

102

0-315-15838-7



National Library of Canada

Bibliothèque nationale du Canada

CANADIAN THESES ON MICROFICHE

THÈSES CANADIENNES SUR MICROFICHE

63747

NAME OF AUTHOR/NOM DE L'AUTEUR Ian McKay

TITLE OF THESIS/TITRE DE LA THÈSE Industry, Work and Community in the Cumberland Coalfields, 1848-1927

UNIVERSITY/UNIVERSITÉ Dalhousie

DEGREE FOR WHICH THESIS WAS PRESENTED/ GRADE POUR LEQUEL CETTE THÈSE FUT PRÉSENTÉE Ph.D.

YEAR THIS DEGREE CONFERRED/ANNÉE D'OBTENTION DE CE DEGRÉ 1983

NAME OF SUPERVISOR/NOM DU DIRECTEUR DE THÈSE Michael Gross and Judith Ringard

Permission is hereby granted to the NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film.

L'autorisation est, par la présente, accordée à la BIBLIOTHÈQUE NATIONALE DU CANADA de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

L'auteur se réserve les autres droits de publication, ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans l'autorisation écrite de l'auteur.

DATED/DATE 16 September 1983 SIGNED/SIGNÉ [Redacted]

PERMANENT ADDRESS/RÉSIDENCE FIXE 176 Bedford Highway, Halifax, Nova Scotia

B3M 2J8

INDUSTRY, WORK AND COMMUNITY IN THE
CUMBERLAND COALFIELDS, 1848-1927

by
© Ian McKay

Submitted in partial fulfillment of the requirements for the Degree of
Doctor of Philosophy at Dalhousie University, August 1983.

TABLE OF CONTENTS

List of Figures.....v
 Abstract.....vi
 Abbreviations.....vii
 Acknowledgements.....viii
 Introductory Figures.....x

CHAPTER ONE
 THE CREATION OF THE COALFIELDS, 1848-1872.....1

CHAPTER TWO
 THE INDUSTRIAL TRANSFORMATION OF THE COALFIELDS, 1865-1900.....64

CHAPTER THREE
 MONOPOLY CAPITALISM AND THE COALFIELDS, 1893-1927.....180

CHAPTER FOUR
 POPULATION GROWTH AND THE EMERGENCE OF TWO COAL-MINING SOCIETIES.....290

CHAPTER FIVE
 THE STRUCTURAL DEVELOPMENT OF THE COAL MINES.....428

CHAPTER SIX
 THE EXPERIENCE OF WORK.....585

CHAPTER SEVEN
 THE POLITICS OF PRODUCTION.....681

CONCLUSION.....845

Appendix One
 A Glossary of Common Coal-Mining Terms.....852

Appendix Two
 The Statistics of the Coal Trade.....866

Bibliography.....882

LIST OF FIGURES

The Area of the Cumberland Coalfields.....	x
Coal-Mining Areas, Cumberland County.....	xi
Coal Production in Cumberland County, 1848-1927.....	xii
Coal Production in Cumberland County, 1848-1872.....	37
Coal Production by Area, Cumberland County, 1848-1872.....	38
Control of Cumberland Coalfields' Production, 1848-1872.....	52
Railways in Cumberland County, c.1873.....	112
Railways in Cumberland County, c.1925.....	113
Coal Production by Area, Cumberland County, 1873-1900.....	150
Control of Cumberland Coalfields' Production, 1873-1900.....	151
Sales of Cumberland Coal, 1873-1900.....	154
Coal Production by Area, Cumberland County, 1901-1927.....	263
Control of Cumberland Coalfields' Production, 1901-1927.....	266
Sales of Cumberland Coal, 1901-1927.....	270
Employees of Coal Mines, Cumberland County, 1848-1927.....	299
Employees of Coal Mines by Coal Mine Area, 1866-1900.....	300
Employees of Coal Mines by Coal Mine Area, 1901-1927.....	302
Room-and-Pillar and Longwall Mining.....	444
Room-and-Pillar Mining in Springhill, c.1927.....	445
A Longwall Mine in the Joggins Coalfield, 1947.....	446
The Tréistle Brook Mine, 1925--A Small Mine in Revier Hébert.....	447
Percentages of Surface and Underground Workers, N.S. Coalfields, 1866-1872.....	513
Percentages and Numbers of Workers, Cumberland Coalfields, 1866-1872.....	514
Structure of the Coal Mining Workforce in Nova Scotia, 1873-1927.....	518
Structure of Workforce, Nova Scotia Coalfields, 1873-1927.....	519
Structure of Workforce, Cumberland Coal Areas, 1873-1927.....	520
Productivity of Colliers, Cumberland, Cape Breton and Nova Scotia, 1873-1927.....	534
Productivity of Underground Men, Cumberland, Cape Breton and Nova Scotia Coalfields, 1866-1927.....	535
Productivity of Colliery Men, Cumberland, Cape Breton and Nova Scotia Coalfields, 1873-1927.....	536
Productivity of Coal Mine Employees, Cumberland, Cape Breton and Nova Scotia Coalfields, 1866-1927.....	537
Productivity of Coal Mine Employees by Mining Area, Cumberland County, 1866-1927.....	538
Productivity of Colliers by Mining Area, Cumberland County, 1873- 1927.....	539
Mining Fatalities in the Cumberland Coalfields, 1868-1927.....	551
Ages of Fatally Injured Workers, Cumberland Coalfields, 1874-1927.....	552
A Model of Work Control in Industrial Organisations.....	688

ABSTRACT

This thesis examines the history of the two coalfields of Cumberland County, Nova Scotia, from 1848 to 1927. From 1848 to 1872 the coal industry was confined to the coastal areas and limited by imperial policy and the absence of local industry. This mercantile coalfield was transformed in the 1860s and early 1870s by state policies, most notably the building of the Intercolonial Railway and the advent of new mining regulations. Industrialization entailed the rapid expansion of the interior coalfield centred on Springhill, but the coastal Joggins coalfield was more slowly transformed. A third structure, also deeply affected by state policies, was initiated in the 1890s. As a result of state-sponsored consolidation of coal companies, the industry in the early twentieth century underwent a gradual process of monopolization, as competition was eliminated through price-fixing and formerly independent companies were merged.

These economic developments influenced the social history of the coalfields. While an urban society developed in Springhill, the Joggins coalfield continued to be rural and fragmented. The Springhill coalfield was characterized by a low level of company domination over housing and retailing and the gradual victory of an ethos of respectability and orderliness; the Joggins coalfield retained many attributes of the frontier. The technical development of the mines allowed the coal miners much autonomy at work, and they developed a distinctive tradition of solidarity, which extended from the mine to the community as a whole. Their struggles within the workplace are examined in the context of three distinct regimes which governed the mines, each reflecting the differing strategies of capital, labour and the state. The history of the Cumberland coalfields demonstrates the process of capitalist development and the large role played by the state within it, and it also reveals the workers' spirited response.

ABBREVIATIONS

Duncan Commission.	Nova Scotia, Royal Commission to inquire into the Coal Mining Industry of the Province of Nova Scotia, Minutes of Evidence, 1925 (Microfilm at the Public Archives of Nova Scotia).
Grand Council	Minutes of the Grand Council, Provincial Workmen's Association (Department of Labour Library, Ottawa).
Minutes, Joggins	Minutes of Holdfast Lodge, Provincial Workmen's Association, 1894-1906 (Dalhousie University Archives).
Minutes, Springhill	Minutes of Pioneer Lodge, Provincial Workmen's Association, 1882-1886 and 1899-1901, the Dominion Coal Company Employees and the Amalgamated Mine Workers of Nova Scotia, 1917-1918, and the United Mine Workers of America, Local Union 4514 (1923-1927) (Angus L. Macdonald Library, St. Francis Xavier University), and the Minutes of the United Mine Workers of America, Local Union 4514 (1921-1923) (Springhill Miners' Museum).
PAC	Public Archives of Canada, Ottawa
PANS	Public Archives of Nova Scotia, Halifax
P.W.A.	Provincial Workmen's Association
Transcripts	Transcripts of taped interviews conducted in the Cumberland coalfields, 1979 (Dalhousie University Archives); Filed separately for the Joggins and Springhill coalfields.
R.C.R.C.L.	Royal Commission on the Relations of Capital and Labour, <u>Evidence Taken Before the Royal Commission on the Subject of Labor in its Relation to Capital in Canada, Evidence--Nova Scotia</u> (Ottawa, 1889).
U.M.W.	United Mine Workers of America

ACKNOWLEDGEMENTS

I cannot thank all the librarians and archivists who have helped me with my research, but I would like to mention two museums in Cumberland County, the King Seaman Museum in Minudie and the Springhill Miners' Museum, who were unusually generous in their help to me. I also owe a great debt to the Public Archives of Nova Scotia, an institution which demonstrates every day that excellence and friendliness can coexist.

I was funded by the Canada Council and the Social Sciences and Humanities Research Council for four years.

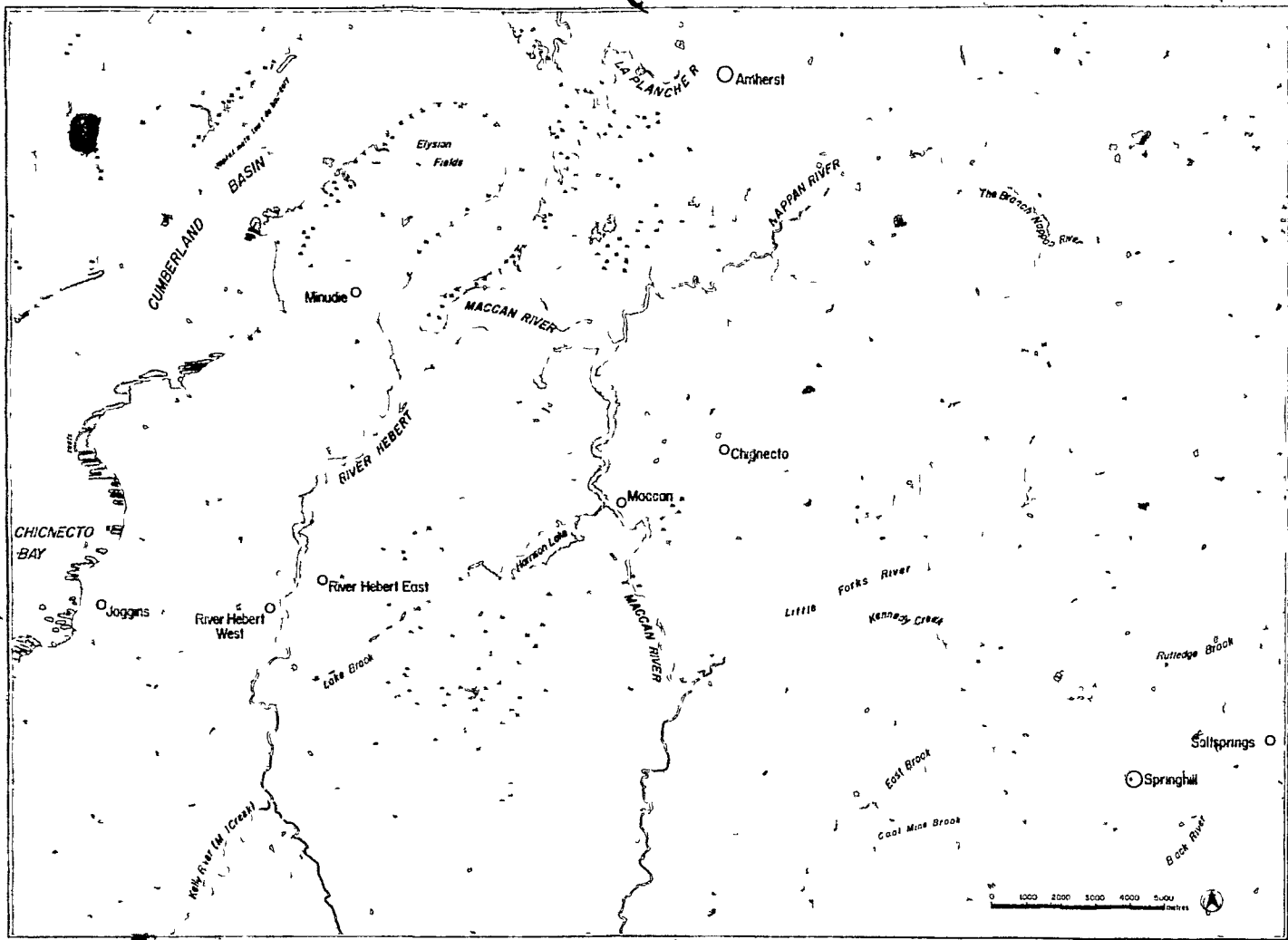
Many people in Cumberland County shared their memories with me; and I shall always remember my conversations with them. Helen Goodwin, a fellow historian of the Springhill miners, worked with me in the field, and I am pleased to acknowledge her collaboration in interviewing the miners and their families.

I am pleased to acknowledge the help of the Dalhousie Computer Centre, Dalhousie Graphics, and Doug Meggison, in the preparation of statistics and graphs. Debra Perrot and Gary Burrill extended invaluable technical assistance, as did Linda Baggs.

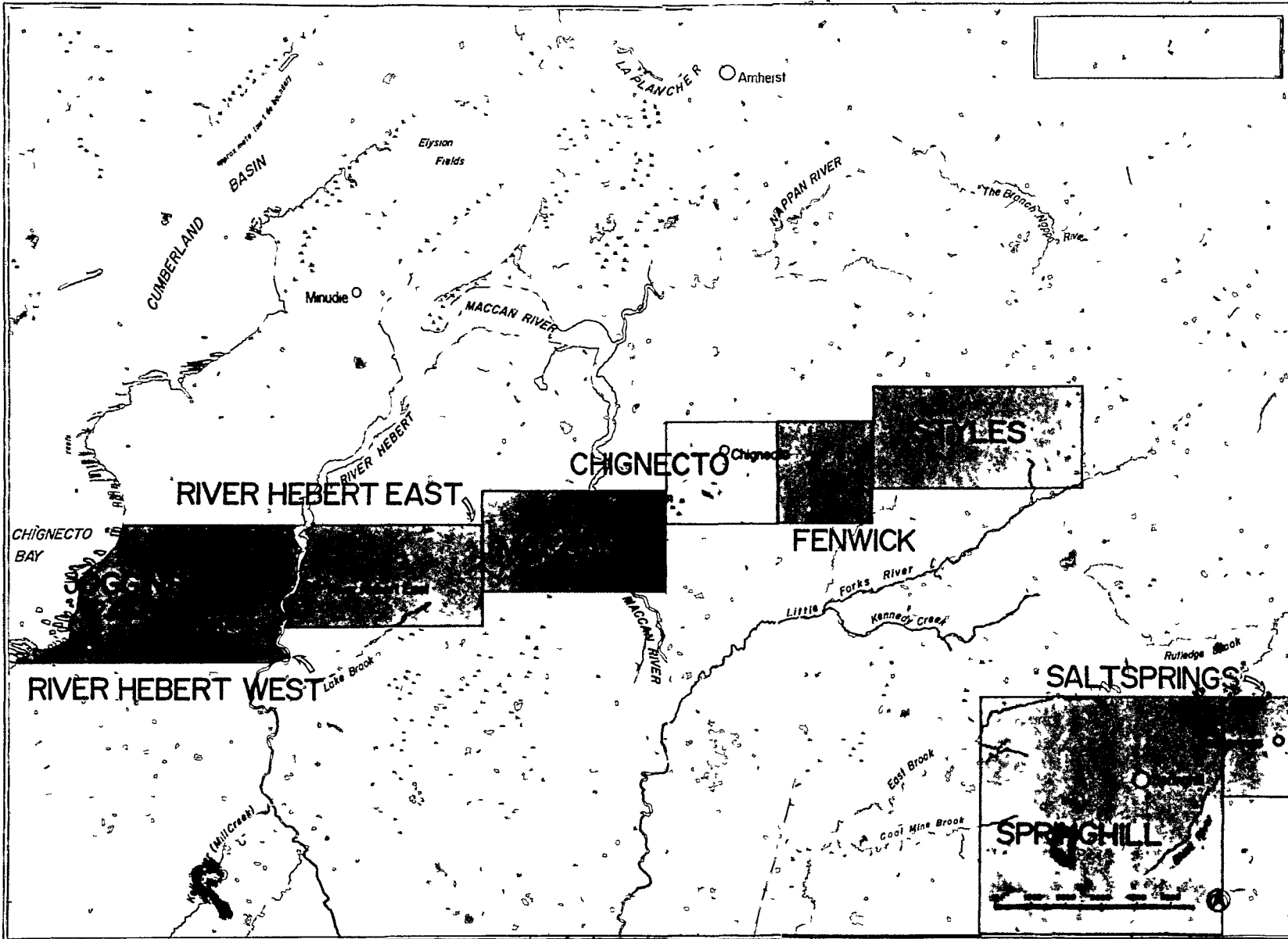
My work reflects the intellectual environment of the history department of Dalhousie University, and I have been lucky to participate in many stimulating discussions. I am pleased to acknowledge a large debt to such historians as Ruth Bleasdale, David Frank, Greg Kealey, John Manley, Bruce Tucker, Peter Lambly, David Sutherland, John O'Brien, Brad

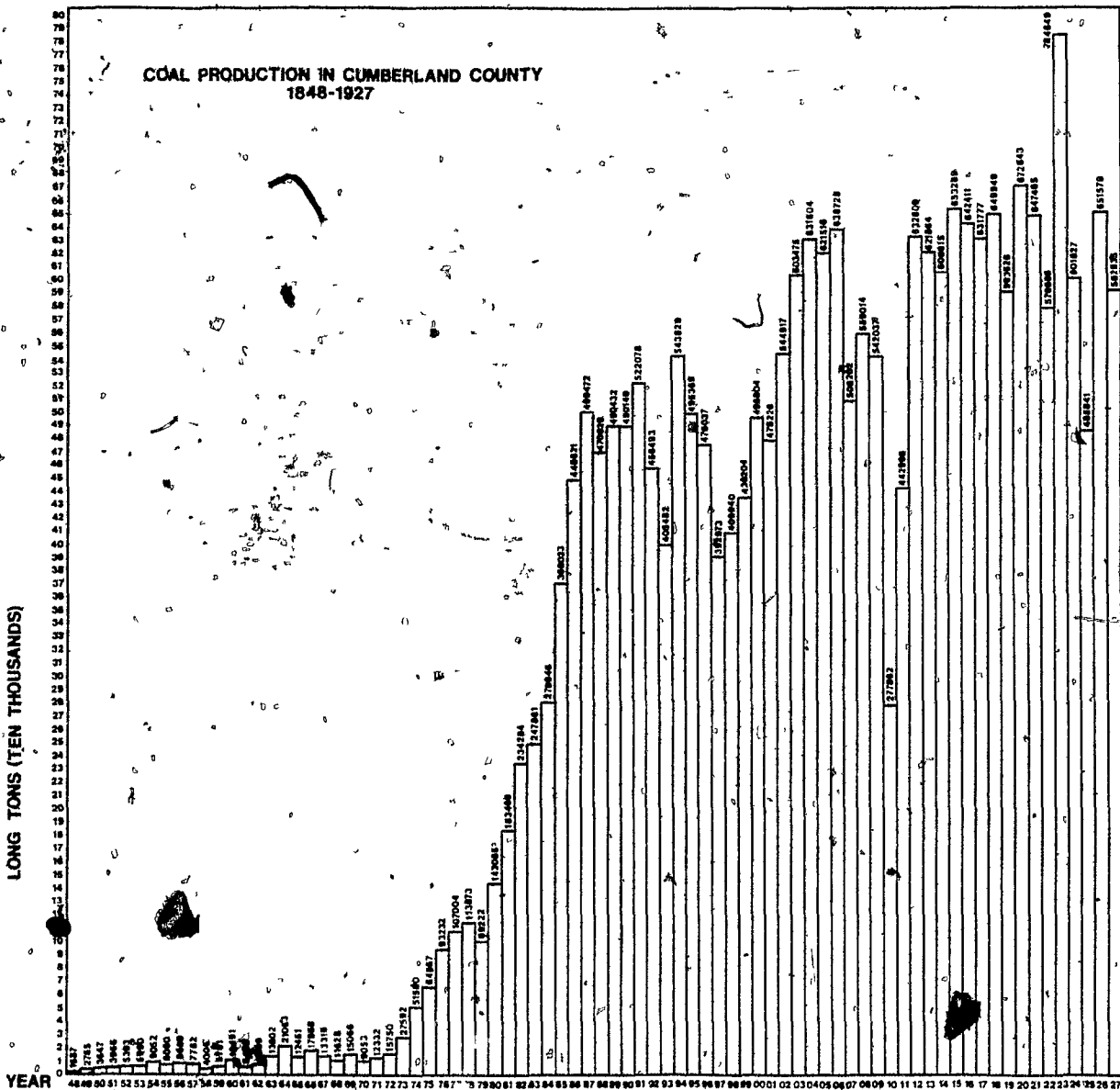
Rudachyk, and Christina Simmons, to name only some participants in our lively seminar. I owe a special intellectual debt to Craig Heron, and to my discerning and patient supervisors, Judith Fingard and Michael Cross.

The Area of the Cumberland Coalfields



Coal-Mining Areas, Cumberland County





CHAPTER ONE

THE CREATION OF THE COALFIELDS, 1848-1872.

CHAPTER ONE

The Creation of the Coalfields

Any account of the Cumberland coalfields must take into consideration the two forces which created them. The first force was that of nature, which over a period of 300 million years made the coal seams and their natural environment. The second force was that of humanity, which required only three centuries to transform completely the work of nature. Nature formed the coal seams, but the coalfields were created by man. In the geological sciences a "coalfield" is an area of coal seams formed at roughly the same time and in the same way. For historians and other social scientists, however, a "coalfield" must be given a more human definition, as "all those human activities which serve to demarcate an area possessing coal seams of a common character and giving rise to communities of a common nature." The coalfield is a social field, a field of social forces ultimately dependent upon the coal seams. No coalfield can ever be fully understood apart from the geological facts which make it possible: these geological facts impose structural limits on human agency, and must be grasped in all their complexity within any adequate social history. But at the same time no coalfield exists as a passive reflection of its geology; this geology enters social history only as a result of its active appropriation by man. (More precisely, it is the result of a dual appropriation, first of nature itself, and then within social life itself, the appropriation of the labour power of some men by others). The coal seams created by nature are only transformed into a coalfield--that complex field of theories, individuals, classes, communities, and mines--by a long and

arduous creation. We may grasp the history of the coalfields as a "natural process," but that nature is socio-historical, and its structure cannot be deduced from its geological preconditions.

The creation of the Cumberland coalfields poses a number of complex problems. Of the three great coal-producing counties of Nova Scotia, Cumberland was probably the first in which coal was discovered and exploited. It was the last to develop a coal industry. The greatest problem posed by the early history of the coalfields is that of their retardation. Why are we faced with two centuries of sporadic development? From 1670 to 1870 the coalfields were obscure. It is true that by 1870 it was possible to speak of a coalfield in the county, but even then it was by no means certain that coal mining would attain any real significance. This problem gives us a guiding thread for the discussion of a long and perplexing period. To answer it we need to assemble the basic facts of natural history, of the earliest settlement of this area by Acadians and by English-speaking settlers, and of the emergence of mercantile capitalism and the gradual expansion of the forces of production, culminating in a sudden and short-lived boom in the 1860s. Our path will lead us to many interesting events in a complex historical evolution, but we shall focus as narrowly as we can on a central question: What explains this long period of retardation, this long period during which the coal seams did not sustain a viable coalfield?

1. The Role of the Environment

Few Nova Scotians noticed the opening of the first significant coal mine in Cumberland County in 1848. It was a year of great political

4 7

and social changes, and the opening of the first significant coal mine was just as much a part of the great age of reform as the political revolution which so dominated the press. Its very existence was a sign of profound social and political change. In response to new conditions, men had started an industry which would eventually affect a large population. Preoccupied with the political questions of the day, contemporaries overlooked an economic development that had taken over a century to become a reality.

The long delay in the development of the Cumberland coal industry can be explained by the minor part played by coal in an economy dominated by trade rather than industry. In the absence of local industries, and too distant from more developed economies to be competitive, the coal resources of Cumberland could not serve a reliable market. Within this limiting mercantile context, different factors accounted for the absence of a coal industry in the Acadian and English periods. In the Acadian period, coal was neglected because of the subsistence nature of the economy and the existence of alternative resources, particularly the marshlands. In addition, the limited exploitation of the resource carried out by enterprising New Englanders was hampered by navigational difficulties and by the conditions of war prevailing in the area in the middle of the eighteenth century. Following 1755, somewhat different factors came into play. An alternative staple export, grindstones, dominated the local economy instead of coal. Initial efforts to mine the coal seams were hampered by the importation of British coal as ballast in timber ships. Perhaps the most fundamental difficulty was

the rule of the General Mining Association, which had gained control over the coal seams and opposed any attempts to develop a mining industry. It was only by forcing the hand of this Association that prospective capitalists managed to secure even the tiny mine which opened in 1848.

The major coal-producing area of the Cumberland coal basin has an areal extent of about 400 square miles lying between latitudes 45° 30' and 45° 45' and between longitudes 64° and 64° 30'. The coal seams were formed from 289 to 341 million years ago, through a process whereby a coastal swamp was covered with organic deposits, which gradually turned the plant matter into coal through compression. Tens of thousands of years elapsed from the formation of one coal seam to another.¹

There are two major coalfields in Cumberland County, the Joggins coalfield extending from the Bay of Fundy to Styles Brook and the Springhill coalfield further to the east. M. J. Copeland, the leading geological authority on the Cumberland coalfields, argues that the available geological evidence suggests that the fields were formed separately.² However geologists ultimately resolve the vexed question of origins, the historian may note four crucial geological facts which establish an evident geological dualism. First, the seams of the Joggins coalfield tend to be less than four feet thick, while all of the five major Springhill seams exceed four feet in thickness. The Joggins coalfield is the leading thin-seam coal mining area of the province.³ Second, the seams of the Joggins coalfield outcrop (i.e. surface) along a relatively straight band, extending the length of the field; those of Springhill, located on the flanks and nose of the symmetrical Springhill anticline, plunge deep into the earth and outcrop within a much smaller

area. Third, the quality of the coal in Springhill is better for most purposes than that of the Joggins coalfield.⁴ Fourth, the seams of coal dip in various ways, from a steep 60° at Chignecto to 19° at Joggins, but in the Springhill coalfield the moderate dip of the major seams (30°) is reduced the deeper one goes. The dip of the seams of Springhill encouraged deep mining, because of the diminished value and steeper pitch of the coal at the flank of the seam.⁵ These geological facts placed material limits on the kinds of mining that could be undertaken and the pattern of settlement.

The coal of Cumberland did not need to be "discovered." The seams proclaim their presence in the cliffs which rise sharply from the shore of Chignecto Bay. These cliffs are the most remarkable natural feature of this area. They present a thirty-mile long document of the history of the Carboniferous Age. Events from pre-human history, such as the growth of vast forests and their compression into coal seams, are preserved with an arresting clarity. The succession of strata and the abundance of fossils made the cliffs an object of scientific attention in the nineteenth century. The cliffs also advertised the presence of at least four seams of coal, visible to any sea-captain who sailed past.

The most important single locational factor in the early days was the Bay of Fundy, which borders the coalfields and connects them with the Atlantic seaboard. The Bay was the focal point of the earliest colonization in the region, and stimulated other export trades. Numerous navigational hazards, such as heavy fogs, eddies, dangerous reefs and shoals, and the absence of capacious harbours, made voyages in much of the Bay of Fundy unpredictable.⁶ The absence of a secure

anchorage at Joggins forced visiting sea captains to load their coal at River Hebert, although given the high Fundy tides this too could prove to be an unwelcome adventure.

The area was first settled by the Acadians, who were probably attracted by the vast marshlands of Chignecto, and its relative freedom from restrictions on trade.⁷ The marshlands were the basis of the Acadian society which emerged in the years 1673-1707. The small Acadian villages were placed in the midst of the marshlands, divided by the meandering rivers wandering to the Bay. It does not appear that the Acadians made any use of the local coal resources, but relied upon wood as fuel.⁸ Within the agrarian society established by the Acadians the coal resource had little function.

Others were more interested in the coal seams. The first reference to them occurs in French correspondence in 1692, and Boston merchants probably started to take coal from the cliffs c.1700.⁹ By 1715 an illicit coal mine was serving the Boston market, and by 1731 Boston merchants secured the right to open a coal mine and settle the area with foreign Protestants.¹⁰ The New Englanders spent some time and money in the area, erecting a hall for visitors and cribs for the coal.¹¹ This trade was disrupted by the war between the French and English, which also destroyed the Acadian communities. In 1757, Captain John Knox, stationed at Fort Cumberland, had made use of Joggins coal, but apart from such incidental military use the coal seams were neglected for the rest of the century.¹²

The Acadian period suggests that the coalfields did not 'inevitably' emerge on the basis of the coal seams. It helps us see that the emergence of the coalfields tells us more about a specific

historical period and the structures it calls into being than about "man's" response to the "environment." Natural facts, as Lucien Febvre pointed out, never exercise a purely mechanical, blind and fatal action on the life of man.¹³ The Acadian period, by showing us that a society could survive in this area without anything more than incidental recourse to its coal seams, serves as an antidote against a naive naturalism. The coal seams only acquired significance within a particular socio-historical formation.

2. The ephemeral coalfield, 1755-1848

There were historical continuities between the Acadian and English periods in this area. Marshlands agriculture continued to be important, although it was now dominated by the estates of J.F.W. DesBarres, the former lieutenant-governor of Cape Breton, who relied upon the services of an Acadian tenantry. His efforts were unsuccessful, partly because of mismanagement and partly because the Acadians resisted this new seigneurial system with as much enthusiasm as they had fought the constraints of the old.¹⁴ Other important activities included the shad fishery and the grindstone trade, which the Acadians prosecuted with their customary flair. Grindstones became the burdensome currency of the Head of the Bay.¹⁵ This trade flourished in response to the ready market for the excellent stones in the United States, and was aided by the unofficial free trade of the Bay of Fundy. There is every reason to suppose that the grindstones were exported without going through customs, just like plaster, whose free entry into the American market made the Halifax newspapers worry about the Yankee principles of the

people of the Bay of Fundy.¹⁶ Although initially the grindstones were a public resource, they were gradually brought under the control of Amos Seaman, who managed to extinguish the popular traditions of the trade and create one of the largest fortunes in the province.¹⁷

The most important reason for the delayed development of the coal industry now became the policies of the General Mining Association. This British monopoly was the beneficiary of an unusual exercise of the royal prerogative. In 1788 King George III granted the mines of Nova Scotia to his son, the Duke of York. The required documents were not completed and this important grant was forgotten until the Duke, hard-pressed by creditors, remembered the gift and had the unfinished grant dug out of the Patent Office in London in 1825. He then used the mineral resources of Nova Scotia to settle a jewellery debt, and the exclusive right to mine coal in the province passed to a company formed by the jewellers, which they called the General Mining Association.¹⁸ It was a development which would long be cited as an illustration of arbitrary rule from London.

In the rather confused period from 1788 to 1828, when nobody quite knew what imperial policy was towards the coal seams, there was only one significant attempt to develop a mine in Cumberland County, that of Samuel McCulley of Nappan, who opened a mine at Joggins in 1819.

McCulley's efforts met with little success, because the best local market, Saint John, was dominated by superior British coal brought as ballast in the timber ships.¹⁹ McCulley was also discouraged by the expense of opening a mine and the poor reception given the coal, which was considered to be of poor quality. A government correspondent also noted the hazardous Joggins anchorage, and described the primitive

workings:

The Mines has been wrought heretofore from the front of the bank at Two different places, a few yards from each other, and are at present Forty or Fifty yards, from the entrance, each Passage from Six to Eight Feet Wide. The Coals are brought in Hand Sleds to the entrance of the Pit, and deposited on a Stage, for that purpose; from which a temporary wharf is carried out in the summer...²⁰

It was a technical level of development reminiscent of the eighteenth century. One further reason for the dismal failure of this mine to become anything more than two short passages, is suggested by a correspondent of the mid-1820s, who noted that "labouring people, at present, are not to be procured in the neighbourhood..."²¹ After this, only sporadic and illegal mines operated in Cumberland, including one at the Joggins, and another at Springhill, until 1848.²²

The population of Cumberland County grew quickly in this period, and a marked interest was expressed by local men in opening the coal seams. Amos Seaman wanted to open mines in Cumberland County. But since the General Mining Association held a monopoly, these men were stymied. Gradually a campaign against the Association gathered force. One of its most interesting features was the part played by Abraham Gesner, later to win fame as the inventor of kerosene. Gesner was not the first to explore the Cumberland coalfields. Titus Smith astutely appraised the economic potential of the cliffs in 1802, and he was followed by the other luminaries of provincial geology, including J. W. Dawson, who with Charles Lyell helped make the Joggins internationally famous.²³ But Gesner was the first to combine geological knowledge with a passion for economic development, and this orientation brought him up against the London-based monopoly. From 1837

to 1853 Gesner was a fierce critic of the Association, which he claimed had impeded the growth of scientific knowledge, obstructed individual enterprise, and selfishly denied consumers the right to inexpensive local coal.²⁴

For its part, the Association attacked adventurers like Gesner ("a person of no means," Samuel Cunard, the Association's agent, called him)²⁵ by scaring off potential supporters with talk of the high expense of opening further seams in Cumberland, and by citing the heavy investment it had made in the province in the hopes of breaking into the American market.²⁶ Opening up a new mine in Cumberland would add to the surplus production of the coal mines it had already established in Pictou and Sydney Mines. Gesner was thwarted in his attempts to establish coal mines in Cumberland, but his campaign was not altogether unsuccessful. In 1848 the Legislature demanded that effective measures be taken by the imperial government to give possession and control over unopened mines in Nova Scotia to the province, and in language that verged on saying that the King's action had been unconstitutional. The question was settled by the transfer of the mines and minerals to exclusive provincial jurisdiction in 1849 and by a compromise agreement of 1857, whereby the Association surrendered all of its mineral rights in Nova Scotia, excepting four reserved areas. Included in these were four square miles at Springhill and four square miles at Joggins. Gesner could claim a good deal of the responsibility for the public outcry against the Association which laid the basis for this agreement.²⁷

It was in the context of this arduous debate that the Association opened the first significant mine in Cumberland County. Joggins was outside the area reserved for the company by an agreement with the

Crown in 1826, and the Association could use the new pit as an example of its conformity to agreements accepted by the province and the Crown in the extraordinarily complex battles waged over royalties until 1857. But it also served as an effective debating point against the enemies of the Association.

In the eighteenth century the coalfields were held back by the existence of other staple exports, the subsistence level of the economy, and the disruptions of war. By the third and fourth decades of the nineteenth century, a significant rise in population and the growth of urban markets made a small coal industry possible. But this possibility was held back by the General Mining Association, which frustrated the ambitions of a fledgling capitalist class. The basic decision to start the Cumberland coalfields resulted from the political campaign waged by local advocates of industrial growth. One could almost describe the first mine as a material embodiment of a politico-scientific awakening. There were thus solid political and social reasons for the opening of the first real mine in Cumberland County in that annus mirabilis of the reform movement, 1848.

3. The General Mining Association: Initiative and Stagnation

The years 1848-1872 witnessed the opening of a new phase of development. The Joggins coalfield, so long glimpsed as a possibility when men looked at the famous cliffs, started to become a reality. The age of itinerants, soldiers, and farmers started to cede place to a period of permanent coal miners and coal companies. Gesner's ambitions started to come true. But only a beginning was made.

Foreign capital, represented first by the London-based General Mining Association, and then by a variety of American companies, made its first significant appearance. Saint John emerged for the first time as an organizing force in the coalfields, taking possession of its natural hinterland and giving us the first of many examples of a coalfield owned by its market. Steam technology was gradually introduced, and breakwaters and specially designed vessels were built to help overcome the obstacles of a maritime environment. It was a period in which more coal deposits were discovered than in the previous century.

But all these developments did not amount to a qualitative breakthrough. The coalfield which emerged in the period 1848-1872 was really a modified and more substantial version of the structures of the past. To substantiate this hypothesis we shall look at the two faces of the Joggins coalfield as it gradually emerged in mid-century: the General Mining Association, which continued at the Joggins, and the variety of small mining companies, which operated in River Hebert, Maccan and Chignecto.

The General Mining Association started its career in Cumberland County with the arrival of Joseph Smith, its mining engineer, at Amherst in May, 1846. He began to supervise the exploration of outcrops of coal in the area, especially at River Hebert and Joggins. In the following year, a government informant reported that he had "another small party of labourers exploring the neighbourhood of Spring Hill, digging pits a few feet deep in various places & Causing the Same to be subsequently filled up." The same informant noted that Smith had "made some surveys of the roads and measured distances in the neighbourhood of the Coal Regions, in the Western End of the County."

Roads were surveyed, and rumours circulated about a railroad from Springhill to either the Maccan River, emptying into the Bay of Fundy, or to Parrsboro. However, Jonathan McCully concluded, "From all that has been done, or is doing in Cumberland nothing has yet transpired, to convince me that the Association intend very soon, to work the Coal Mines, ... in a way likely Either to be of much benefit to themselves or to this province."²⁸

Not everyone agreed with McCully's pessimistic appraisal. Joseph Smith wrote to Joseph Howe in April, 1848: "Permit me to inform you... that active operations have been commenced, and are being pursued with as much expedition as the Season and other circumstances will permit." Smith outlined an impressive programme that the Association was about to launch in Cumberland. A complete survey was to be commissioned. A colliery was to be opened at the Joggins to supply Amherst and adjacent settlements, "as well as Towns, and other places on the Shores of the Bay of Fundy." Everywhere along the Joggins shore things were moving. "The Association have employed... from 30 to 40 workmen, have constructed Machinery, made preparations for the Erection of a Steam Engine, have Built Houses & Workshops, &c., and are now commencing a wharf & Breakwater--a small quantity of Coal has been Mined and is now Shipped for St John N.B. and the United States." Leaving nothing to chance, Smith drove the moral home: "I think you will agree with me the Establishment of these works is sufficiently indicative of the intention of the Association as regards the mines of Cumberland and will refute the remarks or observations that may have been made to the Contrary."²⁹ One sees at once that the Joggins colliery was given a symbolic significance by both supporters and critics of the Association.

The supporters were right to suggest an impressive effort was initially made to develop the Joggins; the critics were correct in thinking that the Association was not about to invest heavily in this area. The Association's first efforts were captured ungrammatically but well by the son of Richard Smith, who submitted the following description to his teacher in English composition at the Sackville Academy:

Among the various operations which mark the present day is that of the Joggins Mines that in so short a time they have made such progress three years ago it was nothing but a dead forrest of ferns and under Brush where now stans houses with pastuers and gardens there is also a good carriage road where even two years ago a man could not take a horse and with no little ease take himself. The first thing that catches your eye off the shore is a large wharf and Breakwater where vessels when they are loading can lay with perfect safety when it is Blowing a heavy gale

Young Smith went on to describe the technical features of the Joggins mine:

...you go off the wharf to the mouth of a place called the levels from the wharf to a place called the face it is a quarter of a mile, at the face up the level all the men are at work there are two parties of men and one party of Boys one half of the men Blast and work the coal and one half gather up the lumps and put them into Boxes made on purpose the Boxes are then put onto little waggons called trolleys and they haul them to the foot of a hole thirty yards deep called a shaft they are thear drawn up by machinery to the surface where they are put into railroad waggons and taken up to the top of a steep place called an incline they are then let down by machinery onto the wharf and while the full one goes down the empty one comes up and in this way they get the coal on the wharf 30

The awkward style of our young author probably earned him some harsh words at the Sackville Academy, but from the historian he wins heartfelt gratitude. With a scrupulous attention to detail he has described, for

the first time, the pioneer colliery of Cumberland County. It is an arresting description. By 1849, when Smith wrote his paper, the colliery had already developed a system for loading coal onto the wharf: an adaptation of the "balance" system whereby a full coal car was lowered by being in balance with a ballast car. He has described a first division of labour, between men who dig the coal and the men who load it. He has shown us the first shaft. He has even captured the spirit of improvement in his description of the rapid settlement of the Joggins and the development of its houses and roads.

The first Joggins mine was developed on the King's Seam, named in honour of the coal-mining carried out by the British garrison. In its first form, the coal was carried out via a horizontal drift, which also served to drain the mine. The coal was then put on board vessels, laid up at high tide directly at the mouth of the drift.³¹ Later it developed the shaft about which young Smith speaks; in fact, it would develop three such shafts as it dug further and further into the coast.

An industrial revolution? Perhaps not. After this initial burst of enthusiasm the Association was content to sit on the resource. After 1857 its hold on Joggins was secure: it won the exclusive right to four square miles encompassing the major coastal deposits. In 1859, R. B. Boggs, to whom the Association leased the mines, offered a detailed description of the pit. In ten years the adit had been driven in from the high-water mark a total of 1,694 yards. A shaft was sunk 286 yards from the high water mark, and a level driven off from the bottom of this shaft, following the coal for 1,634 yards. Two airways had been extended from the outcrop to the Level. The surface works established included a blacksmith shop, a carpenter's shop, a store and office, and

thirty wooden tenements. A 30-horsepower steam engine had been imported but not put into use because demand did not warrant it.³²

This was hardly a portrait of a rapidly expanding, dynamic colliery. If there were good reason to hail the arrival of the Association, there was far less cause to praise its subsequent development in Cumberland County. The Association's motives for following this course can only be surmised. The bitter charge brought against the Association by Gesner-- that it had developed a token mine in order to stave off unwanted competition--seems to have a certain plausibility. The Association was a reluctant entrepreneur in Joggins. Samuel Cunard lamented the expenditure of £3,738. 17s. 1d on the new mine at a time when the Association could not sell its coal from other collieries.³³ From the viewpoint of the London monopoly, the local politicians had been unreasonable. They had not made allowances for the Association's difficulties in carrying out its intention of exporting large amounts of coal to the United States in the face of a duty of \$1.75 a ton (from 1842 to 1846). Although the Association managed to increase its exports to the United States from 1843 to 1848 and pay a dividend to its shareholders, its £20 shares sold at 65% of their value in the London market. One well understands the climate of uncertainty which made the Association reluctant to add much to its reported provincial investment of £250,000.³⁴

By subleasing the mine to R. Beaumont Boggs, the Association basically guaranteed that little improvement would be made. Boggs, insecure in his tenure at Joggins, made only those improvements which were absolutely necessary, and these in the cheapest possible fashion. The pit employed 31 men and 7 boys in 1858--essentially the same number as

a small, craft-based manufactory. After the initial burst of investment, virtually nothing was put back into the pit in the way of new machinery or levels.³⁵ There was a certain growth (especially in response to the Reciprocity Treaty, which boosted production to a high level of 9,052 long tons in 1854), but even mid-Victorians found it difficult to see the little coal mine as a sign of an industrial revolution. Local capital, modest as it was, had proved more resolute in its pursuit of development than the foreigners: ten years after Amos Seaman had introduced steam power to the area, the Joggins coal mine was dependent on a two-horse gin to raise its coal.³⁶

Joggins never attained the same rank as the other collieries opened by the General Mining Association. The value of the property was estimated at £5,143 17s. 1d., in 1868, compared with such other Association properties as Sydney (£79,934 4s. 1d.) and Albion Mines (£112,625 19s. 10d.).³⁷ Only 48 men were employed in 1864. In the difficult period following the abrogation of Reciprocity, the Association felt compelled to reduce its expenditure and effect savings. It was pleased to sell the property at Joggins in 1871 at the good price of £14,637 12s. 1½d. to the Joggins Mining Association, controlled by Alexander Barnhill and other Saint John interests.³⁸

The best thing one can say about the mine at Joggins is that it managed to survive the commercial storms of the 1860s. Quiet improvements were made on the breakwater which extended from the upper mine at Hardscrabble, a property worked together with the Joggins from 1861 on. But no effort was put into a systematic programme of modernization. The essence of the situation was captured by the Association's own representative, James Hudson, who visited the Joggins

in 1869. Hudson noted that the arrangements for haulage were of a "very primitive character." The way the coal was worked betrayed the short-term perspectives of management. The coal was not worked towards the dip, but on the shallower reaches to the rise; the mine was extensive, in other words, rather than deep. The mode of working was not designed to produce the best quality of coal; rather, it was designed to keep the mine going without doing any development work. The proprietor explained to Hudson that such development work was out of the question, given the insecurity of his tenure. Everywhere Hudson saw evidence of decay: the workmen's houses were out of repair, the wharf was decrepit, ventilation in the mine was poor, the means of underground transit could not be worse, everything had been left to stagnate and decay. Even Hudson himself perpetuated this situation, by recommending that Boggs be allowed to continue as lessee, on the grounds that the Association would be unwise to go to the expense of appointing a resident superintendent. 39

How may we account for this stagnation? Its immediate causes seem obvious enough. The insecurity of the proprietor's tenure as a disincentive to development and the disabilities of Joggins as a coal port emerge as answers directly from the historical record. But these immediate causes are not a sufficient explanation. By failing to provide its proprietor with security or to build a modern breakwater, the General Mining Association created and perpetuated these problems.

Was this stagnation perhaps due to the poor quality of the coal?

Joggins coal did suffer from a poor reputation on the market. From an abundance of dismissive statements, let us select just one, from a guide to sailors published by the Admiralty in 1875: "At the South

Joggins there are several seams of coal, but the quality is inferior and not adapted for either steaming or domestic purposes."⁴⁰ Can we then say that the stagnation of the Joggins was merely the effect of underlying geological problems? Several things stand against such resource determinism. The negative appraisals of Joggins coal most probably reflected the carelessness with which it was mined, and not its essential qualities. Many consumers in Saint John found it perfectly suitable as a domestic and steaming coal, if not quite as good as that produced in other collieries. However, carelessness in mining the coal could lead to a marked deterioration in its quality. Especially in the Joggins main seam, the stone bands found in the coal seam could pose a challenge. Unless the coal was carefully mined or screened, the stone would be mixed in with the coal. Moreover, the surface coal, at the Joggins and everywhere else, underwent a natural process of weathering which reduced its quality as a fuel. The "poor quality" of the coal of Joggins was most likely a reflection of the poor quality of mining.

An even more telling indication that the problem of stagnation was one of strategy and not geology is provided by the Association's policies in the rest of the county. The Association's monopoly was broken in 1858; under the terms of the agreement with the province, it had the right to stake out two areas of four square miles each, one at Joggins and one at Springhill. In 1857 the Association sent out two teams to survey Springhill and Joggins.⁴¹ The team which surveyed Springhill made a crucial and conclusive mistake: after a quick survey the prospectors staked out the wrong land, to the northwest of the best area. Given the rough topography and the limitations of geological knowledge, the mistake was understandable. But this mistake was only

conceivable within a given structure. The Association had held Springhill for almost three decades. Surveyors had been sent to Springhill as early as 1848. In the early 1850s, it was claimed by the Association that it would gladly undertake to build a railway from Springhill to Parrsboro if a trade of 40,000 to 50,000 chaldrons could be developed.⁴² Knowledge of the quality of Springhill's coal was not confined to a few people: it was generally known, although there was considerable doubt as to the best place for mining to start. A further decade of exploration would reveal it.

Why was this exploration not undertaken by the General Mining Association? The answer must lie in the underlying framework of the Association's presence in Nova Scotia. Its strategy was one of exporting coal as a staple, and not using it as an intermediate good for local industries. Within this commercial strategy, the coal seams of Joggins were less worthy of attention than those of Pictou and Cape Breton, as were those of Springhill, whose development would have necessitated the building of a railway. The blunder by which the Association lost the coal of Springhill was deeply structured by the history of the Association, which determined its essentially casual and marginal role in developing the coalfields of Cumberland.

This mistake meant that the Association's monopoly was broken in fact as well as in name. It opened the door to many small mining companies and the first major mining boom in the county.

4. The Age of Enterprise

The poor prospecting of the General Mining Association paved the way for an influx of prospectors and mining companies. From 1857 to 1867

Cumberland County succumbed to its first major mining craze, complete with fraudulent prospectuses, claims-jumping, scandals, and a swift and brutal collapse. The Age of Enterprise had indeed arrived.

By breaking the monopoly of the General Mining Association, the state had succeeded in winning a major victory for economic liberalism. From 1857 to 1865 it played the role of nightwatchman that was prescribed by economic theory, although only through its initiative was laissez-faire possible in the first place. After 1865 its role changed to one of greater and greater involvement. The state had no firm idea of what to do with the coal resources of the province. Its outlook was essentially short-term. No force within Nova Scotia society, including the state, had a programme of economic development. The principal motivation of the government was to increase its revenue. Although spokesmen for the coal industry were later to argue that the government royalties were fairly marginal, a form of "export tax" imposed upon coal, they were in fact legally and politically central. The situation could not have been more ambiguous. On the one hand, thanks to King George III, the state owned the coal. It had the unquestioned right to impose royalties, make rules about mining leases, and govern the actual way the coal was mined. On the other hand, the state was committed (by the very reform ideology which had secured for the province the exclusive right to its own mineral resources) to a notion of free enterprise in the coal industry. Consequently, from 1857 to 1865, the state was the custodian de facto, even if it was the owner de jure.

There was no effective government machinery for anything other than superficial management. Much of the responsibility in the period from

1858 to 1862 fell onto the diminutive shoulders of the Crown Lands Department. Although government officers had been maintained in the coalfields to supervise the weighing of coal, such offices were thought to be mere sinecures. The creation of a body of legislation, and an organization of experts and authorities, were both to be protracted affairs. Early mining legislation confined itself to disputes over titles and unseating the General Mining Association.⁴³ Mine inspection evolved in a haphazard and informal way. The first inspector of mines was appointed in 1858, in the person of James McKeagney of Sydney. McKeagney's chief qualification for the position was to have crossed the floor of the House of Assembly to join the Conservatives during the furore over Joseph Howe's anti-Catholic agitation.⁴⁴ McKeagney had really wanted the job of Commissioner of Crown Lands, but the Conservatives had this earmarked for Samuel P. Fairbanks, the former M. L. A. from Queen's County and Provincial Treasurer. Charles Tupper, the provincial secretary, explained this to McKeagney and tried to sweeten the pill by noting the marked advantages of the Inspector's position.

We are induced to make these alterations in consequence of reliable information that your seat could not be vacated without great risk of a member being returned in opposition to the Government, the Effect of which would be very disastrous. I feel assured that you are the last man who would ask us unnecessarily to incur such hazard.

...The precise nature of the duties of Inspector of Mines cannot now be defined further than a general supervision of all relating thereto. My Colleagues all of whom are entirely friendly to you agree with me in thinking this a much better office in a pecuniary point of view, than that of Crown Land Commissioner. You can reside at Sydney and retain your practice and seat in the Assembly whilst you possess the confidence of the Constituency and in the event of losing that your office will not be affected.⁴⁵

Tupper used the position of Inspector as a plum for a political ally. McKeagney was given an awesome list of responsibilities. He was supposed to make a personal inspection of all the mines opened in the year, in order to satisfy himself that the lessees were working the mines according to their contracts; he was to oversee the shipping of coal, receive from the coal weighers certified returns on oath of the quantities of coal shipped, and submit monthly returns of the number of vessels loading coal, among other things. For all this McKeagney was to receive £ 300 a year,⁴⁶ No man could have conceivably fulfilled all these obligations across the entire province, but McKeagney did make the attempt. His reports belie the image of him, perpetrated by Robert Drummond among others, of an ineffectual place-holder.⁴⁷ Yet he was in a politically vulnerable position and hampered by illness. The province passed in 1861 an act abolishing the salary attached to the inspector of mines, and placing the duties of that office in the hands of the Commissioner of Crown Lands. W. A. Hendry, the department's surveyor, acted as the de facto mine inspector.⁴⁸ A further change in government brought a significant reform in the first major mine law in Nova Scotia, included in the Revised Statutes in 1864. This new legislation provided that the governor in council would appoint an inspector of mines, "who shall be a competent, scientific, practical coal-mining engineer, whose duty it shall be to visit from time to time as may be deemed necessary, and inspect the various mines belonging to or under lease from the crown, to ascertain if the laws, stipulations and agreements relative to the working and management of such mines, and to the payment of rents and royalties accruing therefrom are complied with...." This was to be a non-political position: the chief commissioner, deputy commissioners,

and inspector of mines were all deemed incapable of being elected to, or of sitting or voting in, the House of Assembly. The position of Commissioner of Mines was to revert to political status, but the creation of a non-political mines inspector was not subsequently undermined.

This early mining legislation not only created machinery whereby the state could influence events within the coalfields, but also laid down the terms on which exploration and mining could take place. Licenses to search were granted for a period of one year on payment of \$20, and gave the bearer the right to dig and explore for minerals (other than gold) held by the crown. The crown would bear the cost of surveying the tract of ground, which was not to exceed five square miles in extent nor two miles in width, but it bore none of the cost of exploration. This license of exploration could be renewed for a further period of twelve months on application to the chief commissioner of mines, provided this application was made not less than thirty days before the expiration of the license. The holder of the license to search was allowed, at any time before the license expired, to select from the land covered by the license an area of one square mile, for the purpose of working the mines and minerals thereon. Mines that were not worked for a year (or worked only "colourably" to avoid forfeiture) could be (after due legal process) seized by the Crown.⁴⁹

Although the law sounds straightforward enough, the reality was not. The law contained many ambiguities. For example, the renewal of licenses to search and the procuring of additional rights of search to be taken out over the same area, were to prove matters of exceptional complexity, eventually decided (in a crucial case) by a controversial

order-in-council. The actual running of the mines was left without detailed legal instructions. How the mining inspector was to determine if a mine was operating in a bona fide manner or only colourably was not determined, and in practice the section of the law covering the forfeiture of mines was a dead letter:

The Department of Mines was ill-equipped to deal with the acrimonious and exciting world of prospectors and mining promoters. The Department would be called upon to make its own judgment as to whether or not a party surrendering a lease had truly assigned; the evidence was not taken under oath; and there was a real danger of fraud.⁵⁰ In effect, the Department of Mines was to do much the same sort of work as a registry of deeds. It did it rather badly. "The necessity of a revision of the Mines Act appears to me to be urgent, particularly with the view to having a more complete system of registration of leases and transfers," Robert Robertson noted in 1867.⁵¹ When a license to search was incorrectly surveyed, it affected all the adjoining rights to search. Some measure of the confusion of provincial policy may be had from the fact that when more complete surveys of Cumberland County were carried out in connection with the Intercolonial Railway, all the maps of the Department of Mines--the crucial register of claims and claim-holders--were found to be in error.⁵² It is unnecessary to detail all the byzantine machinations of the prospectors and claim-holders; suffice to say that this was the period in which Cumberland experienced something akin to mining fever, of a sort more normally associated with gold mining in the West. It was in this period that claims were staked out--the Styles claim at the eastern extremity of the Joggins coalfield is the best example--which would be held by mining speculators until the

the twentieth century.

The downfall of the monopoly and its replacement by a permissive framework of mining law explains some of the mining fever of the 1860s, but a more fundamental factor was the new access to seemingly unlimited American markets. The coal industry of Nova Scotia would always be directly influenced by the commercial policies followed by Great Britain, the United States, and (after 1871) by the Dominion of Canada. The Reciprocity Treaty of 1854 incurred substantial provincial opposition. As D. C. Masters noted, in the early phases of negotiations for the treaty, the British negotiator was actually instructed to sacrifice the free entry of coal if this were needed to obtain American consent, although this initial negotiating stance was transformed into an insistence upon the insertion of coal as an inducement to the Nova Scotians.⁵³ The classic argument concerning the coal industry and reciprocity, presented in authoritative form by S. A. Saunders and reiterated by Masters, is that the abrogation of reciprocity was not the essential factor in undermining the Nova Scotian presence in the American coal market, and that one should look at the deeper mines of Nova Scotia, the emergence of newer mines, and the creation of a more efficient transportation nexus in the United States as the essential factors which eliminated Nova Scotian coal from contention.⁵⁴ Arguments of this sort are difficult to prove one way or another, but the Masters/Saunders interpretation is surely open to question. Even with a protective tariff in the United States, Cumberland coal was able to supply a number of New England centres, and the arguments concerning the advantage enjoyed by American producers neglect the important changes introduced in the technology of shipping coal, such as the use of

steam-powered barges, which reduced drastically the cost of sending coal to New England. How large the market for coal might have been in New England is a counter-factual question which has not received a definitive answer. Certainly the advent of reciprocity did not make this an American-dominated field, but a significant percentage of Cumberland coal was exported and a good deal more may have found its way to the United States had reciprocity not been ended. Moreover, the Masters/Saunders interpretation to some extent depends upon the artificial separation of the Reciprocity Treaty and the particular economic conditions of the Civil War. It was of course true that the spectacular rise in the price of coal in Boston (it attained a price of \$8 a ton in 1864) had a direct impact upon the Cumberland field, and the collapse of this Boston market created a sharp drop in production from 1864 to 1865. But it is hardly realistic to separate this sudden boom from the underlying free trade which made it possible for the coalfields to respond in so direct a manner.

These external influences created the possibility of the expansion of the coalfields from 1858 to 1866. The first new mine located outside Joggins was opened by William Patrick, a former mining engineer from Maryland, who tramped the coalfields for twenty years, looking for outcrops, locating the best mining sites, and pursuing an ever-elusive prosperity. His forte seems to have been starting things; he had less of a talent for nurturing them to success.

This first mine developed by Patrick was located on the west side of River Hebert. The mine was a short distance from the River, which provided it with certain advantages over Joggins. In 1859 Patrick sold out to the Victoria Coal Company, and henceforth the mines of this

particular area took the name "Victoria." By 1859 the mine was connected by railway to the loading wharf at River Hebert, and it was said that "this coal is much esteemed in St. John, New Brunswick, where it is chiefly sold."⁵⁵ The Victoria Coal Mining Company, incorporated in 1860, was dominated almost completely by Saint John men. The company was controlled by James T. Fellows, a notable Saint John druggist.⁵⁶ His father, Israel Fellows, had failed in business some years before, but the son had, with his push and initiative, brought it back to profitability. In December 1859, the son had "gone out of Drugs into Coal digging in Nova Scotia," according to the Dun and Bradstreet manuscript credit report. A further report conveyed the optimism felt in Saint John: Fellows was said to have "gone in to the digging of Coal, at a new mine he has recently discovered at the River Hibbert, in N. S., which is said to be turning out in good standing..." But by 1863 the same source speaks of Fellows as having "recommenced the Drug trade, he will bring a dearly purchased experience..."⁵⁷ The prospectus of the company conveyed the high hopes with which Fellows began: it estimated that the company would make \$27,000 a year profit on a year's business.⁵⁸ The Saint John men were the first to introduce the steam hoisting of coal into the Joggins coalfield. The mine continued to expand until 1863. Three new air shafts were made, levels to the extent of 640 feet were driven, a new wharf constructed and the railway extended.⁵⁹

The Saint John company spent a large amount of money on the mine. It encountered serious difficulties.

One of these was the uncertainty of mine boundaries, for the River Hebert area was covered with claims and rights to work, many of them not adequately surveyed. Fellows charged that partisanship and dishonesty

had marred the distribution of mining rights in the area; under Charles Tupper, he complained, the company had been deprived of its due rights, "He having taken forceably one half or thereabouts of our mining rights; which we held as owners of soil on the outcrop of coal."⁶⁰ One also suspects that the prodigality with which money was spent on this pit may have lessened its capacities to escape the effects of the post-1866 crisis. The prime culprit, however, appears to have been geology. The company was confronted with the unwelcome problem of severe faults in the three seams it worked, and (as in all thin-seam mines) any extended period of cutting through unremunerative stone could prove fatal. By 1867 the operations at the mine had largely ceased, and the mine was reported to be filled with water.⁶¹

On the eastern side of River Hebert, there was a similar record of failure. In 1859, this area was opened by James Barnes, who worked a seam of about two feet and two inches thickness. Very little money was spent on this mine, and in 1862 Samuel O'Donnell described the mines, after "heavy and continued rains," as having "all fallen in." In the same year, and on a location extremely close to the Barnes pit, a mine was started by George Hibbard, the son-in-law of Amos Seaman.⁶² This mine was taken over in 1862 by the first of the Boston companies, the Lawrence Coal Mining Company, which was formed to take advantage of the high coal prices in Boston.⁶³ The result was a major disaster. In a scene that recalled the faulty practices of the 1730s, the company mined 4,811 tons of coal (including 3,421 "Mixed and Coarse Shipped to the United States"--a tell-tale sign of incompetent mining, since no experienced company would so mix its coal), and through inexperienced handling and other errors, the coal caught fire on the loading pier.

Even had this not occurred, Hibbard noted rather acidly, the coal would hardly have been saleable anyway: "the best has been sold below the market price, while some of the cargoes have been nearly or quite a total loss."⁶⁴ Notwithstanding this inauspicious beginning, the company persisted throughout the period of the Civil War and expended a total of \$19,600 in 1863, including \$2,500 for a small railway, \$1,500 for rolling stock, \$2,000 for machinery and \$5,000 on eighteen houses, stores, shops and sheds. A total of 60 men were employed.⁶⁵ These men and this fledgling community were left stranded when the company collapsed in 1865. The miners were evidently allowed to work awhile on their own account, selling the coal for whatever they could get; their abandoned homes were moved across the river.⁶⁶ The venture had been a disaster.

The same story would be repeated at Maccan and Chignecto. Maccan was first prospected by William Patrick in 1861 and 1862, while he was manager of the Victoria Mine. A license to work a coal mine was granted to him on 25 April 1861, covering both sides of the Maccan River. After opening a small mine, Patrick requested that the lease he had applied for directly be turned over to J. Gardner White and William G. Howe of Boston, who in 1863 had formed the "Macan Coal Company" to take advantage of the wartime fuel prices. In effect, the lease was being treated as a negotiable article, which one party could sell to another. After obtaining the lease the two American entrepreneurs formed an additional company, called the Mulgrave Coal Company, to the west of the lease they occupied on the Maccan River. These manoeuvres, which had the effect of getting Patrick out of the way and giving the Americans the exclusive right to the mines; created a case that went all the way to the Supreme

Court.⁶⁷ "The affairs at Maccan were a magnificent example of the raucous squalor of mining promotions. The prospectus of the company is a classic of the genre. Issued in Boston in 1863, the prospectus appealed first to its readers' profound sense of patriotism. The "public interest demands a greater production and more extending mining facilities than have thus far been developed," the promoters intoned, but then they got down to business. This was an offer that was too good to refuse. The coal deposits of Maccan were located beside a magnificent river which would accommodate vessels of any draught. This great coal deposit had been magnificently developed at great profit. Indeed, such distinguished scientists as J. W. Dawson and William Logan had pronounced very favourable verdicts on the coal, and the title to the mine was guaranteed directly by the British government itself. The mine was close to the Lawrence and Victoria collieries, whose success was a matter of public record. The potential profits were enormous. "It is estimated that an outlay of \$50,000 at the MACAN MINES will produce a net profit of \$50,000 per annum, and that an increased outlay will produce a still larger ratio of net profits," the prospectus predicted. Stockholders could expect to reap about \$2,040 a day.⁶⁸

In 1864 the company changed hands, and a serious effort was made to develop Maccan. A railway was built, together with a wharf and breakwater, five houses with eight tenements, and an engine was purchased for hoisting coal. By 1867, after switching its location, the company was more or less inactive, and by 1870 it had been reduced to the status of a local domestic pit, a familiar end for many a Cumberland mine. The great enterprise which was intended to command the Boston market and provide its owners with untold wealth, ended up meeting the fuel needs

of area farmers and doubtless providing its owners with a marginal income.⁶⁹

At Chignecto three companies were drawn to the area, which was first prospected by William Patrick in 1863. The Boston interests who bought the property in that year divided it into two, the Chignecto and the St. George collieries, and they were soon joined by a third, the New York and Acadia. Here the pattern was an even more lurid example of rapid expansion and decline. A railway was built from Chignecto to Maccan, where the companies maintained a shipping pier. A branch was extended from St. George to connect with this line. On this railway puffed the first locomotive in Cumberland County.⁷⁰ In one year the expenditure at Chignecto approached \$20,000, the highest yearly sum of any colliery. The descent to the status of marginal domestic pits was complete by 1872.⁷¹

The record of failure was complete. Across the Joggins coal measures companies had arisen one after the other, gradually forming the outline of the coalfield. The seams hidden within the earth were brought within the compass of the economy. From the Bay of Fundy inland a narrow band of coal mines was developed, following the outcrop of the seams. The essential determinants of this sudden development were two: the achievement of laisser-faire by the state, and the high price of coal in New England during the Civil War. It was a classic wartime boom. The abrogation of the Treaty of Reciprocity and the decline in the price of coal in Boston ended the boom and reduced the coalfield to a memory. In 1866; at the end of the boom, the coalfield was pock-marked with mines working for the very limited domestic market; by 1872, it was pock-marked with mines full of water.

The mines that emerged in the period 1857-1866 had one thing in common besides failure: they were all within easy reach of the sea. The environment influenced which coal mines would emerge during this period, because the speculative companies generally sought easily located deposits. These deposits in Cumberland County were generally located by the water, where erosion revealed the outcrop. It was the pattern of discovery that one might expect in a period of short-term commercial investment, in which the goal of the entrepreneur was to achieve a high return in the shortest possible time. From west to east, from the Fundy to Chignecto, the speculators and prospectors moved from one shore to the next, along a ribbon of coal. But they left very little behind them.

5. Conclusion: The Coalfields and Mercantile Capitalism

From the first mention of coal deposits in French colonial documents to the collapse of the mining boom in the 1860s, the coalfields were structured by the trade of the Bay of Fundy. It is this mercantile framework which gives this long period its coherence and its meaning. The many events which jostle for our attention have an underlying logic, the coherence of a commercial way of life based upon the Bay.

These events may be summarized in a number of ways. Let us first consider the quantitative pattern they weave in the period 1848-1872, the earliest period for which consistent statistical data exist. Then we can turn to a more general consideration of the period of mercantile capitalism and the creation of the Cumberland coalfields.

From 1848 to 1872 232,810 long tons of coal were produced in Cumberland County. This single statistic tells us a great deal about the limited transformation of the period. At no time did the production of the entire county exceed the minimum output attained by the single most

productive mine in the Province. (The Association's pits at Sydney Mines and Albion Mines ranged between a minimum of 24,054 and a maximum of 227,811 long tons). Cumberland County contributed only 2% of provincial production, compared with 59% for Cape Breton and 39% for Pictou County. There would be little injustice in completely overlooking Cumberland County in a history of the provincial coal industry before 1872.

Table One summarizes the production of the Cumberland coalfields and presents an index created by transforming this series into ratio form, with a base year of 1860.

Table One. Production in the Cumberland Coal Industry, 1848-1872

Year	Production (Long Tons)	Index (1860=100)	Number of Mines
1848	1,687	16.1	1
1849	2,765	26.4	1
1850	3,647	34.8	1
1851	3,966	37.8	1
1852	5,393	51.4	1
1853	5,990	57.1	1
1854	9,052	86.2	1
1855	6,090	58.1	1
1856	8,669	82.6	1
1857	7,762	73.9	1
1858	4,006	38.2	2
1859	5,761	54.9	3
1860	10,491	100.0	3
1861	6,400	61.0	2
1862	8,699	82.9	3
1863	13,802	131.6	3
1864	21,063	200.8	4
1865	12,451	118.7	3
1866	17,968	171.3	5
1867	13,319	127.0	3
1868	11,628	107.4	4
1869	15,066	143.6	4
1870	9,053	86.3	4
1871	12,332	117.6	4
1872	15,750	150.1	4
TOTAL	232,810		

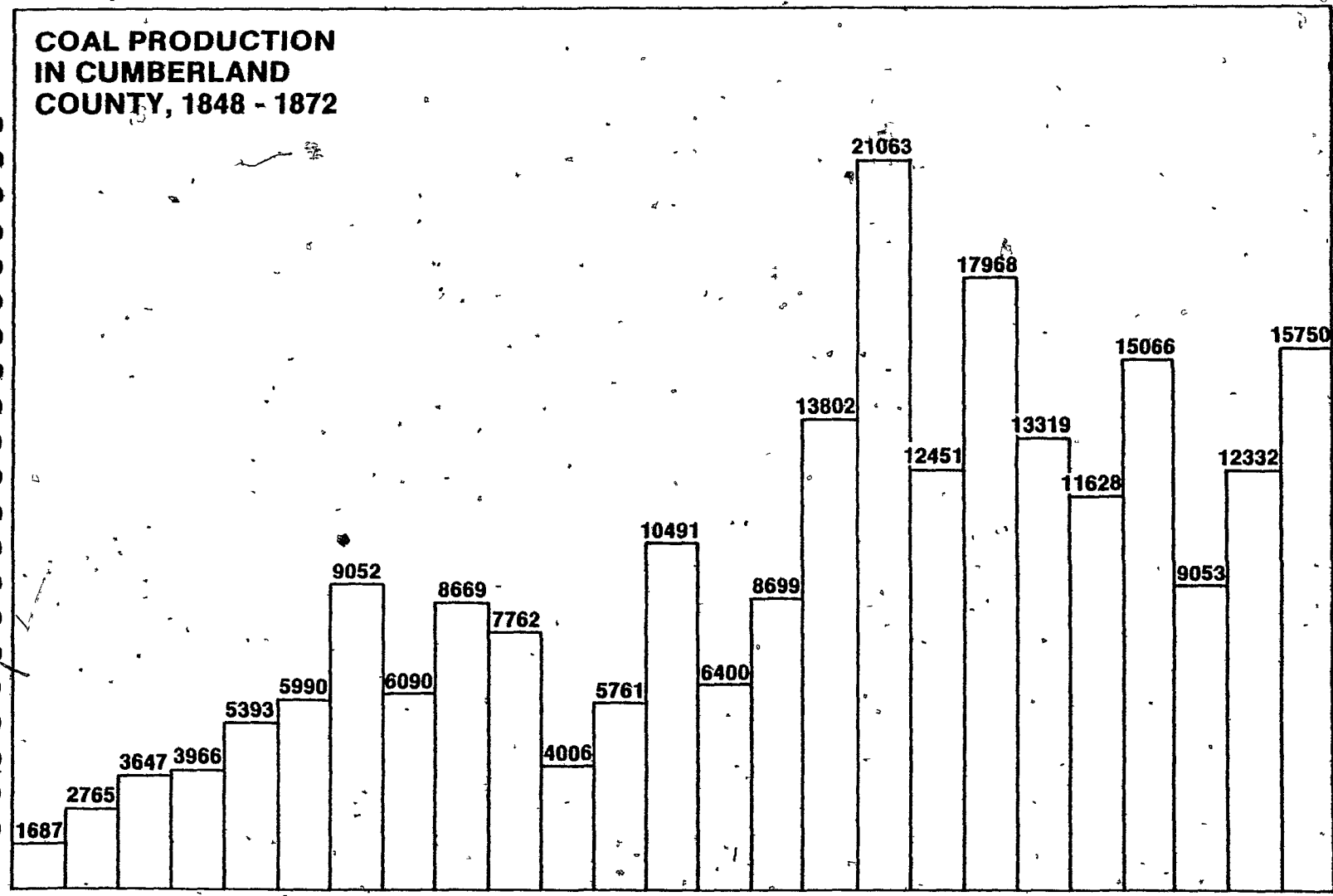
Source: Journals of the House of Assembly and Mines Reports, 1848-1872.
 (The sources for this and subsequent tables based on government estimates are discussed in an appendix).

The mean yearly production of 9,312.4 long tons was chronologically decisive: in no year before 1860 was it exceeded, while all but three years after 1859 saw higher levels of production. Calculating the compound growth rate by the standard formula, we find that the rate of growth was 9.3% per annum.⁷² Figure One displays these results graphically, and Figure Two analyzes coal production by area in

**COAL PRODUCTION
IN CUMBERLAND
COUNTY, 1848 - 1872**

Figure One

22,000
21,000
20,000
19,000
18,000
17,000
16,000
15,000
14,000
13,000
12,000
11,000
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000

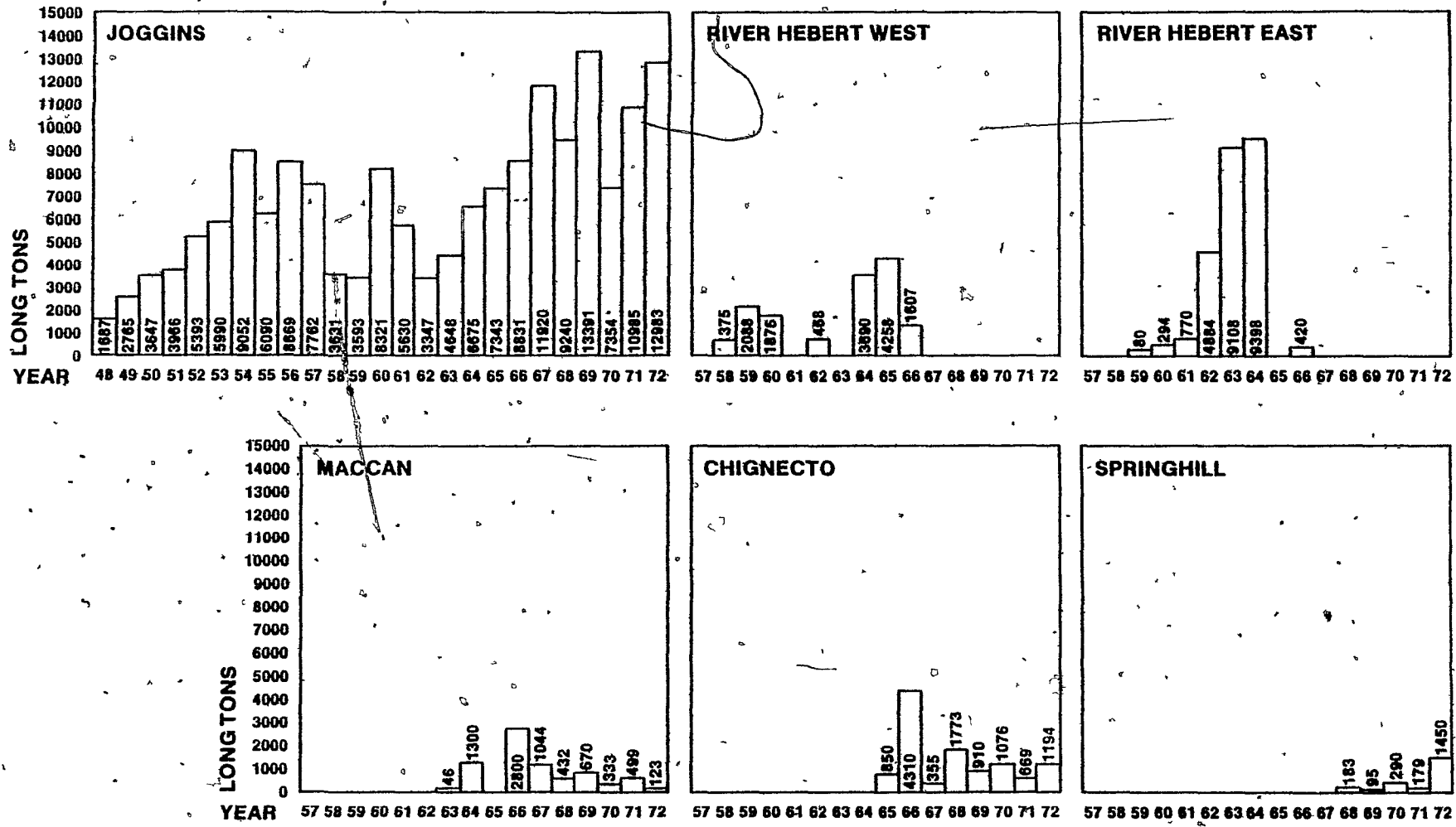


LONG
TONS

1848 1849 1850 1851 1852 1853 1854 1855 1856 1857 1858 1859 1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1870 1871 1872
YEAR

**COAL PRODUCTION
BY AREA, CUMBERLAND
COUNTY, 1848 - 1872.**

Figure Two



Cumberland County. The rhythm of production suggests the profound impact of the Civil War and the drop in production after 1866 (although this drop was not completely consistent). The spatial pattern of production is even more striking. Figure Two presents the mining areas from west to east--from the coast (Joggins) to the most inland point of production (Springhill). It serves to underline the overwhelmingly coastal nature of this nascent industry, the determinant role of the Bay of Fundy in its evolution. Joggins dominated production, accounting for 74% of the coal produced in the period. Other coastal mining areas, such as River Hebert West and River Hebert East, produced 6% and 11% of the county's production respectively. In sum, 91% of the county's production was concentrated in the three westernmost colliery districts. All three districts border the water; in each of them the force of water is important in exposing the coal seams. They are the most easily integrated within the mercantile framework. Maccan was less accessible, although it was located on a river and possessed an important shipyard. Even Chignecto, the most inland of the major collieries, was connected by rail to the Maccan River, about a mile away. With certain inevitable fluctuations and exceptions, the level of production was directly related to proximity to the coast. Only 9% of production took place inland (at Chignecto, Springhill and Maccan--and even this last-named is an ambivalent case).

The spatial pattern is one of a disconnected series of dots, fixed on the north/south axis by the geographical location of the outcrops (which we know follow a narrow band in from the shore) and on the east/west axis by the proximity of water routes. This demonstrates the profoundly maritime character of this first coalfield, whose character

is revealed by those areas which were exploited, and by those areas which were left untouched (such as the many outcrops of coal and suitable mining locations existing between the coastline of Joggins and the banks of River Hebert). A capitalism which flowed into the area on the Bay of Fundy could only capture this terrain in a disconnected series: as a series of coastal dots, not as a single line driving inland. Is this not also a sign of its relatively shallow penetration, of its preference for the most obvious coal seams and its neglect of those deposits which might well have returned a greater profit?

Let us take this argument further by studying the markets for coal. Information on the destination of the coal of Cumberland exists in a consistent form only for the years 1865-1872; fragmentary information on the 1850s and early 1860s may be culled from a number of export tables preserved in manuscript form. The information from this rather uneven collection of documents is presented in Table Two.

Table Two. Estimates of Exports from Cumberland Collieries, 1855 and 1860

<u>Colliery</u>	<u>Year</u>	<u>Exports (percentages)</u>	<u>Total</u>	
Joggins	1855	Saint John, N.B.	59%	3,881½ chaldrons
		Portland, Maine	9%	
		Bath, Maine	6%	
		Digby	4%	
		Cornwallis	3%	
		Sackville, N.B.	3%	
		Shepody, N.B.	2%	
		Marble Head, Maine	2%	
		Hartland, N.B.	2%	
		Moncton	2%	
		Welshpool, N.B.	2%	
		Truro	1%	
		Economy	1%	
		St. Andrew's, N.B.	1%	

Table Two... cont.

(Colliery)	(Year)	(Exports)	(Total)	
		Dorchester, N.B.	1%	
		Mary's Point, N.B.	1%	
		Parrsboro	1%	
		Horton	1%	
		Windsor	1%	
		Annapolis	1%	
		Minudie	1%	
		Walton	*	
		Kentville	*	
			<u>104%</u> (rounding error)	
Barnes (East River Hebert)	1860	Saint John, N.B.	51%	293½ long tons
		New Brunswick (other)	49%	
Victoria (West River Hebert)	1860	Saint John, N.B.	96%	
		Digby	2%	
		Parrsboro	1%	
		Cornwallis	*	
		Hopewell, N.B.	*	
Joggins	1860	Saint John, N.B.	64%	8,021½ long tons
		Hillsboro, N.B.	15%	
		Boston, Mass.	7%	
		Bath, Maine	5%	
		Moncton, N.B.	2%	
		Portland, Maine	2%	
		Windsor	2%	
		Mary's Point, N.B.	2%	
		North Joggins, N.B.	1%	
		Shepody, N.B.	*	
		Parrsboro	*	

*negligible amount

Source: PANS, RG 1, Vol.465½, Nos.20-23, Quarterly Returns of Vessels Cleared at the Port of Joggins; RG 21, Vol.7, File "Coal Mines, Reports and Returns, 1860."

It is a compelling portrait of a world which looked to the south. Every return says the same thing: the fundamental axes of trade were those of the Bay of Fundy and the North Atlantic. Here was an industry--if that

is the word--which relied on schooners and smaller vessels, such as the Atlanta of Hillsboro which carried no fewer than 13 loads of Joggins coal in 1857--not one bigger than 25 tons. Only nominally was the Joggins coalfield located in Nova Scotia; in truth it belonged to the broad region of Fundy, which as Carman Miller has recently reminded us must be understood as a sub-region within the Maritimes, a part somehow much greater (because more coherent and unified) than the whole.⁷³ It is Saint John which most clearly provides a focus for this sub-region and which emerges most clearly in this table. Throughout their history the coalfields were pulled to the south, by the domestic market in New Brunswick or the lucrative, immense and frequently closed markets of the United States.

From 1865 to 1872, of the 180,563 long tons which we can trace by destination, 63% was exported to neighbouring colonies (i.e., New Brunswick), 24% exported to other countries (i.e., the United States) and the remaining 13% went in "land sales" (i.e., home consumption). The pull to the south continued. However, the Civil War gave Boston a new prominence as a market. The ultimate destination of the coal was, in fact, strongly influenced by the controlling interest of the colliery: as Table Three reveals, the mines controlled by Boston interests tended to favour the Boston market.

Table Three. Coal Sales According to Location of Controlling Company,
1865-1872

Coal Mine Controlled From:	(Raw Total) Percentage Exported New Brunswick	(Raw Total) Percentage Exported Other Countries	(Raw Total) Home Consumption
London	(83,792) 70%	(20,471) 17%	(15,320) 13%
Saint John	(23,867) 82%	(23,867) 11%	(1,967) 7%
Boston	(3,123) 13%	(19,313) 79%	(1,988) 8%
Cumberland County	(785) 18%	(106) 2%	(3,507) 80%

✓ Table Four considers the question of markets from another angle, again at the level of the individual colliery: this time we shall look at coal sales by the coal area (designations which encompass all the mines within fairly restricted local areas, precise details of which are given in the appendix).

Table Four. Coal Sales According to Location of Coal Mine, 1865-1872

Coal Mine Located In:	(Raw Total) Percentage Exported New Brunswick	(Raw Total) Percentage Exported Other Countries	(Raw Total) Percentage for Home Consumption
Jiggins	(105,150) 74%	(20,761) 15%	(16,277) 11%
River Hebert West	(4,310) 58%	(3,052) 41%	(85) 1%
River Hebert East	(552) 4%	(13,254) 90%	(900) 6%
Maccan	(1,057) 17%	(3,324) 52%	(2,016) 32%
Chignecto	(2,661) 33%	(2,937) 36%	(2,525) 31%
Springhill	(0) 0%	(0) 0%	(1,702) 100%

Clearly this table shows that within the general emphases of the coalfield, there were distinct specialities pursued by various coal companies in various areas. The abrogation of reciprocity would devastate those coal companies (notably those of Boston) and those coal areas (River Hebert East, and to a lesser extent River Hebert West and Chignecto) most dependent upon exports. (The case of Springhill is aberrant: it represents merely the sale of coal incidentally produced in the process of exploration). New Brunswick dominated this coalfield, but it was a complex affair, with many exceptional areas and circumstances. This coalfield faced south, but its gaze was focussed upon different markets, according to the dominant interests controlling the given mine. There is very little evidence which one can use to

explore marketing in this period. It appears probable (on the basis of fragmentary and inconclusive evidence) that the companies controlled by Boston interests chartered their own vessels, and that the Joggins mine merely took whatever trade happened to come its way. The Joggins mine appears to represent the "natural" lines of the coal trade, insofar as the lessee of the General Mining Association appears to have followed the strategy of allowing things to take their natural course. The other coal mines (always with the exception of Springhill) were far more dependent upon external trade, and far more severely affected by tariff changes.

How exceptional were the structural features of Cumberland's trade? If we move to the less exact statistics compiled on a provincial level, we observe that Cumberland's trade was far more oriented to its immediate locality (the Fundy) than other coalfields were dependent upon their immediate localities. Of the total sales in the province which can be accounted for, 4,890,005 long tons, 1,214,074 long tons (25%) were attributed to land sales in Nova Scotia, 2,528,852 long tons (52%) to sales to the United States and 1,147,079 long tons (23%) to sales to neighbouring colonies. Thus the category which was least significant on the provincial scale--sales to neighbouring colonies--was most important in Cumberland; that which was most significant on the provincial scale--sales to the United States--was second in importance in Cumberland. This one example of the different characteristics of the various coalfields is a warning against premature generalisation on the basis of provincial data. Certainly for Cumberland the fact above all facts was the Bay of Fundy, and more particularly the city of Saint John, which bought so much local coal and ultimately came to dominate the coalfields.

The structures of mercantile capitalism imposed their own shape upon the nature of the process of production. Of the total output, from 1865 to 1872, 114,770 long tons may be assigned to quarters of the year. In Cumberland County, there was a marked drop in the first quarter of the year, from January to April, confirming one's sense both of the navigational limitations of this locale and the small development of land markets (which normally are most bouyant, of course, in the winter season). In Cumberland, sales were bunched in the fourth quarter, from September to December, and in reality from September to November.⁷⁴

Thus we find 15% of production (16,791 long tons) in the first quarter, 21% (24,558 long tons) in the second quarter, 27% (31,454 long tons) in the third quarter, and 37% (or 41,967 long tons) in the fourth quarter. This provides us with an important clue to the rhythms of work in this early coalfield, which follow so closely the rhythm of sales (particularly since, in Cumberland throughout its history, coal was not banked to anything like the extent it was in Cape Breton). But it also provides us with an indication--one of the few that we can obtain from a recalcitrant historical record--about the users of Cumberland coal, since the heavy traffic in the autumn months suggests that it was being sought by domestic users in Saint John, buying up their winter stock. This rhythm of sales corresponds in general but not in detail with the provincial pattern. From 1865 to 1872 in Nova Scotia 25% of coal was produced in the first quarter, 19% in the second, 25% in the third and 31% in the fourth. It seems possible to account for some of the divergence between Cumberland and the provincial averages by noting the far lesser importance of Nova Scotia land sales in Cumberland, which sales would have the greatest volume in winter, and the shorter distance

from Cumberland to its major urban market (Saint John) which afforded, perhaps, greater possibilities for navigation in the fourth quarter than did the longer journeys required from the other coalfields.

From 1848 to 1872 the amount invested in the coalfield was greater than at any previous time, but precious little exact data may be obtained about the process of investment in the absence of good company records. However, data on investment were included in the Reports of the Department of Mines. This source is far from perfect or complete, but at least from 1866 on information, of a rather gross impressionistic sort, is available on the investments made each year by companies in such things as adits and levels, company housing, railways, machines, wharves, prospecting and surface works. There seems to be no reason to exclude this information, in the absence of private documents establishing precisely what investment various companies made in the coalfields. Table Six summarizes the data contained in the 'construction accounts' by colliery area.

Table Six. Investment in Mining Activities in Cumberland By Area,
1866-1872

Area	Adits & Levels	Surface Work	Machines	Dwellings	Railways	Wharves	Prospecting	TOTAL
Joggins	\$12,469	\$4,602	\$2,890	\$2,150	\$0	\$0	\$570	\$22,681
River Hebert West	\$175	\$400	\$0	\$0	\$0	\$0	\$0	\$575
River Hebert East	\$13,000	\$0	\$2,000	\$5,000	\$4,000	\$1,000	\$0	\$25,000
Maccan	\$3,774	\$955	\$2,762	\$410	\$0	\$0	\$0	\$7,901
Chignecto	\$7,755	\$5,943	\$2,859	\$1,604	\$13,063	\$0	\$0	\$31,224
Springhill	\$1,091	\$368	\$30	\$525	\$0	\$0	\$3,611	\$5,625
TOTAL	\$38,264	\$12,268	\$10,541	\$9,689	\$17,063	\$1,000	\$4,181	\$93,006

How much trust should we place in this document? Certainly many of the estimates have a suspiciously well-rounded look, and there is the additional difficulty that the figures do not address a sufficiently long period. The major investment in the Joggins occurred before these estimates were compiled.

But for all that, the colliery accounts offer us a "quantitative impression" which offers us at least an approximate account of investment patterns. Certainly the disincentive to invest in railways (witness the \$31,224 investment at Chignecto for scarcely a mile of track plus

rolling stock) is more understandable placed in this context of a small nexus of trade. Although the \$4,181 spent on prospecting suggests a large-scale exploration of the coalfield (which would contradict the earlier argument concerning the cognitive limits imposed by the structure), a closer examination reveals that this exploration was concentrated in Springhill, an area dependent upon an entirely different process. Of course much prospecting was conducted that was not accounted for in the colliery accounts. But the accounts confirm the impression derived from other sources that this prospecting was somewhat superficial, and that in the absence of a state-sponsored survey the scientific conquest of the coalfields was a protracted affair. It is to be expected that a large expenditure would be occasioned by adits and levels, and by surface work, since the driving of levels and the preparation of the surface are both indispensable for mining; what is perhaps more surprising is that such a comparatively large sum was spent on housing for workers, particularly in River Hebert East. We may begin to put these expenditures within a provincial perspective by noting that at the Albion Mines \$100,768.96 was spent in 1868 alone upon shafts, drains, machinery and engine-houses, and a railway.

To what extent do we find variations in investment patterns according to the controlling interests in the company? Table Seven suggests that the American companies invested most heavily in Cumberland.

Table Seven. Investment in Mining Activities in Cumberland By Controlling Interest, 1866-1872

Mines Controlled From:	Adits & Levels	Surface Work	Machines	Dwellings	Railways	Wharves	Prospecting	TOTAL
London	\$2,760	\$890	\$1,290	\$1,950	\$0	\$0	\$570	\$7,460
Saint John	\$10,085	\$4,477	\$1,630	\$700	\$0	\$0	\$0	\$16,892
Boston	\$21,815	\$6,662	\$6,545	\$7,009	\$17,063	\$1,000	\$0	\$60,094
Cumberland County	\$2,530	\$3	\$70	\$30	\$0	\$0	\$3,611	\$6,244
Unknown	\$1,074	\$236	\$1,006	\$0	\$0	\$0	\$0	\$2,316
TOTAL	\$38,264	\$12,268	\$10,541	\$(-,689)	\$17,063	\$1,000	\$4,181	\$93,006

Clearly the General Mining Association, which had monopolized the most accessible coal seams, made a tiny investment when compared with the others. This is partially to be explained by the dates covered by the table, which do not include the period of maximum initial investment. But this is only a partial explanation. This very low level of expenditure is consistent only with a strategy of squatting on the resource without exerting much effort to develop it. Boston companies followed a different strategy: heavy investments in railways, 28% of their expenditure in this period, exceeded only by their investment in underground mining. Railways dominated American strategies in the coalfield. These strategies were not very wise, and actually represented

not a serious 'industrial revolution' but a short-term response to the boom of the Civil War. Even in its most 'industrial' aspects, the mercantile coalfield expressed its fundamental character: the railways were the classic 'third world' railways, connected not with each other but with the sea, conduits for staple exports rather than elements of an industrial transition.

Finally, Figure Three portrays the control of the Cumberland coalfields, which is judged according to the location of the major shareholders of the companies (which in this period also coincides with the location of their offices). The mercantile coalfield was dominated by three external metropolises: London, Saint John and Boston. On this small and relatively insignificant terrain we find the same forces that were active throughout the region. For reasons which are now apparent, the General Mining Association of London exerted a very important influence, accounting for 65% of production which can be assigned to an identifiable company. Saint John companies controlled 17% of production, and Boston-controlled companies 16%. A miniscule 2% was controlled by Cumberland County companies and entrepreneurs. London's control was absolute before 1858; gradually it was shared with Saint John. Boston interests controlled the majority of production in 1862-1864, but quickly faded from the scene--a measure of just how ephemeral the Civil War mining boom really was. Saint John emerges from this graph as the dawning dominant centre.

These quantitative measures add a certain depth and precision to our portrait of the coal industry in Cumberland between 1848 and 1872. We are left, above all, with an impression of a small, unstable and struggling industry, dependent on water transportation and easily

CONTROL OF CUMBERLAND COALFIELDS' PRODUCTION

1848-1873

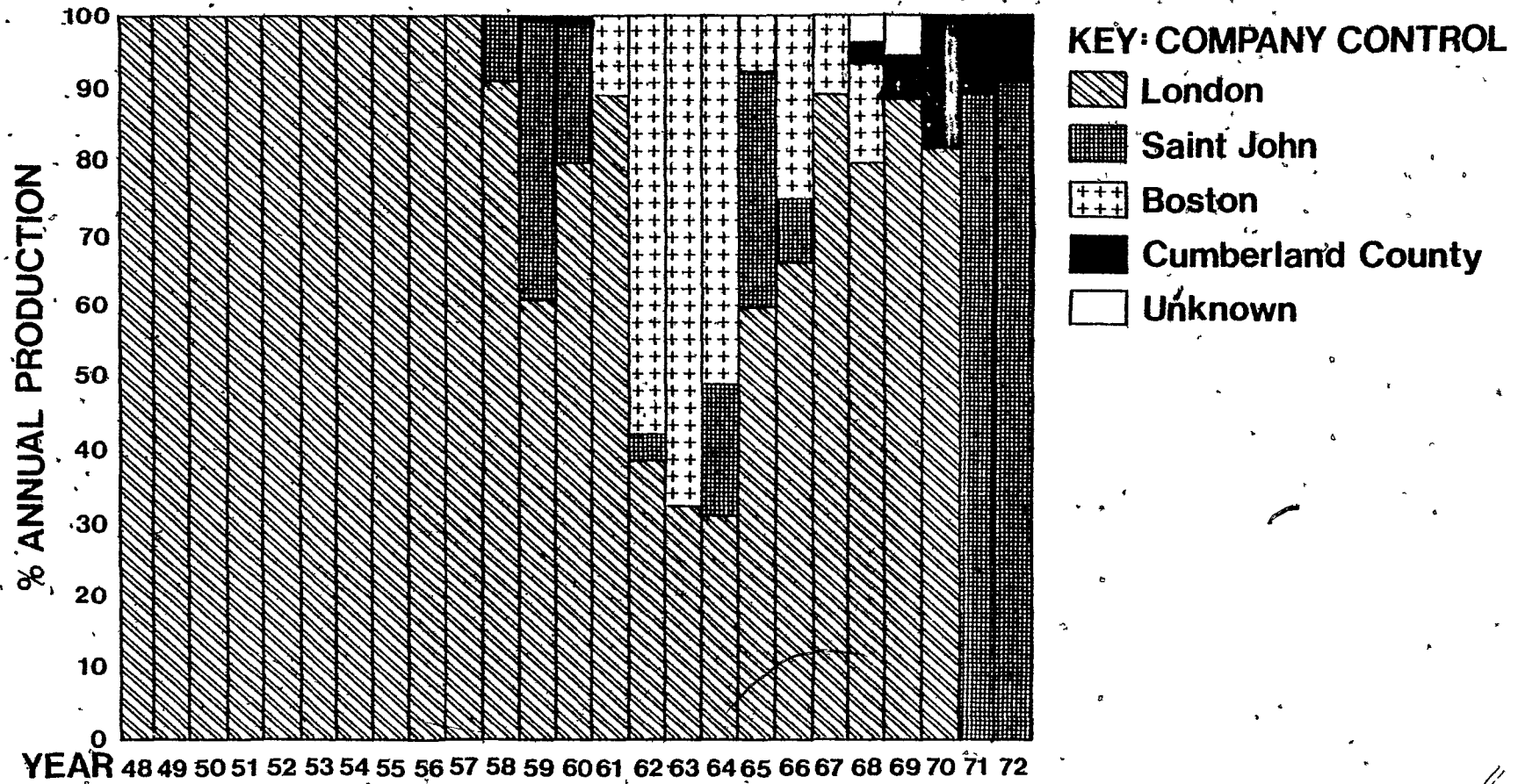


Figure Three

affected by external market pressures. How is this pattern related to the entire period from 1700 to 1872? What can we say in general terms about this period in which the coalfields were created?

This period was unified by the reign of merchant capitalism, which provided the determinant context for the evolution of petty commodity production in Acadia and later settlement by the English. Production under merchant capitalism was oriented to the short-term; in this instance to the export of a staple, which required little infrastructure or fixed capital. The labour process in this period was primitive and took the form of autonomous exploitation of the coal seams, or at most a small 'manufactory' which grouped together various skilled and unskilled men without changing the technical system of production. Production was strictly oriented to the availability of markets: the arrival of schooners determined the pace of production. Steam power was evident only in isolated instances, and for a very short period; in general, the rhythm of production was set by the horse and by men themselves. Similarly the over-riding rhythm of production was set by the tides and the wind which directed schooners towards the coal seams. Human effort was directly subjected to nature; production in this period was highly seasonal. Merchant capitalism did not entail a dramatic transformation in the labour process.

Mercantile capitalism in this specific context entailed an approach to the county which was literally and figuratively shallow. The mines remained tiny. The coal seams were explored only at the water's edge. Elsewhere there could be seen, within the womb of mercantile capitalism, the growth of industrial capital; not so in Cumberland, where the monopoly of the General Mining Association retarded development. No class forces

existed within Nova Scotia to transform this situation; even when the Association's monopoly was broken, the state assumed a basically custodial position, although technically it owned the coal and controlled its exploitation. Only slowly would a different strategy, based on a trans-regional railway and domestic manufacturing, emerge. Coal continued to be a staple for export, not an intermediate good within a national or provincial strategy of industrialization. There was no internal dynamic to this industry, whose basic priorities were always imposed from without. Slowly a stable community of farmers, grindstone cutters and lumbermen emerged in this section of Cumberland, but any indigenous effort at coal mining met the overwhelming pressure of the General Mining Association. Local residents were left at the periphery of the coal industry, even in its earliest days.

There was an underlying structural unity which defined the position of the coal seams in 1731 and in 1872. The coal seams, it is true, had allowed the creation of a coalfield, a small nexus of social relations ultimately dependent upon the coal resource. But this coalfield had little guarantee of permanence. (The coalfield of Springhill was even less visible). In a profound sense, 1848 and even 1857, for all the mines and promoters they had unleashed, had accomplished little. What dynamism Cumberland County possessed--and it was in the decades leading up to the 1860s the fastest growing county in Nova Scotia--was accounted for by shipbuilding, agriculture, grindstones and lumbering. Coal accounted for very little.

For mile after mile the cliffs of Joggins rose sharply from the shore of Chignecto Bay, forming a steep wall against the tides of the

Fundy. On these cliffs one found a tableau of the long history of the earth, a portrait of twenty forests compressed over millions of years into coal seams. Nature is revealed here in all her dynamic and remorseless violence. But where, after nearly two centuries, was man? How had this invitation to enterprise been received? In 1869, there was a small, dismal answer, barely visible on top of the famous cliffs. In 1848 the Association had proudly informed its critics that it had made preparations for a steam engine; in 1859 it kept the engine in reserve, still awaiting the day when the level of output would require it. When James Hudson of the Association visited the pit in 1869, he spotted on the cliffs a little pile of metal: the steam engine, now slowly disintegrating, not transforming the earth but slowly succumbing to it, with "2 Boilers lying about as they must have done for years accumulating Rust &c., until their identity is doubtful..."⁷⁵

Before 1873 one could say of the Cumberland coalfields as a whole that their identity was doubtful. For this reason the long period of merchant capitalism may be seen essentially as a prologue to the true history of the coalfields. The period following 1873 requires a more detailed treatment than that given the sporadic growth of the coalfields in the preceding two centuries. The next chapter will analyse the transformation of the coalfields by industrial capitalism, and the third chapter will study the transition to monopoly capitalism in the twentieth century. These economic chapters are followed by a discussion of the social impact of mining and the emergence of two distinct societies within the coalfields. Chapter Five then examines the structural development of the mines. The first five chapters provide an analysis of the socio-economic structures which emerged in the coalfields.

The sixth and seventh chapters study the impact of these structures upon the people of the coalfields. Chapter Six deals with the mentality created by coal mining, while Chapter Seven analyses the strategies adopted by workers, employers and the state for control of the labour process.

These last chapters take us to the borders of the history of events (especially labour history as it is normally written), but the history of the strikes, political movements, and ideologies of the coalfields lies outside this thesis. Insofar as this study deals with such matters, it does so by giving events a 'structural reading,' rather than by allowing events to speak for themselves and carry the analysis through historical narrative. Consequently our aim is not a 'total history' but a partial structural history which can be read as an introduction to the history of the coalfields and not an attempt to capture this history in its entirety. This strategy runs the risk of losing the human side of history, but perhaps it allows us to cross the border between structure and event with greater assurance and new questions.

Notes

- 1) On the formation of coal see E.S. Moore, Coal: Its Properties, Analysis, Classification, Geology, Extraction, Uses and Distribution (New York, 1922); Otto Stutzer and Adolph C. Noé, Geology of Coal (Chicago, 1940); Iain Williamson, Coal Mining Geology (London, 1967), among many other titles. The Nova Scotia case is described well by Albert E. Roland, Geological Background and Physiography of Nova Scotia (Halifax, 1982), pp. 229-233.
- 2) M.J. Copeland, Coalfields, West Half Cumberland County Nova Scotia (Ottawa, Geological Survey of Canada, Memoir No. 298, 1958), p. 18.
- 3) J.F. Kellock Brown, The Mining of Thin-Coal Seams as Applied to the Eastern Coal-Fields of Canada (Ottawa, Department of Mines, Mines Branch, Bulletin No. 15, 1917), p. 18.
- 4) J.B. Porter and R.J. Durley, An Investigation of the Coals of Canada With Reference to Their Economic Qualities: As Conducted at McGill University, Montreal, Under the Authority of the Dominion Government (Ottawa Department of Mines, 1912), Vol. II, pp. 38-39 and pp. 43-44.
- 5) Copeland, Coalfields, p. 68.
- 6) See Abraham Gesner, Remarks on the Geology and Mineralogy of Nova Scotia (Halifax, 1836), p. 153; Walter Johnson, The Coal Trade of British America, with Researches on the Characters and Practical Values of American and Foreign Coals (Washington and Philadelphia, 1850), p. 22; Charles Churchill, Memorials of Missionary Life, in Nova Scotia (London, 1845), pp. 165-166; Sailing Directions for the South-East Coast of Nova Scotia and Bay of Fundy. Compiled from Various Admiralty Sources (London, Admiralty Hydrographic Office, 1875), p. 223; Robert Hale, "Journal of a Voyage to Nova Scotia Made in 1731 by Robert Hale of Beverly," Historical Collections of the Essex Institute, Vol. XLII, No. 3 (July, 1906), pp. 229-230.
- 7) Andrew H. Clark, Acadia: The Geography of Early Nova Scotia to 1760 (Madison, Milwaukee and London, 1968), pp. 139-141.
- 8) Margaret Coleman, "Acadian Social Life," National Historic Sites Service, Manuscript Report No. 80 (March, 1968, mimeo), p. 22.
- 9) Coleman, "Acadian Social Life," p. 22; W.F. Ganong, ed., "The Cadillac Memoir of 1692," Collections of the New Brunswick Historical Society, Vol. XII (1930), pp. 77-97; Hale, "Journal," p. 230.
- 10) George A. Rawlyk, Nova Scotia's Massachusetts: A Study of Massachusetts-Nova Scotia Relations, 1630 to 1784 (Montreal and London, 1973), p. 132; Archibald M. MacMechan, ed., A Calendar of Two Letter-Books and One Commission-book in the Possession of the Government of Nova Scotia, 1713-1741 (Halifax, 1900), p. 25; Archibald M. MacMechan, ed., Original Minutes of His Majesty's Council at Annapolis Royal, 1720-1739 (Halifax, 1908), p. 179.

11) Hale, "Journal," p. 230.

12) A.G. Doughty, ed., The Journal of Captain John Knox, Vol. I (Toronto, 1914), p. 70.

13) Lucien Febvre, A Geographical Introduction to History (London and New York, 1932), pp. 363-364.

14) G.N.D. Evans, Uncommon Obdurate: The Several Public Careers of J.F.W. Des Barres (Salem, Massachusetts, and Toronto, 1969), p. 41; Régis Brun, ed., "Un registre de l'état civil des habitants de Franklin Manor, des Champs-élysées, de Maccan et de Nappan," Cahiers de la Société Historique Acadienne, Vol. II, No. 3 (Octobre 1966), p. 91; Graeme Wynn, "Late Eighteenth-century Agriculture on the Bay of Fundy Marshlands," Acadiensis, Vol. VIII, No. 2 (Spring, 1979), pp. 80-89.

15) Helen Harper Steeves, The Story of Moncton's First Store and Storekeeper: Life Around "The Bend" A Century Ago (Saint John, 1924), p. 64. See also James D. Snowdon, "The Cumberland Basin Grindstone Industry," B.A. Honours Thesis, Mount Allison University (1972), pp. 9-10.

16) W.S. MacNutt, New Brunswick, A History: 1784-1867 (Toronto, 1963), pp. 173-176.

17) See A.A. MacKenzie, "Amos Peck Seaman," Dictionary of Canadian Biography (Toronto and Buffalo, 1976), Vol. IX, pp. 709-710, and C. Bruce Fergusson, ed., "The Old King is Back": Amos "King" Seaman and His Diary (Halifax, PANS Bulletin No. 23, 1972), a selective edition of Seaman's diary.

18) J.S. Martell, "Early Coal Mining in Nova Scotia," Dalhousie Review, Vol. XXV, No. 4 (July 1945), pp. 160-165.

19) PANS, RG 1, Vol. 458, No. 79, Samuel McCulley to the Inspector of Coal Mines, 15 June 1821.

20) PANS, RG 1, Vol. 458, No. 79, Captain D. Stewart to Sir James Kempt, 29 May 1821.

21) PANS, RG 1, Vol. 458, No. 156½, "Queries and Answers relative to Coal found in the Province of Nova Scotia.

22) See Gesner, Remarks, p. 153, and PANS, RG 21, Series "A", Vol. 7, File "Coal Mines, 1848, Reports and Returns," Jonathan McCully to G.R. Young, 21 March 1848.

23) PANS, RG 1, Vol. 380, Survey of the Eastern and Northern Parts of the Province, Entry for 13 September 1802; see also Andrew H. Clark, "Titus Smith, Junior, and the Geography of Nova Scotia in 1801 and 1802," Annals of the Association of American Geographers, Vol. XLIV, No. 4 (December 1954), pp. 291-314.

24) See PANS, RG 1, Vol. 459, No. 51, Petition of Abraham Gesner to Major-General Sir Colin Campbell, 6 February 1838; No. 62, Petition of

- Abraham Gesner to Sir Colin Campbell, 24 September 1838; PANS, RG 1, Vol. 459, No. 107, Petition of Abraham Gesner to Lieutenant Governor Viscount Falkland, 1844; PANS, RG 1, Vol. 461, No. 60, Abraham Gesner to Joseph Howe, 26 December 1853.
- 25) PANS, RG 1, Vol. 461, No. 59, Samuel Cunard to Lieutenant-Governor Sir Gaspard LeMarchant, 14 November 1853.
- 26) PANS, RG 1, Vol. 461, No. 60, Memorial of Abraham Gesner on behalf of himself and seven others, to Lieutenant-Governor Sir Gaspard LeMarchant, 31 January 1855.
- 27) For useful summaries of this history, see Robert Drummond, Minerals and Mining, Nova Scotia (Stellarton, 1918), pp. 172-191; J.M. Cameron, The Pictonian Colliers (Halifax, 1974), pp. 21-33.
- 28) PANS, RG 21, Series "A", Vol. 7, File "Coal Mines, 1848, Reports and Returns," J. McCully to G.R. Young, 21 March 1848.
- 29) PANS, RG 1, Vol. 461, No. 13, Joseph Smith to Joseph Howe, 4 April 1848.
- 30) PAC, MG 29, B31, Papers of Joseph Smith (microfilm A-925), Composition of Richard Smith, c. December 1849, Sackville Academy.
- 31) Johnson, The Coal Trade, p. 13.
- 32) PANS, RG 1, Vol. 461, No. 106, "An Account of the Coal Works belonging to the General Mining Association at the Joggins Mines with a description of the Shafts, Levels, Adits and Drains belonging thereto."
- 33) JHA (1849), Appendix No. 21, p. 179, Samuel Cunard to Earl Grey, 16 May 1848.
- 34) Johnson, Coal Trade, pp. 42-44.
- 35) PANS, RG 1, Vol. 461, No. 110, "An Account of the number on the average of the years 1857 and 1858 of Persons employed by the General Mining Association in and about the Joggins Mines."
- 36) PANS, RG 1, Vol. 461, No. 106, "An Account of the Coal Works belonging to the General Mining Association at the Joggins Mines with a description of the Shafts, Levels, Adits and Drains belonging thereto."
- 37) General Mining Association, Abstract of the Accounts Presented to the General Meeting of Proprietors Held at the Office on the 25th June 1868 (London, 1868), n.p.
- 38) General Mining Association, Limited, Report to be Presented to the Proprietors at the General Meeting, on the 30th April, 1872 (London, n.d. 1872), p. 13. The profit on this sale for the Association was £8,393 19s. 2½d.

39) PANS, RG 21, Series "A", Vol. 3, James Hudson to Messrs. Cunard and Morrow, 5 August 1869.

40) Sailing Directions, p. 222.

41) PANS, RG 1, Vol. 461, Benjamin Smith to Charles Tupper, 9 December 1857. For evidence of continuing Association interest in Springhill, see PANS, MG 1, Vol. 151, Richard Brown Papers, Richard Brown to Richard Brown, 11 September 1869.

42) Johnson, Coal Trade, p. 16.

43) Statutes of Nova Scotia, 1851, "An Act relative to the Crown Lands Department," Statutes of Nova Scotia, 1853, cap. 15, "An Act to regulate the Mines of this Province"; Statutes of Nova Scotia, Cap. 23, 1854, "An Act to amend Chapter 27 of the Revised Statutes, 'Of the Coal Mines'," provide the evidence for this assertion.

44) C. Bruce Fergusson, ed., A Directory of the Members of the Legislative Assembly of Nova Scotia 1758-1958 (Halifax 1958), pp. 219-220 gives a slightly inaccurate synopsis of McKeagney's career.

45) PANS, RG 21, Series "A", Vol. 35, Charles Tupper to James McKeagney, 30 November 1857.

46) Statutes of Nova Scotia, 1858, cap. 33, "An act for regulating of the office of the Inspector of Mines in this Province."

47) Robert Drummond, Mines and Minerals, p. 257.

48) McKeagney's uncertainty about his duties and their scope, see PANS RG 1, Vol. 461, No. 91, McKeagney to Tupper, 1 March 1858; for the abolition of the office, see Statutes of Nova Scotia, 24 Vic., Cap. 10, 1861, "An Act to vest in the Commissioners of Crown Lands the Inspection of Mines."

49) Revised Statutes of Nova Scotia, 1864, Title VI, Chapter 25, "Of Mines and Minerals."

50) Mines Report (1866), p. 11. See also the remarks of S.P. Fairbanks, the Commissioner of Crown Lands: "I...recommend some check to the disposition manifested by individuals to multiply their applications for licenses for the purpose of speculation. The moderate charge of \$20 for a license to search for minerals, gives the exclusive right over five square miles for one year; and therefore for a comparatively small sum a very extensive area might be monopolized, whilst other applicants for the purpose of actually working the mines, would be excluded to the injury of the Province." JHA (1864), Appendix No. 18, pp. 1-2.

51) Mines Report (1866), p. 11.

52) Mines Report (1876), pp. v-vi. Many of the leases cited a famous "birch tree" that supposedly defined the G.M.A. areas at the Joggins--a birch tree which someone or something unfortunately caused to disappear. PANS, RG 1, Vol. 465½, No. 111 provides an example.

53) D.C. Masters, The Reciprocity Treaty of 1854 (Toronto, 1963 [London, 1937]), p. 19. Michael Cross, ed., Free Trade, Annexation, and Reciprocity (Montreal, 1971) and G.N. Tucker, The Canadian Commercial Revolution, 1845-1851 (New Haven, 1936) provide the essential background to the treaty.

54) S.A. Saunders, "The Maritime Provinces and the Reciprocity Treaty," in G.A. Rawlyk, ed., Historical Essays on the Atlantic Provinces (Toronto, 1967), pp. 173-174, and Masters, Reciprocity Treaty, 112. Many of Saunders' statements seem a trifle simplistic, beginning with "So far as coal is concerned, Nova Scotia has not, and never did have, a very extensive market in the United States" (p. 173).

55) JHA (1859), Appendix No. 22, "Report of the Inspector of Mines, 31st December 1858."

56) Fellows's "Compound Syrup of Hypo-Phos-Phites", for example, was said to be the reformer and vitalizer of the blood, the producer and invigorator of nerve and muscle, and the builder and supporter of brain power, in the Morning Chronicle, 12 April 1879. For Fellows's petition for the mining tract at River Hebert, see RG 1, Vol. 465 1/2, No. 36. See also JHA (1860), Appendix--Coal Mines, p. 286; Statutes of Nova Scotia, 23 Vic., cap. 79, 1860, "An Act to Incorporate the Victoria Coal Mining Company"; 25 Vic., Cap. 71, 1862, "An Act to amend the Act to Incorporate the Victoria Coal Mining Company."

57) Harvard University Graduate School of Business Administration, Baker Library, R.G. Dun & Co. Collection, Canada, Vol. IX, Vol. 11, entries for December 1859 and August 26 1859, and 3 June 1863.

58) Victoria Coal Mining Company, Prospectus (Halifax, 1860). See also JHA (1860), "Appendix--Coal Mines," p. 286, and the prospectus of the Macan Coal Company, The Macan Coal Mines in the County of Cumberland Nova Scotia (Boston, 1863), p. 9.

59) Mines Report (1864), p. 11; see also PANS, RG 21, Series "A", Vol. 7, Samuel O'Donnell to Samuel Fairbanks, 3 January 1862; Vol. 8, Samuel O'Donnell to Samuel Fairbanks, 12 January 1863.

60) PANS, RG 1, Vol. 461, No. 128, James I. Fellows to Joseph Howe, 15 January 1861.

61) Mines Report (1866), pp. 16-17.

62) PANS, RG 21, Series "A", 1862, Vol. 8, Samuel O'Donnell to Samuel Fairbanks, 3 January 1862.

63) The Company was incorporated for \$200,000 in Boston. The records of Dun and Bradstreet note: "Composed of Boston Citizens after making diligent enquiry since the receipt of yours of the 10th inst. [presumably a request for credit] without adding more tangible than a recommendation to be guarded in dealing with them you can judge of its value as their is no doubt clashing of interest among these coal companies with respect to the source of my information I have every confidence in it"--an

interesting bit of evidence with regard to the internecine battles of the companies (R.G. Dun & Co. Collection, Canada, Vol. XII, p. 706, entry for 22 May, 1865). Later, on the basis of the credit rating of its local agent, George Hibbard, the company's reputation was somewhat improved.

64) PANS, RG 21, Series "A"; Vol. 7, File "Coal Mines, Reports and Returns, n.d.," "Memorandum of Coal Mined at the Lawrence Coal Mines, River Hebert Cumberland Co. N.S.", n.d. [1862].

65) Mines Report (1864), p. 9; see also Mines Report 1865, p. 11; PANS, RG 21, Series "A", Vol. 8, File "Coal Mines, Reports and Returns, 1864," George Hibbard to S.P. Fairbanks, 1 January, 1864.

66) Scott manuscript, n.p. In 1873 the Minudie Mining and Transportation Company (which was also influenced by relatives of Seaman) began in the Minudie Area quite close to those of Victoria. The Victoria Company appears to have been damaged by a fire at its engine-house. Mines Report (1866); p. 18.

67) PANS, RG 21, Series "A", Vol. 8, Samuel O'Donnell to Samuel Fairbanks, 12 January 1863; PANS, RG 1, Vol. 465 $\frac{1}{2}$, Nos. 39-40.

68) [Macan Coal Company], The Macan Coal Mines in the County of Cumberland Nova Scotia (Boston, 1863), pp. 5-14.

69) The downward drift of Maccan may be noted in the Mines Report, 1864, p. 11; 1865, p. 10; 1866, pp. 19-20; 1867, p. 17; 1868, p. 13; 1869, p. 21; 1870, p. 15; 1871, p. 13; 1872, p. 6. An attempt was made to revive the coal area by the incorporation of the Maccan Coal Mining Company, but this effort, so far as can be learned, came to nought. See Statutes of Nova Scotia, 36 Vic., Cap. 51, 1873, "An Act to incorporate the Maccan Coal Mining Company." Among the incorporators were John S.D. Thompson and Charles Annand.

70) See R.A.H. Morrow, Story of the Springhill Disaster: Comprising a Full and Authentic Account of the Great Coal Mining Explosion at Springhill Mines, Nova Scotia, February 21st, 1891, Including A History of Springhill And Its Collieries; Also, A Description of the Underground Workings, Mechanical Operations and Mysteries of the Mine; Reviews of other Great Coal Mining Disasters; Coal and its History; Dangers of Mining Operations and Safeguards against Accidents in Mines; Explanation of Coal Mining Terms; Lessons from the Great Calamity, Etc. (Saint John, 1891), pp. 225-228, for a somewhat coloured interpretation of the history of Chignecto, which should be supplemented by Scott's manuscript history.

71) Mines Report (1866), pp. 21-23; (1867), p. 17; (1868), pp. 13-14; (1869), p. 21; (1870), p. 15; (1871), p. 13; (1872), p. 6. An attempt was made to incorporate a company which would amalgamate enterprises in the vicinity (Statutes of Nova Scotia, 1867, 30 Vic., Cap. 49, "An Act to Incorporate the Cumberland Coal Mining Company"), but it seems this was not successful.

72) This is calculated by the standard formula

$$r = \left(\left(\frac{X_N}{X_T} \right)^{\frac{1}{m}} - 1 \right) 100$$

where r is the desired growth rate, X_N the value for the last period, X_T the value of the first period and m the difference in years between the first and last periods. See Roderick Floud, An Introduction to Quantitative Methods for Historians (Princeton, 1973), pp. 92-93.

73) Carman Miller, "The Restoration of Greater Nova Scotia," in David J. Bercuson, ed., Canada and the Burden of Unity (Toronto, 1977), pp. 49-51.

74) This evidently became somewhat more pronounced over time. In 1855, out of shipments totalling 3,881½ chaldrons, 1,084½ (or 28%) were shipped in the quarter ending 31 December, 1,819 chaldrons (47%) in the quarter ending 30 September, and 978 chaldrons (25%) were shipped in the quarter ending 30 June 1855. No returns are listed for the first quarter of the year. Many writers assumed that the storms and fogs of the Bay of Fundy gave it a shipping season of six months, but local captains seem to have extended this shipping season by two months. See also this comment on the pattern of production in 1858: "[F]rom 14 to 16 coal cutters are usually employed during the shipping months, little being done in the winter season." Mines Report (1858), p. 383.

75) PANS, RG 21, Series "A", Vol. 3, James Hudson to Messrs. Cunard and Morrow, 5 August 1869.

CHAPTER TWO

THE INDUSTRIAL TRANSFORMATION OF THE
COALFIELDS, 1865-1900

CHAPTER TWO

The Industrial Transformation of the Coalfields, 1865-1900

The coal mines of Cumberland County languished for more than a century as small pre-industrial workplaces, minor islands of enterprise within a system based upon trade and the sea. The era of sea-borne coal was characterized by episodic mining, governed by the tides and the seasons, the imperatives of foreign wars and the international market. There was a structural unity within this period: the visitor to the Joggins in 1860 would not have thought any great change had occurred since 1848 or even 1731. But then everything changed. One aspect of this change was the mining boom in the Joggins coalfield, which we have already discussed as a classic instance of mining fever: this was the most visible but the least durable aspect of the awakening of the coalfields. The more significant developments were occurring in the interior. The Springhill coalfield, for three decades a small affair serving local farmers and blacksmiths, now emerged as a major centre of production. It grew in population at a very fast rate: more people settled in Springhill in the 1870s than had ever settled in the Joggins coalfield. Production was transformed from the primitive mining of a seasonal economy to the deep, industrial mining of a new economy based on railways and coal itself. The speed with which these changes swept Cumberland County was startling. A wider gulf separated the industrial mines of the mid-1880s from the primitive mines of the 1860s, than had separated those of 1731 and 1850. Suddenly the pace of change had completely altered. Relations of production which had had

a stable existence over a long period of time were transformed; the forces of production were revolutionized with a vast increase in steam power.

How can we account for so swift a change in the fortunes of the Cumberland coalfields? We must first turn to the critical years in which the new economy was developed within the old, the period 1865-1873. In these years there were five major changes: the emergence of a new state (Confederation), the development of new laws governing the rights to coal, the coming of the men of science in the Geological Survey, the rise of new companies controlled from Saint John which brought the coalfields under local control, and the turbulent economic transition from the Age of Reciprocity (abrogated in 1866) to the National Policy (1879, with anticipations in 1871). How are these changes related to each other? What was their immediate impact? After discussing the decisive years of transition, we must enter the industrial period proper. The great transforming influence of this period was the railway, symbol and consequence of the new political realities, and to it we first turn. Then we shall compare the impact of the new structure upon two different coalfields: Springhill, which rose to be the biggest mining centre in the country, and Joggins, which continued to stagnate until the late 1880s. Finally, we shall consider the general economic pattern of the industrial period proper (1873-1900), to determine its specific patterns of development.

1. The Political and Economic Revolution of 1865-1873

It is a commonplace of Canadian economic history that Confederation united separate colonies on a political level and that the National Policy in 1879 took up the task of uniting these separate colonies on the economic level. Only slowly were the distinctive economies moulded

into an integrated economy. The emergence of a national market was impeded by barriers to the flow of savings between regions and between industries, by the absence of complementary economies through which national unity could be consolidated, and by the consequent persistence of sectionalism.¹ For some historians Confederation merely perpetuated a mercantile framework and a staples-oriented economy. Others see the period after 1867 as one of industrial capitalism.² For historians of the Maritime region, the last half of the nineteenth century is viewed as one of significant industrial growth and (particularly after the National Policy) the profound deterioration of the region's position within Canada.³ The period following Confederation is unquestionably one of outstanding importance, but no unanimity has emerged on how best it should be approached. The historian of the Cumberland coalfields is not called upon to settle any of these national questions, but the history of this small area bears directly upon many of them.

The question of mercantile/industrial transition is particularly crucial. The coalfields present us with evidence for both camps in this debate. Unquestionably the advent of the Intercolonial Railway was a decisive step in industrial growth -- measured by the number of wage earners, the value of the product, the growth of secondary manufacturing, the application of steam power, and the development of urban centres. The Cumberland coalfields provide very powerful evidence for the profoundly revolutionary role played by the railway: it may well be the most compelling evidence in the Maritime region, for no one can question the fundamental importance of the railway to the industrial transition in Springhill. Insofar as certain theorists have argued that the railway was essentially part of mercantile capitalism, leaving

undisturbed the prior mercantile system, they stand refuted by the case of Cumberland.⁴ Yet, oddly enough, this refutation only extends to some parts of the county. One could also present a case for an enduring strategy of staple exports in the western coalfield, which was only haltingly transformed by the railway. There is more than a kernel of truth in the suggestion that industrial capitalism was only able to gain supremacy slowly outside the major zone of transformation bordering the Intercolonial. In many respects we are confronted in the period of industrialism with a dual economy in Cumberland County, which corresponds to the underlying formation of the seams. The mercantile/industrial transition had a spatial form in Cumberland County: it was expressed in the reversal of the traditional domination of Springhill by Joggins, of the interior by the sea, of the railway by the schooner.

In a sense, the theoretical writing on this question of transition tends to present us with two simplistic positions, either a position which denies the evidence of industrial transformation, or one which denies the evidence of a substantial survival of the older economy. It is particularly urgent in the case of coal to avoid enlisting in either camp, because coal occupies an ambivalent position. It may be a staple, exported in raw form without creating any significant forward linkages, or it may be an intermediate good, basic to many nineteenth-century industries as their primary energy source, and generating forward linkages in the form of cheap power for domestic industry.⁵ Whether coal is a staple or an intermediate good cannot be decided in advance: in itself it has a dual character. One has to argue within an intermediate position which avoids the 'commodity fetishism' which may accompany too simple a notion of the staple,⁶ and which can encompass an extended period of co-articulation in which mercantile and industrial capitalism

run together.⁷

This theoretical problem is closely connected with the interpretation of Maritime economic history which, since S.A. Saunders, has minimized the political element within the economy in favour of a resource determinism.⁸ Steven Antler has effectively criticised the circular character of resource determinism as a mode of explanation.⁹ What the case of the Cumberland coalfields may help us see is the directly political aspect of this situation, dramatized especially by the political decision to create the Springhill coalfield, as part of the political transformation of the region in Confederation. The pursuit of very general explanations for regional decline (such as an alleged deficiency in entrepreneurial ability, a phenomenon which seems to resist explanation itself¹⁰) had directed attention away from the concrete politico-economic conjuncture in which the basic decisions concerning the economy were made. One such conjuncture is that of the period 1865-1873, in which a fraction of the capitalist class chose union with Canada as the best means of furthering its own interests and realizing its ideological ambitions. By losing sight of those moments in which the structure changed, at least partly as a consequence of the political programme of identifiable class fractions, we have lost the best available 'laboratory' in which to test our theories. One consequence of reversing this tendency is to reinstate, as central elements of any explanation of regional decline, the concepts of class and class strategy, and such events (which a reductionist economism has dismissed out of hand) as Confederation. It would be idle to suppose that a local study of one area can do anything more than bring us partial and incomplete evidence. But the evidence brought forward by the history of the Cumberland coalfields in this

crucial phase must be highly pertinent to any total history of the regional economy.

When did the great transformation in Springhill begin, and why? It began in anticipation of the coming of the Intercolonial Railway, which was the essential economic result of the Confederation agreement, and because a dynamic group of capitalists, geologists and politicians seized an opportunity to make money. One could say that the principal immediate cause was the imminence of the railway; the ultimate cause was the existence of a group of men capable of making the most of this situation.

The railways dominated the nineteenth-century imagination. Joseph Howe called building a railway across the colonies "God's work," and he even condescended to make it his own.¹¹ Apart from a few recalcitrant citizens of the South Shore, Nova Scotians needed little persuasion to become converts to the 'Philosophy of Railways,' that heady theology of steam power that had its most refined expression in the writings of Thomas Keefer.¹² "Since I saw you--I have been busy with our Railway affairs--You may think this of Small account--but I make it the Serious affair of my life," wrote Gilbert Seaman of Minudie to Premier W.S. Fielding, in a vain effort to convert him to the need for a branch line.¹³ Men like Seaman placed tremendous faith in the railways, even in the face of evidence that it would render their own little communities redundant. The appeal of Confederation was largely accounted for by the appeal of the Intercolonial Railway: it seems unlikely that the scheme could have won any plausibility without some guarantee that the railway would finally be built.¹⁴ Other historians have described these complex and difficult railway negotiations. What we want to point out here is the strategic position of Cumberland County. The dozens of

railway routes which vied for public favour in these years all had one thing in common: of necessity they passed through Cumberland County, which was consequently in a pivotal position. On those rare occasions that political debate in the county rose above the level of personal attack, it focussed upon the possibility of the railway connection. Howe and Charles Tupper, who fought titanic battles in Cumberland County, stressed the railway and blamed each other for not having it built;¹⁵ in one election in 1872, the Liberals promised a railway from Parrsboro to Springhill, and the Conservatives replied with a grand conception of a ship railway across the Chignecto Isthmus.¹⁶ Politicians in the County could say, with only slight exaggeration, that railways were their politics.

After 1864, when Tupper steered enabling railway legislation through the House, the province rang with debate over the proper route. Discussions of these debates tend to take their tone from the comments of Sandford Fleming, the architect of the railway boom, whose acid comments on the various detours forced upon the route have become famous.¹⁷ The traditional stance is to portray, in world-weary tones, Maritime sectionalism and parochialism.¹⁸ Such commentary is misleading. As Leo Johnson so ably revealed in his history of the County of Ontario, the debates over the location of railways were intense for the simple reason that they were crucial.¹⁹ There was nothing trivial about them and certainly nothing distinctively Maritime. We shall not explore the debates in central Nova Scotia over the location of the line of the Intercolonial at any length. The significance of them lies in two areas. First, the debate over the main line of the Intercolonial-- whether it should pass through the northern or the central part of the county-- was a struggle, in essence, between heavy industry

(iron and coal) and agrarian life (farming and rural manufactories). In the final analysis, heavy industry won the debate; the proponents of an alternative line of development were defeated in their immediate objectives and in their political careers.²⁰ The margin of defeat was narrower than one might imagine; the Tory fortress of Cumberland was not yet impregnable. But the men who wanted a more 'agrarian' development²¹ and aimed to push the Intercolonial into a role of serving this strategy were, after 1870, no longer politically effective.²² Secondly, the debate revealed a powerful industrial lobby had emerged which could bring real pressure to bear on political life. The notorious 'Grecian Bend' which takes the Intercolonial on a scenic jaunt through the Cobequids, was not only built to accommodate James Livesey and his iron works at Londonderry. It was built to fulfil an industrial programme, a commanding and impressive vision of industrial development. This programme was the unification of the coal deposits of Springhill with the iron of Londonderry. Abraham Gesner had been the first to see the logic of this proposal.²³ There was, naturally, a good deal of self-interest involved in the grand design. Livesey made a nuisance of himself with his unending pamphlets; he was even an unwelcome presence at the Quebec Conference in 1864, together with other eager railway men.²⁴ But there was, apart from this obvious thirst for money, a real industrial design here. R.B. Dickey, the father of Confederation and archetypal Amherst capitalist, underlined the tremendous attraction of the scheme when, after reciting the huge amounts of money invested in Londonderry, he predicted a tremendous surge if the two places be connected:

If all this [growth at Londonderry] has been effected in the absence of the facilities which a railway alone can give, and with only one kind of fuel at command, is it not reasonable to assume that with these facilities,

and by a connection with the Great Cumberland coal field, ... these results will be enormously increased²⁵

This was more than parochialism: it was a concept of a dynamic industrial centre, a unification of diverse resources. The men who advocated this concept insisted that the Intercolonial serve as a road to resources, and as the means to their consolidation.²⁶

In the end their goals were almost reached: The railway passed through Londonderry and came within four miles of Springhill: one suspects that had there been a longer delay, a lobby would have forced it to pass right through Springhill, no matter what the obstacles.²⁷ Only a small branch line had to be built, about five miles long, to connect with the main line at Springhill Junction. This small unsubsidized line connected with the beautifully-constructed Intercolonial, which had been built with little regard for economy. Division Ten of the Intercolonial, which passes through the coalfields, cost \$484,526 for a length of only 27 miles.²⁸ Dickey could report that his dream had been at least partially realized: "Spring Hill is flourishing," he wrote in April, 1874, "Already there is a new thriving village sprung out of the forest in a few months. The coal turns out beyond our expectations. The only trouble is getting it to market."²⁹ Ironically, the Londonderry company which had won the great detour was no longer a force. The Intercolonial enshrined in its final route the ephemeral balance of socio-economic power of the mid-1860s rather than that of the early 1870s.

The great transformation of Springhill did not wait for the arrival of the Intercolonial, important though this was: it was already at work in 1865, in anticipation of the new railway. A frantic scramble for the best claims emerged in 1864 and 1865. Many of the men involved, such as William Patrick, William R. Barnes, George Hibbard, Gilbert

and Rufus Seaman; C.J. Stewart and R.B. Dickey, had long sought to make a fortune in mining promotions of one sort or another. The documents of the 1860s are complex and reveal quarrel after quarrel among these men. With a certain amount of necessary over-simplification, we can locate four main groups: the Americans, aligned with W.R. Barnes; the British, represented by the International Contract Company and James Livesey; the Seaman interests from Minudie (including Hibbard); and a Halifax/Amherst group including Stewart, Dickey, Nathan Tupper, and Charles Tupper. These groups coalesced in a complex fashion and a history of their internal quarrels and strategies would take many pages. A detailed account is probably not necessary. The British and the Americans were the first in and the first out. The Americans, aligned with William R. Barnes (who had played an important prospecting role in River Hebert) were active in the Springhill area in 1865 and 1866. It was thought they had spent at least \$20,000 in prospecting. Controversy surrounded their eventual exclusion from the best licenses to search, which drove these men back to the United States.³⁰ British capital -- the International Contract Company -- entered the fray in 1865 and left in 1867. Since this company held the contract for construction of the railway, it was logically connected with the development of the Springhill coalfield. Tupper obtained from C.H.M. Black the right to sell to the British company the licenses to search while he was in England in the late 1860s.³¹ The failure of the International Contract Company naturally impeded this attempt to attract a large British company. The third group was composed of men, mainly Liberals, who were the inheritors of the Seaman empire in Minudie. Had they won control the industry would have been, in its initial stages at least, under strictly local

control. These men (who were not all that unified) claimed to be the first to discover and explore the deposits of coal in Springhill.³² The fourth group, centred in Amherst with important connections in ~~the~~ ~~area~~, was Conservative in politics and ultimately succeeded in uniting with C.H.M. Black to attain control over the best mining areas.

Put in such summary fashion, the process of discovery and initial exploitation sounds quite simple: of the four groups contesting the area, one emerged victorious. In fact, there was nothing simple about it. The proliferation of claims, counter-claims, splits and disputes is only one aspect of a confused situation. We must remember that all of these initial explorations took place in a context of acute uncertainty. Everything depended upon a railway which had not yet been built.

John Rutherford, the provincial mines inspector, observed in 1865:

"Under ordinary conditions, mines could not be opened and successfully worked in this inland district without a large preparatory expenditure on the part of those immediately interested. But if, as is anticipated, the projected Intercolonial Railway should pass through or skirt this Coal Basin [sic], the commencement of its construction will, beyond question, be simultaneous with the opening of a number of rich Coal mines in the vicinity of Springhill."^{33*} The railway solved many questions at once. It brought in skilled surveyors and geologists, it provided a guarantee that the future mining companies would not

* All quotations from primary documents are given in their original form. Many of these quotations are drawn from the writings of ordinary men with a rudimentary grasp of grammar. The use of "[sic]" after every spelling error would be tiresome, and might also be somewhat condescending. Therefore I have used "[sic]" only in cases of a typographical error in published reports as in this quotation. Idiosyncratic spelling and punctuation are preserved in the citations, although occasionally I have added my interpretation in square brackets after the error, to facilitate comprehension.

have to bankrupt themselves to reach the rich deposits of the interior, and it offered a chance of industrial consolidation with the iron works of Londonderry. Part of the seriousness with which men fought out these confused battles over mining claims must be related to the speculative nature of investing in an industrial boom which depended so intimately upon the uncertain fortunes of Confederation and the railway.

Yet this is only part of the story. Government policy had a decisive impact on the Cumberland coalfields, in two respects. The first was the unbelievable confusion and inefficiency with which mining claims were processed. The second was the favouritism shown to Conservatives, which probably played an important role in determining the outcome of the claims fever.

The inefficiency of the government and the inadequacy of legislation was an important contributing factor to the climate of the early Springhill mining boom. Theoretically the provincial government inherited ownership of the coal seams and the exclusive right to determine their future. This was a legacy of the General Mining Association, which remained in four provincial areas as a memento to the Age of Absolutism. This tradition of crown ownership might be read as one which extended an essentially conservative and pre-industrial tradition into the capitalist age. In Nova Scotia there was no serious challenge to this principle of state ownership, nor to the right of the provincial government to collect royalties. (Ontario, in contrast, enacted legislation in 1869 which repealed previous provisions for royalties, taxes and duties on metallic ores -- which H.V. Nelles has shown to be a complete surrender of public claims to the resource at the request of the industry.)³⁴ One could make a general point that, in contrast with

the common view of Nova Scotia as the home of low-tariff, free-enterprise thought, actual policy revealed the government to be somewhat more interventionist in its approach than that of Ontario.

But this contrast should not be taken too far. The policy of the government in the period 1857-1865 was similar to that of most other North American jurisdictions. Because licenses to explore were not renewable and they could, after expiry, be given to the next claimant in line, the exploration for coal proceeded in a frenzied and disorganized fashion. P.S. Hamilton, the Commissioner of Mines in the most hectic period of the 1860s, remembered the distinctive atmosphere of those years in a memoir written in 1878. "Many -- perhaps the majority -- of men who engage in mining ventures, and especially in mining for the 'precious metals', look to making a rapid fortune," Hamilton noted.

"If there is any element of rapacity in them, it is sure to be developed by this occupation, and to lead to measureless greed and dishonesty, unless that disposition find itself subjected to wholesome restraint."³⁵

Hamilton was particularly shocked when a highly-placed Minister (one may safely assume Hamilton was referring to his arch-enemy, Charles Tupper) passed along a message to him, which was, "in so many words,

'he says -- now that we are in the position to do so, let us make money while we can.'³⁶

Members of the legislature would beset Hamilton, "in some instances with threats, in others with blandishments, to grant them some illegal favor, sometimes involving really atrocious dishonesty."³⁷ These are the memories and accusations of a bitterly disappointed man, who himself would be accused of impropriety in the gold fields -- but they unquestionably capture the febrile world of the mining speculators.

The evidence, much of it circumstantial, suggests that the Conservatives treated the new provincial freedom to define a mining policy in much the same way the Liberals had treated the question of office-holding under responsible government. In both cases, the demand for provincial control entailed patronage. We have already overheard Charles Tupper's eminently political discussions with the first commissioner of mines. What the period 1865-1873 would reveal is a political struggle over the very composition of capital in the coalfields.

In 1865 the policy of the provincial government changed radically and decisively. It did so in a very peculiar manner--through the publication in the Royal Gazette of an order-in-council. The notice was published on 28 June 1865, while the order-in-council had been confirmed in Council on 25 May 1865. This crucial document reads, in full:

It is hereby ordered that in all cases where licenses to search for mines or minerals, other than gold, has [sic] been issued, by which the right to select one square mile for working is secured, it shall be competent for any party, on application specially made therefor, and on payment of the duty for a license to search, to obtain--subject to the right of any previous license or licenses--a license to search on the same area, and that this order shall be applicable, irrespective of the number of licenses previously issued, until the whole quantity contained in any area described in the first license is covered by applications which, when selected for leases or licenses to work, would include the whole quantity in the said area first applied for.³⁸

In this bland, bureaucratic way the Conservatives announced a coup in the coalfields. Let us recall what the law had stated. A party had been able to apply for a "License to Search" for mines other than gold over any area of ground, not previously occupied, up to the extent of five square miles, and this License gave him the exclusive right to prosecute his searches for one year. He could then make a selection of one square mile over which he, for two years, would hold a "License to

Work". Finally, if he actually commenced and carried on effective mining operations, the Licensee could obtain a mining lease lasting until 1886. Previous to this order-in-council of 1865 no license to search on the same area could be given where prior application had been made. The license would go to the next party in line. Now, however, second or third applications for licenses to search on the same area were perfectly in order.

A minor detail? In fact, it was a redefinition of the nature of the license to search, which made the privileges of the licensee far more precious, and gave them something of the character and solidity of real property. It was also a political transformation of the first order. On the very day the notice appeared in the Royal Gazette--and before that publication had been generally circulated--C.H.M. Black, associated with the International Contract Company, appeared at the mining office, with prepared applications for eight areas of five square miles each in the Springhill area--forty square miles in all. Black had moved very quickly. When he arrived at the Mines Office the new order-in-council was not a known fact: only when Black flourished his own copy of the Royal Gazette would the office accept his applications. When word of this coup reached Cumberland County the contesting parties rushed to file application, but they were pipped at the post. Hereafter only two groups were in contention--C.H.M. Black and the British company, and the group of Amherst investors and speculators who were associated with Alexander Macfarlane of Wallace. After Charles Tupper obtained power-of-attorney from Black to sell the licenses in England, and an undivided fifth part of the three leases issued to Alexander Macfarlane, these two groups were on the terms of the most friendly intimacy. They

were connected through Charles Tupper.³⁹

A committee of the Nova Scotia legislature would later find that the order-in-council was "repugnant to, and in direct violation of, the law; and from the time and manner in which the applications were made it is evident that there must have been some collusion between the applicant and the government, or some members or member of the government, and that by the making and withholding the publication of the said minute of Council for thirty-four days after its date great injustice was done to those already holding licenses to search, as well as those applying for the same."⁴⁰ There is good reason to agree with this judgment, even if it was deliberately phrased to embarrass the Conservatives in a politically charged situation. The strongest point of the indictment against the Conservatives is the speed with which C.H.M. Black was able to respond to an order-in-council whose existence was kept a mystery. It is difficult to think of any explanation other than improper access to confidential information. Nothing in the Conservative counter-attack undermined the charge against Tupper and his friends. Tupper began by impugning the motives and blackening the reputation of P.S. Hamilton, the Commissioner of Mines and one of his principal enemies--but he did not explain why a man who was thought to be so untrustworthy was given so responsible a position in his government. Tupper also noted that he was not in the province on the day the Royal Gazette was issued, and that his own material interest in the Springhill area had developed after he had left office.⁴¹ These rebuttals, expressed in Tupper's best rhetoric, staved off the threat of a serious political reversal; they do not seem to undermine the case against him, which, although circumstantial, seems stronger than his defence. It is unfortunate that Tupper's carefully

edited papers do not contain the 'smoking pistol' which would clinch the argument. But unless Providence favours Conservatives, it is difficult not to draw certain conclusions from the success of the Amherst Tories, and the undeniable interests of Tupper himself.⁴³ As Hamilton concluded, "I do think...that anybody who will take the trouble for himself to sum up for himself all the facts, will have to admit the circumstantial evidence is most excruciatingly strong against some person or persons unknown, who were engaged in the concocting of the Order."⁴³

Such 'scandals' are commonplace in Canadian economic history, and reveal the creative role of the political process in the actual business of capital formation. The significance of the order-in-council of 1865 lies not in the justifiable questions it raises about Tupper's political morals but the processes it reveals to be at work in society in a crucial period. It demonstrates that the legacy of crown ownership did not entail a conservative philosophy of resource development. The crown ownership of the resource did not inhibit the emergence of an acquisitive group; rather, it made the formation of such a group a political process. Other industries would be profoundly affected by the state: bonuses, tariffs, contracts all represented political decisions which had important consequences for business and industry. But few other industries were as thoroughly political as coal. The dependence of the coalfield upon the policy of the state was the consequence of the dependence of the state upon the coalfield: the state required royalties from coal in order to function, the coalfields required the markets provided indirectly through state-owned transportation systems and directly by the fuel requirements of the railway. With good reason contemporaries likened the coal industry to merchant shipping.⁴⁴ In both cases the state was perceived

to have a special interest in the industry. The path followed by Nova Scotia was dissimilar to that of the American coalfields, and the very different corporate forms which evolved in Nova Scotia owed much to the history of state ownership.

Who were the men who transformed the character of the coalfields in 1865? They were pre-eminently Conservatives, who flourished as a consequence of a favourable government. P.S. Hamilton, whom we have encountered as an opponent of the ultimate development of this group, nonetheless articulated many of its assumptions as one of the first Confederates.⁴⁵ R.G. Haliburton distinguished himself by his unequivocal belief in the benefits that Confederation would bestow upon the coal industry.⁴⁶ These men would quite consistently argue for the need for a national policy to create a secure environment for the coal industry. Haliburton was so convinced that the coal mining industry was the incubator of Confederates that he thought even William Annand, the anti-Confederate premier, might change his mind about annexation with the United States after he acquired some coal interests.⁴⁷ They were also men with money to spend, although not as much as the traditional mercantile bourgeoisie of the province. We obtain a rare glimpse into the business affairs of these men from a sentence from a letter from R.B. Dickey to Joseph Smith in 1874: "Charley Townshend could not get off to England this winter. I hardly know what his plans are for the future. Perhaps they are somewhat despondent on the news of his brother George at Philadelphia who was unlucky enough to lose 5 or 6000\$ by Jay Cooke's failure."⁴⁸ The Amherst Tories had many business interests in common; the Amherst Boot and Shoe Company was a rallying point for Cumberland County's various Fathers of Confederation, more numerous in

this county than in any other.⁴⁹ Many of these same men figure in this early period of transformation in the coalfields.

Did these men constitute an industrial bourgeoisie, and did the events of 1865-1873 represent their arrival in power? Or did they merely represent an old mercantile group searching for new fields of enterprise? Neither alternative is satisfactory. Jonathan McCully, a Cumberland father of Confederation, made a useful point when he compared those who had "money made" and opposed Confederation with those who hoped to be "money making" and supported it.⁵⁰ He underlined the nascent character of this formation, which defined itself as much by its hopes for the future as by its existing interests. Plainly the chief field of economic expansion in the mid-1860s lay in coal and gold, and virtually all the leading spokesmen for Confederation had mining interests. Other writers have noted the profound links between coal mining and Confederation.⁵¹ Although the argument cannot be pursued through voting statistics in the same way in Cumberland, which in 1867 lacked a large population dependent upon coal, the emergent network of mining capitalists seems to bear it out well. These men imposed a new definition upon the Cumberland coalfields, helped guide the railway through the interior, and changed the role of the state from one of custodian to one of instigator. In all these respects the new men of power resemble an industrial bourgeoisie, a new socio-economic group with a different programme. But the analogy is not precise. The concrete situation of the coal industry from 1867 to 1871 was prolonged and serious crisis. In 1867 the Mines Report noted a decrease by 119,224 tons from the previous year, and blamed the decrease directly on the abrogation of the Reciprocity Treaty.⁵² The imposition of an American duty of \$1.25 gold per ton on foreign coal ruined the

prospects of such concerns as the Glace Bay Mining Company, which was directed by J.R. Lithgow, one of the most ardent of the Conservative coal men.⁵³ In 1872, H.S. Peole, the inspector of mines, surveyed the bleak history of the industry since 1867 and noted that the record told "of one unbroken series of efforts, on the part of the mine owners to contend against low prices and an irregular demand consequent upon the close competition which has hitherto existed for the trade of a limited market." During the period not a single coal company had paid a dividend.⁵⁴ Isaac Buchanan now became a figure local coal men could cite in support of a protective tariff, which would represent the mutuality of interests between the grain grower in Ontario and the coal owner in the Maritimes.⁵⁵ In this period of crisis the incipient industrial bourgeoisie fell back on a mercantile strategy. Everything hinged on reversing the American decision. In 1871, the coal industry faced a dual disaster: the repeal of a protective tariff on foreign coal entering Canada and the collapse of talks leading to a new reciprocity treaty in Washington. Haliburton, the leading spokesman for the coal men, was devastated. As he explained to John A. Macdonald, the position of the industry was one of great vulnerability. "The Nova Scotia Coal Owners have watched the progress of the Commission with great interest & the result with much dissatisfaction. The Coal trade of Nova Scotia is the only branch of Canadian Commerce that is at the mercy of the Americans, for as Coal is too bulky an article to be shipped at distance, unless it is needed for a back freight, which is not the case here, we must ship to the Eastern States, or nowhere." Haliburton saw his personal and his political projects coming to nought.⁵⁶ The new men of the 1860s were denied the secure economic base they so ardently desired.

What Haliburton's comments also make clear is that these coal men operated with an essentially mercantile perspective: his focus is plainly upon shipping and the American market. The underlying assumption of those who wanted to impose a Canadian duty on bituminous and anthracite coal was that this policy would force the Americans to grant reciprocity. The connection between coal men and 'economic nationalism' (at least in its common sense of domestic manufacturing and tariff protection) was initially a tenuous one, because the local men regarded protection as a strategy for restoring the ancien régime of seaborne coal. Haliburton and the 'coal owners' were convinced that the underlying American intention was to force the Nova Scotians into annexation, and went so far as to appeal to the anti-Confederate provincial secretary to stop pro-annexationist stories in the Liberal press on the grounds that such reports would simply give the American coal interests encouragement.⁵⁷

Born within an uncertain and difficult conjuncture, and unguided by any coherent policy of indigenous development, the new provincial coal industry could not sustain an economic revolution of the type envisaged by writers in the 1860s. Nor did the small group of men who monopolized the best Springhill areas reveal themselves to be industrialists. Their principal interest was a quick return on their investment, and they sold out quite readily. However determined the Amherst capitalists may have been to build secondary manufacturing, they readily yielded control over the coalfields. Many documents reveal an orientation towards viewing the coal resource as a form of real estate, to be sold to the highest bidder, whether in England or in Canada.⁵⁸

All this serves to indicate that the 'mercantile/industrial' couplet, an essential guide to interpreting economic history, can

nonetheless force us to miss subtle and complex developments in which both aspects co-existed. In Nova Scotia men saw in Confederation and the railway a tremendous opportunity to make money in mining investments. Robert Drummond was right to claim that the 1860s were "epochal." As he noted, in 1864 applications for licenses to search covering 1,200 square miles were applied for, a greater number applied for in any period since.⁵⁹ The greatest changes were those in government policy and the coming of the railway. But these changes, momentous as they were, only started a long, protracted transition to an industrial order.

Only in Springhill did this transition occur with the speed and decisiveness of an economic revolution. In the early 1860s the area had been left virtually unexplored. Prospectors complained that the heavy rains of autumn limited the time available to explore the area; the strata were often covered by as many as twenty feet of earth. Although some local knowledge and experience had been gathered about the coal resource, it was essentially an unexplored terrain. In anticipation of the railway the first serious effort was made to understand the Springhill coal seams. The provincial government, in an order-in-council of 25 November 1865, had granted a request that various prospectors be allowed to renew their licenses to search for 12 months, on the condition that "a Company is formed with sufficient Capital to operate the Mines on a large scale, and the Railway from Truro to Moncton is being vigorously prosecuted according to the Contract made for that purpose with the International Contract Company."⁶⁰ What the government wanted was the opening of the coalfield and the development of an extensive mining industry.

The International Contract Company sent two investigators to examine

the coal seams in 1866. The first systematic interpretation of the Springhill area thus came about as a direct result of the Intercolonial Railway. The report illustrated the frontier character of the Springhill deposits. "It must be remembered that the Springhill Coal Field has hitherto been in every sense unexplored; the difficulties therefore of examining and ascertaining the value of a Coal Field under such circumstances are obviously greater than those met with in making an investigation in a practically known district," the surveyors noted. "To this must be added that the whole of the fifty square miles [covered by the extended licenses to search] is almost entirely covered with a forest of densest growth the ground being (as is usual in such cases) very swampy and of great thickness owing to vast accumulations of decomposed vegetable matter covering the rocks and effectually preventing their inspection." In light of these difficulties, the surveyors found themselves unable to trace the outcrop of any particular seam for any distance. Still, they had located enough to arouse enthusiasm. They put down a trial pit and located "a very valuable Seam of Coal" eleven feet in thickness. They thought the coal better in quality than that of Pictou. Two other seams were also discovered.⁶¹ The two surveyors also made extremely interesting comments about the economic prospects of Springhill. They recommended acceptance of the terms of the holders of the licenses to search and praised the area's potential for railway development.⁶²

Nothing would come of their recommendations, but the report itself became a standard part of promotional literature for the Springhill field. It is difficult not to be impressed with this manuscript report, the first attempt to correlate the coal seams of Joggins and Springhill,⁶³ and difficult not to be surprised at the thoroughness of

the survey, which included the sinking of a number of test pits. The manuscript report was the first fruit of the changed politico-economic conjuncture: at the behest of a company deeply involved in contracting for the railway, an initial attempt had been made to understand the coal seams of the interior. Behind this first systematic survey was the provincial government, mobilizing support for the railway and rewarding its loyal Cumberland friends. The report reveals how much the Springhill area was a frontier: a vast terrain, offering great promise, beckoning the explorer and the capitalist. But this was a special frontier, a frontier within a well-established society, created only through a mobilization of new men of capital by the trans-regional railway. It was a "frontier of monarchy," whose chief attraction was owned by the state and whose development would be profoundly influenced by politics.⁶⁴ It was because of the state's crucial political initiative in 1865 that the 'frontier' was so quickly subdued and the mining boom so easily diverted into politically useful channels.

Ironically, the best coal was discovered outside the territory of C.H.M. Black, the man so favoured by the government. It was found by a prospector named John Anderson, whose wanderings across the region in search of profit typified those of many contemporary prospectors.⁶⁵

Anderson's discovery transformed the situation and left the Amherst interests in possession of the best claims. The various interests in the coalfield coalesced: C.H.M. Black, Alexander Macfarlane and Charles J. Stewart (with the support of Charles Tupper) formed the "Spring Hill Mining Company" in 1870 with a capital of \$400,000, under the presidency of Macfarlane.⁶⁶

With the emergence of an important company in the Springhill coalfield,

the state intensified the search for coal in the area. The Geological Survey of Canada became a major force in Cumberland County, and the 'artisanal' geologists of the past were replaced with employees of the state, professionals committed by their very calling to the discovery of new economic resources. Even the geologists outside the orbit of the Geological Survey, such as H.Y. Hind, were a far cry from the individual geologists of the 1840s, far more apt than their predecessors to be presidents of companies and enthusiastic promoters of the resources they discovered. In a sense, they were continuing the tradition of Gesner, but without the hindrance of a monopoly or the financial insecurity of the adventurer.

Through the geological work it commissioned (at both the provincial and federal levels) the state intervened decisively to change the Cumberland coalfields as objects of scientific knowledge. The first serious work on the quality of Springhill coal was done by Edward Hartley of the Survey in 1869. Hartley drastically revised the earlier verdict of Dawson, and reported that the quality of Springhill coal put it in the same category as that of Newcastle. His comments made excellent material for mining promotions. Even more encouragingly, Hartley expressed the view that the Springhill coal seams might be part of a "great Cumberland coal-field of Nova Scotia," a vast and unexplored realm.⁶⁷ The geological basis for all such claims was the absence of any defined southern boundary for either the Springhill or Joggins coalfields; to this day their limits are not certain. It was the sort of geological feature which was subject to many readings, and guaranteed that the geologists of the Survey would return to Springhill for further investigations.

The explorations which started on 6 September 1870 were highly suggestive of the new constellation of socio-economic forces which were reshaping the interior of the county. Scott Barlow, the Survey's geologist, was given direct assistance by engineers pushing the Intercolonial through the county, and by the Spring Hill Mining Company's own John Anderson.⁶⁸ The interests of the state and of the company were thought to be one. Barlow proceeded with real tenacity. In 1871, according to the Survey's report, "He measured in all about eighty miles of roads, rivers, streams and lines through the woods, and registered the strike, dip and mineral character of every rock exposure met with.... About one third of the measurements were made in the woods under great difficulties, in consequence of the unevenness of the ground, and a thick growth of underbrush, which necessitated a great deal of chopping."⁶⁹ Barlow traced the seams which outcropped in C.H.M. Black's area south of a point at which they had seemed to be broken by a fault. He thus indicated that the coal measures of Springhill were even greater than the earlier reports had indicated.⁷⁰ Further work established the existence of four additional underlying seams to the south-west of the Spring Hill Mining Company's West Slope. Barlow noted the acute difficulties of exploration in Cumberland County: "As the structure of the field is of a very complicated character, and important faults are known to exist in it, further work is needed before it can be described with any degree of accuracy; this is chiefly in consequence of the few natural exposures of the strata, most of which are only to be seen in the beds of the rivers and brooks during the dry season...."⁷¹ One pictures Barlow trudging through the thick forests of the county, searching out streams, piecing together the puzzle which would never quite be completed. How recalcitrant

would Cumberland County prove to be for the geologists who wanted to understand these seams!

It was as a consequence of the political change of 1867, that the first thorough geological map was produced for Cumberland County, attempting to grasp the coal seams and their internal relations.

Barlow continued his explorations until 1875. His notes reveal the misguided enthusiasm of other prospectors, who used drilling equipment in a senseless fashion.⁷² Later R.W. Ellis of the Survey was to expand and set down many of Barlow's discoveries.⁷³ The Survey's role in Cumberland was indicative of the heavy demand for its services in the Maritime Provinces as a whole.⁷⁴

The provincial government was also roused to activity. John Rutherford, the province's first professional mine inspector, wrote general descriptions of the Nova Scotia coalfields.⁷⁵ The province, by reforming the Department of Mines, had provided a vantage point from which an expert could guide mining activity, and Rutherford's work on the importance of preserving mining records as a guide to further exploration and development showed his serious commitment to an efficient mining industry.⁷⁶ The province was not left behind by the Geological Survey in its respect for the geological expert.

A third aspect of the exploration of the Cumberland coal measures was provided by self-employed men who combined geological expertise with avarice. Henry Youle Hind was the most prominent of these.⁷⁷ Hind was an archetypical son of the Age of Improvement. W.L. Morton captured him well when he wrote, "Hind... had a flair he could not control; he always used any geological evidence, lignite on the Souris, crystalline limestone on the Shield, albertite in New Brunswick, to suggest economic

possibilities in an exciting way beyond the bounds of scientific prudence....There was always gold in the hills he traversed."⁷⁸ Hind's most famous book, Eighty Years' Progress of British North America: Showing the wonderful development of its natural resources, by the unbounded energy and enterprise of its inhabitants; giving in historical form, the vast improvements made in agriculture, commerce, and trade, modes of travel and transportation, mining, and educational interests, etc. etc., tells us everything we need to know about his outlook, just by its wildly enthusiastic title.⁷⁹ Because of quarrels with other geologists, who charged him with plagiarism, Hind was unable to secure a position on the Geological Survey. His work on Cumberland County revealed him to be an enthusiastic echo of other people's opinions, although justice compels us to note that he correctly guessed that there was no intrinsic geological connection between the two Cumberland areas.⁸⁰ For Hind Cumberland County represented a vast and wonderful frontier. In his work on the county in 1872 (prepared in part for the provincial government) Hind anticipated building villages across the county, all along the line of the Springhill and Parrsboro Railway.⁸¹ (It is not altogether adventitious that the railway was an important election issue in the same year). In a pamphlet about the county a year later, Hind advocated the use of diamond drills to overcome the acute difficulties faced by Cumberland prospectors, and publicized the views of Hartley on the quality of Springhill coal. He was particularly enthused about the prospects of linking Cumberland coal and Londonderry iron--another of many ideas that link Hind with Gesner.⁸² But between Gesner and Hind there was a huge gap. Gesner was unable to put his theories to the test of enterprise; Hind did so with abandon. In 1872, he founded the

Mineral Exploration and Mining Association of Nova Scotia, which picked up licenses to search at a wide variety of places (Little Forks, Black River, the Maccan River, Springhill and East Brook) on the assumption that there was such a thing as the Black River coal basin.⁸³ It was a bold idea, but a mistaken one. Hind turned his formidable energies to other problems, although he invested in both the Spring Hill Mining Company (to which he was connected through friendship to Charles Tupper and Sandford Fleming) and the Springhill and Parrsboro Railway, whose affairs he discussed with John S.D. Thompson, a board member.⁸⁴ Hind's scientific contribution to the creation of the Springhill coalfield was a small one, but his talents as a pamphleteer and promoter were unquestionably important in arousing a widespread enthusiasm for this new frontier.

Division Ten was a well-designed part of the Intercolonial; the Springhill branch line was far less imposing.⁸⁵ On 6 December 1873 the first run of coal was brought from Springhill to Springhill Junction, the new terminus on the Intercolonial. The splendidly built railway was a gigantic favour to the men who had used their political knowledge and experience to gain control of the coal.⁸⁶ As we have seen, the railway exerted a force before its actual construction, by inciting exploration and speculation. The Spring Hill Mining Company was authorized by its articles of incorporation "to make or construct a railway over and across any roads in the line of the projected railroad and over and across any railroads or tramroads," revealing that as early as 1870 the need for a branch line was acknowledged by the state.⁸⁷ The company was organized in 1872, with the Honorable Alexander Macfarlane as President. Of the capital of \$400,000, \$130,000 was allotted as working capital shares. Those and half the other

shares were sold chiefly in Saint John by E.N. Sharp, a businessman who often surfaces in later Cumberland mining speculations. The new company's prospectus revealed the tremendous optimism of its early promoters. It advertised the attractions of Springhill with flamboyance:

LEASES OF THREE SQUARE MILES of the richest Coal Deposits in British America are held by the company, good until 1926.
 SEVEN SEAMS OF COAL -- best on the Continent yet known -- ranging in thickness from 13 feet 6 in, to 2 feet each, nearly Forty-five feet thick in the aggregate, and outcrop extending three miles...
 ONE HUNDRED MILLION TONS of the best quality workable Coal is a moderate estimate of the quantity -- sufficient to last two Centuries even though worked to an extent equal to the present rate of all the mines in Nova Scotia.
 SITUATED HIGH ABOVE THE SEA LEVEL, and probably the driest mine on the Continent...
 A PERMANENT AND SAFE INVESTMENT -- Probably Dividends 60 to 100 per cent, per annum, from 1st August next.

The prospectus reveals the markets that the new company wanted to reach were those of the United States, where the freight rates favoured Springhill coal. Here was an "AMPLE MARKET for 300,000 chaldrons per annum at the Bay of Fundy and New England Ports, and 100,000 chaldrons a year will be required by the Intercolonial Railway, and the inland towns from Truro to Woodstock."⁸⁸ With this promise of unlimited expansion the investing public in Saint John (but not, interestingly, Halifax) bought up the shares: when on 14 April 1873 the Board of Directors was constructed, three Saint John men were placed on the board. In 1878 the capital stock of the company was to be increased to about \$650,000.⁸⁹

Even the confidential informants of R.G. Dun & Co. were impressed with this brash new company. The credit report noted that the quality of the coal was excellent and the quantity large, and detailed the improvements effected by the company: "Short Branch R[ail] R[oad]

connects with Intercolonial R R & branch built by profits of mines so far. While a balance of some [thousands] Cash was on hand when St. John Parties took hold. & this made at great expense Intercolonial R R will take 30 to 40,000 tons a year. they pay now \$3.80 per ton at Station. The Co. have excellent prospects & from the names of parties interested in St. John, we have every Confidence that their engagements will be met."⁹⁰ To have invested initial profits in the construction of the branch line was an impressive declaration of faith by the initial investors in the future of Springhill. In 1873 the credit agency suggested a more difficult transition to Saint John control. "Mine is situated here [Springhill] but all bus[iness] is transacted in St. John, where the offices are located and where the directors reside. The quality of the Coal has turned out equal to what was expected While the quantity is unlimited and facilities for disposing of it good. So that the Co. should have made money but owing to the faults of their late Secy. their affairs appear to have got mixed and as a Consequence the Co. has suffered in reputation. Its stock has been sold at 115[%] but it is down to 86% being 4% below original selling price." The difficulties of the company were to be reformed by the brisk management of W.E. Vroom, of the shipbuilding firm Vroom & Arnold, who had been appointed secretary. According to the credit report, "He assures us there is not[hing] wrong with the finances of the Co. -- although they may have expended rather more upon the ppty [property] than was intended and they feel the want of money but there are so many first class men connected with it & such a hardworking shrewd Director that we are satisfied the Compy will soon regain any prestige it has lost."⁹¹ Subsequent reports suggest that this prediction

was accurate, and that the company was a profitable one.

The mining boom in Springhill provided an attractive opportunity for other investors. While the mining company itself had built the branch line to the Intercolonial Railway, the mine still had no easy connection with the Bay of Fundy. Despite the dark suspicions of the Liberals, there is no evidence that Charles Tupper was ever able to transform his land holdings at Maccan into a profitable coal terminus.⁹² Before completion of the Intercolonial in 1876 the shipping point of the mine was Dorchester, New Brunswick.⁹³ The logical alternative was to build a line south from Springhill to Parrsboro, connecting the mine with the Bay of Fundy at a point much closer to its major markets. The Springhill and Parrsboro Coal and Railway Company was incorporated in 1872.⁹⁴ The initial incorporators were primarily Halifax-based; the first president, John T. Wylde, was secretary of the Board of Directors of the Starr Manufacturing Company, a Halifax skate company which was also concerned with producing such heavy industrial goods as ship and railroad spikes, bolts and nuts, scabbord joints for rails, railway tracks, iron roofing, and coal and mineral cars.⁹⁵ The most visible of the Saint John promoters, E.N. Sharp, was a stockbroker who had a boundless enthusiasm for Cumberland mining and railway promotions. The railway's future lay with James Domville, controller of the Maritime Bank, the Coldbrook Rolling Mills, and a host of other industrial ventures.⁹⁶ As with the mining company, the initial role of Halifax was soon eclipsed by Saint John men: once again the metropolis of the Bay of Fundy claimed its hinterland. Even more strikingly than in the case of the mining company, the new railway company revealed the new industrial forces present and active in the region. The company

was also another indication of the more active role of the state. The provincial government granted generous terms to the railway, including grants of crown lands throughout the county.⁹⁷

Thus one can say of the Springhill and Parrsboro Coal and Railway Company what one has said of so many other phenomena of the period 1865-1873: it reveals a new balance of class forces, a new dynamism of the state, a new configuration of capital. Promoters of other branch lines worried that the enormous expense of the Intercolonial (magnified, naturally, by the very political nature of the road) would deter capitalists from taking up the challenge of building less pretentious lines to serve purely local needs.⁹⁸ This fear seems to have been misguided. Although the Intercolonial was in its basic conception a military and not a commercial railway, and consequently traversed mile after mile of barren countryside far removed from potential American invaders and lucrative markets alike, the detailed study of how its route was chosen reveals the determination of local capitalists that the railroad serve an economic purpose. We have a great many words on the political force of the railway, including some patronizing discussions of the railway's mission of removing Maritime particularism (strangely this discussion never focusses on the problem of widening the horizons of Canadians), but we are only starting to reclaim the complex history of the railway as a road to resources and a significant industrial force.⁹⁹ The history of the early development of the Springhill coalfield is a striking illustration of the industrial transition the railway made possible. That the transition was neither sudden nor complete will be documented in the following discussion -- but a definite transition had occurred, a transition involving new modes of

transportation, new roles for scientists and the state, new men of capital.

J.W. Dawson remarked in his great work, Acadian Geology, that the work of the Geological Survey of Canada was the one concrete benefit the Maritimes had derived from Confederation.¹⁰⁰ He probably exaggerated the practical benefits of the Survey's work, which furthered science more than it generated profits. But he also was forgetting Springhill, a coalfield he always tended to minimize. Springhill was a monument to the Intercolonial and to Confederation itself: without them it would not have emerged. Only by driving the railway through the interior could the deposit have been exploited. Springhill's very emergence as a permanent, major coalfield was a sign of the new order. Mercantile capitalism had created a small, insecure coalfield hugging the coast. Industrial capitalism created a potentially massive coalfield in the interior, dependent for its life upon a huge investment in a transportation system and upon the political will of a political group. It was a material embodiment of the new society the Tories wanted to build and control.

On 3 October, 1873, a large number of eminent men from Saint John and Halifax made their way to Springhill. After travelling to Springhill Junction they boarded a specially-constructed train to carry them over four miles of new track to Springhill. "Arriving on the ground, we discovered quite an array of miners and denizens assembled on one of the large coal platforms, which were decorated with flags, who received us with a salute of two guns," noted one correspondent. "They repeated the salute after intervals for loading, and I dare say the owners of those guns must have wasted half a pound of powder, at the least calculation, in doing us honor." Lieutenant-Governor

Archibald drove the last spike into the railway connecting Springhill with the Intercolonial Railway. Then he turned the first sod for the new railway from Springhill to Parrsboro. The correspondent thought the scenery rather bleak ("There is a sad lack of 'Autumn tints,' I am sorry to say...Stumps abound...") but he was more impressed with the signs of change. Here in the middle of the wilderness was the nucleus of a little village. "There are Steam works, Sheds, and platforms, and buildings of all kinds, which indicate the industry, energy and push of the Company." The visitors descended the new mine and were impressed with the thick seam of excellent coal. There were the standard Victorian speeches hailing the day as a momentous one for Cumberland County, eight rounds of toasts, and a sumptuous dinner. As the dignitaries went home, fortified on their long journey by the ample "reserves" stowed away on the train, they might well have congratulated themselves on their own political contribution to the event. For once the rhetoric was not an exaggerated response to the occasion. By 1873 a complex series of events had indeed transformed the wilderness of the interior and irreversibly changed the political economy of the County.¹⁰¹

2. The Impact of the Railways

The railway transformed Cumberland County. P.S. Hamilton, in his manuscript County history, considered that the railway had done even more for Cumberland than coal.¹⁰² Since the railway crossed the County from one end to the other -- some sixty miles in all -- its impact was more profound there than in any other part of Nova Scotia. In the early nineteenth century Cumberland had been a backwater, with the lowest population of any county in Nova Scotia; even a substantial

immigration in mid-century had not changed its pre-industrial character.¹⁰³

Now with the completion of the Intercolonial the County was firmly wedded to an economy of coal, railways and manufacturing. Both coal mining and manufacturing were captives of the railway, which consumed great quantities of coal and absorbed the railway cars produced in Amherst. From 1876, Cumberland County's most important industries were linked to the great railway which ran through its heart.

One aspect of the transformation of 1865-1873 was the launching of branch lines, which promised to extend to the county as a whole the benefits of the railway. The branch line to Springhill, while it lacked the grand solidity of the Intercolonial, was fully functional by 1873. It was financed out of the profits of the mine, and its construction posed only minor problems. It proved far more difficult to build branch lines to other parts of the county.

Connecting the Springhill coalfield with the Bay of Fundy was the most obvious task of the 1870s. It was taken up by the Springhill and Parrsboro Coal and Railway Company, controlled by Saint John interests. This line depended upon the provincial government for a free survey and a subsidy of \$5,000 a mile -- a total of \$134,650 for 26.93 miles of railway.¹⁰⁴ This support did not turn out to be adequate. For one thing, the great boom in the southern part of the county so confidently predicted by Hind (one of the railway's prominent supporters) did not materialize. Furthermore, the government had conceded the company crown lands spread throughout the county instead of concentrated along the proposed line of track; many of the properties, according to the company, were virtually worthless.¹⁰⁵ The Liberals had promised the line in the heat of an election campaign; it seemed that they had

failed to give it adequate financial support. The federal subsidy of \$39,850 was insufficient to make up the deficit.¹⁰⁶ By January 1876 the contractors, Schreiber and Burpee, had spent \$94,255, and by July 1877 the company had used up the last of the provincial subsidy.¹⁰⁷ The railway was virtually bankrupt.

What had gone wrong? The records deny us a definitive answer, but the likeliest reason was the grave crisis of the Maritime economy in the 1870s. E.N. Sharp had sold the stock of the company in the booming climate of the early 1870s; the subsequent years of the 1870s were a time of acute economic distress. The government's support had been inadequate. Perhaps underlying these factors was the inability of the trading economy of the Bay of Fundy to sustain a heavy investment of this type. The railway, which revealed that the longstanding north/south axis was still a consideration in the new era, also showed that it was less potent than the lines of force running east and west.

The railway symbolized the weakness of the regional economy. Its growing dependence upon James Domville and the Maritime Bank revealed the acute difficulties of the company. According to an agreement with Domville in 1877, the railway company agreed to issue first mortgage bonds of £200 cash amounting to £123,200, secured by a first mortgage or deed of trust from the company on all its property, including the crown lands given by the provincial government. The railway was bound to buy from the Coldbrook mills (controlled by Domville) all its rails, consisting of 2,600 tons of old iron rails from stock at Moosepath in Saint John County. The Coldbrook company would soon be owed \$72,794.78.¹⁰⁸

The railway was swept up into the exciting world of the Maritime Bank, which even at the time of the agreement in 1877 was in a profound

crisis. The Maritime Bank was the sort of institution which wins the praise of critics of the Canadian banking system: it was audacious, deeply involved with industrialization, and locally-controlled.

Unfortunately, by 1877, it was also virtually penniless. The Monetary Times, which enjoyed citing the record of the Bank as a cautionary tale for the Canadian financial community, exclaimed in 1880:

"L'audace, l'audace, toujours l'audace," was recommended, in different circumstances, by a brilliant Frenchman as one condition of success. The gentleman we have named [Domville] has, assuredly, illustrated what may be done by audacity, for he showed abundance of that quality. In his various roles of merchant, manufacturer, politician, banker, he played for high stakes, and played highest when the capital he played with was not his own. "Brilliance in finance" is however often an euphemism for unscrupulous boldness and lavish extravagance. And if "brilliance" has been displayed in this case, it has come to a sorry ending.

Here was the stiff-lipped rectitude for which the Times was deservedly famous, but in this instance there was ample justification for this tone. The details published in the Times revealed a bank dominated by one man. In the profit and loss account, there was an amount of \$404,002 at debit, the liability of James Domville to the Bank.

Domville had borrowed money from his own bank for his enterprises without having anything more to go on than his name or that of an associate or partner. The bank had gambled everything on his mills and railways. Prominent among the unrealizable securities on hand belonging to or held by the Bank, were (1) A lien upon the entire rolling stock of the Springhill and Parrsboro Coal and Railway Company (\$31,818.24); (2) 186 bonds of the Springhill and Parrsboro Coal and Railway Company, at £200 each (£37,200 sterling with interest from 1 July 1878); and (3) a confession of judgement by the Springhill and Parrsboro Coal and

Railway Company for \$7,537.10, together with an engine and boiler at the works costing \$2,500. Other such assets were one-sixth interest in a Pictou mine and 290 first mortgage bonds of the Coldbrook Rolling Mills.¹⁰⁹ There was little surprise when this "wild-cat" bank finally collapsed.¹¹⁰

The Springhill and Parrsboro Coal and Railway Company was under-financed. The Saint John interests controlling the company either would not or could not provide an adequate financial base for it. When the line was finally completed in 1877, the provincial engineer wrote somewhat critically that "Although the gradients and curvature are somewhat heavier or greater than they ought, owing to the line being so easy to construct, yet it may be said, the grades are in favour of the traffic, as they descend towards the seaport." The drop was no less than 450 feet from Springhill to the coal depot. Because of the company's poor financial condition, the line was not pushed through to a site near Parrsboro more favourably situated than the town itself for a heavy schooner trade. The old rails were cast-offs from the Intercolonial Railway, and had been laid in such a way that the line provided a very jolting ride.¹¹¹ In 1879 the provincial engineer recommended that the company limit the speed of passenger trains to 12 miles per hour, given the quality of the line.¹¹² The best description of the line -- which deserves a place in any anthology of railway speculations in Canada -- was penned by the provincial engineer in 1883.

The track of this road, which at its best was only second-hand or composed of old or disused rails from another line, is now completely played out.

The ballast consists of patches of that material, here and there.

The surface of rails is up and down almost alternately so on every second or third rail.

The alignment of the track is in as bad condition as the surfacing.

Miles of the fencing are completely gone, a great deal of it being wanting in farming districts.

The rolling stock is about in keeping with the state of the railway.¹¹³

Creative financing had done its work. After six years of operation the line was almost ruined, even though it turned a profit. It is safe to assume that whatever profits were generated did not return to the fixed capital of the railway.

It was, surely, a symbol of the decline of Saint John: The Bay of Fundy and its metropolis could grasp the coalfield of Springhill only weakly. The underlying structure of Saint John's weakness has been examined by T.W. Acheson, who suggests that the city's great merchants, by delaying for two critical decades the diversification of the economy, contributed to the retardation of Saint John's industrial base.¹¹⁴ The case of the Springhill and Parrsboro Coal and Railway Company could be read as a local manifestation of this more general problem. It seems to suggest the underlying weakness of local capital when confronted with the need to finance large, permanent enterprises.

The line was taken over in 1882 by Montreal interests, organized in the Cumberland Railway and Coal Company (supported by the Bank of Montreal). The change was immediate. The line was extended to White Hall Creek and better wharves were provided: in 1887 the railway terminated in an all-season shipping port. The line itself was completely renovated and the rolling stock replaced.¹¹⁵ The new company boasted that its first-class car for passenger traffic was better than virtually any car on the Intercolonial.¹¹⁶ From 1884 the Springhill and Parrsboro line.

was an organic part of the same company which operated the mines:
it was always a positive element, contributing income from passenger
traffic and other commodities as well as transporting coal.¹¹⁷

The success of Montreal places the failure of Saint John in sharper
relief. The railway from 1876 to 1882 did not languish because it
made no economic sense; it languished because it was not adequately
sustained by the owning company. The Montreal company saved the
railway from decrepitude.

The impact of this railway upon Springhill was dramatic. It allowed
the development of the traditional markets of New Brunswick and the
United States. The coalfield could look for markets in the east, the
west and the south. From being the most isolated and unknown coalfield
Springhill became the most central, with distinctive locational advantages
in the Bay of Fundy, New Brunswick and even Halifax markets. Ironically,
although the coalfield was the embodiment of the new national forces
transforming the region, the net effect of the railway revolution was
to allow the coalfield to diversify its markets and achieve a partial
independence from the east/west axis. The coalfield was thus enabled
to express itself within a number of structures.

One may see the true impact of railways by considering the far
different history of the Joggins coalfield. The little coal-mining
communities of the western coalfield were in a far different position
than that of Springhill. Springhill was born because of the railway;
Joggins, River Hebert and Maccan were born because of the sea. Without
a railway connection (except at Maccan) they remained trapped within
the world of sail. As early as 1873 plans had been made for the coming
of a railway. The formation of the Minudie Mining and Transportation

Company in that year was an indication that the Seaman interests wanted to build a railway.¹¹⁸ Gilbert Seaman was later to recall that

"Some twenty years since or at a time when the late Hon¹ Wm Annand was Premier of Nova Scotia -- Mr. John Barnes -- then of River Hebert and myself had various talks of a Railway from the Intercolonial to a point on the Bay of Fundy Shore. So as to open up the Coal Interests of the Section." The provincial government sent out a surveyor, but under the direction of B.B. Barnhill of the Joggins Coal Mining Association, he marked out a route which managed to connect the Joggins mine with the Intercolonial at Athol, but neatly excluded all the other mines of the Joggins coalfield. After Barnhill explained to Seaman that he wanted to exclude potential competitors, Seaman understandably concluded that if the Joggins company wanted its own railroad, it could build it at its own expense.¹¹⁹ There the matter rested.

Without a railway connection the mines of the Joggins coalfield were unable to compete with Springhill in the Bay of Fundy or elsewhere. The dependence of the coalfield upon the Bay of Fundy placed it at a competitive disadvantage with Springhill, which had access to a better port and alternative markets. Without regular markets production could not attain much efficiency. As the mines inspector remarked in 1876, "The irregularity of the trade greatly interferes with the economical working of the seam..."¹²⁰ In 1878 the same lesson was drawn: the advantages of technical innovations in mining were swept away "by the irregularity of the demand and the reduction of the trade in consequence of the low freights bringing other coals in closer competition in the St. John market."¹²¹ The failure of the railway scheme in the 1870s revealed how such a stagnant economy could be perpetuated by the

very divisiveness it encouraged. It was a coalfield waiting anxiously for a breakthrough. As a leading figure in the Joggins company noted in 1888: "We have been working at a heavy loss for a number of years and merely keeping the mine open in expectation of [a] Railway being Completed."¹²² So well known was the plight of the Joggins coalfield, that the Trades Journal even editorialized on the need for a rail connection:

If a railway is needed in any part of Nova Scotia, certain to be a benefit not only to the particular locality through which it would pass, but also to the province at large; then certainly the proposed Railway from Maccan Station to the Joggins Mines is that Railway and should be pushed ahead as expeditiously [as possible] There are coal seams all along the proposed route, which cannot be profitably opened until there is some cheaper and more certain way of bringing the coal to market. For the want of a Railway the mines already in operation are greatly restricted in their output. There are many hundred men now idle in the winter time, who would get employment during that season were the Railway in existence; while the development of other mines, which would follow the construction of the Railway, would give employment to thousands more. 123

Only the railway, this analysis suggested, would transform the stagnant area into a permanent, thriving coalfield, sustaining a large population.

The vision was pursued in the 1880s by Gilbert Seaman. Seaman, an ardent Liberal, pointedly asked Sir Charles Tupper what he had done for Cumberland which would stand comparison with A.J. Smith's services for Dorchester -- a reference to the 'Dorchester Diversion' which, like the Grecian Bend, took the Intercolonial on a detour for political reasons.¹²⁴ Surprisingly, Tupper obliged Seaman by promising to aid his railway scheme, and sent an engineer to survey a route from Maccan to the Joggins. Tupper was both temperamentally in favour of railways and probably enthusiastic about embarrassing the provincial Liberals.

With this promise of support, Seaman called mass meetings, well attended by local residents and men from Amherst, Saint John and Sackville.

In 1883, however, the momentum was lessened by Tupper's suggestion that Seaman entrust his cause to the builders of the Short Line Railway to Pugwash.¹²⁵ Seaman then turned his attentions to the provincial government.

Selling branch lines for Cumberland was a difficult proposition in Halifax. Cumberland County enjoyed more railway mileage than any other, and was resented by assemblymen from Cape Breton.¹²⁶ The Liberal government was caught between its very real political need to win support in Cumberland County and the strong opposition to further railway expenditures in Cumberland from an inadequate provincial treasury. The Conservatives enjoyed pointing at the many branch lines the Liberals turned down with the excuse, "We have no money for you; look to the Dominion government."¹²⁷ The government prevaricated and sought expedients. One interesting measure, which revealed the new approach to the royalties as a development tool, was the exemption given the Minudie and Joggins mines from royalty payments, provided they were applied to the railway.¹²⁸ Finally, however, the province was obliged to offer a subsidy. But this hardly settled the question, because there promptly arose a bitter conflict with the railway company over payment of the subsidy before the line was completed.¹²⁹ The arguments over this one twelve-mile branch line consumed the energies of the leading Liberals. As W.S. Fielding, the premier, explained to W.T. Pipes: "We are under contract with the Joggins Company, and are bound to give them in a liberal spirit whatever they are justly entitled to under their contract. If the Company have finished the

road, they are entitled to the full amount of their subsidy. If they have not finished the road, they are not so entitled."¹³⁰ Tempers were wearing thin. There were harsh words when the government attempted to change the terms of the subsidy by leaving out the last mile which provided the crucial link with the coal mine. The company charged that the contract had been violated.¹³¹ Local residents were up in arms over damages to their properties, many of which were bisected by the railway. The interests of farmers were placed in opposition with the railway and the mining companies.¹³² On top of everything else, the federal government provided a subsidy of \$37,500, a bit better than the provincial subsidy of \$32,500.¹³³ So politically charged had the railway issue become that when it was finally ready to be opened in 1887, there were two ceremonies: one for Tupper (in November 1887) and one for Fielding (September 1888). It was an appropriate conclusion for a highly political story.

The building of the branch line from Maccan to Joggins had a dramatic impact on the Joggins coalfield. The extension of the railway to Joggins transformed the Joggins coalfield no less dramatically than the Springhill area had been changed 15 years earlier. After the line was opened for coal traffic in January, 1889, the little mines of the area reopened and expanded. The Joggins Railway made it possible for them to enter the national economy. The railway itself sought to change its name to the "Joggins Coal and Railway Company," in order (it explicitly said) "to allow it to absorb the various coal properties along the line." In this way it would revolutionize a business "that has hitherto proved most disastrous."¹³⁴ That even in this most backward of the major provincial coalfields, the area most attached to the old economy,

the railway had so transformed the strategies available to coal companies and railways, showed the profoundly new character of the coal industry once it entered its industrial phase.

There were four other branch lines which deserve mention, although they were by no means as critical as the three we have already discussed. The idea of linking Springhill to the Gulf of St. Lawrence (and thus to Montreal by the St. Lawrence River) was popular as early as 1872. The grades were daunting, but the rewards were potentially great. In a sense, the idea conformed to Amos Purdy's old conception of the Intercolonial as an aid to the farmer and to rural industries.¹³⁵

The Springhill-Pugwash or Springhill-Oxford route was a favourite theme of politicians. E.N. Sharp, the moving spirit of so many nineteenth-century promotions, wrote candidly to P.C. Hill, the premier: "If ever there was a chance of securing the County [for the Liberals] you have it now, for the sake of these Railway grants they have agreed to forget the old and to establish new party lines."¹³⁶

The scheme was taken up enthusiastically by R.G. Leckie, a Conservative and general manager of the Cumberland Railway and Coal Company. Again the proposition was weighed on political scales by Fielding. Responding to a Liberal supporter who feared that supporting the railway would help the Conservative cause, Fielding wrote, "As a matter of fact I am disposed to think the influence of that subsidy will be the other way. Leckie is the one coal manager in Nova Scotia who has had the courage to say that he wants free trade with the States therefore he is not in a position to assail the Liberal policy and rally his workmen against us."¹³⁷

The railway received its subsidy, was built, and immediately condemned by the provincial engineer.¹³⁸ A second branch line was that built

by Gilbert Seaman to Minudie from River Hebert. It was used to load coal schooners, and transport lumber: it was really a last attempt to reactivate Minudie and the traditional trade it had once possessed.

It accomplished none of the great things Seaman had envisioned.¹³⁹

A third branch line connected Athol and the Fenwick Mines during the First World War; a fourth brought the Joggins Railway into contact with the Maple Leaf mining area in River Hebert. These branch lines filled in the interstices of the Joggins coalfield without significantly changing its structure.

As Figures One and Two reveal, the railway system in the 1920s bore little resemblance to the 1870s. Step by step the railways entered every corner of the coalfields; their development went hand-in-hand with that of the coal industry.

The railway system affected more than the transportation of coal to the market. It changed the nature of the market by imposing its own demand for coal, and it also changed the character of production.

A total of 2,307,657 long tons of coal (28% of the county's total production) was consumed by the Intercolonial Railway in the period 1877-1900. Table One presents the sale of coal to the Intercolonial Railway by coal mining area.

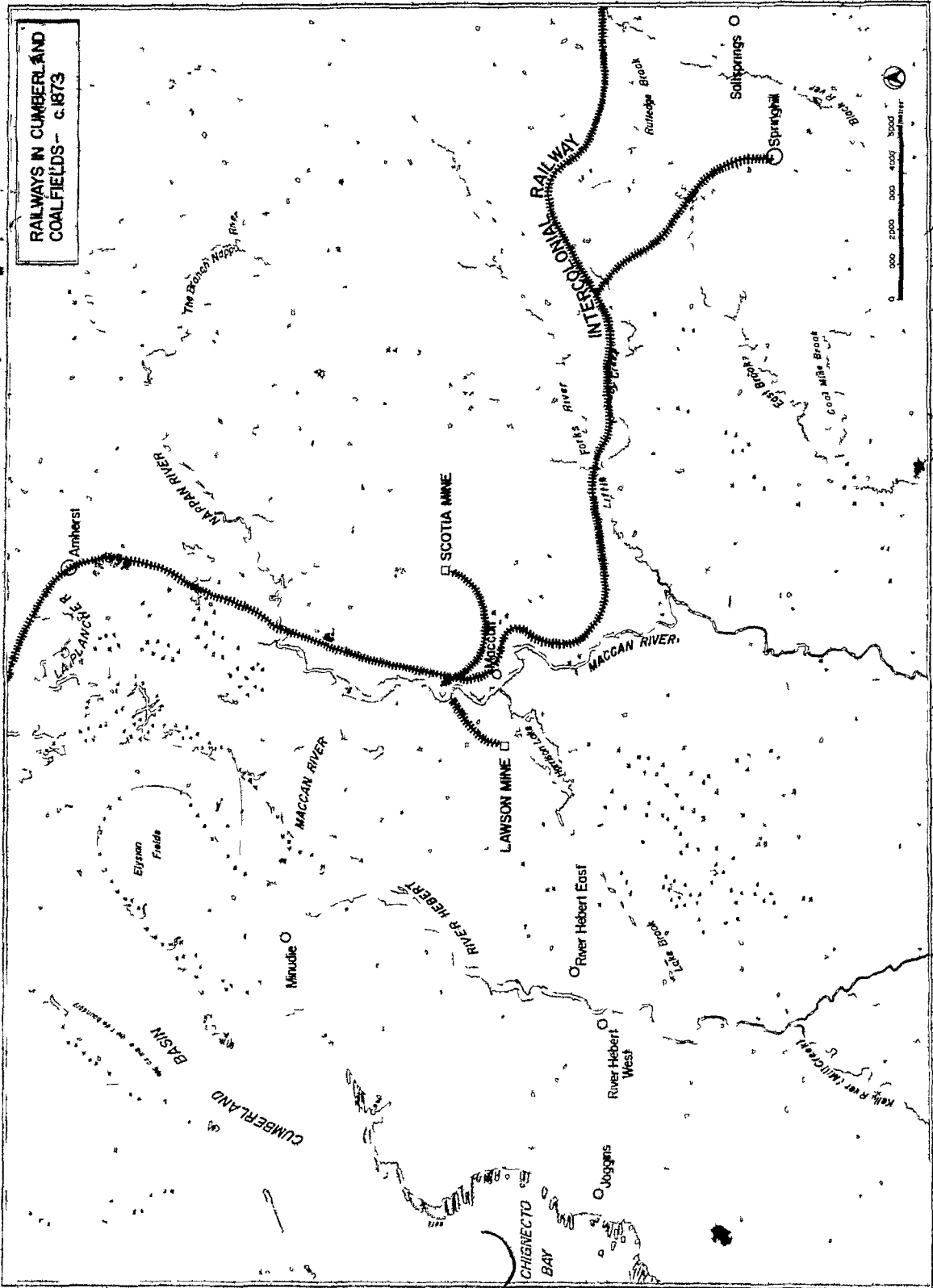


Figure One

Figure Two

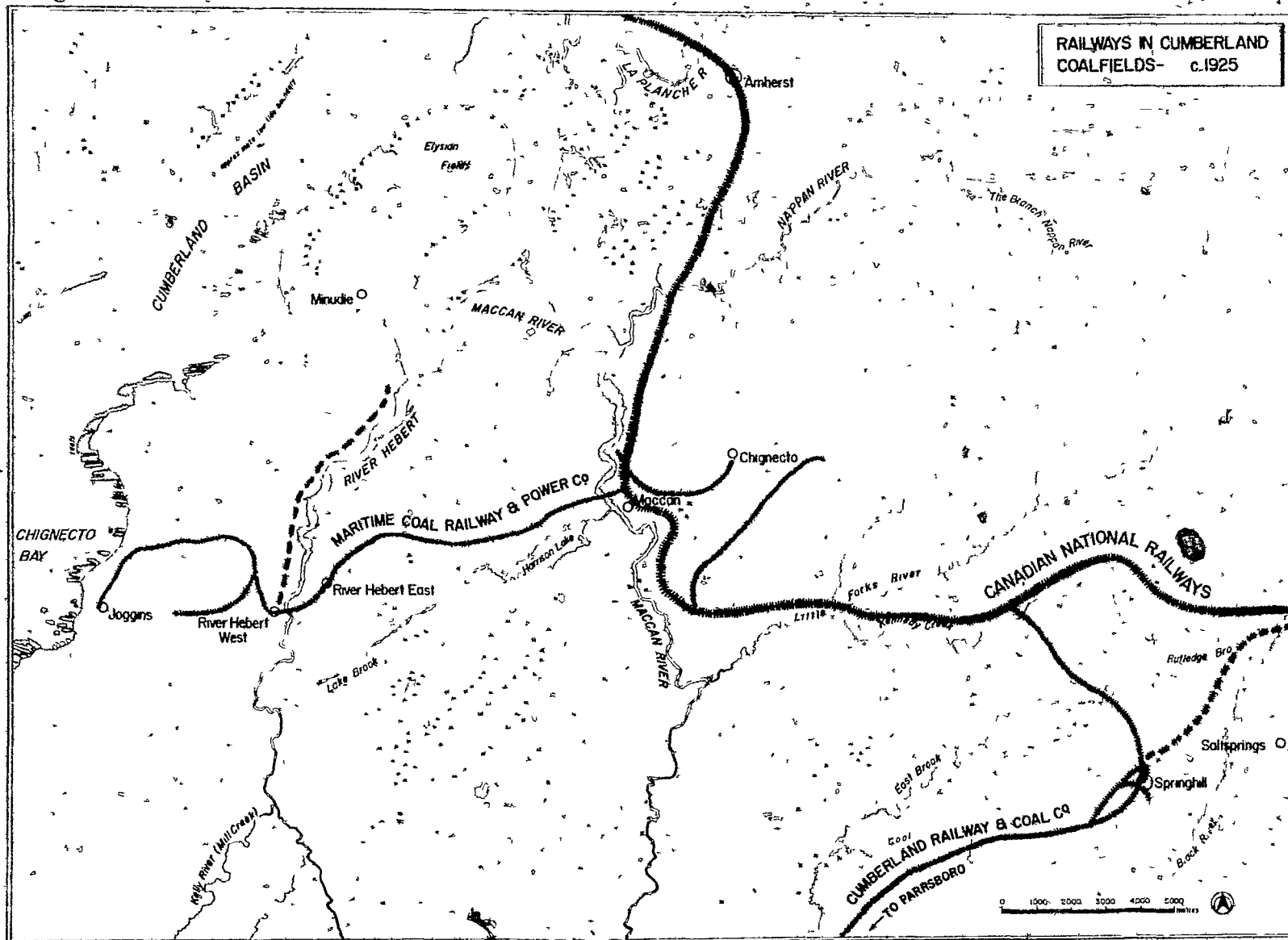


Table One. Coal Sales to the Intercolonial Railway, 1877-1900*

Coal Area	Long Tons Sold to the ICR	Percentage of County ICR Sales
Joggins	399,242	17%
River Hebert West	2,267	--
River Hebert East	0	0%
Maccan	166	--
Chignecto	41,596	2%
Springhill	1,864,366	81%
Salt Springs	20	--
TOTAL	2,307,657	100%

* Excluding 1886

Joggins, Chignecto and Springhill had a large role in supplying the Intercolonial. In fact, the aggregate statistics understate the case. A colliery such as Chignecto, for example, depended utterly on the Intercolonial, which accounted for 37% of its production between 1882 and 1889. When the Intercolonial turned against Chignecto coal, the enterprise quickly declined. Moreover, the Intercolonial was not the only major railway interested in Cumberland coal. In 1885 Springhill won a large contract with the Grand Trunk Railway, over the bids of all other provincial collieries. It did so again in 1891, for an amount of 65,000 tons.¹⁴⁰ The aim of Springhill was not only to capture the Grand Trunk as a steady consumer, but the line of manufactories extending along its route. As the Colliery Guardian of London noted:

The aim of the Springhill owners is to get up into Canada via Portland, Maine. The Grand Trunk railway, Canada, upon which £43,000,000 has been expended

has its terminus at Portland, and all up the 300 miles of their system to Montreal there are great and important points of manufacturing consumption. Upon these the mine owners of the head of the Bay of Fundy have fastened envious eyes and the Grand Trunk too are exceedingly anxious to have coal admitted into Portland for distribution along their system....

The same article proceeded to note the particular advantages of Springhill in this competition for the custom of the railways: "The great system of the Intercolonial railway of Canada runs right past their door, so to speak, and as Cape Breton coal appears to give less satisfaction than the firmer and cleaner coal of Cumberland, Springhill gets a great deal of the business."¹⁴¹

Initially the advantages all lay with Springhill. Its coal was excellently suited to railway use, and its location was the best of any major colliery. In 1880, for example, the Intercolonial required 88,000 tons from the mines of Nova Scotia; Springhill supplied 67,799 of them.¹⁴² In 1884 the railway contracts (60,000 tons for the Grand Trunk, 68,405 tons for the Intercolonial) accounted for 55% of total production.¹⁴³ Springhill had a guaranteed market, and it prospered accordingly.

This situation changed in the later 1880s. In 1885 a price war developed between Springhill and the Pictou collieries, which Springhill (underbidding Pictou's Vale Colliery by 62¢ per long ton) naturally won. The struggle became so intense that the managing director of the Cumberland Railway and Coal Company appealed to his men to assist his company in the fight against Pictou. The trade union was alarmed by the proposal, as suggested by this editorial in its organ:

If there is undue competition between the Cumberland and the Pictou mine owners, the consequences must be a cheapening of prices, and lessened prices for the

product means a less wage for the real producers, the workmen....If the mine operators of the two counties wish to quibble and cheat, and fight in order to draw trade the one from the other, let them do it on their own hook, and on their own responsibility. 144

In the end, the coal companies looked not to their workmen for support, but to each other. Gradually the railway brought the companies together.

After 1886 the larger companies colluded in bidding for Intercolonial contracts. In 1886, the Cumberland Railway and Coal Company, the Intercolonial Coal Company, and the Acadia Coal Company were all awarded contracts by the railway for coal at \$1.25 per ton. By 1889 this rigged price had risen to \$2.20. The Phenix Coal Company of Joggins had by that time joined the combination. The railway was aware of the situation and anxious to take corrective measures. Collingwood Schreiber, the Intercolonial's chief engineer and general manager, argued that every attempt should be made to thwart the companies in their flight from competition:

If contracts are to be awarded only to those mines in the Combination, it is very possible that at a future time, when those not in the Combine are frozen out, the fuel accounts of the railway may be largely increased by a further rise in the price. It will be observed that in 1885, before the combine was formed, the price of coal from the Pictou mines was \$1.85 and that from the Spring Hill mines \$1.23, whereas, in 1889, the combine price is \$2.20. My firm conviction is that we can, by awarding contracts to companies outside the combine, prolong the time of their independence to some extent, and thus extend the time during which we may have the benefit of competition. 145

It made perfect sense, it was in the public interest, Cobden and Bright themselves would have thought it the wisest and most liberal course. But it was politically impossible to put this proposal into practice.

In 1889 the impossibility of Schreiber's idea of encouraging

fully competitive bidding was convincingly demonstrated. In that year the Intercolonial received tenders from the Cumberland Railway and Coal Company (92,000 tons), the Intercolonial Mining Company (23,000 tons), the Phenix Coal Company of Joggins (23,000 tons) and the Acadia Coal Company (46,000 tons). All of these bids were for a price of \$2.20 per ton. However, four other bids were submitted. Two of these were too high and out of the running, but the other two were lower than the prices of the combine. One of these was a complex three-tiered price from the Black Diamond Coal Company in Westville, and the other was from the Cumberland Coal Mining Company of Maccan. If the railway took the maximum amount of coal from the Black Diamond, it would pay only \$1.90 per ton (a significant saving compared with the combine's price) and if it took 10,000 tons from the Maccan mine (at \$2.10 a ton) it would save even more. One hardly had to consult the texts of Manchester to know which way the rules of political economy pointed. 146

But what did the rules of political economy amount to when confronted with the stubborn realities of politics -- particularly the stubbornness of a Tupper? G. Hibbert Tupper, the faithful son of Charles, made the Intercolonial contract a personal crusade. He visited Schreiber, and informed the engineer that the coal from the Black Diamond mine was "very poor for steam purposes," a comment which provoked Schreiber's mirth. Schreiber had made studies of Nova Scotia coal used by the Intercolonial, and maintained two stout volumes of correspondence about complaints and comments concerning the steam-raising qualities of various kinds of coal. On the basis of this correspondence he had reached the conclusion that the Black Diamond mine deserved the

contract, which, if the coal was not up to standard, could always be voided. Tupper, who prepared a précis of the same correspondence, came to remarkably different conclusions than the chief engineer of the Intercolonial. He argued that the coal offered by the Black Diamond was "universally condemned," a revolting coal whose acceptance would be a dreadful mistake.¹⁴⁷ Indeed, Tupper doubted that it could really be considered a coal at all: various friends of his who worked on the Intercolonial reported "that the Black Diamond Coal constantly delayed the trains last year, and that it was largely composed of stone and ashes." Tupper assured Sir John A. Macdonald, to whom this quarrel was referred, that he was dealing with the question "entirely apart from any political consideration," motivated purely from a heartfelt need to save the Intercolonial from the schemes of its chief engineer. But he nonetheless did point out that the chief customer of the Black Diamond mine was the "Provincial Government of Nova Scotia (Grit)" and noted how ashamed he would be "to meet any one in Nova Scotia familiar with the Mining Interests of the Province, if upon the reports now in the Railway Department and the style of argument contained in the letter of Mr. Schreiber, ... you should deal with this ephemeral Grit Ring, known as the Black Diamond Company, in the manner suggested."¹⁴⁸ The Cabinet discussed this issue at length. Finally it decided to take only 10,000 tons from the Black Diamond at \$1.90 a ton (lower than the tender for this quantity of coal), and 50,000 tons from the two other Pictou companies at \$2.05 a ton, down from the original bid of \$2.20. Cumberland County emerged the winner, with all of its major companies getting the price they wanted. The Black Diamond mine had forced the price down in Pictou

County, but political considerations outweighed the search for economy in the Intercolonial.¹⁴⁹

This was no isolated instance. The Intercolonial contract was seen as a political issue throughout this period and into the next. After the Liberal victory in 1896, the Cumberland coal mines (which were now located, mirabile dictu, in a Liberal constituency) prospered as never before. Politicians campaigned quite openly on their ability to win new contracts for local mines. "There is nothing like having friends at court," remarked the Maritime Mining Record in 1903.

"The little mine at Minudie has been given, as its share of the I.C.R. contract, 45,000 tons; while its output will not exceed, if it reaches, the half of that. The Acadia and Drummond, get only 40,000 tons each. The independence of parliament act, is a roaring farce."¹⁵⁰

Throughout its history Springhill would be moulded by the railway. In the pivotal strike in 1879 which founded the Provincial Workmen's Association, one of the best arguments marshalled by Robert Drummond, writing under the nom de plume of "A Traveller," was that the company's demand that the men's wages be reduced by 20% was not conditioned by the contract the mine enjoyed with the Intercolonial.¹⁵¹ In the much different context of the mass insurgency of 1907-1911, the company would appeal to public opinion by claiming that the Intercolonial's reduction in the price offered for coal made existing wage rates untenable.¹⁵²

It would consequently be a mistake to imagine that the impact of the railway upon the coalfields was proportional to its impact upon society as a whole. The impact of the railway extended right to the details of production itself. Large railway contracts allowed Springhill to sell its production "run-of-mine" instead of having

it screened, and this in turn had consequences for the amount of powder used in blasting down the coal and the details of the miner's job.¹⁵³

As the negotiations for the Intercolonial contract make plain, the railway unified various companies for specific projects, and thus paved the way for more ambitious mergers. As the proprietors of the Minudie mine discovered, control over the railway could entail control over an independent mine. Once the Joggins Railway passed into the hands of a new company, controlled by Montreal but with substantial American interests, the tariff for carrying coal from the mine was raised from 27¢ per ton to 40¢ per ton, forcing the Minudie mine to shut down.¹⁵⁴

The same lesson would be driven home in 1904, when the financial difficulties of the Joggins company forced the trains to stop running, and consequently also shut down the Kimberley, Strathcona and Fundy mines in the area. It also disrupted services to farmers and lumbermen.¹⁵⁵

The mines depended upon the railway to provide coal cars; the absence of coal cars meant the closing of the mine. Conversely, the railway alone allowed mines to escape the seasonal disruptions of the mercantile economy. Remarked the mines inspector of Springhill: "This Colliery has an advantage over all others in the Province, in that its sales are little affected by the seasons, the railway requiring supplies in winter as well as in summer."¹⁵⁶ It was the railway's voracious appetite for coal which allowed Springhill to grow while all the other mines languished in the 1870s.

Springhill was the Intercolonial's greatest beneficiary. Richard Brown, manager of Sydney Mines, complained in 1888 that the Cape Breton mines were shut out of Halifax because of high freights, but Springhill enjoyed special advantages with the Intercolonial. It was galling,

he suggested, that his company had to help to pay for carrying Springhill coal to undersell its own.¹⁵⁷ At least Brown had the St. Lawrence trade to fall back upon. Pictou was in a far more difficult position.

Since the 1870s destructive price wars among the collieries had led to a demand for rational amalgamation.¹⁵⁸ Even more damaging was the new competition from Springhill. H.A. Budden of the Intercolonial Coal

Company summarized Springhill's position in terms of freight rates:

"Springhill possesses the advantage of 30¢ per ton less freight to Chaudière Junction; and 75¢ per Ton less to all points on the Intercolonial West of Springhill, over the Pictou Collieries."¹⁵⁹ The Trades

Journal, a trade-union newspaper published in Pictou County, was moved to remark in 1887: "I see the papers are boasting that the Spring Hill Mines are raising two thousand tons of coal daily, and large as that output is, it is one third short of the demand....The agents of the Pictou collieries should not allow those who cannot get their orders filled in Spring Hill to go begging to the States. Let them make a bid for Spring Hill's superfluous orders."¹⁶⁰ Pictou County had been a thriving coal-mining centre when Springhill's resources were unexplored; now it seemed reduced to picking up the orders Springhill was unable to fill.¹⁶¹

One need not be a disciple of Thomas Keefer to be impressed with the changes brought about by the construction of the railway, at all levels of economic life. In a short time the province's least important coalfield was transformed into the most strategically positioned. It can only be described as a remarkable reversal. Springhill was the only coalfield in the province to be created in this way. Also unique, in the opposite way, was the Joggins coalfield -- unique in the primitive

level of its development, and in the long delay before it attained a modern form. The railway -- or, to be more precise, the socio-historical process of industrialization of which the railway was one manifestation -- created this dualism at the same time as it unified the coal industry in new ways. The logic of development initiated in 1865 was the same throughout the province, but this logic had different consequences, it created two radically contrasting structures. It is to this underlying dualism that we now turn.

3. The Growth of the Springhill Coalfield.

In the years 1865-1873 the Springhill coalfield was born. From 1873 to 1884 the coalfield grew rapidly. In 1885 it made a leap to a new level of production, at which it maintained itself for the remaining period (with marked fluctuations). The essential structure of the Springhill coalfield's development from 1873 to 1900 is consequently one of very marked growth from 1873 to 1884, and a sharp upward movement in 1885 followed by stabilization.

A complete body of corporate papers is not available for the Spring Hill Mining Company. Certain facts are clear. After the scandal involving mismanagement of the company's funds in 1873, the new management enforced a strict discipline. The Prospectus of the company had an optimistic view of its future profits. "Taking the low average of only 80 cents per ton, inclusive of repairs of machinery, &c., and assuming only 100,000 tons as the annual production at first, we have a gain of 20 per cent. on the capital, which might be augmented by the rent of other seams...From the exceptionally high character of this coal, and the facilities for raising it cheaply, this quantity, it is confidently believed, might ere long be doubled or trebled, and a

larger rate of profit secured even with considerable increase of capital."¹⁶²

The programme was ambitious; but the new management under W.E. Vroom meant to make it succeed by frugal and disciplined management. Robert Drummond remembered the thriftiness of the management: "From the first the enterprise was an astounding success, due in greatest part to its geographical position and in large part to the untiring vigilance of the directors, a majority of whom visited the collieries at short intervals, thereby keeping the manager, much of the time on tender

[sic] hooks."¹⁶³ A colloquial expression for the strategy of the company might be "cheese-paring." One suggestive indication of this management style was brought forth in the momentous strike of 1879 which founded the Provincial Workmen's Association. Most major mines in the province relied upon iron rails, but in Springhill the management used wooden rails. A miner complained: "[T]he miner has to drop his pick and assist the loaders with each box; for it requires two men with all their strength to do the work one should do with ease if we had iron rails."¹⁶⁴

It was a short-sighted policy suitable for a commercial promotion, not for a major industrial concern.

It must be borne in mind that the company was functioning in a period of commercial crisis. Investors in Saint John would hardly have welcomed heavy expenditure in a mine. In 1872, when the Spring Hill Mining Company purchased from Senator Macfarlane and his partners the three square miles of coal areas at Springhill for \$270,000 paid-up (unassessable) shares, the whole capital of the concern was but \$400,000. The old proprietors received an additional \$20,000 allowance in 1873, after much of the stock was sold by E.N. Sharp: one-half of the allotted stock of the old proprietors was bought at 10% discount

for cash, and the remaining working capital was taken up at par value.¹⁶⁵

There is no solid reference to an involvement by a bank in these early dealings.¹⁶⁶

The inference is that the company was not able to invest heavily in the Springhill mine, through a combination of its initially modest capitalization, the economic conjuncture, and the underlying conservatism of its management. A further constraint may well have been the continuing presence of the General Mining Association, which retained its claim to four square miles until 1878. It was thought that these areas cost the Springhill company some £60,000.¹⁶⁷ The purchase of these areas enabled the company to preserve its monopoly on the coal of Springhill.

What a scattered documentation makes clear is the high level of dividends exacted from the company by the Saint John investors. In 1878, there was evidently a profit of \$44,000 on the coal sold after all expenses, which left shareholders with a profit of nearly 9%.¹⁶⁸

In 1880 the Company declared a dividend of 5% on capital stock of A shares, the only shares entitled to a dividend.¹⁶⁹ Robert Drummond,

in various places, remembers the dividends before 1879 as 10%, 17% and 20%.¹⁷⁰ These dividends were high, when placed in the context of the

coal industry; they were not, when placed in the context of the shipping industry and its high returns.¹⁷¹ The strategy of minimal capital

investment and maximum dividend levels seems to agree with the interpretation of a short-term company moulded by the imperatives of the commercial crisis and not by a strategy of industrialization. It was characteristic that the company took great pride in being (so it claimed) the only business house in Saint John without a single debt standing against

it.¹⁷²

The sale of the railway and the coal mine to Montreal interests in 1882 and 1883 was an epochal event in Maritime economic history. Apart from the purchase of the New Brunswick Railroad in 1880, the arrival of the Cumberland Coal and Railway Company -- whose name was soon changed to the Cumberland Railway and Coal Company -- was the first major takeover by Montreal capital in the region. The deal was put together by both local and Montreal figures. In one account, William Headley, manager of the Dun, Wiman & Co. exchange in Halifax, was instrumental in the negotiations:¹⁷³ The capitalists of Montreal first acquired the railway. The dissolution of the old railway company was accomplished by an act of the Nova Scotia Legislature in 1883, which noted that the company was not able to pay the accrued interest owing to the holders of its bonds, and consequently sale of the property was necessary to pay the proceeds pro rata among the bondholders.¹⁷⁴ In the same year the Cumberland Coal and Railway Company was incorporated with a capital stock of \$2,000,000, divided into 20,000 shares of \$100 each. The initial emphasis of the company was on the railway, although by its federal act of incorporation the company was given the right to "buy or lease other coal mines or coal lands" in Cumberland County. The incorporators were John McDougall, Robert Cowans, David Morrice (all of Montreal), Louis Adélard Sénécal of Quebec City, and James Crossen of Coburg, Ontario.¹⁷⁴

The sale of the mine came in 1883. This took place shortly before the formal incorporation of the company. The stockholders of the Spring Hill Mining Company at an "informal meeting" in June, 1883, resolved to dispose of the company's stock to the Canadian syndicate, at a price of \$890,150. The present stockholders were to receive

the dividend up to 1 July, not to exceed 5%.¹⁷⁵ Remarkd the Trades Journal, in a commentary that has an ironic ring given its author's later encomia for monopolies: "We consider this a first rate 'spec' for the sellers, who acquired the property at a comparatively low figure, and... a good investment to the buyers, At the same time it would have been better had the Syndicate developed the area already held by it, and allowed the S.H.M.Co. to proceed as formerly. All would be better for a little healthy competition. Monopolies are bad things as a rule."¹⁷⁶

The resources of Springhill were thus transferred to new hands, and the claims of Saint John were relinquished. It was a significant development. In many respects the Maritimes, having been colonies of Britain and subject to its coal monopoly, moved swiftly into the colonial system of Montreal. The Maritimes represented a resource frontier for Montreal capital, contributing to its power and hegemony in much the same way as Northern Ontario contributed to the rise of Toronto. The significant difference was that, in the case of the Maritimes, a process of autogenous development was overridden by external capital. No substantial body of contemporary writing exists which would help us understand what the motivations of the sellers and buyers in this transaction were. But there is enough to allow us to arrive at some tentative conclusions.

The Saint John investors seem to have been motivated by short-term considerations. They abandoned the mine when it was making a profit, and enjoyed a guaranteed market in the region and in the railway system. It was a decision which can only be explained by their belief that their capital could be better deployed in other ventures. It

should be remembered that at this stage the coal of Springhill was easily reached. The mine had attained only a relatively shallow depth (400 feet in 1884).¹⁷⁷ It suggests that the merchants of Saint John were unable to transcend the structural limitations of their class. The motivations of the Montreal investors seem to have been more complex. It does not appear that they were motivated by considerations of secure fuel supply, since Springhill coal was not well-positioned for entry into the Montreal market. The Montreal men were first attracted by the railway, which they obtained at an excellent price. This made the takeover of Springhill different in nature than subsequent sales of local coal concerns. The historian David McDougall has compiled a group biography of the directors of the new company. The president, John McDougall, had established a carwheel foundry on the banks of the Lachine Canal, and an iron works at Drummondville which in the late 1880s produced about 20% of the pig iron made in Canada. The vice-president, Robert Cowans, was McDougall's brother-in-law, and had been his junior partner in the iron works. David Morrice and James Crossen were prominent in business, Morrice as a textile magnate and Crossen as the founder of the Crossen Car Manufacturing Company in Coburg, Ontario. Louis-Adélarde Sénécal was a prominent politician and railway promoter.¹⁷⁸ R.G. Leckie, who was elected to the board of directors and later became general manager, had extensive interests in copper mines in the Eastern Townships. E.S. Clouston, general manager of the Bank of Montreal, was elected to the board in 1885. His appearance on the body was doubtless connected with the loan made by the bank to the company to purchase the mine, a loan completely paid off by the profits of the concern in 1885.¹⁷⁹

Most of these men had one thing in common: iron. They were industrial capitalists, who had made their money in the foundries, car works, iron mills and railways of the new age. Clouston was the only significant exception -- and his presence suggests the access this group enjoyed to the vast capital of Montreal, which had financed the takeover. It seems safe to suggest that these men came to Cumberland County to pick up an inexpensive railway and merge it with Canada's most productive coal mine. Normally the conquest of a Nova Scotia coalfield by external interests was the conquest of a fuel source by its market. In this case, however, there is nothing to suggest such a motive. Rather it appears that the Montreal men were able to perceive what the Saint John investors had missed: the tremendous industrial potential of Springhill.

In some respects the Montreal company was a hybrid. Initially it had a board which represented a cross-section of important central Canadian interests. Step by step, however, the company became a "family business" controlled by two inter-related families, the McDougalls and the Cowanses. The Saint John company had been a company open to the public, selling shares on the open market and dependent upon promoters and imaginative literature; the Montreal company was closed, sold no shares publicly, and conducted its business with the utmost discretion. From a joint-stock company the mines passed to a family business -- although this was no ordinary family, but one which through a long industrial apprenticeship had earned its right to prominence in the rarefied business atmosphere of Montreal.

The impact of this change in ownership was evident immediately.

It should not be imagined that the Spring Hill Mining Company had left their property unimproved. In 1873 and 1874 much work

was done in building dwellings for the men, erecting houses, clearing land, finishing the railway, installing a system of wooden pipes to carry water for the engines (for despite its name, Springhill is not blessed with an abundance of water).¹⁸⁰ By 1875 the Mines Report noted the erection of a screening apparatus to separate the slack coal from the dust and fire clay and experiments on the fine coal to test its adaptability for coke-making.¹⁸¹ The extraordinary good fortune of the company became apparent with the surprising discovery of the West Slope. The company had two slopes which were thought to be located on the same seam. An effort was made to connect them, and their upper levels were pushed towards each other to do so. It was then discovered that the east and west slope workings were in different seams, distant 60 yards from each other horizontally. By 1878 there could be no doubt: two seams existed where only one had been thought to be, since the faces of the two approaching levels had passed each other by five chains. This unforeseen discovery opened up a vast new block of coal for the company.¹⁸² Even though the company was afflicted with a major fire in the engine house and the destruction of much of its machinery, it continued to expand its operations. In 1879 and 1880 new equipment was installed, including a telephone for underground communication, new screens, and a large furnace for ventilation.¹⁸³ It would be a grave mistake to equate the reign of the Saint-John company with complete technical stagnation.

Yet compared with what followed the arrival of the Montreal company, the efforts of its predecessor seemed puny. From 1884 to 1889, according to the petition of the Cumberland Railway and Coal Company filed in the later year, the firm "expended in the purchase and equipment of their

coal mines in Nova Scotia upwards of one and a half million of dollars apart altogether from the cost of working the same."¹⁸⁴ Assuming that the initial cost of the mine is included, this would mean that the company claimed an additional investment of over \$600,000 in the property. Other sources back up this impression of an ambitious programme of modernization. The breaking of production records by the company became a stock item of the provincial press. In 1881 the output from the Springhill colliery exceeded the total provincial sales for 1851. In 1882 the Trades Journal noted that "The output of coal at Springhill in August was 20,000 tons, the largest output of any mine in N.S. for one month."¹⁸⁵ The same year the astounding statistic was reported that the company had shipped, during the nine months ending September 1882, more coal than the sales from all the mines in Cumberland County in 1880.¹⁸⁶ There were hoisted from the collieries in one day in July 1887 over 2,000 tons of coal -- the largest output ever attained,¹⁸⁷ and in October 1890 the output from the collieries exceeded 53,000 gross tons and shipments nearly 50,000, setting a new record for Nova Scotia.¹⁸⁸ Springhill had something of the popular image of a coal-mining Klondike, with the significant difference that the individual prospector had long since been pushed to the fringes.

This should not suggest that the company did not encounter difficulties, but none of these problems matched those of Joggins or Chignecto. The Syndicate Slope, a fifth slope developed on the Barlow seam, was closed off in 1889 by damming water against it, and this seems to have ended its role as a major producer; but this was hardly a disaster, considering in the same year the company opened a new slope (which, having run out of points on the compass with which to name slopes,

they called No. 5). The four major slopes of the Springhill mining complex, No. 5, the East Slope, the West Slope, and the North Slope, began to develop an interconnected system of travelling ways and were increasingly planned as one vast complex, any part of which would have overshadowed other area mines. Although the company did experience problems with flooding (an unusually severe rainy season in the fall of 1888 for a time overpowered the pumps of the mines)¹⁸⁹ the company responded with its customary enterprise, building two new dams capable of holding 2,893,000 gallons of water, and installing a stopping and new pumps to control the water.¹⁹⁰ Although the Springhill colliery was in 1891 to have the worst explosion in the history of Nova Scotia, once again the company did not face any serious economic problem, and only two weeks after the explosion the mines were again being partially worked; the very slight underground damage standing in stark contrast to the huge loss of life. In the 1890s further steps were taken to integrate the diverse mines within the colliery: Nos. 1 and 2 slopes were connected overground by an advanced trestle-work 597 feet long, which made loading cars extremely easy; and a double revolving screen, erected at No. 2 slope, served both 1 and 2 Slopes.¹⁹¹ Already, in 1893, the deputy mine inspector was speaking prophetically of the need to adapt to the much greater depths at which the mine was working and the enormous pressure now being exerted on the roof by the superincumbent strata.¹⁹² The longwall system was introduced in No. 3 Slope on the east side, evidently with good results.¹⁹³

More serious difficulties were to be encountered in the 1890s, problems which would have forced a less profitable company out of the field, but which the Cumberland Railway and Coal Company surmounted with

characteristic aplomb. The connected engine-houses and bank-houses of No. 2 and No. 3 slopes ("two of the best bank-head plants in Nova Scotia," the deputy inspector's report noted sorrowfully) were burned down on 19 December, 1895, despite their having been equipped with all the latest fire-fighting equipment.¹⁹⁴ On the following 24 December, a fire started in a portion of No. 1 Slope known as the pipe bord. This fire was gradually extinguished over the next year, through an ingenious use of the company's reservoirs and a mixture of fireclay and earth.¹⁹⁵ The company seemed to survive flood and fire with equanimity. The new bankhead erected to replace that destroyed in 1895 was even more solid than that which it replaced and was specially designed to be fire-proof: "Recently a splendid new bank head and screens have been erected at No. 2," noted the Maritime Mining Record. "As Spring Hill has been a frequent sufferer, from bank head fires, every effort is being made to make the latest bankhead as near fire proof as possible. The bank head and screens have been covered with corrugated iron." Efforts were underway to coat in a similar manner all the buildings which stood in close proximity to the mines.¹⁹⁶ What explains this willingness to invest was the irresistible allure of future profits. The deeper the mines went, the better the coal became. Just as, in the late 1870s, the first company found two seams where it had expected only one, the second company now discovered that the deeper it went, the greater the reserves of coal appeared to be, and the better its quality. As the deputy inspector remarked, "It is a fact that all our coal seams improve in quality towards the deep, but in this seam No. 3 the improvement is greater than usual. The small bands of coarse coal, which render it difficult to make clean coal, have entirely disappeared,

and nothing now remains but the pure coal, which to all appearances is much superior in quality to that which was nearer the rise."¹⁹⁷ Springhill coal was thought by Robert Drummond, who was not one to go in for inflated claims for local coals, as equal to the general run of the best American coal; speaking of the newly discovered seams, he said, "If the underlying seams are of workable thickness, and if the quality is as good as in the 'first' seam lately intersected, then there has been discovered in Springhill another Klondike, with this in its favor, that it is nearer home and has better facilities."¹⁹⁸ The Springhill coalfield, Drummond later remarked, seemed to grow larger the more coal was taken out.¹⁹⁹

The official visitors who came to Springhill in 1873 to open the new branch line noted the stumps, the meagre bankhead facilities and the encroaching forest, from which the fledgling town had won only its first victories. The visitor at the turn of the century carried back a far different impression. "A little over a quarter of a century ago the town of Springhill was not in existence; now it has a population of about 6,000 people, who have been drawn to the locality by the great success attending the Cumberland Coal and Railway Co.'s operations," noted the Mining Record. The main workings of the mine now extended over a mile to the southwest beyond the point where the coalfield had previously been thought to terminate.²⁰⁰ Where the stumps had once been, one now found the workmen's houses, churches, schools, and stores. The brave little effort inaugurated in 1873 had grown into a giant mining complex. Robert Drummond, who surveyed the works with a knowledgeable eye (having worked at Springhill in the 1870s and 1880s), noted the many changes: "The West and North Slopes are contiguous,

and the work of concentration, that has been going on for years, is apparent. Here is the machine shop, and over there the handsome lamp and electric light stations. There is a look of system about the place which in previous years was lacking. The lamp station is a stone building fitted up and having the latest machinery for quick cleaning and repairing of the safety lamps... All parts of the works and offices are connected by telephone. The machine shop has been enlarged, and is to have a further extension of thirty feet, so as to allow of all the locomotives being properly housed, and near to the repair shop." The place buzzed with machinery and enterprise. The huge fans at No. 2 and No. 3 could create a gale of wind, strong enough to send large pieces of board flying before them. The company's bankhead, already considered a marvel of engineering, was to be enlarged with a new circular addition.²⁰¹ Thousands of feet below the surface hundreds of boys and men were at work, getting the coal out with an efficiency that the visitors of 1873 would scarcely have believed. Springhill, with its smokestacks, railway sidings, and humming machinery, seemed to have more than fulfilled the promise dimly perceived a quarter of a century before.

4. The Failed Transition in the Joggins Coalfield

In the interior of the county, the transition from incidental exploitation of the coal seams to major industry took place without a lengthy intervening period of mercantile capitalism. It is only a slight exaggeration to say of Springhill that it was created ex nihilo by the age of Confederation and the railway. The transition in the Joggins was, in contrast, a hesitant, incomplete and unsuccessful transition from a mercantile to industrial coalfield. Here the crucial

phase of transition occurred two decades later than it had in Springhill. By this time the character of capitalism had changed. The accumulation of capital in the centre and the pivotal role played by stock-brokers and bankers entailed a far different development in Joggins than had occurred in Springhill. Springhill was, in the Nova Scotia context, sui generis: a coalfield built by the railway. Joggins, on the other hand, was a lurid anticipation of precisely the same developments which were to transform the Cape Breton coalfields and ultimately those of the province as a whole.

No account of the Joggins coalfield can avoid discussing the geological features which set this coalfield apart. The thin seams of the area have already been discussed. Can we explain the distinctive features of the transition in this coalfield in terms of its difficult geology? Did the thin seams and poor quality of the coal resource rule out the development of a large industrial coal complex?

Geological determinism, carried to its logical limit, would make it impossible to understand the development of the Joggins coalfield in the first place. The resources of the area were able to sustain a large number of coal companies. The coal was sold in a wide variety of markets. Given the inferior quality of coal and the real difficulties of thin-seam mining, the Joggins coalfield played a considerable role in the local economy. Yet we would also do well to give geological structures their due. Thin-seam coal mining imposes upon the companies very real constraints and defines the limits of settlement in a peculiar way. One need only look at the map: the communities of the Joggins coalfield are strung out along the outcrop of the seams, in a thin band, sustained by dozens and dozens of small mines. The reasons for

this are economic. The company exploiting a seam of four feet will reach a point of diminishing returns at which the cost of extracting the coal will be higher than the value of the coal taken out, and it will reach this point twice as fast as a company exploiting an eight-foot seam. Therefore the logical outcome of a zone of thin seams is the proliferation of small mines. This proliferation, as an effect of geological realities, becomes in turn the cause of other limitations upon the companies in such a zone. With many small mines developed without order or plan in the same area, one mine may easily block the progress of its neighbour. Water within an abandoned mine easily became an obstacle for mines nearby, even if these were on distinct seams. Moreover, the development of a coalfield is irreversible. The mines, even if they are filled in, cannot be wished away, and they pose limitations for each new generation. It is idle to suppose, for example, that traditional mining can recover any large quantities of coal from the worked-out areas of the Joggins coalfield today.

The coalfield's geology imposes limitations upon anyone who wishes to live off its resources: there is a decisive finality about this fact. One need only compare Springhill, where the coal seams are thick and centralized, to the Joggins coalfield, where the seams gave rise to a far different form of settlement and a far different way of life. Yet it is just at this point that the historian must be cautious. It is only within a certain type of economy that such geological facts acquire this socio-economic significance. Forgetting this essential point means endowing natural facts with super-human power. A moment's reflection will reveal that it was very possible that the resource endowment would have a very different significance. One need only remember the long

period (from 1755 to 1848) that they did indeed have a different significance. Moreover, it is possible to imagine a society in which the decision to exploit or ignore a resource is a collective one, based on social needs, human values, and the wishes of local residents. Geological facts acquire their finality and decisiveness only within the context of capitalism, only as one part of an interaction between the socio-economic formation on the one hand and the natural formations on the other. Only if we remember this dual aspect (the appropriation of nature as an aspect of the appropriation of the product) can we hope to explain the different 'readings' made of this terrain by various companies and men.

In the 1870s and 1880s the coal companies of the Joggins coalfield clung desperately to life. A memorandum in 1890, besides offering a succinct summary of the coalfield's history, underlined the precarious situation of this period:

The Joggins Coal strata extend from the Joggins Shore to the Intercolonial Railway, a distance of about Twelve Miles, crossing the Maccan and Hebert or Minudie Rivers. Coal has in times past been shipped from this river as well as from the Bay shore at the Joggins, but owing to the expense and uncertainty of water carriage these Mines were one after another closed up, with one exception, namely the Joggins or Phenix Mine. The Acadia Coal Co. [the author almost certainly means the New York and Acadia Company], the Lawson Coal Co., The Laurence [sic] Mine, the Victoria Mine, the Prospect Mine and finally the Minudie Mine were one after another closed up, and the Joggins Mine was kept alive by incurring a debt of over \$60,000 and by ceasing to pay government royalties. The Coal owners were forced to adopt either one of two alternatives, either to abandon properties that had cost hundreds of thousands of dollars, or to construct a line of Railway, in order to secure a certain means of transportation at all seasons of the year and to enable a regular output to be made. 202

A.J. Taylor, the noted historian of the British coal industry, speaks of the almost "unconscionable" tenacity of mines vis-a-vis markets: it takes tremendous pressure to force the abandonment of a mine, which

means, for investors, the abandonment of their money.²⁰³ Only one coal mine in the Joggins coalfield withstood the tremendous pressures of the 1880s and kept up continuous production.

The Saint John companies which acquired control of the Joggins from the General Mining Association in 1871 (the Joggins Coal Mining Company and the Joggins Coal Mining Association) brought about a qualitative change in production at the mines. The Joggins mine experimented with longwall mining in 1873 (whereby much more of the coal could be extracted) and improved underground transportation by building new incline roads. A striking sign of improvement was the building of a 160-foot long pier (funded by a government grant of \$10,000) which made the Joggins anchorage far more safe for vessels loading coal. A coal chute was used which brought the coal by a series of checks and doors; the 140-foot drop (on an angle of 25°) could be thus negotiated without difficulty.²⁰⁴

Additional evidence of the improving drive of the Saint John management was provided by the first application of electric signalling in provincial mines in 1877. In the late 1870s a new slope was opened; in 1880, a ten-inch force pump, built by the Yarmouth Iron Works, was installed; in 1883, the automatic haulage arrangements of the mine prompted the Mines Report to observe that the arrangements of the colliery "are of a permanent and convenient character, suitable for a much larger output than any yet recorded from this colliery."²⁰⁵ Compared with the history of the General Mining Association, the Saint John companies were innovative and imaginative. But all of this determined innovation went for nothing in a location which condemned the mine to an insecure hold on even the Saint John market. Competition from Springhill and other mines and the general irregularity of trade made the investments unprofitable. The

great fire in Saint John in 1877 entailed a reported loss to the Joggins Coal Mining Association of \$5,078.31 arising from the destruction of the coal sorted in the company's sheds and from parties owing money, to the company being unable to pay.²⁰⁶ It was a weakened and embattled company which entered the 1880s.

The company adopted the policy of subleasing the mines, first the "Hardscrabble" property which it leased to the Phenix Coal Company (the name evoked the fire and the new penchant for commercial English) and then the main mine at Joggins, which was leased to the same company. This company was unable to do much more than sit on the mine and wait for the railway.

Throughout the Joggins coalfield the pattern was the same. At the Joggins such companies as the East Joggins Mining Company, incorporated by Sackville interests, and its successor, the "Bay of Fundy Railway and Coal Company," were fugitive concerns of little lasting importance.²⁰⁷ William Patrick made a valiant effort--perhaps his last--to create a successful mine at Maccan; he was plagued with unsteady markets and a fire at the engine house. His Amherst Coal and Mining Company (capitalized at \$40,000) sold out to other investors in 1889.²⁰⁸ Also at Maccan, the Lawson Mining Company of Boston--home of all the company's shareholders--made an effort to exploit local coal seams, and such local entrepreneurs as Abner Ripley and J.T. Smith opened very small mines (employing from 4 to 10 men) near the Maccan Station. Their principal mine was abandoned in 1900 "for want of facilities for handling the product."²⁰⁹ Gilbert Seaman kept up mining coal at River Hebert West, but after modernizing the mine in the Minudie mining area, he was forced into inactivity by soft markets; he finally sold out to an Amherst music teacher, who kept the mine going in a very small way.²¹⁰ The Boston Coal Mining Company merged

the separate Lawrence and Victoria mining areas in River Hebert East but was able to do little with them.²¹¹ Everywhere in the Joggins coalfield the 1880s were disastrous.

The most appalling corporate catastrophe took place at Chignecto. The quality of Chignecto coal for most purposes is considered the worst in the Joggins coalfield. There are impurities in it, and the seams, if not properly handled, are prone to spontaneous combustion. Complaints about the problems of Chignecto surface as early as 1868 in the correspondence of William Bennett, the American who first tried to make his fortune here. He blamed William Patrick for bad mining practices, which had produced a quantity of coal "so badly mined as to be almost valueless....[T]hat portion that was shipped did not pay the expenses of transportation and destroyed the credit and reputation of the mines to such an extent that work was stopped and quite a portion of the Coal thus mined now lies at the shaft utterly worthless."²¹² It was an inauspicious beginning. Part of the problem lay with the character of Chignecto seam, which with an average of ten feet is the thickest of the seams of the Joggins coalfield, but which is also the 'dirtiest'.

William Maddin, the competent but somewhat unlettered deputy inspector of mines for Cumberland, described Chignecto's problems this way:

"Chignecto mine is in good order but they had had a plase to fall in And it may give them bother with fire as it seems when a plase falls it generly goes on fire in a Very Short time if there is aney water coming through and I notice there is Some water in this plase [.]"²¹³ "Speaking in general terms," noted a Department of Mines memorandum on the seam, "the coal improved somewhat in quality to the dip, but never became a deposit of uniform good, or even fair quality. I have never seen any

analyses of it, but it has always been considered inferior in quality to any worked in the district."²¹⁴ Irrational mining practices aggravated the natural problem of spontaneous combustion. There were two major coal-mining areas at Chignecto, the Scotia Mine and Chignecto Colliery; the first-named was located on a strip of crop coal, too small ever to be more than a tiny operation. Because of the special nature of coal in this district, the little mine damaged the prospects of the larger one. "The coal of this seam," remarks the Mines Report,

when mixed with roof stone and moistened, ignites spontaneously. The workings on the brook ignited several years ago, and a similar result of neglect of the laws of nature is now taking place in the western extension of the mine. As there is on this area merely a strip of crop coal in this seam, it is regrettable that a lease was ever granted. The barrier...provided between the Scotia and Chignecto workings contains more coal, which can never be removed, than this mine will in all probability ever produce. As the workings are extending along this crop coal they form a reservoir for water, and must prove a menace to future workings in lower sections of this seam. 215

Mining at Chignecto was a daunting prospect. The seams of Chignecto pitch steeply, from 38° to 40°--coal cars were specially fitted with a middle board to allow the movement of coal without tipping. If one is anxious to emphasize the natural liabilities of the Joggins coalfield, one turns to Chignecto.

Why the Londonderry iron works wanted this property, for which in 1881 it paid \$46,000, is one of the mysteries of the Cumberland coalfields. This was the realization, at long last, of Gesner's old ambition: the integration of the iron resources of Colchester with the coal of Cumberland. But if the iron company revealed its true measure in its selection of a site, it is small wonder that it subsequently went bankrupt. Possibly the company was attracted by the low price, or by

mistaken reports of Chignecto's promise as a coke producer. It was easy to refurbish the railway connection with the Intercolonial. Whatever the motivations, the results were disastrous. A large amount of money was invested. The manager's house--always a top priority when founding a colliery village--and other workmen's houses were erected at Chignecto in 1881; a blacksmith's shop, boiler-house, and modernized bankhead followed rapidly. A locomotive was put on the railway in place of the horses which had drawn out the coal cars since the 1860s. The bankhead was using electric lights by 1882.²¹⁶

This ambitious programme was undone with brutal speed. By 1884 the mine had displayed its problems: an explosion of gas in that year coincided with a bitter strike, occasioned by the wage reductions demanded by the hard-pressed company. The problem of combustion, earlier confined to coal in the upper workings, now affected deeper levels as well, forcing the company to close them off. Coke-making proved to be unsatisfactory. By 1890 the majority of the workers had been dismissed; only 19 or 20 stayed on to try to find a workable seam of coal.²¹⁷ The little village of 250 souls was left to fend for itself. Most of the population moved elsewhere leaving behind them empty houses and an abandoned colliery, brought to life only in the winter by a few men who took out some coal for local purposes. With the wind whistling through the deserted homes and playing idly with the machinery, Chignecto formed the very picture of the desolate abandoned village.²¹⁸

It was an exaggerated version of the same story which affected all the collieries of the Joggins coalfield. Everywhere the absence of a secure market meant the collieries were stagnant or even abandoned. It seems small wonder that the mining men of this coalfield--and especially

River Hebert and Joggins--pressed so hard for a railway which would transform their coalfield.

The arrival of the railway in 1887 did make a big difference, especially in the Joggins. From an output of 16,649 long tons in 1887 the colliery expanded to 48,448 in 1889. It would attain its peak in the nineteenth century in 1895 at 110,082 long tons. Clearly a change had occurred. It was a change in the demand for coal and in the ease with which Joggins Coal could be brought to market. In 1890 the less seasonal pattern of production was noted with satisfaction: "The railway from Joggins to Maccan has enabled this mine to maintain a steady output all the year round."²¹⁹ New markets made possible new methods of production. Under the management of James Baird, the mine was extensively re-timbered. Confidence in the security of demand for coal was evident in the adoption of longwall mining in two-thirds of the mine.²²⁰ The coal chute which had represented the acme of enterprise in the early 1870s was replaced by a more innovative arrangement by which two tracks carried coal to the improved wharf, where several vessels could be now loaded at the same time with various kinds of coal.²²¹ In their inimitable manner the newspapers of the day noted that the future had arrived and had been shown to work: production records were being broken, men were working overtime for good pay, the "management of the mines say that the rush is bound to continue and they are preparing to go ahead with the boom."²²²

Perhaps the most dramatic sign of the transition was the interest taken in the Joggins by investors. The area was buzzing with rumours in the late 1880s about a great "coal deal" with a foreign syndicate. R.G. Leckie, the former manager of Springhill (and the unfortunate

promoter of the Springhill to Oxford Railway) offered \$240,000 to the owners of the Phenix (Hardscrabble) and Joggins mines. He wanted to sell the stock on the London market. The Phenix Company refused the offer, which prompted an outburst from Robert Drummond, editor of the Trades Journal.

There must be some unsolved mystery about the coal trade, when we find those in it decrying it as an unprofitable business, and yet holding on to it with an eager tenacity. The refusal of the Phoenix [sic] Coal Co'y to sell out to Mr. Leckie for the snug sum of \$290,000 [sic], should shake the faith of men wont to listen to the wail of the coal men. The "Joggins" has never been looked upon as a promising investment. The drawbacks connected with the working of the seam... led people to the conclusion that if the "Joggins paid" then every colliery in Nova Scotia should pay. That it does pay is evidenced by the fact that the shareholders have refused to accept a handsome price for it.

Drummond cited a "trustworthy source" who claimed the profits of the company in the past year had been \$21,000, or \$.25 for every ton of coal sold at \$2.00.²²³

Drummond was anxious to underline the hypocrisy of the coal men in Nova Scotia, who were perpetually crying poor, but he did have a point. That anyone should want to buy the Joggins mines, and for \$240,000, was a remarkable change. Even more striking is the success with which a bargain was made with English investors in 1891.²²⁴ That the mines had finally been sold, remarked the Saint John Globe (in a remark which typified Maritime responses to foreign investment in general) was a great tribute to the steadfast courage and tenacity of the Saint John men who had sold out. Here was the beginning, it hoped, of a vast merger of the "vast mineral resources of this country with British skill and capital,"²²⁵

It was the beginning, in fact, of a classic resource speculation.

From 1891 to 1894 the property passed through five separate phases. Mining promoters in London, New York, and Montreal were all swept up in the promotion. Although the Canada Coals and Railway company was ostensibly a Montreal concern from the beginning, New York capital and Toronto capital were also involved. With each new set of promoters the Canada Coals and Railway Company glowed a little more brightly. Skilled promoters passed over the defects of the pit and its location, and made it sound just like another Springhill. The dénouement came at a Montreal dinner party in 1894. Once the coal seams of Joggins had been sealed because of the Duke of York's jewellery; now their future was determined at a Montréal soirée. A New York promoter came to Montreal, the property in hand, advertising it as "one of the best things of the past or present generation."

This New York man came to Montreal some dozen years ago [it was remembered in 1904], bearing the best references. He was introduced to the local magnates right and left, and eventually he was given a dinner. Those attending the function represented the foremost financial and commercial concerns in Canada... When the bill of fare had been thoroughly discussed, and all about the board were feeling at peace with themselves and the world at large, this coal proposition was launched. They bit, one and all, like hungry trout at a bright red fly....

And so the Canada Coals and Railway Company was launched, at a dinner some of the shareholders would later remember as the most expensive they had ever attended. 226

The fate of the Joggins was determined; it was to rush from mercantile poverty to the lurid stock-watering of financial capitalism without an intervening period of solid industrial growth. It was a high penalty to pay for the failure of the railway scheme in 1872. The new company was absurdly over-capitalized. This had social consequences as well as financial ones. During the strike of 1896, during which the

workers took up firearms, the Springhill News and Advertiser remarked that the Joggins company was compelled to reduce wages, but added:

...the important lesson of the incident is the fact that in recent years the valuation of the Joggins property has been unduly inflated. The property has changed hands, each time an added capitalization being the result. A property that can pay a handsome dividend on a capitalization of \$40,000.00 may be unable to pay when its valuation goes up to a quarter of a million. The speculators reap the benefit of such transfers and inflated values, but the result to the hard worked miner is that he is asked to work for love, and to suffer hardship and bear danger in order to pay interest on such inflations.... 227

The government, thought the Springhill newspaper, should keep a closer check on the mines. There was little chance of that. The state was itself to initiate such a stock promotion with its coal resources, and had little intention of interfering.

By the early twentieth century everyone knew that the company's days were numbered. In many respects it was a bitter end to a promising history. Robert Archibald, the manager, had been an ardent advocate of scientific mining at Joggins. He had tried to conduct the pit in the approved manner. By 1902, he was a beaten man--defeated not by geological facts as much as by socio-historical ones. Edwin Gilpin summarized his predicament precisely in a letter he wrote to another mining company:

Mr. Archibald came to this country some years ago from Scotland with very good recommendations, and has been employed at the Joggins Colliery, Cumberland County. I understand that he is leaving that place as it is a small mine, and the owners who paid an exorbitant price for it are embarrassed for funds to properly develop and work it. 228

At the end it was a disaster. The company collapsed in 1904, and the property was put up for sherriff's sale on behalf of the bondholders. There were \$750,000 worth of bonds representing investments from

Montreal, Toronto, England and the United States. The property was sold for \$50,500. The company was even unable to pay the \$9,000 owed to its workers, whose 'back-pay' became a cause célèbre in labour circles. It would be difficult to think of a more lurid example of the twentieth-century mining promotion.²²⁹

Even Joggins, which most nearly completed a transition to the status of a major industrial colliery, came to typify the frustration and failure of the coalfield which bore its name. From Joggins to Styles the record is consistent. It establishes beyond doubt that there were two coalfields in Cumberland County, different from each other in their geology, their economic patterns, their internal logic. Within the very restricted compass of one small county one observes the emergence of two principles of economic life, and with that, as we shall later see, two very different kinds of class formation and class struggle.

5. Conclusion: The Coalfields Transformed

The Cumberland coalfields were transformed in the years 1873-1900 into functioning parts of the industrial economy of the region. This transformation was most visible at the two extremities of the coalfields, and least visible at the mines in between. But every part of the coalfields was changed in this period. To analyze this process of change more precisely, we shall examine the statistics of production for the coalfields, and then consider, by way of conclusion, the geo-historical tendencies which set these coalfields apart from others in Nova Scotia.

What emerges very clearly from the general statistics of production is the unevenness of this process of change. The period is divided into three sub-periods: from 1873 to 1884, a period in which the level of production never exceeded 280,000 long tons per year; from 1885 to 1890,

the period of maximum expansion; and the years from 1891 to 1900, years of stagnation (but also of a redistribution of production, with Joggins growing rapidly and Springhill stagnating). Table Two summarizes these changes in production and offers a way of comparing this period with the previous period.

Table Two.—Production in the Cumberland Coal Industry, 1873-1900

Year	Production (Long tons)	Number of Mines*	Index (1884=100)	Index (1860=100)
1873	27,592	3	9.9	263.0
1874	51,580	4	18.4	491.7
1875	64,857	6	23.2	618.2
1876	93,232	4	33.3	888.7
1877	107,004	5	38.2	1,020.0
1878	113,873	4	40.7	1,085.4
1879	99,222	5	35.4	945.8
1880	143,085	5	51.1	1,363.9
1881	183,469	6	65.5	1,748.8
1882	234,284	5	83.7	2,233.2
1883	247,861	7	88.5	2,362.6
1884	279,946	6	100.0	2,668.4
1885	369,023	9	131.8	3,517.5
1886	448,621	5-7	160.3	4,276.2
1887	499,472	4-6	178.4	4,761.0
1888	470,829	5	168.2	4,487.9
1889	490,432	4	175.2	4,674.8
1890	490,149	4-5	175.1	4,672.1
1891	522,078	4	186.5	4,976.4
1892	458,493	5	163.8	4,370.3
1893	403,482	3-5	144.1	3,846.0
1894	543,829	3-5	194.3	5,183.8
1895	495,369	5	177.0	4,721.8
1896	476,037	5	170.0	4,537.6
1897	392,973	4-6	140.4	3,745.8
1898	409,940	5	146.4	3,907.5
1899	436,204	2-4	155.8	4,157.9
1900	496,804	4	177.5	4,735.5

*See the appendix for a cautionary note on this statistic, especially in the 1890s.

Figure Three illustrates the production in each coal area in the County. The decisive significance of the year 1884 is suggested by the fact that in every year following 1884, production exceeded the mean yearly total of 323,205, while it was below the mean in every year before 1884. By calculating the annual growth rate by the standard formula used in Chapter One, we derive a compound growth rate of 11.3% per annum.

Figure Four illustrates the change in ownership in the coalfields, from Saint John to Montreal in both Springhill and Joggins. After 1888 Saint John ceased to be a major force in the coalfields. Of the 9,049,740 long tons mined in Cumberland, 85% is accounted for by Montreal-controlled companies, 14% by Saint John-controlled companies, and 1% by Cumberland County companies. (A negligible percentage is attributable to Boston companies). The figure dramatizes the obvious importance of the takeover by Montreal in the early 1880s, and also reveals the imbalance of economic forces in the coalfields. They were exaggerated reflections of the economic changes sweeping the region as a whole.

Another major change which the statistics reveal is the transformation of the market. Let us first approach this question on a provincial level. Table Three reveals the structural changes occurring within the market for Nova Scotia coal. The most notable change was the collapse of the American market, which slipped from 52% of the 1864-1872 sales to 7% of the 1873-1900 sales. In its place was built a large market for coal in the St. Lawrence ports (Montreal, Québec and Trois Rivières), a market in which the Cumberland coalfields had little presence.

Figure Three

COAL PRODUCTION BY AREA,
CUMBERLAND COUNTY,
1873-1900

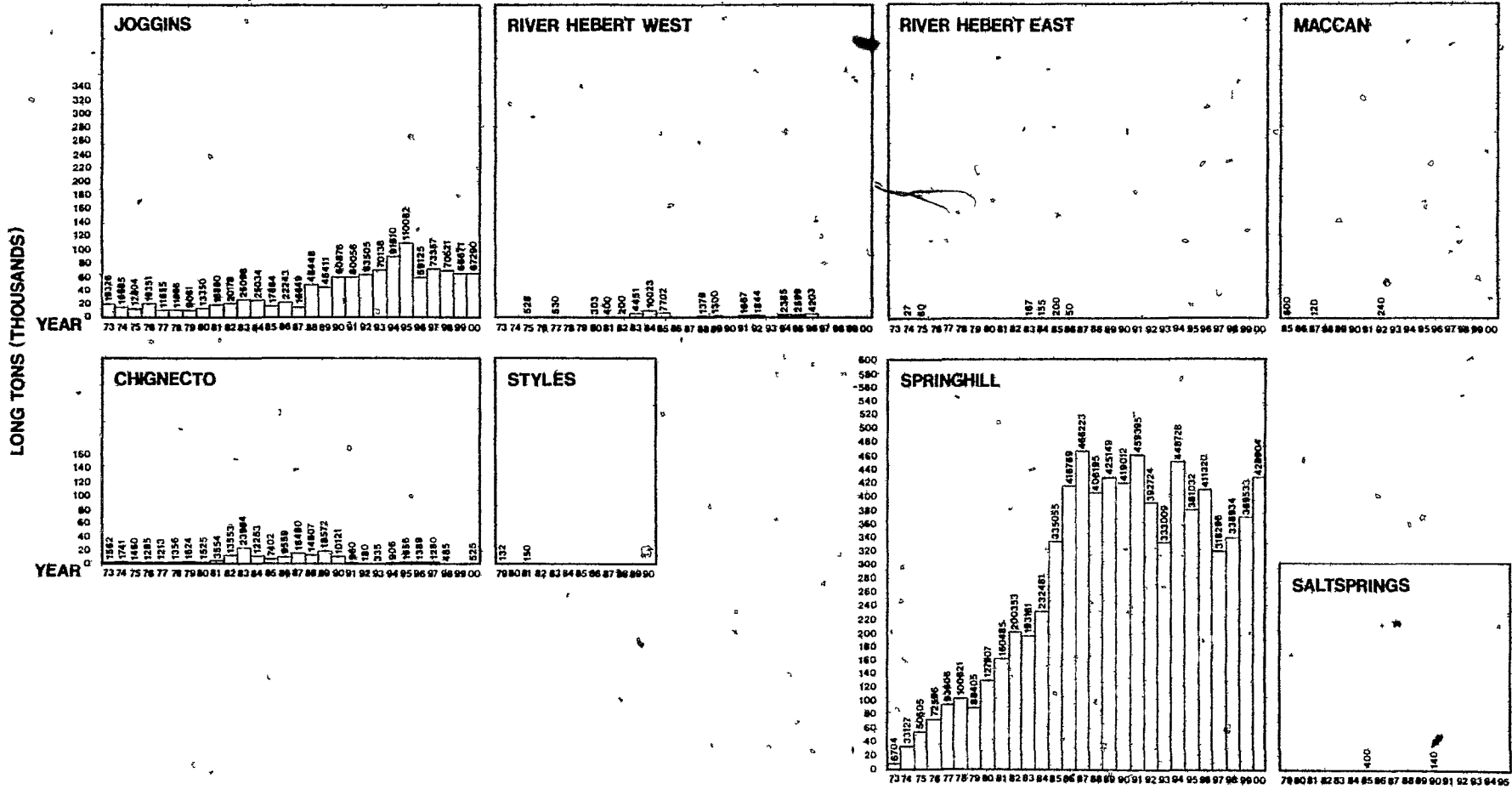
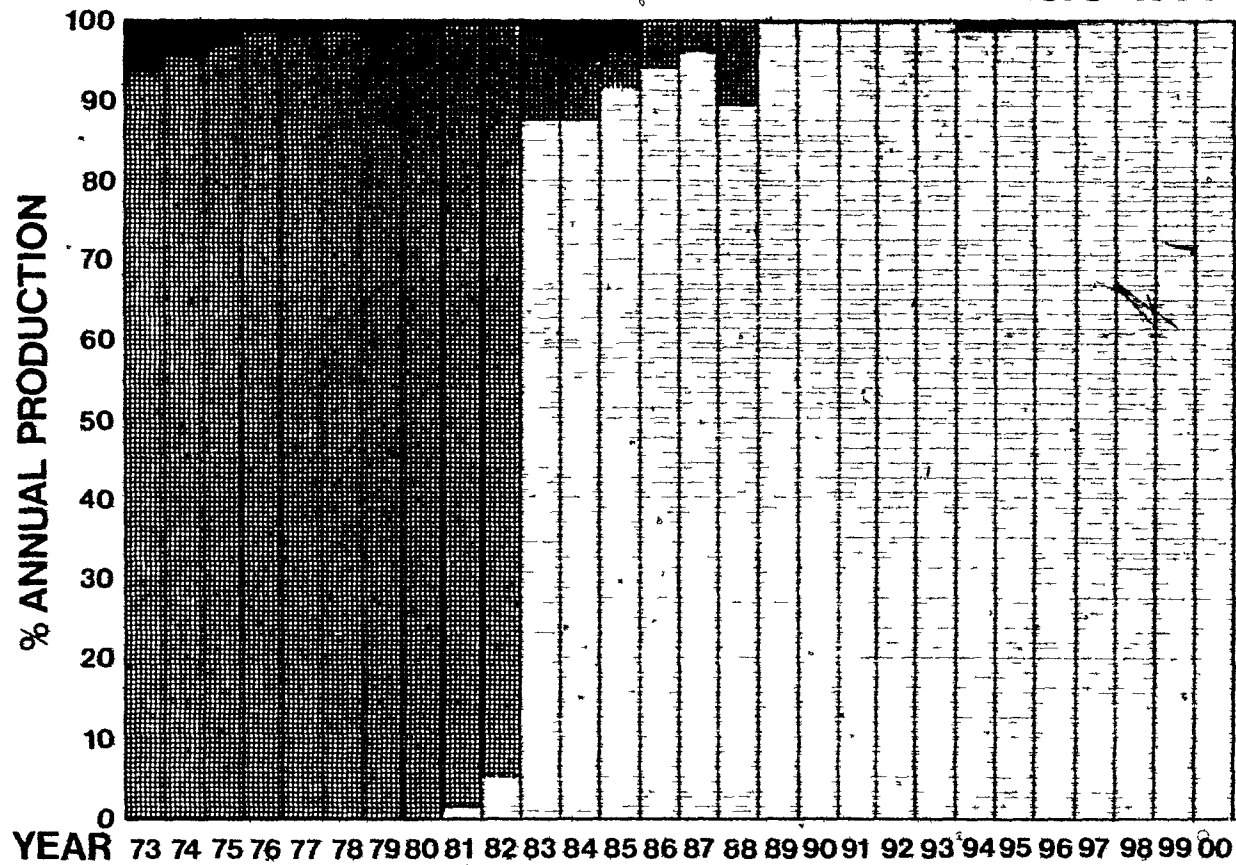


Figure Four

CONTROL OF CUMBERLAND COALFIELDS' PRODUCTION

1873-1900



KEY: COMPANY CONTROL

■ Saint John

□ Montreal

■ Cumberland County

Table Three. Destination of Coal Sold in Nova Scotia, 1873-1900 and 1864-1872

Destination	Total Sold 1873-1900	Percentage of Total	Total Sold 1864-1872	Percent- age	Yearly Mean 1873-1900
Nova Scotia Land	6,977,504	17%	1,214,074	25%	249,196
Nova Scotia Sea	6,505,327	16%			232,333
New Brunswick	5,480,862	13%			195,745
Newfoundland	2,245,729	5%	1,147,079	23%	80,204
P.E.I.	1,529,341	4%			54,619
St. Lawrence Ports	14,870,633	36%			531,094
United States	2,976,999	7%	2,528,852	52%	106,321
Europe	35,032	---			2,502
United Kingdom	7,473	---			534
Other	375,227	1%			13,400
TOTAL	41,004,127	99%			

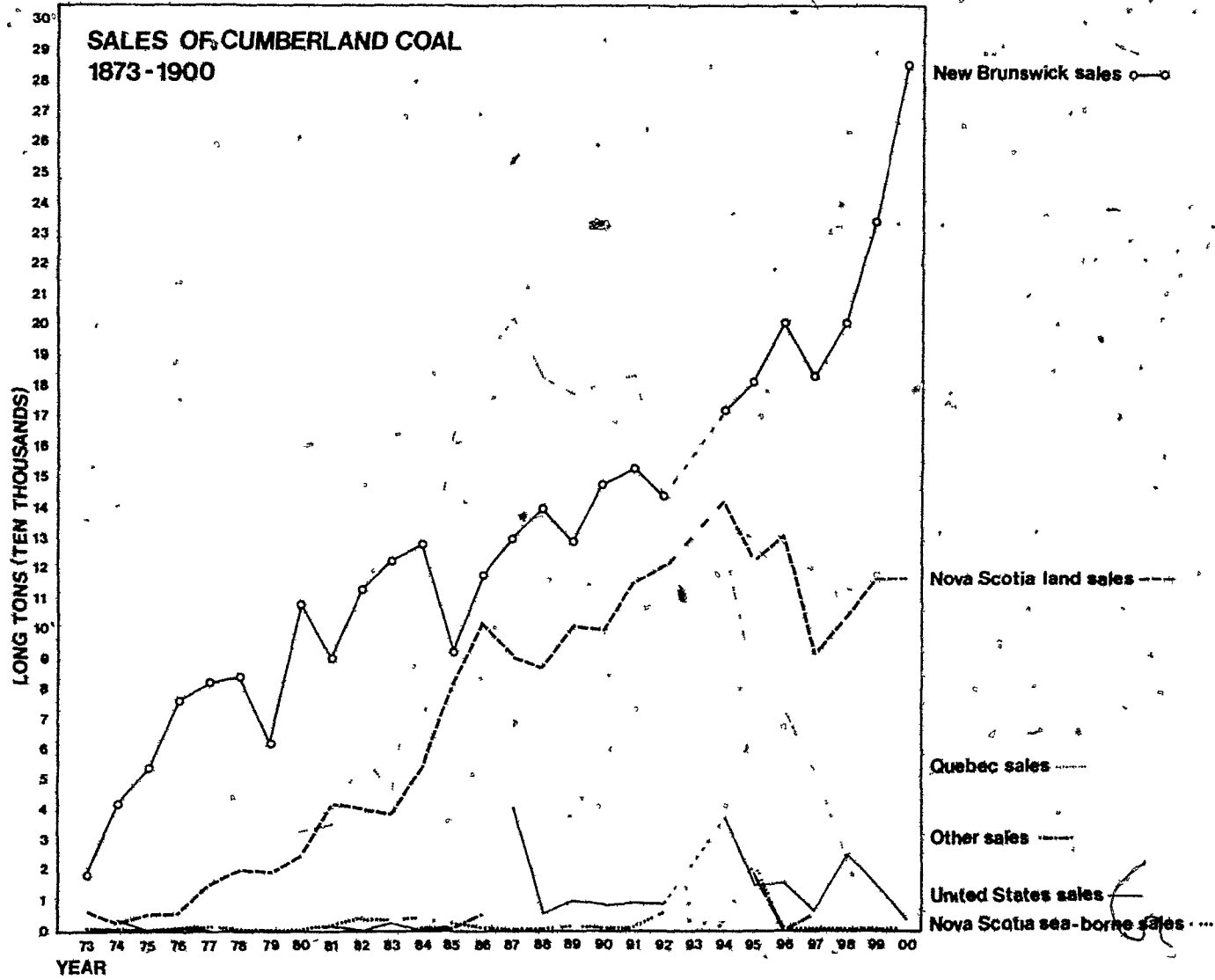
The rise of the Quebec market was largely a consequence of the policy of tariff protection, although provincial coal was never free from the threat of imported coal from the United States or elsewhere.

Cumberland County did not conform neatly to the provincial pattern. Of the 8,220,125 long tons which can be traced to a particular destination, 3,607,294 long tons (44%) were sent to New Brunswick, 2,001,150 long tons (24%) were accounted for by Nova Scotia land sales, and 98,385 long tons (1%) were accounted for by sales to coasting vessels and Prince Edward Island sales. Local sales, in sum, accounted for 69% of the total. The

Quebec market with 2,001,150 long tons (24%) and the American market with 225,976 long tons (3%) were also significant, but the most important market was the Maritime region. By contrast, the entire province was dependent upon the region for 50% of its markets. There is quite a paradox in the finding that the Cumberland coalfields, historically the most dependent upon the national transportation system and the formation of the new dominion, were the least dependent upon the national markets.

Like all historical averages extending over more than a quarter of a century, such statistics tend to blind us to the variations over time and the conscious strategies pursued by entrepreneurs. Figure Five illustrates the changes in the markets for coal over time. From 1873 to 1878 the Quebec market was not a factor; it only became one in 1879, with the advent of the National Policy tariffs. The market was dominated by New Brunswick, which absorbed 70% of the coal sold in 1873, 86% in 1874, 90% in 1875, 83% in 1877 and 80% in 1878. Nova Scotia land sales (which includes the railway) grew from 6% in 1874 to 21% in 1879, and sales to the United States virtually disappeared, sinking from 6% in 1874 to a negligible percentage in 1878. From 1873 to 1879, of the 516,034 long tons sold, 421,266 long tons (82% of total sales) went to New Brunswick, 76,268 was sold on land in Nova Scotia (15%), and only 8,844 long tons (2%) were sold in Quebec. As Figure Five reveals, the 1880s witnessed a startling change. Of the 3,126,046 long tons sold in the 1880s, more than a six-fold increase over the previous decade, 1,193,076 long tons were sold in Quebec, no less than 38% of the total. In the year following the takeover by Cumberland Railway and Coal, coal sales to Quebec reached 40% of the total. Quebec sales far outdistanced land sales, which at 672,685 long tons constituted 22% of the total, and just bettered the

Figure Five



the coal sales to New Brunswick, 1,144,763 long tons or 37% of the total. This was the period in which one might speak of the coalfields as part of the far-flung Empire of the St. Lawrence--although it is significant that in no year did Quebec sales ever constitute the majority. Finally, in the 1890s, this situation changed again. In this period the Montreal market atrophied, in the face of competition from other coalfields; the American market was prised open, and in 1898 would for the first time since 1874 play a big part in Cumberland coal sales. Of the 4,578,135 long tons sold from 1890 to 1900, 1,065,546 long tons (23%) was accounted for by the Quebec market, a decline from the 1880s which became steadily more obvious as the decade progressed. Cumberland coal was pushed out of the St. Lawrence ports by Pictou and Cape Breton, which enjoyed better port facilities on the Gulf of St. Lawrence. Cumberland's "natural protection" did not, therefore, preserve it from the ruthless competitiveness of the coal trade, and in Montreal it was pushed out by the aggressive companies to the east. But what made Cumberland peculiar was that these losses in a major market were far from fatal. The American market, which absorbed 154,252 long tons (3%) attained a large size in 1898, when sales to the United States exceeded those to Quebec. Land sales in Nova Scotia (1,252,197 long tons) accounted for 27% of coal sales, and sales to New Brunswick (2,041,265 long tons or 45%) accounted for much of the rest.

It is a striking confirmation of the evidence presented to us by so many other sources. Cumberland was able to capitalize on its special position; with the growth of industrial capitalism, the position of the county could be 'read' in a new way. Cumberland coal competed in five major markets, and enjoyed particular advantages in three: the railway (land sales), New Brunswick, and the United States. New Brunswick and

the railway have already been discussed, but the surprising strength of the American market in the 1890s deserves comment. It has long been an article of faith that the American tariff made such trade impossible, except in very unusual circumstances (such as the long-term contracts in Boston of the Dominion Coal Company, an unprofitable exception which serves to prove the rule). However, the American tariff was not as insurmountable as might be imagined. In 1883, for example, it was revised to allow the entry of slack coal or culm (which could pass through a half-inch screen) at 30c a ton. (The new tariff arrangement might well have been a consideration in the minds of the Montreal men who acquired the Springhill rights).²³⁰ This tariff did not exclude Cumberland coal, particularly not in bidding for railway contracts in New England. The ingenuity and determination with which the Cumberland Railway and Coal Company secured these American customers was impressive. The traditional north/south axis could be revitalized and adapted to an industrial strategy; there was nothing inherently 'traditional' or backward-looking about it. Parrsboro was developed as a twelve-month port,²³¹ and the company invested in large barges, drawn by steam-driven tugs, including the largest steam vessel constructed at Saint John.²³² It was an integrated attack on the Atlantic markets: to service them the company installed on its railway a locomotive larger than any on the Intercolonial, and in 1902 boasted of five barges and two steam tugs, the S.S. Springhill and the S.S. Flushing.²³³ This ability to compete in several markets, and this reduced dependence on the Quebec market, meant that Springhill enjoyed considerable advantages over other coalfields.

One of the most striking features of the Cumberland industry was its capacity to function throughout the year. Cape Breton coal mines of

the nineteenth century tended to be highly seasonal, forced to follow a schedule dictated by the exigencies of St. Lawrence shipping. Cumberland coal mines could operate all the year round because of the railway, although here again one must be alert to the marked contrast between the Joggins field with its small pits serving a winter-domestic market, and the Springhill field. Of the total output calculated from county statistics (9,192,351 long tons, slightly in excess of the amount calculated from colliery returns), 23% was produced in the first quarter from January to April, 25% in the quarter from April to July, 24% was produced in the quarter from July to October, and 28% in the final quarter of the year. This evenness of production represented a remarkable achievement. Compared with the earlier rhythm of production in the coalfield (during which quarterly production levels ranged from 15% in the first quarter to 37% in the last), the industrial rhythm was persistent and steady. It was also a remarkable achievement given the contours of the provincial industry as a whole in this period. In the province, 24% of the coal was produced in the first quarter, 17% in the second quarter, 26% in the third quarter and 33% in the fourth quarter. Cumberland County (or at least its industrial portion) enjoyed a far steadier seasonal pattern of production than other coal-producing areas.

Another indication of the changes in production induced by industrialism is presented by Table Four, which notes investment patterns detailed in the Mines Reports.

Table Four. Investment in Mining Activities in Cumberland By Area, 1873-1900

Area	Adits & Levels	Surface Work	Machines	Dwellings	Railways	Wharves	Prospecting	TOTAL
Joggins	\$59,448	\$23,756	\$53,141	\$13,433	\$9,676	\$2,636	\$11,023	\$173,113
River Hebert West	\$8,121	\$3,324	\$13,226	\$4,026	\$234	\$285	\$574	\$29,790
River Hebert East	\$532	\$80	\$13	\$0	\$145	\$7	\$900	\$1,677
Maccan	\$850	\$275	\$120	\$0	\$0	\$0	\$0	\$1,245
Chignecto	\$27,361	\$37,242	\$27,085	\$3,260	\$14,325	\$0	\$3,283	\$112,556
Springhill	\$134,119	\$74,307	\$161,907	\$37,670	\$22,989	\$4,227	\$12,656	\$447,875
Styies	\$350	\$50	\$100	\$0	\$0	\$0	\$300	\$800
Saltsprings	\$480	\$0	\$0	\$0	\$0	\$0	\$260	\$740
TOTAL	\$231,261	\$139,034	\$255,592	\$58,389	\$47,369	\$7,155	\$28,996	\$767,796

As with the similar table in Chapter One, it is important to bear in mind the limitations of these data, which unquestionably simplify the matter. (In this instance, there are several years for which data are missing and, most crucially, investment in railways undertaken by railway companies is naturally not included). Still, if we read it as a rather general descriptive document, the table reveals three major foci of investment: Joggans, Chignecto, and Springhill; this last-named area accounting for 58% of the investment recorded in the Mines Reports. It also reveals two areas where coal mining had once been a major part of the economy, but where it now had retreated to a far less imposing position, and two areas of exploration (Styles and Saltsprings).

These statistics lead us to more general questions about the Cumberland coalfields. One of these concerns the impact upon the coal industry of the National Policy. Here was a question which was debated with eager intensity among the miners, and it has aroused no less interest among historians.

Initially the National Policy swept all before it in the coalfields, and although the Liberals pointed out that it never did hand the markets of Ontario to the Nova Scotians, the Policy's supporters could simply point to the large extension of the domestic market, especially along the St. Lawrence. The Trades Journal registered with accuracy the attitude towards the tariff in the coalfields. In the early 1880s it hailed the National Policy as a tremendous boon to the coal regions. Even Springhill, the least 'national' of the coalfields, had benefitted. When the Morning Chronicle wondered whatever had happened to tons of coal that had been expected to go from Springhill to Ontario, the Trades Journal conceded that shipments to Ontario had been negligible but the

improvement after the introduction of the National Policy was considerable.

Certainly the estimates of production bear out the view that some increase had taken place in the 1880s, but whether or not this may be attributed to the National Policy is highly uncertain. As for Springhill, the Trades Journal conceded, "Its isolation is its chief protection."²³⁴

"Not many with any intelligence, or the owner of a coal mine, or anyone interested in a coal mine, will oppose the duty on coal," Drummond argued in 1882.²³⁵ One might argue that Drummond, who exerted a subtle

influence upon W.S. Fielding and the moderate Liberalism evolving in Nova Scotia, laid the basis with his early arguments for the eventual Liberal adoption of the National Policy in 1897. It was true that Drummond in the later 1880s had been very sceptical of the need for any protection. But when he appeared before the 1897 tariff commission to present the miners' point of view on the tariff, he was much less guarded in his expression of pro-tariff opinion. "From a liberal government, as all liberal governments are supposed to be friendly to the working men, the miners do not expect that there shall be any interference with the present tariff on bituminous coal, which is only barely reasonable, and cannot by any means be held as excessive," he argued, dismissing those who contended that Nova Scotia coal could compete in the markets of the world.²³⁶

In this debate Springhill had a distinctive position. Certainly the coalfield owed its existence to the railway, in turn dependent upon Confederation. But it was not a coalfield which confirmed the contemporary view of the National Policy. Reciprocity would unquestionably have benefitted Springhill. Despite the doubts expressed by J.R. Lithgow as to the ability of Nova Scotian coal to compete in the Boston market,

there seemed to be a clear demand for provincial coal for gas-making purposes.²³⁷ From Springhill in 1888 where only a few years before each box-car loaded with coal for central Canada had been seen as proof of the efficacy of the National Policy, came solid critiques of the National Policy. Look at the map, urged one correspondent, and see how the mines and the centres of population are distributed; the "equitable laws of nature" ordained that Nova Scotia should trade with New England. Because of the foolish laws of men, Springhill coal was being sent to markets where it could not possibly compete. "...Spring Hill coal is being sent to Montreal by rail, a distance of seven hundred and fifty miles; while the great Boston market is less than half that distance from Spring Hill; and the city of New York is over two hundred miles nearer Spring Hill than Montreal, and one hundred nearer than the city of Quebec. Besides Portland and other intermediate towns along this frontier from the head of the Bay of Fundy to New York, is the natural market for Spring Hill coal." Under the restrictive commerce of the National Policy, the supply of coal at Springhill would always exceed the demand, but in the event of free trade, "Spring Hill is destined to be the second, if not the first, city in the Maritime provinces."²³⁸ Further letters from Springhill, while conceding the point that under the National Policy production of coal had increased, anticipated the argument later made by economists that such increased production did not signify general economic welfare.

That much of such commentary was motivated by crass political motives is a given, but this makes it all the more interesting and important. The Liberals were slowly making their way towards a

less militant stand on the tariff; and while Fielding may not have been the principal author of the "Fielding Tariff," he could well be said to have put in a long apprenticeship before becoming its principal apologist.²³⁹ The debate unfolding at Springhill and in the other coal centres should be seen within the general context of a Liberalism gradually adapting itself to the imperatives of industrialism. But a more general point is that the tariff, one way or the other, was not of overwhelming significance in Springhill, which was in one sense 'protected' by its isolation from competitors, but in another 'protected' by its very integration within the railway economy. Cape Breton would be jolted out of the mercantile phase by an act of the state; it would pass from a seasonal, mercantile coalfield to a coalfield dominated by monopoly capitalism in scarcely a decade. Cumberland's evolution was more gradual and less painful, because its principal coalfield was developed within the context of an industrial system and was less affected than any other by changes in the tariff or by the structures of mercantile capitalism.

The centrality of the tariff for economic development can be questioned in the case of Cumberland, because the major shifts in the level of production did not coincide with shifts in the tariff. Ironically, the coalfield which owed most initially to the process of national consolidation, was the least dependent upon the national economy. Even more ironically, the coalfield represented in the House of Commons by Sir Charles Tupper, the National Policy transformed into flesh and blood and given a thundering voice, was really the place where arguments for reciprocity made the greatest sense, even to such loyal Conservatives as R.G. Leckie. Each coalfield would find its

own way within the new complex of interests which emerged after 1879, but the way of the most important Cumberland coalfield was uniquely determined by regional forces. To answer a question with which we began, we must describe the impact of the National Policy upon the Cumberland coalfields as minimal. The distinctive pattern of development in these coalfields gave them a certain freedom from national economic policy.

But it gave them no freedom from national politics. The transition which assumed such different forms in the Joggins and Springhill coalfield was unthinkable without the active intervention of political forces. The political and economic revolution of 1865-1873 was political in its inception. The granting of contracts for the Intercolonial was a political process. The railways which transformed the coalfields were built with political considerations in mind. To paraphrase a valuable comment of Alan G. Macpherson, industry was basically irresponsible in its relationship with the people of the coalfield; the ultimate decision concerning their prospects was a political one.²⁴⁰ It was on the political level that the new class of regional capitalists, seeking a peripheral, dependent but profitable place within the new country they helped to create, would consolidate their hold on regional resources. The interpretation which stresses the rentier character of their strategy, the sharply delineated limitations of Canadian industrialism, and the enduring mentality of the short-term characteristic of the structures of mercantile capitalism, has much to contribute to our understanding of the coalfields' evolution, but it must ultimately be subordinated to a more traditional but also more useful conception of socio-economic history which stresses the decisive and qualitative

change--the industrial revolution-- which transformed the Cumberland
coalfields and all who lived within them.

Notes

- 1) For suggestive studies of national consolidation, see James Frost, "The 'Nationalization' of the Bank of Nova Scotia, 1880-1910," Acadiensis, Vol. XII, No. 1 (Autumn 1982), pp. 3-38, and Christopher Armstrong, "Making a market: selling securities in Atlantic Canada before World War I," Canadian Journal of Economics, Vol. XIII, No. 3 (August 1980), pp. 438-454.
- 2) See Tom Naylor, The History of Canadian Business, 1867-1914, Vol. I (Toronto, 1975), pp. 2-64, for the first interpretation, and Gregory S. Kealey, Toronto Workers Respond to Industrial Capitalism 1867-1892 (Toronto and Buffalo, 1980), pp. 3-34, for the second.
- 3) T.W. Acheson, "The National Policy and the Industrialization of the Maritimes, 1880-1910," Acadiensis, Vol. I, No. 2 (Spring 1972), pp. 3-28, and Alan A. Brookes, "The Golden Age and the Exodus: The Case of Canning, Kings County," Acadiensis, Vol. XI, No. 1 (Autumn 1981), pp. 57-82.
- 4) See Tom Naylor, The History of Canadian Business, 1867-1914, Vol. II (Toronto, 1975), pp. 2-36, although this account focusses primarily on the Canadian Pacific.
- 5) The notion of "forward linkages" is developed by Melville Watkins, "A Staple Theory of Economic Growth," in W.T. Easterbrook and M.H. Watkins, eds., Approaches to Canadian Economic History (Toronto, 1967), pp. 49-73. The classic theorists of the staples approach paid little attention to coal, despite its great importance in the regional economy.
- 6) See David McNally, "Staple Theory as Commodity Fetishism: Marx, Innis and Canadian Political Economy," Studies in Political Economy, No. 6 (Autumn, 1981), pp. 35-63, although it is not apparent that Innis is as guilty of this failing as the author implies.
- 7) See William Phillip Moore, "Staples and the Development of the Capitalist Mode of Production: A Study of Mining in Canada 1845-1920," M.A. Thesis, McMaster University (1978).
- 8) S.A. Saunders, Studies in the Economy of the Maritime Provinces (Toronto, 1939).
- 9) Steven Antler, "The Capitalist Underdevelopment of Nineteenth-Century Newfoundland," in Robert J. Brym and R. James Sacouman, eds., Underdevelopment and Social Movements in Atlantic Canada (Toronto, 1979), p. 179.
- 10) Roy E. George, A Leader and a Laggard: Manufacturing Industry in Nova Scotia, Quebec and Ontario (Toronto, 1970). T.W. Acheson, "The Maritimes and 'Empire Canada,'" in David Jay Bercuson, ed., Canada and the Burden of Unity (Toronto, 1977), pp. 87-114, deepens George's analysis by locating 'entrepreneurial deficiency' within a context of colonialism and the recurrent social decapitation of

out-migration. In effect this approach treats the question of the entrepreneur as a symptom of a deeper structural problem.

11) J. Murray Beck, ed., Joseph Howe: Voice of Nova Scotia (Toronto, 1964), p. 130.

12) T.C. Keefer, Philosophy of Railroads and Other Essays (Toronto and Buffalo, 1972).

13) PANS, RG 28; No. 16, Gilbert Seaman to W.S. Fielding, 23 January 1890.

14) On the role of the Intercolonial Railway in the debate over Confederation, see P.B. Waite, The Life and Times of Confederation 1864-1867 (Toronto, 1971), pp. 52-55.

15) See Joseph Howe, The Public Dinner at Amherst [Speech], n.p. [Halifax?], n.d. [1853], pp. 6-7; Charles Tupper, Speech Delivered by the Honorable Provincial Secretary, (Dr. Tupper,) In the Constitutional Debate (n.p. [Halifax], n.d. [1858]), p. 15; Joseph Howe, To The Electors of the County of Cumberland (Halifax, 1857).

16) Kenneth G. Pryke, Nova Scotia and Confederation 1864-74 (Toronto and Buffalo, 1979), pp. 143-144.

17) Sandford Fleming, The Intercolonial: A Historical Sketch of the Inception, Location, Construction and Completion of the Line of Railway uniting the Inland and Atlantic Provinces of the Dominion, with Maps and Numerous Illustrations (Montreal, 1876), especially p. 94.

18) G.R. Stevens, Canadian National Railways. Vol. I. Sixty Years of Trial and Error (Toronto, 1960), pp. 180-181, reduces the complex debate to the persistent lobbying of Livesey.

19) Leo A. Johnson, History of the County of Ontario, 1615-1875 (Whitby 1973), pp. 282-316.

20) For the debate see [John Livesey], To the Honble. W. McDougall, Minister of Public Works (Halifax, 1867); E.A. Jones, Copy of Correspondence referred to, between E.A. Jones, and Mr. Sandford Fleming, C.E. (n.p. [Halifax?], n.d. [1867]); Canada, Sessional Papers, 32 Victoria, 1869, No. 5, "Return of an Address of the House of Commons...calling for copies of all correspondence relative to the surveys of the several proposed routes for the Intercolonial Railway, with copies of all documents relating to the same; also copies of all Orders in Council relative to the same since last Return."

21) For the position of Amos Purdy, the key opponent of the Londonderry route and champion of the agrarian, proto-industrial interests of north Cumberland, see Sessional Papers, 1869, No. 5, "Intercolonial Railway correspondence," pp. 26-32, Amos Purdy to the Secretary of State, 26 October 1868.

22) Amos Purdy was the Liberal M.L.A. for Cumberland County from 1867 to 1871. He was defeated in 1871, staged a return in 1874 and technically won the election, but was replaced by his opponent in a complex set of manoeuvres touched off by ballot-stuffing. He later played an important role as mayor of Amherst and a redoubtable populist. See C. Bruce Fergusson, ed., A Directory of the Members of the Legislative Assembly of Nova Scotia 1758-1958 (Halifax, 1958), pp. 447-448.

23) Abraham Gesner, Report on the Londonderry Iron and Coal Deposits, And a Prospectus to Form a Company To Work The Same, By The Proprietor, John Ross (Halifax, 1846).

24) Waite, Confederation, p. 92.

25) Sessional Papers, 32 Victoria, 1869, No. 5, "Intercolonial Railway correspondence," p. 21, R.B. Dickey to H.L. Langevin, n.d. See also Allister Roy Clark, "The Intercolonial: Its influence on Canadian Development," M.A. Thesis, Acadia University (1953), Chapter 11.

26) The idea of E.R. Forbes, "Misguided Symmetry: The Destruction of Regional Transportation Policy for the Maritimes," in David J. Bercuson, ed., Canada and the Burden of Unity (Toronto, 1977), pp. 60-86.

27) In 1896 the Liberals campaigned on the promise of bringing the railway directly to Springhill; after the election, surveys evidently showed that the grades involved were too steep.

28) Sandford Fleming, The Intercolonial, pp. 226-228.

29) PAC, Smith Papers, R.B. Dickey to Joseph Smith, 30 April 1874.

30) PANS, RG 21, Vol. 461, No. 148, W.R. Barnes to Dr. Nathan Tupper, 3 September 1865.

31) The International Contract Company in 1866 considered a deal whereby the holders of licenses to search in Cumberland County would be offered £10,000 in cash and an interest to the extent of 1/10th in any company to be formed thereafter to work the coal. Metropolitan Toronto Central Library, Baldwin Room; Woodhouse and Jeffcock, "Nova Scotia. Report upon the Examination and Survey of a portion of the Cumberland Coal Field 2nd January 1866," pp. 21-22. For the role of Tupper, see PAC, MG 26, F, Tupper Papers, Vol. 3, p. 1259, Power of Attorney from C.H.M. Black, 4 June 1868. Tupper presumably carried out this approach to prospective British investors while fighting Howe's attempts at Repeal in London.

32) PANS, RG 21, Series "A", Vol. 5, 1864 Correspondence, George Hibbard, Gilbert Seaman and Rufus Seaman to Provincial Secretary, 11 October 1865.

33) Mines Report (1865), pp. 10-11.

34) H.V. Nelles, The Politics of Development: Forests, Mines & Hydro-electric Power in Ontario, 1849-1941 (Toronto, 1974), p. 23.

35) PANS, MG 1, Vol. 335, Private Memoranda of P.S. Hamilton (1826-1893), p. 159. For biographical information on Hamilton, see P.B. Waite, ed., "A Nova Scotian in Toronto, 1858," Ontario History, Vol. LV (1963), pp. 155-159, and W.B. Hamilton, "P.S. Hamilton--The Forgotten Confederate," Collections of the Nova Scotia Historical Society, Vol. XXXVI (1968), pp. 67-94. Any reading of Hamilton's evidence must bear in mind his violent dislike of Tupper and his bitter resentment over his failure in politics.

36) Ibid., p. 161.

37) Ibid.

38) Royal Gazette, 28 June 1865.

39) Tupper also worked closely with R.B. Dickey. In one letter from Dickey to Tupper, Dickey begins: "On arriving home this Evening between 9 & 10 I found our friends considerably Exercised in Mining Matters..." PANS, RG 1, Vol. 464, No. 6, R.B. Dickey to Charles Tupper, 7 April 1864.

40) JHA (1872), Appendix No. 29, Mines and Minerals, p. 1. However, it should be noted that no attempt was made to press charges.

41) Charles Tupper, Letter from the Hon. Dr. Tupper, C.B., to the Hon. James McDonald, M.P. (Ottawa, 1872).

42) The case against Tupper was developed in the course of an election campaign in the Morning Chronicle, 17, 19, 22, 24, 25, 26, 27, 28, 29 June and 1, 2 July, 1872.

43) Morning Chronicle, 22 June 1872.

44) Note this passage from H.S. Poole, in the Mines Report (1873), p. 11: "It has been deemed expedient in this country that the law should interfere and require that the masters and mates in charge of our marine shall be men in whom trust can be placed, men who by practical experience and professional education are, up to a certain standard, fitted to fill the positions they occupy. If this then has been considered necessary, where the property concerned is not directly owned by the Crown, how much more should some prudent supervision be exercised in the case of our mines, which are?"

45) P.S. Hamilton, Union of the colonies of British North America: Being three papers upon this subject, originally published between the years 1854 and 1861 (Montreal, 1864).

46) R.G. Halibuton, The Coal Trade of the New Dominion (Halifax, 1868).

47) PAC, MG 26, A, John A. Macdonald Papers, Vol. 116, pp. 47665-47668 [Microfilm Reel C-1553], R.G. Haliburton to John A. Macdonald, 29 January 1870.

48) PAC, Smith Papers, R.B. Dickey to Joseph Smith, 30 April 1874.

49) Statutes of Nova Scotia, 30 Vic., Cap. 52, "An Act to incorporate the Amherst Boot and Shoe Manufacturing Company." A thorough study of the linkages of this group would reveal many interesting things about the socio-economic origins of Confederation.

50) Cited in Donald Creighton, The Road to Confederation, The Emergence of Canada: 1863-1867 (Toronto, 1964), p. 210.

51) Delphin A. Muise, "The Federal Election of 1867 in Nova Scotia: An Economic Interpretation," Collections of the Nova Scotia Historical Society, Vol. XXXVI (1967), pp. 327-351, and Brian Tennyson, "Economic Nationalism and Confederation: A Case Study in Cape Breton," in Don Macgillivray and Brian Tennyson, eds., Cape Breton Historical Essays (Sydney, 1980), pp. 54-65.

52) Mines Report (1867), p. 10.

53) [J.R. Lithgow], A Letter to the House of Commons of Canada, on Behalf of the Coal Interests of Nova Scotia (Halifax, 1877), p. 4: "[F]rom the business of 1865--a shipment of some 84,000 tons--a dividend of \$75,000 was paid. In the following year the Reciprocity Treaty terminated; a duty of \$1.25 gold per ton was imposed on foreign coal; and from the business of 1866, instead of \$75,000, the stockholders of the Glace Bay Mining Company received not a cent!"

54) Mines Report (1872), p. 1.

55) Haliburton, Coal Trade, pp. 1-8; see also PANS, RG 1, Vol. 461, No. 140, Isaac Buchanan to Charles Tupper (telegram), 20 May 1864--an enquiry about the suitability of Nova Scotia coal for foundry purposes.

56) PAC, Macdonald Papers, Vol. 343, pp. 157, 905-157, 102, R.G. Haliburton to John A. Macdonald, 29 May 1871. Macdonald in the negotiations for the Treaty of Washington had rejected initial American offers of reciprocity in coal, thus condemning the industry to acute insecurity. The traditional account is that of Donald Creighton, Sir John A. Macdonald: The Old Chieftain (Toronto, 1968 [1958]), pp. 70-102; a welcome regional reappraisal is provided by Pryke, Nova Scotia and Confederation, pp. 132-136.

57) PANS, RG 21, Series "A", Vol. 5, Petition of the Coal Owners Association to W.B. Vail, Provincial Secretary, 24 December 1869. Tupper had sought to secure protection for coal in his correspondence with British and Canadian politicians: see PAC, MG 26, F, Tupper Papers, Vol. 3, p. 1132, Tupper to C.B. Adderley, 31 March 1868; p. 1217, Tupper to Cartier, 30 April 1868.

58) Evidence that the government and local capitalist class saw the coal industry as 'real estate' to be sold to the foreign investor making the best offer emerges from the correspondence of George Dundas and W.A. Hendry: see PANS, RG 21, Series "A", Vol. 5, File "Coal Mines, 1868, Correspondence," George Dundas to W.A. Hendry (with enclosures), 31 December 1868.

- 59) Robert Drummond, The Sixties and Subsequently (n.p., 1912).
- 60) Woodhouse and Jeffcock, "Report," pp.5-6.
- 61) Ibid., pp.4-6 and p.13.
- 62) Ibid., p.22.
- 63) Bertha Scott, in Springhill: A Hilltop in Cumberland (Springhill, 1926)--an extremely valuable work of local history--errs on p.18 when she writes of this first comprehensive survey of Springhill's resources.
- 64) Nelles, The Politics of Development, Chapter 1.
- 65) For his biography, see the Herald, 28 August 1902.
- 66) Springhill Mining Company, Prospectus (n.p., 1872).
- 67) Geological Survey of Canada, Report of Progress (1869), pp.445-446.
- 68) Ibid.
- 69) Geological Survey of Canada, Report of Progress (1870), p.6.
- 70) Ibid.
- 71) Geological Survey of Canada, Report of Progress (1873-1874), p.147.
- 72) Geological Survey of Canada, Report of Progress (1875-1876), p.346. Barlow's observation makes it possible to date the first use of a diamond drill in the area:1875.
- 73) Geological Survey of Canada, Geological and Natural History Survey of Canada, 1885, Part E.
- 74) Morris Zaslow, Reading the Rocks: The Story of the Geological Survey of Canada, 1842-1972 (Ottawa, 1975), p.231. Zaslow, in his excellent study, probably makes too extreme a case for the centrality of the Survey to the Maritime mining industry.
- 75) John Rutherford, The Coal-Fields of Nova Scotia (Newcastle-upon-Tyne, 1871).
- 76) John Rutherford, A Letter to P.S.Hamilton, Esq. The Importance of Mining Records (Halifax, 1867).
- 77) It is almost redundant to point out the familiar connections embodied in Hind's career:friendship with Sandford Fleming, association with Charles Tupper and John S.D. Thompson, etc. See W.L.Morton, Henry Youle Hind 1823-1908 (Toronto and Buffalo, 1980), p.114.

78) Morton, Hind, p. 110.

79) (Toronto, 1863). A useful review of the literature of progress in Canada is provided by H.V. Nelles, introduction to T.C. Keefer, Philosophy of Railroads and Other Essays (Toronto and Buffalo, 1972).

80) H.Y. Hind, A Sketch of the Mineral Resources of Part of Cumberland County, Nova Scotia (Halifax, 1872), p. 5.

81) Ibid., p. 48.

82) H.Y. Hind, Report on a Topographical Survey of Part of the Cumberland Coal Field, with Notices of the Coal Seams, and their relation to the Iron Deposits of the Cobequids (Halifax, 1873).

83) H.Y. Hind, Report on the Property of the Mineral Exploration and Mining Association of Nova Scotia (Halifax, 1873).

84) PAC, MG 26, D, Thompson Papers [Microfilm C-9234], H.Y. Hind to J.S.D. Thompson, 22 and 28 January, 1875.

85) Sanford Fleming, The Intercolonial, pp. 226-228.

86) Alan Wilson, "Fleming and Tupper: The Fall of the Siamese Twins, 1880," in John S. Moir, ed., Character and Circumstance: Essays in Honour of Donald Grant Creighton (Toronto, 1970), pp. 99-127, notes the business partnership between Tupper and Fleming and suggests Fleming himself assumed some of the exploratory costs.

87) Statutes of Nova Scotia, 33 Vic., Cap. 72, 1870, "An Act to Incorporate the Spring Hill Mining Company."

88) "The Spring Hill Mining Company, Prospectus (n.p., n.d. [1872])."

89) Amherst Daily News, 7 March 1891.

90) R.G. Dun and Co. Collection, Nova Scotia, Vol. IX, p. 580, Report of 14 May 1873.

91) Ibid., Report of 28 August 1874.

92) Part of the Liberal attack on Tupper in 1872 [see footnote 42] entailed his alleged purchase of land in Maccan to be used as a coal shipment point.

93) Mines Report (1877), p. 27.

94) Statutes of Nova Scotia, 35 Vic., Cap. 69, 1872, "An Act to incorporate the Spring Hill and Parrsboro Coal and Railway Company, Limited."

95) G.A. White, Halifax and Its Business (Halifax, 1876), p. 102.

96) Donville's career is discussed by Acheson, "The National Policy,"

p. 8; J.R.H. Wilbur, "The Stormy History of the Maritime Bank 1872-1886," Collections of the New Brunswick Historical Society, Vol. XIX (1966), pp. 69-76; and Wilfred Harrison, "The Maritime Bank of the Dominion of Canada, 1872-1887," M.A. Thesis, University of New Brunswick (1971).

97) See the Statutes of Nova Scotia, 35 Vic., Cap. 17, "An Act to encourage the building of certain Railways."

98) John McG. Otty, Railway Circular. To the Inhabitants of Pugwash, the Valley of River Philip, and the Spring Hill Mining Company, N.S. (n.p., n.d. [1871]).

99) Stevens, Canadian National Railways, Chapter 5 is the classic case of a patronizing treatment.

100) Dawson, Acadian Geology, introduction.

101) Acadian Recorder, 4 October 1873.

102) P.S. Hamilton, "History of the County of Cumberland," unpublished manuscript, PANS.

103) Ibid.

104) Statutes of Nova Scotia, 35 Vic., Cap. 17, "An Act to encourage the building of certain Railways."

105) PANS, RG 28, Vol. 16, Thomas Stead to P.C. Hill, 20 February 1878.

106) Canada, Sessional Papers, 1901, Vol. XXXV, No. 8, Department of Railways and Canals, Sessional Paper NO. 20, Table of cash subsidies paid in aid of railway construction.

107) PANS, RG 28, Vol. 16, No. 16, Thomas Stead to P.C. Hill, 28 July and 1 August, 1877.

108) PANS; RG 39, Series "C", File 11,080, Supreme Court Papers, Cold Brook Rolling Mills Co. of Canada vs. Springhill & Parrsboro Coal and Railway Co. Ltd., Writ and Declaration of James Donville, 1 July 1880. See also PAC, Thompson Papers, Reel C-10695, Thompson to Thomas Stead, 4 January 1878, among numerous other letters concerning the case.

109) Monetary Times, 15 October 1880.

110) See the censorious obituary of the Monetary Times, 18 March 1887.

111) JHA (1877), Appendix No. 7, Report of the Provincial Engineer, p. 36.

112) JHA (1879), Appendix No. 7, Report of the Provincial Engineer, p. 69.

113) JHA (1883), Appendix No. 7, Report of the Provincial Engineer, p. 17.

114) T.W. Acheson, "The Great Merchant and Economic Development in St. John 1820-1850," Acadiensis, Vol. VIII, No. 2 (Spring 1979), p. 27.

- 115) For an account of the take-over see David J. McDougall, "The Acquisition of a Maritime Industry by Upper Canadians: The Case of the Cumberland Railway and Coal Company," Unpublished paper presented to the Atlantic Conference, Halifax, 1981, pp. 5-7.
- 116) Amherst Daily News, 27 September 1904.
- 117) For evaluations of the trade of this line see JHA (1893), Appendix No. 7, Report of the Provincial Engineer, p. lv, lx; Canada, Sessional Papers, 1920, Dominion Bureau of Statistics, Steam Railway Statistics, Sessional Paper No. 20b, p. 118, for a statistical synopsis.
- 118) Statutes of Nova Scotia, 36 Vic., Cap. 55, 1873, "An Act to incorporate the Minudie Mining and Transportation Company, (limited)." The Seaman interests had also been active in Springhill and seem to have contemplated trying to build a railway: see Statutes of Nova Scotia, 27 Vic., Cap. 50; "An Act to incorporate Spring Hill Mining, Manufacturing and Transportation Company."
- 119) King Seaman Museum (Minudie), Diary of Gilbert Seaman, Memoir written in 1887 (n.p.).
- 120) Mines Report (1876), p. 29.
- 121) Mines Report (1878), p. 13.
- 122) PANS, RG 7, Vol. 375, No. 19, James Kennedy to Charles Church, 30 August 1888.
- 123) Trades Journal, 4 April 1884.
- 124) Diary of Gilbert Seaman, Memoir written in 1887, n.p.
- 125) Diary of Gilbert Seaman, 13 June, 4 August 1882.
- 126) George Hibbard wrote to Gilbert Seaman that he had found "a prejudice against Cumberland as having more Railways than other Counties," particularly among members from Cape Breton, during a visit to Halifax to push the interests of the Joggins Railway in 1884. Diary of Gilbert Seaman, 1 March, 20 April 1884. For a comparison of railway development in Cumberland and Cape Breton, see The Critic, 1 January 1886.
- 127) Herald, 16 September 1884.
- 128) Diary of Gilbert Seaman, 20 April 1884.
- 129) PANS, RG 28, Vol. 16, W.C. Milner to W.S. Fielding, 19 June 1890.
- 130) PANS, MG 2, Vol. 491, Fielding Papers, Letterbook 1888-1889, Fielding to W.T. Pipes, 18 February 1889. Pipes was a stalwart advocate of the Joggins railway.
- 131) PANS, RG 28, Vol. 16, W.C. Milner to W.S. Fielding, 25 September 1890.

- 132) PANS, RG 28, Vol. 16, Memorandum re Land taken for Railway Purposes.
- 133) Canada, Sessional Papers, 1900, Vol. XXXIV, No. 8, Railway Statistics, p. 62 and p. 66.
- 134) PANS, RG 28, Vol. 16, "Memorandum re Joggins Ry.," n.d. [1888].
- 135) John Otty, Railway Circular, passim, and JHA (1872), Appendix No. 14, Report on the Springhill and Pugwash Railway. His idea was manifest in the Statutes of Nova Scotia, 1872, 35 Vic., Cap. 61, "An Act to incorporate the 'Pugwash and Spring Hill Railway Company.'"
- 136) PANS, RG 28, Vol. 16, E.N. Sharp to P.C. Hill, 12 March 1877..
- 137) PANS, Fielding Paper, Letterbook, 1886-1888, Fielding to T.R. Black, 29 May 1888.
- 138) JHA (1889), Appendix No. 7, R.F. Uniacke to M. Murphy, December 1888. At the time of the decision, virtually all the physical structures were in place.
- 139) The contract for the road was awarded in October, 1904 (Herald, 24 October 1904), and the line completed in 1906 (Amherst Daily News, 15 June 1906). It became part of the property of the Minudie Coal and Railway Company, a Montreal-dominated concern.
- 140) Trades Journal, 25 March 1885; Amherst Evening Press, 4 April 1891.
- 141) Colliery Guardian (London), cited in Amherst Weekly News, 23 November 1889.
- 142) Trades Journal, 30 March 1881.
- 143) Trades Journal, 19 March 1884.
- 144) Trades Journal, 16 September 1885.
- 145) PAC, Macdonald Papers, Vol. 135 [Microfilm Reel 1560], Collingwood Schreiber to Sir John A. Macdonald, 19 June 1889, pp. 56,056-56,063.
- 146) Ibid.
- 147) Ibid., C.H. Tupper to Sir John A. Macdonald, 13 June 1889, pp. 56,056-56,072.
- 148) Ibid., C.H. Tupper to Sir John A. Macdonald, 24 June 1889, pp. 56,059-56,063.
- 149) Ibid., Hector Langevin to Sir John A. Macdonald, 4 July 1889, pp. 56,073-56,075.
- 150) Maritime Mining Record, 11 November 1903.
- 151) Herald, 9 August 1879..

152) Labour Gazette (1909), pp. 209-210.

153) PANS, RG 21, Series "A", Vol. 5, Edwin Gilpin to C.E. Church, 13 February 1890.

154) Nova Scotia, Debates and Proceedings of the House of Assembly (1893), Speech of George Forrest, 26 January 1893, p. 73.

155) Amherst Daily News, 29 April 1904.

156) Mines Report (1876), p. 39.

157) Canada, Royal Commission on the Relations of Capital and Labour, Evidence Taken Before the Royal Commission on the Subject of Labor in its Relation to Capital in Canada, Evidence--Nova Scotia (Ottawa 1889) [Hereafter R.C.R.C.L.], Evidence of R.H. Brown, pp. 430-431.

158) Dalhousie University Archives, Rutherford Papers, file A. 11, H.A. Budden to John Rutherford, 11 March 1878.

159) PANS, RG 21, Series "A", Vol. 5, File "Coal Mines, 1887, Correspondence," H.A. Budden to Edwin Gilpin, 3 May 1887.

160) Trades Journal, 10 August 1887.

161) The freight-rate structure aided Springhill. In 1879 a car loaded with coal carried from Springhill to Elmsdale was charged \$10 for the 91-mile journey, while an identical car going from Stellarton was charged \$13 for 71 miles. The impact of freight rates was dramatically revealed when in 1891 the Springhill company declared a "strike" rather than consent to higher rates. See Morning Chronicle, 29 April 1879; Trades Journal, 6, 13 February; 6 March, 1889.

162) [Spring Hill Mining Company], Prospectus of the Spring Hill Mining Company, Incorporated Under Laws of Nova Scotia, 1872, c. 72 (n.p., n.d. 1872).

163) Robert Drummond, Recollections and Reflections of a Former Trades Union Leader (n.p. [Stellarton], n.d. [1936], p. 26.

164) Herald. 6 August 1879.

165) James S. Hickman and E.N. Sharp, Memorandum in re "The Styles Mining Company" (n.p., n.d. [1878]).

166) Although the by-laws of the company were to require that the banking be done with the Bank of New Brunswick, which might suggest a link. See Morrow, Disaster, pp. 186-187.

167) Drummond, Recollections, p. 27. For the transfer from the G.M.A. see PANS, RG 21, Vol. 3., Petition of the General Mining Association, Limited. No price is mentioned on the official document.

168) Herald, 6 August 1879.

169) Trades Journal, 4 February 1880.

170) Drummond, Recollections, pp. 23-24; Maritime Mining Record, 3 August 1898. The 17% dividend perhaps commands greater credence in that it is contained in this last-mentioned account.

171) On the question of shipping profits, see Eric W. Sager and Lewis R. Rischer, "Atlantic Canada and the Age of Sail Revisited," Canadian Historical Review, Vol. LXIII, No. 2 (June 1982), pp. 143-145. The question, however, is still sub judice, as the authors are careful to stress.

172) Trades Journal, 7 February 1883.

173) Morrow, Disaster, p. 196.

174) Statutes of Nova Scotia, 46 Vic., Cap. 85, 1883, "An Act to amend an Act to incorporate the Spring Hill and Parrsborough Coal and Railway Company, and the Acts in amendment thereof, and to provide for winding up the affairs of said Company."

175) Statutes of Canada, 46 Vic., Cap. 77, 1883, "An Act to incorporate the Cumberland Coal and Railway Company."

176) Trades Journal, 6 June 1883.

177) Novascotian, 19 November 1883.

178) McDougall, "Acquisition," passim.

179) Trades Journal, 28 October 1885.

180) Mines Report (1873), p. 14; (1874), p. 27.

181) Mines Report (1875), pp. 32-33.

182) Mines Report (1877), p. 29; (1878), p. 13. See also Maritime Mining Record, 3 August 1898.

183) Mines Report (1879), pp. 2-3; (1880), p. 3.

184) PANS, RG 7, Vol. 375, NO. 12, Petition of the Cumberland Railway and Coal Company, 30 November 1889.

185) Trades Journal, 21 September 1882.

186) Trades Journal, 11 October 1882.

187) Moncton Daily Transcript, 18 July 1887.

188) Amherst Evening Press, 3 November 1890.

189) Mines Report (1888), p. 4.

- 190) Mines Report (1890), pp. 11-12.
- 191) Mines Report (1892), pp. 7-8.
- 192) Mines Report (1893), p. 9.
- 193) Ibid., p. 10.
- 194) Mines Report (1895), pp. 10, 17.
- 195) Mines Report (1898), pp. 11-12.
- 196) Maritime Mining Record, 3 August 1898.
- 197) Mines Report (1898), p. 13.
- 198) Maritime Mining Record, 14 December 1898.
- 199) Maritime Mining Record, 23 January 1901.
- 200) Maritime Mining Record reprinted in Saint John Sun, 30 March 1905.
- 201) Maritime Mining Record, 26 November 1902.
- 202) PANS, RG 28, No. 16, "Memorandum Re Joggins Railway," n.d. [1896].
- 203) Arthur J. Taylor, "Labour Productivity and Technological Innovation in the British Coal Industry, 1850-1910," Economic History Review, Vol. XIV, No. 1 (1961), p. 65.
- 204) Mines Report (1873), p. 14; (1874), pp. 27-28.
- 205) Mines Report (1881), pp. 2-3; (1880), p. 2; (1883), p. 4.
- 206) PANS, RG 7, Vol. 375, No. 19, James Kennedy to Charles E. Church, 30 August 1888.
- 207) Statutes of Nova Scotia, 38 Vic., Cap. 71, 1875, "An Act to Incorporate the East Joggins Mining Company," and Statutes of Nova Scotia, 53 Vic., Cap. 180, 1890, "An Act to Change the name of the East Joggins Mining Company and for other purposes."
- 208) Mines Report (1885), p. 25; [Amherst Coal and Mining Company], Prospectus (n.p., n.d.).
- 209) PANS, RG 7, Vol. 366, file "Lawson Mining Company Shareholders," 1881; Mines Report (1887), p. 11; Mines Report (1900), p. 10.
- 210) [Minudie Mining and Transportation Company], Prospectus (n.p., 1884); Amherst Daily News, 18 September 1900.
- 211) [Boston Coal Mining Company "Limited"], Prospectus (Boston, n.d. [1896]).

212) PANS, RG 21, Series "A", Vol. 4, File "1868," William Bennett to M.J. Wilkins, 11 August 1868.

213) PANS, RG 21, Series "A", Vol. 8, File "Coal Mines, 1888, Reports and Returns," William Maddin to Edwin Gilpin, 21 March 1888.

214) PANS, RG 21, Series "A", Vol. 10, Memorandum "Chignecto Mine, Cumberland Co.," n.d. [c. 1900].

215) Mines Report (1883), p. 5.

216) Mines Report (1882), p. 3; (1881), p. 3. As far as the expense of the renovations goes, this extract from the Trades Journal (18 November 1885) is pertinent: "The Chignecto at Maccan which cost the Steel Company of Canada over \$100,000 has been offered at sale for \$40,000. The 'rods' and 'sulphur balls' in the coal made it unsuitable for the purposes the Co^y had in view when it purchased the mine." In fact the company held on to the mine until 1898, in which year it was sold to James Baird of Maccan (see the Amherst Daily News, 28 March 1898). Presumably the Trades Journal referred to both the initial cost and subsequent improvements at the mine.

217) Mines Report (1890), p. 13.

218) Amherst Daily News, 12 February 1902.

219) Mines Report (1890), p. 5.

220) Mines Report (1890), p. 13.

221) Mines Report (1891), p. 10.

222) Amherst Daily News, 13 January 1890.

223) Trades Journal, 26 June 1889.

224) Maritime Sentinel (Amherst), 21 November 1889; see also Herald, 9 March 1905.

225) Cited in the Amherst Daily News, 21 August 1890.

226) Montreal Star, reprinted in the Saint John Sun, 14 May 1904.

227) Springhill News and Advertiser, 5 March 1896.

228) PANS, RG 21, Vol. 29A, Letter Book of the Department of Mines, 1901-1902, Edwin Gilpin to J. Primrose Lindsay, 11 February 1902.

229) Herald, 9 March 1905.

230) Trades Journal, 25 July 1883.

231) Amherst Evening Press, 17 October 1890.

232) Acadian Recorder, 12 October 1893.

233) Amherst Daily News, 7 March 1902.

234) Trades Journal, 18 August 1880.

235) Trades Journal, 29 March 1882.

236) Journal and Pictou News, 27 January 1897. This issue is not available in the normal newspaper file; it must be consulted in PANS, RG 21, Series "A", Vol. 40.

237) Trades Journal, 24 October 1888.

238) Trades Journal, 7 August 1889.

239) Fielding was acutely aware of the damage which could result from the Liberals' singling out the duty on coal for attack. As he noted in a letter to J.S. Willison of the Globe, "As to coal, let me beg you not to close the door on any policy in the direction of tariff reform that the party may wish to take on that question. ...I am bound to tell you that if we had to stand on the platform declaring particularly for free coal while leaving other items of the tariff in a debateable state, we could not put a candidate in the field in Cape Breton at all." PANS, Fielding Papers, Letterbook 1896-1898, Fielding to J.S. Willison, 23 January 1896. R.T. Naylor attributes to Fielding a dogmatic consistency, but he seems in fact to have been the epitome of pragmatism.

240) Alan G. Macpherson, "Introduction" to Macpherson, ed., The Atlantic Provinces (Toronto, 1972), p. xi.

CHAPTER THREE
MONOPOLY CAPITALISM AND THE
COALFIELDS, 1893-1927

CHAPTER THREE

Monopoly Capitalism and the Coalfields, 1893-1927

On Saturday, 21 January, 1893, W.S. Fielding stood in the House of Assembly to introduce a bill which transformed the coal industry of Nova Scotia. Innocuously entitled "An act for the further encouragement of coal mining," Fielding's bill went far beyond the mere encouragement of the industry. His aim was its transformation, and he succeeded in that purpose. Just as the monopoly of the General Mining Association was broken by a long political struggle, and the railway system created by an act of political will, so too was the third epoch of economic development initiated by a political decision.

It was both a simple and complex event, both a response to an immediate political situation and a structural change of permanent consequence. As a simple political event it can be seen as a brilliant move on the part of Fielding, who transformed the Liberal Party of the province into a hegemonic presence, the party par excellence of the new age of corporate capitalism. As a socio-economic event it can be seen as both a symptom of new tendencies within the economy and the cause of a subsequent economic transformation. The restructuring of the coalfields in 1893 presents us with a good example of the "matrix-event," the event that becomes the precondition of a new structure.¹ It stands at the culminating point of a slow and gradual evolution--its antecedents extend at least to 1873--and yet it also suddenly and irrevocably imposes a new logic upon this development. Only by 1900 would monopoly capitalism become an undeniable reality; only by 1910 would the major coalfields be formally consolidated under one corporate roof. But as

soon as one looks into these moments of consolidation, one is drawn back to their point of beginning: 1893.

The approach we shall take to this great movement of restructuring shall consequently begin with 1893. The first step shall be to trace the policy of the state towards the coal resource from the early 1870s to 1893, to indicate the general problems that the restructuring was supposed to correct. The second step is that of documenting the emergence of a new corporate economy, characterized by the gradual elimination of competition and the consolidation of ownership and control of the coal mines within one company. We then resume our analysis of the economic duality of Cumberland, which was accentuated in the period of monopoly capitalism. In Springhill the new economy was triumphant; in the Joggins coalfield it failed, and this failure placed the coalfield in a unique position in the twentieth century. Here is a comparative problem which demands attention, because it seems to conflict with our general understanding of the growth of monopoly capitalism. After analyzing the two coal fields, a fifth and concluding section will address the question of monopoly capitalism in general terms, and also sum up the economic patterns which the first three chapters have described.

1. The State and the Coalfields: The Road to 1893.

Nothing more profoundly influenced the political economy of coal in the nineteenth century than the fact of state ownership of the resource. H.V. Nelles, looking at the Ontario case, has concluded that the state's proprietary control of resources did not significantly alter the pattern of resource development, except (in the case of hydroelectricity) a possible effect of strengthening the grip of business upon the state.² The Nova Scotia case confirms Nelles's general view

that public ownership did not constitute a significant barrier to the growth of corporate capitalism, but it also leads us to suggest that the fact of state ownership was politically and economically crucial, to everyone in the province. The difference probably lies in the extent of financial dependence of the local government upon the proceeds of the coal industry. This dependence provided a strong incentive for governments to push for rapid resource depletion without a larger conception of the purposes which coal-mining was supposed to serve. The politics of development in Nova Scotia would appear to have been even less influenced by conceptions of public responsibility and popular control than those of Ontario.

It would be difficult to imagine a more complete interweaving of public and private interests. The miner toiled below ground digging out the coal--the "people's property," Robert Drummond would say--in an atmosphere which, more and more each year, "the people" collectively regulated, to the extent of determining how much powder the miner used and whether or not he could use an open light. The state took a growing interest in the training of the miner and in deciding what qualifications he ought to have; it supervised and inspected many of the daily operations of mining life. The miner, in turn, was a crucial link in the generation of provincial revenues. Without him the level of state services would have had to be drastically curtailed. Occupying a strategic position between the miner and the state was the coal company. Through a process of economic transubstantiation, public property (the coal seam) was transformed by the miner's labour into private property (coal ready for market). Coal companies exercised exclusive jurisdiction over many of the most crucial decisions. They alone determined their investment

strategies, their policies towards the miners' wages, and in many cases the minutiae of civic life. There were always three forces to contend with in any mine: the workers, the company, and the state.

But nothing would be less accurate than a depiction of the state as a representative of the broad interests of the community, placing itself above the conflict of labour and capital. There is little evidence that the state ever conceived of its role in the coalfields as a continuously directive one. From the copious writings of various officials of the Department of Mines one comes away with a clear impression of a state bureaucracy content to leave long-term decisions to capital. There was little that was remotely progressive (in the sense of enhancing popular control) in the policies of the state. The Duke of York did not bequeath to Nova Scotia a system of pre-capitalist state authority which could serve as a counterbalance to the demands of capital. Instead he left behind a strange mixture of state ownership and private profit, reminiscent of eighteenth-century Old Corruption in England, and oddly anticipating the marriage of private and public interests in monopoly capitalism. Probably the position and character of the coal industry was sui generis. It may be dangerous to apply models developed in other situations to this one, which in its inception was a mystifying blend of the old and the new.

An entirely different direction was taken by mining law in England, where coal seams could be held privately.⁴ Ironically the principle of crown ownership was abandoned in its homeland but flourished in exile.⁵ Few American parallels existed for this situation. The peculiarities of the Nova Scotia industry had important ramifications for the political structures of the coalfields and their centrality to provincial political

life in general. It took very little to 'politicize' economic issues in the coalfields, when their political dimensions were obvious to all.

In addition to treating with scepticism models which stress the disinterested autonomy of the state, we also have to reject conceptions of the state which see it as the "handmaiden" of capital. Such interpretations correctly stress the dependence of the state upon the continued existence of the coal industry. But they err in suggesting that the state played a docile or subservient role. A far more telling metaphor would be that of the state as shareholder. A large shareholder in a corporation may not be interested in the long-term plans of the corporation, nor in its practical affairs. The essential consideration is the payment of the annual dividend, by which the success or failure of the company is judged. In many ways, this same pragmatic consideration dominated political thinking. It was true that after the emergence of trade unionism the state also had to consider more seriously the socio-political consequences of capital accumulation. Yet what is striking is not so much the violence with which the state responded to challenges to its authority as its willingness to risk serious social conflict--always provided that the annual "dividend" arrived on time. There emerged in the period 1870-1925 a rentier state, whose very functioning depended on coal royalties. To guarantee these royalties the state could act forcefully and, in 1893, would intervene decisively to reconstruct the very organization of the industry. No handmaiden would have ventured upon such an ambitious project.

H.S. Poole outlined with startling clarity the distinctiveness of the state's position in an essay he wrote as part of the Mines Report in 1876. Poole's intention was to refute claims by mining capitalists that

"the royalties paid into the Provincial Treasury bear hardly on the mining industry." After establishing to his own satisfaction that the local government was merely following international convention and the principles of liberal economics, Poole concluded with a startlingly un-liberal doctrine of the state as a corporation.

There is... a point... that it might be well to remember, and that is that the interests of the Local Government respecting the general condition of the country are only comparable to those of a large corporation, and not to those of a general government interested alike in all sources of trade and revenue. Even were the several industries of the country, the agricultural, the fishing and ship-building, and the carrying trade to be benefitted by a reduction in the royalties, their increase would not repay the loss to the Local Government, for, besides mining, no profit is derived from any increase except from that of the population per capita. The Local Government then have to be considered in the light of a corporation owning mining property and leasing it to others to work. 6

This passage summing up Poole's economic doctrine, which tended to anticipate post-competitive capitalism, also suggested the particular nature of the coal industry. Yet Poole's notion of the state as a giant corporation, suggestive as it is, should not lead us to believe that anyone in the provincial government believed in the nationalization of the industry. The state would force the Block House colliery in Cape Breton onto the auction block in the 1880s for failure to pay the royalty, but it never willingly undertook the control of collieries as a state enterprise.

The state had a complex relationship with the collieries of Cumberland County. For many little collieries it had very little relationship whatever, since they tended to be beyond its reach. "A number of small mines in the vicinity of the Maccan and Hebert Rivers

worked intermittently," noted the Mines Report of 1900. "Many of these mines do not make the returns required under the Act, and your attention has been called to the matter as one requiring the adoption of severe measures."⁷ Illegal mines in Cumberland--"bootleg pits" in local parlance--were to plague provincial authorities throughout the history of the coalfields. They were sustained by a popular conception of resource law that made the coal seams part of the moral economy of the countryside. Especially in the Joggins coalfield, stretched out across a sparsely-populated district, the state found it difficult to enforce its monopoly over the right to mine coal.

The larger collieries were more easily monitored and controlled. Their relations with the government reflected the very different histories of the two coalfields in the 1880s. The Joggins Coal Mining Association appealed for help because of the Saint John fire of 1877. The Commissioner of Mines evidently agreed to waive the royalty for 1877, but subsequently forgot he had done so, much to the chagrin of the company.⁸ By 1885 Robert Cruikshank of the Joggins company was alarmed about the prospects of expropriation for reasons of non-payment of royalty. W.S. Fielding, in replying to the requests of the beleaguered company, referred ominously to the precedent set by the Block House mine. He also noted how seriously the government took the question of coal royalties. "The coal royalties are practically our only source of revenue, apart from Dominion subsidy," he wrote. "We have been blamed in the Legislature for allowing claims against the Mines to remain uncollected. The royalty is in the same position as a customs duty and should be collected with the same promptness." Ostensibly reassuring Cruikshank that no immediate action would be taken, Fielding in truth

was threatening him with dire measures should the company not conform to the law.⁹ In the end, the government reached a compromise with the company, whereby the royalties were applied to the building of a railway, with the proviso that a double royalty (15 cents on each long ton sold after 31 December 1888) be paid.¹⁰ Fielding may well have concluded that the coal interests of the County were already aggrieved by the obstructions placed in the way of the railway. But he also illustrated by this policy the extent and limitation of state power, encompassing the ability to close a mine, but limited by the threat of political damage and the difficulty of balancing the prospects of recovering lost royalties with the demands of mining law. By 1890 the company had incurred the wrath of the government by defaulting even on the easy royalty terms negotiated in 1888.¹¹

The situation in Springhill was quite different. Here the company bargained not from weakness but from strength. The royalty question in Springhill deserves close study because it establishes the argument that the 1880s witnessed the maturation of a new concept of the state's role within the industry.

In the original conception of the royalty, payment was for round coal and slack coal was not taxed. This was a prime bone of contention between the General Mining Association and the government. Round coal was comprised of large lumps, slack was comprised of bits of much smaller coal which passed through a screen, and run-of-mine coal was coal that was not screened and therefore made up of both round and slack coal. Determining these categories was a vague and approximate business until the 1870s, but rather more definite after the law and more effective screening evolved to meet the requirements of the government.¹²

The simple dichotomy between round and slack coal, used in the 1860s was no longer applicable to the industrial context, because collieries selling to railways generally sold their coal run-of-mine. In 1881 and 1882 the Halifax Company, the Acadia Coal Company, and the Spring Hill Mining Company all applied for the right to pay royalty on unscreened coal by estimating the percentage of slack. Permission was granted to the Halifax Company of Pictou County to so pay their royalty, on the grounds that this quality of coal was required by the Steel Company of Canada at Wondonderry from this particular pit.¹³ The law on this subject did not really give the state that much flexibility in granting such requests.¹⁴ Nonetheless the companies evidently went ahead and sold run-of-mine coal on the new basis, much to the displeasure of Edwin Gilpin, the Inspector of Mines, who noted how complicated the calculation of royalty accounts would become under this new system. H.S. Poole, who as inspector of mines had been such a militant crusader for the rigorous enforcement of the law, was now said by Gilpin to be selling "run of mine" coal without having received formal license to do so.¹⁵ R.G. Leckie, managing director of the Cumberland Coal and Railway Company (as it was then known) explained the underlying rationale behind his company's pursuit of the new system of calculating royalties. The old system of screening coal entailed an enormous waste--as much as three hundred thousand tons of coal, according to the company's manager--and this loss, he pointed out, fell upon the Government as well as upon the mines. The company's customers, (by which Leckie must have meant primarily the railways) had been induced to use unscreened or run-of-mine coal, and as the slack was included, it only seemed equitable to charge the royalty on the proportion of round coal shipped. The

Inspector of Mines looked at the company's shipments and recommended that a deduction of 40% be made; the government reduced the offer to 30%, which was accepted in January 1885.¹⁶

This was a significant shift in the royalty structure. In essence, as J.R. Lithgow pointed out in a letter to the Herald, the government had undermined its policy of treating collieries on an equal basis and had introduced a system whereby collieries doing a large railway business--those most integrated with the industrial economy--were given a distinct advantage over Cape Breton collieries still forced to rely upon merchant shipping.¹⁷ Other critics of the royalty policy argued that the government had an essentially parasitical function in relation to the industry: it clipped the coupons but little else. "Our mines are already an important source of revenue, yielding nearly Ten Thousand Dollars a year to the Provincial Exchequer by way of royalty," argued one writer, "No Local Administration has ever appropriated a dollar of this fund to the encouragement of that industry beyond what was necessary to support the Minister and his clerks, who survey off the mining areas to applicants, and give receipts for the money paid in as royalty." This "happy-go-lucky" attitude would hardly do if the mines were to be the mainstay of provincial finances.¹⁸

Possibly in response to such criticisms, the government in April, 1885 brought in legislation making the rate of royalty 7 $\frac{1}{2}$ c on every ton of coal raised and sold from the collieries of the province. There was no special provision made for run-of-mine coal.¹⁹ Some of the lessees of coal mines contended that the government was bound to give them renewal leases on the old terms, at the rate of 9 $\frac{7}{10}$ c per ton on round coal raised by their collieries; the government acceded to their

requests, and renewed leases on the old basis. The lease of the Cumberland Railway and Coal Company was renewed on these terms.²⁰

Now the complications began, and the situation became so intricate that it confounded everyone involved in it. What appears to have happened is this. The Springhill mine really wanted to continue selling run-of-mine coal on the old basis, and from this point of view the new legislation was highly damaging. Leckie, in his correspondence with the company in Montreal, argued that he could make an informal bargain: "The Law does not take notice of the run of mine coal but the Government is willing to settle with us on the terms specially agreed to seven and a half cents on run of mine coal and wait for the proper authorization when the Legislature meets."²¹ Leckie fought hard for the compromise formula that had been achieved in 1885, and obviously refused to accept the new system. Consequently the company started to build up a large deficit in its accounts with the government. In 1888 this private arrangement was made with the Department of Mines. "The company under their lease are obliged to pay 9.7 cents on each ton of screened coal. They sell run of mine coal which not having had the slack taken out is considered unscreened and charged equally with the round at 9.7 cents. Last year the Company were so charged, but an arrangement was effected whereby the royalty due to Sept. 30 1887 was paid at the rate of 9.7 cents on round, and 7.5 cents on run of mine coal."²² A crude way of putting this would be to say that the government was breaking its own laws, by charging a company a different rate of royalty than specified in the statute. From Leckie's letters to Montreal it is evident that this compromise was rigidly opposed within the Department of Mines, since the Commissioner and the Deputy Commissioner refused to give

receipts in full for the amounts received from the company, but there can be no doubt that some compromise formula was in fact reached. Charles E. Church, Commissioner of Public Works and Mines, thought that a maximum rate of royalty of 10c per ton on coal sold would be advisable, to force the Cumberland Railway and Coal Company to come within the leases arranged by the legislation of 1885. The government's aim (thwarted to some extent by the persistent Leckie) was to impose upon the coal industry a uniform structure of leases, and to bring all the coal companies within the jurisdiction of leases negotiated on the new basis, which explicitly stated that the government could increase the rate of royalty at any time while the leases were outstanding.²³

Beneath the baroque complexity of this dispute one may find a number of simple and important new features. The provincial government was clearly intent on standardizing the structure of leases in the province. It held tremendous power in its capacity to do so. Certainly it had met the coal companies half-way in this agreement to their demand that old leases be renewed, but it appeared to be much more flexible than it in fact was. There seems to be a centralizing thrust at work, propelled by the universal bureaucratic passion for consistency, but also by the government's desire to bring all the coal companies within the new leasing structure so that its legal right to increase royalties could withstand any conceivable legal challenge.

After Leckie was dismissed by the Cumberland Railway and Coal Company, the new management discovered that the Government demanded payment of royalty from 30 September 1885 to the end of December 1888 on the basis of 9.7 cents, which amounted to \$26,396.41, while the company had paid only \$7,108.33. The department billed the company for

a balance of "upwards of Twelve Thousand Dollars," and clearly had reneged on its compromise agreement.²⁴ The company thought this was thoroughly unreasonable. It pointed out that had the coal been screened as contemplated by the leases under which the coal areas were held, the government would have been the losers as well as the company, for 40% of the coal produced at the mine was considered slack. The company had, by making up its own royalty schedule, saved the government \$13,677.60. The department finally relented, dropped its attempt to collect the overdue amount, and the company were given a full discharge. It was a case, said Edwin Gilpin, of the company choosing to sell its run-of-mine coal in preference to screened coal because it suited their trade better, and from that standpoint the benefits were shared between the government and company.²⁵

Now the company took the initiative, and sought to enlist the support of the government in its bid to secure a large contract with the Grand Trunk Railway for at least 85,000 tons of run-of-mine coal. In this bid for the Grand Trunk contract the links between the government, coal company and railway all emerged with stark clarity. The coal company wanted the government to make a special provision for its attempt to secure large railway contracts, by allowing it to pay as royalty, in lieu of the present royalty of 9.7c per long ton, 7½c per gross ton on run-of-mine coal for 250,000 tons or thereabouts for the year, or to fix such a rate for run-of-mine coal for a term of years. As the company pointed out, "Such a contract would manifestly be in favor of the Government,--for instance 250,000 tons run of mine at seven and one half cents per ton would yield the Government \$18,750, while the same tonnage (less forty per cent 40% of slack which is free) under present royalty

would be only \$14,550."²⁶ In a flurry of telegrams and letters-- everything was hurried so the company could enter its bid--J.R. Cowans told Edwin Gilpin that his petition to the government was part of a comprehensive reform of the mine, starting with the labour process. "I expect by paying higher price on box hand picked coal to induce men to make a marketable run mine with no waste," he telegraphed Gilpin in response to his enquiries.²⁷ Gilpin remained uneasy about the scheme, uncertain whether he could guarantee to the government that the coal company would so increase its output that the lower rate of royalty would pay, but Cowans clearly convinced Gilpin by the sweep of his scheme. The company really proposed an entirely novel approach, focussing on improving the quality of run-of-mine coal through a reform of work underground. The results were wonderfully encouraging; the management was completely satisfied that with bonuses for extra time and care by the men, the quality of the coal could be markedly increased. An advance of five cents on every box of handpicked coal was offered. This would save the company thousands of dollars, add new dollars to the provincial treasury, and secure new markets for Nova Scotia coal. "We are pushing the sale of Run of Mine and have closed with the Grand Trunk Railway for 85,000 tons clear Run Mine and expect another order this week of 40,000 tons." The government stood to gain \$4,000 out of the new arrangement.²⁸ Gilpin was convinced, and after insisting on certain guarantees, the government closed the deal.

We have spent some time with this technical discussion of the royalty because this one aspect of the industry integrates the many different factors which moulded the great change of 1893. There can be no mistake about the greatest factor: the government's thirst for

revenue, its overwhelmingly rentier orientation. Let us cite just one statistic to underline the importance of the royalty. In 1872 the provincial government derived \$54,446.96 from the mines, or 7% of its total revenues; in 1900 it derived \$413,874.77 from the mines, or 41% of its total revenues.²⁹ The state pressed hard upon the coal industry, to which it looked for its financial survival:

The province in 1891 and 1892 was engulfed by bitter debate on the royalties question. The Mining Society of Nova Scotia, an organization of all the mining men of the province, was actually called into being in 1892 by the new royalty policy of the state. The mining men pitted all their intellectual strength against the doctrine that the state had the right unilaterally to raise the level of royalties. The new Mining Society heard H.S. Poole, no longer inclined to make comparisons between the government and a large corporation, proclaim that "the late introduction of clauses into the Mines and Minerals Act reserving to the Legislature the power to increase at will the rate of royalty defined in future leases is arbitrary, and inexpedient, and is contrary to the true spirit of a lease to be made in the sacred name of Her Majesty the Queen..."³⁰ The mining men rejected the view that the government had the right to dictate terms to the mining companies, terms which seemed to undermine their security of property. Their new organization and their new vehemence underlined the dramatic shift in the industry in the 1880s and the early 1890s. When Fielding rose in the House of Assembly in 1893 he was not suddenly making an intervention into "private enterprise." He was only expanding the power of the state within a complex nexus of public and private interests. Just the year before, over the protests of the coal companies, he had raised

the royalties from 7½ to 10 cents per long ton, and had subsequently introduced legal amendments to encourage persons to go into the coal trade on a larger scale.³¹ He was following a programme which can be traced back to the mid-1880s. Throughout this period the state clearly saw the royalty as an instrument of economic policy.

The evolution of the royalty revealed the changing character of the socio-economic formation within which the state functioned. The state in the mercantile period had merely facilitated coal mining, by leasing the right to mine its coal to private companies. In the industrial period the state entered a far more intensive and supervisory phase. It intervened in the labour process through the coal mines regulation laws, and had an impact upon the coalfields through the royalty. Yet for all the demonstrated power of its position—a far cry from a mere passive "reflection" of the colliery owners' interests—the state derived benefits from processes over which it exerted little direct control. It prospered as the coal companies prospered, it had a stake in the greater productivity of the coal miners as did the coal companies themselves. Driven by its fiscal requirements, it had a far more intensive involvement with this industry than had been dreamt of in political economy. This was the context of 1893.

On Saturday, 21 January, 1893, when W.S. Fielding rose in the House of Assembly to introduce a bill which would transform the coal industry, he was continuing a long tradition of state involvement in the coal industry. But he was at the same time transforming that tradition by giving the state a direct role in the formation of the coal companies. The state used its ownership of the coal and its control over the structure of royalties to precipitate a revolution in the mode of

production. Fielding's programme was one of complete renovation, within certain limits: the capitalists were to continue to control the coalfields, and the impact of the change was to be confined to industrial Cape Breton. The first limit was scrupulously respected, the second quickly forgotten. Within certain limits the labour process was to be transformed, the markets changed, the principles of the state royalty altered. The state, in its pursuit of revenue, was intent on changing the nature of the province's most important industry. Fielding, Howe's antithesis in most respects, revealed himself in 1893 to be as devoted as Howe had been to industrial improvement.

One need only look at Fielding's speech introducing his bill to grasp the truth of these claims. The Fielding strategy was based on the American example and the American market. He noted the fast rise of the West Virginia industry, and with a certain historical malice quoted a speech delivered in Sydney by Sir Charles Tupper in 1878, in which Tupper declared the paramount importance of the American market.

To gain access to American markets required a complete transformation in the methods of production, Fielding argued. "Now what I say is that if we expect to compete with the Americans we must adopt modern methods and meet our competitors on even terms. Therefore it seemed to us desirable, in approaching this question, that, in order to meet American competition, we should adopt American ideas and methods in regard to the mining, shipment and handling of coal." But to accomplish this technical revolution an infusion of capital would be needed. Fielding did not care where it came from. "Personally I have faith in the resources of the country," he declared. "I believe the people will support any government or party that brings in capital and skill for the development

of our mines, and I believe too that the people will not be particular whether that capital and skill comes from Great Britain or from any part of the world provided it comes." If Nova Scotian capitalists were so preoccupied with other enterprises, American capital was welcome. "I do not believe in this foolish cry which is now being heard against American capital. I am prepared to hold out both hands to any capital seeking investment in our province."³²

Fielding's proposal was deceptively simple. Since 1892 he had been negotiating with Henry Whitney of Boston on a project to amalgamate various Cape Breton collieries and in 1892 had introduced modifications in laws governing royalties and the length of time leases could be held to accommodate the American entrepreneur.³³ Whitney had bought up many coal areas in Cape Breton and the government, with Fielding's bill introduced in 1893, gave him a 99-year lease, renewable for an additional 20 years, at a fixed rate of royalty of 12½ cents per ton. (This was higher than the 10c paid by other provincial coal companies, in consideration of the extraordinary time covered by the lease).³⁴ Cape Breton was transformed, permanently, by the combined force of external capital (first controlled from Boston and then from Montreal) and the state; from Whitney's Dominion Coal Company to the Dominion Steel and Coal Company of the 1960s ran a direct line of descent, which has been explored by succeeding generations of social scientists and historians. The importance of 1893 as a turning point in the history of Cape Breton and the beginning of its domination by massive consolidated corporations can hardly be questioned. The implications of Fielding's decision for Cumberland County, although less studied, were perhaps just as profound.

In its conception the Whitney Deal was not designed to affect

Cumberland County in any way. As the Morning Chronicle noted, "Let it be understood at all times that they [the syndicate] cannot go outside of Cape Breton county. They cannot touch the mines of Pictou, Cumberland, Inverness, Victoria and other parts of the province."³⁵ This was a purely Cape Breton measure. Whitney in his interviews with the press stressed that the company intended to aim at markets in the West Indies and South America, but he especially emphasized the transformation of the St. Lawrence trade, which he hoped to revolutionize by using larger steamers and barges and improved loading facilities.³⁶ William Roche, M.L.A. for Halifax County and a coal merchant, noted that all these schemes applied only to Cape Breton. Because of the limitations of the company's lease, the Fielding measure was really a blow against monopoly: "Even under the present system a corporation possessed of sufficiently vast capital might for the next 54 years take up all the mines in Nova Scotia and possibly could bring about a grinding monopoly," he reasoned, "but so far as the operation of the proposed measure is concerned it will have an effect of greatly restricting the opportunities for monopoly."³⁷ By means of this argument Roche sought to extricate himself from the awkward predicament of so many late nineteenth-century Liberals, confronting with outmoded free-trade arguments the new realities of large-scale capitalism. This line of defence was taken up by most of the apologists for the Whitney Deal. David MacKeen, a Conservative M.P. who supported the scheme, when asked if the new arrangement would increase the domestic price of coal, replied that "The price of coal in this province was never high. In fact, in my opinion, it was always sold too low. The competition of the Springhill and Pictou mines will always regulate a fair price in the local markets. In the upper provinces and

American markets we must compete against the world, and surely no Nova Scotian should complain if we receive such prices as supply and demand will give us."³⁸ Mr. Thomas Fyshe, Cashier of the Bank of Nova Scotia, thought that the worries about the establishment of a monopoly were misconceived. Obviously the Dominion Coal Company could not establish a monopoly and make a success of their business. "The conditions of success with them depend upon an increased output. They can't increase their output and raise prices at the same time, as they would restrict their market when they put up the price."³⁹ It was absurd to claim that the Liberal government had initiated a monopoly, when most of the province's coal companies were left untouched by the merger, when the proposal was narrowly restricted to Cape Breton, and when it would hardly be in the interests of Dominion Coal to damage its own local and national interests by pricing itself out of the market.

The critics of the deal raised the prospect of the company securing control of all the mines in the province; the Liberals, they claimed, had created a force which they could not pretend to control. C.H. Cahan, the leader of the opposition, noted that no restriction had been placed upon the company except the payment of rental and royalty, and called attention to the fact that the company when in operation could monopolize the trade of the entire Maritimes.

I showed that if they put up the price of coal there was no possibility of competition from outside. I discussed this matter with men in Montreal who are interested in the Springhill mine and in the Drummond mine, and I found that these men look with the greatest possible alarm upon the formation of this company, with its unprecedented franchises and the capital that it may obtain. These men say, and they do not hesitate to say that they cannot stand the threatened competition, with a company organized as this company is; and they say, rather than sacrifice their interests and have their stock depreciated,

they will be compelled to protect their capital by selling out to this company or enter into combination with them. 40

George W. Forrest, the Conservative M.L.A. for Cumberland County, raised many of the same objections. In a pregnant sentence he captured the essence of the problem: "When the machine was once started on its path there was no telling how we could arrest its course." How could the government make leases which lasted for 99 years, and thereby bind the people of Nova Scotia to an arrangement beyond repeal? He detected the hand of the Canadian Pacific Railway behind the venture, and chided the Liberals for having filled the newspapers for ten years with condemnations of monopolies and then proposing to turn the coal resources of the province over to one. "In the county of Cumberland the development of this industry has caused millions of dollars to be invested in the construction of warehouses and other buildings, and if it were possible for the new company to close these mines this property would be utterly lost to the investors."⁴¹ Although Forrest doubtless was motivated by party considerations, one detects in his speech the anxieties aroused by Whitney's coup within the small group of capitalists who ran the mainland Nova Scotia coal industry. They did not stand apart from events in Cape Breton. Advantages once enjoyed in the Montreal market and on the railway might be eroded by the power of the huge corporation produced by government policy. Although many of the criticisms levelled at the Whitney Deal were ineffective and were easily countered by the Liberals, the critics in retrospect did catch sight of many of the dangers of Fielding's legislation. In fact, the combine could not be restricted to Cape Breton; it ultimately swept up most of the province's major coal mines. In fact, the new corporation would require a less

competitive domestic market for coal and a transformation of marketing in eastern Canada. In fact, the Liberals had indeed mortgaged the future of the province and gambled upon the reputation of an entrepreneur whose prowess was over-rated. There could hardly be a more apt description of the history of the Dominion Coal Company (in all the many manifestations it was to assume through the years) than that of a huge, expanding machine, arrested in its course only at incalculable social and political cost.

It would take some years for the full implications of Fielding's measure to be understood. Its immediate implications were evident. The Dominion Coal Company, incorporated on 1 February 1893 with an authorized capital of \$18,000,000, integrated more collieries under one management than any other coal company in the province. The company set about transforming the conduct of mining. Machines were introduced for cutting coal, the railway system of Cape Breton extended, and Louisburg developed as a year-round port. By the end of February, 1894, the company had acquired some 70 square miles of coal lands in industrial Cape Breton.⁴² Just as the Joggins had been suddenly thrust into the world of finance capital, so too would Cape Breton be rapidly transformed from a mercantile backwater where production was governed by the unpredictable appearance of schooners in the harbour, to a bustling industrial centre of finance capital. The crisis which reached its height in Joggins in 1904 would engulf Cape Breton in 1925. But Cape Breton was far more important than the Joggins. The transformation of Cape Breton entailed the transformation of the province. One could debate the birth date of monopoly capitalism as a mode of production within the Maritimes. The year 1901 is used here as an approximation

because it corresponds with far-reaching changes in corporate strategy towards labour--a crucial indication of corporate consolidation. A case could be made for 1893 or 1910, both significant dates in the process of corporate consolidation. What seems beyond debate is the reality and importance of the process itself. The supporters of the revolution of 1893 thought they were guaranteeing a prosperous future for Nova Scotia. Instead they placed at the very heart of the provincial economy a vacuum, created by the stock-watering of successive promoters and the absence of any restraints upon corporate greed. Each phase of the consolidation process would be mistaken for genuine development, when indeed each one represented only the expansion of the vacuum, the desperate expansion of an unprofitable giant. These men--and here one thinks especially of Fielding--were critics of provincial dependency and had used the province's precarious financial position as a key argument for separation. But in 1893 they decided that the province's greatest industry would be controlled by a massive corporation and, that the public would be at best a minority shareholder in the company which exploited its seams. The iron bonds of dependency would endure long past the men who put them in place in 1893. Monopoly capitalism did not evolve naturally from its competitive predecessor, nor did corporate liberalism evolve spontaneously from the ideology of laissez-faire; both the new structure and the new ideology required the energetic activity of the state.

2. The Consolidation of the New Corporate Economy

The new structure of monopoly capitalism was born in a complex manner, and its presence was experienced in different ways in each of the two major coalfields. But before we turn to the monopolism of Cumberland,

It is necessary to note those changes which the new structure induced throughout the province. Five essential changes occurred. First, the character and scope of the state's intervention changed; by the 1920s the state not only collected a mass of statistical data and enforced a complex set of mining laws, but also intervened to set the terms of contracts and assume direct control over troubled collieries. Second, the state sponsored an intensive campaign of exploration which brought scientific knowledge of the coalfield to a new level. Third, the market for coal was transformed by rapid industrialization. The price of coal rose rapidly and there was a great incentive to produce more. The market was also rendered uncompetitive in many fundamental sectors by the combination of coal companies. Fourth, the Dominion Coal Company (or its controlling company) gained ownership of the coal companies in all of the major Nova Scotia coalfields, with only a few minor exceptions. Finally, the forces of production were changed. The mines became deeper, mechanization came onto the agenda, the number of miners increased, and stabilized at a higher level. Only in the 1920s, that decade of crisis, did the underlying weakness of this growth become apparent. It was an epoch of rapid growth, followed by one of profound crisis.

Each of these themes could be pursued fully in a separate thesis. Our task is merely to refer briefly to them to give a sense of the context within which the Cumberland industry grew.

The provincial government's role in the coalfields continued to be played by the Department of Mines, but the department was gradually brought up to date and made into a full-fledged bureaucracy. The surviving letterbooks of the Department speak eloquently of the new forces at work in the early twentieth century. We find Edwin Gilpin

conferring with B.F. Pearson, that grey eminence of regional finance, capitalism, over access to the government's new diamond drill; we hear of disputed elections for the position of checkweighman in Springhill, which the department was expected to supervise; we hear, endlessly, about the appointments for the government's new mining schools and about its policies on technical education. One cannot read these letterbooks without concluding that the state and the industry were profoundly intertwined: even the most minute technical details were recorded in these records. Edwin Gilpin entered into a long correspondence with J.R. Cowans of Springhill regarding electrification, and wrote at one point, "I can quietly call in the man who does our work" to give advice on electrification at Springhill.⁴³ Where was the separation between private and public in such correspondence? Where was it when, on numerous occasions, the department offered its opinions to financiers and speculators? The evidence we have cited is merely a small portion of the record of this extensive interpenetration of the private industry and the state.

Secondly, the scientific knowledge of the coalfield changed. This change was connected with the first one, and underlines once more the merging of public and private spheres. The Geological Survey of Canada had been active in the region since the 1860s, and the Department of Mines had maintained a tradition of publishing occasional papers in geology. But the new structure required a new policy towards exploration. One important innovation was the purchase by the government of diamond and calyx drills for the exploration of mineral resources. The Commissioner of Mines was approached by a delegation of "well known mining men" to purchase such drills. At first he denounced the notion as utterly

utopian, and dismissed the delegation. "If, however, the first delegation was daunted, subsequent delegations were not, and stuck to their guns. The request took on, on a subsequent occasion, the nature of a demand, and of a kind to be pressed," Robert Drummond recalled.

"As in the case of the unjust judge, who could not be bothered, the Commissioner of Mines finally gave way...⁴⁴ The government would henceforth underwrite the costs of mining exploration, by paying for the expensive diamond drills, and the log of the drilling team would be a permanent aspect of twentieth-century Mines Reports.

This expanded role of government meant more than just drilling equipment. It meant the most sustained effort ever made to understand the Cumberland coalfields. The nature of geological science changed. If each epoch created its own kind of geologist, with Gesner and Hind representing the mercantile and industrial periods respectively, the embodiment of the monopoly period was Hugh Fletcher. There is not enough space to do justice to Fletcher, to do more than refer to the audacity and courage with which he defended his view that underlying the known Cumberland coal areas might be a giant coal bed. His life was given for science, for he died in the field in 1909. He was the first scholarly geologist to tackle the structural problems of Cumberland geology in any depth. Subsequent work has refuted many of his contentions, but has left standing his immaculate maps. Fletcher's work was situated within the great seismic shift in Canadian geological science.⁴⁵

All we may do here is suggest that it was also situated within the equally momentous shift in the regional economy. Together with E.R. Faribault, who proclaimed that deeper gold mines might reach vast

gold deposits, and Lawrence W. Watson, who proposed that coal areas might underlie the Post-Carboniferous rocks of Prince Edward Island, Fletcher argued that attention should be paid to the deeper formations.⁴⁶

It can hardly be coincidental that the three major interventions of the Geological Survey of Canada in the early twentieth-century Maritimes--each one prodded insistently by provincial governments--aimed at the elucidation of deep structures, hitherto unknown riches which systematic exploration was sure to discover. The theories and the explorations resembled each other in their scientific rigour and their emphasis on finding new mineral wealth at much deeper levels. The structural preconditions of these theories were (1) the commitment of the state to support the geologists in the area for longer periods of time than heretofore, in pursuits that were not immediately profitable; (2) the advent of new boring technology; and (3) the emergence of new and large enterprises which would underwrite the costs of such explorations when they reached the point of commercial test. Fletcher's new theories did not transform the Cumberland coalfields, but he did symbolize the new drive for resources and the new spirit of scientific research.

Third, the market for coal was changed. The price per net ton of 2,000 lbs. of coal rose from an average of \$2.811 in 1897 and 1898 to \$3.075 in 1900 and \$3.498 in 1901, for ordinary individual Montreal consumers.⁴⁷ Local companies combined to fix the price of coal. We shall explore this process more fully in our discussion of Springhill, for it was clearly one which brought the Cumberland coalfield into the orbit of the new corporate giant in Cape Breton.

Just as significant was the consolidation of protectionism as the dominant strategy of the coal companies when they considered the

evolution of their markets in the long term. After the major shifts in the tariff regime in 1866 and 1879, the nature of commercial policy did not change. As critics would later observe, the level of protection was gradually eroded. In 1897 a distinction was drawn between bituminous round coal and bituminous slack, the duty on the former being reduced to 53 cents, and on the latter to a maximum of 13c. The fixed specific duty decreased, taken on an ad valorem basis, from 65 per cent to 17 per cent on the United States sales price, according to the later estimate of the Glace Bay Board of Trade.⁴⁸ Nonetheless the point stands that there was a relative absence of change. The coal industry seemed to have developed some position in the Montreal market. Once the entire industry had united in its demand for the restoration of reciprocity; now the industry was so firmly wedded to a protectionist system that it rejected reciprocity even when it was offered to it. Thus the period of monopoly capitalism witnessed a transformed debate over commercial policy. Once in place, protectionism was difficult to dislodge, as critics of the "New Feudalism" or the "New Slavery"--this last phrase taken up by a staunch Halifax critic of the monopolies--would discover.

Paradoxically the stability of commercial policy was accompanied by very vigorous debate. In the 1890s, for example, the New England market seemed within reach. Let us look at both sides. For opponents of reciprocity, the phenomenal growth in the American coal industry precluded any penetration of the American market by Nova Scotian coal. One had merely to look at the West Indies, where American and Nova Scotian coals freely competed, and where the provincial coal had been driven out of the market. Certainly the "reciprocal hereafter", which had seemed so close in 1893, was postponed when the Senate restored the

coal duties eliminated by President Cleveland.⁴⁹ The most intelligent case on the tariff was put by Robert Drummond, who may well have served as W.S. Fielding's tutor in the practical politics of the coal duty. Drummond was an early advocate of the National Policy, which he thought an effective stimulus to the coal trade in the early 1880s. In the late 1880s and through the 1890s, Drummond was in favour of reciprocity in coal. Surveying the success of Nova Scotia slack coal in one New England city (marketed at a price far less than \$2.00 a ton, he claimed), Drummond remarked, "I cannot imagine that the Conservative M.P.'s for the mining counties, or the managers of like persuasion, who in days gone by took the stump and asserted that reciprocity in coal between Canada and the United States meant obliteration of our coal trade, will ever again attempt a similar rash proceeding," little guessing that he would, in years to come, resuscitate just this discredited argument.⁵⁰ Drummond in 1898 still viewed the world through liberal spectacles. He advocated a gradual reduction of the tariff walls,⁵¹ and could be heard to remark in 1900 that "Governments can make tariffs, but governments cannot at will make a country prosperous."⁵²

Gradually, however, Drummond changed his mind. During a coal strike in 1903, the American government lifted on a temporary basis the duty on bituminous coal because of tremendous shortages in American markets; it was wondered whether the Canadian government should not follow suit, and thereby initiate a more permanent reduction of coal duties. The Liberal newspapers of the Maritimes thought not.⁵³ Drummond himself noted that "Conditions have greatly changed. Ten years, or less, ago, the coal trade was at its wits end to obtain markets, coal prices were low, wages were insufficient, competition was

of the keenest, the collieries were working three quarter time on the mainland and in Cape Breton they were idle the greater part of the winter season. A change of some description or other could scarcely have been for the worse. At the present time the trade is in excellent condition, far better than at any previous period, competition is natural, prices are fair, wages are satisfactory,--and there are volumes in that--and the demand taxes the best energies of the operators." Besides all these changes, the Americans were now poised to secure a greater share of the Montreal market, and local coal companies could ill afford the massive investment in discharging facilities at American ports in an unstable commercial setting.⁵⁴

It was hardly surprising to find Drummond in the forefront of the attack on reciprocity in the debates of 1910-1911. Drummond's essay in a pamphlet prepared by the major coal companies, Memoranda Respecting Reciprocity in Coal, indicated both how far he had travelled from his former trade-union convictions, and the extent to which he had renounced his former liberalism. The industry, Drummond pointed out, now had 22,000 men dependent upon it, and its health was the most crucial factor in stemming emigration from the Maritimes. He noted that he was not the first advocate of reciprocity to have renounced his former beliefs. Whitney himself arrived in Nova Scotia as a "perfidious free coal leaguer," but a few years later had turned wholly in favour of the Montreal market as opposed to New England. Drummond then turned directly to his own change of heart:

There are those of us who, thirty years ago, were ardent disciples of reciprocity [who] see in it to-day nothing but an impediment to the progress of our province; and for this change of belief there is sufficient justification. Previous to 1878 the best individual market for Nova Scotia

coal was the United States, and naturally, at that time, and subsequently there were those who thought that a renewal of a treaty similar to that of 1854, would restore to us that largely lost market. In process of time the Quebec market grew in proportions and at [as] that market grew larger, while the U.S. market kept diminishing, the desire for reciprocity waned. Now, instead of there being any desire for reciprocity, sentiment in Nova Scotia is largely opposed to it... The fact that conditions have wholly changed must be impressed upon those whose persistent refrain is, "The New England States our natural market." 55

How could Nova Scotia compete with the coal trade of the United States? Providence, Drummond argued, had the largest fleet of sailing vessels in the world, and these vessels could carry and handle coal at a rate to make competition impossible. Drummond concluded his argument with a witty parody on the position of the Toronto Globe. "Certain in Ontario exclaim;--'Free access of N.S. coal into the U.S., for free access of U.S. coal into Ontario. What can be fairer? Nova Scotia gets a quid pro quo.' Oh, no. The Americans would get the 'quid'--vulgarily speaking--the thing having substance, while Nova Scotia would get the 'quo' the shadowy 'what'." 56 Drummond, once reviled in the Conservative press, was now introduced with a great flourish in the Halifax Herald as "The Great Liberal Coal Expert of Nova Scotia," and his writings were used to bolster the Conservative cause. 57.

Drummond's career thus embodied the general course of the debate; he seems to have crystallized the business viewpoint on the tariff. It was partially to be explained by Drummond's changed class allegiance, his evolution from a trade-union leader to a lobbyist for the coal companies. But there was more to it than that. Drummond's stand on the economics of the coal trade had never been very far removed from the "commonsense" of his day, and his radicalism, trenchantly expressed

with regard to working conditions and working-class independence, never extended to a conception of a different economic system. He was a Manchester Liberal transformed by the structural imperatives of his time into an advocate of consolidation and protection. Like Fielding, although following a different trajectory, he was an example of a new liberalism, divorced from free trade and at home in a world of monopolies.⁵⁸ His own narrowing perspectives mirrored the diminishing possibilities open to the industry. The more entrenched the coal monopoly became, the more men became dependent upon it, and the more urgent became the political necessity to defend its survival. The monopoly was weak at its core; it expanded not from strength, but from weakness, and at each new level of consolidation, the weaker and less defensible it became. But to attack the coal monopoly and the system of tariff protection upon which it depended, seemed to be the same as attacking the coal communities themselves. There was no escape from this structure within the accepted framework of politics. Even the local United Mine Workers, who began their trade-union struggles as allies of the Free Coal League, would end up as unwilling apologists for the monopoly. What choice did they have? Once brought into being, the structure of monopoly capitalism could not be changed in any one of its parts, unless one were to run the risk of bringing everything else down as well. Few practical men were willing to envisage that.

So much for the protectionist side. What was the reply of the free traders? Here we must attend to the opinions of D.J. Kennelly, agent and manager of the Sydney and Louisburg Railway. Kennelly was convinced that the future of Cape Breton lay in the markets of New England, and he was instrumental in promoting foreign involvement in that coalfield

in the late 1880s.⁵⁹ By his estimate freight rates would allow the competitive entry of Nova Scotia coal to the Boston market.⁶⁰ He delivered a strong blow to arguments concerning the West Indies as a revealing test case. "The United States coal ports of Norfolk and Newport News are 1,210 miles, and Baltimore 1,400 miles nearer to the markets of the West Indies than are the ports of Pictou, and Sydney. The United States shippers have the further advantage, in most cases, of freighting, by a vessel with a returned freight secured to a port of the United States, an advantage that very seldom accrues to the shipper of coal from Nova Scotia,..." As Kennelly saw it, the advantages of access to the American market were enormous. It would solve, at a stroke, the problem of seasonality. Louisburg could finally enter its own as a major coal-shipping port. He conceded that Montreal would be a battleground, and that American coal owners would rush in to seize Canadian markets. But he did not fear that the ultimate result of the attack, even in Montreal, would be the elimination of the Nova Scotia producer. If, as he claimed, it was possible under the existing tariff regime to put coal profitably on the Boston market, how much better would it be when local producers were released from the payment of .75c per ton of coal in "the reciprocal hereafter."⁶¹

The case was taken up by W.C. Milner, promoter of the Joggins railway, in the twentieth century. His paper on "Reciprocity in Coal," delivered before the Mining Society in 1905, outlined an approach radically at variance with Drummond's. It was a well-reasoned paper, with suggestive references to the dream of Robert Grant Haliburton of a great national coal trade which, Milner noted, remained only a dream. Yet Milner's programme was based essentially on the outlook of the

consumer. He attacked the waste and inefficiency of Dominion Coal, but his comments on the coal duty as imposing an unfair tax upon Ontario industry showed just how divorced from practical politics he was.⁶² Milner went on to become the proprietor of a small Cumberland County mine, a role well suited to a disciple of reciprocity. For all that, he never really advanced a practical programme for salvaging the coal trade from the disruptions which would have followed the free entry of American coal.

Although historians of the coal industry have, with rare unanimity, taken the protectionist side in this debate, the evidence does not seem to sustain so unambiguous a position. The political and economic cost of providing adequate protection for Nova Scotia coal in the markets of central Canada would have been exorbitant. The cost of the compromise formula was high indeed, when one thinks of the wasted opportunities and depleted resources which we know accompanied its implementation. No one would question the almost total defeat of Haliburton's concept of the coal trade of the new dominion. There would never be a secure place for Nova Scotia coal in the new dominion Haliburton worked so hard to build. As for Fielding, it is hard to imagine a more complete reversal than that represented by the "Bluenose Tariff" promoted by British Empire Steel in the 1920s--a wonderfully ironic appropriation of regional symbolism that provided a fitting epitaph for his idea of reciprocity. Certainly no historian would argue that the coal industry succeeded in establishing itself as a secure part of a national economy.

It is almost certainly true that by the 1920s there was only one conceivable position. Once the enormous investment had been made in the coal and steel complex of the province, it was unthinkable that it

should not be protected. This complex had so many internal weaknesses that a case could easily be made for maintaining or raising the level of protection. Critics of the monopoly faced a Hobson's choice of acceding to its demands or urging its demolition. Understandably they quailed before the social consequences of the latter course. But what of the 1890s? The case seems weaker here. The structure had not yet taken shape. It seems conceivable that an alternative strategy would have created a smaller and more resilient industry, less governed by a huge monopoly corporation and giving rise to a greater diversity of industries. Without the vast empire to defend, the prospects of reciprocity might have been less terrifying for politicians. There can be no question that Nova Scotia coal would have been used on American railways and in American factories, since it was so used even under the protectionist regime. Perhaps we need to emphasize less the absolute economic determinism of the protectionists and remember more emphatically the range of political and economic alternatives--for example, the alternative of political separation with its corollary of an independent commercial policy--which were available in the late 1880s and early 1890s. The essential point remains that such possibilities were systematically removed by the growth of the mining monopoly, which became the archetypical bloated infant of anti-protectionist literature. The tariff consolidated political opinion and the realm of the possible just as the growth of monopoly capitalism consolidated the forces of production, and these two processes were intertwined.

Fourth, the industry became one dominated by a single large corporation, exercising power over all its basic features. Three of the five major Nova Scotia coalfields were taken over; only Inverness

and Joggins, the least productive and significant of them, were excluded. This process of economic integration had two aspects. The first was the struggle for a controlled and protected market, protected by the tariff, and controlled by a cartel of coal companies. The second was the outright sale of coal companies to Dominion Steel or Dominion Coal. Both processes entailed an integration of economic and consequently social power.

The existence of this process is not in doubt, and many others have documented its last phase in the 1920s. Perhaps one original contribution that might be made to this historiography is a closer look at the process of monopoly-formation in the period before the First World War. It is convenient for the historian of the Cumberland coalfields to adopt this focus, since it was in this period that the economic destiny of these coalfields in the twentieth century was determined.

Of course it would be a mistake to suggest that the nineteenth-century coal industry was one of pure competition. We have already observed the rigged bidding for contracts on the Intercolonial. What seems to have changed at the turn of the century was the scope of this collaboration, and the emergence of a united strategy for setting wage rates.

Whether or not an illegal combine existed among the Nova Scotia coal companies from c. 1900 to 1909 was the subject of extensive legal proceedings from 4 October 1909 to 15 February 1910, initiated by the United Mine Workers of America in their campaign to win recognition from the coal companies and support from the public. The coal companies were not found guilty then of forming an illegal combine. However, this

verdict is not necessarily conclusive, given the weakness of Canadian law governing such cases documented by Michael Bliss.⁶³ The evidence brought forward at the hearings, if insufficient to win a legal conviction, does establish conclusively that the coal trade was progressively being monopolized, and reveals the processes by which Dominion Coal was able to secure domination of the market. There was an effective system of price-fixing among the major coal companies in certain spheres, but this system was disrupted on occasion by Dominion Coal, which forced the other companies away from crucial markets. The process of monopolization required both such price-cutting wars and general agreements established on the terms favoured by the monopoly. The defence's case--that given the established record of futility competition one could hardly charge Dominion Coal and Cumberland Coal with price-fixing--was disingenuous because it ignored the long-term dynamics of the situation. There can be no question that the Dominion Coal Company was forcing mainland collieries to concede markets once thought to be theirs, and that price agreements among the coal companies confirmed the growing market strength of the Cape Breton company. The coal companies still competed with each other in some markets. But increasingly major markets were divided up by agreement, prices were maintained at an artificially high level (particularly within the Maritimes), and the "flight from competition" worked in the interests, not of all the coal companies as had been the case in the nineteenth century, but mostly to benefit just one.⁶⁴

According to the testimony of William P. Buckley, a Halifax coal dealer, the initiative for the formation of the combine was taken by the Acadia Coal Company of Pictou County, which was anxious "that Dominion Coal Co. should join & meetings were held in Halifax of General Mining

Association Dominion Coal & Acadia Coal Co Gowrie & Blockhouse Cowans Co. Springhill of the representatives of each."⁶⁵ The formation of the Mining Society of Nova Scotia, ostensibly open for the discussion of mining issues to the "mining men" of the province, from the humble prospector to the mining magnate, offered an ideal focal point for private price-fixing discussions.⁶⁶ Two factors greatly assisted the formation of a co-ordinated body among the mining companies. The first was the very large demands made upon the coal industry by the Boer War. The Imperial Cabinet expressed a certain interest in directly acquiring Cape Breton coal lands for the use of the Imperial Navy, at least according to one enthusiastic leaseholder who was encouraged by Lord Strathcona to envisage a marriage of profit and patriotism.⁶⁷ The impact of the Boer War was principally upon the Halifax bunker trade. William Roche, a Halifax coal dealer, explained the combination of 1899 in terms of the short-term demands of the Boer War: "In 1899, you know that was the time of the coal famine in which they had to combine. For instance here in 1899 there was the South African war on, and steamers were fitting out here and had to be coaled, and one of the papers made a great outcry because I supplied one of the ships. There had to be a combination at that time to furnish the coal as occasion arose."⁶⁸ The legacy of this wartime emergency appears to have been a combine between the Dominion Coal Company and the Intercolonial Coal Company to control the bunker trade of Halifax. Meetings were held in 1901 and 1902, in connection with the Furness-Withy and Pickford and Black contracts. The evidence suggests that after concluding the arrangement with Dominion Coal, the Intercolonial Coal Company was undersold: "Mr. McKenzie of the Intercolonial was very anxious to get the protection that he had

promised he would give the Intercolonial Coal Mining Company, and on Pickford & Black, but as a matter of fact he [Dick] had already closed with the Furness Withy Company, and the Intercolonial Coal Mining Company lost the contract which made Mr McKenzie and Mr Fergie very cross."⁶⁹

Clearly the coal mine owners were not unanimously bound by an iron agreement. Certain companies were beyond the pale in any event. The small mines of Cumberland and Inverness, which could undersell the larger mines in many local markets because of lower production costs, caused considerable worry and were outside the range of any potential agreement. On 29 June 1906 Alexander Dick of Dominion Coal wrote to M.R. Morrow, the company's agent in Halifax, on the subject of coal from Mabou in Inverness. He was worried about W.P. Buckley cutting prices on the local market, and added: "It is regrettable that with such a small output that the Mabou Company should become a disturbing factor in the market at such an early point in its history. Have you heard anything lately with reference to the Inverness Coal Company's plans? What are they doing in your market? Are they maintaining prices?"⁷⁰ Concern for the Halifax market and an agreement to regulate it was also revealed by a letter of Dick to Morrow on 6 April 1905, which quoted from a letter written by a Pictou mine manager: "There is one question, . . . that I would like to raise, viz.--rate of freight to Halifax. There is no use of our fixing a price at Halifax if either or any or all parties to the agreement are allowed to quote a delivered price or allowed to quote any rate of freight they choose."⁷¹ The Cumberland and Inverness collieries outside the agreement were looked at anxiously; Morrow recalled that "There are some six or seven small mines in Cumberland County--the Hebert Mine, Strathcona Mine, and 3 or 4 others, and it was those that

I feared; it was these smaller mines I feared competition with."⁷²

However unstable the alliance with such companies as the Inter-colonial may have been, Dominion Coal was anxious to avoid an unrestrained price war. In this ambition it had a willing ally in the Cumberland Railway and Coal Company. This alliance was clearly in the making in 1900, and was accounted for by the unified demands put forward by the labour movement, as J.R. Cowans revealed in a letter to Morrow in 1900, marked "Personal and Confidential."

Just leaving for Washington Will you kindly either write or see Mr McLennan and advise him that I meet my men this A.M. on the train re demand for more wages. The local Lodge has asked 15% advance on coal cutting and 10% on outside labour on the 1st May. Will require to give them something perhaps 10% all round. In view of this, and the probability your men making and receiving a similar demand, at an opportune time, will you not consent to advance your f.o.b. rates 25c per ton on the 1st May and cover this increase. Am asking Messrs Fergie Poole F[]so, and can arrange with the Joggins. There is a strike in the States and perhaps more to follow. Now is the time to raise the price. If we should post an increase soon they put the price up the men would claim a part of it.

I mean face f.o.b. rates where you are not under contract. Yarmouth and St. John and so on. 73.

In the dealings between the Cumberland Railway and Coal and the Dominion Coal Companies in 1900; one detects a design to raise prices in response to circumstances of the day (such as the strike in the United States and the demands of local labour). But this letter should also be read carefully to bring out its essential structural features. Cowans mentions the Yarmouth and Saint John markets, and by doing so reminds us that in these markets in which the Cumberland companies had once enjoyed a privileged status, their position had been drastically undermined by the Whitney scheme, and particularly by the opening of the port of

Louisburg which permitted the Dominion Coal Company to send vessels to these markets cheaply.⁷⁴ Cowans also noted the Joggins mine, and in so doing brought out another structural aspect of the new situation: the ability of the smaller Cumberland pits to disrupt "orderly marketing" and bring the local trade back to competitive status. Cowans here suggests his capacity to curb these smaller mines. Subsequent correspondence also suggests that the Dominion Coal Company saw this as one benefit they could derive from an alliance with him.⁷⁵ They would protect him in certain Halifax markets, he would protect them from the full force of competition from the small companies. Attention has always been focussed on the Dominion Coal Company's huge contracts in Boston and with the steel company in Sydney, both of which were disastrous and showed the mismanagement of the company, probably even more important in this sphere than it was in production.⁷⁶ But our attention must also be focussed on the local contracts in the region, simply because the correspondence proves that the coal company saw these as extremely important to its survival.

The scheme of raising the price of coal in 1900 was a decided success, and the prices remained high throughout 1901. There was an outcry against them. In Saint John the Trades and Labour Council took the lead in a determined effort to mitigate the full impact of the fuel crisis upon the working-class consumers,⁷⁷ and the precipitate price rise was denounced in newspapers and elsewhere. Robert Drummond, who doubtless sensed the turn against his beloved Dominion Coal, met this criticism with an editorial entitled, "Is There A Coal Combine?", and predictably enough said no: "A combination, if it means anything, means that there shall be no underselling, that the one company--its coals

being equal--should not sell at a less price than another. The sole reason for the advance in the price of coal last year was that the demand was in excess of the supply. There will soon be a reduction in prices. Why? Because the supply will be greater than the demand. If there were a combination an effort surely would be made to curtail the supply, and thereby maintain prices."⁷⁸ Classical political economy of this type was hopelessly outdated by the new capitalism. The Cumberland Railway and Coal Company and the Dominion Coal Company had an agreement in 1901, which was seen as part of an organized attempt to keep prices up after the crisis of the Boer War and the American coal strikes had passed. The lucrative contracts for Halifax sugar refining, for example, were clearly subject to prior negotiation between the companies. In a letter which suggested the full impact of the new consolidation, Cowans indicated his strong bent for co-operation among the large companies.

Mr. Shields [Cornelius Shields of Dominion Coal] wired me last night that your Company would keep out of the Acadia Sugar Ref[iner]y Co. business this season, and that he had advised you.

I am glad of this, because it has temporarily saved the situation, and I for one am most anxious that we should continue working harmoniously--It will mean money instead of losses at the end of the year. You and myself have been all through this experience and know just what the result would be--Prices are settled as it were now, and there is no more talk amongst Customers and newspapers about high priced coal, they seem to accept the position, and are making the best of it. It is a most popular move to reduce, but we know the difficulty attendant upon increasing them, even a few cents. Present rates can be maintained for another year just as well as not, if we will hold together, and work together. I have done considerable in the direction of building up prices am willing to do my share in maintaining them.

I suppose you will not quote the Acadia Sugar Refg. Co. for small coal at all, and please advise me what you propose quoting for Run of Mine and screened. Your prices should not be less than full mine rates, plus freight--Please advise me by return what these will be.

In exchange for this information, Cowans offered to give the Dominion Company advance notice of his tender for the Pickford & Black bunker contract.⁷⁹ This was a world of supply and demand, but not the competitive world imagined by Drummond.

But it was not yet a smoothly-running trust, either. Drummond was on sound ground when he defended the coal company by noting the international increase in coal prices and the real evidence of competition among the Nova Scotia collieries.⁸⁰ Indeed, fears were expressed within the Grand Council of the Provincial Workmen's Association that the Dominion Coal Company was intent on eliminating the mainland collieries altogether, by filling their traditional markets.⁸¹ There is solid evidence to suggest that the company fought ruthlessly to retain Saint John.⁸² The two companies were clearly battling for the Bay of Fundy ports in 1904, with price reductions to consumers in Kentville.⁸³ In April 1902, Alexander Dick acknowledged that "the other Companies accuse us of cutting prices and it is asserted that we started the competition last year.... For purposes of our own we would like to have the evidence in any case or cases that you may know of, clearly specified, giving dates and a statement of how the competition came about."⁸⁴ This letter was entered as evidence by the defence, but it is interesting that it unintentionally reveals the distaste with which competition was viewed. There is ample evidence of a savage struggle among the major companies between 1901 and 1904, and of a larger movement to consolidation from 1905 to 1909. Between Cumberland Railway and Coal and the Dominion Coal Company, however, there emerged a special relationship. Cowans and Morrow discussed coal prices whenever Cowans came to Halifax, throughout 1899 and 1900. "There was no formal

agreement of any kind come to, but as I plied Mr Cowans with questions, he plied me with the same,--some we answered and some we did not." One consequence of this talk was that Dominion Coal did not establish depots on the mainland to head off the Springhill trade.⁸⁵

In 1904 a meeting was held in a Boston hotel of representatives of all the important coal companies in Nova Scotia. This meeting was chaired by the representative of the Dominion Coal Company, who suggested that the body be called the Mine Owners Association of Nova Scotia. This name was not adopted, however, and the body met informally. Asked if any information was exchanged regarding prices, J. Reid Wilson remembered in 1909 that the representatives "exchanged views with regard to the prices. Each one had their own memoranda about prices, but what they had I don't know." "I have no doubt," he offered, "that there was a consensus of opinion there that it would be advisable to get certain prices. The Coal producer is like any other manufacturer--he is a poor man if he does not endeavour to obtain the best prices for his goods in reasonable and proper condition." The understanding achieved in 1904 was that long-standing customers of coal companies would not be induced to change their minds by underselling. "That meeting was simply a love-feast," Wilson concluded, "it was an interchange of confidences to engender a better feeling among the coal owners or producers of this Province who had been cutting each others' throats."⁸⁶ The initiative for the "love feast" clearly came from Dominion Coal.

The timing of this consolidation must be connected with the corporate history of Dominion Coal, which needed every sale it could get in 1902 to stave off imminent ruin, but by 1904 had achieved a slightly more stable position. Meetings of the coal mine operators were held in December 1906

and December 1907, in Boston and New York. Different recollections of these meetings were carried away by different people. Thomas Cantley recalled the New York meeting of 1907 as consisting largely of "platitudes": "People talked what would be desirable and what would be a better condition of affairs and so on, but it all amounted to nothing.... I could not make any arrangement with Alex. Dick that would hold him down to a fixed price." Clearly there was no love lost between the Nova Scotia Steel and Coal Company and Dominion Coal. Cantley suggested an apt parallel. "If a blind man has got a paper route on a street, and has had it for 20 years, and some young chap comes in and tries to get ahead of him; that blind man will think he has a grievance, and so will everyone in the street think so." Cantley clearly felt he had been the victim of cut-throat tactics by Dominion Coal, and never did join the compact (and indeed took away the Acadia Sugar Refinery contract from strike-bound Springhill, in contravention of the rule that the markets of a company suffering labour difficulties were to be returned once peace returned.)⁸⁷ Not everyone, however, had Cantley's view of these meetings. James Floyd, superintendent of the Intercolonial Coal Company, after securing from the presiding judge protection against giving self-incriminating evidence, named all the company directors present and noted that the meeting covered a broad range of issues: "We discussed matters of legislation that was coming up, and on the subject of importations of American and British coals; we fully went into those matters, and found out the increase that was coming in...." The questioning then became a bit more specific:

Q. Was there any paper there, on which the prices were down on it?

A. That is getting down to hardpan now.

Q. Any paper with the prices marked down on it?

A. There was some memorandum or some paper, but I can't [sic] swear what kind of paper it was.

...Q. To the best of your recollection was there a paper there with different prices on it?

A. There was a paper there with prices on it. 88

One can feel, even after decades have passed, the discomfort of the witness, who offered up one evasive answer after another. But the hardpan eventually did emerge. The coal companies combined in their bids for the Intercolonial, in their general pricing policies, in their stance towards trade unions, and on a host of other issues. There were companies excluded (the small Inverness and Cumberland pits), and companies on the periphery (such as Nova Scotia Steel), but within the circle were the most powerful mainland companies and the giant monopoly created in 1893, growing ever and ever more powerful.

In the Halifax Club, over whiskey and soda, the province's leading coal magnates gathered to talk over prices, sometimes after meetings of the Mining Society which they dominated. There was one dominating party in this compact, Dominion Coal, but the strategy pursued by Cumberland Railway and Coal was one of collaboration. We do not know why Cowans pursued this strategy, but given the penetration by the Dominion Coal Company of many of his traditional markets, he may well have been pursuing a necessary course. The documents do not establish legal proof of conspiracy. But they do establish beyond doubt the reality of a managed market, co-ordinated by the Dominion Coal and the Cumberland Railway and Coal Companies.

Contemporaries certainly knew that the market reflected something more than the free play of supply and demand. The domination of the Halifax market meant that the city derived no advantage from its proximity to the coalfields. "Nova Scotia is a coal producing province,

yet Halifax has to pay \$4.50 for a ton of coal making it higher than in almost any other place," noted the Suburban.⁸⁹ The Free Coal League emphasized the damage caused by the coexistence of tariff protection and monopoly. Founded and dominated by W.C. Milner, it won considerable publicity in the years 1905 to 1910. Only cheap coal, Milner argued, would give the country and the province a measure of industrial progress.⁹⁰

The debate inaugurated by the Free Coal League did more than expose some glaring examples of price-fixing. It also revealed the more subtle but equally important effects of the coal monopoly on public discussion. When W.C. Milner attempted to present a paper on the coal question to the Mining Society in 1907, he was prevented from doing so by the chairman of the meeting and the representatives of Dominion Coal. The question came up with reference to Milner's motion that "it is competent for this society to discuss the question of markets for the sale of all products of our mines and quarries." Alexander Dick spoke against the motion, in terms which suggested that the company felt it ought to have some control over the issues discussed in the public forum.

This, I understand, is a mining society, and in the absence of those connected with the coal industry the members have discussed coal prices from every point of view. These discussions have been most ex parte when we have not been here. Should Mr. Milner, under the guise of a paper on his motion, . . . misrepresent our position, should he read the same paper on coal prices here and in other parts of Canada, I think before this society publishes any misrepresentation of the coal question, we should seriously consider whether we are spending the money of this society in a good cause. . . . We subscribe to this society; we pay our share towards its publications; we contribute large revenues to the province, out of which this society gets a grant, and I do not think it is fair that any paper which Mr. Milner may read here today on the question of coal prices alone should be published by this society. 91.

Milner, for his part, informed the Society that he had corresponded with Alexander Dick asking him to write a paper for the Mining Society, and saying that he would also prepare one, in the interests of a free, fair and open discussion. Milner suggested that the Dominion Coal Company "had never yet given the people of Nova Scotia an opportunity to judge as to whether its representations were founded on fact or not; it had not treated the people of Nova Scotia as its friends and well-wishers, it had not fairly treated the people who were willing to give it fair play and fair profits and all that sort of thing." If the Dominion Coal Company's position was unassailable, then its representatives were present and could demolish its critics. Milner was finally allowed to read his paper, but only on condition that he not make particular mention of any one company by name; when his address reached a portion in which the Dominion Coal Company was explicitly named, he was stopped. His motion was then put and lost, and Milner left.⁹² It was a frank, even brutal display of corporate power; the genteel pretensions of the Society to intellectual status were rudely exposed as little more than the trappings of private interests. The debate had not yet ended, but the events in the Mining Society indicated that the domain of respectable opinion on the monopoly was, just like the industry itself, becoming centralized and dominated.

The architects of the new coal policy of 1893 had promised that this province-wide consolidation would not happen. Fielding had thought such a general monopoly impossible, and Robert Drummond, in a speech to the Grand Council of the Provincial Workmen's Association, the miners' union, had been even more forthright:

There is...the cry of monopoly. To all present,
and all know something of the vast undeveloped

coal areas in this province, the cry must appear to be a silly and a childish one. As you are aware the company's operations are confined to the County of C.B. 93

But the company's operations could not be limited to Cape Breton. Without the watered stock and mistaken commercial strategies of Dominion Coal, the drive to monopoly might not have been so rapid and total. One consequence of this disaster was the nullification of one of the region's major locational advantages. Another was the formal absorption of other coal companies.

In 1910 the capital stock of the Cumberland Railway and Coal Company, consisting of 20,000 shares of \$100 each, was purchased by the Dominion Steel Corporation. The Cumberland Railway and Coal Company had outstanding at that date \$979,000 in principal of 6 per cent first mortgage bonds. Dominion Steel acquired the capital stock of \$2,000,000 by issuing in exchange \$600,000 par value of its common stock, together with a cash bonus of \$12,000. Technically the Dominion Coal Company (the de facto employer) did not own the property in 1910; by an agreement between the companies, the Dominion Coal Company leased the property on the basis of a yearly rental, computed at half the annual net earnings plus \$30,000 per year. The Cumberland Railway and Coal Company joined the empire founded in 1893, although it would retain its status as an independent bookkeeping item until 1937. After that date its assets were included in the consolidated balance sheet of the Dominion Coal Company.⁹⁴ It was a takeover of great consequence. Springhill was no longer an independent economic entity. The largest Cumberland coalfield was now an appendage of Dominion Coal, and gradually the distinctive features of its position were negated.

Finally, the new structure entailed a far more systematic approach,

to questions of technology. Fielding's speech contains an embryonic programme of scientific management. For him the provincial industry faced a challenge: the challenge of reaching American standards of productivity and efficiency. Dominion Coal represented a genuine effort to make the local coal industry a citadel of modern management and systematic planning. Mining machines were imported, endless haulage made its appearance, all the transportation systems were overhauled and improved. The expenditure of money was profligate and the returns were disappointing. Yet the magnitude of the increase in coal production was impressive. Provincial production rose from 1,682,713 long tons in 1893 to 7,203,913 long tons in 1913. By far the most impressive gains were made in Cape Breton.

It is readily seen that the dramatic transformation promised in Fielding's speech did in fact occur. His wager could be called a success, because it did in fact result in stable revenues for the provincial government and contributed immeasurably to the consolidation of Liberal hegemony in Nova Scotia. The resource policies of the Liberal government contributed to the party's unique success in Canadian political history-- an uninterrupted hold on office that is rivalled only by the present-day Ontario Conservatives. To speak of the 'ineptitude' of external management, as David Alexander did in a comment on coal-mining historiography, may underestimate the extent to which both external promoters and the regime managed the resource brilliantly to serve their own limited interests.⁹⁵ The Whitney Deal was as glowing a political success as Ontario Hydro, and was accompanied by an impressive campaign of social innovation (technical education, the admission of the trade-union movement to government policy, workmen's compensation) which

strengthened the hold of a reformist corporate liberalism. The state which based itself upon this policy of resource depletion and external ownership was never confronted by a serious challenge to its hegemony, except in Cumberland County in 1909-11 and Cape Breton in 1922-1925.

By the 1920s the social risks involved in the strategy became apparent, but they were confronted and surmounted by an unprecedented effort on the part of the state. In the short term, then, it does not appear that the coal resource was "mismanaged" by the regime, nor does it appear that the rentier bourgeoisie was ever confronted with an unmanageable problem in the long term which threatened its social position or its income. It is only if we invoke a different concept of "management", one that relies upon a transcendent regional interest, that the resource strategy of the provincial government can be judged a failure. But to reach this concept means the abandonment of the neo-classical perspective, and the adoption of one which acknowledges the irreconcilable differences between various class interpretations of the interests of the region.

Of course a partial evaluation of the growth of monopoly capitalism can be made by contrasting the assumptions of the men of 1893 with the subsequent events. We have already contrasted the rhetoric of 1893 with the emergent realities of monopoly capitalism in our appraisal of the repeated contentions that this was a containable process, limited in its scope to some coal areas in Cape Breton. But the point can be extended to cover the underlying justification of the transformation. Monopoly capitalism in the coalfields was justified by the doctrine that significant economies would be achieved through size, thus creating a sound and scientifically-managed coal industry which could compete with its American rivals. Instead the coal industry became the prey of a series

of troubled companies, from New England Gas and Coke to British Empire Steel, each using the coal resources of the province as a means to recoup losses incurred elsewhere. It is difficult to think of one large coal merger from 1893 to 1919 whose aim was profit-maximization for the coal company thus formed. Dominion Coal was formed, Schwartzman showed, by a coal-consuming company with overvalued assets; the merger of Dominion Coal and the Dominion Iron and Steel Corporation was motivated by the latter company's desire to unload "some of the losses arising from its inferior economic position on Dominion [Coal]."96

The merger which formed British Empire Steel was structured according to similar designs, according to Schwartzman and David Frank.⁹⁷ There is, as we shall see in a later chapter, real reason to doubt the application of the doctrine of "economies of scale" to the technological history of coal mining. But there is even more reason to doubt the reality of such economies in the concrete situation of the early-twentieth century coalfields. The strategy of 1893 did not envisage the penetration of the coalfields by companies who did not seek to make a profit in coal, but rather shore up sagging companies elsewhere. It did not anticipate the rapacity of the new world of large-scale capitalism, nor the flimsiness and promotional character of mining capitalism in particular. The principal purpose of the mergers--Joggins provided a perfect instance--was not the realization of economies of production, but "the inflation of the values of securities owned by the promoters in companies which were to enter the merger."⁹⁸

The equation of growth with development made by the political leadership in 1893 was highly suspect, because only certain elements within the province could derive the slightest benefit from this

strategy of rapid resource depletion. It was up to J.B. McLachlan in 1925 to assess the human impact of this political decision.

[I]f a man is getting \$1.75 or \$3.75, the margin is so near that any increase in the cost of living plunges this man into distress. Let us call it seven quarts, and you have a family of five. Four fifths of a glass to each one of these people. The cost of living goes down 20%; and lo and behold, that little girl's glass is full; she has got one fifth more of milk. That is not very much. But you get your four fifths of milk in the glass and it drops 20%. You see what happens? But here is what the gentlemen on the other side say: we have 101 millions dollars of capital to pay dividends on; the physical assets behind that are idle steel works in New Glasgow; half idle steel works in Sydney; idle coal mines; abandoned, with fancy bank heads that no man that knows anything about coal mining would ever have put there or squandered their money on. And these men look at this little girl's milk glass and they say: "One fifth more of milk is in there." Smatch the glass from the baby to pay dividends on junk and watered stock. 99

From the particular position defended by McLachlan, the leader of the most radical element within the miners' union, the strategy had failed. But the benefits of the strategy cannot be slighted either. For a rentier bourgeoisie and a rentier state the strategy entailed security of revenues with little short-term cost.

Five decisive changes--the growth of state interest in coal, the rapid exploration of the coalfields, the transformation of the market, the consolidation of ownership, and a rise in the level of production--characterized the emergence of monopoly capitalism. They were, without exception, related to each other; the cause of one of these developments was the effect of another. (For example, without the sharp rise in demand, there would have been no motive for intensifying the exploration of the coalfields, which in turn required the active involvement of the state and the existence of capital to sustain the exploration.)

Everywhere one turns the connections between these aspects are apparent. It is this interconnected nature of the social facts from the coalfield which allow us to describe their causes as forming a structure, a structure of monopoly capitalism whose development in 1893-1900 was the precondition of its triumph in 1901-1927.

The focus may now be shifted from the province as a whole to the Cumberland coalfields. Here, by resuming our familiar discussion of socio-economic dualism, we can estimate the differential impact of monopoly capitalism upon two very different coalfields and evaluate the importance of this period for their evolution.

3. A Difficult Transition: Springhill

Springhill flourished in the 1870s and 1880s when the rest of the provincial coal industry was in crisis, and it fell into difficulties in the 1890s and the early twentieth century when the other coalfields prospered. Part of this exceptionalism can be attributed to the special character of Springhill's markets, which tended to place the coalfield outside the most serious structural crises of the provincial industry. The loss of the Montreal market, which played so important a role in the postwar turmoil in Cape Breton, was relatively insignificant to the Springhill coalfield. We also cannot exclude the major role played by the labour movement, which was most active in the period 1901-1911 and largely quiescent in the period 1917-1927. Yet Springhill was more and more enmeshed in the monopoly and her exceptionalism was in essence a matter of detail, a local sign of a generic structure.

The Cumberland Railway and Coal Company enjoyed a monopoly on the resource of Springhill, which, apart from some illegal mining during strikes and a tiny mine opened by leading citizens in the course of the

First World War, was never open to challenge.¹⁰⁰ Ownership and control in the company was vested in two families, and really in one man, J.R. Cowan, who owned a great deal of stock personally and filled the position of superintendent. Ownership and daily control were more closely integrated in Springhill than was normally the case in the local coal industry. Since the company did not sell shares in the market, it stood apart from the stock-watering and promotions of the period. The Cumberland Railway and Coal Company was consequently something of an atavism in a period of finance capitalism.

That the company was impelled to respond to the new structure of the coal industry is apparent from the evidence of its outright collaboration with Dominion Coal in fixing prices and setting wage rates. Dominion Coal mounted a threatening attack on the coalfield's traditional markets, and even the railway contract was not secure. From 1901 the clear impression is one of a company seeking a modus vivendi with its huge competitor, some way of surviving in this new structure. Dominion Coal placed upon Springhill the same pressure that Springhill had once brought to bear upon Pictou.

Some of these pressures are evident in the statistics produced by the company in 1909, in the thick of its battles against the labour movement. Of course, such statistics, reproduced in Table One, can only be taken with a certain amount of caution, considering their use as propaganda for the company.

Table One. Profit and Loss Per Long Ton of Coal Sold by the Cumberland Railway and Coal Company, 1894-1909

Year	Cost of Coal Per Long Ton	Selling Price	Difference	
			Gain	Loss
1894	\$1.55	\$1.58	3c	
1895	1.64	1.52		12c
1896	1.64	1.63		1
1897	1.60	1.51		9
1898	1.63	1.56		7
1899	1.67	1.72	5	
1900	2.43	2.44	1	
1901	2.51	2.60	9	
1902	2.20	2.43	23	
1903	2.49	2.62	13	
1904	2.60	2.45		15
1905	2.44	2.50	6	
1906	2.80	2.60		20
1907	3.17	2.66		51
1908	2.91	2.74		17
1909 (4 months)	2.95	2.56		39

Source: Labour Gazette (August 1909), p. 209.

One might note that the workers did not mount any attack on these estimates, a fact which cannot be explained by any deference on their part to the authority of the company. These estimates suggested that in 15 years and four months, the company had registered 7 years of slight gains and 8 years and four months of heavy losses. In its 26 years of existence, the company paid only two dividends, one of 3% and another of 2½%, on its capital stock of \$2,000,000 (and both these were in the unusual period of the turn of the century). Otherwise earnings were put back into the property to provide for its further development, although this development work was brought to an end in 1906.¹⁰¹

These statistics suggest a very difficult transition for the coal company to the new age. For the company they additionally suggested the

need to cut wages and limit the scope of collective bargaining. Since the company had lost \$299,691.17 in the period 1906-1909, it had no choice but to refuse to permit standardized wage rates. Other factors mentioned by the company included the decline of the Intercolonial Railway contract, the reduction of the company's largest contract with the Canadian Pacific Railway, the reduction in its railway contracts (newly endangered by the Payne Tariff Bill, which threatened to increase the tariff to 50c per ton on all coal including culm), the entry of American firms into the Montreal markets and the resultant crowding of local markets by Pictou and Cape Breton coal, "which makes local competition all the more aggressive and has the effect of depreciating values." The coal company cited the high expense of mining coal in Springhill, the depth of the mines with their average hoist of 3,800 feet, the pumping of 4.75 tons of water for every ton of coal, and a high proportion of small to large coal because of the highly friable nature of the resource, especially in steep measures. 102

The case was highly controversial. The miners attacked the argument on several grounds. According to the company's estimates, even if the coal miners worked in 1909 for no wages whatever, the company would still lose money. The men cited the rapid expansion of the company's property. From a property of 7½ square miles, their territory had grown to 190 square miles, including 82 square miles of mining leases. The burden of blame, according to the men, fell onto the shoulders of the management, which had little experience of coal mining and had failed to operate their mines on a sound business basis. 103

It is very important to remember, in the excitement of all this debate, some essential points about the company. Since it was the

creature of two families, and in essence of one man, there was little pressure to produce high dividends. The absence of dividends is not necessarily an indication of an absence of profit or personal gain on the part of the company's owners, since these men were remunerated from the payroll of the company and not principally through dividends. The company was based upon a strategy of intensive expenditure on real property and mining equipment. The appreciation of the mining property's value and the vast tracts of crown land taken up by the company meant that its profit and loss statements cannot be read in quite the same way as those of other companies. The company was also not required to pay off any debts to banks nor pay off deferred subsidies to the government. These facts help explain the apparent mystery of the continuing presence of the company in Cumberland, which, if the statement were to be taken at face value, would have to be considered an irrational decision. It rather appears that the profits of the company were reinvested, and that the company in 1909 faced not the absolute ruin its documents suggested, but the unwelcome prospect of selling off some of its valuable mining claims or other fixed assets. The crisis appears to have been one not of unprofitability pure and simple, but of illiquidity.

This raises the further question of how this crisis arose. The miners made a simple charge: incompetence. The company did not know how to manage a large mine, and its labour policies were those of ignorant men. Especially in the case of labour policy, this indictment has a certain truth. But the deeper explanation of the crisis must be sought, as always, in the structure of social relations. The company's crisis was caused by the strategies it pursued in a bid to survive in the new era of monopoly capitalism.

The strategy pursued in Springhill was one of constant modernization. The management of J. R. Cowans initially pushed for a programme of scientific management--at least if we take this to mean the payment of bonuses and a far greater attention to the effort expended by workers. But this initial emphasis on the labour process did not go very far, because the workers resisted it and because the mining environment precluded its full development. The company turned more and more to development work. It followed a sophisticated and extensive programme of technical modernization. The strategy would have worked in many other contexts: the integration of the various mines and the investment in the future would have secured significant economies of production. It did not work here, because it was pursued without any acknowledgement of the collective interests of the miners or of much consideration for the overwhelming contingencies of mining.

On the surface the company followed an aggressive policy of land acquisition. With 184 square miles of timber lands, the company was the largest landowner in the County and in 1903 had more land than even the Dominion Coal Company.¹⁰⁴ No provincial coal mine boasted of such bankheads. At No. 2 slope in 1906 a new chimney towered 100 feet over the town. A coal pocket 62 feet long could hold 200 tons of coal for domestic purposes. A water system had been built to bring water from the Maccan River, some two miles away.¹⁰⁵ The solid brick buildings housing the company's electric light plant and electric station still may be seen. The railway was renovated with rails of 80 lbs. replacing the old 67-lb. rails, and three new steel bridges were also added to the line.¹⁰⁶

But the most significant changes occurred underground. A special

report on the Nova Scotia coalfields by the Department of Labour, said of the underground workings, "It is generally conceded that the mine is developed for 20 years ahead, whereas a year or two ahead is sufficient for the operations of most companies, and it is possible that this policy of development may have some bearing on the financial question."¹⁰⁷ The effect of this strategy was analogous to that of a country sacrificing consumer goods production and placing all its emphasis on heavy industry. The strategy might well have paid a handsome return in many other industries, but it was a difficult one for a coal company. In this uncertain business, an unexpected fault or an accidental fire could undo in a day the development work of several years. In fact this occurred with regularity in Springhill. Since 1891, the company suffered the destruction of two bankheads and surface plants by fire, a fire in No. 3 mine, the destruction of the hoisting engines in No. 2, and the unexpected problem of a downthrow fault at the 3,100-foot level of No. 2. Without wishing to romanticize the activities of the company, we must note that it persevered with its plans with a real tenacity. Particularly impressive was the heavy work of connecting the slopes with tunnels. In June 1902 a tunnel was driven to connect Nos. 1 and 2 seams, to facilitate the handling of three major seams by haulage at the mouth of the Aberdeen tunnel. Here a large turnout was made capable of holding 50 boxes of coal. In the two years since the striking of the Aberdeen seam, 900 feet of slope were cleaned out and timbered, a permanent bottom laid, and upwards of 250 feet of sinking driven in coal 11 feet thick, free from shale, stone or slate.¹⁰⁸ "Giving orders for improvements and seeing that the improvements are made is the work day rule of the manager and his staff of busy officials," the Mines Report noted in 1904.

"To no new improvements in machinery that they utilize do they give the go by." 109

Was this programme well conceived? Armed with our knowledge of the company's financial difficulties, we are tempted to dismiss it as a mistake. But it was probably misconceived only in the particular environment of the early twentieth century. The period of consolidation left little room for such heavy investment in equipment, and the mining environment made such investment risky. But the more fundamental reason was the class struggle, itself one aspect of the coming of monopoly capitalism. To pay its way the company was forced to rely upon drawing pillars in the west and especially the east side of the Aberdeen slope. By 1905 this contributed the largest portion of the output. The East Aberdeen level was extended a distance of 11,289 feet from No. 2 slope in 1904--a very considerable distance for haulage, in mining terms. This reliance upon old workings and the very considerable horizontal extension of the mines meant crucial changes in the labour process. These changes will be fully discussed in subsequent chapters. What must be noted here is that this aspect of the company's strategy of development was misconceived. There were admirable aspects to the company's daring programme of 1901-1907, which combined the elements of long-term growth with short-term profit. The monopoly period witnessed a far more rational and intelligent approach to the resource; the integration of the slopes and the creation of a technical infrastructure did achieve real economies of scale. Subsequent plans would begin with this concept of integration. But what doubtless appeared to be an excellent scientific programme could only be realized after taking account, as the company never did, of the consciousness of the miners.

The miners did not "sabotage" this program, as the company was to charge; nor, perhaps, did the company's plan of development, subtly condemned in official reports, lack intelligence or a scientific foundation. But the programme was doomed from the start because it did not take into consideration the price the miners would be asked to pay for its achievement, and the response they might make to such a levy. The year 1907 marked the end of the company's rapid expansion of the physical plant; with few exceptions 1907 to 1911 were years of stagnation. 110

Dominion Coal was the beneficiary of its predecessor's development work. Virtually no development work was done in 1911 and 1912. In 1914 such work was said to be "well ahead," but there is no indication that the company undertook anything like the rapid expansion of the earlier period. In December 1916 No. 3 Mine was sealed off because of a fire, and it remained inactive. "The advance work is not carried ahead sufficiently to accommodate any more men than are now employed in this mine," the deputy inspector noted in 1918 of No. 2. Only the force of public opinion made the Dominion Coal Company open two new pits, No. 6 in 1918 on a seam underlying No. 2 never worked before, and No. 7 in 1920, on a seam lying between No. 6 and No. 2 with a thickness of 5 feet 6 inches. Almost no changes were effected until 1922 in Springhill's largest mine, No. 2. However, the company did introduce compressed air-driven coal-cutting machines in No. 7, and integrated the facilities of Nos. 6 and 7 by using one set of boilers for both mines and one compressor for the pumping. More impressive changes were in evidence after 1922. No. 2 Mine was extensively re-timbered and cleaned, and a new rope haulage was installed.

The dangerous underground steam pipes were generally replaced with external air compressors. The most important change was the transition to longwall mining in No. 2 in 1924. This abrupt change was necessitated by the frequent "bumps" in the mine, disturbances created by the enormous pressures exerted on the roof and floor of the mine by the superincumbent strata. The transition to longwall did require a certain amount of new development work; new levels were driven from the main slope on the 5,700 feet level east and west, and again at 6,300 feet east and west. The company also installed electric pumps, an exceedingly fortunate decision given that No. 2 mine was nearly flooded by water coming in from abandoned No. 3. The Dominion Coal Company did not allow the mines to stagnate. Yet under its authority, the community was reduced to dependence upon one major slope. The other two slopes were opened under pressure, but were not to last long, and no serious effort was made to reclaim No. 3. The focus of the Dominion Coal Company was on driving No. 2 deeper and deeper, notwithstanding the danger of bumps (which it thought it had solved by the transition to longwall). By 1927 the mine was 7,580 feet long, measured along the slope, the fifth deepest in Nova Scotia. Under the company it was to become the deepest mine on the continent. 111

The coming of Dominion Coal consolidated a revolution which had already occurred, and cannot be equated with a major technical breakthrough. It benefitted by the prior experience of the Cumberland Railway and Coal Company, which had developed the resource despite daunting hazards, but it did little (except under duress, either from the public or because of the bumps) to effect changes at Springhill. Little was invested in the mining complex, at least until the late 1920s and the 1930s. The

244

emphasis was placed on No. 2 mine, to the detriment of the others. The coalfield was more firmly anchored to the east/west axis, and in 1927 the new company ended the historic steamer and barge trade from Parrsboro, by moving the fleet to Cape Breton and servicing Saint John from there.¹¹² It was an indication of the reduced alternatives of Springhill, now deprived of its traditional ability to look south as well as west. As part of the larger empire of Dominion Steel and Coal, the coalfield would even in the years 1930-1935 produce a total net profit of \$616,064.82, or a total profit of \$1,412,129.65 including various bookkeeping reductions and a sinking fund on first mortgage bonds.¹¹³ It is impossible to say if the Springhill mines were profitable at an earlier period, but these profits realized in the depths of the Depression suggest that they probably were.

With the sale of 1910 and the installation of Dominion Coal, the coalfield completed its difficult transition to the new structure of monopoly capitalism. Springhill no longer had a superintendent who could impose his own flamboyant style on the mine. The ensuing years were ones of stability and growing pessimism. The Dominion Coal Company would preside over the coalfield's most productive years, but it would also be the agency which supervised its orderly decline, as coal became less crucial to the industrial economy. Springhill's decline was softened by the continuation of an important railway market.¹¹⁴ But it was made much more difficult by the strategy followed in the later period of very deep mining, the ultimate cause of the disasters which ended large-scale mining in 1958.

4. A Failed Transition: The Joggins Coalfield

Not one of the patterns we find in the Springhill coalfield applies

to the evolution of the Joggins coalfield in the early twentieth century. The Joggins coalfield stood apart from the provincial trend. If it can be compared with any other regional coalfield, it would be with Minto in New Brunswick, which shared with Joggins its same thin seams and dispersed mines.¹¹⁵ Monopoly capitalism succeeded in absorbing Springhill. The Joggins coalfield, by contrast, remained outside the control of monopoly and even offered an efflorescence of pre-capitalist mining, on a scale not reported in any other coalfield. How can we explain this highly anomalous historical evolution, so contrary to all our expectations and any straightforward view of "stages" in history?

A large part of the explanation must be sought in the geological facts of the Joggins coalfield. The coalfield, with its thin seams and dispersed settlement, does not provide a natural focus for a monopoly. Yet it would be dangerous to suggest that geology alone can explain the strange record of the Joggins. The organization of the Canada Coals and Railway Company has already been cited as an instance of the attempt to bring the Joggins coalfield to a new level of development. Motivated by the high price commanded by coal, the Joggins company expanded the level of production, but fell victim to its own over-capitalization and the softening of markets in 1904. The development of this monopoly was dependent on the ownership of the railway and the existence of mining promoters and investors anxious for a high return on their investments. The collapse of Canada Coals and its reorganization as the Canada Coal and Railroad Company in 1905 suggested that some entrepreneurs still saw a future for the railway.

Historically the pattern of development in the Joggins was from the coast inland: the first wave of development had proceeded inland from the cliffs, the second from the Joggins property inland to the

Intercolonial. Now this pattern was strikingly reversed. This new process began at the site which most graphically demonstrated the failure of development in the Joggins coalfield, Chignecto. "Any one who in recent years has visited the Maccan Mines [Chignecto] must have been struck with the spirit of desolation and ruin that seemed to prevail on every hand," the Amherst Daily News noted,

"Empty and broken down houses, rusty machinery, a railroad track, minus the rails, the silent engines, all these forcibly recalled to one's mind Goldsmith's 'Deserted Village.'"¹¹⁶ The property had been deserted by the Steel Company of Canada as a hopeless proposition.

If there was an apt symbol of the very partial character of the industrial transformation of the Joggins coalfield, it could be found at Chignecto, where the old works lay filled with water and the houses left "for the elements to lay their destroying hands" upon them.¹¹⁷

Suddenly Chignecto was reactivated in a context of a rapidly improving market for coal. Hance Logan, a Liberal politician who was highly active in promoting the discoveries of Hugh Fletcher and the companies exploring the southern part of the county, succeeded in interesting several Montreal capitalists in the Chignecto property in 1901. Prominent among these men were David Mitchell, who owned the Pennsylvania Coal Company of Montreal, an importer of American anthracite coal, Senator William Mitchell of Drummondville, Quebec, William Farwell, President of the Eastern Townships Bank in Sherbrooke, and Nathaniel Curry, of Rhodes Curry Manufacturing in Amherst. The new company, after examining the deserted property at Chignecto, resolved to spend \$75,000 to bring the mines back into production.¹¹⁸

As a result, the little village once again rang with the sounds of

construction and mining. It required more than a year to pump the water out of the deserted mine, but new machinery could finally be installed in November 1902. The new company resolved to go below the old work, and thus avoid the problems of spontaneous combustion which had so damaged Chignecto in the 1880s. "They are still continuing to sink for a second level and are down 300 feet," the Chronicle noted, "and ways and balances are being opened up to this depth. This second level will be completed and in operation in a short time when they expect to raise about 400 tons per day. They now have 100 men on the pay roll and sufficient room for many more and will engage all competent men as they apply. All the old buildings have been rebuilt and painted. Rhodes Curry and Co. of Amherst have about completed their contract to build twenty new cottages." New houses, a new store, new offices, a new railway: Chignecto was indeed riding another wave in its dramatic history.¹¹⁹

The turning point in the history of the Maritime Coal and Railway Company came in 1904 with the collapse of the Canada Coals and Railway Company, which was hastened by a disastrous fire at the Joggins but caused by the reckless over-capitalization of the property.¹²⁰

This collapse brought the railway, which the Joggins company had controlled, to a virtual standstill, and brought the workers out on strike, since they had not been paid.¹²¹ James Rodgers, the liquidator of the company, seems to have been instrumental in organizing the sale of the Joggins to the Mitchells. From the start the concept was for a large syndicate which would control all the mines along the line of the Joggins railway. "The idea is that the new syndicate will operate the Chignecto and will acquire and work the Jubilee, also at

Maccan, but on the other side of the river, the Strathcona at River Hebert, the Kimberley on the other side of the River Hebert and the Joggins, with the twelve miles of railway from the Joggins to Maccan Junction."¹²²

The new syndicate began to organize itself early in 1904. The Maritime Coal and Railway Company was incorporated by the Nova Scotia legislature in 1904, by William Mitchell, who was now described rather simply as a "capitalist," James Patrick, merchant, and Llewellyn E. Kimpton, the manager of the Pennsylvania Coal Company, as well as David Mitchell, who now described himself as a mine owner, of Amherst. The company's articles of incorporation laid heavy stress upon the railway and on the prospects of merging with "any person or company, engaged or intending to engage in any business similar to any business which the company is authorized to carry on." The capital stock of the company was set at \$2,000,000, divided into 400,000 shares of five dollars each. The head office of the company was Montreal. According to the original act of incorporation, the company was not to commence business until 50% of its capital stock was subscribed, and 25% paid up.¹²³ This cautious provision was later dropped.¹²⁴ There were no preferred shares in the original act of incorporation. In addition the company authorized a bond issue of \$250,000, bearing 6% interest; of these bonds \$100,000 had been issued as of 1905, leaving \$150,000 available if needed. The bonds of the company were sold in Montreal by the firm of G.J. Adams, whose promotional literature noted that bondholders were entitled to the benefit of a sinking fund, created by the payment of three cents per ton of coal mined from the property and were further secured by a deed of agreement and mortgage

with the National Trust Company. Even though the company had been operating as a developing mine--preparing the mine for the winning of the coal--it had succeeded in making a net profit for the fiscal year ending 28 February 1905 of \$34,703.07, equal to nearly six times the required amount of interest on the outstanding bonds.¹²⁵ The new company was as solid as the Canada Coals and Railway Company had been rickety, for even if we do not wish to believe the biased reports of stockbrokers, we must attend to the tangible evidence of rapid and sustained expansion in fixed capital and output.

It would be difficult to overestimate the socio-economic importance of the new corporation to the Joggins coalfield. The Maritime company was the first to demonstrate that the Joggins coalfield could provide investors with something more than endless litigation and mysterious fires. There was a certain inventiveness to the company which helped it succeed, although the structural precondition of this success was the vast process of industrialization which made coal an article in great demand. In 1906 the annual meeting of the company took place in Montreal, at which a highly optimistic report on the company's prospects was delivered by David Mitchell. The name of the company was changed to the Maritime Coal, Railway and Power Company, Limited, and the par value of the stock increased.¹²⁶ These changes were in anticipation of a new experiment: the generation of electricity at the pit-head. This had been a concept pioneered by Thomas Edison, and the humble village of Chignecto was to provide its first North American application.¹²⁷ Rather than incurring the expense of hauling coal to distant markets and using it to generate electricity, Edison had reasoned, it would make far more sense to locate the power plants

at the actual site of mining, and move the electricity by wire.¹²⁸

It was an eminently sensible idea, and the company showed imagination in carrying it out. It enabled Chignecto to become part of the thriving manufacturing complex of Amherst, the fastest growing industrial centre of the Maritime Provinces. Nothing could have dramatized the great transformation of the western coalfields better: Chignecto had gone from a deserted village to a thriving industrial centre in a scant eight years. What was particularly impressive about the company was its adaptation of a new technology to the particularly demanding geological conditions of Chignecto. Chignecto provided a low-quality coal which would never be suitable for extended railway or domestic use; it was sulphurous, friable and dirty. But the generation of power from such a mining location was a perfect solution, since the fuel used at the power-house was refuse fuel, and it mattered not whether it was smoky or not. Thomas Edison thought the achievement worthy of a telegram. The Nova Scotian and Weekly Chronicle ran a full-page story titled, "GREAT INDUSTRIAL TRANSFORMATION ACCOMPLISHED IN CUMBERLAND. The Story of the Development of the Unique Power Plant of the Maritime Coal, Railway and Power Co., and the Rejuvenation of the Now Bustling Mining Towns of Chignecto and Joggins.—What Enterprise and Courage Have Done For the County."¹²⁹ William Mitchell gave an interview on the local coal industry in 1906 which revealed the depth of the change. A few years before, he noted, several of the mines had been running with half staffs. Today the problem was trying to locate a sufficient number of miners. The company was advertising for 200 more miners, and had just let contracts for several new miners' houses in the last week.¹³⁰ The new company centralized

production in the coalfields, and established a manager's and accountant's residence and general offices at Maccan, from which the collieries at Chignecto and the railway could be operated.¹³¹

No less dramatic was the change made by the company at the Joggins. Although the re-organization of the Maritime company in 1904 was sparked by the collapse of the Canada Coals and Railway Company, not until 1907 was the purchase of the property of the old company ratified. Once again, the Maritime company sought to effect a major technological breakthrough. It was known that extensive submarine deposits existed at the Joggins; Albert J. Hill had prepared an extensive report on the "sea area" for one investor in 1897.¹³² When the Maritime Coal Company acquired the Joggins property, they acquired two slopes (numbered 2 and 3; number 1 had been abandoned years previous), both having reached a depth of 2,500 feet. The great difficulty was the increasing thickness of the parting in the Joggins seam. "At present [1901] in the west working of No. 2, it forms a serious obstacle, as an enormous amount of stone has to be brought to bank," noted an official memorandum. "If, when the levels are extended to the dip of the old workings, and the parting continues of the same thickness, it is questionable if it would pay to work."¹³³ This was again a mining proposition requiring a fair bit of ingenuity to manage. No real understanding existed of the actual extent or value of the seams other than the Joggins, and even this "main seam" had not been traced completely across the coalfield.

When the Maritime company acquired the Joggins property, it decided to prosecute with all possible speed the sinking of a new slope near the Bay of Fundy in order to reach the submarine coal areas

under the Bay.¹³⁴ The company also set about renovating the railway and built a new station and freight house.¹³⁵ In September 1907 the company took the drastic step of closing down the old Joggins slope, which was in bad condition and involved a high cost for every ton of coal produced, and resolved to open an entirely new slope at the Joggins, the first completely new departure since the mines began. "The new slope will open up one of the largest coal fields in the province and everything in connection with the property will be of the most modern kind," the Amherst Daily News announced in 1907.¹³⁶ The company's decision to revitalize the Joggins and modernize its pits completely transformed the community's economy. Noted the Nova Scotian and Weekly Chronicle:

The enterprise of the company seems to have entered into the people and it has more of the air of the great western mining "camps" than of a sober Nova Scotia coal mining town. With its long fine main street, prosperous looking stores, and comfortable residences it gives the appearance of being a place where life is not a very hard proposition.... Outside of the town the Company has opened up a long new street, broad and well made, where they have erected twenty new houses, long double tenements of fine appearance, very unlike the typical "miners' houses." In all, 40 new houses have been erected making the total accomodation in the Company's houses at this point equal to one hundred families.

The new slope by 1909 was ten feet high and ten feet wide, and the slope was pitched at a very easy angle, unlike many of the other mainland collieries. It won a ready market on the Intercolonial Railway. Everywhere there were signs of change. The new bankhead could handle 1,200 tons of coal per day (up from a mere 400 tons), and was equipped with endless haulage, air compressors, duplicate hoisting equipment, and (most importantly) electricity.¹³⁷

It is always easy to be seduced by the warm rhetoric of the

early twentieth-century boosters, for whom every mediocre colliery was a Newcastle in embryo. But in this case there really had been a stunning and sudden change. Perhaps only under monopoly capital could a company have entered the Joggins field, secured 22 square miles of coal lands, completely modernized two major collieries, transformed a railway and equipped it with three locomotives, and developed advanced loading facilities in Moncton and an electrical power plant based on the latest ideas.¹³⁸ No company previously had had the means, nor the will, to do this. That the booming economy of the early twentieth century made the transformation possible can hardly be questioned, but it must also be said that the Maritime company adapted to the special geological problems of the Joggins coalfield with rare intelligence and imagination.

Are we not here confronted with a contradiction of our basic idea with respect to the Joggins coalfield, which was that the Joggins coalfield stood outside the pattern of monopoly capitalism? Have we not simply described the transformation of the coalfield along the line of the railway, monopolized by a large and externally-controlled corporation?

The contradiction is, in fact, more apparent than real. In 1904, Cape Breton boasted five incorporated coal companies; Cumberland, with a fraction of its production, boasted six. Virtually all of these companies were failures, ending their brief careers on the sheriff's auction block. Apart from the Maritime Coal, Railway and Power Company, no single economic force dominated the Joggins coalfield--and it should be remembered that even this company was miniscule compared with either Cumberland Railway and Coal, or Dominion Coal. The other companies

were controlled by a diversity of capitalist interests. At Strathcona, on the east bank of River Hebert, the Strathcona Coal Company represented a rare infusion of local capital (from Sackville, N.B., and Moncton, with some investment from Charlottetown); it developed a fine mine, which was sold by the county sheriff on 30 September 1911 for defaulting on its obligations to the Eastern Trust Company.¹³⁹ In the postwar period the property passed into the hands of small local entrepreneurs. The Minudie Coal Mine in River Hebert was controlled by local investors (including Job H. Seaman of Barronsfield); it was transferred to Montreal capital in 1903, and acquired by the Maritime Coal, Railway and Power Company in 1916.¹⁴⁰ The neighbouring Victoria coal mine, now operated by the Minudie Coal Company, in 1923 owed the Government \$59,172.90 in unpaid royalties as well as significant other monies to creditors.¹⁴¹ The Fundy Coal Company in the Hardscrabble area of Joggins, developed by Harry F. Huestis of Providence, the moving spirit of the Fundy Coal Company, merged with the Atlantic Grindstone, Coal and Railway Company in 1906, which in turn suffered a long lingering death until its seizure by trustees in Providence for default on its bonds.¹⁴²

There is therefore every reason to stick with our idea that the Joggins coalfield was exceptional--exceptional in the number of locally-controlled firms, the number of small mines, and the high rate of failures. The cases we have cited are far from atypical. The typical history of a mine in the Joggins coalfield--in every single one of its mining areas--was a triumphant entry, an arduous and unrewarding period of development, and an ignominious death on the sheriff's auction block. Only one company, the Maritime Coal, Railway and Power Company,

provides an exception. The major reason for this was its control of the railway, which became more and more the central focus of its activities.

The Joggins coalfield stood alone in Nova Scotia, uniquely disrupted and dispersed. Yet this corporate failure and confusion did not necessarily mean the stagnation of production. In fact the growth rate of the Joggins coalfield was 3.4% in 1901-1927 per year, compared with .1% for Springhill. The coalfield was expanding, but in its own inimitable fashion.

The expansion of the Joggins coalfield was undertaken first by the Maritime Coal, Railway and Power Company, and by a host of minor companies following in its wake. Several new areas were opened up. The Bayview mine on the Queen Seam, 2½ miles east of Joggins, was established in 1923; by 1927 this important mine was worked longwall and had two levels broken off from the slope, down 900 feet under a cover of 245 feet.¹⁴³ The Beech Grove area at River Hebert was also opened up, and slopes were put down to exploit the Joggins Bench and the Joggins Fall.¹⁴⁴ The most important single new development was the opening of the Maple Leaf area of the Joggins. This was first developed before 1910 to prove the Joggins main seam at a point two miles east of the old mines. So good was the coal that development work was stopped so that a new branch line could be built--the only extension of the railway in this period, except for the construction of a line from Athol to Fenwick. By 1919 there were three slopes in the area, and by 1926 a fourth mine had been developed to take the place of one of the slopes which had been impeded by a fault. This, Maple Leaf No. 4, became the largest single producer of the

Maritime Coal Company, and was one of the most advanced mines in the province. A new hoist and picking tables were installed on the surface, and new coal cutting machinery in the mine; the longwall system, complete with coal cutting machinery and conveyor pans to convey the coal to the slope, was in use as early as 1923.¹⁴⁵ The opening up of entirely new districts in the 1920s meant that the Joggins coalfield, although afflicted with its customary bankruptcies, did not feel the full brunt of the crisis of the 1920s.

Older areas in the Joggins coalfield acquired new life as well. The Boston area on the east side of River Hebert was extensively redeveloped by the Central Coal Company, and then by the Valley Coal Company, both under sublease from the Boston Coal Company, which assumed direct control in 1924. (These baroque subleasing arrangements were quite common in the Joggins coalfield). By 1926 the main slope of the Boston mine extended 760 feet from the surface.¹⁴⁶ At the Joggins itself the Maritime Coal, Railway and Power Company commenced the sinking of a new slope to tap the submarine areas; and spared few efforts to make this new slope as modern as possible. A large reservoir was excavated and a new pipe line to the pumping station at McCarron's river, where a large concrete dam was installed; a new rail connection was established with the Fundy mine and its good tidewater facilities. The pace of expansion was extremely fast. The sinking operations for the new slope began on 1 September 1907; coal was hoisted onto the new bankhead from a slope 2,400 feet long on 5 October 1908. By 1910 the mine was the first in the province to be run almost completely by electricity. The power, 11,000 volts, was from the company's own plant at Chignecto, and was used (for the first time in the county)

to lower coal by engines or motors in the balances, where once cages and ballast boxes had been required. By 1911 the mine also had one pick-quick longwall mining machine, driven by a 220-volt motor.

Throughout the war period the company added to its stock of machinery.

Longwall mining was used everywhere in 1915, except on the 1,800-foot lift, and a new belt-conveyor had been installed with a capacity of 50 tons per hour. This was a peculiar case of a small mine consistently operating in advance of the provincial standard. However, the programme of modernization was abandoned in the 1920s, and the mine itself abandoned in 1927, as the quality of the coal deteriorated and the company decided to open new slopes in the Joggins.¹⁴⁷

What would have been a major social disaster earlier was merely a shift of development policy from one slope to another; the company in 1926 had seven slopes in the Joggins field. Even at the Hardscrabble, which Drummond, for one had always considered the least promising of all Nova Scotia's coal properties, there was a dramatic expansion, as the Fundy Coal Company reopened the Fundy Mine with electric haulage and an electric hoist, all provided with electricity from Chignecto, and the National Coal Company, the Emmerson Coal Company, the Canadian Coal Company, and various local men all worked in this area, on the old Hardscrabble seam and the more promising Forty Brine.¹⁴⁸

The Victoria Colliery, which was closed down on 1 May 1916 by the Minudie Coal Company, was reopened in the 1920s, and additional slopes were put down on the Victoria area by the Trestle Brook Coal Company, the Victoria Coal Company, Pat Boudreau and Company, and the National Coal Company.¹⁵⁰

The Sterling Coal Company, operating in an area west of these companies, opened up the Kimberly seam; their mines were taken over by the

Maritime Coal, Railway and Power Company; additionally, the Milner Coal Company opened a mine 800 feet north of the Sterling No. 1 mine and operated on a small scale in the 1920s.¹⁵¹ There was a similar activity at the Jubilee area between River Hebert East and Maccan.¹⁵² At Maccan and further east, the pace of activity slackened (as is revealed by Figure Two), although even as far east as Fenwick there was a flurry of activity in the First World War and a new mining camp established in the middle of the woods.¹⁵³

Any attempt to provide an exhaustive chronicle of these small companies and mining enterprises would exhaust not the available supply of detail but only the reader. The general situation in the Joggins field was that of rapid growth, spurred by the discovery of large new areas of coal. The mines were squeezed into this small field. Some were only separated from each other by a few yards. The thin seams affected them all, and limited their potential growth. The customary rule of coal-mining economics is that entry into the industry is far more easily accomplished than exit from it, which accounts for the marked inelasticity of supply.¹⁵⁴ The rule was not borne out in the Joggins coalfield. The mines abandoned by one company could be easily pumped out by another, since the mines never attained such depth to make such pumping a major barrier to entry. Teams of men could pump out the upper levels of a mine and extract pillars, without the expenditure of much money. In some respects one could say that the development of the Joggins coalfield was the exact opposite of what one would expect: by the 1920s the coalfield was a proliferous realm of small mines, many of them employing four or five men, and had become less 'concentrated' under the control of one company than it had been in 1900 or (for that

(matter) 1870. Monopoly capital had swept up this coalfield in its mergers and grandly capitalized promotions, but after its failure the coalfield was open to men of moderate means. Local men increasingly dominated the coalfield and would run it completely in the succeeding decades. It is as if the great wave of corporate mergers had broken upon the stubborn facts of local geology.

There was a good deal that was irrational about this mode of production. Even the Mines Department, not given to trenchant critiques of the industry, noted in its 1926 Report, "The coal areas of Cumberland County present some problems that will require further and more careful consideration, especially towards securing more uniform methods of operating. At present there is a tendency there towards small operations that are inclined to discontinue when, owing to deeper development, costs of production increase. The result is many abandoned workings and much waste."¹⁵⁵ The critique was sharpened by the unusual lengths to which the state had to go to preserve a semblance of order in the coalfield. For example, when the Mirudie Coal Company went into liquidation, the property and equipment were taken over by the Department of Mines. After lengthy negotiations, terms were agreed upon and the National Coal Company turned over all their assets to the Victoria Coal Company. For a short period, the state therefore directly operated the mine. In 1933, when the Victoria Coal Company sought to abandon one of its most developed mines, the Department of Mines refused to allow it to do so, resulting in the company losing thousands of dollars, forcing it finally to withdraw its pumps without legal authorization.¹⁵⁶ These facts were generated by the different structure of corporate weakness and active state intervention that dominates the coalfield after 1925, but

they relate directly to the irrationality of production in a coalfield such as this and the energetic intervention required of the state to minimize its social cost.

The result of this unusual development is apparent in the Joggins coalfield today. Everywhere one turns in this district one encounters an abandoned mine. The geological rationale for this pattern is plainly an important consideration. "A serious handicap for all companies operating in the River Hébert district is the quality of the coal; the seams are thin, making mining difficult and expensive, and faults are fairly numerous," Dr. D.M. Cochran, the coalfield's leading entrepreneur in the interwar period, remarked in his testimony to the Carroll Commission in 1945.¹⁵⁷ Cochran was probably right. Thin seams did provoke a corporate strategy of shallow mining and exacerbated the problem of corporate instability. Yet it would be wrong to reduce the problem to one of geology. It was the combined impact of geology and the structures of capitalism--in this case a resurgent competitive capitalism--which led to the distinctive features of the Joggins coalfield. Only in a certain market would anyone have been tempted to open new coal mines in this district, such as the mines of Benwick and Chignecto, which during the war sold so much coal of dubious quality.¹⁵⁸ Consequently we have to insist on the co-determination of the pattern of development by the economic structure on the one hand and the natural features of the coalfield on the other.

The Joggins cliffs had inspired so many odes to progress, but the Joggins coalfield refuted the notion of steady economic evolution. Instead the coalfield regressed, from monopoly to small-scale, local capital, and even back to pre-capitalist forms of production, in the

form of bootleg mining. In its complex response to the external realities of the market and advanced industrial capitalism, the Joggins coalfield proved that a regression to less developed economic forms could be a 'functional' response to the new era.

5. Conclusion: The Complex Transition of the Cumberland Coalfields to the Age of Monopoly Capitalism

The rapid industrial expansion of Canada at the beginning of the century transformed the coal industry by stimulating the consumption of coal and the entry of large-scale capital. Between 1902 and 1913 consumption trebled. After the First World War there was no comparable increase, but instead there followed a period of large yearly fluctuations. Consumption in 1925 stood well below the 1913 level. Although the level of consumption rose to 8 per cent over the 1913 level by 1929, the depression which followed reduced the annual consumption of coal to 30% of the pre-war level. As J. Harry Jones observed, "Not only has the Canadian demand for solid fuel failed to expand at the same rate as in the pre-war period, but the demand has reflected the severe fluctuations in industrial and economic activity experienced since the war."¹⁵⁹ The secular decline of coal as a fuel was combined with the economic crisis of the 1930s. The Springhill coalfield was sheltered by its railway market, and Joggins by its local customers, but neither shelter could remove the coalfields from the structural change which, from 1927 to the late 1950s, reduced the place of coal in the economy. It is convenient to date the end of our period with the fall of the British Empire Steel Corporation in 1927. But, as David Frank has shown, this fall was the closing act of a protracted drama, beginning in the postwar period.¹⁶⁰ Just as 1893 served as a "matrix event" for the structure of monopoly capitalism, so did the crisis of 1922-1927 serve as the formative event

of the structure of late capitalism, in its particular local form.

We now need to sum up the period of monopoly capitalism, first by examining the statistics of this period, and then by considering, by way of conclusion, the distinguishing features which set these coalfields apart from each other and from the Nova Scotia standard.

Table Two presents the statistics of production in this period. Figure One breaks the production of coal up according to mining area.

COAL PRODUCTION BY AREA,
CUMBERLAND COUNTY,
1901 - 1927

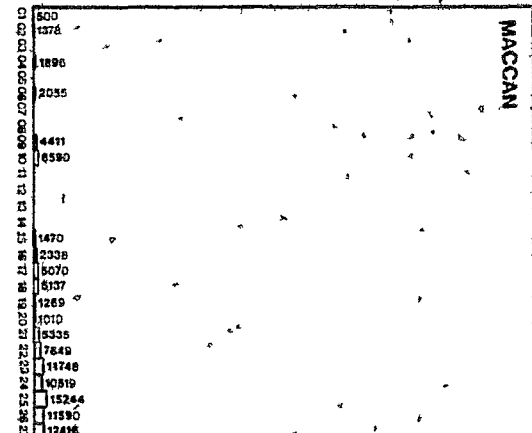
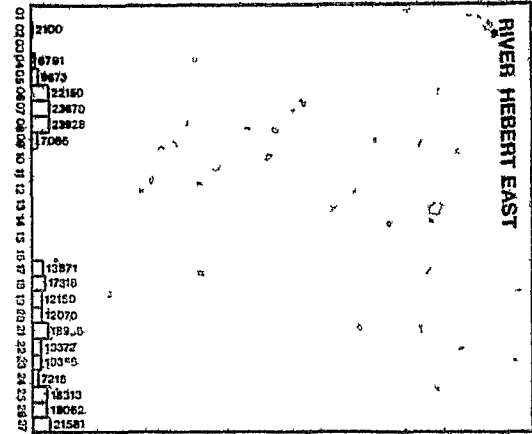
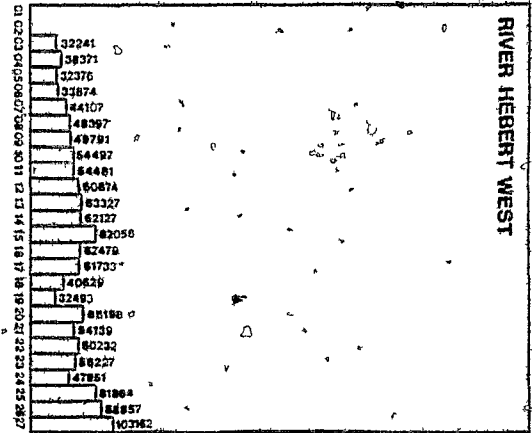
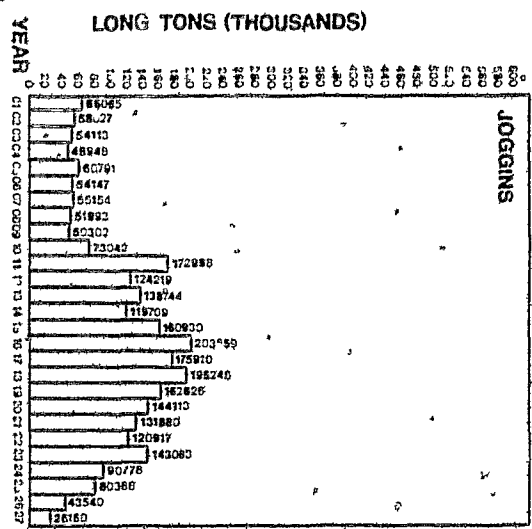
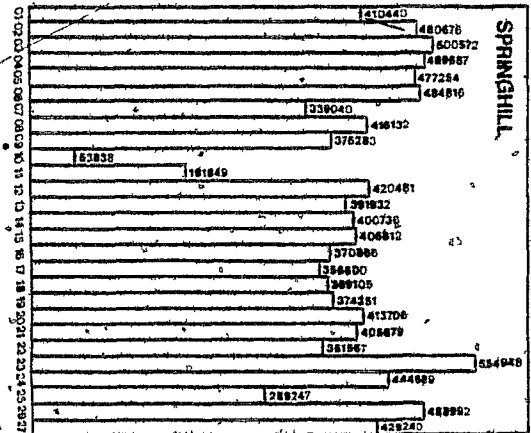
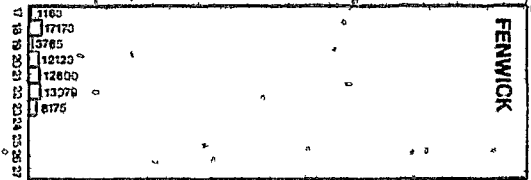
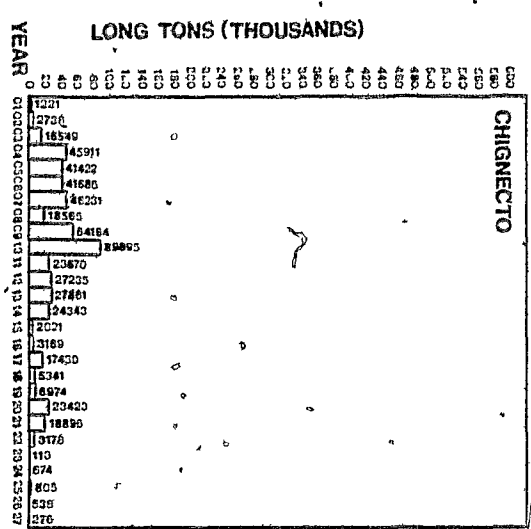


Figure One

Table Two. Production in the Cumberland Coal Industry, 1901-1927

Year	Production (Long tons)	Number of Mines	Index (1913=100)	Index (1884=100)
1901	478,226	4	76.9	170.8
1902	544,917	6	87.6	194.7
1903	603,475	6	97.0	215.6
1904	631,604	7	101.6	225.6
1905	621,516	8	99.9	222.0
1906	638,728	7	102.7	228.2
1907	508,202	7	81.7	181.5
1908	559,014	7	89.9	199.7
1909	542,037	8	87.1	193.6
1910	277,862	7	44.7	99.3
1911	442,998	6	71.2	158.2
1912	632,809	5	101.8	226.0
1913	621,864	5	100.00	222.1
1914	606,915	5	97.6	216.8
1915	653,289	6	105.1	233.4
1916	642,411	6	103.3	229.5
1917	631,777	12	101.6	225.7
1918	649,949	11	104.5	232.2
1919	593,628	11	95.4	212.1
1920	672,643	13	108.2	249.3
1921	647,485	15	104.1	231.3
1922	576,988	14	92.7	206.1
1923	784,649	15	126.2	280.3
1924	601,827	12	96.8	215.0
1925	485,841	13	78.1	173.5
1926	651,579	12	104.8	232.8
1927	651,579	11	95.3	211.8

Source: See appendix One.

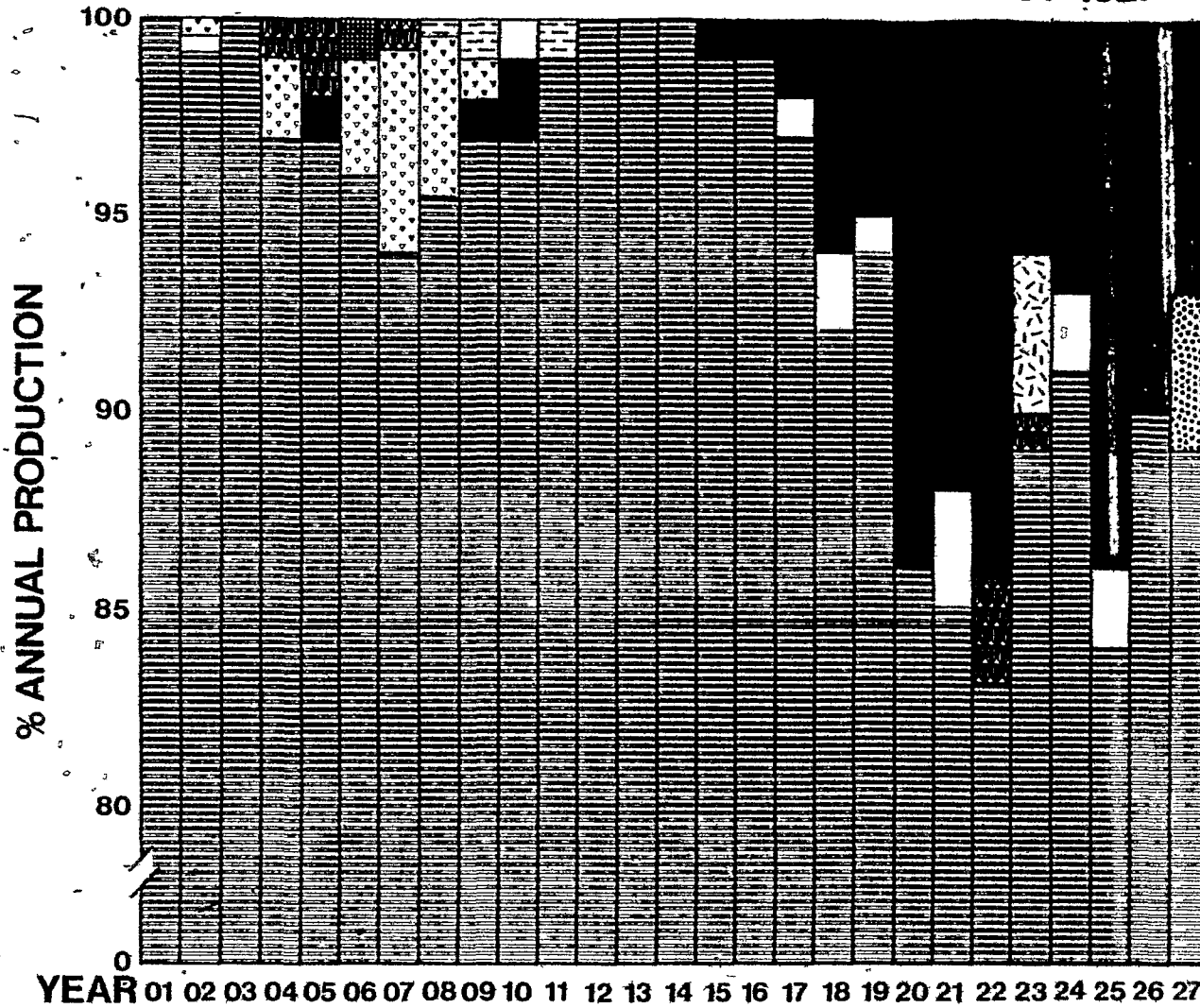
Using the standard formula for the calculation of the annual growth rate, we derive a compound growth rate of .8% per year, significantly lower than the estimate of 11.3% per annum growth in the period preceding. Of course growth at the high levels already achieved by the coalfields had a far greater absolute magnitude, and in 1923 the coalfields reached their highest peak of production in the entire period from 1848 to 1927, a level which would only be bettered by the massive outputs in the

period of the Second World War. In Nova Scotian terms this pattern is somewhat surprising, given that provincial estimates reveal a peak of production in the period before the First World War. The case of Cumberland may be explained by referring to the facts of geology. The western coalfields, neglected except at areas of obvious outcrops (such as Joggins, River Hebert and Maccan), now assumed far greater importance, as new coal resources were exploited. Yet this is only a partial explanation, because Springhill itself did not fall within the provincial pattern, producing more in 1923 than in any previous year, and more in 1930 than in 1923. Springhill was less deeply marked than Cape Breton by the crisis of the 1920s, although it would be highly inaccurate to believe that this difference obviated the real distress of residents of the coalfields during the 1920s and 1930s.











The change in the nature of ownership in the coalfields is illustrated by Figure Two, which illustrates the pattern of control. Montreal interests dominated Cumberland, through the Cumberland Railway and Coal Company, the Maritime Coal and Railway Company, and Dominion Coal. This domination was modified somewhat in the 1920s, when a number of locally-controlled companies secured a presence in the coalfield. The turning point in this respect appears to have been the First World War, in which the demand for coal reached a new height and the deep mines of Springhill were overtaxed; local men were given an opportunity to develop coal mines in areas which had hitherto been considered too marginal for exploitation. Table Three extends this analysis to the percentage of production controlled by the two largest coal companies, providing a measure of the concentration of production. The table tells us to what extent we may legitimately speak of consolidation in these

CONTROL OF CUMBERLAND COALFIELDS' PRODUCTION

1901-1927



KEY: COMPANY CONTROL

-  Montreal
-  Cumberland County
-  Sackville-Moncton
-  Providence
-  Toronto
-  New York
-  Saint John
-  Unknown
-  Halifax
-  New Glasgow

coalfields. At an aggregate level the consolidation process is evident; at no point did the two largest companies account for less than 50% of production. Moreover, Springhill was consistently monopolized by the Cumberland Railway and Coal Company, which, excepting the years of the great strike (1910, 1911), always represented most of the coal produced in the County. However, another level of analysis reveals the very different histories of the Springhill and Joggins coalfields. The Joggins coalfield, highly centralized in 1912, was less so by the mid-1920s. Locally-controlled coal companies gained ground. This anomaly is accounted for by the opportunities provided local men in a coalfield that still contained unexploited areas and the declining interests in the coal mines on the part of external capital. The surprising complexity of this area is brought out by these statistics.

Table Three. Output in the Cumberland Coalfields By Company, 1901-1927

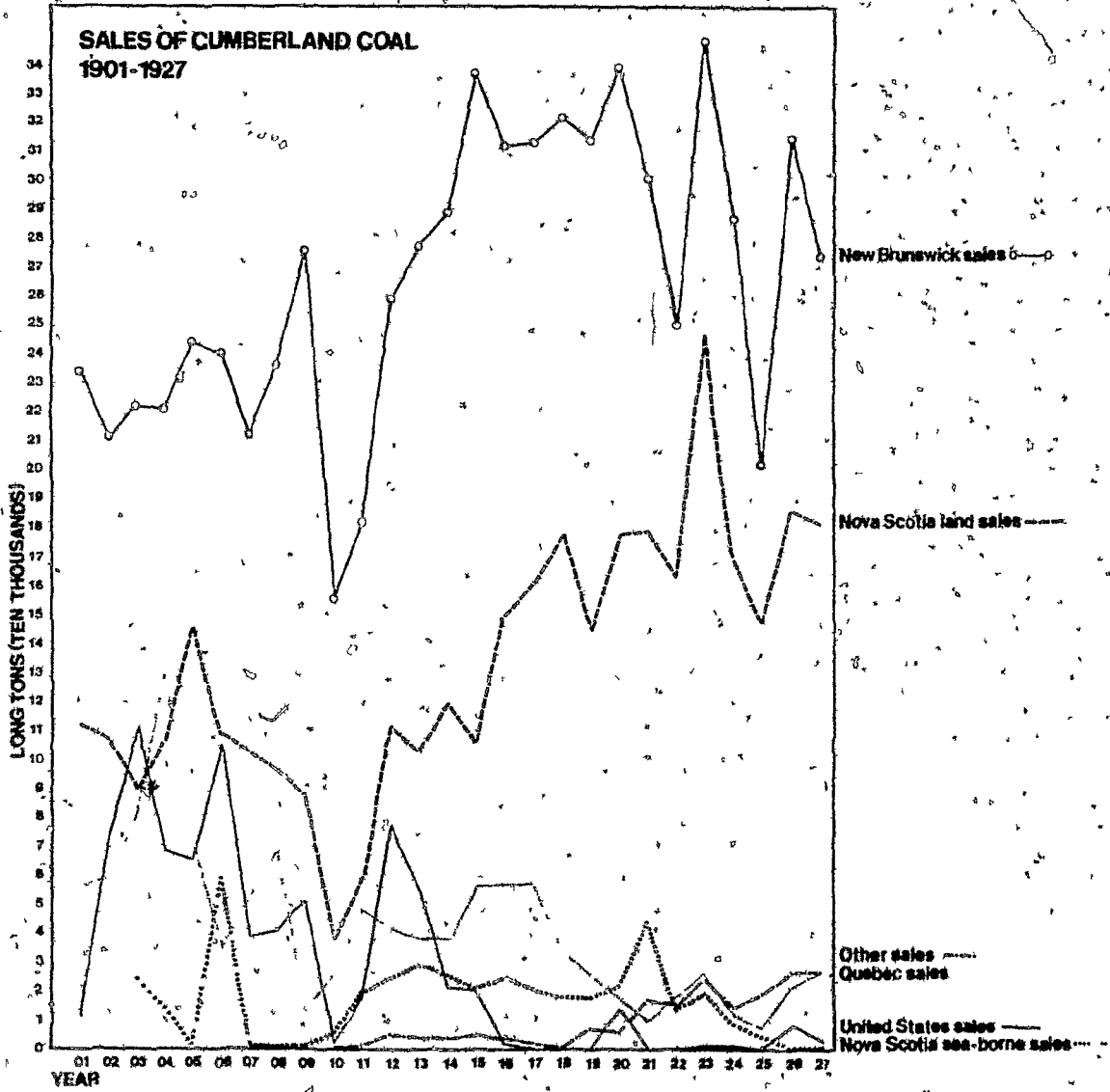
Year	% Maritime Rwy. C.P. Co.	% Cumberland R. & C. Co.	% Other (external)	% Other (regional)	% Joggins coalfield: Maritime Rwy. C.P. Co.
1901	0	86	14	1	0
1902	0	88	11	1	0
1903	0	83	17	1	0
1904	7	78	14	1	32
1905	6	77	15	2	27
1906	7	76	13	4	27
1907	19	67	10	5	56
1908	12	74	9	4	47
1909	18	69	10	2	60
1910	58	19	3	19	72
1911	43	43	13	0	76
1912	24	66	10	0	71
1913	26	63	10	0	71
1914	24	66	10	0	69
1915	25	62	13	*	65
1916	32	58	10	*	76
1917	33	56	8	2	75
1918	33	57	3	7	76
1919	31	63	*	5	71
1920	24	62	*	14	63
1921	21	63	1	14	57
1922	20	63	3	14	53
1923	16	71	2	10	56
1924	17	74	2	7	64
1925	22	60	2	14	55
1926	13	75	1	10	53
1927	16	72	1	11	58

Source: see appendix. An asterisk indicates a reading of less than 1%. The percentages in some cases do not add to 100 because of rounding.

The market for Cumberland coal indicated differences between the Cumberland coalfields and the province as a whole. For a number of reasons, the pattern in Cumberland County does not resemble the provincial pattern very closely. Of the 15,895,068 long tons produced in the county from 1901-1927, 13,359,944 may be assigned to a particular destination. 3,597,070 tons (27%) were accounted for by land sales in Nova Scotia (in this instance the railway primarily); 7,186,561 tons (54%) by sales to

New Brunswick, and 1,136,698 tons (9%) by Quebec sales. A total of 807,103 long tons were sold to the United States (6%) and 434,421 long tons were accounted for by seaborne sales in Nova Scotia (3%). (The remaining 1% of sales were accounted for by other markets, of which Prince Edward Island was the most important). Sales to New Brunswick had increased as a proportion of the total; sales to Quebec had declined, while land sales (primarily the railway) had increased. In a restricted sense, the advent of Dominion Coal and the monopolization of the coalfields did represent process of standardization, but in terms of the markets served by each coalfield, there appears to have been little major effect, and this coalfield was as "local" in its orientation in 1925 as if had been in 1885. Figure Three portrays the market for Cumberland coal over time. There were substantial fluctuations in these markets, but a comparison with the whole industry suggests the far steadier evolution of the Cumberland coalfields as opposed to the province as a whole. There is nothing to compare with the turmoil after the First World War, when the Cape Breton coalfields exported large quantities to the United Kingdom and the United States, and lost the crucial Montreal market. The American market, a very major consideration in the early twentieth century, gradually receded from view, while the Bay of Fundy trade was pre-empted by Dominion Coal in Cape Breton. However, the changes in the pattern of markets for Cumberland coal were modest and reasonable compared with the bizarre fluctuations on a provincial level. In contrast with the province as a whole, whose trade is evaluated in Table Four, the Cumberland coalfields relied far less upon the St. Lawrence ports. The Cumberland coalfields were able to rely upon stable regional markets, while those of Cape Breton were forced into

Figure Three



'exports' to the port cities of Quebec. In this sense, the attempt to change the mercantile orientation of Cape Breton succeeded only very partially, and even in the 1930s observers noted the extreme seasonality of production and the importance of banking coal.

Table Four. Destination of Coal Sold in Nova Scotia, 1901-1927

Destination	Total Sold (1901-1927 (Long tons)	Percentage of Total	Yearly Mean
Nova Scotia Land	42,905,857	32%	1,589,106
Nova Scotia Sea	10,407,424	8%	385,460
New Brunswick	16,029,152	12%	593,672
Newfoundland	5,287,999	4%	195,851
P.E.I.	2,239,987	2%	82,962
St. Lawrence Ports	38,763,128	29%	1,435,671
United States	10,014,973	7%	370,924
Europe	776,272	1%	28,751
United Kingdom	547,662	*	20,283
Bunker	6,185,047	5%	229,075
Other	618,181	*	22,895
TOTAL	133,755,682	100	

Of course, as one realizes when one compares these estimates with those of the period 1873-1900, considerable change had occurred. The category "Nova Scotia Land" which in the period 1873-1900 accounted for only 17% of provincial sales, now accounted for 32%, a sign of the landward shift of the industry and its generation of forward linkages. But these linkages, forced into being by the state and zealous speculators, were fragile and speculative. The steel mill in Sydney represented an imposition of the 'manufacturing condition' upon the Cape Breton coalfields, but it was one which was to prove to be highly contingent, based upon the construction of the railways. In this respect Cumberland

was favoured by being the coalfield which served the regular fuel needs of the railway, while Cape Breton paid a heavy price for its dependence upon supplying its rails.

The statistics, with all their intransigent complexity, still allow us to confirm many of our essential ideas about the period of monopoly capitalism. It was in this era that the coal industry assumed its modern form, even if subsequent decades would transform the situation from one of expansion to one of retreat.

Of the five great changes of this period--the qualitative change in the state's involvement, the advance in scientific knowledge, the growth of large corporations, linked with finance capital, the transition from a partially competitive to a non-competitive market, and the great rise in the level of production--it is probable that the most pivotal was the changing strategy of the state. It is quite true that the coal industry presented a 'natural' field for industrial concentration. The case of the Joggins Railway speaks eloquently of the potential for consolidation presented by a railway placed across a coalfield--even so diffuse a coalfield as the Joggins. But the innate tendency to consolidation can only explain so much: Even with the Joggins Railway, the Maritime Coal, Railway and Power Company did not sustain a complete monopoly in its field. Even more persuasive is the geological argument--the contention that the configuration of seams (for example, the closely converging outcrops of Springhill) contributed to the formation of monopolies. But this argument helps us understand why one coal company dominated the Springhill coalfield, not why one company was able to absorb all the major coalfields and the bulk of the region's heavy industry as well. The inherent tendencies of capital accumulation help explain why such

large pools of capital existed in Montreal ready for investment in the coal industry, but not why such investment occurred so rapidly and with such dramatic effects. Few coalfields of the United States were so dominated by one huge corporation. Indeed, the primary problem of the American industry in the twentieth century appears to have been the proliferation of companies, not their excessive consolidation.¹⁶¹ No, valuable as all these inherent tendencies are to a full explanation, the weight of analysis falls inevitably and conclusively upon the conscious policies pursued by the state.

The problem does not thereby escape logic or economic analysis. Once the critical decision of 1893 had been taken, there is a certain inevitability about the subsequent events. One reads of the merger of 1919 with little surprise after the many mergers preceding it. But the logic of consolidation proceeded from the political intervention of 1893. This matrix event itself does not lie beyond logical analysis. It was born of the fiscal imbalances of Confederation, and the consequent search for royalties. The design of the Whitney Deal indicated its profoundly colonial cast. It was the strategy not of industrial capitalists, but of a rentier state, which proved incapable of any sustained thought concerning economic development. The state had a strategy for economic development, it possessed an agenda for social consolidation, but it could not and did not have a long-term perspective, a thorough and innovative programme such as that hesitantly but irreversibly adopted by Ontario. Inevitability may always be seen in historical development, and there are many who view regional economic decline through such a fatalist perspective. At the most profound level there is probably no way of undermining the determinist outlook, in

which some Marxists find themselves united with determinists of many other kinds. But the evidence of the coal industry poses a problem for determinism because of the manifestly crucial role of politics, and consequently of structured human choice. There appears to be a good case for associating industrial decline not with an iron law of resource determinism but with a strategic choice made by the state, driven by the imperatives of finance and moulded by the dependant, colonial mentality of its rulers. To follow this line of argument would mean placing the political at the centre of economic analysis. It suggests a general hypothesis that an internally generated system of exploitation established by the state and serving identifiable class interests, contributed to regional decline by irremediably damaging the resource endowment.¹⁶² Following this train of thought might help us explain why the coal industry, whose disastrous collapse was the essential socio-economic fact of the 1920s, can nonetheless be thought of as a political success story, probably the earliest and most successful transition in Canada from competitive to corporate Liberalism. And this was not only a political success story, but a social accomplishment as well, for the creation of a rentier state was not accompanied, and has never been accompanied, by any serious socio-political challenge. It rather has created a particular form of paralysis, the product not of an intrinsic conservatism but of the unique role of the political in the realm of the economic. We are led to the idea that the most plausible line of inquiry into regional underdevelopment is that of investigating the internal class dynamics which created the rentier state, whose strategy worked with such brilliant success in the coalfields, with the incidental effect of destroying whatever potential for enduring growth the coalfields contained.

Let us conclude by surveying the economic history of the coalfields throughout the entire period covered by our study. First of all, the coalfields were defined and limited by the system of mercantile capitalism, which assumed here the form first of military exploitation, then of petty commodity production, then of limited development by the imperial monopoly. Capitalism in this stage was highly undeveloped. Second, in the 1860s, there came the period of the industrial revolution, which was brought to Cumberland along the tracks of the railway. The customary phase of independent prospecting was cut short by the intervention of the state. Industrialism assumed an uneven spatial form, because the Joggins coalfield remained mercantile in its orientation throughout the 1870s and 1880s. Finally, in the 1890s, a third phase opened, characterized by horizontal and vertical integration of companies, the collaborative corporate management of markets, and the interpenetration of industrial and finance capital. Once again this phase was unequally developed, with the Springhill coalfield fully absorbed within the new structure, and the Joggins coalfield remaining independent, and even providing an unusual environment in which petty commodity production could flourish once more.

This model of development is hardly original. It may appear to conform, with suspicious ease, with a pre-existent account of economic history. But the history of the Cumberland coalfields, after we have made as much as we can of all the curious anomalies it presents, confirms with uncanny persistence the periodization of the Canadian industrial revolution. Other coalfields, most notably Cape Breton and Pictou, would diverge more radically. The key here is the railway, which forced development along the lines and the schedule of the national

pattern, even while it provided the coalfields with their unique access to regional markets. This periodization informs the rest of the analysis in the study, for economic developments conditioned the emergence and evolution of coal-mining society. Adopting this periodization entails breaking with the 'staple approach' to the history of coal mining. It establishes that the coalfields, except in their earliest articulation, were terrains of industrial capital, and that their populations were dominated by an industrial working class. 163

Have we merely re-established the old model in a new context?

There is a certain justice to the charge, but also a certain mistake. The old periodization works in this history, but for new reasons. It is not possible to view the development of the coal industry as primarily one of capital accumulation--of the reinvestment of profits in the mines and their growth on this basis. Everywhere one is confronted with a different logic, an external one: the logic of politics. Coal was exceptional. Owned by the state, necessary for the vital functions of an industrial order, the basis of provincial finance, coal was imbued with politics. At every critical stage of industrial history we find a political decision. The state frequently intervened to affect the evolution of the economic base. It did so when the imperial authorities locked up the resources of the province, it did so when provincial reformers freed them, it did so when it drove the Intercolonial through as part of Confederation, it did so in the Whitney Deal, and it would do so once again in the far-reaching restructuring of the coal industry in 1925-1927. The old periodization works because the bourgeoisie consciously modelled its approach on other economies in its pursuit of its objectives, and not because the coal resource 'spontaneously' and

freely yielded these phases of development. This is not a question of 'stages' in the old sense, but of structures, each with its own internal logic of development, often similar to the wider economy, but with a distinctively political bearing. Each structure was brought into being through a process of political struggle, each one was profoundly influenced by its predecessor. The natural environment played in this history a role at once determining and accidental: determining, because only certain coalfields could sustain full capitalist development, and accidental, because the seams were only slowly mastered and brought within the scope of human prediction, and were thus only able to provide partial guidance for the men who shaped the rhythm of their exploitation. Within each structure we confront this subordinate determination, this non-human and slow-moving history deep within the earth. But it was man who made the coalfields out of the coal seams of nature. Fernand Braudel put it well when he said, "It is worth repeating that history is not made by geographical features, but by the men who control or discover them."¹⁶⁴

Notes

- 1) See Traian Stoianovich, French Historical Method: The Annales Paradigm (Ithaca and London, 1976), pp. 228-229.
- 2) H.V. Nelles, The Politics of Development, pp. 489-490.
- 3) Trades Journal, 27 September 1882.
- 4) See William Bainbridge, The Law of Mines and Minerals, With an Appendix of Mining Precedents, Fully Annotated with Reference to the Text (London, 5th Edition by Archibald Brown, 1900).
- 5) Many British colliery owners would demand public ownership of the coal seams in the crisis of the industry in the 1920s. See Frank Hodges, Nationalization of the Mines (London, 1920), for a contemporary account.
- 6) Mines Report (1876), p. 16.
- 7) Mines Report (1900), p. 6.
- 8) PANS, RG 7, Vol. 375, No. 19, James Kennedy to Charles E. Church, 30 August 1888.
- 9) PANS, MG 2, Fielding Papers; Letterbook 1885-1886, Fielding to Robert Cruikshank, 9 January 1886. Criticism of the government's royalty policy may be found in the Trades Journal, 22 March 1882.
- 10) PANS, RG 7, Vol. 375, No. 19, C.E. Church, "Report for Executive Council in re Arrears due for Royalty by the Joggins Coal Mining Association, 1 October 1888." In mining law, the lessor, in the event of non-payment of rent or other breach of covenant, may elect to avoid the lease, or to waive the forfeiture and treat the lease as valid. The crown, as lessor, thus had wide discretionary power. See William David McPherson and John Murray Clark, The Law of Mines in Canada (Toronto, 1898), pp. 129-130.
- 11) PANS, Fielding Papers, Vol. 422, Fielding to Cruikshank, 8 August 1890.
- 12) Slack coal was ordinarily defined as that which passed through a standard 3/4" screen. Poole called the attention of the government to the looseness of the standards by which slack was measured in the Mines Report of 1872 (p. 48), but subsequent legislation imposed a uniform standard on the Nova Scotia coalfields.
- 13) PANS, RG 21, Series "A", File "Coal Mines, 1882, Correspondence," Edwin Gilpin to John Kelly, 21 November 1882.
- 14) Revised Statutes of Nova Scotia, Fourth Series, 1873, Part I, Title II, Chapter 9, "Of Mines and Minerals," Section 106.
- 15) PANS, RG 21, Series "A", File "Coal Mines, 1883, Correspondence," Edwin Gilpin to the Commissioner of Public Works and Mines, 30 May 1883.

16) PANS, RG 21, Series "A", File "Coal Mines, 1884, Correspondence," R.G. Leckie to Albert Gayton, 1 May 1884; RG 7, Vol. 375, No. 12, C.E. Church to R.G. Leckie, 13 January 1885.

17) Trades Journal, 11 March 1885; Herald, 6 March 1885.

18) The Critic, 8 January 1886.

19) Statutes of Nova Scotia, 48 Vic., Cap. 3, 1885, "An Act to amend Chapter 7 of the Revised Statutes, Fifth Series, 'Of Mines and Minerals.'"

20) PANS, RG 21, Series "A", Vol. 12, File "1885" [This file has been misdated], Charles E. Church to Fielding, 20 December 1887.

21) PANS, RG 21, Series "A", Vol. 12, File "1885", Letter of R.G. Leckie to the Cumberland Railway and Coal Company, cited in the petition of the Cumberland Railway and Coal Company to the Government of Nova Scotia, 30 November 1889.

22) PANS, RG 21, Series "A", Vol. 5, File "Correspondence 1888," Edwin Gilpin to C.E. Church, 13 February 1888.

23) PANS, RG 21, Series "A", Vol. 12, File "1885", Charles E. Church to W.S. Fielding (copy), 20 December 1887.

24) Petition of the Cumberland Railway and Coal Company, 30 November 1889.

25) PANS, RG 21, Series "A", Vol. 12, File "1885", Edwin Gilpin to C.E. Church, 13 December 1889.

26) PANS, RG 21, Series "A", Vol. 10, Memorial of the Cumberland Railway and Coal Company, 10 February 1890.

27) PANS, RG 21, Series "A", Vol. 10, J.R. Cowans to Edwin Gilpin, 21 February 1890.

28) PANS, RG 21, Series "A", Vol. 10, J.R. Cowans to Edwin Gilpin, 19 March 1890.

29) JHA (1873), Public Accounts, and JHA (1901), Public Accounts. See also J. Murray Beck, The Government of Nova Scotia (Toronto, 1957), p. 329: "After the turn of the century coal royalties surpassed the federal subsidy as the greatest single source of provincial revenue, and for the first time since Confederation the province was placed in a position of financial independence.... Coal royalties and federal subsidies accounted for 89 per cent of the provincial revenues in 1913...." Colin D. Howell underlines the importance of provincial revenues as an issue in the Repeal Agitation of the 1880s in "W.S. Fielding and the Repeal Elections of 1886 and 1887 in Nova Scotia," Acadiensis, Vol. VIII, No. 2 (Spring 1979), pp. 30-31.

30) Proceedings of the Mining Society of Nova Scotia, Vol. 1, Part 1 (1892-1893), pp. 10-11.

- 31) Debates and Proceedings of the House of Assembly, (1892), p. 220.
- 32) Debates and Proceedings of the House of Assembly (1893), pp. 13-16.
- 33) See Don Macgillivray, "Henry Melville Whitney Comes to Cape Breton: The Saga of a Gilded Age Entrepreneur," Acadiensis, Vol. IX, No. 1 (Autumn 1979), pp. 44-70. As Macgillivray notes, the precise chronology of the formation of the deal--whether Whitney first contacted Fielding or the other way around--is not known. It is interesting to note that R.G. Leckie, who had managed Springhill and had attempted to build a syndicate in the Joggins field, was apparently the first recorded correspondent of Fielding's to make a connection between the premier and the Boston entrepreneur.
- 34) See especially David Schwartzman, "Mergers in the Nova Scotia Coalfields: A History of the Dominion Coal Company, 1893-1940," PhD Thesis, University of California, 1945; David Frank, "The Cape Breton Coal Industry and the Rise and Fall of the British Empire Steel Corporation," Acadiensis, Vol. VII, No. 1 (Autumn 1977), pp. 3-34; Don Macgillivray, "Henry Melville Whitney," and Eugene Forsey, Economic and Social Aspects of the Nova Scotia Coal Industry (Montreal, 1926).
- 35) Morning Chronicle; 23 January 1893.
- 36) Morning Chronicle, 14 January 1893.
- 37) Debates and Proceedings of the House of Assembly (1893), p. 78.
- 38) Morning Chronicle, 24 January 1893.
- 39) Interview with Thomas Fyshe in The Coal Question. The Whitney Syndicate Discussed, Endorsement of Leading Miners, Bankers, Merchants, Lawyers, Newspapers and Statesmen (Truro, n.d. [1894]), p. 19.
- 40) [C.H. Cahan]; The Coal Deal. Speech by C.H. Cahan, M.P.P. in the House of Assembly (n.p. [Halifax], n.d. [1893]). The coal deal also sparked debate in the federal House of Commons; see [Richard Weldon], Speech by Mr. Weldon, M.P., on Nova Scotia Coal Deal (Ottawa, 1893). The federal Tories were not united in their opposition to the deal.
- 41) Debates and Proceedings of the House of Assembly (1893), p. 72.
- 42) See William Blakemore, "Coal Cutting by Machinery," Transactions of the Institute of Mining Engineers, Vol. II (1895-1896), pp. 179-204; J.G. Hudson, "Notes on Coal Cutting Machinery at the Collieries of the Dominion Coal Company," Transactions of the Mining Society of Nova Scotia, Vol. III (1894-1895), pp. 104-107; Canadian Mining Manual (1894), pp. 24-29; John S. McLennan, "The Organization and Development of Dominion Coal Company," pp. 76-81; F.W. Gray, Mining and Transportation: A General Description (Toronto, 1909).
- 43) PANS, RG 21, Vol. 29A; Department of Mines Letterbook, 1901-1902, Edwin Gilpin to J.R. Cowans, 16, 27 December 1901.

44) Robert Drummond, Minerals and Mining, p. 348. See also the Maritime Mining Record, 6 July 1898 and 23 January 1901, for editorials concerning the drill.

45) For a biography of Fletcher, see the Novascotian, Special Mining Number, 190, p. 59; his theories regarding Cumberland may be found in "Limits of the Workable Coals of the Cumberland Coal Fields in Nova Scotia," Transactions of the Mining Society of Nova Scotia, Vol. VII (1903-1904), pp. 123-126.

46) See Morris Zaslow, Reading the Rocks: The Story of the Geological Survey of Canada (Ottawa, 1975), p. 232.

47) R.H. Coats, Wholesale Prices in Canada 1890-1909 (Inclusive) (Ottawa, Department of Labour, 1910), p. 192.

48) Glace Bay Board of Trade, Coal, Steel and The Maritimes: An Illustration of the Disabilities under which the Maritime Provinces Labour (n.p., n.d. [1926]).

49) Macgillivray, "Whitney," p. 59.

50) Maritime Mining Record, 3 August 1898.

51) Maritime Mining Record, 17 August 1898.

52) Chronicle, 14 January 1900.

53) See, for example, the Saint John Sun, 17 January 1903. As the Sun pointed out, the United States did not abolish the coal duty as part of an economic policy generally, but merely as an emergency measure for a limited time in the form of a rebate.

54) Maritime Mining Record, 28 January 1903.

55) Robert Drummond, "The Coal Trade and Reciprocity;" in Dominion Coal Company, Limited, et al., Memoranda Respecting Reciprocity in Coal (n.p. [Halifax], n.d. [1910]), pp. 45-46.

56) Ibid., p. 56. The original says "free access of N.S. coal into Ontario," which is obviously a typographical error.

57) Herald, 11 September 1911.

58) Drummond's later writings provide the clearest and least qualified praise of Dominion Coal on record; he does not appear to have repented even as the events of the 1920s unfolded.

59) See PAC, MG-26, A, John A. Macdonald Papers, Vol. 464, pp. 230755-230757 [Microfilm Reel C-1793]; J.R. Lithgow to John A. Macdonald, 13 September 1888. Lithgow said he felt it was his duty to warn Macdonald "that there is a scheme on foot which may result in most of, if not all the coal mines of Cape Breton & possibly of Nova Scotia being owned or controlled by United States capitalists. Mr. D.J. Kennelly has been

working it up for a long time, and a day or two ago got an offer of the "Little Glace Bay colliery."

- 60) D.J. Kennelly, Reciprocal Coal with Canada would give New England states cheaper fuel. An answer to William Whitman, Protectionist (New York, 1892), estimated that one long ton could be delivered at Boston for \$3.09, and estimated also that freight charges for Boston were less than those for Montreal (pp. 7-8).
- 61) Ibid., p. 34 and p. 41.
- 62) W.C. Milner, "Reciprocity in Coal," Transactions of the Mining Society of Nova Scotia, Vol. X (1905-1906), pp. 148-161.
- 63) Michael Bliss, "Another Anti-Trust Tradition: Canadian Anti-Combines Policy, 1889-1910," in Glenn Porter and Robert Cuff, eds., Enterprise and National Development: Essays in Canadian Business and Economic History (Toronto, 1973), pp. 39-50.
- 64) On the general "flight from competition", see Michael Bliss, A Living Profit: Studies in the Social History of Canadian Business, 1883-1911 (Toronto, 1974).
- 65) PANS, RG 21, Series "A"; Vol: 328, Record of Proceedings, Rex vs. Cowans and Dick, October 4, 1909-February 15, 1910, Deposition of W.P. Buckley.
- 66) Statutes of Nova Scotia, 3 Edwd. VII, Cap. 231, 1903, "An Act to incorporate the Mining Society of Nova Scotia," and Alex McNeil, "The Aim and Scope of the Mining Society of Nova Scotia," Transactions of the Mining Society of Nova Scotia, Vol. VII (1902-1903), pp. 62-77, offer details of the evolution of the Society.
- 67) PANS, RG 21, Series "A", Vol 5, File "Coal Mines, 1868, Correspondence" Robert L. Weatherbe to Edwin Gilpin, 21 August [1899]. [This letter has been misfiled].
- 68) Rex v. Cowans and Dick, Testimony of William Roche, p. 16.
- 69) Rex v. Cowans and Dick, Testimony of William P. Buckley, p. 663. That an agreement existed between the Intercolonial Coal Company and the Dominion Coal Company to divide up the "bunker trade in Halifax" was conceded by the defence: see the testimony of M.R. Morrow, pp. 70-71.
- 70) Rex v. Cowans and Dick, Exhibit H/26, Alexander Dick to M.R. Morrow, 29 June 1906.
- 71) Rex v. Cowans and Dick, Exhibit 26/21, Alexander Dick to M.R. Morrow, 6 April 1905.
- 72) Rex v. Cowans and Dick, Testimony of M.R. Morrow, p. 197.
- 73) Rex v. Cowans and Dick, Exhibit H/33, Cowans to Morrow, 17 April 1900.

74) For Dominion Coal's penetration of Moncton, over the protests of J.R. Cowans, see Rex v. Cowans and Dick, Testimony of M.R. Morrow, p.14.

75) Rex v. Cowans and Dick, Exhibit H/55, M.R. Morrow to Alexander Dick, 1 April 1905.

76) See Schwartzman, "Mergers," pp.113-121 for a study of the contracts. Under the 1897 contract with the New England Gas and Coke Company of Everett, Massachusetts, the gas company was to be supplied with 800,000 tons annually. According to the Canadian Mining Review, the contracts with the gas company and the Sydney steel works left no margin for profit. In 1900 market prices f.o.b. mines were between \$3.50 and \$4.00; Dominion Coal sold coal to these companies at \$2.25. It is apparent that despite the rise in bituminous coal prices, Dominion Coal was making no profit. This odd situation stemmed from its status as a secondary promotion, tied to various other companies. See the Canadian Mining Review, Vol. XVI (December 1897), p.333, Vol. XX (June 1901), p.147, and Vol. XXI (April 1902), p.72. Although local markets were only a small part of Dominion's total market, it is easily understood why so much energy was put into monopolizing them; the company had to regain somewhere the ground lost in its disastrous arrangements elsewhere.

77) Saint John Sun, 25 October 1902; 1 November 1902.

78) Maritime Mining Record, 15 May 1901.

79) Rex v. Cowans and Dick, Exhibit H/34, Cowans to Morrow, 26 December 1901. See also the Testimony of Thomas M. Cutler, Secretary of the Nova Scotia Sugar Refinery, pp.644-646. The Port Hood colliery, outside the compact and in some ways a "rogue elephant" in this situation, won the contract after Springhill, but was unable to meet the order. Other contracts explored in some depth at the trial were for the Catholic institutions and the cotton factory of Halifax. The case for the defence was that specialized customers required specialized coal, and that the Dominion Coal Company was simply out of the running because of the problems of transporting coal directly to the sidings of Halifax factories. The obvious objection to this line of reasoning is that it would make meaningless the existence of the letters between the companies in the first place.

80) Maritime Mining Record, 3 October 1901.

81) Department of Labour Library, Minutes of the Grand Council, Provincial Workmen's Association [Hereafter Grand Council Minutes], Minutes of Meeting of 17 September 1901.

82) Rex v. Cowans and Dick, Exhibit H/35, Cowans to Morrow, 16 March 1901: "Re St John You have obliged us to make quite a reduction in St. John rates, to come down to your figures, although we have not fixed our price for Screened so low that dealers can come down to \$7.50 per chaldron...."

- 83) Rex v. Cowans and Dick, Exhibit H/18, Dick to Morrow, 11 October 1904.
- 84) Rex v. Cowans and Dick, Exhibit H/Y, Dick to Morrow, 19 April 1902.
- 85) Rex v. Cowans and Dick, Testimony of M.R. Morrow, pp.215-216.
- 86) Rex v. Cowans and Dick, Testimony of J.Reid Wilson, pp.366-367.
- 87) Rex v. Cowans and Dick, Testimony of Thomas Cantley, pp.512-531.
Nova Scotia Steel and Coal made arrangements with Cumberland Railway and Coal in 1905, by which the Springhill Company helped fill an order from a Montreal customer that could not be filled by Nova Scotia Steel and Coal. See Rex v. Cowans and Dick, Exhibit H/82, Harvey Graham to J.R.Cowans, 13 October 1905.
- 88) Rex v. Cowans and Dick, Testimony of James Floyd, pp.301-302.
- 89) Cited in L.D.McCann, "Staples and the New Industrialism in the Growth of Post-Confederation Halifax," Acadiensis, Vol.VIII, No.2 (Spring 1979), p.77.
- 90) See his article on "Cheap Coal and National Progress" in Industrial Canada (August 1905), p.23, as well as the controversies surrounding Milner and his work in the Saint John Sun (29 December 1905, 19 January 1906, 11 March 1908, 22 April 1909), and the Herald (28 February, 8 June, 29 June 1906; 3 January 1907).
- 91) Proceedings of the Annual Meeting of the Mining Society of Nova Scotia, in the Transactions of the Mining Society of Nova Scotia, Vol.XII (1907-1908), Annual Meeting, 27 March 1907, pp.143-144.
- 92) Ibid., pp.146-147. A lively description is contained in the Herald, 28 March 1907. Incidentally, there is a discrepancy between the account published in the Transactions and in the newspaper. In the Transactions it is reported that Milner, after losing the vote on the motion, was given permission to read his paper, but refused to do so. The impression created is that of a man who declined a liberal compromise. In fact, what was offered to him, on a motion by Robert Drummond, was the right to deliver his paper unofficially after the Society adjourned—precluding publication of the paper in the Transactions of the Society. The newspaper's account is far more plausible.
- 93) Department of Labour Library, Ottawa, Minutes of the Grand Council of the Provincial Workmen's Association [hereafter Grand Council Minutes], September 1893. pp.256-257.
- 94) Herald, 18 November 1911, 1 January 1912; see also the Report of the Royal Commission on Coal, 1946 (Ottawa, 1947), p.134.
- 95) David Alexander, "Economic Growth in the Atlantic Region, 1880 to 1940," Acadiensis, Vol.VIII, No.1 (Autumn 1978), pp.47-76.
- 96) Schwartzman, "Mergers," pp.297-298.
- 97) Schwartzman, "Mergers," pp.298-299; Frank, "British Empire Steel,"

pp. 15-25.

98) Schwartzman, "Mergers," p. 298.

99) Minutes of Testimony, Royal Commission on Coal Mines, Nova Scotia, 1925 [microfilm, PANS] [hereafter cited as Duncan Commission Evidence], Testimony of J.B. McLachlan, p. 969.

100) For the wartime agitation over the company's refusal to open new coal areas, see the Herald, 17 October, 13 March 1918.

101) Labour Gazette, (August 1909), p. 209.

102) Ibid., pp. 210-211.

103) Herald, 30 September 1909.

104) Chronicle, 11 June 1903, and PANS, MG 3, Vol. 1731, Cumberland Railway and Coal Papers, Schedule of Timber Lands owned by the Dominion Coal Company, Limited, in the Counties of Cumberland and Colchester, Nova Scotia.

105) Mines Report (1903), pp. 7-8; (1904), pp. 11-13; (1905), pp. 7-8; (1906), pp. 7-9; (1907), pp. 9-11.

106) Mines Report (1899), pp. 10-11; (1900), pp. 7-9; (1901), pp. 14-16; (1902), pp. 9-11.

107) Report of the Deputy Minister of Labour on Industrial Conditions in the Coal Fields of Nova Scotia (Ottawa 1909), pp. 31-32. [Also printed as Sessional Paper No. 36a].

108) Mines Report (1899), pp. 10-11; (1900), pp. 7-9; (1901), pp. 14-16; (1902), pp. 9-11; Labour Gazette, (August 1909), p. 209.

109) Mines Report (1904), p. 12.

110) Mines Report (1907), pp. 9-11; (1908), pp. 42-45; (1909), pp. 110-116; (1910), pp. 116-117; (1911), pp. 161-166.

111) Mines Report (1909), p. 110-116; (1910), pp. 116-117; (1911), pp. 161-166; (1912), pp. 150-159; (1913), pp. 96-98; (1914), pp. 65-66; (1915), pp. 36-37; (1916), pp. 37-38; (1917), p. 26; (1918), pp. 34-35; (1919), p. 34; (1920), pp. 36-37; (1921), pp. 37-38; (1922), pp. 39-40; (1923), pp. 41-43; (1924), pp. 68-70; (1925), pp. 69-72; (1926), pp. 61-63; (1927), pp. 65-68...

112) Canada, Royal Commission on Coal, 1945, Submission of the Parrsboro Town Council, in Evidence, Vol. XVI, p. 1271. (mimeo).

113) Canada, Report of the Royal Commission on Coal, 1946 (Ottawa, 1947), p. 135.

114) See Canada, Royal Commission on Coal, 1945, Submission of E.B. Paul,

in Evidence, Vol. XV, pp. 1213-1214: "The market for Springhill coal is a domestic and railway demand and while it is a relatively stable market, because of the situation of the mines, on the main line of the Canadian National Railways in the centre of a territory with a consistent consumption, the market, apart from the war period, has been seasonable, that is, the demand is greater in winter than in summer, both for domestic and railway services.... Industrial Coal, of which we sell a large quantity, doesn't fluctuate with the seasons and has no bearing on this discussion."

115) Allen Seager, "Minto, New Brunswick: A Study in Class Relations Between the Wars," Labour/Le Travailleur, Vol. V (Spring 1980), pp. 86-95.

116) Amherst Daily News, 22 July 1901.

117) Amherst Daily News, 12 February 1902.

118) Amherst Daily News, 22 July 1902.

119) Chronicle, 13 June 1903.

120) On the Canada Coals and Railway Company, see PANS, RG 21, Series "A", Vol. 40, clippings in the R.H. Brown papers, and PANS, RG 21, Series "C", Vol. 24, "By-Laws and Officers of the Canada Coals and Railway Co. Ltd.," Sept. 28 1903.

121) Herald, 30 April 1904.

122) Saint John Sun, 27 May 1904.

123) Statutes of Nova Scotia, 3 & 4 Edwd. VII, Cap. 153, 1903-4, "An Act to incorporate the Maritime Coal and Railway Company, Limited."

124) Statutes of Nova Scotia, 3 & 4 Edwd. VII, Cap. 160, 1903-4, "An Act to amend an Act of the present Session, passed February 5th 1904, entitled 'An Act to incorporate the Maritime Coal and Railway Company, Limited.'"

125) G.J. Adams & Co., Brokers, Maritime Coal & Railway Company, Limited [brochure offering \$50,000 worth of bonds] (Montreal 1905).

126) Amherst Daily News, 27 March 1906; Statutes of Nova Scotia, 6 Edwd. VII, Cap. 162, 1906, "An Act to amend Chapter 153, Acts of 1903-1904, entitled 'An Act to Incorporate the Maritime Coal and Railway Company, Limited.'"

127) For the development of this project and Edison's telegram, see the commemorative pamphlet put out by the Canada Electric Company, written by N.T. Avard, The Story of Canada Electric--1889 to 1949 (Amherst 1948).

128) PANS, MG 3, Vol. 3879, Papers of the Maritime Coal Railway and Power Company, details operations of the power company in the later years of the twentieth century.

129) Nova Scotian and Weekly Chronicle, 26 November 1909.

130) Amherst Daily News, 15 September 1906.

131) Herald, 25 December 1907.

132) Albert J. Hill, Report on Sea Area "A153." Joggins, Cumberland County, Nova Scotia (Sydney, 1897).

133) PANS, RG 21, Series "A", Vol. 10, "Memo. Joggins Coal Mine," 1901.

134) Amherst Daily News, 1 June 1907.

135) Amherst Daily News, 18 June 1907.

136) Amherst Daily News, 3 September 1907.

137) Nova Scotian and Weekly Chronicle, 26 November 1909.

138) See the description of the company in the Report on the Mining and Metallurgical Industries of Canada 1907-8 (Ottawa, Department of Mines, 1908), pp. 568-569. The company aspired to become the major utility of Cumberland County and this appears to have been the major reason for the major corporate changes effected in 1909-10, such as the enlargement of the board of directors from seven to eleven, and the all-embracing revision which allowed the company "to lay out, construct, own, equip and operate an electric street railway or tramway in Amherst, Springhill, Parrsboro or Oxford," thus creating a Cumberland County transportation grid analogous to that of industrial Pictou County. The collapse of the Cumberland County industrial economy after the First World War spelled the doom of such ambitious proposals, which reveal the 'monopolistic impulse' clearly. See the Statutes of Nova Scotia, 9 Edwd. VII, Cap. 160, 1909, "An Act to Amend Chapter 153, Acts of 1903-1904, entitled "An Act to Incorporate the Maritime Coal and Railway Company, Limited," and Statutes of Nova Scotia, 10 Edwd. VII, Cap. 154, 1910, "An Act to Amend Chapter 153, Acts of 1903-4, entitled "An Act to Incorporate the Maritime Coal and Railway Company, Limited, and Acts in Amendment thereto." The company was empowered to issue preferred shares in 1911: Statutes of Nova Scotia, 1 Gev. V, Cap. 138, 1911, "An Act to amend Chapter 153, Acts of 1903-4, entitled "An Act to Incorporate The Maritime Coal and Railway Company Limited, and Chapter 102, Acts of 1906; entitled "An Act to Incorporate the Maritime Coal and Railway Company Limited."

139) See PANS, RG 21, Series "G", Vol. 24, Letters patent incorporating "The Strathcona Coal Company, Limited," New Brunswick, 1901 (copy); Saint John Sun, 30 August 1901; Amherst Daily News, 15 May 1903; 11 May 1905; 25 January 1909; Mines Report, (1906), p. 13; (1907), p. 13; PANS, RG 21, Series "C", Vol. 30, Claim for Lien under the Mechanic's Lien Act, 27 October 1911.

140) Statutes of Nova Scotia, 2 Edwd. VII, Cap. 140, 1902, "An Act to incorporate the Minudie Coal Company,"; Minudie Coal Company, Prospectus (n.p., n.d.); Saint John Sun, 12 May 1905; Amherst Daily News,

- 18 January 1909; Mines Report (1917), p. 26.
- 141) RANS, RG 21, Series "C", Vol. 30, Memorandum for the Executive Council [on the Minudie Coal Company], 16 June 1924.
- 142) Statutes of Nova Scotia, 3 Edwd. VII, Cap. 202, "An Act to Incorporate the Fundy Coal Company Ltd.," Fundy Coal Company, Prospectus (n.p. [Providence], n.d. [1904]); Amherst Daily News, 9 May 1907; Herald, 1 October 1910.
- 143) Mines Report (1923), pp. 45-46; (1925), pp. 64-65; (1927), p. 73.
- 144) Mines Report (1922), p. 42; (1923), p. 45.
- 145) Mines Report (1910), p. 122; (1912), p. 162; (1919), p. 35; (1920), p. 38; (1921), p. 33-39; (1922), p. 41; (1923), p. 45; (1924), p. 72; (1926), p. 65; (1927), pp. 71-72.
- 146) Mines Report (1919), pp. 35-36; (1920), p. 39; (1921), p. 40; (1924), p. 74; (1925), p. 75; (1926), p. 67; (1927), pp. 71-72.
- 147) Mines Report (1907), pp. 12-13; (1908), pp. 46-47; (1909), pp. 119-121; (1910), pp. 117-118; (1911), pp. 166-169; (1912), pp. 159-162; (1913), pp. 99-100; (1914), pp. 65-66; (1915), pp. 137-138; (1916), p. 39; (1917), p. 26; (1918), p. 35; (1919), pp. 34-35; (1920), p. 37; (1921), p. 38; (1922), p. 40; (1923), pp. 44-45; (1924), p. 72; (1925), p. 73; (1926), p. 64; (1927), p. 73.
- 148) Mines Report (1907), p. 14; (1908), p. 49; (1909), p. 123; (1910), p. 122; (1913), pp. 100-101; (1914), pp. 66-67; (1915), p. 40; (1916), p. 26; (1918), p. 36; (1919), p. 36; (1920), p. 38; (1921), pp. 39; (1922), pp. 41-42; (1923), pp. 44, 47; (1924), pp. 71-72; (1925), pp. 74, 77; (1926), p. 63; (1927), p. 68.
- 149) Mines Report (1912), p. 150; (1913), p. 99; (1914), p. 67; (1915), p. 39; (1916), p. 39; (1917), p. 27; (1918), p. 36; (1919), p. 35; (1920), p. 39; (1921), pp. 39-40; (1922), pp. 43-44; (1923), pp. 46-47; (1924), p. 73; (1925), pp. 75-76; (1926), pp. 66-68; (1927), pp. 68-69, 72.
- 150) Mines Report (1912), pp. 148-150; (1913), p. 98; (1914), p. 67; (1915), pp. 38-39; (1916), pp. 39-40; (1917), p. 26; (1918), p. 35; (1919), p. 35; (1920), p. 40; (1921), p. 41; (1922), pp. 42; 45; (1923), pp. 43-44; (1924), p. 73; (1925), pp. 74, 77; (1926), pp. 67-68; (1927), pp. 69, 71.
- 151) Mines Report (1917), p. 26; (1918), p. 36; (1919), p. 36; (1920), pp. 38-39; (1921), p. 39; (1922), pp. 41-42; (1923), p. 46; (1925), p. 76; (1926), pp. 65-66; (1927), p. 69.
- 152) The Jubilee Mine, inactive from 1909-1914, was reopened in 1915, but closed down in 1917 for want of men. It was reopened after the war by a local resident, Isaiah McCarthy, who subleased it from the Atlantic Coal Company, and was subsequently operated by the New Jubilee Coal

Company, which put down a slope to tap the Forty Brine seam. Mines Report (1916), p. 39; (1917), p. 27; (1918), p. 36; (1919), p. 35; (1920), p. 39; (1921), pp. 39-40; (1922), pp. 43-44; (1924), p. 73; (1925), pp. 75-76; (1926), pp. 65, 68.

153) For a local history of the Fenwick mine, see Myrtle Chappell, The Chignecto: The St. George and Fenwick Mines (Fenwick, 1977).

154) See R.C. Smart, The Economics of the Coal Industry (London, 1930); John Sinclair, Coal-Mining Economics: Organization and Management (London, 1957), and particularly James P. Johnson, The Politics of Soft Coal: The Bituminous Industry from World War I Through the New Deal (Urbana, Chicago and London, 1979), especially chapter 4.

155) Mines Report (1926), p. 9.

156) Canada, Royal Commission on Coal (1945), Testimony of Dr. D.M. Cochrane, Evidence, Vol. XV, p. 1148 (mimeo).

157) Ibid., pp. 1146-1147.

158) Transcripts, Joggins, p. 10; Campbell, Manuscript History, n.p.

159) J. Harry Jones, G. Cartwright and P.H. Guénault, The Coal-Mining Industry: An International Study in Planning (London, 1939), p. 313.

160) David Frank, "The Cape Breton Coal Industry and the Rise and Fall of the British Empire Steel Corporation," Acadiensis, Vol. VII, No. 1 (Autumn 1977), pp. 3-34.

161) In 1950 Dominion Steel and Coal produced approximately fifty times as much as the average coal-mining firm in the United States; only 13 firms in the much larger American industry produced over 5,000,000 tons per year, as Dominion Coal did. See Schwartzman, "Mergers," pp. 2-3. See also Johnson, Politics of Soft Coal, pp. 4-5. Of course, vertical and horizontal integration did occur in the American industry; the point is merely that Nova Scotia was, in continental terms, highly unusual.

162) This is an alternative position to one outlined in David Alexander, "Development and Dependence in Newfoundland 1880-1970," Acadiensis, Vol. IV, No. 1 (Autumn 1974), p. 4.

163) See the more extended theoretical discussion in William Phillip Moore, "Staples and the Development of the Capitalist Mode of Production in Canada: A Study of Mining in Canada 1845-1920," M.A. Thesis, McMaster University (1978).

164) Fernand Braudel, The Mediterranean and the Mediterranean World in the Age of Philip II, Vol. I (London, 1972), p. 225.

CHAPTER FOUR

POPULATION GROWTH AND THE EMERGENCE OF TWO
COAL-MINING SOCIETIES, 1848-1927

CHAPTER FOUR

Population Growth and the Emergence of Two Coal-Mining Societies, 1848-1927

The growth of industrial capitalism and its eventual transition to monopoly capitalism entailed important changes in the size and shape of the population of the coalfields. This change may be described in quantitative terms as one of very rapid population growth in the period of industrial capitalism and continued growth in the period of monopoly capitalism. However, the transformation of the coalfields must also be seen as a series of dramatic qualitative changes in the coal-mining population. The internal organization of the population changed as durable patterns of settlement and community emerged. The sparsely-settled mercantile frontier of the Bay of Fundy slowly gave way to a stable, industrial area, with towns, communication systems, local political structures, and so on. This was the social aspect of the industrial changes described in our first three chapters, and the analysis of its essential features is the business of this chapter.

Four basic arguments can be established concerning the structure of the coal-mining population as it changed throughout this period. The first is that each economic structure imposed its own logic of settlement upon the area. The mercantile coalfield imposed a coastal pattern of settlement, and entailed only a very small workforce of coal miners. Most population growth in this area before 1872 can be attributed to other staples. Industrial capitalism made interior settlement possible, and led to a very rapid rise in the number of workers, while monopoly capitalism entailed a continuation of this pattern, although it eventually entailed the slow, inexorable decline of the

coal-mining population as a result of the crisis of the coal industry in the post-war period. In these last two phases the growth of population was directly and unambiguously affected by the labour requirements of the coal industry.

Secondly, the entire period from 1848 to 1927 may be seen as the progressive articulation and development of the capitalist labour market, beginning on a very modest local level, but gradually drawing upon labour pools further and further removed from the county. In this respect, the period of monopoly capitalism effected a qualitative breakthrough by allowing local capitalists to draw upon an international labour market, to help to expand their mines, and to discipline local workers.

Third, the period witnessed the emergence of two coal-mining societies, and not one. In the Joggins coalfield the pattern of settlement was dispersed, fragmented, and rural, while in Springhill it was concentrated, coherent, and urban. This contrast applies to virtually every aspect of social life--the presence of the state, the nature of churches, the durability of trade unions, the effectiveness of movements for social reform, the presence of a middle class, and the very nature of social classes in general. This social pattern was rooted in the economic dualism of the coalfields, and it served to reinforce it. Two very different socio-economic constellations emerged in this one county. The contrast between them helps to establish what structural conditions aided the growth of stable class-based institutions such as trade unions, and may be of significant benefit in more general studies of social history.

Finally, the study of the coal-mining societies of Cumberland casts

doubt upon all those theories which stress, as the fundamental fact of mining settlement, the factor of social isolation. Social or geographical isolation, however defined, fails to explain the particular attitudes of the coal miners and the nature and functioning of social institutions in the coalfields. A subsequent chapter will tackle the problem of attitudes; this one is largely devoted to institutions, although the distinction between the objective facts of institutional history and the subjective world of ideas is occasionally blurred. What underlies both chapters on society and consciousness is a rejection of theories of isolation as useful explanations of the history of the coalfields and an advocacy of a model stressing the miners' centrality and capacity to resist as the key elements in this history. A pivotal aspect of this argument is established by those aspects of institutional development which reveal the coalfields to be similar to other areas, and connected with them on many levels.

1. The General Pattern of Settlement in the Cumberland Coalfields

Patterns of population growth before 1871 are difficult to estimate in the Cumberland coalfields because of the categories used by the provincial census. Certain facts which can be established for the County probably apply to the coalfields as well. Cumberland Township was the focal point of early settlement at the head of the Bay of Fundy, but lost its chance to become a pivotal regional centre with the partition of Nova Scotia in 1783. In the 1770s large numbers of Yorkshiresmen journeyed to this area in search of cheap farmland, followed by a contingent of Loyalists.¹ The early years of the nineteenth century were ones of stagnation, a reflection of the distance of the County from Halifax and Saint John, the region's cities. However, from 1838 to 1851

the county posted a remarkable 89% increase in population, followed by a further 36% increase in 1851-1861 and 20% in 1861-1871. These were the most impressive gains in the province, equalled or bettered only by Hants and Yarmouth Counties in the 1860s.² Compared with the abundant literature on eighteenth-century settlement, relatively little has been written about this growth of population in the early nineteenth century. Howard Trueman's work which takes as its focus the family histories of the settlers in the Chignecto Isthmus, conveys an impression of Protestant Irishmen and Scots seeking farms in the county.³ Probably a good deal of the population increase is to be accounted for by the native population occupying an area long left relatively unsettled. This possibility is suggested by the provincial census of 1861, in which it was estimated that of the total county population of 19,533, only 14% were born outside Nova Scotia, high by provincial standards, but low if we seek to explain the large surge in population as a reflection of immigration. This 14% of the population included 790 people from New Brunswick, 215 from Prince Edward Island, and 120 from the United States. European immigrants included 537 Scots, 799 Irishmen, and others from the West Indies, France, Spain, the Isle of Man, and Canada.⁴ P.S. Hamilton proudly remarked that the history of Cumberland revealed the patriotism of native sons, unwilling to leave their county, but pending a thorough investigation of this period, it might be safer to link population growth with the availability of resources.⁵

These resources were plentiful and laid the basis of the early nineteenth-century economy. Grindstones, developed with such brilliance by Amos Seaman as the major staple export of Minudie, became less and less important as the century progressed. Agriculture in Cumberland was

aided by the fertile soils which are found in many parts of the county, 23% of which is considered by soil scientists to offer opportunities for sustained arable culture. The soils of the Cumberland coalfields were highly varied, and included the grayish-brown Joggins soil, extremely acid and unsuited to agriculture (except limited use as pasture), and the equally unpromising Springhill series, of little use because of stoniness and imperfect drainage. In between such areas can be found fertile soils of the Acadia series, associated with the marshlands and the river valleys, and Debert soils, the most extensive in the county as a whole and offering a potential for a wide variety of crops.⁶

Agriculture in Cumberland County took an unusual form, with incorporated companies organizing marshlands and capitalist agricultural interests also emerging in livestock production.⁷ Other important ventures included maple-sugar and Fox farming.⁸ The forest industries played an even larger role in the economy. Shulee, Parrsboro and River Hebert provided the major foci of the export of lumber, which was dominated by local entrepreneurs. Wasteful lumbering and fires had undermined this industry by the 1920s. Cumberland County was one of the major centres of lumbering in Nova Scotia.⁹ Shipbuilding and fishing (important on Parrsboro Shore) had only a slight impact upon the region of the coalfields: shipbuilding at Maccan, and the shad fishery at Minudie. There was good reason for settlers to flock to Cumberland County, although many were to be disappointed in their selection of farm sites.

Coal exerted only a small influence on the early settlement of the county. This is an important fact, not only in considering the earliest period of settlement, but the nature of population growth in the coalfields in general. The coalfields did not emerge in isolation. They were

surrounded from the beginning by other industries and possibilities, whose impact upon coal could be profound. The most important instance of this symbiosis was that of lumbering and coal-mining in River Hebert and Joggins. The seasonal rhythms of production in lumbering easily coexisted with the rhythms of mining in the mercantile period, which followed the shipping season. Nothing was more natural than the intermingling of these two industries. For workers the consequence was that they were influenced by standards of the lumber industry (notorious for its low wages and poor conditions)¹⁰ and were also inclined to shift occupations. The coal miners of the Joggins coalfield became farmers or lumbermen with the season.

The nature of immigration to the coalfields in this early period can be explored with the help of the 1861 Census. In the district of River Hebert, a majority of the total population of 1,713 was native-born (i.e., 1,035 persons or 60%). The remaining population was made up of individuals born in New Brunswick (11%) and the United States (2%), and immigrants from more distant countries, Ireland (13%), Scotland (6%), England (3%), and Germany (2%). Although the 678 immigrants hardly constituted a major wave by national standards, they did represent an exception to the provincial pattern, with its 89% native-born level in 1861, and also represented a marked contrast with the district of Maccan, where of the population of 838, 791 persons (94%) were native-born.¹¹ The 1860s represented a period of relative stagnation in River Hebert (a growth of only 12% to 1,920, compared with 20% for the county as a whole) and one of rapid growth in Maccan (39%, up to 1,162). Given the very small mining industry in the latter district, it is safe to assume that the major reason for population

growth was agriculture. The reasons for the stagnant growth of River Hebert probably lay with the crisis of the coal industry, and the resulting departure of many of the immigrants. This conjecture is supported by the rise in the percentage of the native-born in this district from 60% to 78% and a fall in the number of Scots, Irish and English, in absolute as well as relative terms.¹²

The general pattern after this early period is more easily assessed, thanks to the federal census. Table One presents estimates of the population of the Cumberland coalfields from 1871 to 1931. It should be noted that the designation "Maccan-Chignecto" refers narrowly to the two villages and the land between, rather than to the whole of the eastern portion of the coalfields.

¹ Table One. Population Estimates for Coalfields Communities, 1871-1931

Place	1871	1881	1891	1901	1911	1921	1931
Maccan-Chignecto	397	480	561	502	684	843	523
River Hebert	1,728	1,823	2,353	1,535	1,875	2,379	2,216
Joggins	--	--	--	1,088	1,648	1,732	1,000
Springhill	--	900	4,813	4,559	5,713	5,681	6,355

Source: Census of Canada, 1931, Vol. II, p. 29. The district of River Hebert included Lower Cove in 1931, and earlier results have been retabulated to provide a consistent comparison. The population of Springhill was underestimated in 1891 because an unknown portion of it was enumerated in the sub-district of Rodney.

The pattern is reasonably clear. In the Joggins coalfield, four villages developed, Maccan, Chignecto, River Hebert and Joggins.

Joggins developed because of the grindstone trade, Maccan because of shipbuilding and the Intercolonial Railway, and River Hebert because of lumbering and agriculture, in addition to the contribution made by coal. Only Chignecto can be said to have been a village completely determined by the coal industry. These villages were separated from each other by barren countryside. Even Maccan and Chignecto, so close together that many referred to them by the same name, were separated by two miles of almost uninhabited country. The Joggins coalfield was always to maintain this dispersed character, and it is an important element in the social and economic fragmentation of the area. Conversely, the Springhill coalfield witnessed the growth of one large coal town, for a short time the largest town in the county. After 1871, the ratio of the population of Springhill to the population of the Joggins coalfield communities was .39:1 (1881), 1.65:1 (1891), 1.46:1 (1901), 1.36:1 (1911), 1.15:1 (1921), and 1.70:1 (1931).

These general population estimates do not convey the precise numbers of men who were involved in the coal industry. Fortunately, this can be estimated from the yearly records of the Department of Mines, which allow us to pinpoint with much greater accuracy the evolution of the coal-mining population. Figure One presents the estimates which are available from 1848 to 1927. Figure Two portrays the numbers of coal mine employees by mining area in the period 1866-1900; and Figure Three continues this analysis for the period 1901-1927. It should be borne in mind that these are estimates based upon the workplace and not upon residence; a Springhill man who worked in Fenwick would be counted as a Fenwick miner.

Given this limitation, the statistics convey very vividly the

Figure One

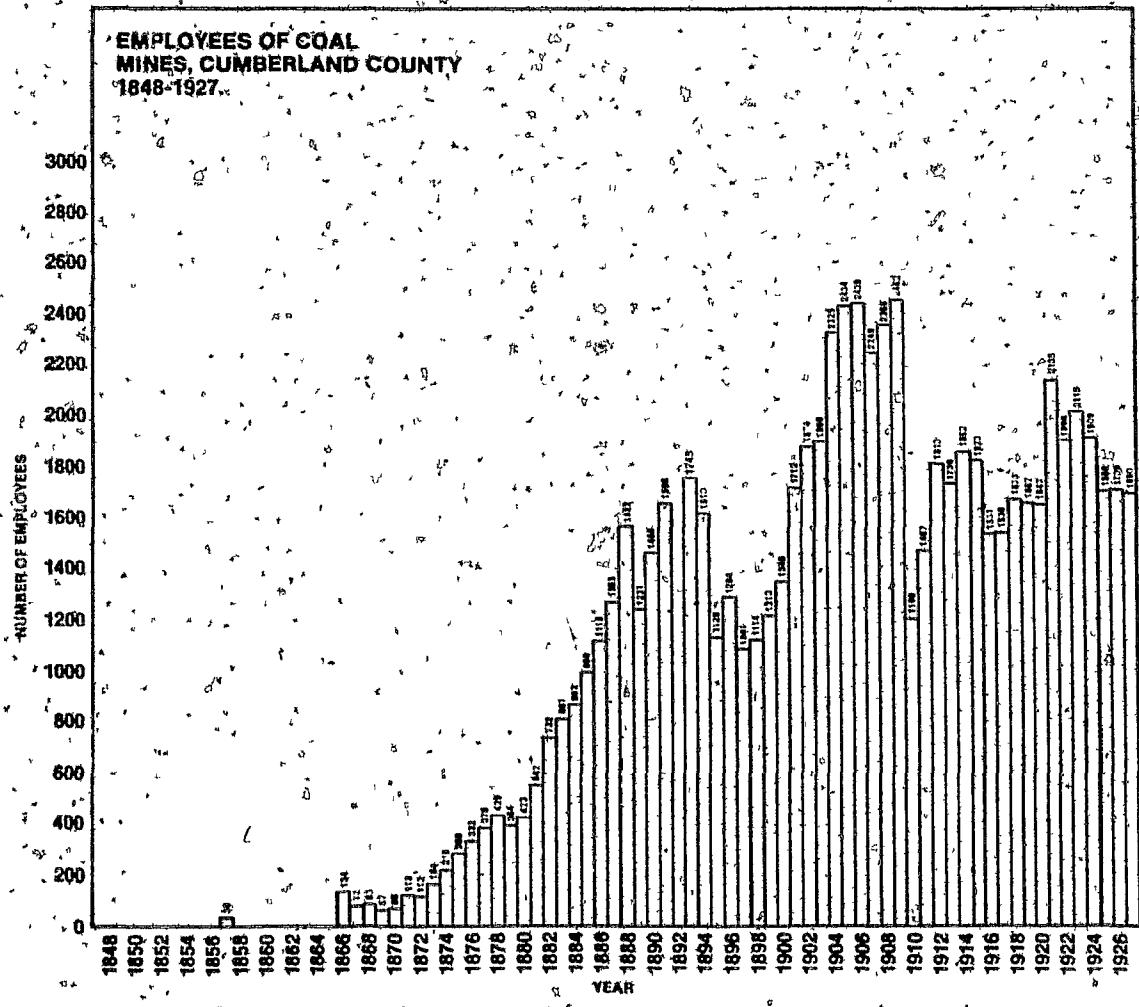
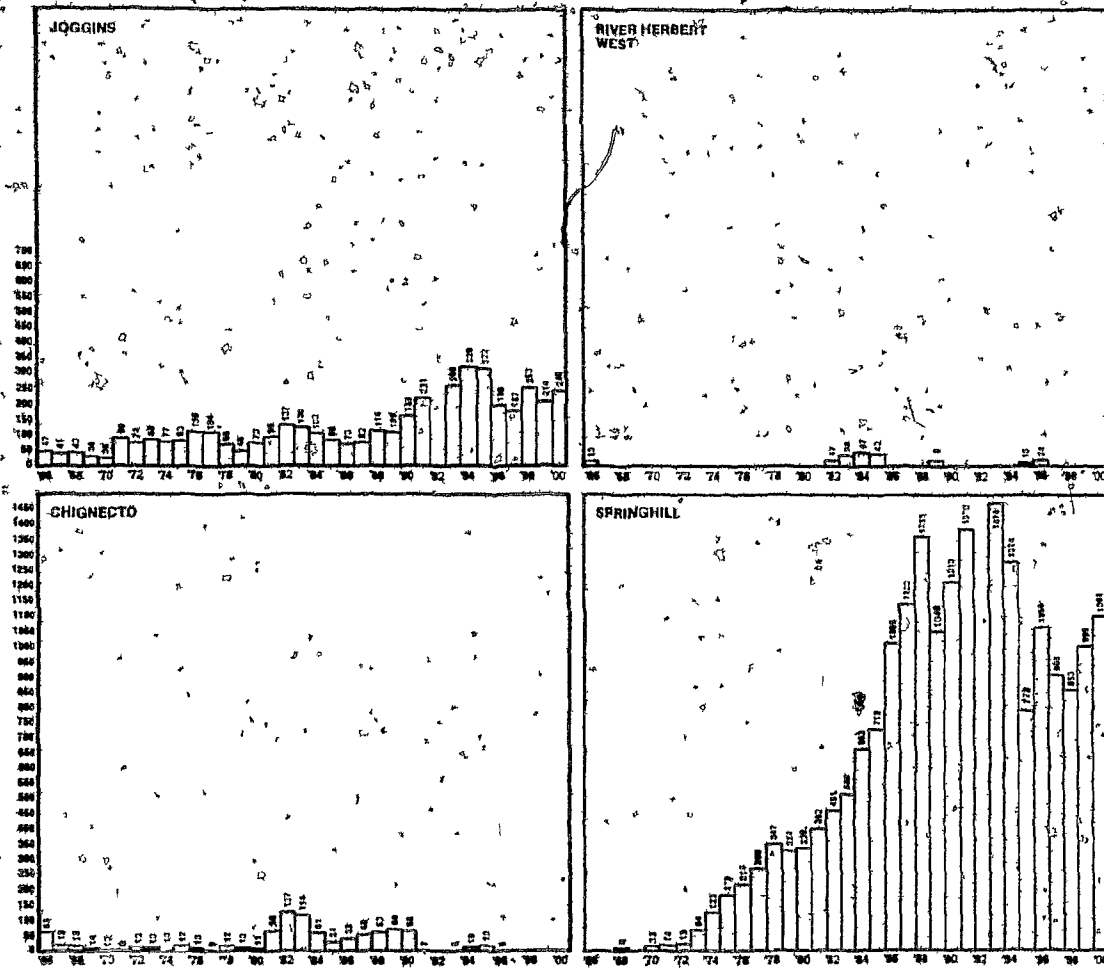
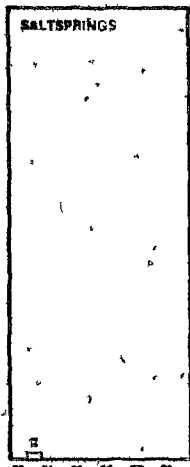
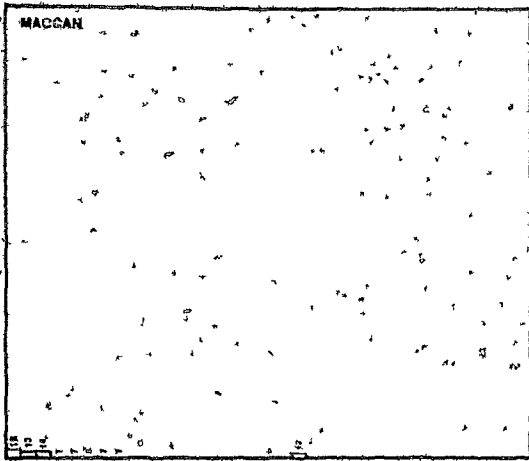
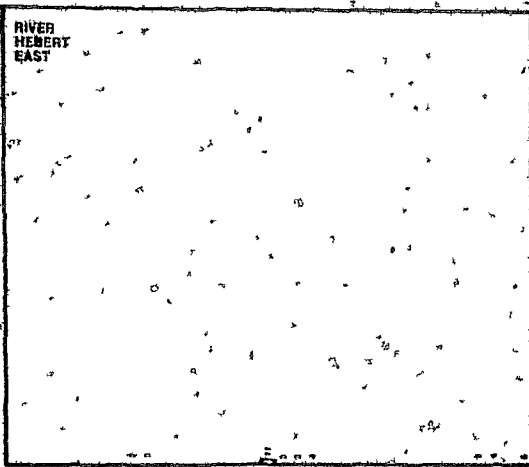


Figure Two

**EMPLOYEES OF
COAL MINES BY
COAL MINE AREA
1866-1900**



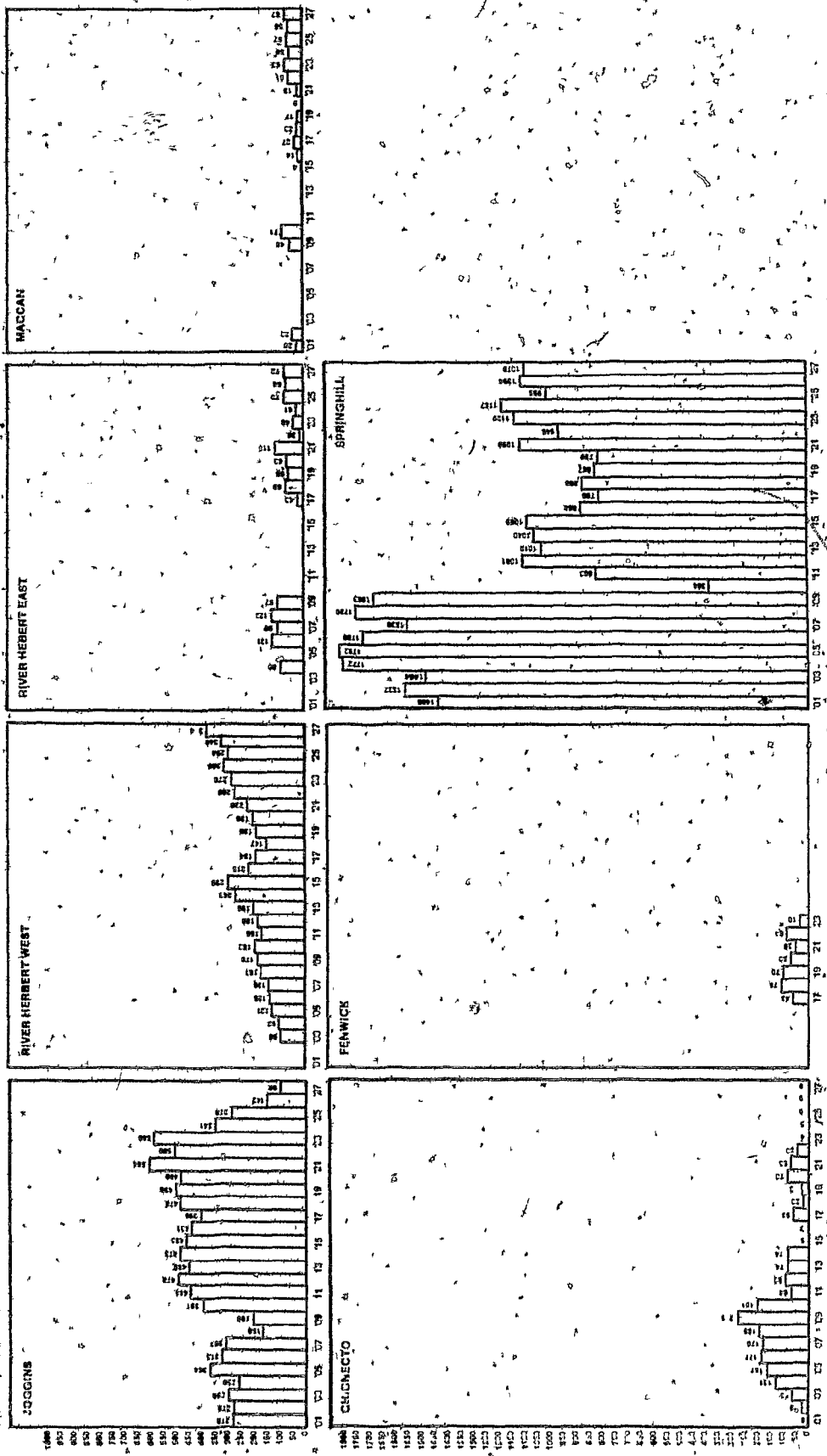


66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 00 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 00

66 68 70 72 74 76 78 80

Figure Three

EMPLOYEES OF COAL MINES BY COAL MINE AREA, 1901-1927



contrast between the two coalfields and the very different structures of their growth. Four great movements are evident in Figure One.

First of all, there is a long period of stagnation, from 1848 to 1872.

There is next a period of steady and rapid growth, from 1873 to 1893.

With one or two interruptions, this was a long period of expansion,

beginning with the slump in employment in 1894 and rising to the

record level of 1909. Finally, overlooking the strike year of 1910,

the period 1911-1927 was one of relative stability.

From these basic statistics outlining the number of coal mine employees in the various mining areas, certain comparisons may be made between the Springhill and the Joggins coalfields. There is first of all the question of the size of the workforce, and secondly that of the relative importance of each coal industry within its respective field. Table Two outlines these essential comparisons.

Table Two. Percentages of Miners per population and Size of Mining Workforce, Joggins and Springhill Coalfields.

Year	% of County Coal Miners in Joggins Coalfield	% of County Coal Miners in Springhill Coalfield	% of Miners in Joggins Coalfield Population	% of Miners in Springhill Coalfield Population
81	28	72	7	44
82	38	62	12	35
83	37	63	12	30
84	23	77	8	32
85	19	81	7	29
86	10	90	4	35
87	10	90	5	35
88	11	89	6	37
89	15	85	7	26
90	17	83	9	27
91	14	86	8	29
92	n.a.	n.a.	n.a.	n.a.
93	16	84	9	31

Table Two...continued

94	21	79	11	27
95	31	69	12	17
96	18	82	8	23
97	16	84	6	19
98	23	77	8	18
99	18	82	7	22
00	19	81	8	24
01	18	82	10	31
02	18	82	10	33
03	23	77	13	31
04	24	76	15	36
05	26	74	17	36
06	30	70	19	33
07	32	68	17	29
08	27	73	15	32
09	32	68	18	30
10	70	30	18	7
11	45	55	14	14
12	40	60	15	19
13	41	59	15	18
14	44	56	17	18
15	41	59	16	19
16	44	56	14	15
17	49	51	15	14
18	49	51	17	15
19	51	49	17	14
20	51	49	17	14
21	49	51	21	19
22	50	50	20	17
23	47	53	21	19
24	39	61	16	20
25	41	59	16	17
26	36	64	14	18
27	36	64	14	18

Source: Census of Canada, 1931, Vol. II, p. 29, estimates partialled in non-census years, and the Mines Reports.

These statistics suggest that the coalfields were quite different from each other in their development. In the period 1881-1890, the Joggins coalfield provided work for an average of 21% of the Cumberland coal miners; this level would remain constant in the next decade (at 20%), but rise thereafter, to 25% in 1901-1910, excluding the aberrant strike year of 1910, 46% in 1911-1920, and 43% in 1921-1927.

The pattern is therefore one of the relative rise of the Joggins coalfield as a factor of importance in the local labour market.

Springhill's position, conversely, was overwhelmingly dominant in the 1880s, and much less so by the 1920s.

It would be interesting to analyze the numbers of miners within the working population, but this data is difficult to compile in an area profoundly affected by part-time employment. Looking at the more reliable estimates of the percentage of miners per population, we notice the profound difference between the two coalfields in the 1880s. Springhill's exceptionally high percentages indicate a coalfield that has not yet passed the level of frontier development, while Joggins shows the very marginal impact of coal upon this area. The two series approach each other only after the 1909-11 strike. The relatively low levels posted in Springhill in the 1920s suggest not a diminution in the importance of the coal industry, but the crisis of unemployment which affected Springhill in this period. Springhill's population was dominated at an early stage by the coal miners, and to such a degree that no other economic activities were pursued to any major extent; the Joggins coalfield, on the other hand, was only slowly dominated by its coal miners (for example, only in 1921 did the coal miners equal 21% of the population--a level exceeded in every year but three in the period before 1910 in Springhill) and never at the levels recorded in early Springhill. This is the difference between a coalfield whose coal-mining population has many alternatives and whose coal industry is plagued with difficult structural problems, and one with a large coal industry with a guaranteed market and few other sources of employment.

The contrast between the two coalfields is also brought out by Figures Two and Three portraying the spatial growth of the coal-mining population. Apart from Springhill, it is a portrait of fragmentation and instability which emerges from these data. Joggins, the most stable mining area, nonetheless fluctuated markedly in the levels of employment available; it entered a severe decline in the 1920s. River Hebert West and River Hebert East barely existed as coal production centres in the nineteenth century, but in the twentieth the coal miners played an increasingly important role. The other centres were only intermittently involved with coal mining. In short, the Joggins coalfield was characterized by mining areas which were highly unstable. Only the Joggins itself persisted, with marked irregularities, throughout this period.

The human consequences of this structure included a pervasive tradition of mobility within the coalfield, a phenomenon which is difficult to establish quantitatively, but unquestionably emerges as a major theme in oral history. Workers in the Joggins coalfield who were able to remember their employment histories in detail listed as many as ten different mines in which they found employment. Miners working in the Joggins often found jobs in River Hebert and vice versa, but even this common experience entailed a long walk or ride. The coming of the automobile in the second and third decades of the twentieth century changed the character of the coalfield by permitting workers to drive in from other areas. The distances separating other areas (such as Maccan and Chignecto) from River Hebert and Joggins made such commuting difficult. The consequence of this dispersed pattern was the absence of any central town in this coalfield, which

resembled many parts of the province in its ribbon-like settlement (although along the outcrop of the seam, rather than on the coast).

By contrast, the Springhill coalfield reported a far less pronounced history of mobility within the coalfield itself, and workers who stayed in Springhill would work in the same mining complex throughout their working lives.

The size and character of the labour force in the coalfields was directly influenced by the nature of the coal mines themselves. In the mercantile period, the coal miners represented a tiny proportion of County population. In 1871, for example, only .5% of the total population of 23,518 was employed in the mines. Industrial growth entailed the creation of a permanent labour force, which in 1891 had reached 5% of the total population of 34,529. By 1911 the coal miners represented 4% of the population of 40,543, while in 1921 they made up 5% of the population of 41,191. These statistics refer, of course, only to those directly employed by the coal mines; using the conservative estimate of four dependents per wage-earner, we arrive at an estimate of 20% of the population directly dependent upon the mines in 1921. After 1871, the coal industry was always an important aspect of the Cumberland labour market, but it was not nearly so overwhelming a presence here as in Cape Breton. The social and political consequence of this was the lesser importance attached to the coalfields within the County, governed from a seat which had other resource and industrial interests. The size of the industry and its localized nature made it easy to place the coal-mining population in a sort of ghetto. There never evolved in Cumberland the close association of the entire County population with the coal mining communities. The low density

of population in Cumberland--always significantly lower than the Nova Scotia total--also inhibited the emergence of a strong 'county identity' analogous to that of Cape Breton or Pictou.

The contrast between the Joggins and the Springhill coalfields was one between a rural and an urban configuration. These terms, of course, are somewhat descriptive and may lead to an exaggerated view: Springhill, a large town in local terms, was small in national perspective. But they capture the essential contrast. We can look, for example, at the question of the middle class. In 1892 Springhill had 19 general stores, 5 tailors, 4 confectionery stores, 3 jewellery stores, 3 hotels, 3 physicians, 3 restaurants, 3 boot-and-shoe stores, 2 carriage shops, 2 liquor stores, 2 livery establishments, 2 butcher shops, 2 stove shops, 2 stationery stores, 2 dry goods stores, and 2 blacksmiths, in addition to a number of other small establishments of various sorts. It claimed a population of 4,813. The centres of the Joggins coalfield were much smaller and enjoyed a far less extensive retailing sector. Joggins, with 500 people, had 4 general stores, 2 grocery and liquor stores, 1 general and lumber concern, and 1 confectionery shop. The Mercantile Reference Book lists the population of Maccan as 250 and that of River Hebert as 700. It should be borne in mind, however, that these place-names are never precisely defined by statute, and these population estimates doubtless include a number of local farms.¹³ The contrast was brought out by a study of retailing in the county in 1930, included in the 1931 Federal Census. This revealed that in Springhill a total of 83 stores employed 94 individuals, with net sales of \$1,311,600. Joggins, with 16% of Springhill's population, claimed 18 stores, with only 3 full-time employees.

The smaller centre had 10% of the net sales of Springhill, while claiming 16% of the latter town's population. Evidently Springhill and Joggins were places of a different character.¹⁴ The impression is brought out even more clearly when we consider that Joggins alone was large enough to merit inclusion in the table. Only Springhill developed a coherent shopping district and a recognizably urban landscape; the other centres were classic examples of the diffused villages of the Nova Scotian countryside.

Three major periods, corresponding to the fundamental periodization of the coal economy, can be discerned in the history of the coalfields' population. The mercantile period (1848-1872) saw small numbers of immigrants arrive, and also witnessed their departure as the economy collapsed. The industrial period (1873-1900) was characterized by intensive immigration from a number of areas: Pictou County, New Brunswick, and England. The number of coal miners grew at the rate of 7.7% per annum. The period of monopoly capitalism (1901-1927) was characterized by a different kind of immigration, co-ordinated by coal companies and the state, either to serve general labour needs in expanding areas (such as Chignecto) or to serve particular needs in times of labour crisis (as in Springhill, 1909-11). The average growth rate per annum was 1.2%. Using as a key the periodization we have already established, the period of monopoly capitalism was one of far slower growth in the workforce than that of industrial capitalism. However, this is a somewhat misleading impression, given the stagnation of the industry in the 1920s. It would be more accurate to say that both the periods witnessed dramatic waves of growth and dramatic collapses: from 1873 to 1893, for instance, the growth rate was 12.6%, and from

1897 to 1909 it was 7.1% per annum. In other words, the rhythms of growth in the coal-mining population do not correspond exactly with the structures of the coal-mining economy, although these structures help us understand why these rhythms took the shape they did.

It is now possible to extend our analysis by looking more carefully at the three major waves of immigration which occurred in this period and study in greater depth the human aspects of the growth in the coal-mining population.

2. The Recruitment of the Coal Miners

The formation of the coal-mining population was an extremely complex and intricate process, only some of which can be reconstructed from the available historical data. The essential sources are newspapers, personal memories, and the manuscript census schedules of 1871 and 1881. Unfortunately the manuscript census is only available for the earliest years of the significant growth of the coalfields' population, and many hypotheses concerning the level of mobility can be confirmed only by impressionistic sources.

The manuscript census of 1871 captures the coal-mining population in detail at the end of the mercantile period. Of the 51 miners listed in the census, all but one lived in the district of River Hébert (encompassing all the Joggins' coalfield, with the exception of Maccan and Chignecto, which do not figure in this schedule). This small population of miners was primarily made up of men born in Nova Scotia (33 men or 65%), but there were some immigrants from England (7 or 14%), Ireland (5 or 10%) and Scotland (2 or 4%). In addition, some movement had occurred in to the coalfield from New Brunswick (3 men or 6%).

The bulk of the miners of the Joggins coalfield had doubtless emigrated by the time of the 1871 census. In terms of the 'national origins' of the miners, the census suggests a population dominated by men of Irish (39%), English (29%) and French (20%) descent, with a smattering of Scots (12%). These are statistics which are interesting primarily because they suggest a certain continuity to the coalfield; brought out by the participation of the Acadian descendants of the eighteenth-century tenantry. The coal miners were divided between five religious denominations, the Roman Catholics (23 or 45%), Church of England (12 or 24%), the Presbyterians and Wesleyan Methodists (6 and 12% apiece) and the Baptists (4 or 8%). Taking those families headed by a mine employee, we find a total of 214 people within the "mining families," 110 females and 104 males. This sexual balance is indicative of a population that is centred on the family, rather than one dominated by single transients. The census does not record any miners living outside a family, all of which were evidently 'biological' families, as evidenced by the sharing of common surnames. In other words, the notion of an isolated coalfield, populated by a workforce of transient men living in bunkhouses, is highly inappropriate when describing this period.

The coal miners' willingness to travel was a matter of common knowledge in the nineteenth century. As early as 1850 Walter Johnson remarked upon the tendency of local miners to leave their place of employment in search of better opportunities in the coalfields:

The [General Mining] Association, I understand, give little encouragement to return; to those who have once left their works for the United States, and decline to employ such, unless in urgent want of hands. I was several times asked by laboring men, miners, and others, if I thought working people could get a "chance" now "in the States," meaning of course good wages.¹⁴

Henry Poole in 1875 spoke of the need for a uniformity of allowances and rates, which "would...tend to reduce the migratory habit of trying first one colliery and then another."¹⁵ John Brophy has left us with a tender reminiscence of the gypsy life of the mining family in the United States, moving every few months or so in search of better conditions or steady work.¹⁶ Certainly one has the impression of large movements of people in and out of the Cumberland coalfields, even if this impression is not always easily put in terms of precise statistics.

The statistics available for 1881 nonetheless allow us to make some evaluations of this question of transiency. Of the 51 employees listed in 1871, only 14 can be traced to 1881. This places the coal miners at the low end of the scale established by Michael Katz for Hamilton workers (although it would of course be invalid to form any definite conclusions on the basis of this without much further work).¹⁷ Such a low level of persistence must have had the consequence of breaking the historical connection between periods, and making it difficult to build a consistent tradition within one area.

The most compelling evidence of the extraordinary mobility of the mining population was provided by Springhill, which grew from nothing to a large village in 1881. The manuscript census of 1881 presents data for 272 miners in the district of Maccan in 1881, a district which encompassed Springhill. (It appears that the coal mining population listed under the designation "Maccan" is virtually confined to Springhill). Everyone in this interior coalfield was a new settler, with the exception of John Anderson, the first miner of the Springhill coalfield. The coal-mine employees were primarily men born in Nova Scotia (187 men or 69%), but there were immigrants from New Brunswick (11%), England (10%),

Scotland (4%), Ireland (3%), France (2%), and Newfoundland (1%).

In a modest way, the labour market had expanded to draw upon more distant areas.

The process of recruitment in Springhill was somewhat haphazard. One must bear in mind the troubled context of the 1870s; many men in Pictou and Cape Breton would have responded with enthusiasm to a chance to find better conditions in Springhill. Robert Drummond, future leader of the miners' union, was only one of many men in Pictou who responded to the call of Springhill in the early 1870s.¹⁸ The mines were initially dominated by a nucleus of men from Pictou County. A number of them were brought out by William Hall, the new manager of the Springhill mine, who had filled a similar position at Albion Mines. At least 40 miners from Pictou County arrived in the year the mines officially opened.¹⁹ A second source of labour was New Brunswick, where the instability of the traditional staple trades made coal-mining attractive. A third was England, particularly the Staffordshire area. Men from Staffordshire settled in log houses near the foot of Salt Springs hill in the mid-1870s.

One reflection of the Pictou immigration is the data on the national origins of the coal mine employees in 1881. Men of Scottish origin accounted for 118 of the 272 employees listed (or 44% of the total), compared with 75 of English origin (28%), 60 of Irish origin (22%), and 10 of French origin (4%). There were small numbers of Swiss, German, and Welsh descendents. Thus the Scots held a strong position in Springhill, and this almost certainly underlined the extent to which Springhill was 'colonized' by Pictou County. The same might be said of the data concerning religion, which show that the Presbyterians,

accounted for 48% of the coal mine employees, Methodists 20%, Roman Catholics 13%, adherents of the Church of England 9%, Baptists 8%, and members of the Church of Scotland 2%. It would be quite proper to think of the early Springhill coal miners as strongly influenced by Presbyterianism, Scottish descent, and Pictou County. Many of these men were not first-generation miners, but long-standing coal miners who did not need to be introduced to the discipline of industrial labour. Some imbalance is evident in the ratios of the sexes (there were, of the households headed by a coal mine employee, 352 males and 326 females, a ratio of 1.07:1.00), which however does not suggest a drastic surplus of males. The overwhelming majority of coal mine employees were residents in family homes, and not boarders.

The much smaller population of the River Hebert district--in essence the Joggins coalfield--was even more 'local' than that of Springhill. Fully 71% of the 34 coal mine employees here were Nova Scotians by birth, followed by 15% for New Brunswick, 6% each from Ireland and England, and 3% from Scotland. No fewer than 29 out of 34 coal mine employees (86%) were born in Nova Scotia or New Brunswick. The most striking contrast between the Joggins coalfield of 1871 and that of 1881 was the increase in the percentage of men from New Brunswick. The proportion of men listed as French in origin also rose from 20% in 1871 to 35% in 1881 (12 out of 34); while the other nationalities listed by origin claimed 35% (English), 21% (Irish) and 9% (Scottish). If one were anxious to over-simplify the two social worlds emerging in Cumberland, one would describe one as Presbyterian, Scottish and native, and the other as French and English, Catholic (59% of the coal mine employees in 1881) and native-born.

The early industrial coalfield drew disproportionately upon the surplus rural population and the coal miners thrown out of work by the recession of the 1870s. There was no shortage of labour in the initial phases of industrial growth, and consequently no need for companies to attempt to secure additional recruits overseas. Even in their earliest phases, the coalfields did not resemble the mining camps of the west. They were 'frontiers' in the sense that new immigrants settled them very rapidly, but not in the sense of encompassing severe sexual imbalances or any major institutional breaks. The rapid growth of Springhill was a testimony to the migratory habits of coal miners, who quickly filled up the coalfield, but since its period of rapid expansion coincided with the period of crisis in the rest of the coal industry, there was a large surplus population in Nova Scotia ready and able to enter the new area. In many respects the Springhill coalfield was the child of Pictou County.

It is very difficult to ascertain how many of the coal miners had previous experience in the industry. According to Robert Drummond, the Pictou County miners predominated in Springhill in the early 1870s, but later in that decade there was "indiscriminate employment of men-- including farmers living and working at odd jobs in the vicinity. The Pictou miners dubbed all such 'hemlock butchers,' and tried to place them in a class by themselves, but some of the so-called hemlockers in a short space of time became the most regular and best earners in the collieries."¹⁹ Drummond's memory is confirmed by newspaper evidence of 1880:

When the miners worked fair hours and were content with a fair wage, there was little danger of the pits becoming overcrowded. No sooner, however, had they removed the restriction, and made big wages, than it flew far and near, that fortunes were being made at the Spring Hill Mines, and men flocked in, in swarms; in some cases, leaving their farms to run waste, in order to get a share of the supposed big bonanza. Some men were beguiled by promises of big wages to come, we are sorry for those, but for others who left their legitimate business, farmers, and such like, we have only to hope, they may get a severe lesson. 20

A.J. Taylor has noted the centrality of the wages paid in mining as an important factor in accounting for the waves of immigration in and out of coalfields.²¹ Certainly the relatively high wages paid in Springhill, and the unusual steadiness of work there in the 1870s, made it an attractive prospect for local men--farmers, unemployed miners, and others.

This theme of local 'immigration' runs through the nineteenth century. One must remember that in many cases these families were not from mining regions, and that their transition to life in a coalfield might well have been more difficult than genuine foreigners experienced in the coal industry. From Newfoundland came a steady stream of immigrants to both coalfields. Not all of them were welcomed.

"Judging from the appearance of the last crowd of Newfoundlanders that arrived here it would lead you to think there is not many more men left in that colony, as they are a most miserable looking set, of men in comparison to the able robust looking men that we always have seen coming from there," the Joggins correspondent of the Amherst Daily News complained in 1897.²² The Newfoundlanders of the Joggins appear to have been itinerants, while those of Springhill appear to have been settlers, although the evidence on this point is sketchy. According

to one description, the Newfoundlanders developed a rhythm of work which entailed the seal fisheries in the fall and the coal mines in the summer.

Among the miners at Joggins each summer are from thirty to sixty Newfoundlanders who return to Newfoundland in the fall for the seal fisheries. They live in small one story houses, ten in each sleeping in bunks as on board ship. They are not properly speaking miners but assistants above and below ground, for a miner must serve his apprenticeship two years and pass examinations before he is entitled to recognition. 23

It is a vivid reminder of the large population of semi-proletarian people who lived within or close to the Maritimes. Throughout the nineteenth century men would be drawn in from such areas to the coalfields.

There was also an important movement between the various local coalfields, prompted by strikes, commercial disasters, or a deeply ingrained migratory habit. A sudden influx could create serious difficulties. After Chignecto ran into commercial difficulties in 1884, a Springhill correspondent complained that

All Maccan [Chignecto] seems to have migrated to S. Hill, besides numbers from Pictou; and as if a heavy supply from these two districts was not enough, one of the bosses from the East Slope went all the way to C.B. [Cape Breton] for men, and induced a number to leave off work at the Gowrie Mines and other places, and come hither, promising them the pick and good pay as soon as they arrived.

The Cape Breton men were disillusioned by the offer of the company, but had to keep loading for miners until they made enough money to make their way home. 24

Our statistical base for the period after 1881 is unfortunately highly uninformative. Many of the most interesting and important facts remain obscured by the collection of data at a county level, a procedure

which entails serious problems in so heterogeneous a county as Cumberland. Consequently the history of the two movements into the coalfield after the 1881 census must be written with less assurance on the basis of descriptive accounts.

There is little doubt that a concerted effort was made in the period 1887-1914 to attract and hold skilled British colliers. A large amount of controversy was aroused in Springhill by the arrival of English immigrants, who were thought to be the instruments of a company wage reduction.²⁵ Many of the British immigrants found conditions little better than in their own country. William Hall, in testimony that estimated that half of the workforce was Scottish and the rest a mixed bag, denied any suggestion that the company was importing miners from Great Britain.²⁶ Charles Runney told the Labor Commission that he had found conditions in Springhill little better than in his native Lanarkshire.²⁷ The evidence suggests that a crisis was reached in 1888-1890. "Immigrants are beginning to arrive," wrote the Springhill correspondent of the Trades Journal in 1888. "Some of them display a card a foot long, displaying the name of the society which told them fables and assisted them to come hither."²⁸ Accounts suggested that government immigration agents and private philanthropies were behind the sudden influx. "The immigrants are swearing vengeance on somebody," a critic of the new policy argued. "It makes one feel sorry to hear the poor deluded fellows tell of all the inducements offered them to come to Spring Hill. Those who had comfortable homes sacrificed them to raise enough money to bring them to this Eldorado. They were promised from \$2.00 to \$2.50 per day. Now they are here and can't make the half of it. Should not this position be stopped?"²⁹ Indignation was also

expressed at British immigrants who wrote encouraging letters to prospective immigrants in Britain.³⁰ At the Grand Council of the Provincial Workmen's Association, Springhill delegates expressed dismay at the overcrowding of the mine. One delegate explained that no other provincial mine was as overcrowded as Springhill: "Men come from other countries--from England, for instance,--and get work, good places too, while natives must stand aside."³¹ The union advanced a doctrine of political protection for the working class, urging such steps as certificates of competency in order to check the indiscriminate hiring of men.³²

The problem acquired a new intensity in the early twentieth century. Hundreds of miners from Britain were brought over by the Dominion Coal Company and others. Offered \$1.50 to \$1.75 at tonnage rates, British miners were disappointed with the comparatively low Nova Scotian wages; just as in 1850, they were quite anxious to leave for better conditions. Speaking of the British miner, the Herald suggested that "He is evidently just as susceptible to the western fever as our native bred. If the west continues to draw labor from the east, both native and imported Anglo-Saxon at the same rate it has been drawing of late, the time is not far distant when employers in the eastern part of Canada, especially in connection with the coal mines, will be forced to turn to continental Europe and even the far east for sufficient unskilled labor to carry on their industries."³³ In the new period of monopoly the companies were far more insistent on obtaining foreign miners. The Maritime Coal, Railway and Power Company, on assuming control of the Joggins in 1907, wrote to their agent in London, asking him to procure for them "quite a few miners and helpers, also some

surface men," offering as bait the promise of \$2.78 per day. "Now, if you would kindly send us a lot of about 30 or 40 capable miners, we will be pleased to have them, and will give you three dollars per head, providing the men go to work and work at least twenty five days."³⁴

They received a solid response to their campaign, if oral history is any guide: one miner recalls the advertisement in his local newspaper in Ashington as a major factor in his decision to come to Canada.

On his arrival in the Joggins he was impressed with the large numbers of men from the north of England, notably from South Shields and North Shields.³⁵ Many would make a satisfactory adjustment, but some memories are of terrible anxiety and loneliness, and shock at the rural atmosphere of the Cumberland coalfields, such a contrast to the urbanized English coal counties.³⁶ The frequent strikes in Springhill were thought to be a real impediment to attracting skilled English colliers.³⁷

There were frustrations in the attempt to secure an influx of English miners to serve the needs of the expanding industry. In response, the coal companies could turn to local men, as the Cumberland Railway and Coal Company did in 1891 when it had to replace the men suddenly killed in the Explosion with "navvies and farm labourers" from Nova Scotia and New Brunswick.³⁸ However, the companies paid increasing attention to the possibilities of East European and Italian labourers. Italians were evident in the Springhill mine in 1895, as is suggested by a murder trial in that year.³⁹ In a strike in 1895, an Italian strike-breaker was met by a crowd of the miners, "who speedily, but good naturedly, dumped him into a ditch, and held him in the snow till he shiveringly swore to stand true to his brother members."⁴⁰ Italian strikebreakers were also to figure in the 1909-11 strike. But the

continental immigrants made their greatest impact in the Joggins coalfield, where sections of Chignecto and Joggins acquired the classic appearance of immigrant shanty-towns. In Chignecto it was noted, "We have miners from almost every quarter of the globe, even from far off Australia and New Zealand."⁴¹ One poem, durably installed in popular memory, commemorates the opening of a new mine between Maccan and River Hebert:

There was Germans, there was Frenchmen, Italians and Jews,
 All flocked to the Jubilee when they heard the good news
 With a pair of old pit shoes and a rusty old can
 To go in to work in McNaughton's new mine. ⁴²

There were Belgians, Russians, and (mirabile dictu) even Turks in the mines of the Joggins coalfield.⁴³

The immigrants were brought within the unions, although there were strained feelings. Holdfast Lodge of the Provincial Workmen's Association admitted eight "Belgians" in 1895.⁴⁴ Yet a distinction between newcomers and natives was evident in the deliberations of this union, as we discern in a resolution passed in 1897: "After some discussion it was moved and seconded that we request the Manager, that if there is men to be discharged, that he send off the last man hired, with the exception of natives of the place who may have been hired lately."⁴⁵ In 1906 the Lodge Secretary was struggling valiantly with such names as "shilipp Klawzinski Frank Kanzinski Van Carlken Loesp," all of whom were admitted to the union.⁴⁶ There is a similar dichotomy of response in Springhill. There was bitter resistance to the foreign strikebreakers who were brought in to crush the great strike, and during the First World War nativism reached its peak with a strike, mounted by native miners, to force "enemy aliens" to submit to the

wearing of special lamps and to searches of their lunch tins for explosives. It was a strike fought in the name of patriotism, but with the fairly transparent purpose of settling old scores.⁴⁷ But there were also Belgians who enjoyed prominence as labour agitators, and efforts by the union to teach "our Foreign members" the rudiments of English.⁴⁸ Italians were forgiven by many Springhillers for past transgressions when one of their number became a top star with the local baseball team. An East European immigrant held a high position in the Springhill union, and a Belgian was financial secretary of the United Mine Workers local in Joggins for 33 years.⁴⁹ Outside a few moments of acute tension, there does not appear to have been a strong, systemic nativist movement in the county. Despite the prominence of Jewish men in shopkeeping and trading, the Cumberland coalfield did not have any marked anti-Jewish outbursts, of the sort other provincial coalfields experienced. Perhaps the most the record sustains is a charge of quiet exclusion and neglect, as immigrants were placed in the worst housing (the shanties of the district were nick-named "Belgian shacks") and only slowly welcomed by the local population.

The period of monopoly capitalism saw the coming of the continental Europeans, a feature which was not peculiar to the Cumberland coalfields.⁵⁰ It also saw a far-reaching participation of local men in the Canadian labour market. Here the impression we have is of a socio-economic dualism, the Joggins coalfield lying outside a circuit of local coal miners who travelled throughout the region, and the Springhill coalfield lying within it. It is an impression that comes from interviews, unfortunately, rather more than it can be substantiated by printed sources. There were connections between the two Cumberland coalfields,

but in many respects working biographies suggest a much closer connection between Springhill, Westville and Cape Breton. The normal pattern was emigration to these more distant coalfields; less usual, it appears, was movement between the two local coalfields. The coal miners of Springhill were to be found as far west as Carbondale in 1883, where 12 Nova Scotians (including three Springhillers) circulated the trade union paper.⁵¹ Of the coal miners interviewed in Cumberland County, fully three quarters had worked in coalfields outside the county. British Columbia was a favourite destination. Five Springhill men were killed in the Fernie Disaster in 1901.⁵²

Coal miners were highly mobile, and their mobility took a particular form, from coalfield to coalfield. It was the kind of mobility that strengthened a consciousness of occupational tradition, and since it was often done on a collective basis, it did not necessarily entail cutting ties with one's home community. One aspect of this geographical mobility was the quick expedition sparked by a sudden crisis in the local coal economy. After a fire which shut down Springhill's North Slope in 1906, the Amherst Daily News noted that "A few of the workers, mostly young men, left last week for Cape Breton and other places. We understand there were about fifty who left during the course of the week. Probably some of these will return when the slope is in good shape again."⁵³ Another face of this phenomenon seems to have been a rapid turnover that was naturally accepted as part of mining life. This was vividly documented in 1906 in Springhill, by a story in the Springhill Tribune which focussed on the "floating nature" of Springhill's population. Looking at the voter's list, it noted that in Ward 1, 94 names had been added and 65 removed; in Ward 2, 83 added and 91

removed; and in Ward 3, 66 added and 53 removed. In all, 243 names were added, and 209 taken off. Only 18 of the names removed were taken off because of death.⁵⁴ There seemed to be an argument for restricting the franchise to property owners, some argued—a suggestion which reflected a difference in the community between those who had purchased homes and had no intention of moving, and those who were the archetypical gypsies of the mining towns. This difference probably reflected a generational division. Young men flocked to the Harvest Excursions, sought employment in the woods during strikes, travelled the circuits of the mining towns of Pennsylvania, the Canadian West, and Cape Breton. Often they would return, in response to a summons from their parents, or because jobs seemed to be more secure at home.

So far as a partial record allows one to judge, the average turnover of population in the pre-war years was greatly reduced in the post-war period. There was far less incentive to move from Cumberland County, which was less drastically affected by the recession than other local coalfields. It was in this period that the coalfields started to acquire a "closed" character. In 1945, the major entrepreneur in the River Hebert area, Dr. D.M. Cochrane, explained to the Royal Commission on Coal that "about seventy-five per cent of the miners own their own homes," and that there is "practically no floating population of miners in normal times."⁵⁵ In Springhill we read, from the records of the miners' union, of vigorous protests against the arrival of miners from Pictou County.⁵⁶ Such evidence suggests that the coalfields were no longer characterized by extensive population inflows. It is a predictable pattern, given the decline of the coal industry in the 1920s, even if we at present lack the statistics with which to ground

our impression more fully. It is probably legitimate to read the 1931 Census as a confirmation of the 'closing' of the coalfields, since it shows that of a total County population of 36,366, 30,448 people had parents who were both Canadian-born.⁵⁷ Until the opening of the manuscript schedules, however, it will be impossible to add much quantitative weight to our hypothesis.

Still, even with the data at our disposal, it is possible to make some firm generalizations about the formation of the coal-mining communities. In its first and best-documented form, the coalfields population was primarily a native-born group, with significant numbers of men from Pictou County. In the 1880s there was a small wave of English and Scottish miners, which ended c. 1891. In the 1890s the emphasis appears to have been on attracting men from northern New Brunswick. By the twentieth century, the labour market had decisively changed in character. A systematic effort was made to obtain immigrants from both Britain and continental Europe. This effort had two motivations. One was to further develop the coal areas in a time of chronic labour scarcity. This was the underlying reason for the recruitment drive of Dominion Coal, and the less massive efforts of Maritime Coal in Chignecto. A second motivation was that of breaking strikes, for which the companies imported labourers from many quarters. This 'international' period was also one of considerable geographical mobility. In the 1920s the labour market changed once again, and no less profoundly. It became less and less open to outsiders, because of the crisis of the industry and because of the protective measures taken by the miners themselves. These demographic changes make it difficult to accept, as a generalization covering the entire period, David Jay Bercuson's

notion of the Nova Scotian situation as one of "closed communities".⁵⁸ By relying extensively upon estimates for coal-producing counties in the Census, Bercuson has been misled by the two cases of Inverness and Cumberland, both counties with a large and stagnating rural population as well as relatively 'open' coalfields. There is a legitimate comparison to be made between the western and eastern coalfields, but the very Census cited by Bercuson reveals some 30% of the provincial coal mining workforce was made up of immigrants.⁵⁹ It is highly probable that the impression of a closed paternalism, which we find contradicted at every turn in the early-twentieth-century coalfields, has arisen because of the striking heterogeneity of these two counties.

Having assembled the available information on the coal-mining population and attempted an initial periodization, let us turn to the question of socio-economic duality, for underlying these general patterns are striking differences between the two coalfields; differences which affect not only social structure but social consciousness.

3. The Development of an Urban Coalfield: Springhill

The rise of Springhill was the single most dramatic change in the history of the settlement of the coalfields. In 1871 there were five houses in Springhill. Only John Anderson is listed in the 1871 Census as a miner. Explorations were conducted by itinerant workers and explorers. The settlement expanded in the early 1870s. The first store was constructed in 1872, the first school-house in 1874, the first Orange Lodge in 1873. Springhill is an oddity in Nova Scotia history, because it was a resource town which emerged with dazzling speed in a decade which was elsewhere characterized by stagnation and decline.

Was Springhill a "frontier" in the complex sense that historians have used this word? Visually, indeed it was. Stumps abounded. The earliest settlers lived in log cabins and rudimentary company housing. But in the deeper sense, which implies at least an appreciable level of social discontinuity, the 'frontier' aspects of Springhill were secondary to those which tied it to the wider society. For example, the Presbyterian Church, the Conservative Party, and the Scots all arrived at more or less the same time. Springhill, as an off-shoot of Pictou, was initially dominated by a coherent group of Scots colliers who had already made their adjustment to industrial life.

Let us pursue this hypothesis in a number of essential areas, extending our analysis through the three basic periods of socio-economic history. The critical areas to explore (1) the physical aspects of settlement, namely housing; (2) the growth of a middle class; (3) religious and voluntary institutions and (4) the presence of the state within this society (education, the enforcement of order, and civic government).

Springhill was distinguished from other major Nova Scotia coalfields by the low percentage of the housing stock owned by the coal company. Out of 818 houses in the town in 1891, 70 were company-owned dwellings, providing accommodation for about 120 families.⁶⁰ In 1925 the Cumberland Railway and Coal Company found that 374 of its employees owned their own homes directly (38% of the total workforce).⁶¹ This statistic was not extended to analyse the numbers of employees living in homes owned by their families, but descriptive evidence and oral history suggest that there were many families in this period with two or three wage-earners. Consequently the large majority of workers in Springhill

either owned their own homes or lived in houses owned by their families. An undetermined percentage also lived in dwellings rented from local merchants.⁶² This was an unusual pattern in Nova Scotia.

How did this situation emerge? Probably one important key lies in the peculiar outlook of the Spring Hill Mining Company, which we have elsewhere described as a company of the short-term. When the General Mining Association founded a coal community, it built company housing on a large scale. This policy seems to have been a reflection of British experience, which would have suggested the usefulness of maintaining control over housing as a way of disciplining labour. However, the Spring Hill Mining Company did not aspire to this kind of complete control. In the 1870s, to be sure, there was a high level of company control, but after 1880 the company followed a policy of selling off its property in Springhill to the miners. It was a profitable policy in the short-term, and seems consistent with the company's other development strategies.

Another important element, however, lies in the stubborn resistance of workingmen. Here there was an element of the 'frontier,' in that the workingmen themselves made a conscious effort to break free from company domination. A critical turning point here was the strike of 1879, which founded the Provincial Workmen's Association. At a crucial phase of the strike, the company decided to follow a classic strategy of mass evictions from company housing. Robert Drummond describes the episode:

Notice first was sent to the workers who were tenants of the company houses. No attention was paid to these. Then followed legal eviction notices, served by the sheriff; ordering the tenants to vacate the houses by a stated date, and here followed one of the most remarkable incidents in connection with a strike in this or any other

country. Springhill at the time, may have had a population of from eight to twelve hundred. No notices of "Rooms to Let," appeared in any window. The body of the workers lived in Company houses. A number of the few shop-keepers dwelt above their stores. There were not six tenement-houses in the village. The Company must have concluded these facts were in their favor, but in this they were mistaken. The sheriff publicly announced that on the morning of a set day he would enforce the law. In the interval preceding this announcement the men's committee had been at work and had succeeded in securing accomodation, in store lofts, in kindly neighbor's houses, and in hastily remodelled barns for all of the Company's tenants capable of being removed without peril.⁶³

It was a dramatic gesture. Probably the company's decision to sell off its town lots and its prospects of thorough-going control over the community stemmed from this reversal in 1879, in which the company housing had failed to be a reliable weapon.

These two aspects of the decline of company housing in Springhill help explain the unprecedented housing boom in the early 1880s. The boom started in 1880, in the midst of an acute shortage of housing.⁶⁴ Robert Drummond, who had a material stake in this development, hailed the drive for working-class housing as a confirmation of the P.W.A.'s social philosophy. "The property 'boom' still continues," he wrote in 1881. "There have been more purchases of lots during the past week. It is a pleasing feature of the present time, that the working men are striving to possess little households of their own. The exhortations to thrift repeated weekly in the Union lodge meetings, are producing a satisfactory effect." It was, he noted, an indication of the virtues of the union's doctrine of "wise economy."⁶⁵ Drummond's self-serving view of the housing boom tells us much about the liberalism and notions of self-help which predominated the P.W.A., but they probably also capture a certain element of truth. This sudden expansion of housing

was a working-class declaration of independence. Houses were thrown up--it was observed that trees growing on Maccan Mountain in the morning, were the same evening standing in Springhill, the frame of a house⁶⁶--as miners gambled heavily on independence and on the coal economy. One social critic noted the number of merchants who by 1884 had lost money in bad debts, and went on to analyze the causes:

Had we not been so dreadfully stricken with the building fever during the past summer, we would be very much healthier now, financially. Every one had to have his new house. A man without a cent to his name, would run up a dwelling and shake the dust of the Company Rows off his feet with as much confidence as if he was the possessor of a moderate nest egg, whereas the same house would be the means of crippling him in money matters for years to come.⁶⁷

To shake the dust of the Company Rows off one's feet meant a hard struggle for financial security. Not all the homes were erected by the miners themselves. Capitalists erected tenement houses which complemented the trim cottages of the workers.⁶⁸ Even with all the activity, the demand for housing continued to grow throughout the 1880s, in response to the expansion of production. An acute housing shortage required that sub-standard dwellings be called into service. Even a blacksmith shop was sub-divided and the rear and upstairs occupied by a large family, according to a report in 1887.⁶⁹ This social revolution was seen as a major step in working-class advancement. One writer, who responded to the charge that the miners were courting insolvency by investing so heavily in housing, cited the 1879 strike as an example of what the miners would face if they did not secure independent accommodation. Moreover, the Company Rows were an insult to the men: "When one looks at the battered, unpainted, leaky barracks, in which the S.H. Co. house their workmen, and the roads between the same,

macadamized, generally, with broken dishes, preserve cans, and cow dung, one does not wonder at anyone's wishing to get clear of them."⁷⁰

There was a definite social purpose behind what was termed the "building craze" of the early 1830s.⁷¹

The pattern would be repeated in the early twentieth century.

The stimulus here was the arrival of some 300 or 400 miners from England and Scotland in 1904 and 1905. The coal company erected 21 double dwellings, and erected a large boarding house near the West Slope.⁷²

Over 140 houses were privately built in Springhill in 1903 and 1904, and of these one local merchant, Daniel Rogers, accounted for 30.⁷³

Although the company increased its housing stock in the twentieth century, it appears that the most important builders continued to be private contractors and the coal miners themselves. The tradition of collective roof-raising continued down through the twentieth century.⁷⁴

The pattern of minimal company housing is therefore not in doubt, but it is more difficult to weigh the consequences. It certainly appears to be true that some coal miners exchanged immediate dependence upon the company for ultimate dependence upon merchants, who were asked to carry a more extensive debt load. Beyond these initial consequences, the existence of independently-owned housing in Springhill had two rather contradictory effects. In the first place it gave the men independence from the company in times of industrial conflict. The threat of eviction was never enough to bring a strike to a halt. In the great strike of 1909-11, it appears that the miners' possession of their own homes was of decisive importance in allowing them to struggle as long as they did. Mackenzie King reported that the manager of the Springhill mines in 1911 remarked "that a great many of the

thousand men at Springhill who are out on strike own their own homes, and that this with the liberal assistance they have received from the United Mine Workers accounts for the reason why so many of them have remained in the town and not moved away."⁷⁵ A long strike in many American fields entailed setting up a rough camp in the woods, where women and children were exposed to the elements and to company men; here the women and children could stay in their own homes.

In 1909, the Herald noted that tenants were also protected from eviction by the property owners:

Several instances have been reported of property owners reducing the rents to one-half during the strike period, and in a few cases the tenants are given their houses free of rent till the strike is over. Mayor E.A. Potter was perhaps the first to lead off with this reduction to his tenants, as on resumption of work the arrears are deducted from the tenants wages. ⁷⁶

When the leaders of the company finally did evict its tenants, the policy gave them accomodation for their strikebreakers, but did not force the tenants to leave the community.

On the one hand, the fact of independent home ownership gave the miners independence. Yet the other side of this relationship was the strong impact of home ownership on the rootedness of the population. In a strange way, company housing gave one the independence to leave the community altogether; home ownership carried with it far less freedom to go. And this tendency was strengthened as the coal economy entered its crisis in the 1920s, because those who wanted to leave were left with the dilemma of selling their homes in a particularly soft market. Buying a home often entailed intensifying the dependence on the coal company by forcing the family to rely on the labour of its youngest members to help pay for the home. Being a homeowner in

Springhill meant tying one's future to the coal industry in a far more profound and durable way than living in a company house. Drummond's philosophy of self-improvement encompassed a strategy of embourgeoisement whereby individual workers, by thriftiness and sobriety, could better their condition. By a savage historical irony, however, the outcome of this strategy of independence and improvement was the intensification of dependence and the binding of a large population to the coalfield.

Company housing was accompanied, in the 'classic' mining towns, by the company store, where miners were forced into debt by the company as part of a general strategy of social control. Here again Springhill departs from the expected pattern. The company store was of negligible importance. What was crucial was the merchant community. David Frank has raised important questions about the 'two-class' model in Cape Breton, and it is all the more necessary to be sceptical about it when considering the Cumberland coalfields.⁷⁷ There was a middle class in Springhill and to a lesser extent in River Hebert and Joggins, a class of merchants and professionals falling between the company and the workers. Its size is not easily estimated. The 1881 Census manuscript lists 51 individuals as heads of families who were artisans (most probably self-employed), professionals or merchants. By 1892 Dun and Bradstreet were able to list 112 businesses in Springhill, including 19 general stores, 3 hotels, 1 'fish and sewing machines,' 3 physicians, 1 photographer, etc.⁷⁸ None of these businesses was large, but together they represented an interest group of considerable importance. Main Street of Springhill was a complete shopping district, providing most of the services a small town required.

The most essential services were for the miners. Granting credit

was a necessity in the coal mining town. Some shopkeepers attempted to sell on a cash basis, but strikes or interruptions in work would force them back to granting credit.⁷⁹ The process can be traced in the case of one individual miner, one John Malaly, who dealt with John Wilson, proprietor of a general store. Beginning on 10 October 1891 with a debt of \$.46, the account book of Malaly reveals him gradually accumulating a debt of \$103.99 by 16 November 1894, at which point the miner left town and his outstanding accounts.⁸⁰ There is a strong oral tradition in the coalfields of the self-sacrificing shopkeeper who kept the community going through strikes, often staying just one step ahead of bankruptcy himself. The question of the merchants sustaining the miners is not a simple one, because the miners claimed with equal justice that their custom was essential for the merchants. Small businessmen often came to Springhill in the expectation of making good money in a hurry. They crowded each other in offering many of the same services. Such general merchants as C.W. McLeod, Ferguson and Wilson, J.H. Johnson, John Murray, T.H. Howard & Co., A.E. Fraser, F.C. Faulds, Thomas Fraser, James Simpson and J.H. Hewson all offered the same huge range of goods, from crockery to kerosene.⁸¹ Springhill boasted two bakeries in the 1880s, a fish market, several boot and shoe stores, and in the 1890s would be served by a bookshop offering such immortal classics as William Harding's Dreyfus, the Prisoner of Devil's Island and Father Chiquy's Forty Years in the Church of Rome.⁸² It was an indication of Springhill's sense of itself that it provided a base for at least one newspaper in the 1890s, and often as many as three, and a further sign of the self-importance of the business class that a reader of these newspapers might well not realize that this

community was based on coal mining. The Springhill Advertiser even refers, at one point, to the infrequency of its coverage of the miners compared with its extensive examination of town affairs.⁸³

Here was a middle class that truly occupied a difficult position. During strikes everything would be at stake for the merchants. Since many of the aspiring businessmen who came to Springhill did so without much money behind them, a strike could easily end their careers. Springhill lost a soap factory and laundry as a direct consequence of the strike of 1890, and another merchant was forced to assign for the same reason.⁸⁴ It was a graphic illustration of the merchants' dependence upon the miners' custom. Probably this structural weakness explains the merchants' relatively weak internal organization. The organization of the Springhill Board of Trade in 1896 represented the first serious effort to organize the merchants into a cohesive body, but after two years of agitating for improved mail service, a better water supply and more adequate fire protection, the Board collapsed (along with many of its members) during the prolonged economic crisis of 1897 and 1898.⁸⁵ A second Board was constituted in 1908 by a "large and enthusiastic meeting of the professional and business men of Springhill," and lasted long enough to criticise the coal company for the excessive rates charged on its rail line. The merchants went so far as to demand a government takeover of the line.⁸⁶ They also advocated a programme of industrial diversification to reduce the town's reliance on coal. The Board vanished in 1910 and was resurrected in 1923.⁸⁷ Another indication of the size of the retail sector in Springhill is the appearance of an Early Closing Movement for store clerks in 1888.⁸⁸ Springhill, with its large working-class

population, provided an attractive market for merchants, and the town was periodically invaded by drummers, who were particularly visible in the aftermath of strikes. Such itinerants also eliminated the chance for local merchants to monopolize the miners' trade, as did the ability of miners to take their custom to Amherst.⁸⁹

Who had the upper hand in this situation? There can be little doubt that the coal miners did. One could cite evidence that goes the other way. When the question of fortnightly wages was debated in 1880, many vivid remarks were made about the curse of being on the merchants' books.⁹⁰ The miner/merchant relationship was explored with particular intensity in 1888, in the course of a debate between one miner and a Springhill merchant. Ostensibly this also shows the power of the merchant over the miner. In this case, the merchant took legal action against an English immigrant who had arrived in Springhill in 1887.

Let us let the miner tell the story:

Almost two months later I sent for my wife and child, and furnished two rooms, the most of the goods being obtained on credit from a man who seemed very anxious to supply me, stating that I need not be in any hurry paying for them. I had not been long dealing with him until I found his style of doing business peculiar and not at all beneficial to me. I owed him the sum of \$50.00. Owing to sickness and other domestic troubles I was unable to pay the amount in full, but continued to pay at the rate of \$4.00 per month until I had reduced the amount to \$11.00. A demand was made for immediate payment, and I responded by paying \$5.00, and offered a note of hand for the remaining \$6.00, but no such terms would suit. Shylock wanted his pound of flesh. I explained my circumstances and felt satisfied that they would have the desired effect, as my creditor was a communicant, a strict adherent, but his christianity could not be penetrated. My wife had just given birth to a baby which, like herself, was dangerously ill, and another sick baby in the cradle with no aid or assistance only such as I could render, (we being strangers and sojourners far from home,) when to my great surprise a constable entered with an execution, arrested me and had me en route for Amherst jail.

A friend gave him the necessary security to secure his release, but the miner had been given a harsh impression of the country.⁹¹ The merchant followed with a story of his own. The miner had been impudent. No payments had been made for a long time. "In fact," the merchant complained, "instead of payments being made, abuse was so freely given that at last it became insufferable and led to the steps that were taken for recovery of what was due. If one man owes another a bill and abuses him instead of making payments, he can only expect one result to follow."⁹² The last word went to another defender of the miner, who noted the precarious lives of the miners of Springhill.

Any miner working in Spring Hill last winter knows that we were merely earning enough to pay our board. After the man was injured in the pit he had, for two months, to live on \$2.60 per week, and even then he was harassed and goaded by my "John A. Coombe," and in order to appease his hungry savings made payments from his weekly pittance--merely sufficient to keep body and soul together. "Observer" makes an allusion to the action of the merchant in taking out an execution against a customer--who was endeavoring, as far as in his power lay, to deal squarely--for the paltry sum of \$6, while his wife was sick in bed with two sick babies, unable to do anything for himself or them. No one with a spark of charity in his breast would have been guilty of such an unfeeling act. 93

What does this affair of the \$6.00 debt--actually, \$6.54, as the grasping merchant pointed out!--prove about the relationship between the merchants and miners? It proves that merchants could take harsh measures to collect debts, but at the price of being denounced as monsters in the workers' newspaper. We do not know how this affair ultimately ended, but we may guess that the merchant thought long and hard before taking another miner to Amherst to collect a debt. Given the intensity of feeling aroused by this case, it seems entirely likely that the merchant's business suffered as a result of his zeal.

The coal miners did not restrict their pressure on the merchants to occasional denunciations of individuals in their newspaper.

There is much more evidence of the imbalance in this relationship than that. The Trades Journal, the organ of the P.W.A., urged its members to deal only with the wide assortment of shops advertising in its columns.⁹⁴ In the 1920s the U.M.W.'s minute books contain acid criticisms of one prominent Springhill merchant who was thought to be lax in his contributions to the relief of the unemployed.⁹⁵

Even more persuasive is the evidence provided by the merchants' position in the many Springhill strikes. In 1895, Robert Drummond told the Grand Council of the P.W.A. of the coal miners' attempts to win the support of the merchants. "Some months ago when a serious difference had arisen between the management of the Spring Hill Collieries and the workmen, the latter, wise as serpents, if not at all times harmless as doves, called a meeting of the merchants and related the grievances, and what they intended to contend for. The upshot of the meeting was an assurance from the merchants of all reasonable support."⁹⁶

In 1887 Pioneer Lodge thanked the merchants of Springhill for their generous contributions to the strike relief fund set up for Pictou County miners.⁹⁷ In the great 1909-1911 strike, the coal miners were

very anxious to maintain the support of the merchants. They called a conference with them on the technicalities of distributing relief money from the union (which was paid directly to the merchants).⁹⁸

For their part, the merchants made every effort to please the strikers.

"The merchants have entered into the spirit of this industrial movement very commendably," noted the pro-labour commentator in the Herald.

"They have joined in a mutual discussion as to ways and means whereby

both merchants and the union can work together for the best results. Several dry goods merchants have quoted considerable reductions in prices during the strike.⁹⁹ No attempts would be made, the correspondent added, to curtail credit.

The merchants formed a captive group in Springhill. It would be wrong to overlook less 'structural' reasons for their meek submission to working-class demands. The merchants were often drawn from the population of coal miners and shared their outlook. The accident which affected Joe McDonald of Springhill, who was badly injured about the back by a fall of coal, was not unusual, except for MacDonald's occupation—he was the town butcher, evidently supplementing his income by a stint in the mines.¹⁰⁰ But one suspects that apart from such individuals, the merchants would have slowly worked out a distinctive business ideology which corresponded to their social position, had it not been for the continual pressure of the coal miners. It is a startling indication of their dependence that even in the depths of strikes that were undermining their financial position, the merchants uttered very few words of criticism concerning the coal miners. Most of their sharp denunciations were reserved for the coal company.

Much the same could be said of other middle-class groups in Springhill. The town's doctors, for example, represented a group undergoing a very concerted campaign of professionalization, as Colin Howell has demonstrated.¹⁰¹ Cumberland County doctors were fully in accord with this movement, as indicated by the Cumberland Medical Association.¹⁰² But however much they may have desired the stature and dignity of full professionals, the doctors in Springhill were placed in a position which made them servants of the coal miners.

The mine workers hired the doctors themselves and sustained them through a check-off from their wages. In 1888 there were three recognised colliery doctors. William Hall, the mine manager, described the process of selection: the men "hold a public meeting in one of the halls and they agree unanimously upon a man."¹⁰³ Just how this unanimity was obtained is something of a mystery. W.S. Fielding thought that a prospective colliery doctor might try applying to Mr. A.E. Fraser, "our leading Liberal friend at Springhill Mines, and a gentleman of large influence among the miners."¹⁰⁴ It was a lucrative position. A correspondent in the Amherst Evening Press noted that Springhill had one-fifth the doctors of Amherst, while it had slightly more inhabitants.¹⁰⁵ Under the system, the single miner contributed 35c per month, and the married employee 45c per month; the colliery doctors split the total, which amounted to about \$2400 per year. Their earnings were directly affected by the labour market. In the dull times of the mid-1890s their incomes had fallen from \$200 to \$160 per month.¹⁰⁶

The doctors were dependent upon the miners for more than their incomes. The coal miners demanded the right to govern how their practices were conducted. A major controversy erupted in Springhill in 1896 over the doctors' insistence on the right to restrict patients transferring from one doctor to another. The newspaper noted that "The men pay the piper and there ought to be no difficulty in immediately securing any reasonable request regarding a matter which is pre-eminently their own business."¹⁰⁷ This seems to have been the majority viewpoint. The coal miners also felt entitled to remark upon the way doctors treated them. Delegates to the Grand Council of the P.W.A. criticised the use of medical assistants, and one Glace Bay delegate

wanted to know why, "If the best skill can be had...should greenhorns be tolerated?"¹⁰⁸ The coal miners unilaterally reduced the doctors' pay in 1909, provoking the local newspaper to wonder if the doctors, like the coal miners, would respond with a strike.¹⁰⁹

The same theme is to be found in the 1920s. The coal miners expressed disapproval of the way the doctors handled the prescription of liquor for medicinal purposes--and the doctor accommodated their interests by charging a special rate for the medicinal liquor required by the miners.¹¹⁰ The local demanded dismissal of a doctor who had questioned the right to compensation of a worker who had suffered from a wrist injury but not followed the doctor's advice in his recovery.¹¹¹ The doctors could be expected to answer to the trade union about their treatment of coal miners and their wives.¹¹²

We do not want to exaggerate the situation. So far as the record allows us to judge, the miners never fired their doctors; although they threatened to. Nor did they regularly sit in judgment on questions of medical treatment. But the evidence confirms the unusual degree of power exercised by the workers and the ambiguous situation of the local middle class. Where else were workers able to wield power over doctors, even in this incomplete and hesitant manner?

The religious and voluntary institutions of Springhill undermine any view of the coal-mining community as an isolated hamlet. In 1911 80% of the community was Protestant and 20% Catholic; the proportions in 1931 were 84% and 16% respectively. No one Protestant denomination claimed a majority; the largest was the Presbyterian in 1911, which had 25% of the population, and the United Church in 1931, with 31%.¹¹³ Without entering into the minutiae of congregational history, one may

remark that the outstanding features of the church history of Springhill were the success of the established churches and the stability of the town's denominational structure. In the far different environment of the Appalachian coalfields, social scientists have noted a deeply-rooted tendency to fundamentalist religion, which they associate with the isolation of the coalfields and the pressing dangers of coal-mining life.¹¹⁴ In the British coalfields the coal miners provided various Methodist sects with much of their support.¹¹⁵ The pattern is not the same in Springhill. The town in 1911 departed only in details from the percentages recorded for Cumberland County as a whole. There were more Anglicans in Springhill, for example (20% of the population), than in the average Cumberland County community, and fewer Baptists (13% of the population, as opposed to 23% for the county as a whole). Springhill was a town in which Anglicans, Presbyterians and Catholics enjoyed more support than elsewhere in Cumberland County, while the Baptists and Methodists enjoyed less. The only significant denominational innovation was the Salvation Army, founded in the community with the customary excitement and hostility in the 1880s, and a securely established church in 1931 claiming 2% of the population.

With slight variations, all the major denominations followed the same pattern. First, in the period 1850-1873, meetings were held in local homes. Second, in the 1870s, the first churches were established at Miller Corner, the site of the first community. Third, the churches moved to the north when it became clear where the focus of the town was to be. Finally, much larger churches were erected from 1880 to 1900 to accommodate the rapidly increasing number of worshippers. Throughout this process the coal company supported the growth of churches,

by granting large town lots to the Presbyterians and free stone to the Catholics. The churches were also supported by a deduction from the wages in the company office, arranged by the ministers submitting lists of their members to the company. 116

Religion was profoundly connected with the economic life of the community. Many of the key figures in the coal company were Presbyterians. It was thought that one good way of advancing oneself in the company was to support that particular church. A letter in the Trades Journal hinted at this (without naming names):

A certain young man met a friend and was lamenting to him about not getting work: "Look here," says his friend, "I will put you on a plan to get work;--but remember it is a secret. There is a certain individual in town, who, if you promise to pay 35 cents a month to certain denomination, will give you a line to the management that will get you work." But the ungrateful fellow said that he would sooner travel the shoes off his feet. 117

The Presbyterians came the closest to being the 'company church.'

When J.R. Gowans was the head of the mines, he would enter the church with a flourish; the service would not begin before his entry, and many Springhillers still recall the size of his offerings and the beautiful silk dresses worn by his wife. 118 One might also connect this close link with the company to the stern measures taken by the Presbyterians to root out moral indiscipline. The Court of Session of the church kept a watchful eye on the faithful. After one woman made a donation to the church of \$100, the Court passed the following resolution: "Because Mrs. M. has been in the liquor traffic for years, a business which the law of God and the law of Man has stamped against the best interests of Humanity, the interest which we as a Church seek to promote, be it resolved that this Session request the Trustees to return

to Mrs. M. the one hundred dollars that she has donated to St. Andrew's Church." The congregation passed the resolution unanimously, and to intensify the ostracism of Mrs. M., asked the secretary to have the decision publicised in the newspaper.¹¹⁹ Within the Presbyterian Church one found a court of social discipline, wielding the awesome power of excommunication. Something of the same moral determination is evidenced by the Methodists.¹²⁰ Of Henry Swift, the manager of the mines whose letters form the major source of our knowledge of the employers' mentality, the local historian of the Presbyterian Church remarks: "He took a deep interest in the welfare of the men over whom he was placed overseer. He was concerned about their spiritual life, and it has been said that he was not averse to using his cane on any workman he heard using profanity."¹²¹ Swift was Secretary of the Presbyterian congregation from 1884 to 1891. It was an interesting aspect of Presbyterianism that the pews in the church were purchased until 1908, with the leading families of Springhill keeping the same pews from year to year.

The power and authority of the Church, particularly the Presbyterian Church, was connected with the power of the mine management. This social power was intensified as the Church moved into more and more spheres of social activity. The Boys' Brigade of the Presbyterians provided an early prototype of the Boy Scouts, inculcating in its members the virtues of manly sportsmanship. It was aimed explicitly at the pit boys.¹²² The Young Men Christian's Association provided an ideology as well as recreation in the early twentieth century. The combined Protestant congregations could muster as many as a thousand people for the annual Sunday School picnic.¹²³

Yet just as we are about to conclude that the churches represented 'agents of social control' in the coalfields, we confront evidence which reveals this conclusion to be at best an over-simplification.

There is first the question of denominational pluralism. Perhaps the most important fact about the denominational structure of Springhill was that no one church had anything like a hegemonic presence. There is nothing in Springhill that can be compared with the Roman Catholic Church in Cape Breton or the Presbyterian Church in Pictou County.

Secondly, the various congregations assumed contrasting social positions.

One of the most surprising developments in Springhill was the intense interest taken by the Church of England in social questions. The Anglicans were far in advance of the other denominations in their social programme, which embodied a kind of Social Gospel well before such doctrines became popular. Many of the ideas espoused by the Rev. W.C. Wilson, the leader in this movement, stemmed from his background in England. He was

instrumental in founding the hospital, a number of charities, and a kindergarten.¹²⁴ Nor was his social activity confined to the safe realm of charity work. He was a sharp critic of company stores, and was instrumental in having the church as a whole take a stand on this question.¹²⁵ In the course of the miners' strike in 1890, Wilson

wrote to church authorities as follows:

Next Monday begins the sixth week of this unfortunate strike in Springhill, and six weeks without work or wages mean suffering for many people. I plead now for the widows and orphans of our congregation, not for the men. I believe the men are asking for justice, but they are strong and can bear. It is different with widows and orphans. Hard, pinching struggle is their lot at the best, and now they need the necessities of life sadly enough. Will the church help their brethren? ¹²⁶

The appeal was answered with an outpouring of support for the miners'

cause.

The Salvation Army would also become known for helping strikers maintain themselves during the 1920s. There is some evidence that the members of the Army went beyond such support work in the course of the strike of 1909-1911. In the depths of the strike we find this report:

There is considerable comment over the action of the Salvation Army officer here at a meeting in the barracks recently. At the forenoon service, a man, who had been a striker, but who had returned to work, was present and was asked to retire. In the afternoon two of such men were similarly treated by the officer in charge. No "scab" appeared to be wanted in the meeting. Some people are saying that a "scab" needs the benefits of salvation and should have an opportunity for conversion as well as any other sinner, but there seems to be no room for repentance with things as they are to-day in Springhill. 127

Such explicit militancy within the churches was not common. But it was generally true that the churches could not stand apart from the social struggles within the town. The only strong sermon condemning the great strike of 1909-1911 was delivered by the Rev. R.W. Norwood, rector of All Saints Anglican Church. His sermon began with a strong statement of his conviction that the cause of labour was just, but proceeded to warn the workers of listening to false prophets, the revolutionary socialists who preached materialism and class warfare.

"The rights of man have been thundered in our ears by itinerant agitators of late," he said, "but we hear very little about the rights of Him who is said to have created this world and all that are therein.

HAS HE NO RIGHTS?"¹²⁸ It was a sermon which conspicuously took no overt position on the strike, but attacked the socialist beliefs of those leading it. Even this sermon suggests that the church in

Springhill had to be a great deal more than an agent of social control. The concessions Norwood was forced to make to the claims of evolutionary socialism suggested that he could not go too far in distancing his church from the workingmen. Even as it was, his sermon was roundly denounced in the press.¹²⁹ Perhaps the most revealing aspect of Norwood's address was that it was his valedictory sermon--the candid words of a minister who could afford to burn his bridges. Other ministers were more circumspect. John M-C. Wilson, who shared with Norwood a fear that labour might follow extreme socialists and likewise ministered at All Saint's Church, wrote The Labour Movement and the Church with the intention of uniting Christianity with the labour movement.¹³⁰

Although they were not prone to the types of religious revivalism noted in other coalfields, the Springhill miners gave every sign of being steeped in religious imagery. One encounters, even today, very little scepticism about the truth of Christianity, even if this widely-shared religious faith does not always take the form of church attendance. The worries that Norwood expressed in 1910 about the miners' church attendance were also to be found in 1895.¹³¹ Yet Norwood was probably wrong in thinking that the miners were becoming disenchanted with religion. When a member of Pioneer Lodge of the P.W.A. sought to defend his union's strike for the closed shop in April, 1907, he fell back instinctively upon biblical imagery. "The capitalist may think he has a tool in the laboring man and nothing more, that is bound to bring him in great wealth, but let him remember also that laboring man) has a soul that is superior to those who disdain to earn their bread by the sweat of their brow, the curse that God bestowed upon the earth for man's profit after he fell gives it to him and which the birth and

life of the Carpenter of Nazareth emphasized."¹³² The coal miners would return to this religious imagery again and again. The unwise attack on religion mounted by certain socialists helped to undermine the socialist cause in Springhill, and is recalled to this day as a major factor in their downfall.¹³³

Religious sectarianism was an intermittent phenomenon in Springhill. At the time of Louis Riel's execution, a "trifling excitement" was reported in Springhill, and a local shopkeeper set several candles in his window to honour the rebel.¹³⁴ Even the normally non-sectarian Trades Journal had to make room for some fierce polemics on the Jesuit Estates Question.¹³⁵ The most dramatic battles took place not between Catholics and Protestants, however, but between the Salvation Army and everyone else. The Salvation Army began inauspiciously by issuing a pamphlet which portrayed the moral condition of Springhill in the darkest possible colours.¹³⁶ So hostile was Springhill's reception to the Army that the company began a policy of dismissing workers who interfered with the Army on the streets. This policy had to be discontinued because, as the Trades Journal put it, "at the rate the thing was going on the bosses would soon be in a majority."¹³⁷

There were musical duels between the Springhill band and the Salvation Army band, and more serious attacks on the Army in 1889, when its band was pelted with potatoes by a large crowd.¹³⁸ The Salvation Army came into conflict with the Orange Order by scheduling a big dinner on July 12th, in conflict with the Orange festivities.¹³⁹

However exciting such conflicts may have been at the time, it is difficult to see in them a serious religious division in the town.

These divisions did exist. Catholics and Protestants faced constraints in marrying and in attending funerals, although individuals often circumvented the letter of the law. But it would be more accurate to emphasize the religious tranquillity of Springhill and its orderly denominational growth. The coal miners were proud of their churches, which figured so centrally in the regular funerals of a mining town and as focal points of social life. An amusing episode revealed the depth of their attachment. In 1888 an unknown organization put out a circular letter soliciting aid for the building of a church for the miners of Springhill. The original pamphlet does not exist, but it evidently appealed for aid in much the same manner as missionaries in the South Seas. The reaction was anything but positive. Said one writer in the Trades Journal,

I believe it is nothing but a gigantic fraud perpetrated on the public outside of S.H. I know it is a wanton and humiliating insult to the workingmen of Spring Hill, let the perpetrators be who they will. Why do I think so? Simply because the miners of Spring Hill, gracious knows, have churches enough for all ordinary purposes. Take the different denominations and see what church accommodation they have got. The Presbyterians have a church capable of seating eight hundred people; erected at a cost of eight thousand dollars. This church to-day is, comparatively speaking, free of debt, and was built exclusively by the miners of S.H. The Methodists own a church; the seating capacity of which is equal to the Presbyterians. Built also by the S.H. miners. [The writer proceeds to the Baptists and the Roman Catholics, and then concludes:] I don't think any man with any honesty of purpose would appeal for outside aid to build any more, and for a class of men owning the same amount of church property as does [sic] the miners of S.H. 140

The voice of working-class pride! One notes with interest the emphasis on the miners as the builders of churches, the miners as their main support. It was a kind of occupational pride that stirred in this

defence of the honour of Springhill; even if it took the form of a defence of the established churches.

Rather than revealing a distinctive attitude towards religion in Springhill, this evidence suggests that the coal miners differed only in detail from the general provincial pattern. Perhaps the most significant difference was the very early growth of the social gospel in Springhill, which emerged as something of a model for Christian activists. Two conclusions may be drawn: the town was fairly conventional in its religious life and consequently not isolated in this crucial sphere, and it was very quickly organized along stable denominational lines, so that the 'frontier' phase of unstable or itinerant churches was not of any lasting importance.

One may make many of the same points about non-religious voluntary associations and fraternal orders. Cumberland County was a well-organized county. Freemasonry began in earnest in 1822; Laurie Lodge in Springhill was established as early as 1874 via the lodge at River Philip.¹⁴¹ The Oddfellows, Sons of England, Good Templars, and the Knights of Pythias were all active in Springhill, and connected the town population with members across the county. The Orange Order may serve as an illustration of this general pattern. Wellington Orange Lodge, Springhill's first fraternal order, was organized in November, 1873, and a second lodge, Lord Nelson, was organized in 1891. Springhill was, like Westville, a thoroughly Orange town. It was honoured to be the site of many provincial Orange activities. The Grand Orange Lodge of Nova Scotia held its annual sessions in the town in 1885,¹⁴² and in 1888 it was said that the Orangemen had "monopolized the rest of the inhabitants for the past week" with parades, field sports,

dancing and eloquent anti-Catholic addresses.¹⁴³ The Glorious Twelfth was an occasion of great importance. In 1898 the Grand Lodge procession for the province came to Springhill. A huge crowd of two thousand arrived in the town, from Amherst, Truro and New Glasgow. The splendour of the day, with holiday atmosphere and colourful flags, was capped when the Springhill Maple Leafs won the baseball championship of Nova Scotia.¹⁴⁴

The Orange Order is commonly seen as a vital part of the Canadian working-class world, and certainly the coal miners demonstrate how important it was to their own lives. Yet Orangeism in Springhill has none of the fiery qualities of the same movement in industrial Ontario. There was no tradition of religious rioting. Every effort was made to avoid pushing the largely ritualistic denunciation of Catholics to the point of an actual clash. In 1889 a Springhill Orangeman wrote to the Trades Journal to complain that the union was taking too active a role in politics, a course which might "disturb the really good feeling hitherto existing between the Orange and Catholic citizens of this town."

The Springhill News and Advertiser made a point of carrying stories which demonstrated the good relations between Orangemen and Catholics, such as one which reported that Orangemen showed great respect for a Catholic funeral passing by.¹⁴⁵ Catholics attended the Orange picnics and played in the Orange band in its trips away from Springhill.¹⁴⁶

A Catholic man "called off" at Orange dances in the twentieth century.¹⁴⁷

A jocular tradition existed between the Orangemen and the Catholics that confirms Gregory S. Kealey's hypothesis that the Order may well have helped workers come to terms with religious division.¹⁴⁸ One Catholic remembers that the Orange Band would tease his grandmother,

a first cousin of the Archbishop of Halifax and a woman renowned for her fiery temper. The Band, on passing her house, would strike up the "Protestant Boys" just to see what sort of reaction they could get out of her. "And you know," he concludes, "the following afternoon, they'd be down to get her silverware and dishes for their time here."¹⁴⁹ It was a symbol of the coexistence of the two major religious communities, paradoxically inserted within an event that ostensibly dramatized the gulf between them. This ambivalence recalls the same movement in Ontario. But Orangeism in Springhill cannot be tied down to a political force or even to the town itself; it was an amorphous movement, which belonged as much to the countryside as to the workers in the town. It does not appear to have acquired a class connotation.¹⁵⁰

There is a contrast between the early and all-pervasive hold of the fraternal orders and the more hesitant growth of institutions providing entertainment and recreation. This contrast is partly to be explained by the assumption that such activities belonged to the church, a belief that was not peculiar to Springhill. However, there also appears to be more reason here to invoke the spectre of company control. The absence of stable institutions providing entertainment and recreation in the period 1880-1900 is largely attributable to an intensive conflict within the town concerning appropriate forms of social life. The company, and also the union, placed emphasis on those institutions which would consolidate a new and organized pattern; many coal miners clung tenaciously to older ways of enjoying themselves. This conflict was never completely resolved. Even today one encounters different memories and perceptions of appropriate conduct, depending on whether one talks to a miner who consumed rum at the hotel every night or to a Methodist

whose life revolved around the church. But a resolution of some kind seems to have emerged c.1900 which gave the upper hand to the forces of respectable entertainment. Finally, after the war, spectator sports gained a new popularity and attained enormous symbolic importance for the community as a whole. One might well debate the precise periodization of these shifts, but the underlying pattern of increasing organization and systematization cannot be doubted.

It is the role of the company in this movement towards rational recreation that raises difficult questions. There can be no doubt that the company was concerned to promote, through recreational activities, the qualities of discipline and self-control that it thought useful in the workplace. The company suspended a worker in 1891 for being a participant in a prize fight, although the union compelled it to reinstate him.¹⁵¹ R.G. Leckie of the company was particularly anxious to "elevate" his workmen. He arranged with Pioneer Lodge of the P.W.A. to build a reading room for the miners. The union committee left the meeting on this question "with the impression that he was a perfect gentleman," to quote the words of the lodge secretary.¹⁵² Not only was the company to bear a portion of the cost of the room, but the janitor was to be supplied with free coal.¹⁵³ The company, in the person of J.R. Cowans in 1898, also bestowed its patronage upon the Maple Leaf Baseball Club, and Cowans was thanked "for the very gentlemanly way in which he helped them out..."¹⁵⁴ There was a coercive as well as a gentle aspect to this involvement. In 1887, the company, in a rare exercise of its power over the railway, refused permission to a circus to come to the town from Springhill Junction, "the reason given being that the coming of the Circus would throw the pit idle

for a day."¹⁵⁵

In the period 1880-1900 the goal of various managers was the preservation of order and decorum in the town. The punishment of employees who disturbed the Salvation Army had its justification here. One must remember that the police had a tiny presence in the town, and the company's property could easily have been damaged in any serious disturbance. There were material as well as symbolic reasons for the company to be interested in the leisure activities of its workers.

The most aggressive intervention of the company took place in the field of temperance. The rule of the company was, "any one off two days in succession through drink will be discharged, and any one seen drunk on Sunday gets a 'ticket-of-leave.'"¹⁵⁶ The clergymen of Springhill visited R.G. Leckie, the company manager, in 1885 with a dual purpose: to solicit free coal for their churches, and to press him to take steps to stop the liquor traffic. Leckie declared he would not permit any rum-seller in Springhill to work for the company. The clergymen then handed him a list of rum-sellers, and Leckie posted a notice saying that as of 19 January 1885 any workman who sold liquor could consider himself discharged.¹⁵⁷ Leckie was an active supporter of the formal temperance movement, contributing money as well as his moral support to the cause.¹⁵⁸ But the most dramatic impact he had on the movement was through the policy of dismissal for drunkenness. Fourteen men were discharged in December 1890 for this reason.¹⁵⁹

We do not have to push the evidence to see, in these various company policies, a coherent strategy of reforming the habits and activities of the men. But there are real difficulties in seeing this programme of moral reform as a full-realized strategy of bourgeois social domination.

Two difficulties in particular stand against this interpretation: the convergence of the interests of the trade union and of the company, and the solid evidence that old habits of drinking and rough recreation persisted despite the reformers' efforts.

There can certainly be no question where the sympathies of the Provincial Workmen's Association lay. Robert Drummond, in his capacity as a J.P., may be seen in the town demolishing the casks of a liquor-seller and sending their contents into the gutter.¹⁶⁰ Drummond was an activist in the Springhill Temperance Reform Club.¹⁶¹ Under Drummond, the P.W.A. secured provincial legislation forbidding the sale of liquor within one mile of a coal mine. (Had it ever been rigidly enforced the Springhill liquor trade would have been crushed).¹⁶²

The Trades Journal, the organ of the trade union, carried this arresting paragraph in 1884, which almost counselled violence against liquor-sellers:

...a Spring Hill correspondent sends us word that there are no fewer than twenty three rum holes, and gin mills in Spring Hill Mines. Spring Hill men cannot be the men they were of yore, or they would not allow this state of things to exist in their midst a day longer. The miners of Spring Hill are united for the removal of grievances. For the removal of grievances in connection with work or wages, we would be the very last to advocate anything having even a resemblance to force. But as for this evil which overlaps all other grievances, we almost could approve of the good and true men of S.Hill rising in their might, and, as they do at times out West, giving these law breakers, these robbers of men's wages and blighters of men's homes, twenty four hours notice to close down or open up a large track between them and S.HILL. 163

It was not merely rhetoric. There was a tradition of incendiarism in Springhill against drinking establishments, as Drummond must have known.¹⁶⁴ He was stopping just short of endorsing such direct action

himself. That such a spokesman for working-class respectability would write in this way suggests the depth of feeling aroused by questions of drink and temperance in Springhill.

The Trades Journal carried a diatribe against drunkenness in Springhill at least once a month. "Friends of sobriety in S.H. hope that at length the day is dawning when S.H. items to the Journal shall no longer consist of descriptions of acts of vandalism or accounts of the doings of Rogue's Corner or happy times at Fenwick," noted one correspondent, referring to two local drinking spots.¹⁶⁵ The Springhill column on 3 August 1887 contained three items aimed at the drink trade: a description of a detective breaking up a ring of whiskey makers who operated out of the woods, a denunciation of the bar rooms which seemed to proliferate in the absence of a functioning police authority, and a call for improved police services to meet the problem of "drinking and disorder."¹⁶⁶

Great emphasis was placed on securing the discharge of drunken workmen, and some went so far as to call for the discharge of men for being drunk on Sunday. "The Sunday after last pay day," noted one disgusted correspondent, "drunks were very plentiful. Probably the reason is due to the fact that there has been no further discharging for Sunday drunkenness.

The work is too brisk at present to discharge for such an offence.

The colliery managers' code of morality is very peculiar, and peculiar to themselves."¹⁶⁷ Criticisms of the discharge policy related not to its harshness but to the consistency with which it was applied.

It was considered absurd to discharge workmen when their superiors did not set a better example.¹⁶⁸ Another critic of the company's policy detected favouritism in the discharges.

A short time ago the manager discharged some men who were engaged in the Rum business. Among these was one

who had been attending a bar for a friend for a couple of days. Two of the discharged men have been given their work again, one a person engaged in the business for years, and the other who had run two mills. The small offender has not been re-employed. Our manager professes to be a friend of temperance, and he shows this by giving work to the greatest offenders against law and sobriety. 169

This criticism was aimed at the partiality with which the law was enforced, not the rule itself. The wives of coal miners were thought to be strong supporters of the union's policy. "I am afraid that most of your members look upon the union as just an institution to secure better wages for them," argued one letter from a miner's wife.

"But Mr. Editor, could I not point you out a large number of wives in S. Hill who would rather have their husbands earning one dollar per day, and sober all the time, than two dollars and them drunk half the time." ¹⁷⁰ Pioneer Lodge of the P.W.A. pushed the temperance crusade so far that the prosecutor under the Scott Act, empowered to bring charges against liquor-sellers, found himself in legal difficulties because he had pressed unfounded charges on the advice of the union. ¹⁷¹

The position of the P.W.A. doubtless reflects its generally liberal position on most social issues, a liberalism which closer analysis would easily connect with Presbyterian rationalism. But the policy would never have attained the importance it did had it not had a popular base of some significance. This popular agitation for temperance was closely linked with the realities of working-class life in the coalfields. In the very first recorded strike in Springhill in 1876 we discover the unorganized coal miners issuing a proclamation to the rumsellers "that they must close their bar-rooms until work is again resumed, giving as a reason that while unemployed many miners would spend their

means for liquor and [sic] leave their families to suffer,"¹⁷²

Controlling the supply of liquor was a major aim of the organizers of the great strike of 1909-1911. Coal miners organizing a strike knew that alcohol weakened discipline and undermined the workers' collective capacity to resist. One might also mention the practical damage a drunken and careless workman could do to a mine and those within it.

It is easy to find connections between the struggle against drink and the attack on other disreputable pleasures. Although we shall never be able to tabulate their numbers or even define their position precisely, many miners and others formed a disreputable class in Springhill in the 1880s and 1890s. Very likely the line was not firmly or precisely drawn, and this very ambiguity gave the struggle to eliminate the disrespectable element its real note of fear and alarm. The disreputable were not neatly segregated; they could be found within the same mine where one worked. The disreputable might include one's own children. It was an element of uncertainty which the forces of moral reform unceasingly emphasized.

The men and women who formed the disreputable community did not often have occasion to put pen to paper to explain themselves to the world. One liquor-seller did write to the Trades Journal to protest against the zealous attack against him mounted by Richard Bennett, Springhill's clerk of license. The liquor seller, Murdoch Henderson, noted that selling liquor helped him supplement his income at a time of poor health. He also described his boarding house as a quiet refuge where one might obtain ale, porter and hop beer. "I deny keeping a gambling house," he said with some indignation, "as I have only a

Cippi Board...." He attacked the chivalry and manliness of the clerk of license, who had barged into his home and frightened his poor wife in the raid. Bennett was unsympathetic. "Your correspondent would try to make the public who know no better, believe that his is a Model House when he says he never approved of Liquor among his family. But still, your correspondent believes in a gambling house, and has a Cippi Board running in full blast to entice the young and thoughtless, and if those who are in a position to know can be believed, it is also a house of Sunday drinking."¹⁷² Henderson, by attempting to justify his activities, had merely increased his chances of being prosecuted again.

From the beginning of mining to today, there was an important element in the community which viewed drinking as a natural right of a coal miner. One revealing aspect of Bennett's tangle with the unrepentant boarding-house keeper was the clerk's confession that he might not have the support of the community. "There can be only one opinion held; on that point, by the respectable portion of the community, and that, that the clerk did no more than his duty," wrote one of his supporters. "He may not, it is quite true, have had all the community to back him, but he had a sufficient number to give him support and courage, had he been thoroughly determined in his own mind."¹⁷⁴ On the question of a plebiscite for Prohibition in 1898, the Springhill News and Advertiser estimated that three-fourths of the people wanted prohibition, and those who did "comprise the best educated, most intelligent, and most respectable of our citizens."¹⁷⁵ Not much conclusive evidence can be drawn from the votes for prohibition candidates or from the evidence of temperance societies, although in

the one case one would argue that prohibition as a movement was insufficiently strong to alter fixed party loyalties, and from the other that the temperance movement had succeeded in finding a broad base in the community.

Those who sold liquor and consumed it maintained a discreet silence, for obvious reasons. Resistance was confined to incidental rowdyism

and practical jokes, such as the "heartless" prank pulled on the

Women's Christian Temperance Union in Springhill, which was wired

from Halifax to expect the appearance of a well-known lecturer;

after the women had flocked to Fraser's Hall and waited for an hour

and a half for the learned lecturer to make her appearance, it dawned

on them that they had been duped. "Certain parties in town are suspected,"

the story hinted darkly.¹⁷⁶ Perhaps they were the same parties who

were later to decorate the picket fence of the Methodist Church

with a colourful array of jackets from whiskey bottles.¹⁷⁷ When one

local manufacturer of spirits (who operated in the woods of the surrounding

area, ideally suited to such activities),¹⁷⁸ was arrested, a petition

was circulated in the town asking for his release, although it is not

known how many signed it.¹⁷⁹ Popular resistance to the arrest of local

men suggests an element of resistance to the enforcement of temperance

laws: after horse races on Thanksgiving in 1902, there was "considerable

drinking in Springhill," and a row ensued, with a man named Daniel

Thompson identified as a ring-leader. When the policeman moved in to

arrest Thompson, the crowd interfered, and the prisoner was beaten

over the head. The prisoner ended up with a bruised head and six

months in jail; two others were convicted of interfering with the

police.¹⁸⁰ In fact the record suggests a fairly deep-rooted tradition

of drinking, both as a way of marking the transition to manhood (at

the age of 14 and 15) and as a principal form of recreation.¹⁸¹

The tradition of the miner's pay day--followed by the notorious slack Monday--seems to have coexisted with coal mining since the beginning.

This popular tradition of drinking went hand-in-hand with other disreputable pleasures. Rogue's Corner was notorious as a drinking spot and a gathering place for the unruly. "The Devil's Kitchen has been moved down to the Store of W.E. Gilmore," reported the Trades Journal. "There were two fights on the first day of business. Rogue's Corner is the most vicious place in S.Hill. A person can go on any Sunday and get a shave, or his hair dressed, or his picture taken, or get drunk."¹⁸² Pay-day crowds gathered at the Corner for drinking, carousals and fights.¹⁸³ Rogue's Corner also acquired a reputation for prostitution, as we learn from its designation "red curtain corner" in January 1885;¹⁸⁴ but this problem was confronted with communal violence.

Between four and five o'clock on Sunday morning a crowd raided a disreputable house at 'Rogue's' corner, cleared out the proprietor, smashed the windows, removed the inmates, and horsewhipped a temporary lodger out the house and up the street to his boarding house. The inmates were given, on Monday, a few hours to clear out of Springhill.¹⁸⁵

This was not quite the end of the matter in Springhill, for three years later it was noted that "The proprietors of one of the most infamously notorious houses in the village have 'got-up-and-got,' and the large and respectable majority of the people are smiling contentedly at the riddance."¹⁸⁶ A conviction for maintaining a disorderly house was obtained against one boarding-house keeper in 1896.¹⁸⁷ After that, the question appears to have subsided. Such moral offences, if they continued, seem to have avoided the public eye.

Some moral critics were seriously alarmed by Springhill. "It is a fact, that our village for vulgarity, profanity, and unchastity, has the reputation of being without parallel in the county of Cumberland," one noted. "Conspicuous, and seeking the utmost notoriety, are rumshops, carroussals, balls, boxing and dancing-schools. And if young men and women, with others, will frequent those places of very doubtful character, where breasts are heated with strong drink, passions inflamed, reason and conscience debauched by the excitement and associations of the hour, need we marvel, if in connection with such comingling of the sexes, unmentionable sins should be perpetrated?"¹⁸⁸ There were other amusements which aroused alarm as well. When fire swept away a bowling alley in the town, the Trades Journal pronounced "Fire" to be a "great purifier" and claimed that "The women, more especially those who are mothers of boys, are heartily glad the place is burned down."¹⁸⁹ Gamblers did a good business in Springhill. From the descriptions which survive of them one gathers they were the archetypical confidence men of frontier legend. "Springhill is visited from time to time by a parcel of sharpers," one account reads, "some with wheels of fortune, others with lottery bags. Last pay a fellow took up a position at the corner of the Main St. selling a half ounce of soap for twenty-five cents. The inducement to buy was that some of the pieces of soap contained dollar bills. It is needless to say that the chances of securing a bill were very slim."¹⁹⁰ The attractions of the itinerant card sharps were so strong that the secretary of Pioneer Lodge of the P.W.A. wrote this resigned note in his minute book: "Pioneer Lodge opened in Regular form M^easter]W[orkman] in Chair Readings of Minutes was dispensed with as the Secy. and the most of the members

were absent, having to attend the performance of a Card Sharper and patent med's hack at rogues Corner."¹⁹¹ Handbills throughout the town in 1881 proclaimed the attractions of a "Wild Man Shooting Show."¹⁹²

A particular worry, for moral reformers, was the kind of social education received by the children. "The spirit of war permeates the breasts of the Spring Hill youths," it was claimed in 1885, a comment prompted by a battle between the pit boys and school boys that came into court.¹⁹³ Worries were expressed about the gangs who besieged local concerts. When a singing group called the Bairnsfeather Family gave a concert in Pioneer Hall, they were prevented from doing so by the noise and yelling going on outside. "Mr. Bairnsfeather went out and endeavored to pacify the mob, but was only greeted with fresh chorus of yells, stones were thrown at him, and at the same time he was struck a severe blow on the head with a large piece of wood; the consequence was the concert could not be gone on with, and Mr. Bairnsfeather has had to go away, suffering much pecuniary loss, and as you readers can imagine, carrying a very poor opinion of S.Hill with him."¹⁹⁴ Boys were paralyzed with drink on election day, and four were brought before the stipendiary magistrate in 1898 for attempting to hang one of their playmates.¹⁹⁵ There was a rising alarm about the morals of boys in Springhill.

It is legitimate to ask whether these tensions and divisions represented class cleavages in Springhill. Certainly no argument may be presented in a tone of certainty. It seems clearly impossible to posit a clear correspondence between social reform and the middle class. There was a conscious middle-class element to the demand for moral reform. The Springhill Advertiser portrayed a classic conflict between traditional workingmen's rights and property values when it

decried the problem of vandalism to the plate glass windows of the Main Street merchants, and also pointed out that the large number of men loafing near shops and properties in the business district were "much to the detriment of trade in the vicinity and to the destruction of property." Shoppers were impeded or insulted, and tobacco juice squirted in all directions. The Advertiser called upon the police to exert themselves to keep the "lawless loafing element" within "respectable and lawful bounds..."¹⁹⁶ It was a conflict between two perceptions of proper behaviour, that of the men who liked to loaf on the street corner and chew tobacco, and those of the Main Street merchants, worried about public decorum. Or we might cite the frequent dog-fights and cock-fights, and the equally frequent denunciations of them. Nor is it possible to overlook the union dances to commemorate the founding of the P.W.A., which took place outdoors on rough platforms, and whose ambience is captured in this description from the Amherst Evening Press:

The Master of Ceremonies was arrayed in a suit of black, with coat closely buttoned, to keep the heat out--for the day was hot. A pepper colored hat of the popular slouch style, hauled down over his ears, protected his ruddy dome of thought from the heat of the sun. He was not arrayed in white skids. His badge consisted of a scarf or handkerchief of varied colors, and from its appearance one might have been excused for mistaking it for the flag that Nelson nailed to the masthead of the "Victory." In appearance he was outside the ordinary run of humanity, being tall, though somewhat stooped. His nose was of the noble Roman variety; his mouth of that variety which works destruction in tobacco-chewing competitions; while his eyes, in the language of the poet, were like two full moons in the month of August.... It is not to be presumed that these dancers were professionals, and some of the spectators evidenced amusement when the master of ceremonies, after repeating his directions thus: "Up around the left side, down through the middle; take hold of this one--diddle, diddle, diddle!"--made his obeisance to the ladies, and suddenly caught his toe on

the edge of a plank and landed his Apollo-like form amid the spectators. Most people would have yielded to the temptation to laugh and so did we, but unfortunately, the "M.C.," not being in a happy state of mind, thought we should have acted differently, and having made his way to where we were, addressed us in the following mild language: "!!! ()))-----!!!-----d-----d", to the breathing of which soft prayer was answered "amen" and secured our first impression of the excellence and uniqueness of the master of the ceremonies-- which we shall not soon forget. 197.

It was a far cry from the elegant dances put on by the exclusive Springhill Club, whose dance in 1895 was described as "a very fashionable affair, none but the choicest of Springhill's society with a few friends of the membership invited." 198

There was, in the 1880s and 1890s, a Springhill that danced, a Springhill that turned out en masse for card sharps and gamblers, a Springhill that drank. At times one senses an atmosphere of carnival.

It is hard to say anything very definitive about sexual attitudes, although given the enthusiasm with which common-law marriages were denounced, it might reasonably be surmised that they were not unknown. 199

One may rely only on chance descriptions. But it does appear that ritual masquerades involving role reversals were visible indications of a popular tradition of theatrical display.

Out by the Herritt Road the other night I met a curious cavalcade. Evidently the party was masquerading. From the strut of some of them, dressed in female attire, I came to the conclusion that the pretended females were males. On making enquiries I found that three of your young blades took it into their heads to don their sweethearts robes and take a trip out to Cheap Jacks... But don't say bad boys, until you hear about the girls. Two of the high-toned girls promenaded the streets the other night in male attire. One of them appropriated a boarder's suit without even saying, 'by your leave.' Now I don't call this Pall Mall Gazette wickedness, but I do say it belongs not to the legitimate drama. 200

The charivari was a ritual which united the mining village with its rural environment, from the Joggins in the 1860s to Springhill in 1914, and might be considered a robust theatrical celebration of sexuality. 201

Robert Drummond, writing on the general problem, condemned the charivari unequivocally:

Just fancy a man and maid on the evening of their marriage, which should be one of the quietest, and quietly happiest of their lives, when they should be in fairy dream land and roving midst the flower beds of sentiment, revelling in the beautiful realm which fancy weaves; being bombarded by tin tea kettles, bake pans, old dinner horns, bone crackers and old horse pistols. 202

Boys were urged to give up the charivari, lest their moral sensibilities be blunted. The most flamboyant of the Springhill charivaris encompassed the firing of a cannon, which did considerable damage to the Presbyterian Church. 203 The charivari never attained in Springhill the stature it possessed in rural Nova Scotia, but its survival in early Springhill suggests that there was much of the countryside and its ways that lingered on in the town.

Most pay-days brought out the carnival spirit, the spirit of disorder and ritual fighting. One pay-day is described in glowing terms in the Trades Journal:

WHAT THE S.HILL FOLK SAY.--That the scenes on the streets last Saturday night were disgraceful; that the rowdies ruled; that the constable had his billy wrenched from him and kicked; that the rowdies will be brought to justice; that the P.C. should have broken his billy over their heads; that some of the rowdies will be discharged from the employ; that groggeries are springing up all around; that gambling is rampant; that the better class of citizens should rise in their wrath and exterminate the evils. 204

The better class rose to the challenge. Slowly and in many ways the rough ways of a newly-established community were made to yield

to the more disciplined demands of a settled town. The growth of institutions providing entertainment and recreation was an indication of this fundamental change in the mores of the society. It meant the replacement of spontaneity with order, carnival with discipline, noisy brawls with quiet meetings. Such a transformation could never be total. But the evidence suggests that the sharp divisions in the town in the 1880s gradually gave way to an ethos of calm and respectability at the turn of the century. How should this transition be viewed? One possible argument would emphasize the imposition of a bourgeois discipline upon an indigenous "working-class culture," and stress the narrow, middle-class outlook of the temperance movement and the other forces of reform. But this interpretation is too simplistic. It would tend to overlook the active role of the workers themselves in creating the new consensus. If it is necessary to argue in the problematical terms of "working-class culture," one might ask why mass support for temperance is less an aspect of this "culture" than the tavern or the street-corner? Perhaps a more balanced interpretation would view both the reformers and their opponents as having a working-class following, with the forces of temperance and respectability slowly gaining ground. As early as the 1876 strike, for example, the working-class movement demanded the suspension of liquor-selling. By the turn of the century the miners' leaders were even more convinced of the need for order and discipline. The arguments for temperance can be seen as rising organically out of the daily realities of working life, and their triumph as the emergence of a more disciplined and effective response to an industrial society. As Antonio Gramsci insisted, the workers needed the new discipline of an industrial society

to free themselves from their own weaknesses and attain the disciplined proletarian spontaneity of an effective movement. His analysis of these ambiguous phenomena would lead us to interpret the temperance movement, the drive for rational recreation, and the imposition of an ethos of order as steps which represented both the imposition of a new social discipline and the laying of a foundation for effective working-class resistance.²⁰⁵

Throughout the contested decades of the 1880s and 1890s many attempts were made to impose order upon the social life of Springhill. Attempts were made to reform popular taste by offering miners a chance of something better. The results were often discouraging. "The Rev. Mr. Clarke of Amherst, gave some capital Readings in the school house last Friday night," the Trades Journal noted, but added reprovingly: "The attendance was very limited. It is a great pity that when any intellectual treat is to be given, an audience cannot be had. Just intimate however, that the performer will give a dog dance, appear with an artificial ebony face, or distribute sticks of Candy, and the people come out in paying quantities."²⁰⁶ It was to become a familiar refrain. The newspaper noted the demise of the Y.M.C.A. for lack of interest, and in the next breath described the wonderful enthusiasm for dance halls.²⁰⁷ Pioneer Lodge sponsored a lecture series on "The Battle of Life," but this earnest talk (as well as one on Robert Burns) did not arouse much interest.²⁰⁸ R.G. Leckie's reading room was a thing of the past by 1888.²⁰⁹ The Temperance Reform Club, which relied upon a strategy of lectures and readings, withered from neglect.²¹⁰

In the late 1890s and early twentieth century a great change came over the town. In many respects recreation and entertainment,

once organized informally if at all, became the objects of an institutional discourse. The Springhill Tribune describes one night in the town in 1906.

Springhill is no sleepy town. It has, on occasions a decided strain of strenuosity; for instance last Monday evening the Evangelist had a full meeting; the enlarged Salvation Army Band had a great crowd around the post office; the Sons of England band had about 300 people listening to its fine music on Main Street; "East Lynne" drew a bumper house at the Academy of Music; the Robert Burns concert attracted a big audience at the Parish House; a large and merry party covered the ice at the skating rink; the sewing society which meets at Mrs Henry Brown's was in full swing; the photographic saloon was crowded with bottles and boozers; the Rebecca Lodge was in session; S. Fraser's public reading room was filled with town philosophers settling the affairs of Springhill and affairs of all the other nations. There must have been fully two thousand of the population on the move that evening. 211

True enough, the "boozers" were still there, but there were so many additional activities. There was a great demand for entertainment and recreation. When the new opera house was opened in 1903, it was immediately found to be too small to meet the demand: the builders cut it in half and inserted an extra thirty feet. 212 Lecturers no longer were disappointed by poor attendance; large audiences came out to hear the Rev. R.W. Norwood deliver intriguing "psychological addresses" or to hear Keir Hardie deliver somewhat different talks. 213 It would serve no useful purpose to enter into the history of the many clubs which arose in Springhill in this period; it was a veritable age of clubs, ranging from the Octette Musical Club for singers to the Twentieth Century Club for progressive middle-class men. Associations that had once eked out an uncertain existence, such as the Y.M.C.A., now acquired a real sense of permanence. 214

In sports we sense a dramatic change. It was true that in the 1880s the miners had organized sports events. Foot races, for example, could involve as much as \$100.²¹⁵ "Scottish Sports" held in Springhill in 1883 pitted a Springhill favourite against a runner from Westville-- the perpetual rival of Springhill in the sporting world.²¹⁶ We also find cricket games between Springhill and Westville, and the cricket club was reprimanded in 1888 by the Trades Journal for drawing trade unionists away from P.W.A. meetings.²¹⁷ But when all is said and done, the list is not impressive. Most of these sporting events were ad hoc. But in the 1890s and early twentieth century the level of organization changed dramatically. The Old Orange Hall on Mechanic Street, home of an informal baseball team called the "Rinky nine," found itself in 1896 the headquarters of the "Starlight Social and Athletic Club." It was part of a wider pattern. In the 1890s Springhill converted to baseball, and became a town of sandlots. As the local newspaper put it, "The Base Ball craze has struck Springhill. There are about 3 teams at Miller's Corner ranging from 6 years of age to 60, also 2 teams on the Herritt Road and 2 or 3 in town."²¹⁸

The company built the Victoria Driving Park and made it one of the best race-tracks in the Maritimes. It was a move which reflected the pseudo-aristocratic tastes of J.R. Cowans, whose love of horse-flesh was mentioned even in the shortest biographies,²¹⁹ but it was also a move which gave the company a presence in the community as a whole. The horse races were extremely popular. They were so popular that men would absent themselves from work. In 1907 Cowans announced he would allow the races to proceed only on condition that the workers

conducted themselves properly. If the miners worked steadily until 12 noon on Saturday, the races would come off without incident; undue absenteeism would cause their cancellation.²²⁰ When the level of industrial conflict reached unprecedented heights, Cowans announced he was going to shut down his park. In explaining his decision, Cowans argued that his passion for horse racing had been hauled into the disputes "and that there was no alternative but to cut them out and further would have the public believe that he took up this horse racing passtime at the men's request and carried it on for their especial enjoyment." The P.W.A. expressed its public astonishment at the "childish expressions" of Cowans.²²¹ It was a graphic and even crude demonstration of the connection between industrial conflict and leisure activities, both seemingly responsive to the whims of the Cumberland Railway and Coal Company.

One has a sense of a public hungry for organized spectacles. Over 1,500 people attended the horse races in Springhill in 1900.²²² There was much less debate about proper and improper forms of sporting events. Even boxing was endorsed by the Springhill Tribune, which (in the progressive language of the day) said of a match that it had been "clean, scientific and consequently free from any trace of roughness or brutality."²²³

Other branches of social life betray the same patterns. Mass entertainment in Springhill arrived in the form of the "Nicklet" or movie house. In 1911 the town collected \$400 in revenue from the moving picture shows. The movies became part of the weekly ritual, especially for women. As one miner told the Duncan Commission, "I go there, I don't think on the average once a month. My wife perhaps goes once

a week or once a fortnight. They are entitled to some amusement."²²⁴

The coming of organized leisure hardly entailed the end of conflicts over leisure. Strikes were fought on the issue of going to baseball games. The recreational strike became a feature of the Springhill coalfield in the interwar years. "If there was a ball game or a hockey game, they'd stay off," recalls one woman, with a sigh.²²⁵

Rational recreation did not entail the elimination of class conflict, but its translation into a more organized and coherent form. The strikes over baseball games, although they are cited as examples of the miners' capricious natures, suggest more the great importance attached to organized sports in the community.

The advent of new leagues also marked this age. Both the West Cumberland Hockey League and the Cumberland County Baseball League testified to the new insistence on organization. In 1906 the Cumberland Baseball League was the only amateur baseball league in the province outside Halifax.²²⁶ It was very much dominated by the miners.

After the war this tendency towards organized sport became a tendency towards mass spectacle. With the organization of the Nova Scotia League, baseball became a mass enthusiasm. The League was organized in 1920, as an attempt to win a large audience for amateur baseball. The schedule was so constructed that players would be away from their employment for as short a time as possible.²²⁷ Springhill prepared for its position in the League by forming its own town league, comprised of four teams, under the auspices of the Springhill Amateur Athletic Association.²²⁸ The local teams served as the training ground for the provincial league. The strategy worked brilliantly, and the Springhill ball club (which was known as the Fencebusters) came to

dominate the province. The company co-operated by allowing its employees to participate in the games without loss of earnings. On 16 September 1922 the Convenor of the union's committee reported that the company had agreed to alter its shifts "so that the day and afternoon shifts could see the Ball game."²²⁹ At 4 p.m. all the stores in the community would lock their doors. Huge crowds assembled at the ball park. For the game against the War Veterans of Halifax, about two thousand enthusiastic fans were inside the gates, "the largest baseball crowd Springhill has ever known."²³⁰ When in 1921 word came from Truro that the home team had won the provincial title,

The town received the news...with an enthusiasm which brought to mind the day when the German tide was turned back at the Marne. A crowd of five hundred filled Main Street in front of the bulletin board, and after waiting anxiously the innings in which Middleton led, greeted the final result with wild cheering. Tonight, flags are flying everywhere and all the town is smiling. 231

The highly organized realm of baseball in the 1920s provided a focal point for the energies of the entire community. It provided a place where the divisions of social life could be forgotten. Many residents of Springhill recall the ball games of the 1920s far more vividly than they do the strikes. The careful rousing of emotions was the polar opposite of the inchoate disorder of the 1880s. In this sense the town's sports captured the essence of its movement from the small village divided between reformers and ruffians, to the modern town with its mass spectacles and unifying enthusiasms.

We may trace the same evolution of order in the history of public institutions--those institutions which were built and maintained by the state, or directly reflected its purposes. Our focus shall be on three areas: the emergence of civic government, the provision of

education, and the maintenance of law and order.

Incorporation of the town of Springhill was linked directly with the improvement of its sanitary and moral conditions. (The mind of the Victorian reformers welded these two concerns together). "Are we prepared for a larger population than we have at present, or are we properly prepared to keep our present population in health and safety of life and property? We are not prepared, nor never will be, under our present system of town government," one miner argued.²³² There was a widening discrepancy between the kind of town the improvers wanted and the town they saw all around them. "Main Street, especially the lower end of it has always been noted for its filthiness. Ashes are often piled up in the middle of the street," noted the Trades Journal.

"If incorporation will rid us of the sweet odors proceeding from the lower reaches of the town, by all means bring it along quickly."²³³

The specific problem incorporation was supposed to solve was the provision of water. The water question was the major issue in Springhill politics in the 1880s. In 1885 the directors of the company made a proposition to the members of Pioneer Lodge--functioning, interestingly, as a sort of town government pro tem--to the effect that if the inhabitants of Springhill would guarantee 7 per cent yearly on an expenditure of \$6,000 the company would bring water into the town and lead it into all the houses on the principal streets.²³⁴ From this date on, the company and the town had differing interpretations of the purposes of the water system.²³⁵ For significant interests in the town, the provision of a water system would free Springhill from the company. Colonel E.A. Potter, the town's mayor from 1909 to 1912 and a founder of its militia, told Pioneer Lodge that the primary aim of the town

council should be to transform the town from one that "exists to be bled by the multitude outside" to a "town that shall rank first class with others, by reason of its industrial equipment, business appointments and modern conveniences."²³⁶ Bonuses to industry were important weapons in the council's industrial strategy, but the existence of a good water supply was seen as the crucial step to industrial growth.

The conflicts between the town and the company on the question of the water system were politically crucial because they helped foster a separate civic identity. A strenuous political debate, which cannot be fully detailed here, occupied the town from 1889 to 1907. The company built its own water supply system in the 1890s. The town experimented with an expensive and controversial system based on gravitation, over the objections of the provincial engineer and a good portion of the electorate.²³⁷ The coal company approached the town with a view to sharing its water supply in 1906; the request was turned down, although allowances were made to families living on the Company Rows, who lived in company housing but were supplied from the town water system.²³⁸

The existence of two water systems dramatized the division between the company and the town. The town's system had cost \$140,000, the company's much smaller system \$25,000. Once the company realized that it would be much cheaper to obtain water via the public system, it began to court the town council. As the strikers of 1909 put it, "A proposition to supply the company's works with 200,000 gallons per day for a payment of \$1,000 a year was fought for twelve months by the citizens, who protested against such a ridiculously low price for so much water."¹ Finally a deal was closed by which 200,000 gallons per day was provided

for an annual payment of \$1,500. Yet public antipathy was aroused by the surcharge of 25¢ Cowans imposed upon his own tenants for the use of public water. The company, the strikers charged, had impeded the urban development of Springhill by its obstinate water policy.²³⁹

This issue takes us to the heart of town politics in Springhill. It would be a grave mistake to conclude that politics in Springhill moved to the dictates of the coal company. The town council represented the interests of the merchants, with the coal miners in a subordinate but important position.²⁴⁰ It consequently tended to support all economic and social projects which would give Springhill stability and growth.

These projects often pitted town interests against those of the company. For example, we find town representatives in the agitation to allow a less restrictive access to coal seams—a direct attack on the principle of the company monopoly.²⁴¹ The local merchants were not creatures of the coal company. There was mounting hostility towards the company in 1906-1911. One reason for the opposition to the company was its policy of charging local consumers a higher price for coal than external customers. "[I]t looks as if the Co. were trying to extort out of the town people what they lost by the strike," observed an editorial on one precipitate price increase.²⁴² David Frank has described the evolution in Cape Breton of 'company towns' into 'union towns,' but this pattern is only dimly visible in Springhill, whose civic politics was dominated by the small businessmen of Main Street.²⁴³

These men wanted, above all else, stability and peace. They wanted industrial diversification which would free them from the treacherous heights and abysses of a mining economy. Yet they were very much constrained in the pursuit of these objectives by the nature of the

town. As the Mayor's Report in 1915 emphasized, Springhill was outstanding in Nova Scotia for having a large population in proportion to the value of assessable property, a predictable characteristic in a town of workmen's cottages. Because of this restricted tax base, "to follow in the wake of other towns in respect of Public Utilities, Street Lights, Modern School Buildings and such like—we must submit to a higher rate of taxation."²⁴⁴ Springhill ratepayers faced the highest rate of any town in the province in 1915.²⁴⁵ The town also had serious difficulties selling debentures. In 1912 the civic debentures, held by the Royal Bank, were sold at a lower rate than anticipated, partly because the bond market was depressed, but also because recent legislation gave a town with less than one million dollars assessable value the right to borrow only five thousand dollars as a temporary loan in anticipation of the collection of the taxes for the current year.²⁴⁶ Part of the town's problem stemmed from the standard of valuation, fixed at an unrealistically low level in the days when the townspeople sought to avoid paying their fair share of county taxes. The town council was, like it or not, a convert to the gospel of economy. The chairman of the police committee reflected this preoccupation with finance when he so forgot his role as the guardian of law and order that he expressed his deep regret at the paltry sums generated for the town from prosecutions under the Nova Scotia Temperance Act.²⁴⁷

The dilemma was often painful and difficult. It was a matter of great pride with the town council that Springhill had been able to secure credit with large financial institutions. When the town council wanted \$12,000 to meet expenses on a school loan, a chemical fire engine, and a temporary loan to the school board, it mailed a circular

to the banks and leading financial men in Halifax, Montreal, and other cities, which served the dual purpose of boosting the town and illustrating its solvency and small debt load. For \$12,000 of 4½% debentures, the town received \$12,121.80 less some charges by the Halifax Banking Company.²⁴⁸ There was tremendous pride in securing this vote of confidence from a bank, and a real determination to build up a solid educational system in the town. By 1909 the town's financial outlook had worsened, precisely at the moment that workers were demanding better services. An overdraft at the bank on capital account for the extension of the water works (\$16,848.48) and debentures issued to cover this expenditure (\$20,000) which remained unsold; as well as additional financial problems, limited the flexibility of the town council.²⁴⁹ The long strike of 1909-1911 was a crisis for the town council, because the Union Bank of Halifax served notice that it would no longer advance any money on the overdraft until a settlement of the labour trouble was reached. The school account was overdrawn about seven thousand dollars for salaries and general maintenance and the bonds for the new school building had still not been sold.²⁵⁰ Although Springhill emerged from this crisis without formally declaring bankruptcy, it had come perilously close to the edge.

The position of the town council reflected the local symbolic power of the merchants and their more profound powerlessness when confronted with structural conflict. Colonel E. A. Potter embodied the contradictory position of the local elite. As mayor and the officer commanding the 93rd regiment, he might have been expected to take an anti-labour position. The opposite was true. When he was interviewed in Halifax in 1909, he pleaded with outsiders not to

judge Springhill unfairly. "Springhill has stone churches," he said, "The Catholic church cost \$30,000; the post office building of stone and brick cost \$25,000; we have a stone and brick opera house, and a school building is being built to cost \$40,000--all showing evidence of prosperity and stability."²⁵¹ Such a town deserved public confidence. It was exactly the sort of rhetoric one expected from a man defending the town's image, and precisely the right symbols. His mention of the post office had a special meaning. It was a normal Laurier post office, graced with a splendid clock tower, similar to dozens distributed as political plums throughout the province. But in Springhill it had a special significance. It testified that the federal government did not view the town as an overgrown mining camp but as a legitimate centre of business. Potter felt proud of his town. When the company wanted troops to intervene in the strike and protect its property, Potter refused to make the request.²⁵²

The mayor would in 1910 defend the expenditure on the new school, which he thought "should be an inspiration to every citizen having the welfare of the town at heart."²⁵³ In his mind, and consequently in our analysis, the two issues of civic government and education are profoundly linked, and the link is a defence of stability and order.

We have already seen the pervasive fears which gripped Springhill in the period 1880-1900 concerning the child. The editor of the local newspaper was not the only man who feared the emergence of a "class of negligent children who, by their school neglect, are growing up to be a menace to society," nor the only social critic to prescribe education as the means by which the public could be protected from a "growing criminal class."²⁵⁴ After a delay, the town council decided

to enforce the Compulsory School Law, and opened a special school for boys on 9 December 1898. The school was designed to teach reading and writing to youths who had to go into the pit at an early age. ²⁵⁵

Popularly the school was known as the "Truant School" and was associated with incorrigibly bad boys. That the truancy question had not been solved with its advent was confirmed in 1911, when it was shown that out of an enrolment of 1,476 children, an average of 1,282 attended school during the month, and a mere 883 were present on the average day. The town council appealed to parents to see that their children were sent to school regularly. ²⁵⁶ As late as 1920, only 70% of the children attended school on the average day, and the Chairman of the School Board noted the existence of incorrigible boys between 10 and 12 years of age who had resisted education. ²⁵⁷

Education remained a primary goal of the civic elite and gained new ideological force during the War, when its political purposes were really accentuated. ²⁵⁸ Its efficacy as a means of instilling bourgeois values cannot be gauged. Many miners suggest that they were "stupid" in school, and there appears to have been no effort to do much more than teach by rote—a reasonable strategy in classes that were as large as 105 pupils. ²⁵⁹

Education also provided a role model for girls in Springhill, especially as the system came to favour local teachers.

By 1915, of the teaching staff of 26, all save the principal were natives of Springhill. ²⁶⁰

Finally we must note the development of a more sophisticated system of law and order. This was a real problem in the contested decades of the 1880s and 1890s. Disorder was a recurring theme in these years,

We have already seen the fears aroused by Rogue's Corner and its

disreputable pleasures. Against this perceived tide of disorder the respectable class had only a few defences: one policeman, one stipendiary magistrate, a jail in Amherst. Richard Bennett, the first stipendiary magistrate, was a classic backwoods lawman. "He was a coal miner, janitor of the Methodist Church, Lay Preacher, Tinsmith and Photographer," notes the admiring sketch of him by Daniel McLeod, "and with all his varied accomplishments was ever ready to help in any good cause." He apparently made up the law as he went along, and many of his cases were appealed to a higher Court, where his verdicts were usually set aside.²⁶¹ The one policeman in 1891 was employed for two-hours each day.²⁶²

Starting in the mid-1890s there was a sustained law-and-order campaign which changed the atmosphere of Springhill. One of its central features was an assault on juvenile delinquency and rowdyism. In the early twentieth century children were sentenced to jail for minor thefts. An enormous outcry went up in the County over the policies followed by the local stipendiary, who enjoyed the full support of the town council and the local newspaper. In one controversial case, an 11-year-old boy was sentenced to five months and twenty days in jail for stealing three bottles of beer, some candies and cigars, and several empty bottles and old rubbers. The total value of the stolen goods was \$6.50. The sentence seemed unduly severe. "It was a pathetic sight to see a two hundred pound policeman coming to Amherst with this little mite of humanity that he could have stowed away in his overcoat pocket," one editorial exclaimed. "If the rubbers were new and the bottles were filled we presume the boy would have been hanged."²⁶³ The policy was not relaxed.

Another front in the war against disorder was the Scott Act.

Cumberland County was a hotbed of temperance activity and had passed the Scott Act (which absolutely prohibited the sale of all intoxicating liquors except for medicinal, mechanical, or sacramental purposes) in 1882. Reflecting on the twentieth anniversary of the act in 1902, the Amherst Daily News thought that the only purpose it served was the generation of revenues. Although adequate machinery existed to enforce prohibition, the prevalence of bars in Amherst indicated that it was rarely used.²⁶⁴

This cynical appraisal of the act does not seem to apply to Springhill. The indefatigable liquor inspector and the growth of an activist Temperance Alliance (strongly supported by the labour militants and socialists)²⁶⁵ may explain why we so seldom read of outbreaks of drunken rowdiness in the town. "For a town the size of Springhill I think I can truthfully say that we have an unusually quiet and orderly town," the Police Committee report noted in 1914. "There is, it is true, a little outbreak of crime or rather rowdyism from time to time, particularly after payday, and it may be that there should be more cases in the juvenile court, or there are too many youths allowed upon the streets day and night that ought to be at school or at work in the day time and in bed at night time; still, with all that, it is not exceptional and does not put the town, a mining town, as they say, in the disorderly class."²⁶⁶ The working-class movement took tremendous pride in the orderliness of the town and the discipline of the coal miners. "Springhill is the most law-abiding town on the North American continent," wrote one advocate of the miners' cause in the 1907 strike. "Sixteen hundred men on strike for 20 days and not one arrest for drunkenness

or disorderly conduct. Absolutely no crime after 20 days of strike. It would be hard to find another community which could boast of such a large body of men who are so law-abiding and fair-minded." Indeed, the author argued, "Springhill stands to-day in the unique position of being securely established on a high rung of the ladder of civilization."²⁶⁷

One could easily cite ten more passages from the writings of the strikers in Springhill to make the same point: the ethos of respectability and order had become the outlook of the workers themselves. It was the pride of the town. The residents of Springhill prided themselves on the progress they had made since the raw beginnings of the town in the backwoods. Their pleasures were increasingly orderly and organized, their churches were made of stone and solidly established, their houses were often their own and surrounded with well-tended gardens, their children went to modern schools, they had one of the province's best hospitals, they read the Halifax and even Montreal newspapers and supported several of their own. Peace, order and good government had triumphed in the 1890s and the early twentieth century.²⁶⁸ The strange thing, as contemporaries saw it, was that this same town had the most militant and socialist workers' movement in the province. The town had many symbols--the post office, the smokestacks of the mines, the church spires, and the houses: a Herald correspondent noted the houses especially, which had none of the dinginess normally associated with coal mining localities. In 1906 he described the rows of neat and tidy houses set on the hill, the most heartening sign of this "bright and progressive" community, and he concluded his description with the rhetorical question, "And what better measure is there of a dry, well behaved, industrious people, than such things?"²⁶⁹

4. The Development of a Rural Coalfield: Joggins

The social history of the Joggins coalfield presents a stark contrast with that of Springhill. Here the underlying framework of dispersed settlement and intermittent mining imposed an altogether different pattern of social life. There was much less sense of a stable community expanding and improving its institutional matrix. The Joggins coalfield in 1920 closely resembled the Springhill coalfield in 1880. It was as if the frontier had become a permanent condition of life, a 'stage' which stubbornly refused to retreat before history. There was not much that was 'Jacksonian' in this frontier society. It was rather a society where kinship counted for everything, and where the ideology of paternalism was rooted in the very instability of economic life. The Joggins coalfield resembled the rural world which we know better through the fiction of Alden Nowlan than through our social history.

R. James Sacouman has discerned one of its essential traits when he notes the structural traits of semi-proletarianization, most importantly the low wages made possible by the tradition of occupational pluralism.²⁷⁰ In the Joggins coalfield it was not easy to make a living. It required ingenuity to stay in this area. It was not easy to "scratch a living" from the thin seams and the woods. In Springhill one could expect, barring some real calamity, to work in the same town and in the same industry, throughout one's working life. Any such expectation in the Joggins coalfield would have been highly unrealistic. Survival required an ability to switch occupations as necessity demanded. There is a poetic justice in the name 'Hardscrabble' which identifies a part of the Joggins, an evocation of its unrewarding soil, the thin coal seams, and the tenacious and difficult survival of its people.

The fragmented nature of the coalfield poses a challenge to the historian. Arguments which may be supported by dozens of documents in Springhill must rely upon a much less substantial body of evidence in the Joggins coalfield. All the royal commissions, except that of 1946, forgot about the Joggins. It rarely attracted attention in the press. Even institutional records are less plentiful, partly because of the real instability of institutional life, and old inhabitants who remember their history are only a small minority of the hundreds of men who passed through the mines. We can arrive at a coherent picture of this coalfield only by generalizing on the basis of fragments, the incidental glimpses and the occasional reflections which such a coalfield leaves us.

There is enough to sustain the contrast between the two coalfields. The Joggins coalfield differed from Springhill in its housing, middle class, religious life, and public life. Each area will now be briefly explored.

Company housing was an intrinsic aspect of social life in the Joggins coalfield. In the 1860s building the company housing was one of the first tasks of the new coal companies. This pattern persisted until the First World War. Large concentrations of company housing could be found deep in the woods, at Fenwick, beside the Minudie mine at River Hebert, and along Mitchell Street in the Joggins. The companies exerted even more direct control over lodging through company boarding houses. The Fenwick mine had a large boarding house; at the Jubilee Mine between River Hebert and Maccan, a large boarding-house served 25 to 30 men, with a smoking room, kitchen, two bedrooms downstairs, and a large common sleeping area above, furnished with cheap, thin mattresses. 271

The Minudie Coal Company maintained a boarding house. This pattern was consistent with the shifting population of the Joggins coalfield and the heavy influx of immigrants in the first decade of the twentieth century.

The private boarding house had an importance in the Joggins coalfield that it never possessed in Springhill. According to one worker, who arrived in the Joggins in 1912, his Irish boarding-house keeper charged seven miners \$2 per week for room and board. Four men shared a room, two per bed. His boarding-house lodged a German, an Italian, a Welshman, and a resident of Springhill. Four inches of rye whiskey were included in the board, and one could also obtain an abundant supply of liquor on pay-day. As for the food, he remembered "Lots of beans, lots of beans."²⁷²

Elsewhere in the Joggins coalfield one found the "Belgian" tarpaper shacks, clustered at Maccan, River Hebert and Fenwick. These shacks seem primarily to have served single transient men.

Two features stand out from the evidence: the impact upon housing of a transient population and the extent of company control. In 1884, the Joggins company successfully used the strategy of eviction to break the workers' movement.²⁷³ The same strategy had failed five years earlier in Springhill. In the Joggins, however, a less diversified community gave the companies much greater control over their workers. The company housing also created a kind of ghetto of disorder, ironically in the very area, Mitchell Street, which was named in honour of the company's president. In 1907 the company unveiled twenty double houses, capable of housing 100 families. The houses were warmly praised in the press, but they were quickly transformed into centres of lawlessness.

The "Hottentot" district (as Mitchell Street was informally renamed) emerged as the rough immigrant quarter.²⁷⁴ Housing was an important issue for Holdfast Lodge of the P.W.A., the trade union of the Joggins miners in the 1890s and early twentieth century. It threatened that its members would withhold the rent if the company did not fix the latches on the doors, or put on storm doors, or stop raising the rent.²⁷⁵

Only after the First World War did this situation change and the workers start to acquire the bulk of the housing stock in the coalfield.

The Joggins coalfield resembled the lumber woods with its isolated mining camps (Penwick was the best example) connected to civilization by a branch line, served by a cookhouse and bunkhouses. The company housing tended to separate the coal miners from the surrounding farming population. The deteriorating housing stock and the transient population made the Joggins coalfield a hodge-podge of housing conditions, most of them substandard. In this it resembled West Virginia more than Springhill.

The nature of the middle class in the Joggins was complex. Prosperous farmers, lumbermen and general merchants made up a small elite in River Hebert, important in social terms through the church and other organizations, but not exerting much force over the miners. Company stores operated intermittently, but most business was conducted by individual merchants. In Chignecto, in 1883, it was reported that there was a certain merchant "who manages somehow or other to learn the exact amount earned by the workmen who deal with him each month," information he could only have received through the manager.²⁷⁶ This suggested a connection between the merchant and the coal company, but it was a far cry from the classic truck system prevailing elsewhere.

The merchants of the Joggins coalfield were even more insecure in their position than those of Springhill. Like all small businessmen in the coalfields they faced the problems of strikes and recessions, but they also confronted the unique problem of surviving in an economy dominated by weak or collapsing companies. In 1896, when the company entered a deep crisis and a bitter strike gripped Joggins, the merchants and the miners fought very much together. If the merchants would not agree to "carry" the miners, the newspapers reported, the closing down of the coal mine in January entailed terrible privations for the workers. 277

"Business in the little town is practically at a standstill," the Amherst Daily News reported, "Many of the miners are in debt to the merchants, they cannot pay and yet they must live. On the other hand the merchants do not feel able to carry them through until spring simply on faith."²⁷⁸ This mutual dependence forced the merchants to align themselves with the miners in this militant struggle, with the odd result being that after they mounted their rebellion against the company, the miners thanked the merchants for their generous support. Even more dramatic was the position taken by the merchants in 1904, another year of financial crisis and labour unrest, when they actually advised the men to stop work at once in order to collect their back wages. The merchants urged them to take this action against the wishes of the P.W.A., which leaves us with an amazing portrait of coal miners striking on the advice of the local middle class, against their company and the wishes of their own union. 279 However paradoxical it first appears, this "militancy" of the merchants was completely logical. How else were the miners to repay their debts to the merchants if they did not force the company to pay them back wages? Far more than in

Springhill, the Joggins merchants were prisoners of the major classes in the coalfield. It does not surprise us to read, in 1896, that two leading merchants of Joggins posted bonds for the men arrested in the labour rebellion. In an interview one merchant remarked "that the battle would be fought to the bitter end and as long as a pound of flour remained in their stores they would fight for the men, that 'the men's fight was their fight.'"²⁸⁰ The material interests of the merchants thus found appropriate expression within a populist struggle of 'the people' versus 'the company'.

There was a small group of men in the Joggins coalfield who stood outside the major forces in the coalfield. Merchants such as Job Seaman and Gilbert Seaman, Captain S. Como (who ran the hotel) and F. Melanson, who ran a general store, provided the nucleus of a small business class. The coal miners employed a colliery doctor on the basis of a highly egalitarian check-off in 1896.²⁸¹ There were school teachers, often of somewhat dubious quality, and other professionals. But compared even with Springhill, this class was tiny. Only in 1920, when the first Joggins town council reflected the interests of some local businessmen, can we describe it as a class with a programme of development.

Joggins was notorious as a centre of the drink traffic. It was difficult to enforce the law in so remote a corner of the county. Its grogeries were the subject of much criticism. Fifteen "rum-dens" were said to be active in 1884, and the claim was made, which is naturally difficult to test, that of the monthly pay of \$4,000, at least one-half was spent on liquor.²⁸² No fewer than 14 bar-rooms were reported active in 1894, i.e. twelve years after the adoption of the Scott Act.²⁸³ There was no Scott Act inspector until 1909;

it appears that the local liquor-sellers had very little to fear from the law. Local hotels and boarding-houses all supplied liquor, and widows and others made homebrew in the Hottentot, a concoction fondly remembered today.²⁸⁴ Chignecto, in the 1880s had two rumsellers, which the Trades Journal thought excessive for a tiny hamlet. "The Scott Act should take a walk up Maccan Railroad," wrote one social critic.

"By doing so, it might discover beer standing on a certain table, in a cellar or what you might call an ancient house built on the bank of a brook. Whiskey too all day long." When men from Springhill wanted to get drunk, they often made the excursion to Fenwick, where they gained access to a drinking-spot called "The Mansion" by means of passwords and other signals.²⁸⁵ The "Hop Mine" in the Joggins coalfield--an illegal bootleg pit--received its name from the illegal beer consumed in its neighbourhood.²⁸⁶ An old veteran of the Joggins coalfield, whose work took him to Chignecto and Fenwick, was asked if the miners there were strongly interested in religion. He responded, laughing: "They wasn't interested... The only thing they was involved in was liquor. And from the time they quit on Saturday night till they went to work on Monday morning, they had time to get drunk and partly time to sober up. That's what they were interested in."²⁸⁷ Unless all the newspapers and memories are wrong, we must conclude that the Joggins coalfield was fairly saturated with homebrew and illicit rum.

There was a contrast between the two coalfields: Springhill's drinkers were under strong attack, those of the Joggins coalfield enjoyed relative impunity. This was partly a function of geography. As in Appalachia, home brew flourished in the backwoods. But it was also a consequence of the class structure. After the defeat of the P.W.A.

in the Joggins coalfield in 1884, there was virtually no major force standing for temperance. The coal company did discharge workers who were frequently absent through drunkenness, but its policy was not consistently enforced. In 1887 we read in the Trades Journal:

Matters are run in a peculiar fashion in this place. We have a great temperance Reformer here. He plasters the walls about the pit with notices intimating that no rum seller or rum drinker shall ever get a days work at the Joggins. And yet there were those who sold rum working in the pit, while the notices were on the wall, and working in the best places too. But that is not all. It is said that some folks who sell rum are favored by getting their coal at 50¢ per load while poor men, with from two or three months pay due them, require to pay \$1.12 per load. 288

Some raised the possibility that the management of the mines was deliberately allowing rum shops to proliferate in order to weaken the organization of the men. "Can it be that the managers, knowing that men who spend their wages largely in drink, are more dependent on their good will, and more likely to be pleased to agree to the measures they propose, are not over anxious that all men should be steady, sober, industrious, and as a matter of course, independent[?]"²⁸⁹

We must not convey an impression of complete immobility. After the P.W.A. was re-established in Joggins, it worked in concert with a dynamic Law and Order League to clear out the liquor dens.²⁹⁰ The

union and management agreed to a policy of dismissing liquor-sellers.

The union minutes reveal this policy in action, with union members

being discharged on the evidence of their brothers.²⁹¹ In one instance the coal company requested that the union investigate a charge against a union member of selling liquor, before it decided to fire him.²⁹²

Such tactics could be divisive, but they show the depth of commitment of Holdfast Lodge, in its most creative period, to the regeneration

of the workers' movement in the village.

But there were lively traditions which made any thorough-going reform difficult in a village like Joggins. The minutes of Holdfast Lodge reveal a vigorous tradition of dancing. On 27 November 1895 the lodge was read a "notice from D.M. Belliveau about Splitting Panels in the Door the night of the Dance and complaining that there was no Body in charge and warning the lodge not to use the hall for no other Purpose only lodge meetings."²⁹³ The Lodge did not turn against dancing, rejecting another attempt by its landlord to stop the dances, and finally submitting to a demand that a damage deposit be posted before each dance.²⁹⁴ The Lodge dances appear to have been boisterous affairs. The general manager of the colliery in 1897 "complained of the Lodge renting the Hall for dances all night thus keeping men off work."²⁹⁵ The charivari flourished in Joggins, and more serious moral problems, such as prostitution, were associated with the Hottentot.²⁹⁶ It was difficult terrain for moral reform.

The churches of the Joggins coalfield were, far later than elsewhere, dominated by the itinerant minister. The Catholic Church at Joggins, under the leadership of a very conservative priest, did represent an exception to this rule, thanks to the unpaid labour of Catholic grindstone-cutters and others who donated their labour to the church. Other denominations were less established. Clarence Mackinnon, later to become principal of Pine Hill Divinity Hall in Halifax, ministered to the Presbyterians of River Hebert for 18 months ending the autumn of 1893. "River Hebert included Joggins, Two Rivers, Minudie, Maccan, Southampton, Maple Mountain and all the associated areas, a field over thirty miles in length," Mackinnon notes in his Reminiscences.

Mackinnon, who spent his time wrestling with Hegelian philosophy and pondering the relationship between Marx and Hegel, a suitable diversion for summer evenings "with the swish of the tide in one's ear as it raced up the river carrying the lumber barges with it," provides an extreme case of a cosmopolitan minister in a backwoods setting.²⁹⁷ For all his burrowing in Capital, it does not appear that he was concerned with the social question, although he did work vigorously in the interests of temperance. There was no force in religious life like the Church of England in Springhill, with its profound concern for the social well-being of the miners.

Catholic and Protestant fraternities were active. The Orange Hall at Maccan was a popular gathering place, and the Catholic Mutual Benefit Association held monster picnics at the Joggins, to which individuals of all faiths flocked.²⁹⁸ It was strange, given the existence of French-speaking Catholics, that language and religion remained so dormant as issues of public contention, but this was the case. A miner from the North of England who arrived in the Joggins with a profound hatred of Catholics, remembers his shock at the casual intermingling of Catholics and Protestants at the Joggins.²⁹⁹ Apart from minor tensions, the two faiths seem to have coexisted without incident, and French seems to have been confined to the home and little used in the mines or elsewhere.

One notes some attempts to bring traditional customs within the realm of rational recreation. The English immigrants of Joggins and Chignecto played association football at the Joggins in a local league.³⁰⁰ The Cumberland County Baseball League also represented a new spirit of organization, although it first collapsed because "the Joggins boys

do not feel able to go into it, as work has not been very brisk in that town and they do not feel able to afford the time and expense." In 1906 the whole town turned out to watch a game with Springhill, and even the mine was shut down, "naturally from the fact that the boys employed in the mine wanted to see the game, and decided to knock off, with the result that the men were forced to quit."³⁰¹ One could cite hockey contests between River Hebert and Joggins, a curling rink, literary evenings--although many of these activities seem to have involved other groups and not the miners. Yet one's general impression is that few of these institutions were able to sustain themselves easily. Even the Freemasons, whose first promoter had been Amos Seaman of Minudie, found themselves in difficulty in River Hebert as its economy declined.³⁰²

The institutions of the state were rudimentary. A primitive school was established by Amos Seaman, and schools were present in the Joggins and River Hebert throughout the period in some form or another. They were not advanced. "The school was a dingy-looking two room building with lean-to sections fore and aft, serving as cloak rooms for the two rooms," recalls Mrs. S.A. Demond. "These rooms were known as the big room and the little room. Not because of any difference in size, but because children from grade 1 to grade 4 attended the little room and the older ones, from grades 5 to grade 9 were in the big room. If you attended grade 9 in those days, you had gone about as far as you could go." "The school was the classic primitive school with a pot-bellied stove in the middle, two rows of desks on each side, with benches in front of the stove for any extra pupils for whom there were no desks."³⁰³ The ferocity of corporal punishment in the schools is remembered vividly

by the miners even today. Until the building of the province's first consolidated rural high school in River Hebert, educational facilities remained at about this low level.

The presence of the state was otherwise confined to maintenance of the waterfront facilities, an inspector of customs, and a post office. There was no real municipal government. The county council provided little more than upkeep for the poorly maintained roads. There was no water system and no sewerage system. The village of Joggins resembled a miscellaneous collection of peasant plots, rather than a town; only slowly did it acquire a Main Street. "Of all Nova Scotia mining villages the Joggins is the most ancient, and most odd. We have not yet made up our minds whether this is a village or not. There was no Road and Bridges bill when the site of the future Joggins was planned. It is all streets, a street to every house. The Joggins is the oldest mining locality in N.S. with perhaps one exception. It is the oldest looking without dispute."³⁰⁴ In the absence of any effective civic government, such projects as the construction of sidewalks in River Hebert were financed through basket socials.³⁰⁵

The Joggins coalfield contained some of the worst living conditions in the county. The open sewers and tarpaper shacks gave much of this rural coalfield a Third World appearance. In contrast with the Springhill townspeople, with their civic pride and their grasp of their own history, the peasant-miners of the Joggins coalfield were unable to sustain communities with a general vision. Instead local memory is focussed on families and kinship networks. Nothing holds this coalfield together as a social unit, except the historian, who can observe the

underlying similarity between these villages and can note the underlying structural factors which account for it.

As early as 1884 we hear of the problems of informers within the union. Complaining of men who were "perfect spies, and the meanest of speaks, not for a moment to be depended on," the correspondent of the Trades Journal argued that a campaign to secure regular pay-days would have succeeded "had all the men been thorough union men, and all pulling one way."³⁰⁶ The complaint echoes through the history of this coalfield. Reasons for disunity were to be found in many areas, but the underlying reason was structural. The very society in which the miners of the Joggins coalfield lived, this society based on small mines and a semi-proletarian mining population, discouraged unity among men. It was not true that such a rural coalfield lacked class conflict. But such class conflict, which was often explosive and violent, left little trace behind it. Perhaps the Joggins shows us the fate of workers who did not undergo the harsh moral and economic discipline of the new age, so implacably opposed to the old spontaneous traditions; and so necessary if a disciplined social group was to emerge which could grasp the future as a class. In the history of the Joggins coalfield, at least until 1927, we find, to cite a formulation of E.P. Thompson, class conflict without class, a "society which 'respired' but did not advance."³⁰⁷

The rhythms of life were those of the seasons. "The fishermen"—most likely part-time miners and part-time lumbermen as well—"have already commenced to set their first stakes on the Minudie flats as the June bugs have already revealed the secret that the shad will make their appearance 10 days earlier than last season," we read in a note from

Minudie.³⁰⁸ It was easy to move from the mines to the lumber camps, and back again. We find, in the correspondence from Joggins in the Amherst newspaper, items which take us directly to the heart of the rural milieu of the miners:

Butchering and dressing pigs for their winter outlay of pork, is the order of the day around here. John Penny at Road End killed a very large pig a few days ago, when weighed it tipped the scales at ninety-five pounds.... 309

Or from Maccan we read: "There was no work the first three days of last week.... All the folks are busy gardening."³¹⁰ Chignecto, for all its pretensions to industry, was in fact a common cow pasture, and all its residents had land with their places for livestock and poultry.³¹¹ It was the same throughout the coalfield. The rural coalfield allowed its inhabitants to preserve their attachment to the land and to its diverse resources, at the cost of diminishing their effectiveness as a social force.

5. Conclusion: The Cumberland Coalfields and the Theory of the "Isolated Mass"

From 1848 to 1927 the Cumberland coalfields developed as population centres. One coalfield was centralized within a single town; the other was fragmented among several villages. Springhill grew from a frontier hamlet to a major provincial town in two decades, a response to the growth of industrial capitalism. The Joggins coalfield grew slowly. With the exception of Joggins itself (incorporated as a town in 1919 and disincorporated in 1939) no community changed its legal status nor improved its economic position as Springhill had done. There were two societies in the Cumberland coalfields, each with its own internal

structure of settlement and its own rhythm of social life. We could attribute this pattern to the natural fact of the different coal seams, but only if we remember that such natural facts acquire a determinate character because they are appropriated by man within an economic system. The formation of these radically contrasting communities can be explained only by reference to the combined effects of natural and social structures. Once formed, however, the pattern of settlement acquired a determinate character and set an objective limit to the strategies available to the social classes in the coalfields. We can conclude by examining these limits in the entire county, and secondly by placing these communities within the context of an international discussion concerning the general character of mining settlements.

Perhaps the most obvious limit that this pattern of growth imposed was found in the absence of a strong ethnic identification, of the sort that David Frank has described in Cape Breton.³¹² There is no general conception of the Cumberland coalfields as forming a unified or cohesive whole, with interests to defend and a tradition to maintain. This would appear to be a contrast with industrial Cape Breton, where a strong Scottish tradition helped to foster a perception of a common history. Although the Yorkshire emigration might have provided a basis for such a common identity, or the coming of the Hector, one must conclude that such a common identity did not emerge. The structural and ethnic heterogeneity of the coalfields provided a harsh climate for the emergence of such cohesion. It is germane to observe here how fragile contacts were between the two coalfields, apart from the trade union. Springhill miners filled in at Joggins during the slack season in Springhill.³¹³ During

the great strike of 1909-1911 coal miners from Springhill, sought work in the Joggins coalfield, over the objections of some of the Joggins miners.³¹⁴ There were also a few men in Springhill who regularly worked in the Joggins coalfield, travelling to and fro over the Athol Road.³¹⁵

In strikes, financial support was freely given from the workers in one coalfield to those in the other.³¹⁶ It would obviously be an exaggeration to say that an enormous, unbridgeable chasm existed between the two fields, which virtually border each other. But there is a solid foundation for our conviction that a division was there. Men from the Joggins coalfield were accustomed to the unusual working conditions imposed by the thin seams; other miners regarded these conditions with horror. For their part, Joggins miners, accustomed to working in thin seams, disliked working in normal coal mines, and often developed back problems if they took up work in Springhill. "They had a feeling," explains one of the few Springhill men who spent some time in the Joggins coalfield. "River Hebert miners wouldn't stay here. Looked up at the ceiling and said, if something falls from there, it would kill you. I'd far rather have something fall from up there than be crawling on my hands and knees all the time."³¹⁷ The persistent wage differential which one finds in the twentieth century can only have further severed the Joggins coalfield from others. Springhill miners were far more likely to pursue work in Cape Breton than they were in Joggins, if oral history serves us as a reliable guide. When miners from the Joggins coalfield sought work in Springhill, there were complaints when they were hired ahead of Springhill men.³¹⁸

The greatest difficulty in arguing that there were two distinct societies in the Cumberland coalfields is not found in drawing a distinction between Springhill and the other mining communities—a distinction everyone knows exists. It lies, rather, in imputing a unity to the Joggins coalfield, this fissaporous realm of villages, families, and small plots. In this coalfield one found one's way by maintaining family connections, or by linking oneself to a community; it is hard to discern many general forces here, which could mitigate a village parochialism. River Hebert and Joggins were closely tied together after the 1920s, as their labouring men intermingled and found work in the same mines; Chignecto and Maccan were linked together by clubs and other connections. But across the coalfields as a whole these connecting links were weak. We can speak of the Joggins coalfield, but only if we remember we are using a kind of abstraction, and not describing a vivid historical identity. To cite one final aspect of the difference in mentality, the events of the strike of 1909-1911 are very widely remembered in Springhill, and are cited spontaneously in conversations, but the events of 1896, which were just as dramatic, are only rarely mentioned in the Joggins coalfield. It is the difference between a society which is able to retain a partial memory of its history, and one that remembers its history through details of the family, of individual biography, and of the various churches.

How do these two different coal-mining societies compare with the descriptions of other coal communities? The most influential interpretive tradition in the literature is that which emphasized isolation as the key element in the situation of coal miners which predisposed them to

accept trade unionism and even socialism. The evidence of the Cumberland coalfields suggests, on the other hand, that it was the combined effects of a shared occupational identity and socio-economic centrality which determined the coal miners' distinctive pattern of militancy. The Cumberland coalfields can be cited as evidence against the isolation hypothesis, because the most socially isolated of the coalfields was not the most militant. The nature of workplace traditions will be pursued in later chapters, but here we need to consider more precisely and carefully the question of "isolation" and whether or not this hypothesis helps us to understand the social history of the Cumberland coalfields.

Clark Kerr and Abraham Siegel advanced the theory of the isolated mass in order to explain the strike frequency of different industries; on an international level, mining, logging, and dockwork lost the highest number of man-days through strikes. This pattern could be explained by looking at "the location of the worker in society."

The miners, the sailors, the longshoremen, the loggers, and to a much lesser extent, the textile workers form isolated masses, almost a "race apart." They live in their own separate communities: the coal patch, the ship, the waterfront district, the logging camp, the textile town. These communities have their own codes, myths, heroes, and social standards. There are few neutrals in them to mediate the conflicts and dilute the mass. All people have grievances, but what is important is that all the members of each of these groups have the same grievances: industrial hazards or severe depression [,] unemployment or bad living conditions (which seem additionally evil because they are supplied by the employer), or low wages or intermittent work. And here is a case where the totality of common grievances, after they have been verbally shared, may be greater than the sum of the individual parts. The employees form a largely homogeneous, undifferentiated mass—they all do about the same work and have about the same experiences. 319

M.I.A. Bulmer has drawn together the literature on this question and presented an "ideal type" of the "traditional mining community." Operating within the tradition of Weber, Bulmer is concerned not to offer an explanation of the mining community but rather construct a conceptual tool which can be used to analyse historically unique configurations. Within his ideal-type, the mining community is (1) physically isolated, i.e. removed from existing urban centres of population, with a minimal contact with the outside world; (2) economically dominated by mining, with no alternative employment to mining other than a very few minor service jobs, and additionally with company-controlled stores and housing; (3) socially isolated--there is little contact made or sustained with other social groups outside the community, which consists exclusively of the manual working class, with the exception of mine management, and shopkeepers and service workers; (4) has the main centres of leisure activity outside the home, in communal activities of a formal or informal kind, and workmates are leisure companions; (5) is characterized by marital roles of husband and wife which are sharply separated, with family continuity in mining work the norm; (6) structured by the fact that the interests of the mine owner and miner in a capitalist society are in conflict, and by conflict over the distribution of available economic resources which will, in a pure capitalist mining community, entail the subjugation of the miner entirely to the interests of the mine-owner; (7) shaped, by the nature of mining work, a source of pride and satisfaction to those who work in the industry, with closely-knit working groups; work is unifying by being experienced as a group activity; and (8) characterized by the prevalence of communal social

relationships among miners and their families which are "multiplex" in form, with the social ties of work, family, neighbourhood and friendship overlapping to form close-knit and interlocking locally based collectivities of actors, which results in the mutual aid characteristic in adversity and an inward-looking focus on the locality. Solidarity consequently can be seen as the consequence of occupational homogeneity and social and geographical isolation from the rest of society.³²⁰

We have enough information at our disposal to be able to place the two coal-mining societies we have described within this analysis of social and geographical isolation. Geographical isolation is perhaps the least self-evident trait of these coalfields, unless one wants to term the entire Maritime region "isolated," with curious theoretical results.

"Isolation" in Joggins in the mid-nineteenth century entailed a four-hour ride to the nearest large centre (Amherst) over execrable roads;³²¹ in the case of Springhill, it was a three-quarters of an hour period on the train, provided one made the right connections.³²² However, taking "isolation" only in its landward aspects may be misleading. Joggins and River Hebert were not isolated in terms of the mercantile economy of the nineteenth century. Except the mining camp established in the middle of the woods during the First World War, the geographical isolation of the coalfield communities does not seem to be a meaningful concept. There was no significant barriers to outsiders coming into the coalfields, which were centrally located in the Maritime region and traversed by the major national railway. Even Joggins, perhaps the best candidate for geographical isolation in an age of railway transportation, did not fit the criteria of "minimal contact with the outside world," as anyone who

has studied the hotel register of Como's Hotel may attest. 323

The more interesting notions are those of economic domination. As Table Two revealed, the level of domination, determined by the percentage of miners in the total population, underwent fluctuations through time, but there is no reason to doubt the overwhelming economic importance of mining, certainly for Springhill, and only to a slightly lesser extent the Joggins coalfield. However, there were significant alternatives to coal mining in the Joggins coalfield--farming, lumbering, fishing--and it was only after the lumber industry of the River Hebert district completely collapsed in the 1920s that the population became highly dependent on coal mining. The level of economic domination as measured by company housing and company stores varied enormously. There was only one genuine "company town" in the history of the coalfield: tiny Fenwick, a mining camp where all the houses and other facilities were controlled by one company. Here one could make a strong case for isolation. Elsewhere the companies did not control the communities in which they were located. Although most of Springhill's housing was owned by the company, and the town was served by the company store in its initial years, it soon acquired independent stores and privately-owned housing. Company housing was far more a feature of the Joggins coalfield, especially at Chignecto, River Hebert and Joggins. But here we come into a conflict with the first dimension of economic domination, since it was precisely this district that was the most 'rural' and the most prone to occupational pluralism.

Since the fully-fledged "company town" was scarcely to be found, the coal miners were less apt to be socially isolated from other

classes in the community. There were in Springhill and Joggins intermediate social classes which could "dilute the mass," to use the somewhat mechanical metaphor of Kerr and Siegel. In the Joggins coalfield these men were either merchants or made their money in other pursuits (such as lumbering); in Springhill they formed the town's important business class and dominated local government. Miners were not isolated from other classes, whose importance was such that they enjoyed formal political power. These merchants are allowed for in the ideal-type formulated by Bulmer. But they figure within it as a minor exception to the rule of social isolation. In Springhill, particularly, we find the merchants playing a subordinate but crucial role that tended to reinforce the position of the miners. The absence of company stores and the consequent rise of a merchant group qualifies the general argument for isolation.

The emphasis on leisure and the "multiplex" bonds of work and community takes us into some of the basic differences between the coalfields, but also between these coalfields and their "ideal-typical" counterpart. How close-knit and inward-looking these communities were depends upon the date at which one studies them. There can have been little that was "inward-looking" and close-knit about the village of Springhill in the 1870s or 1880s, given the extent of immigration, nor about the "instant community" of Chignecto, planted in the woods in the early twentieth century. What impresses one about Springhill is the determination to be progressive, to be worthy of comparison with the rest of the Twentieth Century Club. The inward-looking phase seems to have consolidated after the First World War, and corresponds to that

period of the industry when large-scale immigration was no longer possible because of its secular decline. There were few major ideas, whether one thinks of the social gospel, municipal ownership, socialism, or whatever, which did not have some currency in the coalfields. Nor were the coal miners of Cumberland, in contrast with their fellow miners of Cape Breton, separate by virtue of their ethnic tradition, which here (with the notable exception of the Acadians of Joggins) had little to do with a perception of a distinct coal-mining community. Patterns of leisure did combine forcefully with patterns of work, but there was a real movement here as leisure came more and more to be influenced by reformers of various hues, whether middle-class or proletarian. The ideal-type draws us toward activities organized autonomously by the workingmen which reinforce their common bonds. But many of the most important sports activities in the coalfields were centrally influenced by the coal companies (as in the case of horse racing) or at the least represented a highly organized activity which did not so much draw the miners together as a distinct occupational group as reinforce their sense of belonging to a wider community.

Such reservations make one reluctant to ascribe to the social or geographical isolation of the coal miners the importance given it by isolated mass theory. The coal miners were not, in fact, an isolated mass. They were not homogeneous, and the communities in which they lived showed the most pronounced dissimilarities. Taking the isolation theory at its word, we should expect the most militant miners to have lived in Fenwick or Joggins, and the least militant in Springhill. We should also expect to find a constant pattern of militancy through time,

rather than the ebbs and flows of working-class activism in Cumberland. Kerr and Siegel themselves warned against too dogmatic an insistence upon isolation, which in the absence of "the capacity for cohesion" can explain very little. What constantly surprises us about the most militant miners of Cumberland County, the miners of Springhill, is how very similar their community was to many others in nineteenth-century and early twentieth-century Canada. We find the same concerns over juvenile delinquency, the same temperance crusades, the same fraternal orders, the same currents and counter-currents in Christian thought, the same enthusiasm for mass entertainment: Springhill in the early twentieth century was proud of being in the mainstream. It seems difficult to accept, then, a concept of "isolation" which would lead us to think otherwise.

The isolated mass hypothesis, formulated in the 1950s, hypostatizes the shocked reactions of social theorists to the social backwardness of the coalfields. By this point, throughout North America, coal had been dethroned as the basic fuel source of industrial life, and the coal economy had entered a profound decline. With it declined the living standards of the coal communities, which by the 1950s were indeed isolated from the mainstream. But what the isolated mass theorists missed—nowhere more obviously than in their comparison between clerks and miners—is that the location of workers in society changes according to the development of the economy. An isolated mass theory would be hard pressed to account for the passivity of coal miners in Nova Scotia for the past third of a century, although the coal-mining communities are still socially "isolated" from twentieth-century affluent society.

The alternative to a focus on isolation is an emphasis on socio-economic centrality. We should not forget that the initial theory put its finger on a real question and proposed a compelling solution, and that we are accordingly obliged to come up with something better. Insofar as the social structure of mining communities goes, Alan Campbell's emphasis on geographical mobility, always taken within its particular context, marks a promising new beginning.³²⁴ But the most attractive line of explanation in this particular context lies in the realm of production rather than in the world of the community, no matter how intertwined these two realms are. The coal miners of Cumberland County attained their heights of militancy (in the period 1890-1911) precisely when their labour was most crucial to the economy and to the state. They knew they were essential. The labour market was not overstocked, and employers had to create new channels in order to supply the mines with workers. The coal miners possessed a tremendous power, the power to shut down the industrial economy. Why else would the premier of the province become involved in the day-to-day negotiations in Springhill, and why else would the Liberal party make room for the miners' demands and coal miners themselves? We shall explore these arguments in greater depth later on. What we want to note here is the damage they do an explanation of the coal miners' community as an isolated one. Open to the world and its coal miners, central to the aspirations of the provincial government and essential for the functioning of the industrial economy, the coalfields were not isolated or peripheral: they were central. It was only when they became peripheral that the coal miners lost their potential for power, and with it their militancy.

This has merely stated an alternative, it has not demonstrated its worth. To do that we shall have to explore the social relations of production at length, to show how these in fact shaped the miners' decisions. It is never our intention to reduce the history of the coalfields to one-sided equations nor to minimize the importance of human agency. Nor do we intend to minimize the importance of the miners' community as a crucial arena of struggle, for it is evident that a fragmented and heterogeneous milieu such as the Joggins coalfield could sustain a class discourse only intermittently and with difficulty. Any balanced social history must make room for fraternal orders and town councils. But it would be an interpretive evasion, even if a highly fashionable one, merely to claim that the distinctive traditions of the coalfields were the result of many interconnected forces; from the Knights of Pythias to the Intercolonial Railway. Our evidence allows us to say more than that. We have seen that the concept of social isolation does not explain the traditions of the coalfields, and that few ethnic traditions or other social features set the coal miners apart. This suggests that the distinctiveness of the coal miners does not lie in the realm of 'culture,' as that is commonly conceived, but in the social relations and forces of production. It justifies our emphasis on the functional adaptation of the coal miners to the particular features of the forces of production (a process, incidentally, as dynamic and creative as any other). The coal miners were distinctive because they were proletarianized en masse within a setting which gave them an unrivalled opportunity for power. We turn to the relations of production which figure in Bulmer's ideal-type, but we elevate them to the central and commanding position, to the point that we view them as

the real basis of our communities. Since hypotheses based on social isolation do not explain the history of the coalfields, it is logical to seek our central explanations in the workplace. Literally and figuratively these communities were founded on top of the coal mines, and it is in the mines themselves that we find the answers to most of our questions.

Notes

1) See Esther Clark Wright, "Cumberland Township: A Focal Point of Early Settlement on the Bay of Fundy," Canadian Historical Review, Vol. XXVII, No. 1 (March 1946), pp. 27-32. Other valuable studies include Frederick Dykeman Grimmer, "The History of Cumberland Township," M.A. Thesis, Acadia University (1951), and W.C. Milner, "Records of Chignecto," Collections of the Nova Scotia Historical Society, Vol. XIV (1906), complete issue.

2) Gerry Panting, "Personnel and Investment in Canadian Shipping, 1820-1889," in Rosemary Ommer and Gerald Panting, eds., Working Men Who Got Wet (St. John's, 1980), p. 354; n. 18.

3) Howard Trueman, The Chignecto Isthmus and Its First Settlers (Belleville, 1975 [Toronto, 1902]).

4) Census of Nova Scotia, 1861 (Halifax, 1862), pp. 94-95.

5) P.S. Hamilton, "History of the County of Cumberland," manuscript essay, 1880 [PANS], p. 110.

6) J.L. Nowland and J.I. MacDougall, Soils of Cumberland County Nova Scotia (Ottawa, Canada Department of Agriculture and Nova Scotia Department of Agriculture and Marketing, Nova Scotia Soil Survey, Report No. 17, 1973), pp. 26-29, 32-33, 33-35, 38-39, 39-40, 47-49, 51-52.

7) For hay exports and such companies as the Missiquash Marsh Company, the Maritime Hay and Chopping Company and the Cumberland Marsh Company, see Amherst Semi-Weekly News, 1 October 1895; Acadian Recorder, 27 February 1896; Amherst Daily News, 6 March 1896 and 4 June 1908; H.A. Innis and A.R.M. Lower, Select Documents in Canadian Economic History 1783-1885 (Toronto 1933), p. 691.

8) For newspaper stories, see Amherst Daily News, 5 December 1903; 11 April 1902; Springhill News and Advertiser, 16 March 1898; Trades Journal, 18 May 1881. The importance of Cumberland County agriculture was dramatized by two developments: the experimental farm at Nappan and the Maritime Winter Fair at Amherst. Amherst was touted as the "Guelph of the Maritimes."

9) See Amherst Daily Press, 28 June 1890; Amherst Evening Press, 6 February 1891; 9 January 1892; 7 February 1896; Morning Chronicle, 18 May 1901; for indicative descriptions of Cumberland County lumbering.

10) Note this comment by J.D. Leary, a man who won fame for sending the world's largest lumber raft from Joggins to New York: "The Maritime provinces are dead, or might as well be dead. Of course, the towns are all right, but in the country.... Why, I have lumbermen, sixty or seventy of them, working for twenty-five or six dollars a month, and glad to get it. They are well fed, of course there is no business going down there though." Montreal Star, 13 December 1895.

- 11) Census of Nova Scotia, 1861, pp. 94-98.
- 12) Census of Canada, 1871, Vol. I, pp. 412-413.
- 13) [R.G. Dun & Co.]; The Mercantile Agency Reference Book (And Key) for the Dominion of Canada (January 1892), n.p., and Census of Canada, 1931, Vol. X, p. 238.
- 14) Johnson, The Coal Trade, p. 21.
- 15) Mines Report (1875), p. 16.
- 16) John Brophy, A Miner's Life (Madison and Milwaukee, 1964), p. 51.
- 17) Michael Katz, The People of Hamilton, Canada West: Family and Class in a Mid-Nineteenth Century City (Cambridge, Mass., and London, 1975), p. 133. The persistence rate is the percentage of all those in the district whose occupation was recorded as miner or mine employee in 1871 who were also recorded as such at its end. For a more extensive analysis based on persistence, see Alan Campbell, The Lanarkshire Miners: A Social History of their Trade Unions, 1775-1874 (Edinburgh, 1979), pp. 166-167. It would be exceedingly interesting to do a complete computer analysis of the Cape Breton; Pictou and Cumberland mining populations on the basis of the 1871 and 1881 census, and also draw upon the marriage records. Both these further steps lie outside the scope of this thesis. The initial computations in this thesis are based on the manuscript census schedules for 1871 and 1881, microfilm, PANS.
- 18) Robert Drummond, Recollections, p. 22.
- 19) Ibid., p. 43.
- 20) Trades Journal, 30 June 1880.
- 21) Taylor, "Labour Productivity," p. 62.
- 22) Amherst Daily News, 22 November 1897.
- 23) Amherst Semi-Weekly News, 14 June 1895.
- 24) Trades Journal, 25 June 1884.
- 25) Trades Journal, 25 January 1888.
- 26) R.C.R.C.L., Evidence of William Hall, p. 295.
- 27) R.C.R.C.L., Evidence of Charles Runney, pp. 285-288.
- 28) Trades Journal, 25 April 1888.
- 29) Trades Journal, 6 June 1888.

- 30) Trades Journal, 19 December 1888.
- 31) Grand Council Minutes, April 1889, p. 186.
- 32) Trades Journal, 29 May 1889.
- 33) Herald, 8 August 1906. See also the Amherst Daily News, 14 August 1903, for a report of an address, presumably somewhat critical, delivered by disillusioned English immigrants at a farewell ceremony at the railway station.
- 34) PANS, RG 7, Vol. 136, File "June, 1907," David Mitchell to F.C. Smith, 19 June 1907 (copy).
- 35) Transcripts, Joggins, p. 92.
- 36) Transcripts, Springhill, pp. 17-18.
- 37) Amherst Daily News, 8 December 1903.
- 38) Journal and Pictou News, 3 June 1891.
- 39) Amherst Semi-Weekly News, 21 June 1895.
- 40) Amherst Weekly News, 11 January 1895.
- 41) Amherst Daily News, 6 October 1905.
- 42) Transcripts, Joggins. p. 12.
- 43) Transcripts, Joggins. p. 10.
- 44) Joggins Minutes, 7 December 1895.
- 45) Joggins Minutes, 8 June 1897.
- 46) Joggins Minutes, 29 August 1896.
- 47) For a description, see PAC, RG 27, Vol. 304, file 15 (34), Memorandum of James Forsyth, 16 October 1915.
- 48) Springhill Minutes, 11 July 1912.
- 49) Transcripts, Springhill, p. 95.
- 50) See Donald Avery, "Dangerous Foreigners": European Immigrant Workers and Labour Radicalism in Canada, 1896-1932 (Toronto, 1979), and Craig Heron, "Working-Class Hamilton, 1895-1930," Ph.D. Thesis, Dalhousie University (1981), Chapter Four, for appraisals of this phenomenon.
- 51) Trades Journal, 3 October 1883.

- 52) Amherst Daily News, 27 May 1901.
- 53) Amherst Daily News, 8 November 1906.
- 54) Springhill Tribune, cited in the Amherst Daily News, 12 March 1906.
- 55) Royal Commission on Coal, 1945, Evidence, Vol. XV, Amherst, N.S., 12 February 1945, Testimony of Dr. D.M. Cochrane, p. 1151.
- 56) Springhill Minutes, 19 March 1927.
- 57) Census of Canada, 1931, Vol. 2, p. 766. More specific information on the coalfields communities produces the following estimates:

Population of Coalfields Communities Classified by Place of Birth, 1931

Place	Canadian born		British Born		Other	
	Males	Females	Males	Females	Males	Females
Maccan-Chignecto	270	220	2	3	18	10
River, Hebert	1,072	988	54	54	28	20
Joggins	491	416	31	25	20	17
Springhill	2,879	2,740	253	195	186	102
Cumberland County	17,555	16,516	694	634	558	409

Source: Census of Canada, 1931, Vol. 2, pp. 167-168.

58) David Jay Bercuson, "Labour Radicalism and the Western Industrial Frontier; 1897-1919," Canadian Historical Review, Vol. LVIII, No. 2 (June, 1977), p. 174. Bercuson's argument is that "Young men growing up in the closed communities of the Nova Scotia coal towns knew little else and expected little better. They too would go down in the mines and would live in the company towns as did their fathers before them." Our argument, in contrast, is that (1) a substantial number of miners did immigrate to Nova Scotia, especially in the period of monopoly capitalism; (2) substantial numbers of coal miners journeyed from community to community (as dramatized by Springhill) and would thus not be so confined within the closed paternalism Bercuson described and (3) the 'company town,' in Cumberland County at any rate, is a very rare social phenomenon.

59) Census of Canada, 1911, Vol. VI, p. 154.

60) Census of Canada, 1891, Vol. 1, p. 24., and R.C.R.C.I., Evidence of William Hall, p. 295.

- 61) PANS; RG 21, Series "A", Vol. 42, No. 67, "Number of Employees who won [sic] their own houses."
- 62) Amherst Daily News, 30 December 1904.
- 63) Drummond, Reminiscences, p. 28.
- 64) Trades Journal, 27 October 1880.
- 65) Trades Journal, 11 May 1881, 3 August 1881.
- 66) Trades Journal, 22 June 1881.
- 67) Trades Journal, 30 June 1884.
- 68) Herald, 23 December 1885.
- 69) Trades Journal, 25 May 1887.
- 70) Trades Journal, 6 February 1884.
- 71) Trades Journal, 3 August 1881.
- 72) Amherst Daily News, 26 August 1904.
- 73) Amherst Daily News, 30 December 1904.
- 74) Transcripts, Springhill, p. 14; Joggins, p. 94.
- 75) Mackenzie King to Harriet Reid, 30 January 1911, in William Baker, ed., "The Personal Touch: Mackenzie King, Harriett Reid and the Springhill Strike 1909-1911," Labour/le Travailleur (forthcoming).
- 76) Herald, 22 September 1909.
- 77) Frank, "Cape Breton Coal Miners," pp. 77-78.
- 78) R.G. Dun and Co., Mercantile Reference Book (1892), n.p.
- 79) Transcripts, Springhill, p. 172.
- 80) Account Book, John Wilson (merchant) with John Malaly, 1891-1894.
I should like to thank Mr. J. Wilson for allowing me to examine the privately-held document.
- 81) See the Trades Journal, 18 May 1881; 10 August 1887; 1 February 1888; 14 January 1891 for useful collections of advertisements.
- 82) Springhill Advertiser, 15 November [1899] (fragment) contains the advertisement for the books; for the bakeries, see the Trades Journal, 10 August 1881, 18 May 1881. The town also boasted an omnibus--see the Springhill News and Advertiser, 23 March 1898.

- 83) Springhill News and Advertiser, 15 October 1902.
- 84) Amherst Daily Press, 6 August 1890; Morning Chronicle, 22 July 1890.
- 85) Merchants had earlier banded together in a "Merchants' Protective Association," which undertook to press the government on the line of the Intercolonial Railway and to change the mode of granting credit. In neither field did it accomplish its objectives. Trades Journal, 13 February 1889. For a co-ordinated business campaign against fire insurance rates, see the Springhill Advertiser, 28 November 1895; 21 August 1896; Springhill News and Advertiser, 1 October 1896; 5 January 1898; 2 April 1898. For the Board of Trade, Springhill News and Advertiser, 8 January 1898; Amherst Daily News, 21 July 1898.
- 86) Amherst Daily News, 17 March 1909.
- 87) Springhill Record, 7 July 1955.
- 88) Trades Journal, 11 April 1888.
- 89) Amherst Daily Press, 25 August 1890; Springhill News and Advertiser, 29 June 1888.
- 90) Trades Journal, 7 April 1880.
- 91) Trades Journal, 28 November 1888.
- 92) Trades Journal, 19 December 1888.
- 93) Trades Journal, 26 December 1888. See John Foster, Class Struggle and the Industrial Revolution: Early industrial capitalism in three English towns (London, 1974), p. 170, for somewhat similar merchant dependence in Britain.
- 94) Trades Journal, 25 May 1881.
- 95) Springhill Minutes, 28 January 1922.
- 96) Grand Council Minutes, September 1895, p. 290.
- 97) Trades Journal, 23 February 1887.
- 98) Amherst Daily News, 23 August 1909. It is interesting to note the solicitude expressed for the merchants by the U.M.W. leadership--see Amherst Daily News, 12 February 1910.
- 99) Herald, 25 August 1909.
- 100) Trades Journal, 2 May 1888.
- 101) Colin D. Howell, "Reform and the Monopolistic Impulse: The Professionalization of Medicine in the Maritimes," Acadiensis, Vol. XI, No. 1 (Autumn 1981), pp. 3-22.

- 102) Amherst Evening Press, 24 December, 17 March 1891, documents the participation of Springhill doctors in the Cumberland Medical Association.
- 103) R.C.R.C.L., Evidence of William Hall, p.282.
- 104) PANS, MG 2, Vol.422, Fielding Papers, W.S. Fielding to J.A. Chipman, 25 January 1897.
- 105) Amherst Evening Press, 7 September 1891.
- 106) Amherst Semi-Weekly News, 28 May 1895.
- 107) Springhill News and Advertiser, 30 July 1896.
- 108) Grand Council Minutes, September 1896, p.314.
- 109) Amherst Daily News, 14 June 1909.
- 110) Springhill Minutes, 17 September 1921.
- 111) Springhill Minutes, 24 June 1922.
- 112) Springhill Minutes, 1 August 1924.
- 113) Census of Canada, 1911, Vol.2, pp.30-31; 1931, Vol.2, pp.514-541.
- 114) See, for example, Kai T. Erikson, Everything in its Path: Destruction of Community in the Buffalo Creek Flood (New York, 1976), p.74. See also E.J. Hobsbawm, Labouring Men: Studies in the History of Labour (London, 1974 [1964]), p.376, for an African example.
- 115) Robert Moore, Pit-Men, Preachers & Politics: The effects of Methodism in a Durham mining community (Cambridge, 1974).
- 116) For general studies of religion in Springhill, see Bertha Campbell, "Early History of St. Andrew's-Wesley United Church of Canada Springhill, Nova Scotia," Nova Scotia Historical Quarterly, Vol. IV, No.2 (June 1976), pp.173-192; Bertha Campbell, "Early History of Presbyterians of Springhill, Nova Scotia," Nova Scotia Historical Quarterly, Vol.VII, No.1 (March 1977), pp.1-30; Jean Hefferman, "History of Springhill's Church of England Dates Back to the Year 1873," Mail Star, 9 May 1952; Jean Hefferman, St. John's Church 75th Anniversary, Springhill, Nova Scotia (n.p. [Springhill], n.d. [1980]); Bertha Scott, Springhill, pp.46-48. "On the religious check-off, see R.C.R.C.L., Evidence of H. Rea, p.305.
- 117) Trades Journal, 23 May 1888.
- 118) Transcripts, Springhill, p.99, p.29.
- 119) Campbell, "Presbyterians," p.18.
- 120) Campbell, "St. Andrew's," p.184.

- 121) Campbell, "Presbyterians," p.21.
- 122) Transcripts, Springhill, p.24.
- 123) Amherst Daily News, 21 December 1895; 18 August, 1908.
- 124) Springhill News and Advertiser, 23 April 1896 and 22 December 1897; Amherst Evening Press, 23 September 1894.
- 125) Acadian Recorder, 30 June 1898.
- 126) Morning Chronicle, 28 July 1890.
- 127) Herald, 15 April 1910.
- 128) Herald, 31 August 1909.
- 129) Herald, 4 September 1909.
- 130) John M-C. Wilson, The Labour Movement and the Church (Boston, 1922).
- 131) Amherst Daily News, 18 November 1895.
- 132) Herald, 19 April 1907.
- 133) Transcripts, Springhill, p.38.
- 134) Trades Journal, 2 December 1885; for evidence of debates over Riel in the fraternal orders, see Trades Journal, 9 September 1885.
- 135) Trades Journal, 28 August 1889.
- 136) Trades Journal, 6 April 1887.
- 137) Trades Journal, 4 May 1887.
- 138) Trades Journal, 22 June 1887, 13 February 1889.
- 139) Springhill News and Advertiser, 6 July 1898.
- 140) Trades Journal, 15 August 1888.
- 141) F. Garman Wightman, The Development of Freemasonry in the County of Cumberland Nova Scotia 1822-1967 (Amherst, 1967), p.52.
- 142) Trades Journal, 25 February 1885.
- 143) Trades Journal; 18 July 1888.
- 144) Springhill News and Advertiser, 13 July 1898; Amherst Daily News, 12 July 1898.
- 145) Trades Journal, 4 September 1889; Springhill News and Advertiser, 25 August 1898.

- 146) Transcripts, Springhill, pp.61-62.
- 147) Transcripts, Springhill, p.171.
- 148) Gregory S. Kealey, Toronto Workers Response to Industrial Capitalism 1867-1892 (Toronto and Buffalo, 1980), Chapter 7.
- 149) Transcripts, Springhill, p.109.
- 150) The only exception appears to be the donation of \$100 to the strike fund in 1890 (Morning Chronicle, 29 July 1890). Even this should be seen in the context of the community support for the strike as a whole, which embraced many other groups and the churches.
- 151) Amherst Evening Press, 21 August 1891.
- 152) Springhill Minutes, 1 May 1884.
- 153) Trades Journal, 2 December 1885.
- 154) Springhill News and Advertiser, 25 May 1898.
- 155) Trades Journal, 13 July 1887.
- 156) Trades Journal, 30 December 1885.
- 157) Trades Journal, 21 January 1885.
- 158) Trades Journal, 6 May 1885.
- 159) Amherst Evening Press, 13 December 1890. See also the Maritime Mining Record, 4 January 1899: "A notice was posted about the works in Springhill on the 24 ult., announcing the dismissal of any employee of the C.R. & Coal Co. seen intoxicated during the holidays. It was a stringent measure, certainly, but the end apparently justified the means, as no drunkenness of any consequence was observable on the streets during the holidays."
- 160) Trades Journal, 22 June 1881.
- 161) PANS: Micro: Places: Springhill, Minutes of the Springhill Temperance Reform Club, 1878. Drummond became president of the club at its August 17 meeting; it evidently did not survive past the end of 1878.
- 162) Trades Journal, 12 March 1884.
- 163) Trades Journal, 3 December 1884.
- 164) Trades Journal, 12 September, 3 October 1883.
- 165) Trades Journal, 17 December 1884.
- 166) Trades Journal, 3 August 1887.

- 167) Trades Journal, 21 October 1885.
- 168) Trades Journal, 25 June 1884.
- 169) Trades Journal, 10 June 1885.
- 170) Trades Journal, 31 October 1883.
- 171) Morning Chronicle, 22 December 1890.
- 172) Halifax Citizen, 7 January 1876.
- 173) Trades Journal, 13 September 1882, 11 October, 27 September 1882.
- 174) Trades Journal, 11 October 1882.
- 175) Springhill News and Advertiser, 21 September 1898.
- 176) Amherst Evening Press, 18 November 1890.
- 177) Amherst Daily News, 2 June 1903.
- 178) See the Trades Journal, 3 January 1883, for an account of the wrecking of a still at Springhill Junction.
- 179) Springhill News and Advertiser, 22 December 1897.
- 180) Amherst Daily News, 23 October 1902.
- 181) Transcripts, Springhill, p.15. On the miners' pay day, see the Trades Journal, 18 February 1885:- "It appears that the less the men make, the more rum they drink. Last pay was the worst this year."
- 182) Trades Journal, 8 November 1882.
- 183) Trades Journal, 7 March 1883.
- 184) Trades Journal, 14 January 1885.
- 185) Trades Journal, 12 August 1885.
- 186) Trades Journal, 8 August 1888.
- 187) Amherst Daily News, 11 November 1896.
- 188) Trades Journal, 17 May 1880.
- 189) Trades Journal, 8 November 1882.
- 190) Trades Journal, 10 October 1883.
- 191) Springhill Minutes, 14 August 1884.
- 192) Trades Journal, 23 November 1881.

- 193) Trades Journal, 1 April 1885.
- 194) Trades Journal, 15 October 1884.
- 195) Trades Journal, 2 January 1889; Amherst Daily News, 6 January 1898.
- 196) Springhill Advertiser, 2 January 1896.
- 197) Amherst Evening Press, 2 September 1891.
- 198) Springhill Advertiser, 12 December 1895.
- 199) Trades Journal, 5 May 1880.
- 200) Trades Journal, 23 September 1885.
- 201) -See, for example, PANS, MG 1, No.798A, Diary of George Seaman, Entry for 5 December 1863. There was a vibrant tradition of the charivari in nearby Oxford.
- 202) Trades Journal, 10 September 1884.
- 203) Campbell, "Presbyterians," pp.23-24.
- 204) Trades Journal, 13 August 1884.
- 205) For a discussion, see J.D. Young, The Rousing of the Scottish Working Class (Montreal, 1979), p.47, although this is in effect a critique of Gramsci's position. See Clifford Rose, Four Years with the Demon Rum (1925-1929) (Fredericton, edited by E.R. Forbes and A.A. MacKenzie, 1981), for a working-class perspective on temperance.
- 206) Trades Journal, 8 September 1880.
- 207) Trades Journal, 3 June 1885.
- 208) Springhill News and Advertiser, 20 February 1896; Trades Journal, 29 February 1888; 17 December 1884.
- 209) R.C.R.C.L., Evidence of Elisha Paul, p.272.
- 210) Temperance Reform Club Minutes, 31 August 1878. It should be noted that one of the principal activities of the club was entertaining its members. On 8 June 1878 we read that Bro. Chaplain gave a very laughable "negro stump speech in character," and Robert Drummond favoured the Club on 6 April 1878 with "a Scottish Song given in the Scottish style..."
- 211) Amherst Daily News, 9 April 1906.
- 212) Amherst Daily News, 22 September 1903.
- 213) Amherst Daily News, 30 November 1908.

- 214) Herald, 28 January 1907. It might be noted, however, that the Y.M.C.A., which erected a splendid new building in 1906, had to dispense with the services of its general secretary in 1907 because of the labour difficulties.
- 215) Trades Journal, 11 July 1883.
- 216) Trades Journal, 18 July 1883.
- 217) Amherst Daily News, 7 August 1899; Trades Journal, 6 June 1888.
- 218) Springhill News and Advertiser, 13 August 1896.
- 219) Henry James Morgan, The Canadian Men and Women of the Time: A Hand-book of Canadian Biography of Living Characters (Toronto, 2nd edition, 1912), p.268, where Cowan's is described as a "great patron of the turf".
- 220) Herald, 28 March 1907.
- 221) Amherst Daily News, 3 October 1907; Herald, 28 September 1907.
- 222) Amherst Daily News, 4 July 1900.
- 223) Cited in the Amherst Daily News, 9 August 1909.
- 224) Duncan Commission, Evidence—Springhill, Testimony of William Wiseman, p.3599.
- 225) Transcripts, Springhill, p.6.
- 226) Amherst Daily News, 23 January 1909; Herald, 31 May 1906. Springhill had also been involved in the Central Nova Scotia Baseball League (Amherst Daily News, 13 May 1901). A Victoria Baseball Club was active in the Joggins as well (Joggins Minutes, 19 April 1905).
- 227) Herald, 19 March 1920.
- 228) Herald, 30 April 1921.
- 229) Springhill Minutes, 16 September 1922.
- 230) Herald, 1 September 1921.
- 231) Herald, 22 September 1921.
- 232) Trades Journal, 23 May 1883.
- 233) Trades Journal, 7 March 1888.
- 234) Trades Journal, 11 March 1885.

- 235) Statutes of Nova Scotia, 51 Vic., Chapter 150, 1888, "An Act to incorporate the Springhill Water Supply Company, limited,"; Statutes of Nova Scotia, 54 Vic., Chapter 113, 1891, "An Act to provide for supplying the Town of Springhill with Water."
- 236) Herald, 31 January 1907.
- 237) Amherst Evening Press, 29 February 1892; see also the private collection of Mr. J. Wilson; Springhill, water works report, 7 October 1896, and Ernest G. Hopson, Civil Engineer and Expert, to William Conway, 25 May 1902.
- 238) Amherst Daily News, 6 September 1906; see also Springhill News and Advertiser, 30 July 1896 for criticism of the company for delivering "a financial blow to the water movement" by building its own system.
- 239) Herald, 29 September 1909.
- 240) Two of the six councillors elected to the first town council were miners; it was headed by A.E. Fraser, the town's most prosperous merchant. Trades Journal, 8 May 1889.
- 241) Herald, 17 October, 13 March 1918.
- 242) Amherst Daily News, 20 December 1906.
- 243) David Frank, "Company Town/Labour Town: Local Government in the Cape Breton Coal Towns, 1917-1926," Histoire sociale/Social History, Vol. XIV, No. 27 (May 1981), pp. 177-196.
- 244) The Civic Year Book of the Town of Springhill, for 1915, Embracing a Report of the Several Departments of Town Government and School Commissioners (Amherst, 1915), p. 5.
- 245) Ibid, pp. 6-7.
- 246) The Civic Year Book of the Town of Springhill for 1912, Embracing a Report of the Several Departments of Town Government and School Commissioners (Amherst, 1913), p. 5.
- 247) Civic Year Book, 1915, p. 19.
- 248) The Financial Year Book of the Town of Springhill for 1895. Embracing Reports of the Several Departments of Town Government and School Commissioners (Springhill, 1896), n.p.
- 249) The Civic Year Book for the Town of Springhill for 1909. Embracing a Report of the Several Departments of Town Government and School Commissioners (Halifax, 1910), p. 5.
- 250) Saint John Globe, 17 March 1910,
- 251) Herald, 16 September 1909.

- 252) Herald, 11 July 1910.
- 253) Civic Year Book, 1909, p.7. Despite serious political divisions on the question of high school rates (Amherst Daily News, 8 June 1909), it is an interesting commentary on the priorities of the council that it always seemed to find money for education and esteemed this kind of expenditure..
- 254) Springhill News and Advertiser, 6 August 1896; 15 October 1896.
- 255) The Civic Year Book of the Town of Springhill for 1898. Embracing the Reports of the several Departments of Town Government and School Commissioners (Springhill, n.d. [1899]), n.p.
- 256) The Civic Year Book of the Town of Springhill for 1911. Embracing a Report of the Several Departments of Town Government and School Commissioners (Halifax, 1912), p.10.
- 257) The Civic Year Book of the Town of Springhill for 1920. Embracing a Report of the Several Departments of Town Government and School Commissioners (n.p., n.d.), p.10.
- 258) Springhill schools were singled-out for special mention by the National War Savings Committee for their excellent work in encouraging children to buy thrift stamps: Herald, 3 October 1919.
- 259) See the general description of Bertha Campbell, Reading, Writing and Reminiscing: Springhill Schools in Retrospect (Oxford, 1978). General questions about the impact of formal education upon mining children are raised by Robert Colls, "Oh Happy English Children!": Coal, Class and Education in the North-East, "Past and Present 73 (November 1976), pp.75-99.
- 260) Campbell, Reading, pp.39-30.
- 261) PANS, MG 100, Scrapbook No.184, p.79; Daniel McLeod, "Of a Number of Men Who Took a Leading Part in Springhill Years Ago."
- 262) Robert Morrow, Disaster, p.205.
- 263) Amherst Daily News, 26 June 1903. The same editorial commented, "Surely, a town of churches like the chief mining centre of this county is not so poor that it cannot afford to give one of its unfortunate, ill-trained lads a chance to become an honest, upright and useful member to society." It was precisely in such a "town of churches" that the new policy against the boys made the greatest appeal.
- 264) Amherst Daily News, 1 October 1902. As the paper noted, one major loop-hole was that wholesalers could ship cases of liquor to private customers in dry areas.

- 265) Amherst Daily News, 4 May 1908. William Watkins, J.S. Price and Seaman Terris, all radical leaders, were pro-temperance.
- 266) The Civic Year of the Town of Springhill for 1914. Embracing a Report of the Several Departments of Town Government and School Commissioners (Amherst, 1914), p.18.
- 267) Herald, 22 August 1907.
- 268) There is a similar appraisal, couched in somewhat different terms, in Bertha Scott, Springhill, pp.75-76.
- 269) Herald, 6 February 1906.
- 270) See R.J. Sacouman, "Semi-proletarianism and Rural Underdevelopment in the Maritimes," Canadian Review of Sociology and Anthropology, Vol. XVII, No. 3 (1980), pp.233-245.
- 271) Transcripts, Joggins, pp.10-12. The Maritime Coal, Railway and Power Company advertised for a man "to run boarding house at Chignecto Mines" in the Amherst Daily News, 21 June 1907.
- 272) Transcripts, Joggins, p.91, p.93.
- 273) Trades Journal, 4 June 1884.
- 274) Nova Scotian and Weekly Chronicle, 26 November 1909.
- 275) Joggins Minutes, 14 December 1895.
- 276) Trades Journal, 19 December 1883.
- 277) Amherst Daily News; 25 January 1896.
- 278) Amherst Daily News, 1 February 1896.
- 279) Amherst Daily News, 30 May 1904.
- 280) Amherst Daily News, 7 February 1896.
- 281) Joggins Minutes, 30 March 1896.
- 282) Herald, 28 November 1884.
- 283) Amherst Weekly News, 12 October 1894.
- 284) Transcripts, Joggins, p.9. p.22. As the Amherst Daily News reported, in a description of Joggins on 8 October 1903; "There is practically no law in force there."
- 285) Trades Journal, 2 April 1884; 18 July 1883; 6 June 1883; 27 February 1884.
- 286) Transcripts, Joggins, p.59.

- 287) Transcripts, Joggins, p.42.
- 288) Trades Journal, 26 January 1887.
- 289) Trades Journal, 17 December 1884.
- 290) Amherst Daily News, 18 May, 29 March, 15 April, 27 July, has details concerning the Joggins Law and Order League; see also 7 September and 15 September 1897 for protests against its over-zealous campaign.
- 291) Joggins Minutes, 26 March, 30 March, 9 April 1897.
- 292) Joggins Minutes, 1 September 1897.
- 293) Joggins Minutes, 27 November 1895.
- 294) Joggins Minutes, 26 February 1897, 12 January 1898.
- 295) Joggins Minutes, 22 January 1897.
- 296) Transcripts, Joggins, p.93.
- 297) Clarence Mackinnon, Reminiscences (Toronto 1938), p.91.
- 298) Amherst Daily News, 2 September 1908.
- 299) Transcripts, Joggins, p.13.
- 300) Amherst Daily News, 10 October 1904.
- 301) Amherst Daily News, 16 May 1905; 7 June 1906.
- 302) Wightman, Freemasonry, p.76: "Today [1967] this imposing [Lodge] structure has become a liability to the Lodge due to decline in membership brought about by the disappearance of the great industrial activity that was in evidence during its first twenty five years as a Lodge."
- 303) PANS, MG 100, Scrapbook No.188, Mrs. S.A. Demond, "History of Schools in Joggins and River Hébert."
- 304) Trades Journal, 14 January 1885.
- 305) Amherst Evening Press, 4 November 1890.
- 306) Trades Journal, 9 January 1884.
- 307) E.P. Thompson, "Eighteenth-century English society: class struggle without class?", Social History, Vol.III, No.1 (May 1978), pp.133-165.
- 308) Amherst Semi-Weekly News, 17 June 1895.
- 309) Amherst Daily News, 22 November 1897.

- 310) Trades Journal, 4 June 1884.
- 311) Myrtle Chappell, The Chignecto St. George and Fenwick Mines (n.p. [Amherst], n.d. [1977]), n.p.
- 312) David Frank, "Cape Breton Coal Miners," pp.88-91.
- 313) Trades Journal, 3 August 1881.
- 314) Herald, 28 August 1909.
- 315) Transcripts, Springhill, p.65. The cost of regular communication between the two districts was not negligible. In the nineteenth century it cost the Joggins miners \$8.54 to send a delegate to Springhill to confer with P.W.A. officials about a grievance: Joggins Minutes, 31 August 1895. One should also note that the earliest campaign for a workingman's candidate started in Springhill, spread to Joggins: Springhill Minutes, 28 January 1886.
- 316) Joggins Minutes, 29 January, 2 February, 12 February 1897.
- 317) Transcripts, Springhill, p.65.
- 318) Springhill Minutes, 20 August 1921.
- 319) Clark Kerr and Abraham Siegel, "The Interindustry Propensity to Strike--An International Comparison," in Arthur Kornhauser, Robert Dubin and Arthur M. Ross, eds., Industrial Conflict (New York 1954), pp.191-192. For critiques, see Gaston V. Rimlinger, "International Differences in the Strike Propensity of Coal Miners: Experience in Four Countries," Industrial and Labor Relations Review, Vol.XII, No.3 (April 1959), pp.389-405, and Charles Tilly and Edward Shorter, Strikes in France (London 1971), pp.287-295.
- 320) M.I.A. Bulmer, "Sociological Models of the Mining Community," The Sociological Review, Vol.XXIII, No.1 (February 1975), pp.85-86.
- 321) PANS, MG 1, No.798A, Diary of George Seaman, entry for 9 November 1863.
- 322) Trades Journal, 18 May 1881.
- 323) Privately held by Mr. F. Como, Joggins. The hotel register lists guests from a wide range of American and Canadian locations, and includes a number of performing companies.
- 324) Campbell, Lanarkshire Miners, Chapter Six.

CHAPTER FIVE

THE STRUCTURAL DEVELOPMENT OF THE GOAL MINES

Chapter Five The Structural Development of the Coal Mines

1. The Coal Mine as a Dynamic Structure

Just after lunch-time in the East Slope in Springhill, on 21 February 1891, the mine workers were startled by a loud roar. On the surface there was little noise, but underground there was a sudden storm of wind and flame. Eye-witnesses would later describe the devastating force of the wind, "which swept like a tornado through the dark passages, hurling timbers and clouds of dust and flying missiles before it." Then came the balls of fire, of varying sizes, and finally "a solid body of fierce flame that filled the passages, and literally roasted everything in its path."¹ One survivor of the explosion, who worked in another part of the mine, recalled "a terrific gale of wind followed by another and heavier gale which carried along with it pieces of rock, timber and coal with a tremendous force. He was knocked down, but on rising and opening his eyes he saw that the whole slope was in a flame." Making his way as best he could out of the mine, he noted everything around him had been twisted and turned in all directions.² Alexander Blue, probably closer to the scene of the explosion than any man who escaped, knew what the roar signified as soon as he heard it. He jumped to the low side of his place, and squeezed in between the timber props. "The blast came like a lightning flash, and, in passing, caught his safety lamp, which projected outward from his hand, and carried it away as if in the bore of a mighty cannon."³ Blue was a highly intelligent man. He

immediately took out some cotton rag, dipped it in water, and stuffed his mouth full. He ran for his life, scrambling past the wreckage and death of a mine disaster.

Men working underneath the centre of the explosion reported that they had heard a normal shot fired, and then a series of rumblings which seemed to shake the roof over their heads.⁴ Once the alarm had spread, the race for life began. The men raced against the perils of falling roof and timber, and against the deadly assault of mine gas. Many men shouted vociferously, thus expending the air in their lungs which, if husbanded, might have enabled them to escape.

Men who were close to the explosion stood virtually no chance of survival. They were incinerated. The others faced different perils. The East and West Slopes were connected by a tunnel, and the force of the explosion and the deadly effects of gas soon spread to the West Slope. Death in the West Slope tended to be from the effects of the gas. On the 1,300-foot level, near the tunnel to the East Slope, the bodies of 20 men were later found lying on their faces, their safety lamps in their hands, marking the last point they reached in their race for life. "Most of the dead," H.A. McKnight (the best chronicler of the disaster) tells us, "were in the attitude of making violent efforts to escape, when they became rigid under the influence of the poison which they inhaled."⁵ In the East Slope the explosion district was literally covered with the dead. Death had been more merciful here. "The men appeared as though instantly killed. They were covered with a lead colored powder, the ash of the burnt coal dust. They did not seem badly burned. Most of them had their hands before their faces, to shield them from the fierce flame.

They were blown hither and thither by the force of the explosion. With few exceptions their faces wore a peaceful look, and there were evidences of sudden death. One man had a piece of bread in his mouth and had not finished eating his dinner. Another had his teeth firmly set upon the amber mouthpiece of his pipe, which had to be broken to be released from his death grip.⁶ These men had not had time to run. They had been spared the sensation of being slowly and patiently overcome by the mine gas as they scrambled for freedom, and spared the insanity which awaited some of those who inhaled the gas and survived.⁷

The explosion took place at 12:43 p.m. No living person emerged from the mine after 2 p.m.

On the surface everything was confusion. "Mothers, fathers, sisters, brothers, wives and children ran about in wild confusion, imploring all whom they met to institute a search for their friends," according to R.A.H. Morrow. "No one could remain unmoved as they saw frail mothers, half clothed, clasping tender little ones to their bosoms, beseeching men who were near at hand to find out as soon as possible if their husbands, the fathers of their dear babies, were among the dead."⁸ They waited for a long time in the cold, driving rain, but by and large they waited in vain. Almost all the news from the pit was bad. Some men and boys in the East Slope were rescued immediately, thanks to heroic efforts on the part of workers and the overman, who risked falling victim to the poisonous gases. But after the first rescue parties returned, it became clear that everyone else must have died. Searching was discontinued while the ventilation system was restored. Very few in the anxious crowd at the bankhead would find anything but grief.

It took five days to complete the task of locating bodies and bringing them to the surface. They were placed in a make-shift morgue in the carpenter's shop. It was a place of horror, where wives tried to identify the remains of husbands and mothers found their sons. Outside, "sleighs awaited the bodies, which were first stripped of the clothing worn at the time of the accident, prepared for burial, and then conveyed to their former homes."⁹ The last to come out of the mine was Henry Swift, the manager of the collieries, whose remains were found near the face on the 1,900-foot level, covered by nearly three feet of stone.

The inquest began at Fraser's Hall on 23 February, and concluded on 11 March. It established a number of important points about the disaster. The most probable course of events was that a shot (placed in the coal to bring it down) had been inadvertently fired with too much powder, so that a flame from the shot ignited a mixture of coal dust and a certain portion of gas.¹⁰ This part of the mine was not considered gassy. A miner testified that before New Year's Day, the same shot-firer had fired a shot in the same district which flamed out 40 feet, and it had required four buckets of water to put out the fire around the hole in the store. This flaming shot was evidently not reported to the management.¹¹ The coroner's jury returned a verdict which attached no blame to management, and added that the management had taken "every precaution for the safety of their workmen." Three recommendations were made: that powder not be used in very dusty places nor where safety lamps were used; that in gaseous portions of the mine, before the men resumed work after their dinner, the places be examined by competent officers; and finally, that the local government procure a Shaw gas-testing machine (the latest in

gas-testing technology) for the use of the deputy inspector of mines.¹²

The explosion was the third worst in North America, and still holds the record as the worst disaster in Nova Scotia mining history. A total of 125 men and boys were killed. Strangely enough, very little damage was done to the mines themselves. In the immediate vicinity of the explosion there were signs of its tremendous force. Here one found fallen stone and coal, collapsed timber, a maze of rails bent like barrel hoops. But elsewhere there was little sign of damage. A few days after all the bodies had been removed, the men went to work as usual. A visiting manager from the Drummond Colliery remarked that never before had he seen an explosion attended with so great a loss of life and so little damage to the mines.¹³

Even more curious were the circumstances leading up to the explosion. Madame Coo, a Pictou County Indian woman who enjoyed a strong reputation as a prophetess, had predicted a colliery explosion for the following May. Worried about her prophecy, and by other indications, the miners asked that the management allow them to tour the mine. (They were entitled to do this by the Mines Regulation Act). The committee of miners toured the mines on 19 February. By and large their report was a glowing endorsement of the ventilation of the works and the mine in general. However, one small exception can be found in their report: "In visiting No. 6 and 7 balances, west side, main seam, we found the place very dry and dusty, and in a condition, from the quantity of dust floating in the air, to make it a possible source of danger, which possibility, however, is rendered nil by a system of waterworks, carrying the water to each bord end, with a hose attached for sprinkling and damping the places."¹⁴

What is arresting about this passage is that the miners named, out of the dozens of possible locations in the mine, exactly the spot where the explosion evidently began. The miners' own statement suggests that the waterworks system was not working adequately, and that the dust was not being controlled.

The Springhill disaster was important in mining circles because it strengthened the view that dust could play a major role in coal mine explosions. For the community it represented a major crisis. For the province the explosion sparked a major reform in the law, whereby powder was not to be used in mines which had had recent manifestations of gas. Each of these consequences of the disaster is important. However, the disaster in this phase of our discussion is important not for what it did but for what it tells us about the structure of the mine.

The explosion leads us directly to a structural understanding of the coal mine, an understanding of the coal mine as a giant machine for the production of coal. At the moment of systemic malfunction the interdependence of the various systems making up the mine became clear.

The truth of structural analysis emerges as soon as one asks the question, What caused the explosion of 1891? The jurors give us an answer: a flame from a defective shot ignited a mixture of coal dust and gas. The requirements of the law were satisfied by their finding that the company was not to blame. But are the requirements of historical explanation so easily satisfied? Let us leave to one side both the question of the company's responsibility (we shall have occasion to note the longstanding problems with shotfiring in Springhill) and the question of mine safety laws (whose adequacy, questioned before the explosion, was

even more radically doubted after it). Instead we want to focus on the determinate context in which the explosion occurred. This context was the mine itself, the unity of its objective functions.

In order to work efficiently the coal mine had to integrate distinct functions within a coherent structure. Each of these functions was performed by a sub-system within the mine (represented by distinct machines, employees, physical structures) and each function was imposed through the inescapable logic of underground coal mining. Because each coal mine was an objective structure designed to perform certain economic functions, it imposed through the necessities of its structure definite relations upon individuals, relations which were indispensable and independent of individual will. No underground coal mine could exist without five interconnected systems—those of production, transportation, maintenance, distribution and management. Each system possessed its own technical history, but none existed independently of the others. Every mine, without exception, required such systems. Coal mines resembled each other because each was a technical response to a common set of problems. It is this functional similarity which makes it possible to write a general 'anatomy' of the mines.

But we need a 'physiology' as well as an 'anatomy' to grasp the mine in its context of constant change. The coal mine was a machine, but it was a machine of a unique type. The mine was at one and the same time the place and the consequence of labour. Coal mines survived only through expansion. Only by extending the mine could one produce coal. This simple fact leads us to more complex ideas. The most important of these is the historical irreversibility of any coal mine. A mine, once

opened, cannot be relocated or completely rebuilt. Consequently any major decision taken in the earliest days of the mine binds succeeding generations, by setting an objective limit to human choices. There could be no escape from history, preserved in the location of an entry or the timbering in an upper level. Each mine was imprisoned by the geological realities of the coal seams, but just as forcibly by the ever-increasing weight of its own past.

Finally, we need an integrated approach which will combine these first two levels of analysis to produce an appraisal of the efficiency of these machines over time. Subsequent chapters will study the struggles within production over wages and workers' control. Here our focus is on productivity and mining accidents as crucial indications of the functioning of the mines over time. To approach even these quantitative measures is to begin to reintegrate the coal mines with the wider currents of social history, particularly with the formation of social classes. There are quantitative but not neutral measures, such as those of productivity and fatalities, which suggest the different stages mines went through in matching their internal functions to the wider social purposes they were built to serve.

This three-stage analysis presents us with an itinerary for our exploration of the structural development of the coal mines. The first stage of the analysis is the construction of an abstract portrait of the coal mine of the period; the second is the analysis of coal mining structures through time. The third stage takes up the question of productivity and the question of mine safety.

Is our argument one of technological determinism? Not in the sense that we rest our analysis on machinery or reduce the mentality of the mine to a passive absorption of the environment. But against culturalist analyses of the workplace, which seem vague and evasive in their characteristic avoidance of causality, our approach insists that the mines were structured in objective and definite ways, and that these structures determined, in the last analysis, the range of possibilities open to the contesting classes. A characteristic trait of our approach is to locate the causes of socio-historical change in the coalfields within the coal mines themselves. It is the mode of production (seen theoretically as the combination of the forces and social relations of production, the structured utilization of nature, technique and scientific knowledge) which strongly limits or determines the evolution of the superstructure. In this particular case, our argument is first that the mines were the basis of the mining towns in the coalfield, setting limits on their rate of growth and determining their histories, and secondly that the mines were themselves structured in specific ways as part of their function within a capitalist society. This hypothesis is not one of geographical determinism (although there was a functional fit between the mine and its environment) nor one of technological determinism (although the forces of production are seen as a crucial sphere). It is rather that the mine placed firm limits on the nature and degree of human choice. This base is visualized as an active process because within production itself we find struggle and decision. But these struggles and decisions were limited by this determinate material context. We know that these mines were initiated and influenced by

political decisions. But once the mines were durably installed in the county, they set limits for everyone around them: objective limits which were less the product of conscious human agency than the result of objective structures.

The explosion of 1891 is a perfect example. No one wanted this event to occur. It represented no conscious intention. It is legitimate to note (for nothing in this perspective binds us to a narrow mono-causal approach) that the state had failed to prevent the accident by banning powder in gaseous mines and that the company had not always been careful in its policies. But these are at best distant causes. The immediate cause of the disaster lay in the structure of the mine, which alone guaranteed that a natural event could have such devastating social impact. Only within a determinate historical structure could an isolated explosion of gas have acquired this significance. Between the 'ultimate' level of analysis, which would link the explosion to the subordination of labour within society as a whole, and the 'immediate' level, which sees the disaster as a natural event, there is a third level, the level of structure, which explains the impact and importance of the disaster in terms of the structure within which it occurred. In this instance, for example, the disaster's impact was much greater because of the connection between the two mines, their depth (which made escape difficult and problems of ventilation more acute), the masses of men beneath the surface, and so on. It was a natural event that acquired its significance only within a socio-historical structure. The explosion shows us that in many ways it is possible to write of the mine as a process unto itself, as a force interacting with men. Such an approach carries with it the

danger of anthropomorphism. We must avoid the temptation of endowing the mine itself with volition and purpose. But while the mine had no purpose, it was an active presence. Created by the labour of men and maintained through their socio-economic interaction, the mine was more than the combined activities of the men within it. These activities were structured by the past history of the mine and by its future prospects, by the hierarchy in the labour process and by each other. It is this complex setting of limits which allows us to think of the mine as a dynamic structure. Only this approach allows us to grasp why one man, firing a shot in one bord, could bring death to 124 of his fellow workers, many of whom were not even in his mine.

The mine was far more than a place of work. It was a process of labour which shaped everyone within it. Human agency in the mine was limited by the mine's objective structure. Within the dynamic process of the coal mine there was a solid tradition of self-activity and autonomy. But the mine imposed its limits with an implacable force. In the twentieth century the most vivid example is provided by the "bumps," those seizures of the coal seam which were produced by the extreme pressure of superincumbent strata. In the nineteenth century the explosion of 1891 reveals the force of the mine as a dynamic socio-natural process. What better example of the structural limits imposed upon human agency by the mine could there be, than that of the coal miners, racing frantically to the surface, only to be remorselessly overcome, a short distance from safety, by the gases of the mine?

2. The Fundamental Systems of Coal Mining

Coal mines may be classified according to their general structure or according to their specific level of technology. The first procedure, which is relatively easy, provides the background for the more complex discussion of specific mines and methods.

Mines may be classified according to the means by which they are entered. The first mine at Joggins was entered by means of an adit, a nearly horizontal passage from the surface by which the mine was also drained. Apart from this first mine, all the other coal mines of Cumberland appear to have been slope mines, that is, entered by means of a sloping or inclined passage driven from the dip of the coal seam. Very small mines, or mines in an early stage of development, had slopes which were worked by a horse-gin, a drum and framework carrying pulleys by which the ore and waste were raised from the pit. Such an arrangement was suitable only for shallow mines, however, and after the mid-1870s every established mine possessed some mechanized hoisting equipment to bring coal from the depths and take men and supplies down. The main slope was the principal artery of the mining system, and led to the various 'levels' in the mine, a term Nova Scotians used to designate horizontal passages leading off the main slope, numbered according to their distance along the main slope. (Bemused visitors to coal mines often remarked that there was nothing particularly 'level' about them). Off the levels ran the inclines or balances (this last term bestowed because of the counterpoise or weight attached by cable to the drum of a winding engine to assist in moving the coal to the level). Finally, at the end of one's journey to the coal face, one found the bord in which the coal was actually mined.

a passage or 'breast' driven up the slope of the coal from the incline or balance.

Just as the historians of the shipping industry may draw upon an arcane vocabulary, the historian of the coal mines may use a special language. Balances, counter-balances, boxes, levels, inclines, slopes: all these terms have a specific meaning within the structured context of the mine. Perhaps the best way of conveying the essence of the mine is to see it as a series of streets laid out on a grid pattern, whose exact names are essential for mining engineers but not for outsiders. Balances, levels, inclines, and slopes all denote different kinds of mining 'streets,' and the basic character of the mine was determined by the way the streets were laid out and the space left between them. Furthermore, the mine's essential character is revealed by the programme through which the streets were laid out--whether, for instance, the streets were extended back to the main slope from the boundaries of the mine, or conversely pushed from the main slope out to the boundary. These details matter little in town planning, but in the mine they mattered a great deal. To make matters more complicated, the streets are all uphill or downhill, becoming steeper as one moves away from the main slope ('to the rise' of the seams). Finally, the streets are placed on top of each other as the mine goes deeper and deeper. The underlying principle of the grid may be held constant or it may change; a mine might be worked on one system in its upper levels and on another in its lower levels. The angle of the main slope is determined by the "dip" of the seam, which (in Springhill at any rate) tended to become flatter as the depth increased. The art of designing a mine lay in thinking in three dimensions, in being able to

co-ordinate the development of the mine on its many levels to cope with the problems of pressure and efficiency.

Virtually all mines entailed a grid system, but there were two major systems in vogue. One entailed driving a series of parallel passages through the coal (generally called bords) and connecting these at intervals by further passages driven at right angles to them. In this, the bord-and-pillar system, the mine resembled in certain phases a checker-board, with the coal isolated in a series of "pillars", solid blocks of coal of varying size left to support the roof. In most bord-and-pillar systems, less than 50 per cent of the coal was extracted (or "won") on the first working of the coal; then on the next time through the pillars were "drawn" or removed and the roof of the mine permitted to subside as the men worked their way back to the main slope. In longwall mining, increasingly in evidence in the Cumberland coalfields from the 1890s, the coal face was not worked in isolated rooms or bords, but was worked along its whole length simultaneously. The difference between the longwall system and bord-and-pillar is simply that under the bord-and-pillar system pillars were left to hold up the roof, and were subsequently withdrawn, while under the longwall system, the whole seam was taken out and no pillars were left, except those adjoining the main slope. There were two main types of longwall mining. Longwall advancing meant the mining of the coal outward from the main slope pillar, with roadways (underground passages used for haulage and the transportation of men) maintained through the portions of the mine where the roof had subsided. Longwall retreating entailed working back towards the main slope after the roads had been driven to the boundary of the tract of coal. Longwall

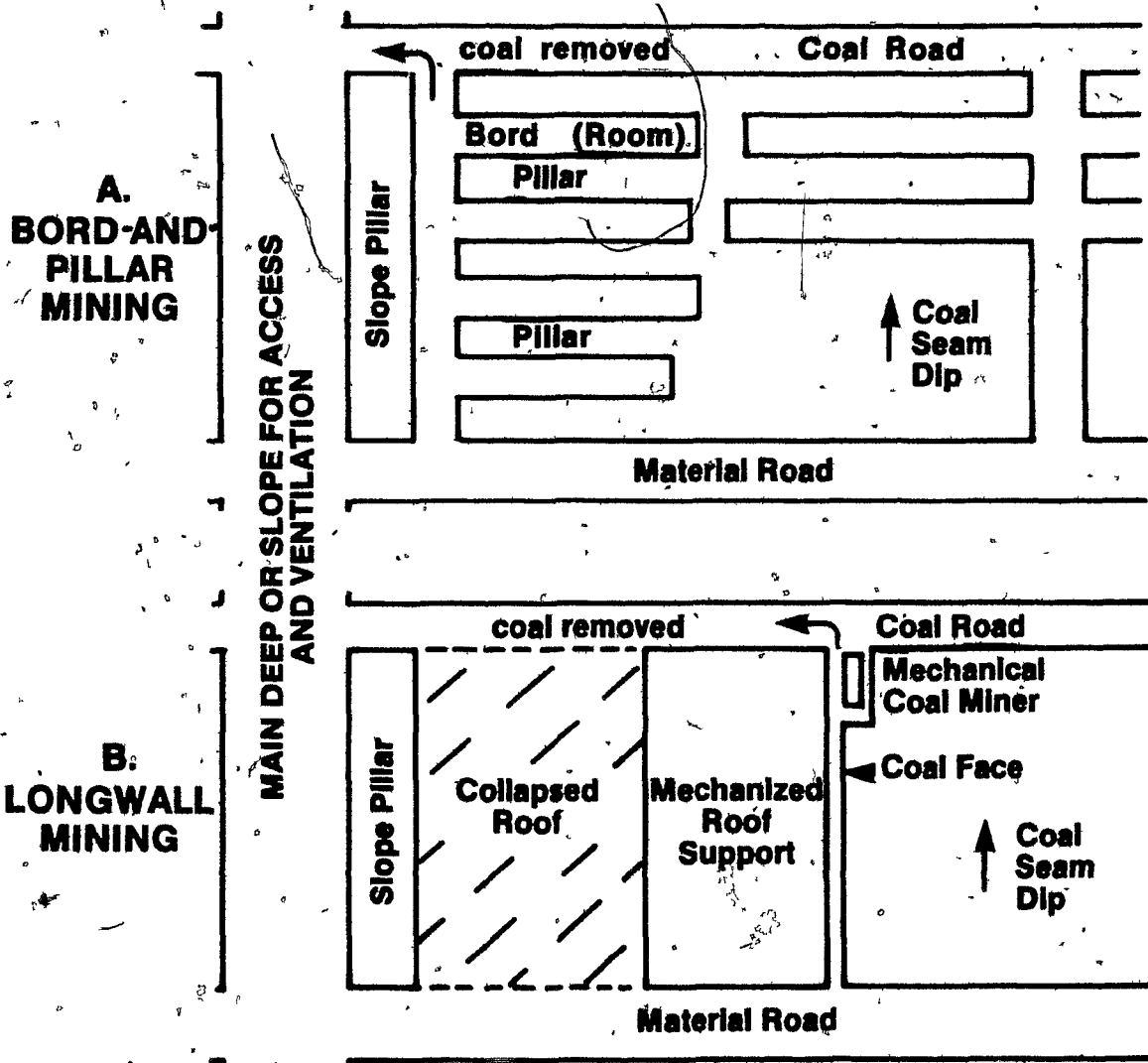
had a tremendous advantage over bord-and-pillar because it allowed a more complete exploitation of the coal; however, not all coal mines were suited to it. Figure One presents, in highly simplified form, a contrast between bord-and-pillar mining and longwall mining. Figures Two, Three and Four show these principles in a more concrete way through extracts from actual mine plans from Cumberland County.

Each underground coal mine integrated five basic systems: production, transportation, distribution, maintenance and management.¹⁵ The interplay of these systems can best be illustrated by working back from the coal face to the surface. The actual production of coal was entrusted, in bord-and-pillar mines, to a team of two miners who, often with a loader, were responsible for their 'place' (or bord). The first task of the team was that of undercutting the coal seam (the 'mining' strictly speaking), which was done by cutting at the bottom of the seam to a depth of about three or four feet. Then a hole was drilled in the coal face with an auger, gunpowder placed in it, and the coal was blasted down. (It was this process that initiated the 1891 explosion). The coal lumps thus produced were loaded into a mine car (or "box" in the parlance of the County). Many other jobs were also undertaken by this production team, such as laying track within the place or setting timber which held up the roof. For reasons which we shall later describe, the mining cycle in Cumberland County often omitted the undercutting of coal.

Once the coal was dug out and put in the coal car, it entered the transportation system. There were two components to this system, haulage (i.e. transportation of coal through the mine) and hoisting (i.e. transportation of coal from the mine to the surface). The coal mine was

Figure One

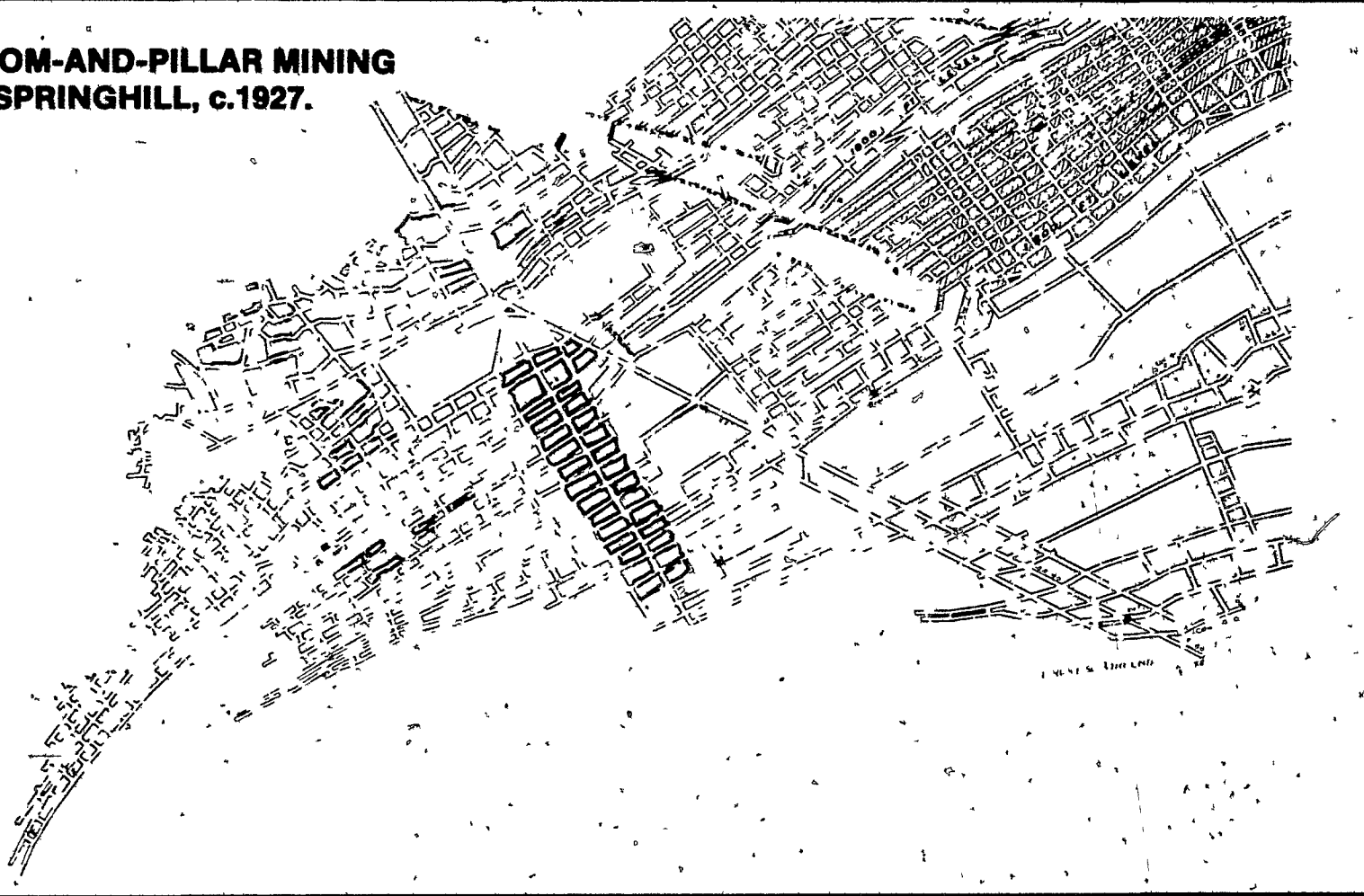
BORD-AND-PILLAR AND LONGWALL MINING



Adapted from Nova Scotia Department of Mines, *A History of Coal Mining in Nova Scotia* (Halifax, 1978).

Figure Two

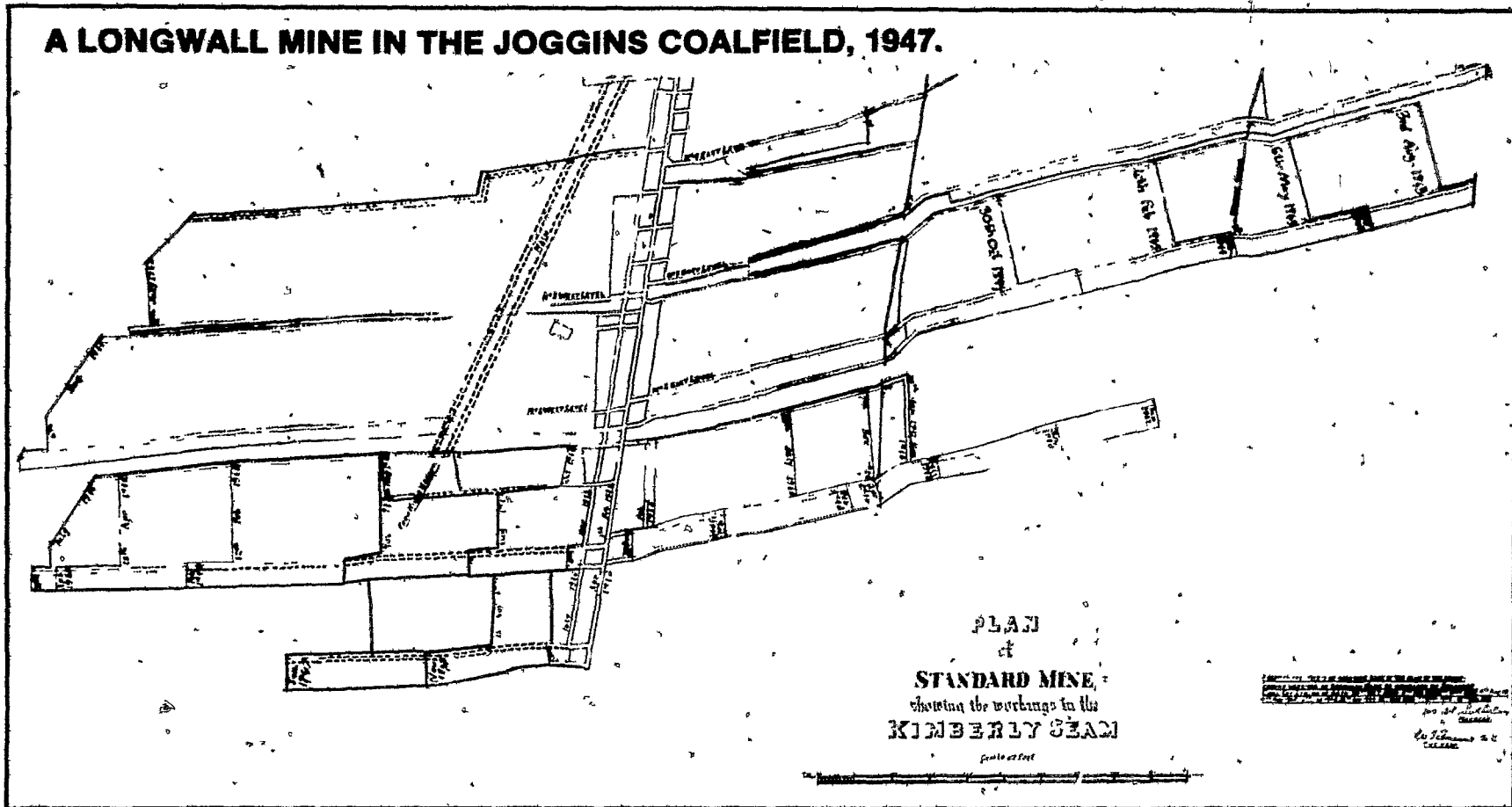
**ROOM-AND-PILLAR MINING
IN SPRINGHILL, c.1927.**



NO. 6 MINE, SPRINGHILL. THIS MINE HAD BOTH ROOMS AND BORDS. THE SHADED AREA INDICATES THAT THE PILLARS HERE HAVE BEEN REMOVED. THOSE ON THE TOP LEVEL ARE MAINTAINED FOR ADDITIONAL ROOF SUPPORT. NOTE THE TWO PARALLEL PASSAGES (THE HOISTING SLOPE AND FANWAY). SCALE: 1" = 400'. COPIED FROM A MAP IN THE COLLECTION OF THE DEPARTMENT OF MINES.

POOR COPY
COPIE DE QUALITEE INFERIEURE

Figure Three.

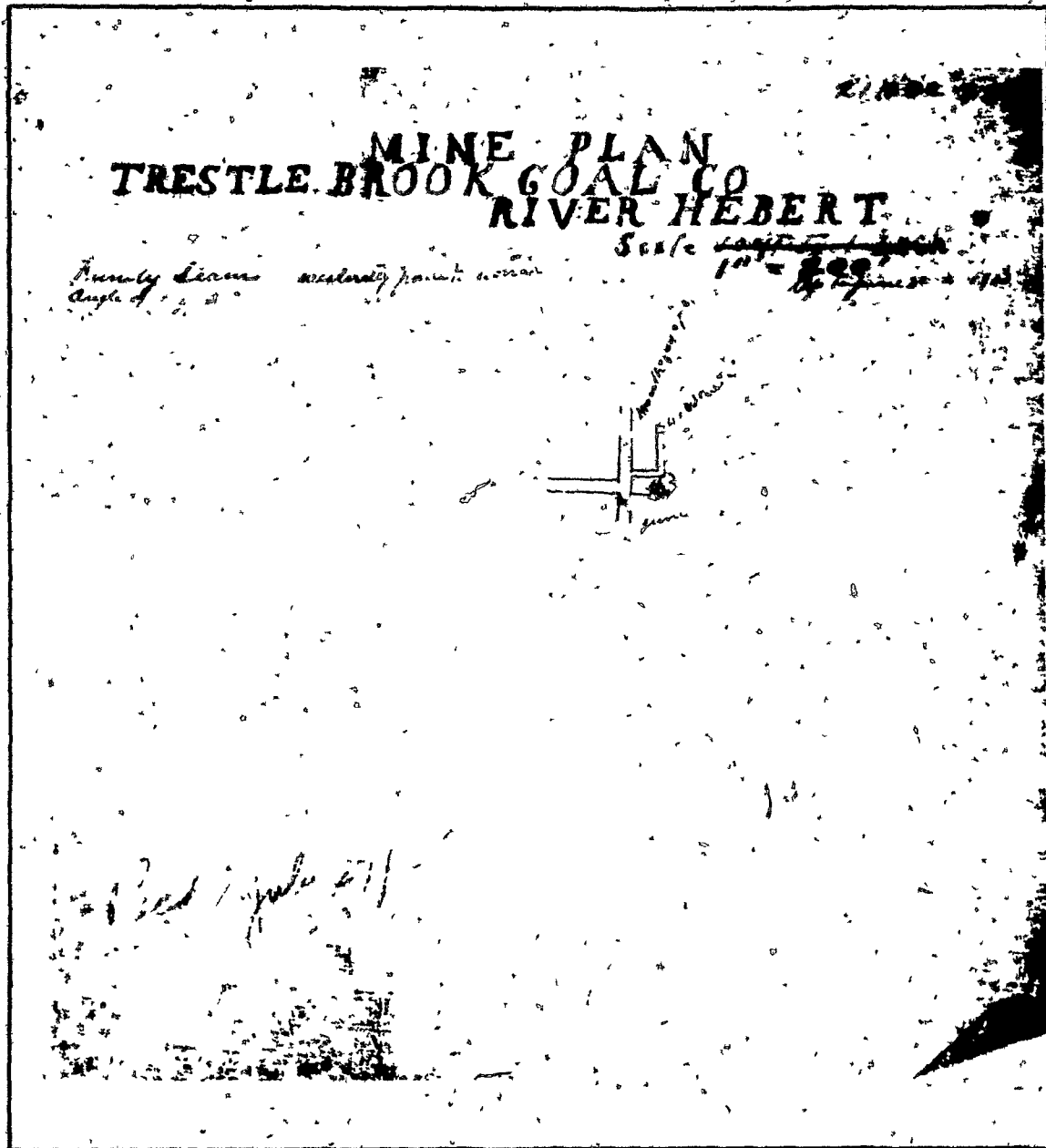


A PART OF A PLAN OF THE STANDARD MINE ON THE KIMBERLY SEAM.

A mine demonstrating longwall methods. Pillars are left to guard the two parallel passages in the centre of the mine—the main slope and the airway. The straight lines and dates indicate the position of the walls on a given date. The dates on the walls on the bottom left indicate “longwall advancing,” later dates being recorded the further one moves from the main slope. From a map in the collection of The Department of Mines.

Figure Four

**THE TRESTLE BROOK MINE, 1925
A SMALL MINE IN RIVER HEBERT**



This miniature mine produced 231 tons in 1925. Operations had begun in April, 1925. By the end of the year these levels had been extended 150 feet. In 1927 this mine produced only 1378 tons from rooms worked by hand-pick. Many bootleg mines would resemble the legal Trestle Brook Mine in their scale of operations. An exact copy of the plan filed with the Department of Mines.

in essence an underground railway system, which often worked sluggishly and impeded the production of coal. Once the coal cars were brought to the bottom of the slope by a horse driven by a young driver, the cars were made up into trains (or 'rakes') by a bottomer. The coal, once it reached the surface, entered the distribution system, wherein it was prepared for market. This entailed the screening of the coal to remove stone and other impurities, the sorting of the coal by size, and the loading of coal cars. Often this entailed a tippie, a platform upon which a pair of iron tram rails, fixed upon an axle and attached to a lever, were bolted down for emptying the coal cars into bins or railway coal cars. The surface facilities of the mine were collectively known as the bankhead.

These three interconnected systems were stages in the production of coal, and represented aspects of the same task of getting the coal from the coal face to the surface. The remaining two systems were not directly connected to the production of coal, although they were both basic to it. The maintenance system included ventilation and pumps. The primary objective of the ventilation system was the removal of harmful gases from the pit. Although systems of ventilation varied from 'natural ventilation' to fans which blew air directly into the mine, the principle of mine ventilation was the same: to drive a strong current of air through all the working places of the mine. This air current had to be directed by various devices, such as ventilation doors and bratticing (light wooden frames with canvas or other material attached, generally installed about a foot from the wall). The air current was not supposed to be divided, since this would weaken its capacity to

remove gas in the working places through which it travelled. Specialized workers were required by the system, such as examiners, who were required by law to check the mine for the accumulation of gas, and bratticemen, who were specially skilled at guiding the air current through the maze-like workings of the mine. Pumping out water was no less an essential function which had to be performed in most Cumberland mines. Very modest pits, such as the first Joggins mine, were drained through the main opening itself, but deeper and more complex mines did not have this option. Mines were deeper than wells, and if left alone would normally fill with water. Pumping created its own specialized workforce of mechanics and firemen.

The management system was in many respects the least vital to the day-to-day functioning of the mine, although it was crucial to its long-term evolution. In the early nineteenth century the general manager was the man who looked after marketing, engineering, safety, labour negotiations, and every other aspect of the business. Gradually the increasing size of the mines meant that a specialized body of men assumed these various functions. The men who managed the mines stumbled from one crisis to the next, condemned by the sheer diversity of mining functions and the tyranny of distance to a spontaneous philosophy of rule-of-thumb empiricism. A miner might see a mine official once in a day. The officials also served as the designated agents of the state and were expected to uphold mining law. Lacking modern communication equipment (although telephones did connect the slope bottom with the surface in the larger mines by the 1880s), the mining officials could not co-ordinate the various mining systems, except perhaps in the smallest

and least important mines. Rigid schedules could not be made for a mining environment so prone to accidents. Only gradually did the management go beyond the setting of long-term strategies to the effective, detailed supervision of labour.

If there was one unifying theme within these systems it was that of fragility. The ventilation system is a good example. Here was a system articulated with, indeed within, the production and transportation systems, forming an imbricate pattern of employees and structures. In the last analysis the business of mining, this crude and muscular business of digging coal from the earth, depended on something as fugitive and intangible as a properly guided gust of air. A misplaced brattice, an open door, a damaged fan: these minor defects could bring production to a halt. One may make the same point about the pumping system, so often overwhelmed by the rains and "feeders" (underground springs), or about the hoisting of coal, dependent on the strength of wire rope. This environment was one of brute force, of explosive charges and grubby piles of coal, but it resembled a very delicately balanced eco-system in its reliance upon a few very fragile arrangements. Nothing could be more important to grasp, in any consideration of the general structure of all the coal mines, than this complex interweaving of fragility and power.

This brief description merely outlines in a relatively static fashion the basics of coal mining. The coal mines of Cumberland, and each system within them, were constantly changing. Such change tended to be rather gradual, and only in a few cases were mine employees presented with a radically different technology. Yet the mines of 1927 little resembled those of 1872. On a general level, there had been a

transition from bord-and-pillar workings to longwall, an adoption of machinery driven by compressed air or electricity, and a transition from shallow to deep mines. In each system within the mines there was far-reaching change. Production was transformed by longwall mining and coal-cutting machinery, and transportation by the removal of horses and their replacement with haulage engines. The ventilation of the mines was consistently improved at the urging of the state, and distribution was transformed through the adoption of better screening equipment. Mine management evolved from the heroic individualism of the nineteenth century to the bureaucratic control of the twentieth. Many of these changes were promoted by the state.

Of the general changes, the transition from bord-and-pillar to longwall mining was the most important. "The advantages of working the Longwall...are, a better yield of large coal, less injury to upper seams as the intermediate strata settle gradually, simplicity of working, ease of ventilating, and greater economy, for the superincumbent weight reduces the labour of 'holing.' These advantages are so manifest as to indicate the desirability of working all seams of usual thickness situated 100 fathoms or more below the surface on the Longwall system," noted an international guide to coal-mining techniques in 1904.¹⁶ Longwall was a tremendously simplifying system, and that in itself was an improvement from the point of view of mine managers. It was also reasonably adaptable. The British economist H. Stanley Jevons noted that a number of factors conditioned the choice of a mining method. "Local custom counts for much in working a colliery, and in districts where a certain

method has been in operation for a considerable period the introduction of a different method may entail great expense and difficulty on account of the inability of the miners to adapt themselves to the change." He added that the purpose for which the coal was required was one of the important factors in determining the choice of a mining system. If the coal was wanted large, the longwall system was usually best; but if the whole of the coal was to be crushed and the slack sold, bord-and-pillar would work equally well and might indeed be cheaper. "Thick seams, again, and seams containing much refuse can be worked satisfactorily by pillar and stall, whereas the longwall system would be best where seams are very hard and roofs and floors are soft."¹⁷ If conditions allowed, longwall was generally acknowledged to be the superior system. Practically all the coal was removed, a larger number of men could be employed for a given length of coal face, the workings were less liable to sudden and unequal subsidences and the ventilation arrangements likewise were safer, and the decrease in the number of roads entailed lower production costs. It was known to be especially well adapted to the working of seams at great depth.¹⁸ It was also considered especially well-suited to thin-seam mining. In Northumberland and Durham, longwall working was chiefly practiced in thin seams, where there was not height for the ordinary coal-tub to be taken along the face. In thin-seam mining longwall could provide a great boon to the hard-pressed companies who confronted the problem of diminishing returns. It also seemed to be conducive to a more scientific approach to the utilization of labour. Harrison F. Bullman was not alone among the mining experts in drawing parallels between the longwall system and the division of labour advocated by

Adam Smith, although he felt constrained "from the humanitarian point of view" to praise the variety of occupation offered by bord-and-pillar.¹⁹ As Professor W.E. Lishman noted, in an address contrasting Nova Scotia mines with those of his native Durham, longwall offered special advantages because machinery could be applied more easily to it. It also allowed a more scientific control over the problem of surface subsidence, since if subsidence were to take place, it was better that it should be uniform so as to do as little damage as possible.²⁰

Longwall was considered an important step in the long campaign to make the mine into a scientifically reputable workplace. This modernization of the mine required, in essence, the destruction of the special skills of the collier. Yet this was a programme that was far more easily outlined on paper than implemented in a mine. Miners were known to be quite prepared to resist longwall when it was introduced by improving managers. "A prejudice seems to exist against it in some regions and it has been found difficult to hold miners when the attempt has been made to change to methods of operation other than room-and-pillar," noted one American authority in 1926.²¹ The historian Donald Macleod notes the importance of the transformation of the collier's working routine. In bord-and-pillar mines the collier, in partnership with his butty, controlled his own place; under longwall his independence was limited by a more intense supervision by officials, and his pace determined by the collective pace of the wall.²² Although hard evidence is difficult to obtain, some reports suggest that coal miners forced some entrepreneurs to abandon plans to introduce longwall.²³

Certainly such labour resistance cannot be ruled out as a possible

explanation of the slow advance made by longwall mining in Nova Scotia during the nineteenth century. Geological conditions in many districts favoured the new method. Such conditions included thin seams which freely parted from the roof, and tender strata overhead. A band of dirt in the coal, easily separated from the coal seam itself, was an asset to longwall mining, which required material with which to fill up the goaf (the worked-out area of the mine). Such waste material was needed so that the roadways through the goaf, which often had to be very long, could be filled. Many Nova Scotia mines possessed such conditions, yet longwall was not adopted on any significant scale before 1900. Several factors seem to have been crucial in this fairly rapid transition. Probably the most important was the demand for greater mechanization as a means of reducing labour costs. Only a longwall system could provide a good field for the extensive use of coal-cutting machinery and mechanized haulage systems. "In bord-and-pillar methods, a regular succession of varied operations takes place within a short time and the tonnage in each place is relatively small; whereas in longwall working, many tons are handled, giving the machines a continuous work period, and so providing the best conditions under which they can be operated," one enthusiast argued. "Machine mining offers too the only antidote to the ever-increasing wages cost. There is also the advantage of more systematic working methods, with a consequent increase in safety and total efficiency of the mine." For scientifically-inclined managers longwall machine mining seemed to offer "the realization of a dream in the way of decreased costs and ease of production, worth years of experiment and trial."²⁴ Additionally, increasing depth must be taken into account as an important factor in

the transition to longwall. In the longwall system ventilation was radically simplified: the full air current swept along the working face without the aid of brattice, and free from the obstructions met with in the bord-and-pillar system.²⁵ Longwall in Springhill emerged in the 1920s, as we shall see, as a response to the problem of the pressure exerted by the superincumbent strata. For many managers in the early years of the twentieth century longwall solved many intractable problems associated with deep mining. Yet perhaps the decisive general factor was the question of reducing labour costs, by improving productivity. It is unquestionably true that discussions of longwall in the early twentieth century are completely different than those of the nineteenth; that the flurry of experiments in longwall reported in the 1890s did not by and large entail a revolution in the labour process,²⁶ whereas those of the twentieth century involved wholesale mechanization. If the direct evidence that longwall was impeded by labour resistance is not available, the indirect evidence suggests that the success enjoyed by miners in their struggle for better wages promoted the adoption of longwall as one aspect of a total modernization of mining.

Longwall as a mining system had been known in Nova Scotia prior to the coming of the General Mining Association in 1828, and had been practised intermittently since that time in Pictou County and elsewhere.²⁷ The first known application of the technique in Cumberland County was at Maccan in 1866, but this experiment was short-lived and exceptional.²⁸ The first prolonged use of longwall in the county was at the Joggins in 1873, where it was reported that "The system of 'longwall' adopted in one district of the workings has been proved well adapted to the requirements

of the seam and will be extended to other portions of the workings as circumstances allow."²⁹ It is not altogether clear how far the management of the Joggins mine went with this experiment. In 1878 the Mines Report noted that the "advantages of the system adopted, by which almost the whole of the seam is won, has been interfered with by the irregularity of demand and the reduction of the trade in consequence of the low freights bringing other coals in closer competition in the St. John market."³⁰ The exact nature of the interference was not specified, but it is probable that the Report refers to the difficulty of mounting such a programme of innovation in a soft market, and perhaps to the task of maintaining the roof at the face of the longwall mine, carried out through regular removal of the coal. This technical feature of longwall mining made it unsuitable to seasonal, mercantile collieries. Longwall must have been discontinued at the Joggins in the 1880s, because James Baird, when he became manager of the mine in September 1890, decided to introduce a system of longwall "pure and simple."³¹

Baird's attempt to transform the Joggins mine brought to light many of the new conditions longwall implied. One consequence of the new system was that the mine consumed vast quantities of timber. Because the fireclay band in the Joggins was of too soft a nature to build walls with, Baird was obliged to adopt wooden butts 3 feet by 4 feet. This timber was used to keep the roads open to the face. In longwall working, Baird noted, the trick was to allow the roof to subside in such a way that mining at the face could proceed safely. "The roof sometimes bends quite gradually; at points it breaks heavily," Baird noted. "We have been very fortunate in the way of breaks, never having had a butt thrust

out of its place, and the roads have always kept good under the most severe strain." Baird pronounced this first major experiment in longwall mining a success: "I can safely say that the adoption of longwall at the Joggins has been a benefit to all concerned; the miner gets more coal with less labor. A greater quantity of timber is consumed, but the additional cost is more than offset by the other advantages."³²

Baird's enthusiasm for the new system was shared by the deputy inspector of mines. "All the work done in this mine during the year was long wall," he noted in his 1891 report. "It has proven very successful here, as the coal taken out under this system is larger, and a larger percentage of coal is won. I would say 95 per cent of all the coal is taken out, it may require more timber, but the larger percentage of coal obtained amply pays the difference. The men also can dig a larger quantity per shift than under the old system."³³ But events at the Joggins were to show some of the limitations of longwall as well. Increasingly bitter relations between the coal miners and the company—partly aggravated by the miners' uncertainty over the wage structure of the longwall system—led to a long strike in 1896. After the strike, it was discovered that the mine had been extensively damaged by a "creep" (the forcing of the pillars into the roof or pavement, causing the filling of the spaces between pillars). The roads in the mine had to be lifted and relaid, and the slope retimbered to permit the boxes to run. It was doubtless a very expensive outcome of the strike, and can only have contributed to the eventual bankruptcy of the company. As the management at the Joggins discovered, longwall had the rather surprising consequence of giving additional power to the workers, because damage to

a strike-bound longwall mine was apt to be greater than to its room-and-pillar counterpart.³⁴ So far as an imperfect record allows us to judge, these were the only attempts to introduce longwall in the county in the nineteenth century.³⁵

The twentieth century saw a major transformation in the thinking of coal-mine managers. Already in the 1890s there was a heightened interest in longwall methods, part and parcel of a growing emphasis upon rational management. Three major papers read before the Mining Society dealt with the question of longwall and practical steps which had been taken to introduce it. But this interest remained at a fairly abstract level until the penetration of monopoly capitalism made increasing labour productivity a question of survival. Longwall won an easy triumph in the Joggins coalfield, where thin seams provided an ideal environment for its introduction. The Joggins worked a mixed system; various balances would be worked differently. For example; in 1906, Nos. 1 and 2 balances were worked bord-and-pillar, and No. 4 balance was driven in the solid and opened out long wall, as were balances Nos. 5 and 6.³⁶ After the Joggins came under the forceful control of the Maritime Coal and Railway Company in 1907, longwall became a more important part of a mining operations, although in the submarine portions of the mine bord-and-pillar was preferred.³⁷ By 1911 a longwall mining-machine was in use, an indication that the management was alive to the technological advantages of the new system.³⁸ Longwall and mechanization proceeded together in the Joggins colliery. By 1915 the method of working was described as being entirely longwall, except for one lift worked bord-and-pillar.³⁹ By 1922 the

Joggins mine had been taken over by longwall and electrically-driven coal cutting machinery.⁴⁰

Many other coal mines in the Joggins coalfield followed this pattern. By 1925 a total of 9 separate pits (the Bay View, Boston, Fundy Nos. 5 & 6, Lawson, Maple Leaf 3 & 4, and Victoria 1 & 2), were worked longwall, compared with 10 (the Carter, Casey, Joggins, Marsh, Milner, Scotia, Sterling No. 3, Strathcona, Tom Pit, and Trestle Brook) worked bord-and-pillar. More importantly, the longwall mines accounted for a majority of the coal mined in the Joggins coalfield.⁴¹ The importance of longwall and mining machines was heightened in the years of the Depression and the Second World War. The triumph of longwall and machine mining was highly ambiguous, since it enabled these small, semi-rural pits to survive in the local market. It did not usher in a new era of scientific management in any profound sense; rather, longwall and machine mining tended to allow the old locally-controlled pits to continue to pursue small-scale mining. It is perhaps this unique context which explains why the coal miners lodged no protests against longwall.

The case of Springhill was quite different. Unlike the relatively new pits of the Joggins coalfield--new, of course, because deep mines were uneconomical--the mines of Springhill had been in continuous existence for many years. Springhill had been worked consistently on the bord-and-pillar system in the nineteenth century, with the exception of a fairly minor experiment in longwall in the mid-1880s. Springhill might have served as a textbook example of the ways mining decisions of one decade constrained the possibilities open to the next. In 1866 John Rutherford had warned of the short-sighted policy (which one might

associate with a classic staple approach to coal) of leaving minimal pillar support in the mine.

The facility with which the coal has been reached in all the districts, as compared with other Mining countries in which, from the exhaustion of the seams near the crop, expensive sinkings become necessary to reach the underlying coal, and consequent great skill and carefulness are required in properly opening out the Mine; this freedom from an expensive preliminary outlay, instead of enabling an effective winning of a large tract of coal to be made before commencing the regular working thereof, seems to have engendered an indifference to future operations, and allowed the desire for an immediate profit to supersede the necessity of a judicious arrangement of the mode of working. To this cause I attribute the short distance from the crop, to which in most of the Mines the working[s] are confined; and the adoption of a system by which as much of the seam as possible is taken away in the first working and the pillars are reduced to a minimum of strength for the purposes of support. The injudiciousness of this system cannot be too strongly urged.... For, although with the present limited extent of workings and the absence of pressure in consequence of the proximity of the coal to the surface, the pillars may be sufficient to keep the Mine open for ventilation or other purposes, yet if unaltered where the overlying strata are very much thicker and heavier, their inability to support will in no long time be exhibited to the serious detriment of all concerned. 42

It is an extraordinarily perceptive observation: Rutherford connects the architecture of the mine, the very nature of the pillars themselves, to the mentalite of the short-term characteristic of his epoch. The question of pillars indicated the profoundly historical nature of coal mines. A coal mine reversed a common-sense understanding of development by resting upon its upper levels: if the main slope was inadequately protected by slope pillars, the mine would be plagued thereafter with heavy costs for maintenance. The management of Springhill, like that of Joggins, won the praise of contemporary mines inspectors for following a scientific plan

in the extraction of pillars.⁴³ But the management also earned the condemnation of succeeding generations of managers and miners, who were plagued with the problem of inadequate support for the main slope of No. 2 Mine. "When the mine was opened," Walter Herd, an engineer with the Dominion Coal Company testified in 1925, "scant regard was paid to the future development of the workings and the policy of leaving small pillars of insufficient size is to-day being heavily paid for by the costly upkeep of a main slope, 97% of which cost is attributable to the old upper workings."⁴⁴ It was an arresting example of the hindering character of decisions in the environment of the mine.

If the hesitation to introduce longwall in Springhill partly stemmed from the unwillingness of management to innovate, there were also strong technical points against the new system. Many of the seams which would be most beneficially exploited through longwall yielded no waste with which an adequate roof support system could be constructed. Since support of the roof in the longwall system is a consideration of primary importance, the absence of such building material constituted a grave impediment. Rather than adopt longwall, the innovative management of J.R. Cowans turned to extensive exploitation of the remaining pillars and the use of chutes in inclined areas. However, such measures could hardly satisfy the requirements of mining as the pit became deeper and deeper.

A whole range of systems was evolved within the bord-and-pillar framework, many of them unique to Springhill. These new systems were mostly associated with Dominion Coal. Any description of them is apt to take us into the very special language of mining, but an attempt must

be made to convey the essence of the systems if not their full technical complexity. The Springhill mine had first been worked by dividing the coal into pillars on the 'first working' (the phase of driving roads and testing the limits of the seam). As the levels advanced, passages (called 'headings') were driven 700 feet apart into the seam, then the coal was brought down from these steeply-inclined places on 'sheets', iron or steel slides which facilitated the movement of the coal. When the heading reached the level below, the sheets were taken up and replaced by normal tracks, and a 'back balance' was set up. This was a kind of self-acting incline, with a loaded balance car attached to one end of the rope, and a carriage for the mine car on the other. The loaded car was run on the carriage and lowered to the foot of the incline, raising the balance car; the balance car in its descent raised the carriage when it was loaded on with an empty car. It worked on the principle of the seesaw, and provided an ingenious and efficient method of reaching bords in steeply-inclined places. Bords were developed on both sides of the balance and driven about 350 feet, or until they had holed through into the workings coming from the next balance. After the whole district had been divided into bords and pillars, the pillars were removed, working (generally) from the boundary of the developed mine back to the slope. In the first form the slopes were 30 feet thick, with cross-cuts (small passageways driven at right angles to the main entry to connect with a parallel entry or air course--so named because they were driven across the "grain of the coal") every 50 feet. As the mine became deeper and deeper, the pillars increased in size. By the time the mine had reached the 3,300 foot-level, the pillars were 40 by 70 feet, and the width of

the bords had been reduced from 12 to 10 feet.

This system did not work all that well at great depths. The management discovered that before all the pillars could be removed, much of the first development work had caved in. Much effort had to be put into clearing up falls of coal and driving entirely new bords. Putting in new roadways through the pillars (a process called "ribbing in" in Springhill) had grave disadvantages for the company, because it had to pay men extra for this kind of "narrow work" (work for which a price per yard of length driven was paid, and which, therefore, had to be measured). The men claimed that the system of ribbing in was much safer, whereas the management believed that it aggravated the problem of underground tremours or "bumps".

The management under Dominion coal decided to experiment with a variety of new mining systems. First an experiment was tried of increasing the size of the pillars to 90 feet, but this did not eliminate the heaving floor and other difficulties of the bumps. Trouble was also experienced with the balances, where the heaving of the pavement threw the track out of alignment and reduced the height.⁴⁵ The management resolved to bring in a more radical change.

The new system entailed a drastic reduction in the size of pillars and a startlingly new rhythm of mining. In the old system the development work--driving the inclines and roadways--preceded the extraction of the pillars. Now extraction of the pillars proceeded immediately after completion of the bord. The swift extraction of pillars, it was hoped, would circumvent the problem of leaving pillars of only 35 feet under a cover of 2,500 feet. Because the pillars in the

new system were allowed almost no time to cave in; their size could be reduced with impunity. Moreover, "ribbing in" could be eliminated.⁴⁶

However, as a solution to the problem of bumps, the new system proved to be no more successful than the old.

As the problem of bumps became more and more serious, the government and the company turned to outside experts for guidance. The report by George S. Rice, chief mining engineer of the U.S. Bureau of Mines, represented a landmark in the history of Springhill when it was presented to the government in 1924. Rice surveyed the problem of bumps, which he thought were caused by too much pressure being placed upon the pillars by the overlying strata. Rice was critical of the modified bord-and-pillar system, which he thought was designed in a manner that placed the maximum amount of pressure on the pillars. But the problem was more profound, Rice argued, because "it does not seem possible to devise any pillar plan which will avoid bumps or bursting of pillars at very great depths (3,000 feet and over), because the unit compression strength of the coal as a pillar except one of impracticable size, will not at these greater depths exceed the unit pressure of the overburden." Rice noted that in the west side of No. 2 mine, the roof and pavement were stronger than the coal, and this strengthened his argument, since such conditions were associated with bumps. The inescapable conclusion was that the entire mode of working should be changed: "Plans should be made, in my opinion for a complete change of mining system below the 5,900 levels, east and west, to a retreating longwall with faces in steps. Pneumatic hammer picks can probably be used to advantage and either drag scrapers or shaking conveyors should be used to transport and load the coal on

mine cars in the respective levels." The die was cast: henceforth retreating longwall was to be the prevailing system in the most important mine of Springhill. "I never heard," Rice said, "of bumps being experienced in longwall mining."⁴⁷

Rice's Report was highly critical of the reduction in the size of pillars, which he thought might well have intensified the problem of bumps. The idea of extracting 30 per cent of the coal in the first working left the direct vertical load on the pillars dangerously near the crushing strength of the coal. With these criticisms in a public report, the company probably had little choice but to go along with Rice's plan. There is some evidence that it was far from unwilling to do so. From 1925 Springhill was governed by a new system of technology.

The transition from bord-and-pillar mining to longwall was plainly a protracted and complex affair. Descriptions of the coming of longwall often make it appear as if it imposed by itself a new regime upon the mine. A detailed local analysis indicates that any equation of 'longwall' with 'modernization' simplifies a complex and ambiguous relationship. One could combine longwall mining with bord-and-pillar for an extended period and without significant mechanization, as at the Joggins in the period 1890-1910. One could introduce longwall without mechanization, as was the case in Springhill in 1924. All that longwall allowed was the possibility of a more stringently controlled and technically advanced workplace; it did not by itself make this control inevitable. The gradual drift to longwall was favoured by certain geological conditions (such as thin seams) and impeded by others (such as Springhill's absence of a waste material for stowage). Longwall mines could be small and relatively primitive. Most crucially, significant technical achievements

were possible within the context of bord-and-pillar mining. The coal miners who appeared before the Duncan Commission in 1925 from Springhill were concerned about the way longwall had been introduced, but they were far angrier about the company's unilateral termination of "ribbing-in" during the First World War. Here, as in so many other aspects of the structural evolution of coal mines, we are confronted with a slow drift towards scientific management, rather than a sudden and irreversible imposition.

Two other general changes characterized the Cumberland mines in this period. Electricity and new compressed-air technology made possible a general mechanization of the mines at all levels, and the larger mines, particularly in Springhill, attained far greater depths.

Competition and unsteady markets in the nineteenth century, combined with the short-term perspectives of management in the mercantile period, made it unlikely that coal companies would invest heavily in finding new sources of motive power. Steam power prevailed from the 1870s on, favoured by the mines' ability to use their own coal to run small steam plants. H.S. Poole underlined the dangers of mine boilers in a note in 1872: "Boilers may be seen in use with seams and rivet holes leaking, with water running over and corroding them where they rest on the brickwork, or with places strained and bulged or covered with patches."⁴⁸

Corrosive water, exhausts which damaged mine timbers: steam power, particularly as applied to pumps underground, had marked disadvantages.⁴⁹

"It has long been recognized that compressed air is the power best fitted for coal cutting machinery and its use is extending in the application of power underground to drive locomotives instead of using stationary

engines for the haulage," Poole noted. "The liberation of fresh air instead of waste gases in the workings is another inducement, as it is a direct aid to the ventilation, while the use of steam is often a cause of much inconvenience on account of the heat and loss of power from condensation in the pipes."⁵⁰ Henry Swift in his letters to Cowans often notes the damages to the mine structure caused by exhaust from the underground pumps. Yet finding suitable substitutes for steam technology was a difficult business. Compressed air and electricity--the two most promising candidates--were only slowly adapted for mining use. Although a knowledge of the uses of compressed air had been in existence for centuries, its modern use in industry dated only from the third quarter of the nineteenth century. One of the earliest tests of compressed air for mining work was made at the Calumet and Hecla copper mine in Michigan in 1878; a demonstration which illustrated the potential value of this technology for coal mining. Poole showed the precocity and awareness of local mining authorities in their approach to technological development, by so swiftly appreciating the value of compressed air.

Compressed air and steam were perceived as rivals in the coal mines. Some considered compressed air safer than steam power. "The reason compressed-air is a safe power is the fact that it has no reserve force, as is the case of steam boiler explosions," reasoned one article in the Maritime Mining Record. However, the article proceeded to note, the method had its dangers because of the proximity of oil or other inflammable substances used to heat the air. Explosions in Cape Breton seemed to be attributable to such fires in the pipes of air compressors.⁵¹ There was general agreement that if properly handled,

compressed air posed far fewer safety problems than either steam or electricity. Yet it was far less efficient than electricity when applied over distance, and it was precisely within a context of deepening mines that the new technology was coming into play.

Electricity seemed to open up great new vistas for mine managers, although it too posed problems. T.J. McKavanagh presented an important paper to the Mining Society in 1908 which spelled out the enormous potential represented by this new motive power. Most of the underground processes could be transformed by electricity. Mining pumps could be improved dramatically with electrification; owing to the perfect balancing in turbine pumps, and the constant turning effort of the electric motor, heavy foundations were not required. Electric percussion drills, or combinations of compressed air and electricity in the form of coal-cutters using electrically driven portable air compressors, created a more economical coal-mining practice. Ventilation could be entrusted to the electric motor; and main and portable haulages could be economically operated by electricity. Although even ardent advocates of electricity conceded that modern steam winding engines were formidable rivals--all the more so because coal mines could use their own coal--electric winding was considered feasible for particularly deep mines where the consumption of coal was apt to be exorbitant, or in situations where economies could be effected by having several mines supplied from one generating centre.⁵² Yet many thought that electricity in the coalfields was an untested and even dangerous innovation, largely because of the peril of sparks in a gassy environment. Robert Drummond, for example, opposed the introduction

of electricity, and other mining men greeted a paper delivered on the benefits of electricity in 1911 with scepticism.⁵³ A Royal Commission formed to look into the question of electricity in the coal mines considered that "in a not remote future electricity will be the power generally used in our mines," citing in particular the impact of the new technology on thin seams. "[W]e had evidence of a seam that only averaged 18 inches being worked at a profit; and it is apparent that the low seams of various companies which could not be worked by steam or compressed air to advantage, may, by the use of electricity, be made workable propositions." Notwithstanding these tremendous benefits, the commission was clearly impressed with the potential dangers of electricity. The commission recommended that before electricity was introduced into any mine, except for telephone or signalling purposes, leave be obtained from the Inspector or Deputy Inspector of Mines.⁵⁴ The recommendation became part of mining law.

Some of the earliest victories in the struggle to electrify the mines were won in Cumberland County. Electric signalling was introduced at the Joggins in 1877,⁵⁵ the first application of the technique in the province.⁵⁶ No further advances in electrification were reported in the nineteenth century, but rapid progress was noted with the rise of the Maritime Coal and Railway Company—naturally enough, given its interest in producing power right at the mine. In 1908 the Joggins colliery was converted to pumping by compressed air.⁵⁷ By 1910 the mine's machinery was said to be "nearly all run by electricity," with power (11,000 volts) being supplied by the Chignecto plant of Maritime Coal. "The change from steam to electrical power has brought

about a large saving in operating expenses," notes the Mines Report.

"A change has been made in the mode of working: the balances are now driven narrower and the coal lowered by engines or motors--this does away with cages and ballast boxes." An electrically-driven fan for ventilation was in the process of installation.⁵⁸ By 1911, Joggins boasted an electrically-operated Jeansville pump which disposed of 45,000 gallons of water daily,⁵⁹ as well as an electrically-powered longwall mining machine.⁶⁰ By 1914 haulage and hoisting were evidently entirely powered by electricity.⁶¹ Few collieries in Nova Scotia were converted so completely to electricity at such an early date.

Certainly the pace of electrification was more sluggish in other parts of the Joggins coalfield. In the Minudie mining area, for example, it does not appear that electricity came into general use until after the First World War.

Springhill also followed a less dramatic path. Workers discussed the wisdom of having an electrical cable in the mine in the 1880s--an interesting illustration of their willingness to discuss practical mining improvements.⁶² Apart from the use of electric lights in surface areas, little use was made of electricity in actual mining operations in pre-war Springhill.⁶³ In 1913, the company was reported in the process of erecting a new air-compressor, which would enable all underground machinery to be run by compressed air.⁶⁴ Apart from an electric fan at No. 6 Mine (installed in 1927), it appears that the power for mine machinery was supplied by compressed air throughout this period.⁶⁵ This reluctance to switch to electricity as the direct motive power for machinery almost certainly stems from the ready supply of

slack coal with which steam boilers could be kept going. It may well have been the most economical decision under the circumstances of mining at Springhill. As well, management may have been deterred from adopting electricity by the gassy nature of the mines. There were good reasons to avoid adopting electricity in mines with Springhill's reputation.⁶⁶ In 1927 electrically-driven machines were present in such mines in the Joggins coalfield as the Marsh, Maple Leaf No. 4 and Lawson, while other mines (such as Strathcona and Victoria Nos. 1 & 2) relied on the handpick. In Springhill, by contrast, the machines used for mining in Nos. 6 and 7 mines were exclusively powered by compressed air.⁶⁷

Of the general changes affecting the mines of Cumberland County, the most obvious and in some ways the most important was the depth of the mine. In 1866 the greatest depth attained by any mine was 210 feet. The greatest depth of the workings at Joggins was 110 feet; the Victoria Colliery had attained a maximum depth of 135 feet.⁶⁸ Mines that were operated continuously naturally became deeper as years progressed. As this happened, many conditions changed. Miners who had once been able to leave their work at will were now constrained by the very geography of the mine, which could only be left after a long walk through the travelling way or via the main slope. Depth, to some extent, was the friend of centralized company control. As we have noted, problems of the weight of superincumbent strata increased as mines went deeper, forcing, at least in Springhill, a radical reappraisal of mining methods. Mine accidents increased as the mine became deeper and more extensive. By the 1890s managers were forced to wonder, with

William Blakemore, whether there was an economic limit to the output of a coal mine: whether, because of the augmented depth and extent of coal mines, the expense of haulage and hoisting would start to outweigh the revenues received from coal.⁶⁹ Few technical factors weighed as heavily in the balance which had tipped so decisively against Nova Scotia in the international marketplace in the early twentieth century. As mines became deeper, a premium was placed upon scientific control, detailed accounting, and supervision over the labour process—and at the same time, the greatly enlarged area of a coal mine meant these functions were more difficult to exercise.

In 1927, as indicated by Table One, the depth of the Cumberland slopes had increased enormously. (In this instance depth refers to the distance along the slope and not the distance straight down from the surface).

Table One. Depth and Angle of Dip of Cumberland Coal Mines, 1927

Name of Mine	Name of Seam	Size of Slope (feet)	Depth (feet)	Angle of Dip (degrees/minutes)
Springhill No. 2	No. 2	10 X 8	7,580	18 to 37 0
Springhill No. 3	No. 3	10 X 8	5,100	18 to 34 0
Springhill No. 6	No. 6	12 X 6	2,831	15 to 50 0
Springhill No. 7	No. 7	12 X 6	2,386	20 to 50 0
Boston	Victoria	8 X 5	760	20 0
Fundy No. 6	Fundy	9 X 5	400	18 0
Strathcona	Kimberley	10 X 5	800	19 0

Table One (Cont.)

Name of Mine	Name of Seam	Size of Slope (feet)	Depth (feet)	Angle of Dip (degrees/minutes)	
Lawson	Lawson	9 X 5	800	34	0
Maple Leaf No. 4	Joggins Bench	10 X 6	1,280	18	0
Bayview	Bay View	10 X 5	1,000	18	0
Casey	Joggins Bench/ Fall	10 X 5	1,350	18	0
Sterling No. 3	Kimberley	10 X 5	750	18	0
Milner	Fundy	8 X 5	250	19	0
Teapot	Fundy	7 X 5	200	18	0
Scotia	Chignecto	8 X 6	165	50	0
Marsh	Kimberley	8 X 5	1,130	22	0
Trestle Brook	Fundy	8 X 6	218	20	0
Victoria No. 1	Queen	8 X 5	1,000	19	0
Victoria No. 2	Queen	8 X 5	1,000	19	0

Source: Mines Report, (1927), Table 29, pp. 306-307.

This array of statistics crystallizes a whole host of relationships and possibilities, conditions and struggles. One notes, first and foremost, the geological dualism of the county: not one of the coal mines of the Joggins coalfield comes near to the depth of the least of the Springhill mines. In fact this mere record of depth does not fully express the contrast, since what was also at stake here was the sheer extent of the coal mine, which was far greater in the case of Springhill than in any of the other coal areas. The deepest mine in the county in 1927 was 26 times as deep as the deepest mine in 1866. We have here a measure of the transformation of the coalfields through time, but also a measure of the

stubbornly refractory nature of the Joggins coalfield, where pits in the 1920s might be no deeper than those of the 1860s. The mines of Springhill were not yet the deepest in Nova Scotia, but they had certainly been transformed, in the years of industrial capitalism.

These were the general conditions which changed through the entire coalfield, affecting all the mines in an uneven but persistent way. But many other changes must be noted in each of the five main systems which made up the mines.

The production process--the actual cutting of coal at the face and the loading of that coal for transportation through the mine--moved from a method where by two men used hand picks to get the coal (with a third to load the coal into a coal car); to one in which four or more men worked together with coal-cutting machinery on one wall and a conveyor to take the coal to the main slope. More than any other of the basic changes in coal mining, this transformation in production was uneven and halting. Certain physical conditions (such as Chignecto's steep inclines) restricted the use of machines, by making it difficult to move them through the mine. Apart from the large Stanley Header, used to drive main roadways, the mining machines adopted in Nova Scotia took the form of bar coal-cutters, which employed electricity or compressed air to power a cutting bar into the coal face at ground level, disc longwall machines which undercut the coal with a thin cut by means of a six-foot long cutting portion, and percussion-type coal cutters, the most adaptable of all the devices, which featured a steel bit (the "punch" or "pick") driven by compressed air and driven into the coal face in much the same way as a handpick, only with greater speed and force. Percussion-type

coal cutters were enthusiastically endorsed by one mine manager in the 1890s, who estimated that the machine produced the same amount of coal as a handpick miner could in one-sixth the time. As he proceeded to note, however, the machine's advantages were beneficial only within a context of improved loading and haulage.⁷⁰ The lesson was not lost on the Dominion Coal Company, which in Cape Breton combined a programme of mechanization with improved underground haulage in a successful attempt to boost levels of productivity.⁷¹ Although workers voiced misgivings about the machines, which made it hard to listen for mine dangers, intensified the problem of dust, and shook the men who worked them, there is scant evidence of a concerted attempt to stop their coming, apart from local disputes over appropriate rates.⁷²

Cumberland County differed from Cape Breton, and from the province as a whole, in the nature and timing of the mechanization of coal production. Surprisingly, the most successful adaptation to machine mining was made in the Joggins coalfield, where the thin seams allowed advantageous use of many of the undercutting machines and there was an abundance of cheap electricity, and the least impressive response was found in Springhill, where the threat of explosion and other factors impeded mechanized production. In the nineteenth century only sporadic experiments (including one of the province's earliest percussive mining machines driven by compressed air, in 1882) are reported,⁷³ but gradually most of the major mines of the Joggins coalfield adopted coal-cutting machinery, a trend which was strengthened by the First World War.⁷⁴ By contrast, the much larger Springhill mines initiated a serious programme of mechanization only in 1921, and then only in Nos. 6 and 7

mines. Even then the introduction of mining machinery was highly controversial. James U. McLeod expressed the opinion of many Springhill miners in his testimony before the Duncan Commission in 1925, and indicated at the same time many of the conditions which had impeded mechanization of the mines. He was highly sceptical of the suitability of the machines in a mine such as No. 7. He noted how dangerous it could be to secure the machine in steeply pitching places, and tended to blame the machine for disturbing the conditions in Springhill. "We have had a lot of discomfort and discontent, no peace, no steady employment to speak of since it came," he argued, "and why that is so we are all trying to find out... I don't know that I can blame it on the machine, but since it has come it has caused a lot of discomfort." McLeod was concerned about the rates paid the machine miners and the arrangements for loading. He was particularly worried about the dangers of the machine.

We will take it for instance that there is a board that is across the whole, and it is in, we will say anyway from 25 to 40 feet and you are driving the head up. That machine could be running inside and you would be loading the coal from there and probably some stone would come down. It would kill you and you would never know what hit you. If things were as quiet as they should be you would hear this coming and would have a chance to escape. 75

Between machine mining in Cape Breton and the same job in Springhill-- McLeod had done both--there was "all the difference in the world," he reported: in Cape Breton's flatter seams the machines could be profitably employed and the machine runner was not afflicted with constantly lugging the machine uphill, whereas in Springhill the steeply pitching seams and the constantly varying mining conditions presented tremendous obstacles. 76

In the much larger No. 2 Mine in Springhill, coal-cutting machinery was not employed at all in this period. Since the use of powder had been ruled out after the great explosion of 1891, the use of most undercutting machinery was out of the question. Other types of machinery were not considered because of the risk of explosion. The result was that the traditional skills of the collier were if anything more completely preserved here than in the smaller mines of Cumberland. H.S. Poole had expounded on the skills of the collier and the importance of good picks in 1873:

A pick-handle may seem a small thing to bestow much thought on and yet it is a matter of some solicitude to the collier who, in the course of his day's work may require as many as six or even eight picks. Those now in use are made by hand, of birch or maple....In the Pictou field the introduction of machine made handles was followed by a considerable reduction in the number required, where, during busy times, as many as one hundred dozen a month are used. ...So much depends in cutting coal on truly delivering the blow, that, although a skilled collier will unconsciously correct the wavering due to a bad handle, he naturally prefers a good one, and is strongly induced to destroy those that are inferior....77

Although Poole would not have remarked upon the need for standardized pick handles in 1927, he could have repeated everything he had said about the particular knack of coal mining with a pick. And he could have been even more emphatic than he usually was, since the production of coal in No. 2 involved skills not required in other pits. Since technically the production of coal here was not 'mining'--the coal was not undercut--the skills needed by the collier (such as knowing just which way to strike the face, just the right way to play the pressures exerted by the roof to the best advantage) were peculiar to Springhill. At a time

when most North American collieries were swiftly becoming mechanized, Springhill remained at a most archaic level of production, a level in which her colliers enjoyed many rights.

The question of the transformation of production is consequently far more complex and interesting than at first sight it might appear to be. There can be no question that the mines were transformed by the application of new technology. Yet this transformation took place in a manner that was strikingly hesitant and incomplete. The crucial technological bottleneck was loading techniques. As long as coal mining remained dependent upon hand-loading the new innovations would not really transform the pace of production. J. F. Kellock Brown, a geologist, alluded to the problem of mechanical underground loading in 1914, but brought up the point that such innovations might not justify initial expenditure.⁷⁸ Hugh B. Gillis, superintendent of Mines and Quarries, Dominion Iron and Steel Company, placed the problem in Nova Scotia within the context of local coal being severely undercut by American coal. Traditional remedies no longer worked, and the problem was made all the more desperate by the wage demands of the miners. The traditionalism of loading practices in the mines seemed irrational.

There is one large labour absorbing process that for years did not receive the attention its bearing on the cost sheet deserved. Hand loading is still followed as in the days of the Duke of York, and, although in past years there was the excuse that no adequate substitute was available, its continued practice in the face of the last few years will, within a very short period, be a reproach to any mining man responsible for its use.⁷⁹

Only such a transformation of loading could avoid the problem of expensive machines doing nothing when small delays interrupted the supply

of cars. The most important hitch was that while the longwall system could supply enough coal to justify face conveyors, only in special cases could conditions of roof be found to permit passage of cars along the working face. Until more sophisticated methods of roof support were diffused, scientific loading remained an ideal rather than a reality. With only a few exceptions, loading in Cumberland proceeded along wholly traditional lines in this period.

The level of coal-mining technology in Cumberland County in 1927 was a reflection of the contrasting character of the coalfields and the general pressures of the economy. Table Two summarizes the mining methods used in the county, in 1927. To some extent this picture of the situation at the end of our period exaggerates the traditionalism of the Cumberland mines, because it does not capture the extent of electrification at the Joggins, which was by this point not a major producer. Moreover, many of the smaller mines of the Joggins coalfield were to adapt to longwall machine mining shortly after 1927. Nonetheless the portrait conveys accurately the unevenness of technological change in the actual production process. Even more suggestive of the differences in the Cumberland mines is the fact that in 1927 the huge No. 2 mine in Springhill used a mere 400 lbs. of explosives, or 1 lb. for every 536 tons. The diminutive Carter pit used 500 lbs., and the Tom Pit 17,000 lbs. Less powder was used in the Cumberland mines than in other coal counties of Nova Scotia.

Somewhat more dramatic changes were recorded over this period in the mines' transportation systems. The conventional method was to have the miner himself extend the reach of the transportation system into his

Table Two. Methods of Mining and Lighting in the Coal Mines of Cumberland County, 1927.

Mine	System of Mining	System of Cutting	Number of Mining Machines		Lighting
			Jack-hammers	Radial Chain, Etc.	
Bay View	Longwall	Hand Pick	.....	.....	.....
Boston	Longwall	Hand Pick	.....	.....	Open
Casey	Bord and Pillar	Hand Pick	.....	.....	Open
Fundy No. 6	Room and Pillar	Hand Pick	.....	.....	Open
Joggins	Room and Pillar	Hand Pick	.....	.....	Open
Lawson	Longwall	Machines	.....	.....	Open
Maple Leaf No. 4	Longwall	Hand Pick	.....	2E Bar,.....	Open
				25 H.P.	
Marsh	Bord and Pillar	Hand Pick	.....	1E Bar,.....	Open
				18 H.P.	
				1E Ch., 30 H.P.	
Milner	Bord and Pillar	Hand Pick	.....	.....	Open
Springhill No. 2	Longwall	Hand Pick	.....	.....	Electric

Table Two (Cont.)

Mine	System of Mining	System of Cutting	Number of Mining Machines			Lighting
			Jack-hammers	Radial	Chain, Etc.	
Springhill No. 6	Room and Pillar	Machines	16A	14A	.....	Electric
Springhill No. 7	Room and Pillar	Machines	17A	17A	.....	Electric
Sterling No. 3	Board and Pillar	Hand Pick	.....	.....	.....	Open
Strathcona	Room and Pillar	Hand Pick	.....	.....	.....	Open
Tom Pit	Room and Pillar	Machines	.....	2A	.....	Open
Trestle Brook	Board and Pillar	Hand Pick	.....	.....	.....	Open
Victoria 1 & 2	Longwall	Hand Pick	.....	.....	.....	Open

A: Driven by Compressed Air. E: Driven by Electricity

Source: Mines Report (1929), Table No. 23, pp. 296-297.

place by laying track near the face of the coal; the box would be brought within range of the loader, and thence taken out of the place. In Springhill especially, a more efficient method of "chute" loading was attempted in places with a steep incline. "The headings were run straight up the dip and bords driven on angles to the rise, thus on a slope. Flat iron sheets, boxed in or walled with boards to form the shutes, were laid up each heading and into the rooms right to the face. The coal slid down the sheets to the level, where it was stopped by a drop-door, raised at intervals to allow horse-drawn tubs employed in the level to be quickly and automatically filled."⁸⁰ Loaders were normally required to do less shovelling, and the number of horses, drivers, and pit rails were reduced. However, the system was only possible in certain areas. An additional method, also common in Springhill, was that of the "back balance," often attributed to William Hall, who may well have encountered similar methods in the north of England. As with chute loading, the headings were driven to the dip. Rails were installed at the top of the "balance" (as this type of heading was called) and a box full of stone was placed on one of two sets of track going up the balance. The weight of this stone-filled box was then used to pull empties up the balance and carry full boxes slowly back down to the level. One boy could run 300 boxes a day, Edwin Gilpin estimated in 1872.⁸¹ Again, this method was only available in mines which had steeply pitching headings; the Cape Breton mines were, in this one respect at least, placed at a disadvantage by Springhill.

The horse provided the principal means of haulage in the pits, and consequently dictated just how fast production could proceed. The horses were perpetually overworked and prone to injury.⁸² So difficult

were conditions for the horses in low seams of the Joggins coalfield that the animals had to be provided with special caps to protect their heads.⁸³ Horses were replaced by oxen for a period in River Hebert, and by men and boys in the smallest mines; over the long term, they were replaced with mechanical devices for haulage. In 1870 10 horses worked at the Joggins, and the mines at Maccan, Chignecto and Springhill had one horse apiece. The ratio of men to horses was 6:1. By 1900 the number of horses had grown to 52, 10 at the Joggins and 42 at Springhill, 35 of which worked underground and 17 of which worked on the surface. The ratio of men to horses was 25.8:1. In 1927, 23 horses were employed in the Cumberland coal mines, 19 at Springhill and 4 at the Victoria Coal Co. mine at River Hebert West. The ratio of men to horses was 69:1. Since a certain proportion of these horses must have been employed on the surface, this was tantamount to the virtual elimination of the horse in production.⁸⁴ Cumberland was in stark contrast with Cape Breton, where the horse retained an important position in the mines.⁸⁵

Mining men were attracted by a variety of mechanized substitutes for the horses. Apart from 'plain rope haulage,' which relied upon gravitation on much the same principle as the system of balances, two alternatives faced mining engineers: main and tail rope and endless haulage. The first system relied upon a winding engine at the top of the slope, and two long wire ropes, a main rope attached to the front end of the trips, and a tail rope strung over pulleys and shaves along the roof or walls of the roadway. At the furthest point of the roadway the tail rope passed around a sheave and then back towards the shaft. Pulling in the tail rope brought empty boxes away from the slope;

reeling in the main rope, full boxes were pulled towards the slope.⁸⁶ This system whereby the full trip was hauled out and the empty journey hauled in presented a number of advantages: it could adjust to varying grades in the mine better than other systems, and required only a single track. However, difficulties were noted when the distance became so great that the rope was required to run more than 10 miles per hour.⁸⁷ The most radical and systematic innovation was endless haulage, which ran perpetually. A wire rope was used with its two ends spliced together which travelled a circuit around a driving pulley at the slope and a shave at the end of the roadway. Boxes were attached and detached singly at any point required to facilitate the constant delivery of coal to the shaft or slope. As one enthusiast noted, the new system would bring order and efficiency into the mine: "[I]nstead of being all hurry and skurry to handle the journey when it arrives and start the empties back, necessitating a larger staff of men just at the moment of its arrival than are required again until the next trip comes in, the endless rope keeps delivering constantly and uniformly one tub at a time, never varying its speed or rate of delivery so long as the workings supply the coal."⁸⁸ Further advantages included the reduction in the number of haulage accidents, because the engine ran so slowly, and a much reduced problem of damage to the wire ropes. However, the system had its drawbacks. A double track was an absolute essential for its efficient operation, and double-tracking a mine was an expensive proposition. Furthermore, it required a far greater attention to detail, particularly as regards roof conditions. Sceptics also noted the failure of the new system to cope with winter conditions. Robert

Drummond remarked, during the savage winter of 1903, that the boxes passing one by one in the mine suggested a perfectly working system, but once overground their wheels refused to turn in the snow.⁸⁹

Innovations in hoisting were less profound. After the horse gin was no longer suited to large-scale production (horses continued in use in many of the smaller mines for hoisting), the machine hoist, generally powered by steam, gained ascendancy. Technical improvements gradually made these hoists more and more powerful. Changes in hoisting technology appear to have been more incremental than systemic. In 1876, according to an unusually detailed report, three Cumberland mines were outfitted with winding engines: the Cumberland and Joggins pits at the Joggins had engines of 21 and 11 horsepower respectively, while Springhill's engine had a horsepower of 54. The coal drawn up each trip ranged from 33 cwt. in the case of the Joggins pits to 50 cwt. in Springhill.⁹⁰ By 1913 the most modest hoisting engine in the coalfields was more formidable than this. At No. 2 Mine, the coal was hoisted by a direct acting winding engine connected to 6000 feet of 1½-inch rope.⁹¹

Haulage at the Joggins appears to have been conducted on traditional lines until 1892, when the slope was double-tracked, evidently as part of a conversion to endless rope haulage.⁹² Springhill introduced tail-rope haulage in one section of No. 3 mine in 1892.⁹³ H.S. Poole was later to remark that no less than 27 miles and 300 yards of ropes were bought to equip the pit.⁹⁴ No. 3 slope was reported capable of hoisting 1,000 to 1,200 boxes per day after the change. As the slopes in Springhill were integrated with each other from 1893 to 1907, the company connected all three major pits by haulage converging at the

mouth of the Aberdeen tunnel. A large turn-out was constructed capable of holding fifty boxes. This by no means eliminated the horse in the pits, but it did effect a certain amount of rationalization.⁹⁵ Horse and tail-rope haulage were combined in such important slopes as No. 3, where horses hauled coal in 1911 on the 2600 and 2800-ft. levels, and main and tail-rope haulage was used on the 3200-ft. level.⁹⁶ Only after the First World War did the Dominion Coal Company mechanize virtually all the haulage in the Springhill mines. Electrically-powered endless rope haulage had been introduced in the Joggins in 1912, although horse haulage was still in evidence in some of the levels in 1913.⁹⁷ Rope haulage appears to have come in completely by 1915.⁹⁸

Here, as in so many other aspects of the history of coal-mining technology, we are dealing with a gradual shift towards a fully mechanized workplace, rather than a revolutionary process of modernization. Throughout most of this period the haulage of coal through the mine was extremely inefficient. The writings of Henry Swift bear ample testimony to the almost endless problems presented by the transportation systems of the mine. He writes on 15 January 1890 that he "traveled down the Traveling way to the $\frac{1}{2}$ way pump house and in to the Main Slope to ascertain if possible the cause of the boxes going of[f] Yesterday this point of the Slope being exactly meeting I Stopped the rakes to see if it were possible that the Catches would catch each other when passing but found 6" clearance examined track and found road 1" out of level which is not sufficient to account for it wheter [whether] debris in the Slope was the Cause I am unable to Say..."⁹⁹ He returned to this problem in a note on 31 January 1890:

...the upper 400 ft of the Main Slope should be relaid and new Cross ties and timbers put in; the present ones have been in some Seven Years and in some instances are rotten, they were laid in a fire clay bottom which has Softened and Causes the track to be unlevel.

Of all tracks about a Colliery I always look upon the slope track as the Most important. It is a most painfull duty to stand in the Bankhead and listen to raps of rakes up and down, everyone idle, and when the report comes "an rake of[f] the track," a very familiar expression. 100

One serious problem encountered by Swift was that of the portions of the mine where neither horses nor mechanical haulage could do the job of getting the coal out. Speaking of the east level of No. 5 Slope, Swift remarked that "The difficulty at the present is to get the Coal from the working face to the bottom of the slope having no horses down according to the rule about the Colliery the amount per box for overpush at the present point at working face is nearly 12c[.] But of late we have put in pushers out which is very hard work and hard to get any one to Stop at it to put in a Small horse and make turnouts along the level is the only way to get over the difficultry[.]"¹⁰¹ Swift was probably understating the case. Mine workers despised doing "horse's work" for the company, and would set rates that would discourage the company from adopting such a practice. The question of transportation recurs over and over again in Swift's writing. He confronted workmen angry over not having their coal taken away, or not getting fair treatment in the distribution of boxes.¹⁰² It was little wonder that the transportation system of the mine was so often the centre of controversy. It stirred the same emotions as a traffic jam, with the important additional factor that one's wages depended upon its uncertain efficiency. American

studies inspired by the movement of scientific management underlined the crucial significance of faulty mine transportation in explaining the low level of mining productivity.¹⁰³ Writing of an accident in the mine which injured a young bottomer named Cory Taylor, Swift noted that the box involved had been of a new design, and proceeded to report some of the arguments going on in the mine about it:

The box referred [referred] to had what they call patent Wheels in but loose in the axle every one seems loud in denouncing the Wheels I see no fault except they may be rather near fit the axle in the wheels one says he wished they were all in Siberia another says he wished they were all in Purgatory for my part I think them first rate may be a little stiff at the start but will come all right when run a short time anything new always meets with a certain amount of prejudice when first introduced 104

But what Swift referred to as the miners' "prejudice" was not an unthinking resistance to mechanical improvement, nor even an instinctive conservatism. It was much closer to a suspicion that innovations in the mine were often designed without taking the workers' interests into consideration. Machines were introduced without thought to the workers' health, and transportation systems were redesigned without consideration of the workers' interests. No miner would have opposed a rationally designed transportation system which would ensure him a steady supply of boxes and their efficient transportation to the bankhead.

On the surface the transportation system merged with the distribution system of the collieries—that system which existed in order to get the coal into the wider world. There were a number of discrete tasks to be formed. The coal had to be prepared for market—through the removal of impure coal, the sorting of coal of various sorts into separate cars, and in some cases through washing. It had to be

conveyed to the waiting railway cars. Impure coal had to be taken away to the duff bank or to the company's own furnaces. All of these tasks meant conveying the coal through the workings on the surface. The surface workings of the mine were almost as complex and intricate as those beneath the surface, and were as tightly interconnected

There were parallels as well between the structural development of the surface and that of the underground. In both cases a gradual and uneven process of mechanization can be observed. There were fewer obstacles to a complete mechanization of the surface. Machines could be installed without consideration of underground conditions, and a body of theory and practice outside mining could guide mining men in their decisions. The conveyance of coal could adopt many of the techniques suitable to the conveyance of other products: the bankhead was analogous to elevators used increasingly for certain kinds of agricultural produce.

The first customers of the coal of Cumberland County in the eighteenth century had confronted the problem of improper storage, which had led to fires at American docks where the coal was stored. The 1860s contain many testimonials to the carelessness with which Cumberland coal was marketed. There was a general provincial concern in the 1860s with the careless, and occasionally fraudulent, manner in which local coal was sold. "There have been complaints, during the past year, of misconduct on the part of some of the ship-masters, in representing the coals to come from a different mine from that where they were raised, and thus obtained a larger price than the quality bore in the market."

Samuel Fairbanks notes in 1862.¹⁰⁵ In 1866 John Rutherford complained that the inefficient methods of banking caused a great deal of waste,

and advocated as a remedy the building of special shelters.¹⁰⁶ He was to reiterate his criticism of local coal preparation in 1869, focussing this time on the impurities and foreign matter left in the coal.¹⁰⁷ An equally unsatisfactory arrangement, from the standpoint of the government, was that which governed weighing the coal. Companies persisted in estimating the quantity of coal upon which royalty was to be paid on the basis of bills of lading, and resisted going to the expense of installing weigh scales.¹⁰⁸ H.S. Poole directed sharp criticisms in his Reports to the careless handling of the coal, and advocated the adoption of new balance-tips used in England, which alleviated the problem of breaking coal.¹⁰⁹

The first systematic attempts to solve some of the problems of preparing the coal for distribution were made in the Joggins in the 1870s. The Mines Report in 1874 noted a change in the transportation of coal to vessels waiting at the wharf: "Instead of lowering the coal wagons by a counterbalance from the top of the cliff, and emptying them from the wharf, ... the coal is now emptied at the top into a shoot 140 feet long inclined at an angle of 25°, and the shoot is kept full. The coal is drawn off as required, regulated in its descent by checks and doors."¹¹⁰ The Joggins also benefitted from new screening technology, adopted to separate duff from slack coal. A suggestive aspect of this adoption of new screening technology was the introduction of the principles of the assembly line. "An endless chain with shallow cast iron buckets, similar in arrangement to grain and saw-dust elevators, carries the slack from the main screens up into the upper end of an inclined circular sieve made double; the inner separated 3 inches from the outer, and made

of a coarser mesh to prevent the clogging of wet coal. Only the fine that passes through both is thrown away.¹¹¹ How long this experiment was kept up is unknown; but one suspects it was discontinued in the long period of stagnation from the mid-1870s to 1890. In 1891 the arrangements for loading vessels were thoroughly renovated. The chute was replaced by two tracks. "At the head of these two tracks is placed a drum barrel with brake attached, and the full boxes running down bring up the empty ones. Instead of two tracks from the pit and an endless rope, there is now only one track with sufficient descent in it for the full boxes to run down with rope attached, and the engine then pulls back the empty ones, thus doing away with half of the track and rope formerly used."¹¹² The main advantage of this new system was that two vessels could be loaded with different kinds of coal at the same time.

A different pace of change was noticeable in other parts of the Joggins coalfield. At Chignecto the modernization of the bankhead was a necessary aspect of the takeover of the colliery by the Steel Company of Canada, since the coal was required for coke. Bankhead screens were installed in 1882 and the bankhead was lighted with three electric lights, which were found to facilitate screening at night.¹¹³ Other coal mines either did not screen their coal, or with one or two exceptions did so without any advanced bankhead facilities. In some of the primitive small mines the 'bankhead' consisted of one man unloading coal cars and taking out whatever coal happened to appear defective.

The mines of Springhill predictably developed in a more consistent manner. Very early in the history of Springhill the question of cleaning slack coal for market was faced directly. In 1875 a screening apparatus

had been erected. "The coal from the screen is hoisted by a small engine 42 feet above the track," the Mines Report notes, "and passed through a circular screen four feet in diameter and 22 feet long."¹¹⁴ There was constant improvement in bankhead facilities throughout the nineteenth century. One of the most impressive features of Springhill's development was the integration of its bankhead facilities--an integration which was to attain a level that was most unusual even within a North American context. Already in 1892 the No. 1 and No. 2 slopes were connected over-ground by a trestle-work nearly 597 feet long, which accommodated an endless chain conveying full boxes up the grade, as well as an endless rope.¹¹⁵ In 1911 the various bankheads were equipped with most available appliances for preparing coal for market. No. 2 Bankhead was made of wood housed in with corrugated iron, and was equipped with two end-tipples, three revolving tipples, three shaker screens, a picking belt (from which employees 'picked' out stone or duff) and a rotary screen. Even the normally non-committal Mines Report judged the bankhead of neighbouring No. 3 Mine to be "imposing." It was equipped with shaker-screens and picking-belts (which conveyed coal past employees who picked out the stone) capable of handling 2000 tons per day of 10 hours--a very high output by provincial standards.¹¹⁶ Springhill adapted to changing post-war conditions by eliminating the screening of coal at the new mines (Nos. 6 and 7), but by and large the mines in Springhill were far more elaborate and extensive in their bankhead facilities.¹¹⁷

The most crucial point for our purposes is that bankheads everywhere remained quite labour-intensive. Many of the bankhead tasks involved little skill but an unrelenting physical labour. Although

continuously running machinery, rotary screens, and countless other innovations made it possible to process large amounts of coal per day, no fundamental revolution in loading techniques had occurred which enabled management to do without a vast army of surface labourers.

Although it is of a Cape Breton colliery, Albert Dawes' description of bankhead work applied with full force to the major Cumberland pits:

"Every part requires constant attention and continual repairs to keep it in running condition; the number of men employed on all the various operations involved in handling the coal from this pit bank to railroad cars is very high; and the all round mechanical efficiency is extremely low--these factors have all contributed to the present high cost of producing coal."¹¹⁸

One might also refer to the recurrent problem of a shortage of coal cars supplied by the railway, a difficulty which compounded the problems of managing the bankhead.¹¹⁹ The inherent problems of distributing coal on the surface and preparing it for market must be considered as serious rivals to underground hand loading as primary technological bottlenecks.

These three systems--production, transportation, and distribution--were all directly involved in the production of coal, but there were two further systems, maintenance and management, which were vitally but indirectly involved as well. Maintenance took in three essential features: slope repairs and development, pumping, and ventilation. Since every mine had to grow in order to survive, special employees were to be found in all the large mines whose function was to prepare new workings in the pit. Development work in the mine required specialized skills that gave those workers involved in it a certain amount of privilege. It

took place outside the context of normal mine work. Often work of this sort was tendered for by coal miners.¹²⁰ Slope repairs involved such tasks as timbering and track laying, and went on every day, particularly in the older mines.¹²¹

Pumps were a vital link in the maintenance system. The most primitive mines, such as the first mine at Joggins, could do without pumps, leaving the water to drain naturally through an adit to the water level.¹²² Even as late as 1885 five of the Cumberland mines (out of a total of 10) reported using no pumps for removing water. Both the Boston Mine and the Scotia Mine were developed in such a way that the water level of the mine was worked along the outcrop of the seam. The Lawson mine relied upon hoisting the water out by boxes, while W. Patrick & Co. at Chignecto employed a syphon to remove about 17,520 tons of water per year.¹²³ The larger pits had long since converted to direct-acting pumps. The mines of Springhill employed a total of six pumps; to pump out 307,727 gallons per day, or an estimated 561,419 tons per year; those of Joggins used one pump to remove 23,142 gallons of water per day, or 42,234 tons of water per year. The tons of water raised from these mines exceeded their production of coal, by a ratio of 1.68:1 in the case of Springhill, and 2.39:1 in the case of the Joggins.¹²⁴ By 1927 the Cumberland mines without exception had mechanically operated pumps, powered both by compressed air and by electricity. The mines of Springhill employed a total of 10 pumps to remove 1,126,700 gallons of water per day from the mine.¹²⁵ While production of coal had increased by 27%, the production of water had shot up 266%. The question of pumps clearly had an immense significance in the determination of how well the pit

functioned. The peculiar importance of the pumps in Cumberland County emerges in the presence, as early as 1876, of the largest provincial direct-acting pump in Springhill.¹²⁶

The central importance of pumps to the working mines did not immediately give rise to an efficient technology. In Springhill and in Joggins the pumps were suddenly overwhelmed by feeders of water (springs encountered underground) or flooded by the torrential rains of spring and autumn. In 1888 the Springhill Mines were drastically affected by heavy rains.¹²⁷ Similar problems threatened to damage the pit at Joggins. The department of mines conferred at length with the management of the Cumberland collieries, and significant improvements were made.¹²⁸ New dams were constructed in Springhill and a more scientific effort—clearly evident in the letterbooks of Henry Swift—was made to control surface water.¹²⁹ The pumps of the major mines were seldom overwhelmed in the period following the 1880s by sudden rains. But the chronic problem of mining in such a wet district remained and could only grow worse as the mines went deeper. It was a Sisyphian struggle against the perpetual challenge of water, which could never be completely resolved. The opening of the twentieth century saw an intensified effort to control water. More sophisticated pumps were adopted at both Springhill and Joggins.¹³⁰ But no pumps proved to be completely satisfactory. Steam-powered pumps could be a menace underground. The fire in No. 3 Slope in Springhill, which broke out on 26 November 1916, was attributed to the intense heat generated in the pipe slope, which made conditions ideal for such a disaster. In turn, "the temperature in this slope was very high, as

pumping had to be carried on continuously owing to a large quantity of water below."¹³¹ The paradox of a colliery fire being indirectly caused by water demonstrates the functional interdependence of the mine, and the interconnected perils which constantly threatened to destroy it.

The other major component of the maintenance system of the mine was ventilation. Mines in Cumberland County were not considered to be particularly gassy, until the late 1880s. Consequently there was little concern over the use of powder or the normal miner's lamp. After the 1891 explosion at Springhill and the passage of restrictive legislation, an active effort was made to improve safety, by restricting the use of powder and improving the system of ventilation. The earliest mines of Cumberland had relied upon 'natural ventilation,' a method of designing mines which took advantage of the difference between the temperature at a higher and lower level, and above and below ground. Mines drained by a water level, opening on the sea shore at or near high tide, were able to suck in air that was cooler than the general surface of the surrounding country or the interior of the mine. This difference in temperature produced sufficient ventilation. It was a method that was unsuited to extensive mines, because the current so produced was quite feeble, and it was also a system of ventilation which was prone to disarrangement because of a change in atmospheric conditions.¹³² It was acceptable in a period of shallow mining, during which few gases accumulated, but as early as 1866 the Mines Report considered the mere fact of there being in most of the mines no deleterious gases an insufficient excuse for not providing "such a quantity of fresh air as is necessary to the healthy pursuit of the occupation of the miner."¹³³ By 1876 both the Joggins and

Springhill had converted to ventilation by furnace, a mode of ventilation dependent on the creation of a rising column of warm air to suck cooler air into the mine. The Springhill furnace was placed on the surface, which was considered to be the least advantageous position for the purposes of ventilation. Normally the furnace was placed within the mine itself, which involved the considerable risk of setting the coal on fire. Upcast temperature was obtained ingeniously by the use of exhaust steam from the steam pump, a further illustration of the ways in which the systems which made up the mine could interpenetrate.¹³⁴

Gradually fans began to replace the furnaces.¹³⁵ The mainland collieries were the first to adopt the new technology.¹³⁶ In Cumberland in 1889, three out of four slopes at Springhill used a "blow-down fan," while only No. 5 relied upon natural ventilation; the new technology was also in evidence at Chignecto. At the Joggins miners continued to put up with ventilation provided by a furnace, and the Lawson mine (which was idle for most of the year) relied upon natural ventilation.¹³⁷ There were extremely serious problems with ventilation at the Joggins in the 1890s, caused by the continuing reliance upon a small furnace, inadequate airways extending through the mine, and the blocking of certain key airways after a sudden influx of water drowned the pump at the 2300-foot level.¹³⁸ Only in 1896 did the Joggins adopt a fan which brought to the workers of Joggins a decently ventilated mine.¹³⁹ The first mechanical fan in the district appears to have been that installed in Springhill, and, for the first time in the province, this fan blew the air down into the mine instead of drawing it out as the Guibal fans had done.¹⁴⁰ The fan installed at Springhill at the turn of the century won great

attention in the mining press as the acme of mechanical innovation, and was described as the most powerful and advanced in the province.¹⁴¹ It does not appear that the smallest mines of the County had any ventilation system whatever in the nineteenth century. By 1927 all the large mines were equipped with mechanical fans, most commonly of the "blow-down" or pressure variety. Yet even then such small mines as the Boston, Fundy No. 6, Lawson, National, Trestle Brook, Stirling No. 3 and Milner relied upon natural ventilation.¹⁴²

Fans mitigated but hardly eliminated the problem of gas. Dangerous accumulations of gas were reported in many collieries. Increasingly stringent provincial laws attempted to standardize procedures in the event gas was discovered in the mines, by imposing strict limits to the use of open lamps and powder. Such legislation probably had a beneficial effect. But mining law, no matter how comprehensive, could hardly govern all the contingencies which naturally arose in the mine. Throughout this period the question of ventilation was raised, particularly in the 1880s and 1890s. Mine gases (of which after-damp, comprised of nitrogen and carbon dioxide, was the most common), were especially fearful because of their stealthiness. The problem of gas accumulation was only faced by constant surveillance, eventually spelled out specifically by the law. Miners debated the respective contributions of gas and dust to mine explosions with an understandable intensity and a surprising sophistication. A working miner took on the latest British theories of coal-mine explosions in a letter from Springhill to the Trades Journal in 1881.¹⁴³ There was mounting criticism of the management of the Springhill mine throughout the 1880s on the question of gas accumulations.

In 1885 Springhill correspondents wondered why 300 feet of accumulated gas had been allowed to build up in a mere hour, casting obvious suspicion on the scrupulousness of the company's safety procedures.¹⁴⁴ The general system of ventilation of the East Slope of Springhill was sharply criticised in a polemic in the Trades Journal.

An attempt some time since, was made to make of this 'slope' a model mine, laid out in the latest, most improved, scientific methods. The conception was grand, but the result was disappointing. The planners had it in their head to do a much more impracticable thing than making water run up hill. They tried to induce two opposing currents of air to meet, say good day to each other, and then pass on their respected missions. But they wouldn't. There was not a particle of harmony between them. As surely as they met so surely did they chaff, and wrestle and baffle one another. In the battle for supremacy, all consideration for the workmen was cast aside.¹⁴⁵

The union newspaper also charged that officials of the company had acted in a careless way in testing for gas. One of the officials of No. 5 slope, after partially brushing out a place in which some gas was found, attempted to convince workers they could resume work by opening his lamp and raising it up, thereby bringing the lamp into contact with the gas and causing a minature explosion. "It would be well," the newspaper noted, "to have men in positions, where life and property is at stake, who could be depended on when danger is present."¹⁴⁶ The deputy mine inspector also expressed misgivings about the way the company handled ventilation in the 1880s. In his rather rough-hewn prose William Maddin provided a cogent critique of the mine management.

I Am of the oppinion that there was some gass in the level whare thos Men was burnt in Springhill Mine And if properly Examined would not have burnt these men its to bad to be having to record thos Accidents when they might be prevented thare is shurley some Men in Springhill Mines who knowes gas when they see it I must

Say there is considerable gass given of in thos pits
 At Springhill Still there is not enough to case
 [cause] So Many Men to be getting burned timè after
 timè it Makes a terable talk in Mining districks
 And its not our plase to Say who is the best Man to
 be shot firer but if Appears to me there is some
 mistake in the men in this mine or there would not be
 so Maney Men burned 147

Maddin's superior, Edwin Gilpin, wrote of the general concern with the Springhill management's handling of ventilation more circumspectly and politely in a letter to the company in 1889. After noting the presence in the return airway of the East Slope of .75% of fire damp, Gilpin emphasized the tremendous importance of keeping the air currents close to the working faces, and scrupulous observance of the regulations laid down by the law. "If...strict attention is not paid to these precautions, an amount of gas could accumulate sufficient upon Explosion to cause damage....This section of the workings may be described as being in the position of a mine in which the period is approaching when the question of open or safety lamps would have to be discussed. At present they are not needed, but if the reports of the firemen show any increase of gas, they should be adopted not with a view to any relaxation of care in the part of those in charge, but as a protection to the men while working."¹⁴⁸

The blunt criticisms in the Trades Journal, the homely language of Maddin, and the courtly circumlocutions of Gilpin all foreshadowed the disastrous explosion of 1891, evidently caused by the ignition of dust and gas in the mine after a shot. Only after 125 men had been killed did the Department of Mines institute the reform of safety procedures Gilpin so hesitantly suggested in 1889.

It was partly a problem of perception. There remained in the minds of many officials and miners the idea that after brushing a place free of gas, it was safe to proceed with shot firing. What such men tended to overlook, wrote one miner in 1888, was the danger posed by powder smoke, especially mixed with gas.¹⁴⁹ Within the P.W.A. the question of banning powder in gassy mines was debated throughout the 1880s.¹⁵⁰ When at last powder was banned in gassy mines the argument was made that coal companies now felt obliged to experiment with more effective ventilation systems.¹⁵¹

If the ventilation problems of Springhill acquire a special significance in the light of the 1891 explosion, it would be an error to imagine that the air conditions there were any worse than at other Cumberland collieries. Conditions at the Joggins were frequently very bad. Maddin reported that a miner had been burnt by gas at the Joggins in 1888 and noted that this should be a "warning in futur[e] for the management."¹⁵² No improvement in ventilation was made. Evidently in response to this failure of management, Maddin delivered a lecture on safety to the colliery management. "...I think it stirred the Manager up. And I trust it may be the means of keeping him nearer the law than in time pass," Maddin wrote to Gilpin.¹⁵³ Probably the worst problem existed at Chignecto. Three men were killed by choke damp at Chignecto in 1883, under conditions which a coroner's jury thought reflected badly upon the management. This incident was all the more controversial because it occurred in the course of a strike, and those killed were strikebreakers who were attempting to recommence mining after a period of inactivity. The coroner's jury found that the men had come to their deaths by the

inhalation of carbonic oxide or "white damp" while at work in the level, the gas being caused by spontaneous combustion of old coal and rubbish in the mine. To an extent unusual in provincial coal mining history, the jury censured the management:

The jury are...of the opinion that said gas was allowed to accumulate by a "place" being driven from the "deep," thus communicating with the Bennett level and not being properly shut off during the night, upon opening the "check" door on Saturday morning and putting "brattice" cloth on said "place," it caused a stagnation in ventilation and forced the gas back on "face" of the "level." This they consider a great oversight or error in judgment. They do further believe that Mr. John Patrick was to blame for violating the general mining rules in taking men into the mine before examining it, and they are further of the opinion that Mr. Baird is blamable for not more vigorously investigating the matter upon the report of Mr. Patrick. 154

Although such a verdict was a reminder to mine managers that they were obliged to take ventilation seriously, only the highly detailed regulations of the period after 1891 were to effect a real transition in ventilation conditions. But a further explosion of gas at Chignecto in 1910 revealed the limitations of even this considerable body of legal reform, and the extent to which some of the more remote collieries could evade the law. 155

Obviously the ventilation of a coal mine was a matter of life and death, and formed a fundamental part of the mine's functioning. Without fans, brattice cloth, ventilation doors, and gas-testing equipment the mines could not function; nor could they do without mechanics and firemen for the fans, bratticemen for the brattice, trapper boys for the doors, and officials and staff to check the level of gas. Withdraw the men who kept the fans working, or the trapper boys who manned the doors, and the mine perforce shut down.

Timbering was another vital aspect of the maintenance system. In contrast with the ventilation of the mine, its timbering was often in the hands of the coal miners themselves, who exercised their own personal judgment as to safety or danger in their place. Timbering also required the services of specialized workers, such as the surveyors who toured the company's vast timber holdings and the timberers who set timber. There were sustained conflicts over the responsibility of getting timber to the miners at the face.¹⁵⁶ The case for a specialized class of timberers was forcefully put by Edwin Gilpin in 1879. After citing the familiar judgment of a colliery manager who stated that he had never heard of an accident by falls of roof or coal, which was not due "in great measure, to the contributory negligence on the part of the workmen," Gilpin suggested the creation of a special class of timberers who would make timbering their exclusive responsibility.¹⁵⁷ Greater seriousness in the approach to timbering is evident by the late nineteenth century in company attempts to secure great woodlots, the state's insistence that the amount of timber used in the mine be carefully documented, and the workers' demand that the quality of timber be improved for better mine safety.¹⁵⁸ After the introduction of longwall mining in Cumberland County the mines' timber requirements shot up dramatically.¹⁵⁹ Longwall mining gave the timbermen something of the same power as the pumpmen enjoyed traditionally.

Pumps, fans, timber: these were the physical aspects of a system of maintenance which was tightly intermeshed with the three-fold production system of the mine. Some parts of this system required a separate workforce (such as the engineers for the fans and the trapper boys for

for the ventilation doors) and other parts did not (such as the miners and labourers putting up timber in their own places). Overall the drift was away from having the miner do his own tasks and towards the growth of specialized groups of workers to perform maintenance and development work. This tended to mitigate the miners' sense of independence, but it also created new groups of workers equally convinced of their indispensability.

Over and above this complex structure was the management. In law the general manager of the mine was responsible for his employees and his mines, and upon his shoulders fell all the day-to-day financial decisions at the mine. Legally he stood in the same relation to the mine as did the captain to his ship. The integration of the various systems making up the mine was his responsibility, and so too was the planning of the systems in the future. Under the general manager worked a number of men: underground managers, surface managers, other officials. Throughout the mine the policy of the general manager was law, and indeed 'special rules' drawn up by him could attain the actual status of law under the Mines Regulation Act.¹⁶⁰ The General Mining Association had always laid great stress on the super-human qualities needed for a manager by building him large semi-palatial quarters in which to live. The dominating manager, far more than the explorer or the businessman, swaggers across the history of the coalfields: men such as Richard Brown, Henry S. Poole, Charles Fergie and James Baird were well known throughout the province. It was the manager who single-handedly symbolized the mine in the nineteenth century. Gradually this changed. Larger corporations, in particular Dominion Coal, brought in large numbers of engineers and

experts. Specialized departments assumed responsibility for such matters as industrial relations and company housing. Managerial specialization was a conscious response to the need for co-ordinated supervision of the diverse and connected world of coal mining. As A.W. Macdonald argued,

Some attention in the past has been focussed upon individual phases of the work, such as employment, welfare work, accident prevention, and the reduction of labour 'turn-over.' Work in these several directions has been conducted without co-ordination, although as a matter of fact each is an integral and related part of the single problem having to do with industrial relations. High labour 'turnover,' for example, is one of the principal causes of a high accident rate, and poor housing conditions are largely the cause of labour 'turnover.' 161

This argument--put forward in connection with the establishment of a labour relations department in 1920--underlined the deep connections found in coal-mining life, and the rather belated realization that management had to cope with them systematically.

Management techniques and philosophies evolved only slowly toward the ideal of scientific control. Henry Swift's letters to Cowans reveal how imperfectly various items in the mine were accounted for. He attempted to initiate much tighter procedures in various departments of the mine, but reported little success.¹⁶² Swift's letters are especially revealing because they were written in the context of a whole-hearted attempt to bring the Springhill mines under a disciplined and unified control. The consequences of this effort at scientific management will be explored in a further chapter. What must be underlined here is the general limitation placed upon even the most ambitious coal-mining managers. Even the most ardent proponent of management rights had to concede the inherent limits of the mining environment. One of the most crucial obstacles was the absence of modern communication equipment.

The first application in the province of electric signalling in mines took place in the Joggins in 1877: the slope bottom was connected with the engine house at comparatively small cost.¹⁶³ A telephone made its appearance in Springhill in 1879, and was judged "very serviceable."¹⁶⁴

But beyond the main slope there were only the most primitive means of communication. Men would bring word of problems to the deputy in the pit; messages would pass through the lamp-cabin or be exchanged by men during the breaks. But there were simply no methods by which a centralized control could be exerted, given the unavoidable practical realities of mining. Longwall mining would eventually help to centralize control of the mine, but only partially. The geographical space of the mine and the darkness which governed it ruled out an intensive supervision. Coal mining was the backwater of the movement for scientific management.¹⁶⁵

The situation is even more complex, however, because the socio-political environment demanded precisely the centralized control which mining conditions made impossible. Entering a cycle of consolidation in which all but the most efficient operations stood to lose money, managers had to cut costs and maximize productivity. The state added its own insistent pressures for precise measurement of everything from the amount of timber consumed to the exact volume of air circulating underground. The coal companies were faced with imperative demands which were almost impossible to meet. Centralization and consolidation in response to the new economic realities could only advance to the 'frontier of control' lying between the slope bottom and the coal face. On one side of this frontier, encompassing the bankhead, offices, shops, and the main slope, the management faced problems of control no more severe than those faced

in the industrial workshops generally. But on the other side, the management faced truly intractable difficulties in enforcing its will, and it was on this other side where the balance of control was most sharply contested that the most crucial struggles for productivity and efficiency had to be won.

Henry Swift's letters discuss this problem, common to all large mines. He walked endlessly, at least four miles a day. One of his most pressing worries was the primitive state of mine communications. Remarking on the 'rappers' (levers or hammers at the top of a shaft or inclined plane for signals from the bottom), he remarked, "...they are not what they ought to be and am Sorry to Say they reflect no Credit on the Management," and referred especially to the repeated breakages in the wire.¹⁶⁶ Although rappers were required by law in all the balances in the mine, Springhill had not yet installed them as of January 1890. "Should an accident occur," Swift warned, "the matter will be fully gone into then... [I]f we got one or two in operation it would Show a Spirit of intention..."¹⁶⁷ The defective communication system of the mine had to be remedied in order to avoid legal entanglements. We may watch Swift's mind working in a similar way when he analyzed an accident in the West Slope:

I think It would be well in all cases of accidents for overmen to give in a Special report stateing all particulars how such accident happened and if any blame attached to any one and have them put away on file or entered in a special book kept for that purpose we never know what may come up afterwards in shape of suit for damages or etc. and well in all cases to be prepared. 168

The need for a consistent body of information, systematically maintained, was often noted by Swift. One of his more impressive efforts was a

compilation, in 25 hand-written pages, of all the physical assets of the company with a note on potential problems.¹⁶⁹ But his awareness of how urgently the company needed centralized control and accurate records could not make for a genuine breakthrough in mine management.

The management of the mine, in the absence of a technical breakthrough in systems of communication, relied upon quasi-military obedience. Swift refers to the 'standing orders' of the pit and kept track of all the orders he gave out when he became general manager.¹⁷⁰ At one point in his period as underground manager he responded with genuine horror to the idea that he might have been careless in obeying an order. "I am not guilty of disobedience," he protested, "and Never was nor don't allow it if I know. It has always been my aim to give the fullest information on any matters of importance in my reports...."¹⁷¹ His letters reveal a devotion to the company and to the detailed supervision of the mine.

When he became General Manager he reflected on his high calling:

Having to day entered upon duty as Manager of the Colliery Dept. Not with feeling of exaltation but rather with those of one assuming a great responsibility I feel very thankful indeed Not so much for the financial point as the confidence placed in me Which I trust I may never betray. I shall endeavor at all times to promote the best interests of the Company And do what I consider is honest between all parties or in other words have a dollars worth of work done for every Dollar expended.¹⁷²

Poor Swift! He seems genuinely to have believed in the company and in bringing reason into the pits. No one believed more fervently in unquestioning obedience to orders issued from an omniscient high command. No one, with the possible exception of Swift's superior, believed more completely in system.

In Swift we may observe a monumental attempt to rationalize the mine. Confronted with customs, Swift responded with notices, rules, bureaucratic order. "What we want about the Colliery is a good Code of Rules," he wrote on 20 January. "Regulations for the guidance of all parties and these strictly enforced." He mimicked the customary slipshod manner in which mining decisions were made. "This I told you and you told me and I told somebody else," he noted with a certain contempt, "and when anything happens everyone is looking around for a loop hole to Crawl in...."¹⁷³ He was highly suspicious of anything which resembled rule by precedent. When approached by the men to have coal loaded by company hands, Swift rejected the idea: "[I]t would only in my opinion be opening a back door for trouble some future day that is one thing to be carefull in establishing precedents for they are always or stuck for the future and come up when You least think."¹⁷⁴ His preference was always for the written and the repeatable. But he was incapable of imposing a complete system on the mining environment. Military discipline could only be imposed in certain conditions. In essence the world of the underground was conducive to common law rather than written law, and to guerilla warfare rather than conventional military order. Inescapably the miners had to have control over the most important daily decisions in mining. Swift struggled heroically to reconcile the conflicting demands placed upon him. He was a one-man industrial relations department, safety expert, strategist of the long-time development of the mines and the tactician who confronted their daily emergencies. He subscribed to the right engineering journals and sought to contribute to the provincial mining intelligentsia.¹⁷⁵ His concept of systematic reporting became

Springhill's distinctive trademark: the mines were renowned for the systematic reports required of officials.¹⁷⁶ He typified the company's strategy of promoting men from the ranks: the principle of meritocracy was more firmly enshrined at Springhill than at any other provincial colliery.¹⁷⁷ But his ideal of a centrally organized pit was no further advanced in 1900 than it had been in 1880. Impossible demands were made upon the management system, demands for which the nineteenth century possessed few answers. Upbraided by his superior for an incident involving a horse in the pit, Swift noted how difficult it was to supervise the underground, and indicated how heavily the responsibilities of management weighed upon his mind: "My Mind is at all times fully occupied with thoughts to Make the Work a Success enough of worry to Kill a Man."¹⁷⁸

The management system could never truly control the environment of the mine: dependent upon rudimentary means of communication and the energy of only a few conscientious officials, it was only one subordinate part of a functioning mining system, dominating the mine less than it was moulded by it.

The five systems which together made up the mine were each evolving, but they were always embedded within the technical structures of mining which limited and shaped the extent of change. Mining in Cumberland County was not prone to sudden technological breaks or changes; with the significant exception of the adoption of longwall mining in Springhill, the changes which did occur were more apt to be gradual, coinciding only loosely with the transitions from one phase of capitalist development to another. No rapid change in the labour process accompanied the transition to monopoly capitalism in the period 1890-1910, for example; what one more readily observes is an interlocked series of changes, each small

in itself, which cumulatively represented a major transition.

3. The Structural Evolution of the Workforce

Three aspects of the structural development of the coal mines reveal this tendency to evolutionary rather than revolutionary change: the workforce, productivity, and accidents. The structural evolution of the mining workforce reflected the relatively conservative nature of coal mining, with the significant exception of a sudden change in 1915 when coal miners deserted the mines en masse for military service. The level of productivity, measured either by tons of coal produced per employee per year, or by tons of coal produced per day, fluctuated but within a narrow range. Nonetheless structural change, representing cumulative trends, may clearly be noted: an upward trend from 1873-1895, a downward trend from 1895 to 1910, and an upward trend from 1910 to 1927. Productivity provides a reflection of the underlying periods of capitalist development, but the periodization is slightly different: the major transitions occur within the epochs of capitalist development, and represent the complex embodiment within the labour process of the structural logic of the economy. Finally the number of accidents reflected the trends in production, although in an even more complex manner than productivity. The level of accidents was somewhat unpredictable because an individual mishap in the mine was easily converted, given unpredictable circumstances, into a general disaster. Moreover, this level depended on two conflicting forces: the increasing depth of the mines (itself the product of the heightened demand for coal) on the one hand, which forced the level up, and the miners' demand for safety

inspection and stiff regulation, which tended to keep it down. Taken on a purely quantitative level, the number of fatal accidents reveals no consistent pattern; because the disaster of 1891 so completely overshadows the other fatalities. There was an upward tendency if we remove the disaster from consideration, because of increasing depth, but a general downward tendency because of the prohibition of powder in significant Cumberland mines...

Figure Five displays the percentages of surface and underground workers in Nova Scotia coal mines during the period 1866-1872, broken down according to coal county. It is readily apparent that utilizing the simple surface/underground distinction we find that the majority of mining employees in Nova Scotia, and in each coal county with certain exceptions, were underground. The highly exceptional position of Inverness doubtless reflects its immaturity as a coalfield. A higher percentage of men in Cumberland were employed underground than in the province as a whole.

Figure Six offers a more precise picture of the structure of the mine workforce in this early period. The percentage of underground men ranged from 47% in 1868 (N=39) to 60% in 1871 (N=71); it was always far in excess of the second largest category, men working on the surface, which ranged from 23% in 1871 (N=27) to 35% in 1868 and 1870 (N=29 and 23 respectively). There was less movement within the other two major categories deployed by the mines department, underground and surface boys. Boys (not specifically defined in this period but generally construed as workers under 18) constituted on the average 15% of the mine workforce: this level of juvenile employment was relatively constant throughout the period 1866-1872, with a range from 11% in 1867 to 18% in 1868 and 1869.

Figure Five

**PERCENTAGES OF
SURFACE AND
UNDERGROUND WORKERS,
N.S. COAL FIELDS,
1866-1872**

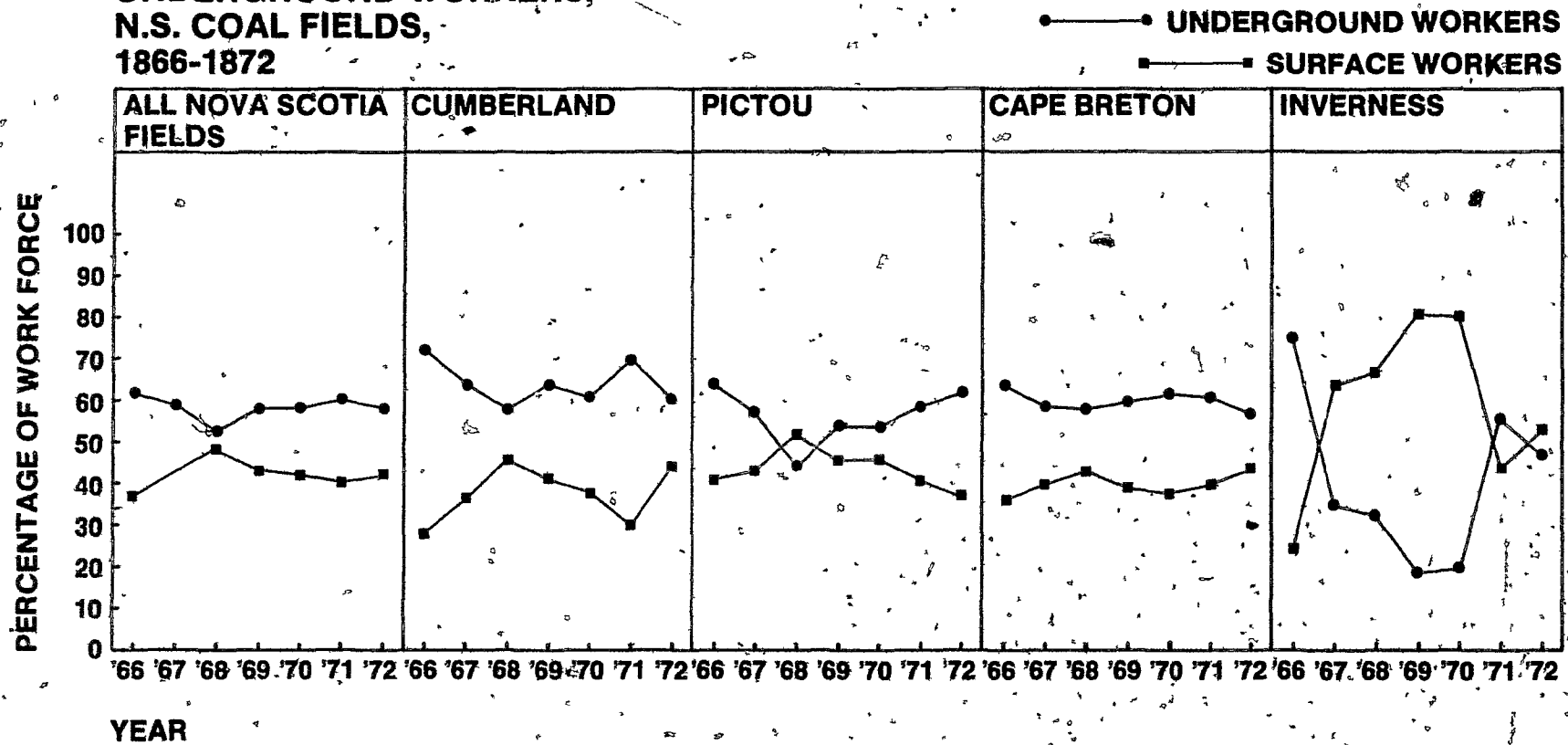
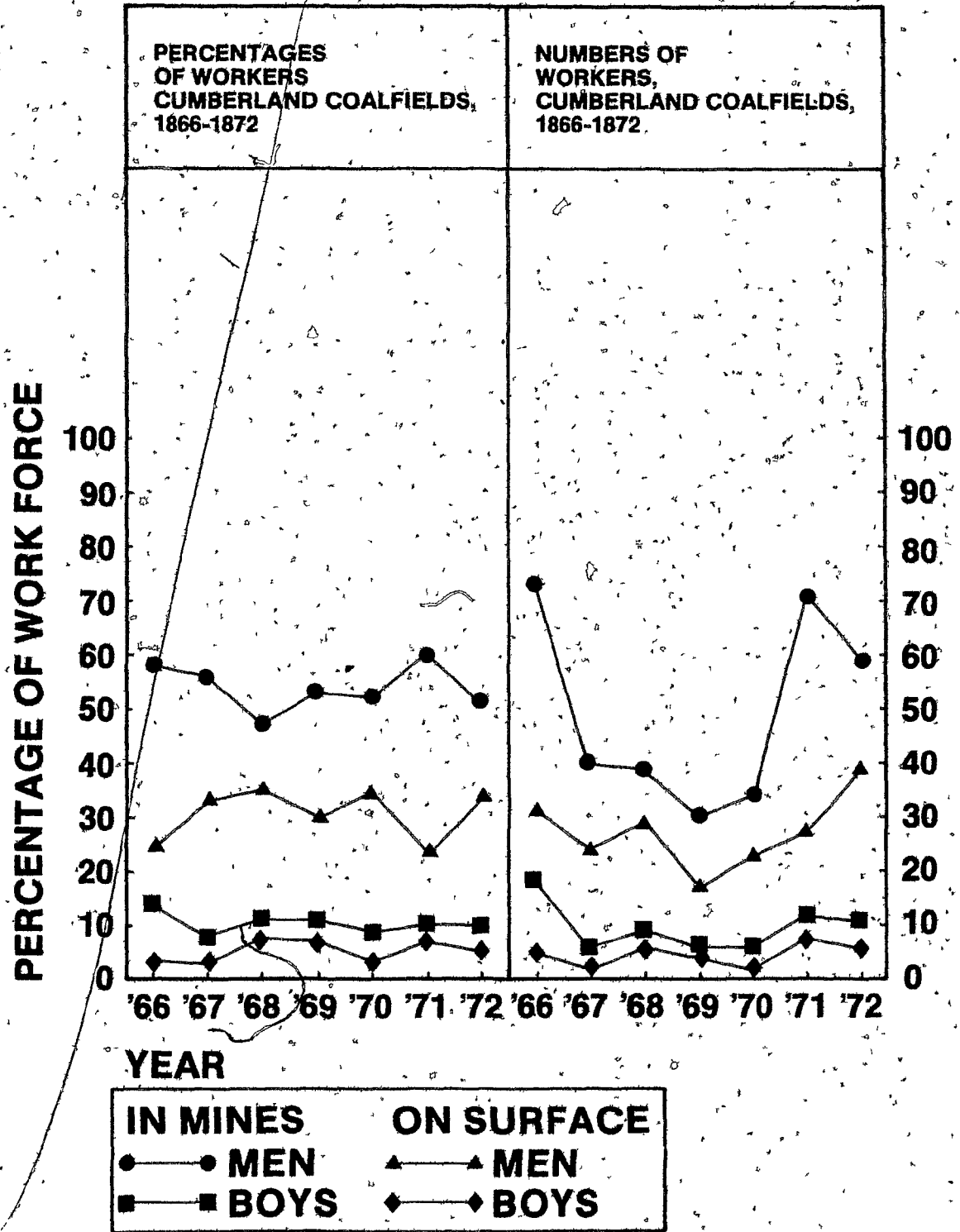


Figure Six



In brief, 85% of the workforce in this period was made up of adult males, and 53% of the total workforce was constituted by men underground (the great majority of whom were skilled colliers) and 25% by surface men. The coal mines of the 1860s and 1870s were plainly dominated by skilled men.

The aggregate information for the period to 1872 may be supplemented by more precise estimates for occupation submitted in manuscript to the government. Estimates are available for the Joggins for 1857-1858 and 1863 and 1864, which are summarized in Table Three.

Table Three. Types of Workers Employed by the General Mining Association in and about the Joggins Mines, 1857-1858 and 1863-1864.

1857-1858

	<u>Men</u>	<u>Boys</u>
<u>In the Pits</u>		
Overmen & deputies	1	
Colliers	12	
Road Makers	2	
Onsetters	1	
Horse Drivers		4
<u>On the Surface</u>		
Clerks & Overmen	1	
Blacksmiths	1	
Carpenters	1	
Labourers	3	
Banksmen	2	
Coal Fillers	4	
Horse Drivers		2
Coal Shippers	2	
Breakmen	1	
TOTAL	31	6

1863-1864

	<u>Men</u>	<u>Boys</u>
<u>In the Pits</u>		
Overmen	1	
Colliers	17	
Road Makers	3	
Onsetters	1	
Horse Drivers		5

Table Three (Cont.)

<u>On the Surface</u>	Men	Boys
Clerks & Overmen	1	
Blacksmiths	1	
Carpenters	1	
Labourers	4	
Banksmen	2	
Drivers		2
Breakmen	1	
Engine Driver	1	
TOTAL	33	7

Source: PANS, RG 1, Vol. 461, no. 110, 'An Account of the number on the average of the years 1857 and 1858 of Persons employed by the General Mining Association in and about the Joggins Mines,' and RG 1, Vol. 464, no. 75, 'An Account of the number on the Average of the years 1863 & 1864 of persons employed by the General Mining Association in and about the Joggins Mines.'

The table suggests a number of interesting points about the labour process and the structure of the workforce in the earliest period of systematic mining. It suggests first the domination of the mine by skilled men: Taking into consideration surface craftsmen, colliers and roadmakers, the level of the skilled in the early mines was 52% in 1857-1858 and 55% in 1863-1864. The earliest mines resembled workshops both in the high percentage of skilled men and in their small size. The ratio of supervisor to worker was 1:19 underground in 1857-1858 and 1:26 in 1863-1864. The percentage of directly productive workers underground (i.e., colliers and drivers), was 42% of the total in 1857-1858 and 55% of the total in 1863-1864.

Because of a greater uniformity in categories employed, it is possible to compare percentages of various kinds of workers from 1873 to 1927 and note with confidence the essential points of change. Figure

Seven portrays the evolution of the coalmining workforce in Nova Scotia in terms of the percentages of four basic types of mine worker, Figure Eight undertakes the same task but provides a breakdown by mining county, and Figure Nine provides an analysis of the six major Cumberland coal areas from 1873-1927. These figures essentially compress the history of the coal mining workforce in the area and provide us with the basis for a comparative structural history.

One of the more interesting points brought out by Figure Seven is that the percentage of underground workers in the province rose (with some reverses in certain years and never by many percentage points) from 1873 to 1915, less as a consequence of any increase in the number of colliers (who in fact remained fairly stable from 1873 to 1915) but more because of a rise in the number of other--unskilled--underground workers. This reflects the growing problem of depth in its most acute form, because it reveals how many ancillary workers were required by the Nova Scotia mines as they grew larger and larger in extent. The essential technological bottleneck, this figure suggests, was underground and not on the surface. The percentage of labour employed on the surface declined steadily from 1873 to 1915. Both general bankhead labourers and such miscellaneous workers on the surface as construction men and boys declined as a percentage of the total. This situation was abruptly changed by the First World War, which witnessed a virtual desertion of the collieries by the skilled colliers and the systematic 'dilution' of coal-mining labour underground by the unskilled. The proportion of the surface to skilled workers was also fundamentally affected, with the 1915 ratio resembling that of 1875 more closely than that of 1910. This suggestion of a

STRUCTURE OF THE COAL MINING WORKFORCE, NOVA SCOTIA, 1873-1927






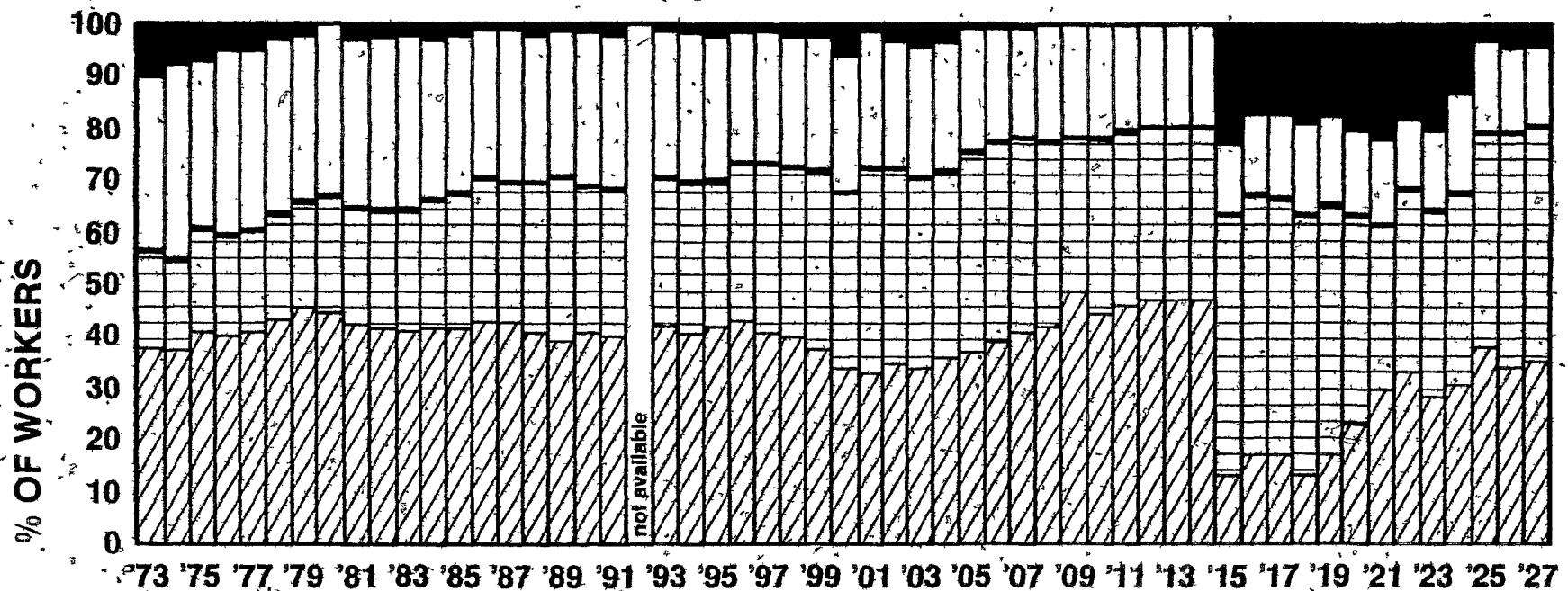
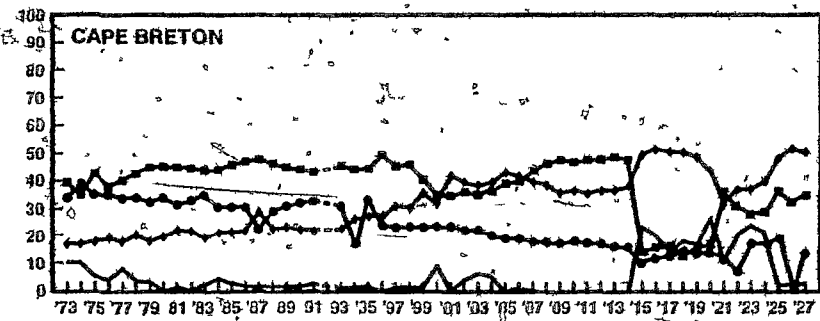
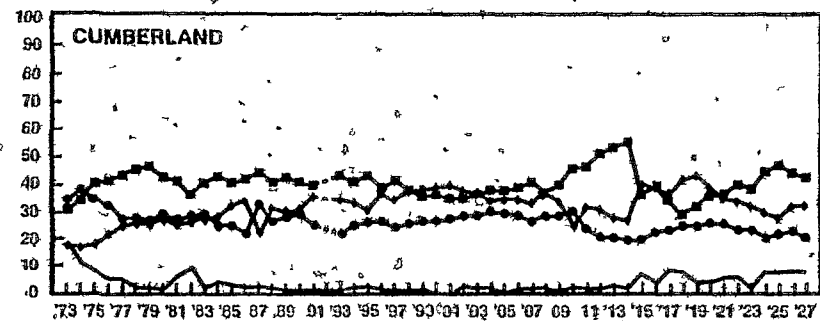
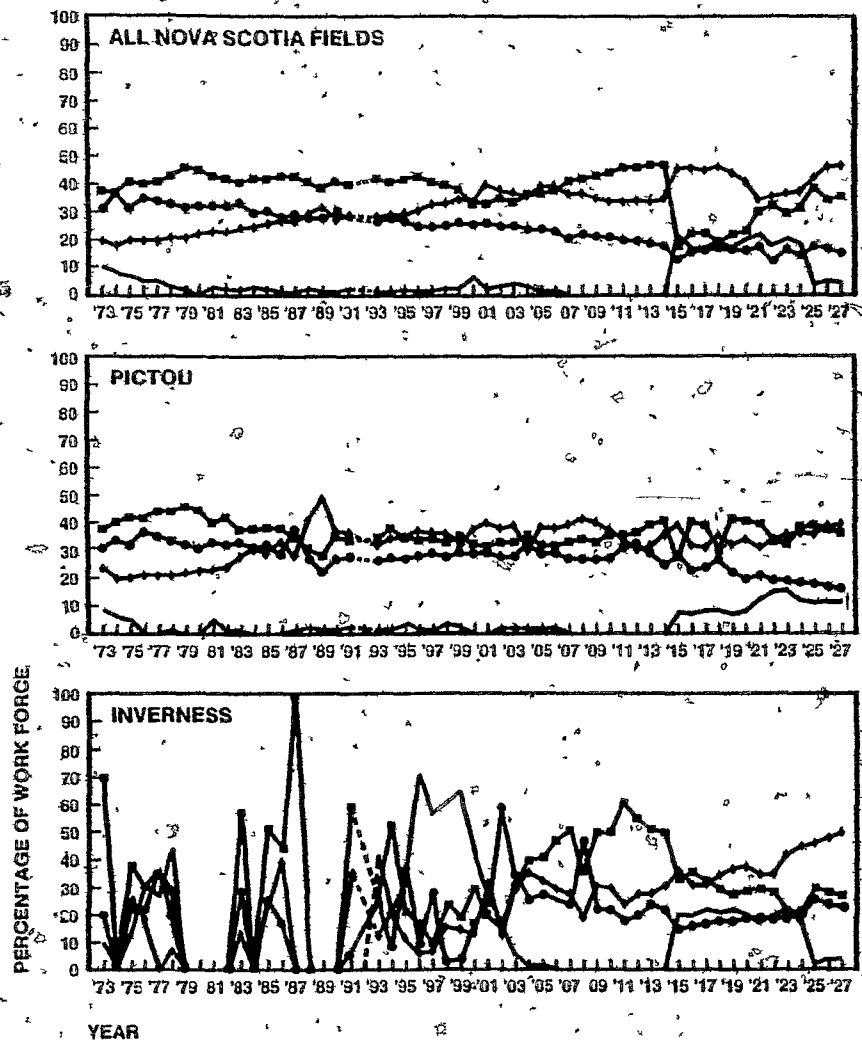
-  SKILLED UNDERGROUND WORKERS
-  OTHER UNDERGROUND WORKERS
-  SURFACE WORKERS (GENERAL)
-  MISCELLANEOUS SURFACE WORKERS
-  UNDERGROUND/SURFACE BOUNDARY

Figure Seven



**STRUCTURE OF WORKFORCE,
NOVA SCOTIA COALFIELDS, 1873-1927**



- ◆ SKILLED UNDERGROUND WORKERS
- OTHER UNDERGROUND WORKERS
- GENERAL SURFACE WORKERS
- ▲ OTHER (SUPERVISORY, OFFICE, CONSTRUCTION)

Figure Eight

**STRUCTURE OF WORKFORCE,
CUMBERLAND COAL AREAS, 1873-1927**

— SKILLED UNDERGROUND WORKERS
 — OTHER UNDERGROUND WORKERS
 — GENERAL SURFACE WORKERS
 — OTHER (SUPERVISORY, OFFICE, CONSTRUCTION)
 (Dotted line denotes assumed levels)

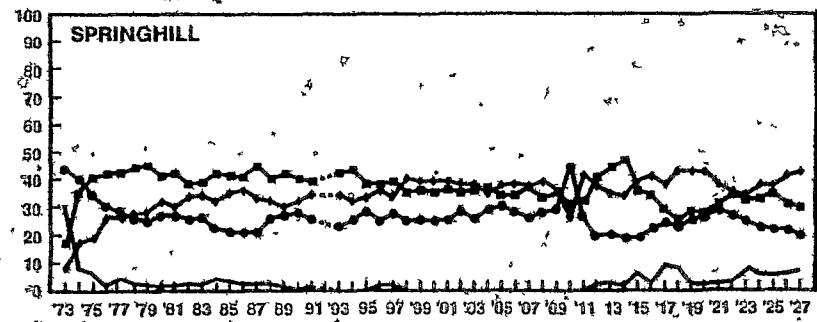
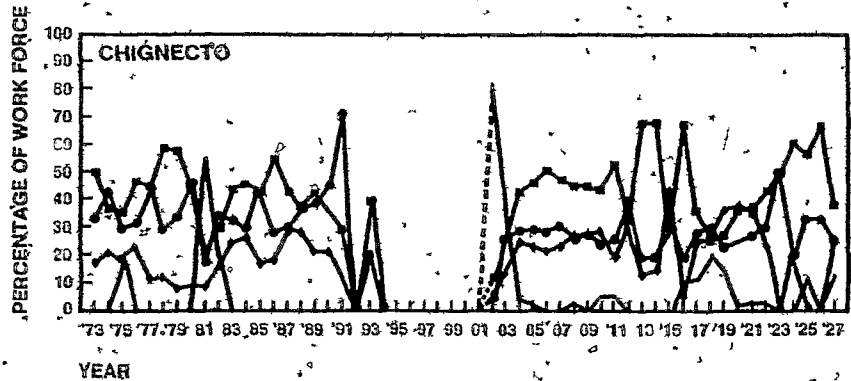
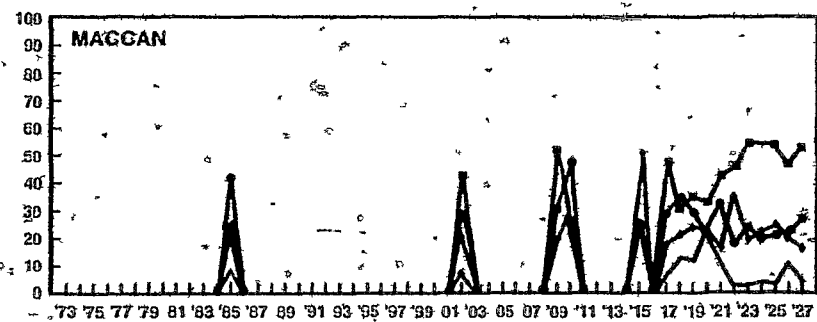
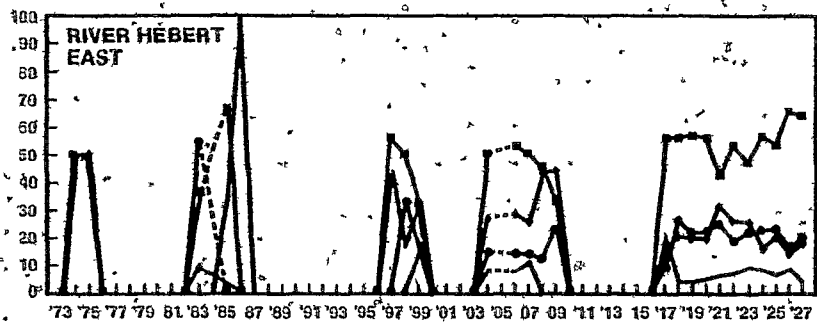
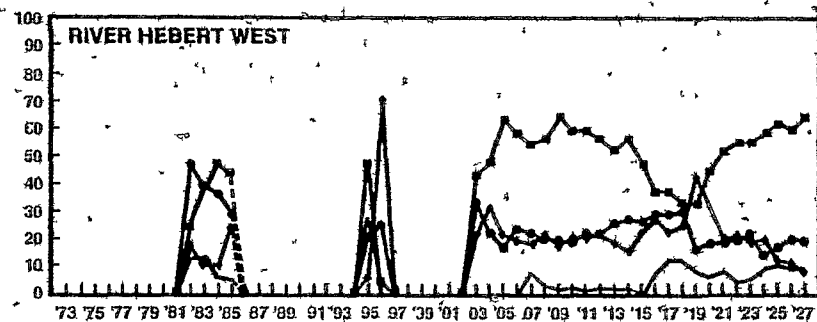
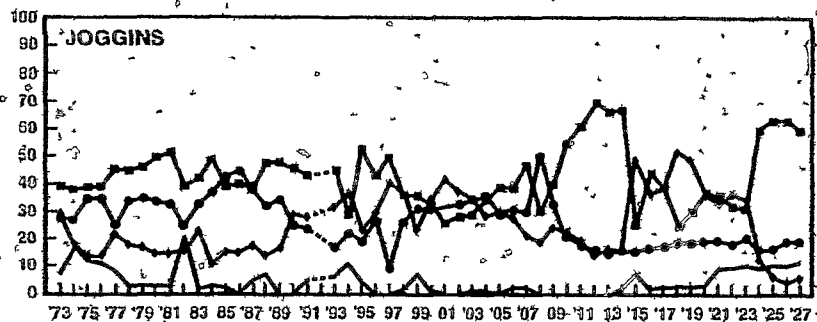


Figure Mine

fundamental transformation occurring during the War is a qualification of the argument that the primary qualitative change took place in the 1890s, since it is evident that as far as the labour process is concerned this earlier shift to monopoly capitalism took twenty-five years to transform the structure of the workforce. From 1915, the figure suggests, the process of dilution was gradually reversed, but never again would the skilled underground workers dominate the pits as they had in the nineteenth century.

Figure Eight suggests qualifications in this general pattern according to the specific coalfield. The general Nova Scotia pattern is heavily influenced by the Cape Breton experience, since increasingly the mining population was to be found in that coalfield. The Cumberland statistics diverge markedly from those of all other coalfields. In common with all other coalfields the colliers in Cumberland declined in 1915; but this decline was never as pronounced as it was in Nova Scotia as a whole. In the province, and in every single other coalfield, the highest percentage of any category was that of "other underground workers"—workers employed in haulage, construction, and maintenance. Without exception the other coalfields had made a transition to a new structure of employment during the War, in which ancillary underground workers were given a predominant position. Cumberland was the exception. In Cumberland alone did the skilled underground workers maintain their position. The explanation of this aberration is to be found in Figure Nine, which breaks down the county statistics by coal mine area. Essentially the reason for the general county pattern was the rise of the west Cumberland coal areas, where shallow mines on thin seams could reap full advantage of machine

technology. Such mines required extremely small staffs of workers for such functions as maintenance or haulage: large majorities existed for the colliers in four of the five west Cumberland areas. The mines of west Cumberland bore a strong resemblance to the first pits established in the Joggins, insofar as the skilled underground worker continued to hold his numerical position. However, as we know, this underground worker was working with machines while his Springhill counterpart was working with handpick, a vital distinction which the statistics could not capture. Perhaps the most fundamental economic fact which emerges from this figure is that the two kinds of mines differed quite fundamentally in the types of strategies open to them. For all the disruption of the War, Springhill's structural evolution was remarkably orderly. (The other major disruption to be noted is that of the 1909-11 Strike). There were few sudden changes, and the decline of the underground skilled worker proceeded at a very gradual pace. The signature left behind by the other coal areas is one which conveys a far greater volatility, an exaggerated propensity to radical change. This is partly a function of the economic instability of the western coalfield, brought out so emphatically by the broken lines, but even more interestingly by the chaotic shifts in occupational structure from one year to the next. This suggests that formal occupational titles were of less consequence in the smallest mines, and were quickly changed. Within this rather chaotic environment, which changed only after the War, one would scarcely expect to find stable groups of men with a common work experience or shared loyalties to defending a customary definition of a job. Once again we encounter a paradox: the coalfield in which the

underground skilled worker was the unquestioned king was also that in which he was least likely to have a definite sense of an occupational tradition.

To what extent do our data confirm general theories of the history of work? The most important theoretical framework thus far elaborated stresses the transition from 'formal' to 'real' control. Marx's essential argument is that the fundamental relationship of ownership and control, as well as inter-enterprise competition, impose upon enterprises the necessity of constructing apparatuses of labour discipline which have the aim of maximizing managerial control over the quality and quantity of output. Developing this insight, the theorists who stress the transition from formal to real control note, with Marx, that "capital... is at first indifferent as to the technical character of the labour-process; it begins by taking it just as it finds it."¹⁷⁹ The question which seems unresolved by employing the theoretical dichotomy of real vs. formal control is that of periodization. Marx's distinction (subsequently absorbed into that between relative and absolute surplus value in Capital) refers to a difference in kind as well as degree; formal control designates the situation in which capital seized existing methods of production, and real control that in which the labour and instruments and materials of production were critically transformed through the substitution of the interaction of machines for that of the detailed labourers. These ideas have formed the interpretative basis of the existing sociology of Canadian mining.¹⁸⁰ Certainly one may see in coal mining the same drift towards the replacement of hand tools by machinery, handicraft by specialisation, diversified labour by specialized and detailed labour, noted in many other contexts,¹⁸¹

What remains unsatisfactory about the "real/formal" distinction, however, is that in the context of mining if itself is more formal than real. It postulates a sudden and irreversible transformation, a qualitative breakthrough, which, if it ever really took place at all, did so in the very recent past.

Such a model, with its ahistorical bias, would homogenize the past and prevent us from seeing in it anything more than the long reign of formal control. Instead the evidence from the coal mines suggests another approach. If we conceive of formal and real control as two extreme poles of a continuum, the coal mines could be said to have started at a point slightly below the median and ended slightly above. The inapplicability of the model of transition from 'manufactory' to 'machinofactory' stems from the peculiar character of the mines, whose growth and stability was a function of the growth and stability of industrial capitalism. Large-scale coal mining required industry, and vice versa. At the other end of the continuum, the turn to other fossil fuels took away much of the pressure needed for a profound transformation of work in the period after the Second World War. We find here a war of position, not a war of manoeuvre.

Nothing is further from our intention than to underestimate the changes which did occur in coal mining. The question of the breakdown of the collier's job into the component parts is one raised insistently by the data of the workplace. The work of the skilled underground worker in 1925 was far less encompassing than it had been in 1850. Specialized workers took care of a number of the functions once performed by the miner: timbering, shot-firing, and other aspects of his craft might well

be assigned to other, specialized workers. No longer could authorities complain of Nova Scotia mines as Rutherford complained in 1867: "There is a system that prevails to a great extent, of allowing the miner to do nearly everything himself that is required in the course of his operations, respecting which I would also remark, that although his own safety should be a sufficient inducement for the exercise of care in working, yet it is well known that to save a little trouble, risk is very frequently run."¹⁸² By the 1920s the acceptance of the coal miners' position in the mine had changed to an insistence—strengthened enormously by public pressure—on the need for scientific management in coal mining.

The complexity of this problem emerges when one considers the ambiguity of scientific management in the context of coal mining. The limitations of scientific management were suggested by George McHattie in 1922:

The personnel of a coal mine must be an efficient machine above and below ground, or troubles will arise on every side very early. And yet, in and around nearly every coal mine, evidences of inefficient organization and incompetent officials are all too apparent. It is not to be wondered that coal mining in so many districts is facing a crisis. 183

The failure of scientific management in the coal mines was an indication of the structural limitations imposed by the mining environment on any thorough-going reform. The consequence was that the pressure to change the structure of work was insufficient to do so. The transition from 'formal' to 'real' subordination was aborted: the coal mines persisted in an intermediate state. The suddenness and completeness of the transformation envisaged in most theoretical discussions of the history of work was entirely absent in the case of coal-mining. The archetypal

'mass industry' was paradoxically that which most clearly typified the persistence of older patterns of organization, notwithstanding its general image and the fond hopes of managers.

But there is a further ambiguity to any consideration of the structure of work. As functioning systems integrating complex and diverse functions, coal mines required scientific planning. Perhaps more effort was made to rationalize the mining of coal than was put into any other industrial improvement in the Maritime Provinces. Because of the special safety problems created by the mining environment and the vested financial interests of the state, the government put increasing pressure on mine owners to rationalize production; this bureaucratic initiative, as much as the inherent logic of the industry, was instrumental in the campaign for a more scientific mining. Harsh attacks were published on irrational mining practices in the 1860s, and severe criticisms were made of the instability of the Cumberland industry in the 1920s.¹⁸⁴ Such public criticisms were merely the outer and visible sign of a complex and imbricated relationship between the industry and the state. Perhaps the most dramatic example of state involvement was the establishment of a system of education for mining officials, initially in the form of miners' night schools but ultimately in the establishment of a sophisticated technical college.¹⁸⁵ To be sure the province was responding to an international climate of ideas concerning technology, and was anxious to show its 'progressive' orientation. But there was within this programme of technical education a clear emphasis on scientific mine management. Its proponents frequently argued that technical education, by creating a local and scientifically-trained cadre of mining officials, would

safeguard the most valuable resource of the province. There was, in brief, a serious attempt to reform mining by the state, supported by many mining engineers. Professionalism had a broad mandate, simply because professional and scientific knowledge was so obviously necessary to running a mine. In some respects the mine was one of the most planned working environments imaginable; forced by the unavoidable circumstances of underground mining, officials had to measure precisely the various working parts of the mine and plan for the future. In some respects the mines were already scientifically planned. But with the notable exception of the transition to longwall, such scientific planning could not master the structure of underground work. These data testify then to an underlying set of limits which constrained the management of the mines.

There is a further difficulty in any discussion of scientific management in coal mining. In most discussions of scientific management, the movement is presented as the enemy of the workingmen, a destructive force which undermined traditional crafts and gave management a new capacity to exploit. Taylorism provides the most compelling example. The situation in the coal mines was somewhat different. If by scientific management we mean the attempt to heighten productivity by more precisely integrating diverse productive functions, then we must conclude that such an attempt would have had the endorsement of many miners. The subdivision of the traditional job of the hand-pick miner was not resisted, and in fact attempts to reverse this process of specialization were opposed by the workers. The new specialities acquired 'craft' properties of their own which workers were anxious to defend, and the essence of mining--productive face work--was not transformed. Many of the reforms

suggested by mine reformer Hugh Archbald were directly in the workers' interests and would have enjoyed their support. Proposals to increase the safety of the mine included, by necessity, steps to increase the collective discipline of the mining workforce. The miners' union itself may be seen attempting to impose such discipline upon its members. A solution to the vexed question of inefficient haulage--which forced miners to wait for coal cars underground--would have been universally hailed. These aspects of the structure of work and the programmes to change it set mining apart from other industries and make the question of scientific management in mining more complex.

The differences in the structure of the mining workforce over time are brought out by an analysis of the wage books of the Cumberland Railway and Coal Company for 1891, 1901, and 1908. These do not list all the workers in the company nor cover entire years, but they do offer us a rare glimpse of the workings of the local mines and an opportunity to plot change in the occupational structure over time.

Table Four. Occupational Structure of Mines in Springhill, 1891, 1901, 1908.

1891

Officials: 3

Underground Manager (1), Overman (1), Timekeeper (1),

Contract Miners: 155

Others: 166

Firemen (2), Shot lighters (7), Roadsmen (5), Cleaning Roads (3), Attending Slope (2), Shiftmen (7), 'Various' (7), Bottomers (3), Stables & c. (2), Lamp cleaners (3), Shiftmen on Construction (22), Blacksmiths (2), Main Seam Sinking (9), Back Seam Sinking (8), Straight in Incline &

Table Four (Cont.)

Chute (4), Cage Runners (8), Brakeholders (9), Shovers On (5), Drivers (19), Trappers (12), Shovers-Down (14), Loaders Out (6), Laying Dawson's Balance Back Seam (5), Masons (2).

1901Officials: 18

Underground Manager (1), Overmen (3), Timekeeper (1), Day Examiners (8), Day Examiner Working on Surface (1), Night Examiners (4).

Contract Miners: 422Others: 245

Examiners' boys (5), Stablemen (2), Roadsmen & oilers (8), Trip runners (4), Bottomers (3), Night Bottomers (2), Point Tender (1), Drivers (12), Trappers (7), Blacksmith's Boy (1), Chain Runners Riding Slope (1), Cage Runner (1), Brake-holder (1), Shover One (1), Shovers Down (68), Stauching Picks (1), Loaders on Company Work (7), Company Loaders (13), Road Cleaners (3), Canvassers (5), Attending Slope (1), Lamp Lighters (2), Rope Inspector (1), Shiftmen and Labourers (36), Building Packs (2), Masons (2), Timbering Riding Slope (3), General Shiftwork (38), Building Packs (2), Building Overcast (2), Timbering Riding Slope (3), Sinking (7).

1908Officials: 26

Underground Manager (1), Overmen (3), Timekeeper (1), Official Measurer (1), Day Examiners (13), Night Examiners (7).

Contract Miners: 513Others: 397

Examiners' boys (4), Stablemen (2), Roadsmen (9), Trip runners (5), Bottomers (5), Point tenders (2), Chain Runners & Transit (1), Drivers (28), Trappers (9), Shovers Down (71), Cage runners (3), Brake holders (4), Loaders on Company Work (34), Company Loaders (18), Road Cleaners (5), Stauching Picks (1), Lamplighter (1), Canvassers (4), Attending Slope (1), Blacksmiths (2), With Mechanics (1), Shiftmen and Labourers (73), Timbering on Transit (3), Timbering (3), Masons (3), Timber Carriers (17), General Shift Work (56), Timbering on Transit (6), General Shift Work (22), Masons (3), Mechanical Department (1).

Source: Cumberland Railway and Coal Company Wage Books, Miners' Museum, Springhill.

This information is not altogether easy to interpret. The 1891 Wage Book, which bears the title 'Explosion Wage Book,' presumably lists underground workers in the East Slope or No. 1 Mine, which was where the 1891 Explosion occurred. The 1901 Book lists 685 out of a total of 1406 employees at Springhill; the total is too few to be a listing of all underground employees, and there is no mention of the pit. The 1908 Book is most probably related to No. 2 Mine. Thus the books refer to different mines, and are consequently highly individual documents not easily compared with one another.

With that caution in mind, one can still make certain inferences from the evidence. The most notable change in this period was the rise in the number of officials, from 3 for the East Slope in 1891 (or one official for every 140 contract miners) to 26 for No. 2 Mine in 1908 (or one official for every 20 contract miners). A second noteworthy change--and one which qualifies to some extent our emphasis upon continuity--is the gradual increase in the percentage of men directly employed by the company, as opposed to men working on contract. (The continuation, throughout this entire period, of the contract form of payment was a legacy of craft mining, and testified to the continuation of real interests in maintaining this system on the part of workers). The level of contract miners dropped slightly through this period, as we may infer from the category 'skilled underground men' in the figure, but this slight drop conceals the underlying structural change: in the 1890s payment for loaders passed from the miners to the company, and this represented a major increase in those directly in the pay of the company. Finally, one notes the sheer diversity of occupation, the heterogeneity of

the workforce. A persistent myth of mining life claims that one unifying force was the uniform nature of everyone's work. In agreement with Rolande Trempe, we make the opposite argument: the mining workforce was divided into many categories of workers.¹⁸⁶ The proliferation of different types of workers was, if anything, more acute in the 1920s. There is no direct evidence of a conscious policy of stratifying the workforce, but there is testimony that some types of workers felt excluded from the deliberations of the elite workers of the mine, the miners. These listings of categories understate the case, of course, because they are based on underground operations; on the surface there were many more occupational groups, from machinists and blacksmiths in the company's workshops to the unskilled labourers who worked at the picking table.

By comparing the Cumberland mines in 1927 with those of the 1860s we can obtain a clear idea of the changes brought about in 60 years of mining development. Table Five summarizes the structure of the workforce in Cumberland County in 1927. In the mines of the 1860s, we recall, underground men had normally constituted a majority of employees. The position of the underground compared with the surface is even more one of domination in the 1920s, the consequence of a gradual trend whose provincial counterpart is plotted in Figure Seven. This underlines the difficulties of rationalizing the underground operations; which remained highly labour-intensive. What rationalization had been effected underground is evident in the changed position of coal cutters. In Springhill coal cutters were outnumbered by other underground labourers 461-325. In contrast to the mines of the 1860s, Springhill was no preserve of the craft miner. While once skilled miners had constituted 52-55% of the

Table Five. Number and Classes of Workmen in the Coal Mines of Cumberland County, Year Ended September 30th, 1927.

Company	Average Surface	Daily Force Cutting Coal	Other Labour	Total Colliery Men	Miscellaneous	Total Workmen
Boston Coal Co.	7	21	7	35	1	36
C.J. Burke et al.	4	17		21	2	23
Carter Coal Co.	8	15	8	31	3	34
Cumberland Ry. and Coal Company	219	325	461	1,065	74	1,079
J.P. Taylor (Standard Coal)	4	14	3	21	-	21
C.R. Smith (Enterprise)	10	20	3	33	-	33
Maritime Coal	63	210	11	284	38	322
Sherwood and Swanson (Milner)	3	10	2	15	-	15
Provincial Coal Co.	2	3	2	7	1	8
River Hebert Coal Co.	7	20	6	33	1	34
TOTALS	327	655	503	1,485	120	1,605

Source: Mines Report (1927), Table XIV.

workforce, in the largest and most significant Cumberland mining complex they amounted to a mere 30%. This was, as Figure Nine reveals, a development which had taken many years to evolve, and represented a partial recovery from the nadir of the war years. But--underlining the geological dualism of the coalfields--the pattern in the small mines of West Cumberland was dramatically different. The most important employer here, Maritime Coal, had a workforce of which 65% was comprised of coal cutters. These cutters bore little resemblance to their nineteenth-century ancestors--they worked with machines and on walds--but they did represent a curious reversal of an expected pattern. The major difference between the two periods was the absence of children in the mine--they had been removed by protective legislation, and their functions taken over by haulage engines or by adult employees. Table Five reveals a quantitative increase in the size of the workforce and certain differences occurring within its structure; but like most of the evidence available for this question, it does not sustain any notion of a qualitative breakthrough in coal mining.

4. The Pursuit of Productivity

A more direct measure of the Cumberland mines and the changes within them is provided by the statistics on productivity, which may be calculated from the Mines Reports, both on an annual and a daily basis, using a number of indicative categories. Figures Ten, Eleven, Twelve, Thirteen, Fourteen and Fifteen present a general picture of the evolution of coal-mining productivity from 1873 (1866 in the case of underground workers) to 1927. They allow us to place the experience of the Cumberland industry in a

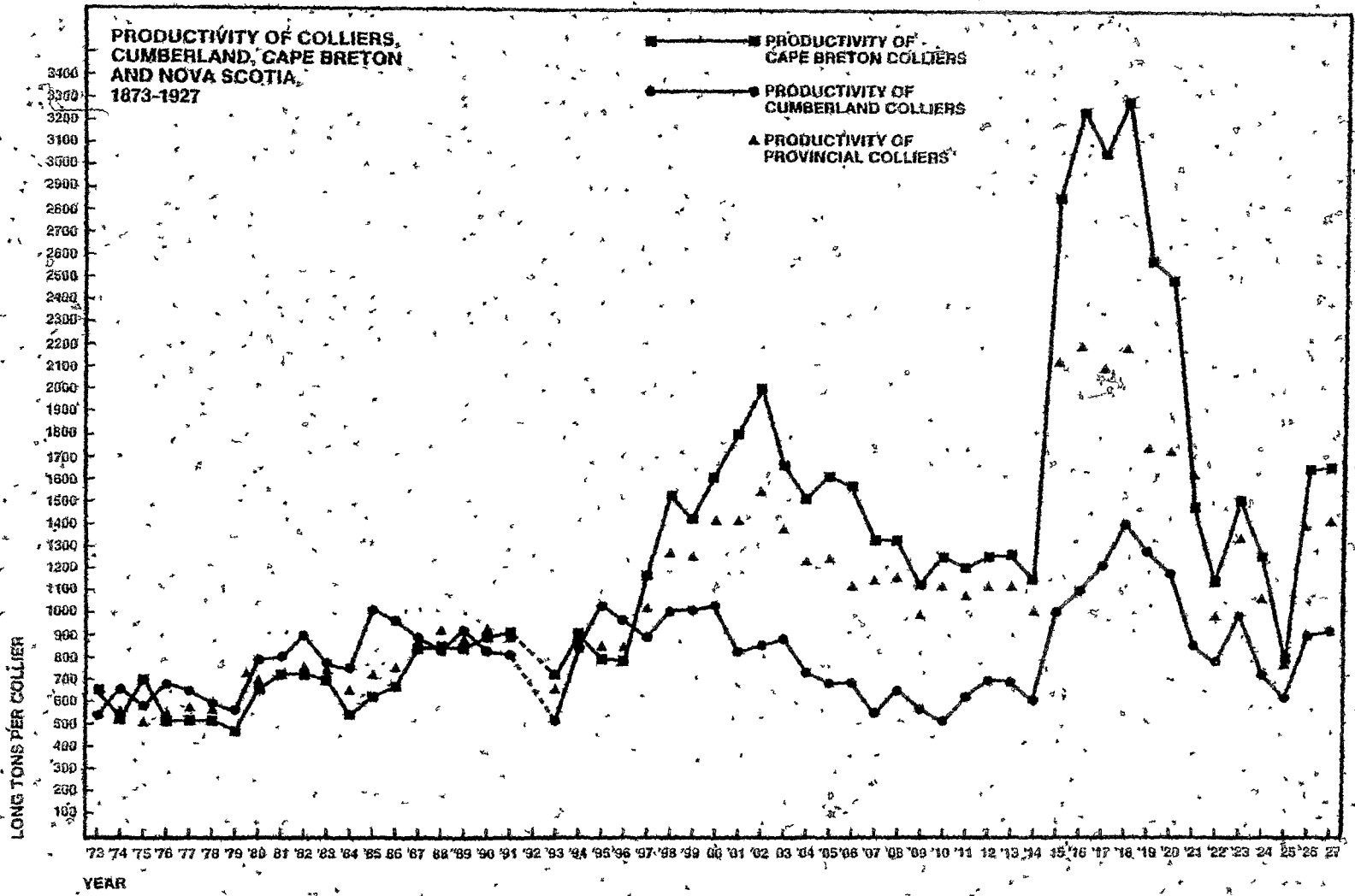


Figure Ten

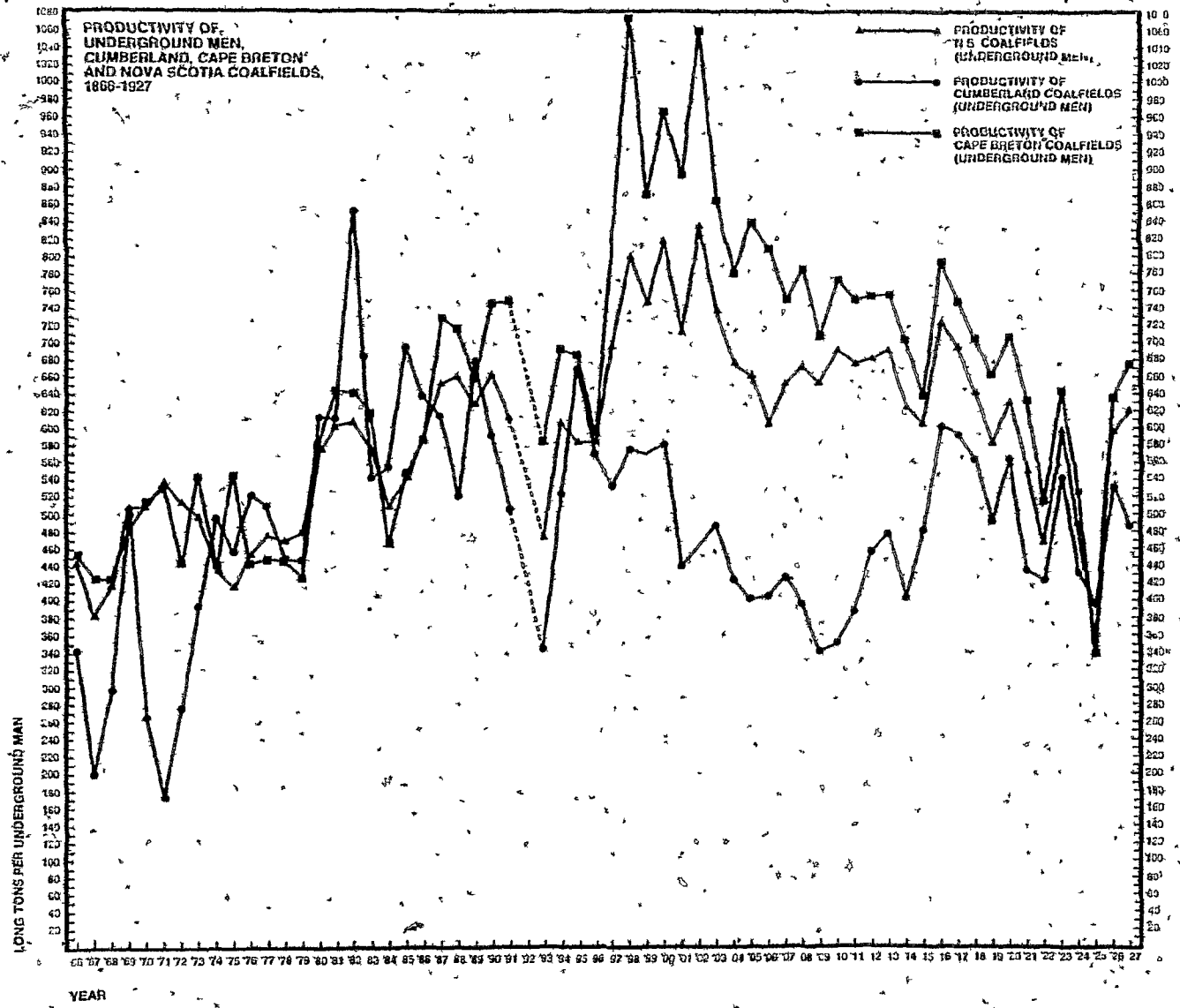


Figure Eleven

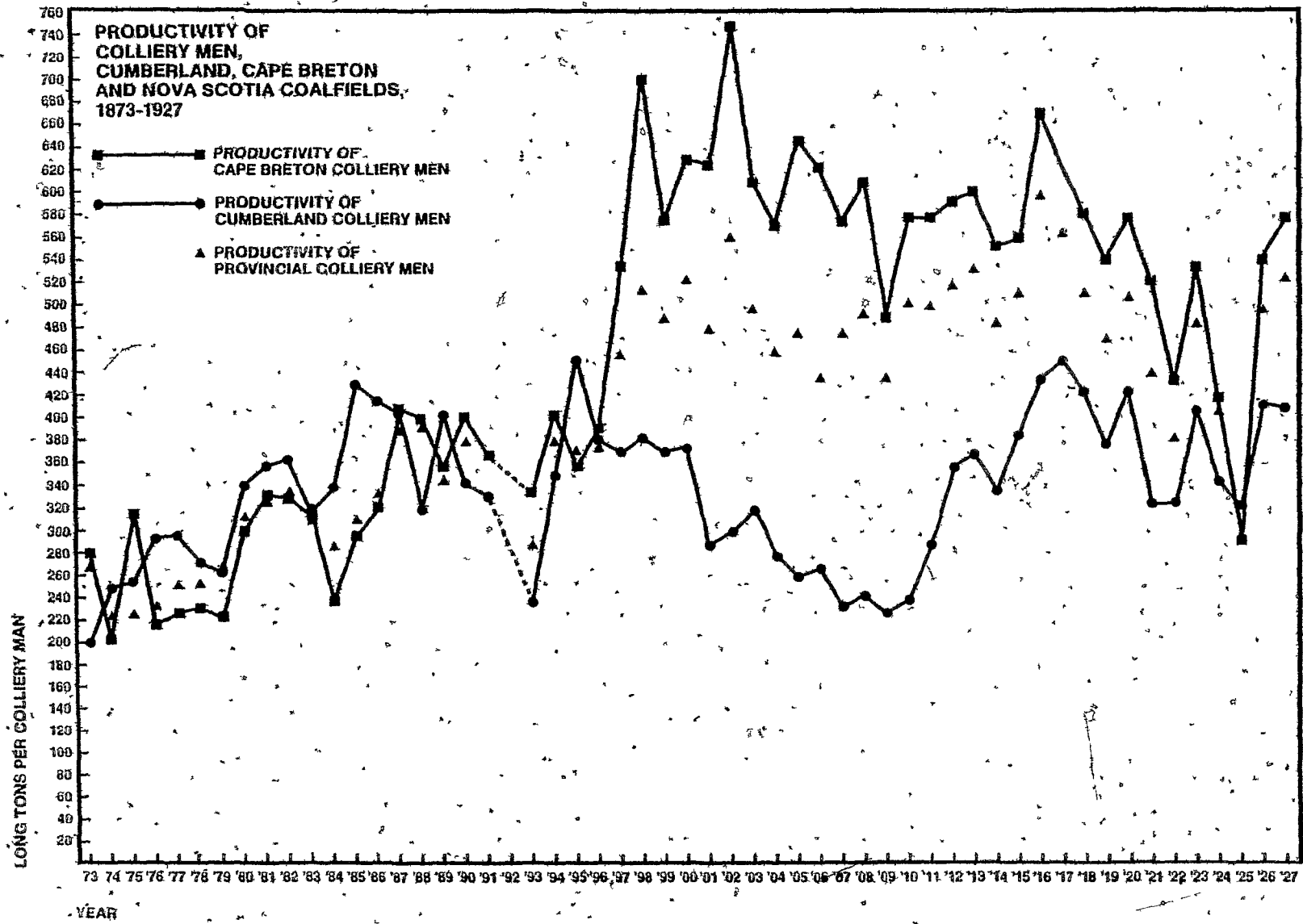


Figure Twelve

Figure Thirteen

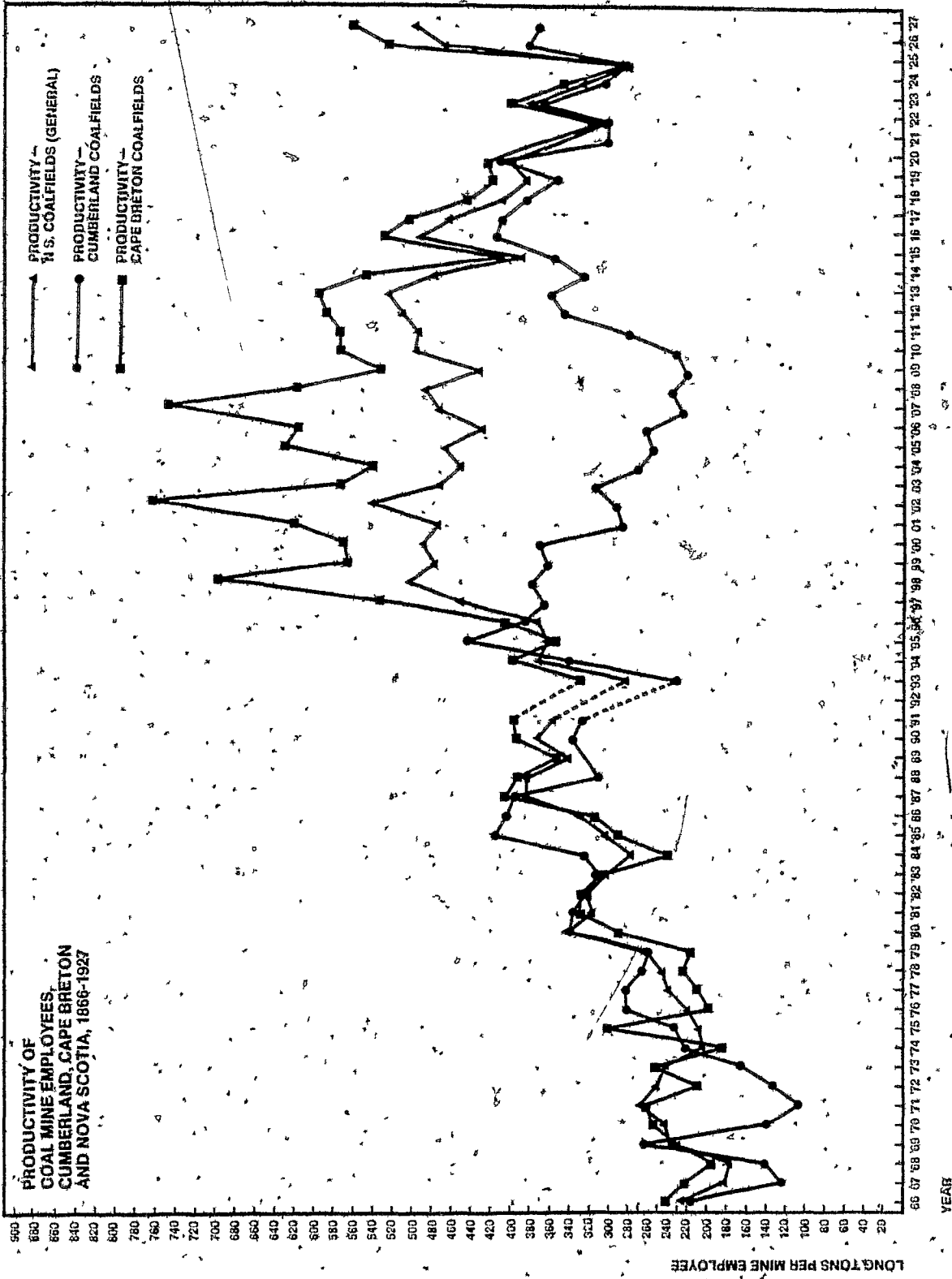
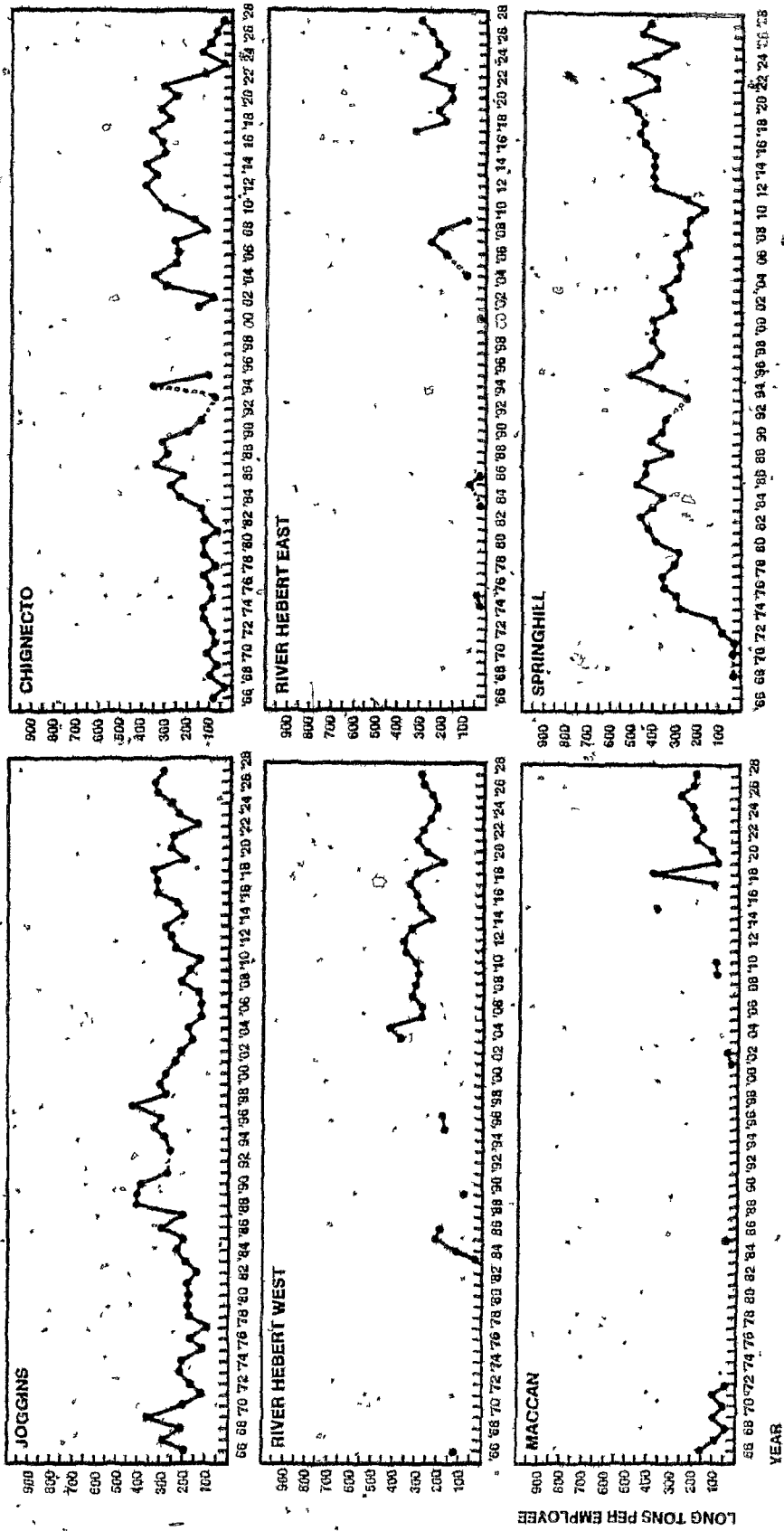


Figure Fourteen

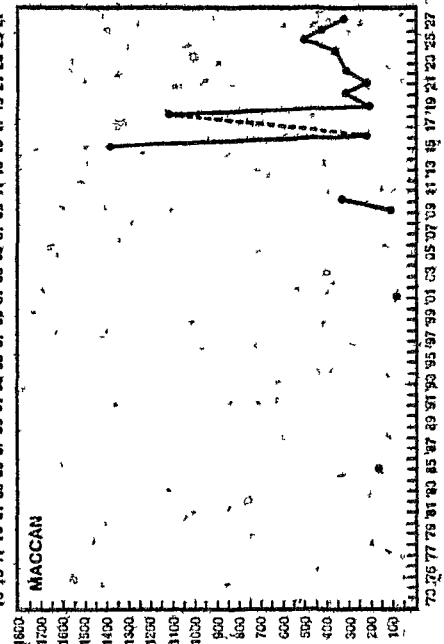
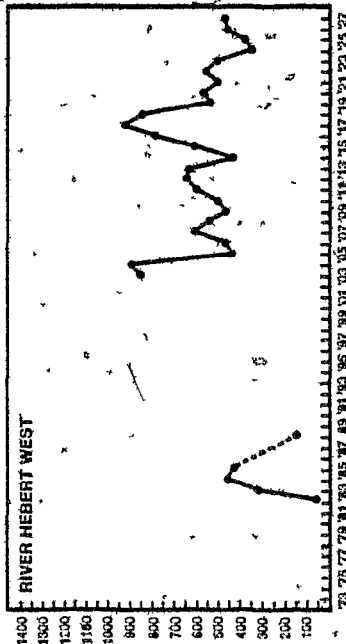
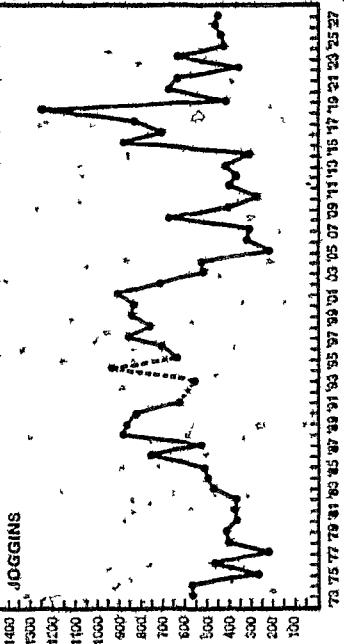
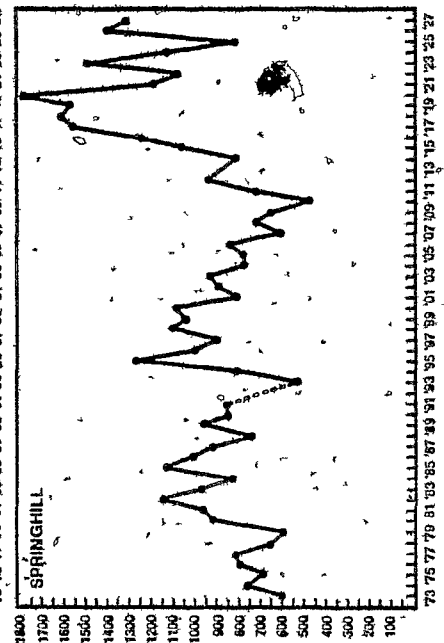
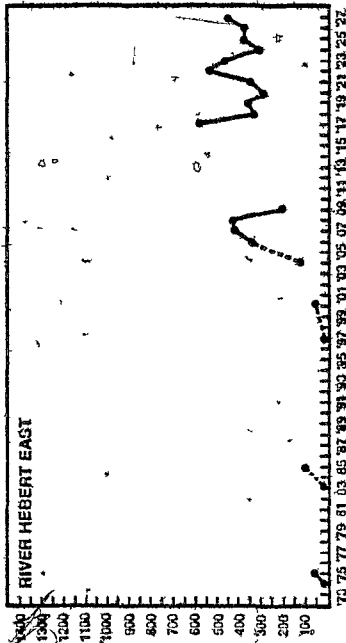
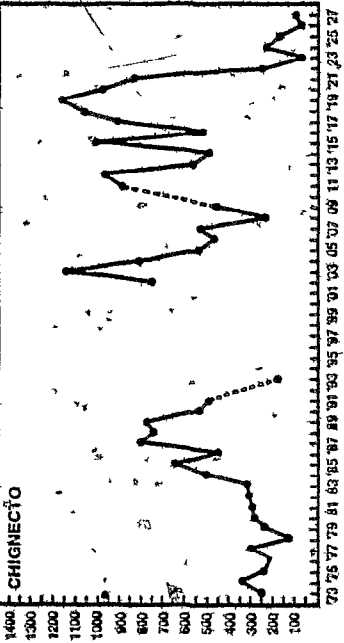
PRODUCTIVITY
OF COAL MINE
EMPLOYEES BY
MINING AREA
CUMBERLAND
COUNTY, 1866-1927



LONG TONS PER EMPLOYEE

YEAR

Figure Fifteen



**PRODUCTIVITY OF COLLIERIES
BY MINING AREA,
CUMBERLAND COUNTY
1873 - 1927**

LONGTONS PER COLLIER

YEAR

provincial perspective. In general the pattern they illustrate confirms the underlying periodization of this thesis, but in a manner which suggests a significant lag between the emergence of new economic structures and the transformation of work. From 1866-1868 the output per mine employee in Cumberland lagged far behind the provincial or Cape Breton totals, and with the exception of the year 1869 it continued to do so until 1874. After 1874, and until 1896, the output per man in Cumberland kept pace with, and often bettered, the Cape Breton and provincial average. In 1896 a major structural shift occurred, marking the advent of a new period in the industry: the Cape Breton average output per man increased dramatically, pulling with it the provincial average, while the average yearly output of Cumberland mine employees actually declined. A less radically demarcated period is evident in the figures after 1915, a period in which the gap between the two coal counties were narrowed. This reflects the growing uniformity of mining conditions after the takeover of Springhill by Dominion Coal. The discrepancies increase as one narrows the field from all coal mine employees to the colliery men (all coal mine employees minus the officials and miscellaneous workers) to the colliers themselves. This strongly confirms the hypothesis that the crucial defeats of the strategy of scientific management took place underground.

These measures of crude productivity present us with a clear portrait of the performance of the local industry, but they represent the end result of a complex historical process. Such statistics cannot but reflect the underlying features of the coal trade cycle and other aspects of the conjuncture (such as strikes). A further difficulty is that any measure of productivity in coal mining (in comparison with manufacturing)

must take into account the distinctive features of the mining environment. Faced with statistics suggesting, as these do, an uneven but persistent tendency for provincial productivity to fall from 1900 to 1925, Cape Breton productivity to fall from 1903 to 1925, and Cumberland productivity to fall from 1895 to 1910, the historian might be tempted to conclude that the industry was inefficiently managed. But while this might indeed be true, there can be no automatic leap from declining productivity to inefficiency. "In mining," as Arthur Taylor argues, "with its inherent tendency to diminishing returns, the effort needed to maintain a given level of labour productivity, especially in a period of heavy demand, may well be as great as that capable of effecting a considerable increase in the productivity of a manufacturing industry."¹⁸⁷ Merely to stand still required an ever-increasing effort in a mine which had to go deeper and deeper into the earth. Declining productivity, these estimates suggest, was a defining trait of Cumberland County from the mid-1890s to 1910. This reflects the growing age and depth of the pits, the serious disadvantages faced by them in a market increasingly dominated by Cape Breton, and also the hostility between capital and labour which forced productivity down as a result of frequent interruptions in work.

One way of removing the impact of the conjuncture and examining the long-term evolution of underground efficiency is to examine daily estimates of production. Such estimates do not exist in themselves. Ideally one would like a record of output per man-shift. However, it is possible to calculate the daily production of coal per general man-day, per underground man-day and per collier man-day. These statistics offer a corrective to the general crude productivity rate in that they take

into account the number of days worked by the pit. However, they are far from perfect. In some cases the estimates are unavailable or unreliable, and in no case are we able to compute the effects of the absentee employees, who were thought to be so serious a danger to coal-mining productivity. They reveal a gradual upward trend in individual productivity. The essential battleground was the underground, but significant victories were won in the actual production of coal. One collier-day in Springhill produced 2.22 tons of coal in 1873; by 1927 it produced 5.46 tons. In Joggins the increase was less remarkable but nonetheless considerable. However, the statistics for production per underground-day show that whatever progress was made at the face tended to be counterbalanced by the sluggish advances posted by the other underground workers. Average production in 1927 was higher than in 1873: on the other hand, the rate of growth was fairly unimpressive. That the mine in Springhill in 1927 produced at a rate of 1.64 tons per day per employee, is impressive only if we forget that in 1898 it had produced at about that rate. Against the impressive efforts to modernize the pits, we must place this record of sluggish improvement--the consequence not of a failure to mine coal efficiently, but to effect the structural transformation of mining which alone could ensure optimal transportation and distribution. The category 'Reported tons per collier day' is the actual statistic printed in the Mines Report. In some cases this number compares with the estimate derived by dividing production by the number of colliers and the resulting number by the number of underground days; in other cases there is a variation. The estimate quoted in the reports is probably an empirical evaluation of the actual amount of coal cut on a

Table Six. Individual Productivity Estimates for Springhill and Joggins, 1873-1927.

Year	Joggins				Springhill			
	Tons per man-day	Tons per collier-day	Tons per underground-day	Reported tons per collier-day	Tons per man-day	Tons per collier-day	Tons per underground-day	Reported tons per collier-day
1873	.77	2.46	1.47	2.0	.38	2.22	1.53	2.2
1874	.96	2.36	1.60	2.3	1.04	2.71	1.82	2.7
1875	.91	2.30	1.46	2.7	1.02	2.57	1.75	2.5
1876	.71	1.16	1.59	2.5	1.31	3.03	1.87	3.1
1877	.39	1.37	1.30	1.7	1.22	3.00	1.86	2.8
1878	.90	1.97	1.39	2.0	1.30	2.89	1.75	2.9
1879	1.27	2.06	1.50	2.7	1.32	3.41	1.80	2.9
1880	.65	1.37	1.07	1.3	1.60	3.87	2.17	3.9
1881	.80	1.75	1.34	1.6	1.59	3.70	2.17	3.7
1882	.51	1.34	.96	1.3	1.54	4.12	2.18	4.0
1883	.74	1.75	1.11	1.7	1.32	3.41	1.81	3.4
1884	1.20	2.75	2.25	2*	1.32	n.a.	n.a.	2*
1885	1.59	3.29	2.32	4*	1.79	4.36	2.35	4*
1886	1.74	3.62	2.62	4.3	1.65	3.92	2.09	4.0
1887	1.00	2.83	1.93	2.5	1.50	3.29	1.88	3.2
1888	1.53	3.87	2.50	3*	1.39	n.a.	n.a.	3*
1889	1.44	2.95	2.16	3*	1.61	3.85	2.22	3*
1890	1.31	2.98	1.86	n.a.	1.54	3.73	2.10	n.a.
1891	1.20	2.54	1.56	n.a.	1.30	3.36	1.75	n.a.
1892	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1893	1.09	2.52	1.47	2*	1.49	3.50	1.92	3*
1894	1.04	3.68	1.64	3*	1.57	3.81	2.20	3*
1885	1.25	2.29	1.60	n.a.	2.76	4.14	2.21	n.a.

Table Six (Cont.).

Joggins

Springhill

Year	Tons per man-day	Tons per collier-day	Tons per underground-day	Reported tons per collier-day	Tons per man-day	Tons per collier-day	Tons per underground-day	Reported tons per collier-day
1896	1.36	3.00	1.75	n.a.	1.51	4.69	2.44	n.a.
1897	1.61	4.06	2.24	n.a.	1.15	4.37	2.35	n.a.
1898	1.09	3.38	1.70	n.a.	1.63	4.74	2.31	n.a.
1899	1.16	3.14	1.92	n.a.	1.54	4.37	2.04	n.a.
1900	.99	3.02	1.44	n.a.	1.45	3.90	1.58	n.a.
1901	1.01	3.91	1.49	n.a.	1.28	3.56	1.75	n.a.
1902	.84	2.87	1.25	n.a.	1.29	3.73	1.82	n.a.
1903	.75	1.29	.94	n.a.	1.31	3.61	1.78	n.a.
1904	1.07	1.60	1.27	n.a.	1.47	4.12	1.61	n.a.
1905	.95	1.87	1.38	n.a.	1.19	3.51	1.70	n.a.
1906	.93	1.19	1.25	n.a.	1.17	3.50	1.81	n.a.
1907	1.50	1.62	1.57	n.a.	1.03	2.80	1.50	n.a.
1908	1.12	1.85	2.66	n.a.	1.05	3.19	1.52	n.a.
1909	1.06	1.12	1.00	n.a.	.96	2.75	1.46	n.a.
1910	.82	.92	.79	n.a.	.66	2.14	.88	n.a.
1911	1.62	1.97	1.63	n.a.	.82	2.53	1.14	n.a.
1912	.88	1.26	1.21	n.a.	1.30	3.17	1.64	n.a.
1913	.82	1.09	1.19	n.a.	1.32	3.02	1.70	n.a.
1914	.92	1.24	1.31	n.a.	1.37	2.92	1.67	n.a.
1915	2.10	3.97	---	n.a.	1.43	3.96	---	n.a.
1916	2.10	2.36	---	n.a.	1.51	4.44	---	n.a.
1917	1.49	1.80	---	n.a.	1.67	5.80	---	n.a.

Table Six (Cont.)

Year	Joggins				Springhill			
	Tons per man-day	Tons per collier-day	Tons per underground-day	Reported tons per collier-day	Tons per man-day	Tons per collier-day	Tons per underground-day	Reported tons per collier-day
1918	1.48	2.92		n.a.	1.51	5.75		n.a.
1919	2.00	3.97		n.a.	1.45	4.95		n.a.
1920	1.17	1.34		n.a.	1.77	6.22		n.a.
1921	.88	.94		n.a.	1.56	5.07		n.a.
1922	1.35	1.67		n.a.	1.66	4.69		n.a.
1923	.62	1.05		n.a.	1.96	5.99		n.a.
1924	.77	1.40		n.a.	1.85	5.54		n.a.
1925	1.12	1.44		n.a.	2.08	5.90		n.a.
1926	1.22	1.56		n.a.	1.85	5.87		n.a.
1927	2.22	3.44		n.a.	1.64	5.46		n.a.

*Decimal point not reported in original.

'normal' working day, and while it may not have been prepared with much consistency or care, the number indicates a range within which a normal collier was expected to work.

Productivity was positively correlated with the gross output from coal mines ($r = .3358$) and slightly with the percentage of colliers within the working population ($r = .1121$), but a slight negative correlation existed between productivity and the level of the skilled ($r = -.1624$). Economies of scale pertained to at least some degree in this industry, evidenced by the positive correlations which exists between the gross level of output and the productivity of the colliers ($r = .4046$). Mines became more efficient (measured at least in terms of production per man) as they grew larger in output: a larger output generally entailed a greater individual productivity. However, one must note that none of these correlation coefficients is particularly impressive; although it would be misleading to speak of a 'confidence interval' with such non-random data, it would simply be realistic to note that the vagaries of nineteenth-century measurement or the problem of missing data force us to the conclusion that only a weak relationship existed between these variables. Indeed, while the correlation coefficients are somewhat disappointing in one sense--they fail to provide a clearcut model for levels of productivity, a goal which presumably will have to wait for later work with a more extensive data base--they are reassuring in another, because they confirm the impression left us by the many other documentary sources, an impression of a slowly-evolving structure which resisted any easy answers, whether these answers were to decrease the level of colliers or increase the size of the mine.

The average number of tons produced every day by colliers increased steadily in Springhill, from an average 2.83 tons in the 1870s to an average 5.59 tons in the 1920s. (There was a revealing setback in the first decade of the twentieth century, in which the policies of the company--not least of which was the hiring of unskilled strikebreakers--forced productivity down). In the Joggins, by contrast, the colliers' productivity rose from the 1870s to the turn of the century, dropped in the first decade of the twentieth century, and plummeted in the 1920s--a pattern which reflected the transformation of the coal mine to a distinctive mode of operation in which the colliers (now running machines) dominated the mine. The gap between the daily production of Springhill and Joggins colliers widened: in the 1870s Springhill colliers produced 145% of the Joggins daily total; by the 1920s the corresponding percentage was 347%.

However, the table also indicates that the superiority of Springhill was less marked in the crucial area of daily production per employee. The advantages enjoyed at the face were dissipated in the long lines of supply: it was here that the smaller mines of Joggins regained some ground. The Springhill men produced 129% of the daily Joggins production total in the 1870s; 153% in the 1920s; yet at the end of this period we see the relationship reversed, as it was to be during the Second World War. The large mine had advantages, but not overwhelming or permanent ones.

Did the conservative trend of productivity indicate a conscious effort on the part of workers to restrict output? The evidence, predictably enough, is controversial. One Pictou manager, who complained

to the Department of Mines that "At present, Companies have no Control whatever over their men," also judged that the colliers were deliberately restricting output:

At present, We are seriously enough hampered, in working our Colliery, by the adverse action of the men, and our Cost, has been much enhanced by the unfair & persistent limiting of the output... The present union system, works much injustice not only to the Operators, but also to the Steady industrious Cutter—who is Compelled to work less, than he could easily accomplish, depriving him of the advantage of making extra pay, when his labor is in demand, & dragging him down to the level of the ordinary improvident Workmen. 188.

Restriction of output is mentioned fleetingly in the local records of the trade union.¹⁸⁹ In a debate occasioned by the disastrous showing of Springhill from 1897 to 1907—a period in which the company required the greatest possible efficiency in order to withstand the challenge of Dominion Coal—the management charged workers with deliberately sabotaging its development programme. During one of the many twentieth-century strikes a reporter noted that the miners seemed to have an intuitive concept of a 'fair day's work' which one would find difficult to ignore in the pit:

The men, and many of the most thoughtful ones too, consider that a workman should do a fair day's work and make a fair day's pay, but when he works early and late, and slaves between to produce big pay, they consider him unreasonable, and an enemy to his fellows, because he has created conditions under which an average steady worker, who properly respects the constitution God has given him cannot produce the amount he should receive. 190

Such a conservative approach to the level of effort easily became an issue in the acrimonious atmosphere of the early twentieth century. It does not indicate a conscious policy of restriction, but unwritten and implicit

understanding among the men. In his Reminiscences, Robert Drummond describes the regulation of work at the bankhead at Ligan in the 1860s in terms which suggest a implicit restriction of output, in which the management collaborated; he was sent home for doing too much work in the early afternoon.¹⁹¹

A more visible response of labour to intensified pressure was absenteeism. The Cumberland Railway and Coal Company argued in 1909 that 10 per cent of the employees were absent from work daily; it produced estimates indicating an absentee rate of from 9 per cent to 20 per cent (the latter figure following pay-days). "The indifference to work on the part of the employees must be attributed to, too much money, too easily earned," the company admonished. "No other class of artisans do or can afford to lose so much time. This utter neglect of duty on the part of employees falls most heavily on the Company in reduced output, increased cost, and correspondingly poor returns, and is largely responsible for the deplorable results in operation, which have obtained for the last three years and four months."¹⁹² Other observers noted a high level of absenteeism at Springhill.¹⁹³ Such observations must be placed in the context of the regulation of output and the bitter disputes between the company and the men.

The estimates of productivity for the Cumberland coalfields show us why the period 1890-1914 was potentially so explosive. In the context of a new monopoly capitalism, signalled by the emergence of the Dominion Coal Company which achieved dramatically higher levels of labour productivity, the Cumberland companies had to produce at a higher level. To do so meant changing the whole working of the underground. But the

practical realities of coal mining did not allow this. The pitching seams, entrenched interests and depth of the Cumberland mines did not permit a drastic change in the underground, except at the price of a titanic struggle with labour. The curve of productivity is the signature left by that struggle, in which the contesting classes battled for control within production.

5. The Pattern of Coal-Mining Fatalities

A final measure of the trends in the coalfields over time is provided by the statistics of working life, particularly those relating to accidents. These too provide us with a viewpoint on the structural evolution of the coal mines, since they document the impact of the mines upon the miners themselves.

A total of 275 workers were killed in the coal mines of Cumberland County from 1873 to 1927. The general pattern of these fatalities is shown by Figures 16 and 17. Obviously the analysis of trends is made exceedingly difficult by the Explosion of 1891, which produced an extremely uneven distribution in mining fatalities. A superficial judgment might well be that mining safety conditions suddenly worsened in the 1890s and then improved thereafter. More than half of the recorded fatalities (144) took place in the 1890s, compared with 4 in the period 1873-1880, 20 for the 1880s, 36 for 1901-1910, 42 for 1911-1920 and 29 for the period 1921-1927. But in many ways this 'optimistic' reading forgets the particular mining environment which produced these statistics. The Explosion cannot really be understood as a large mining accident; rather, it represented a qualitative transition, much as a

Figure Sixteen

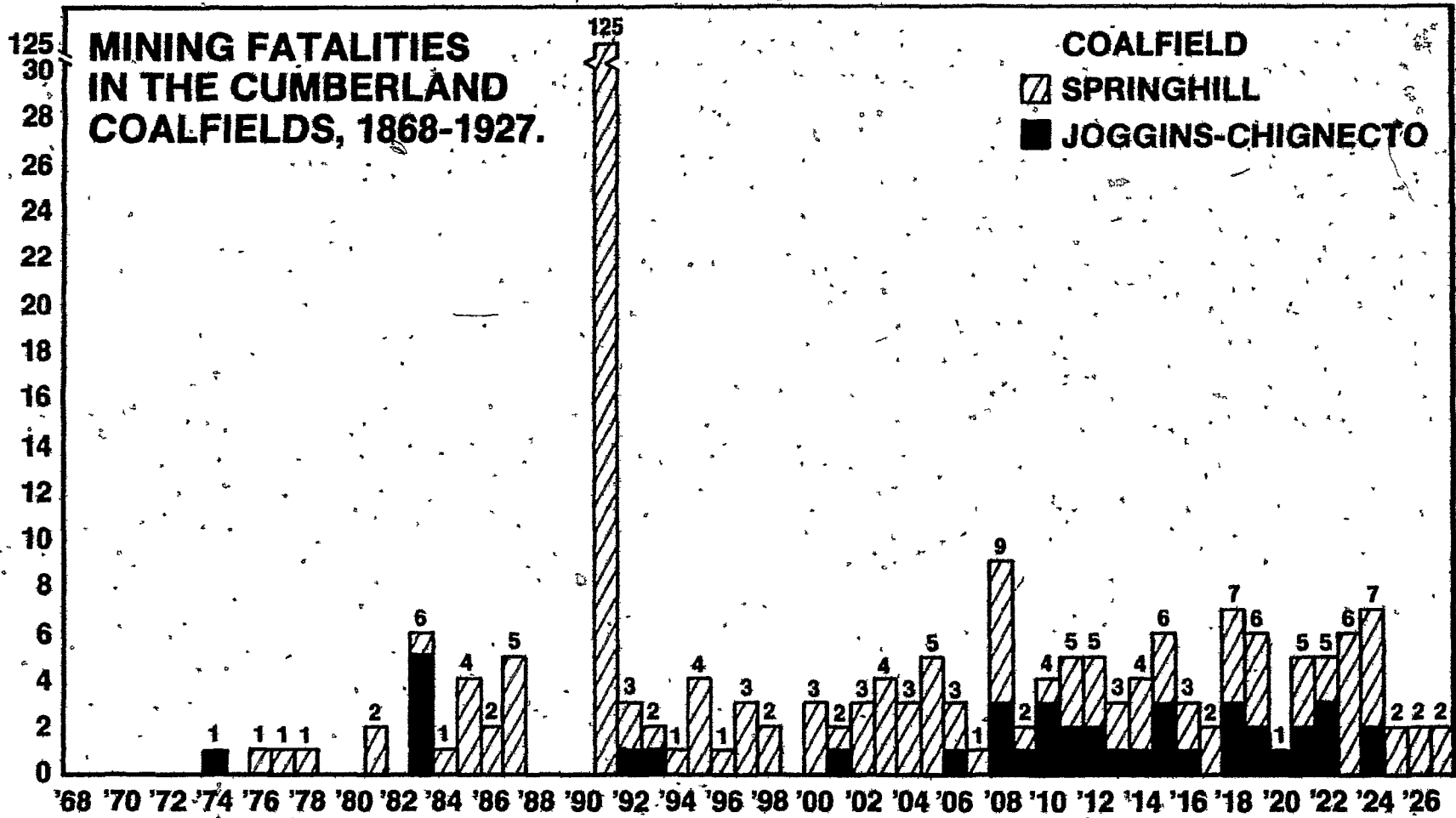
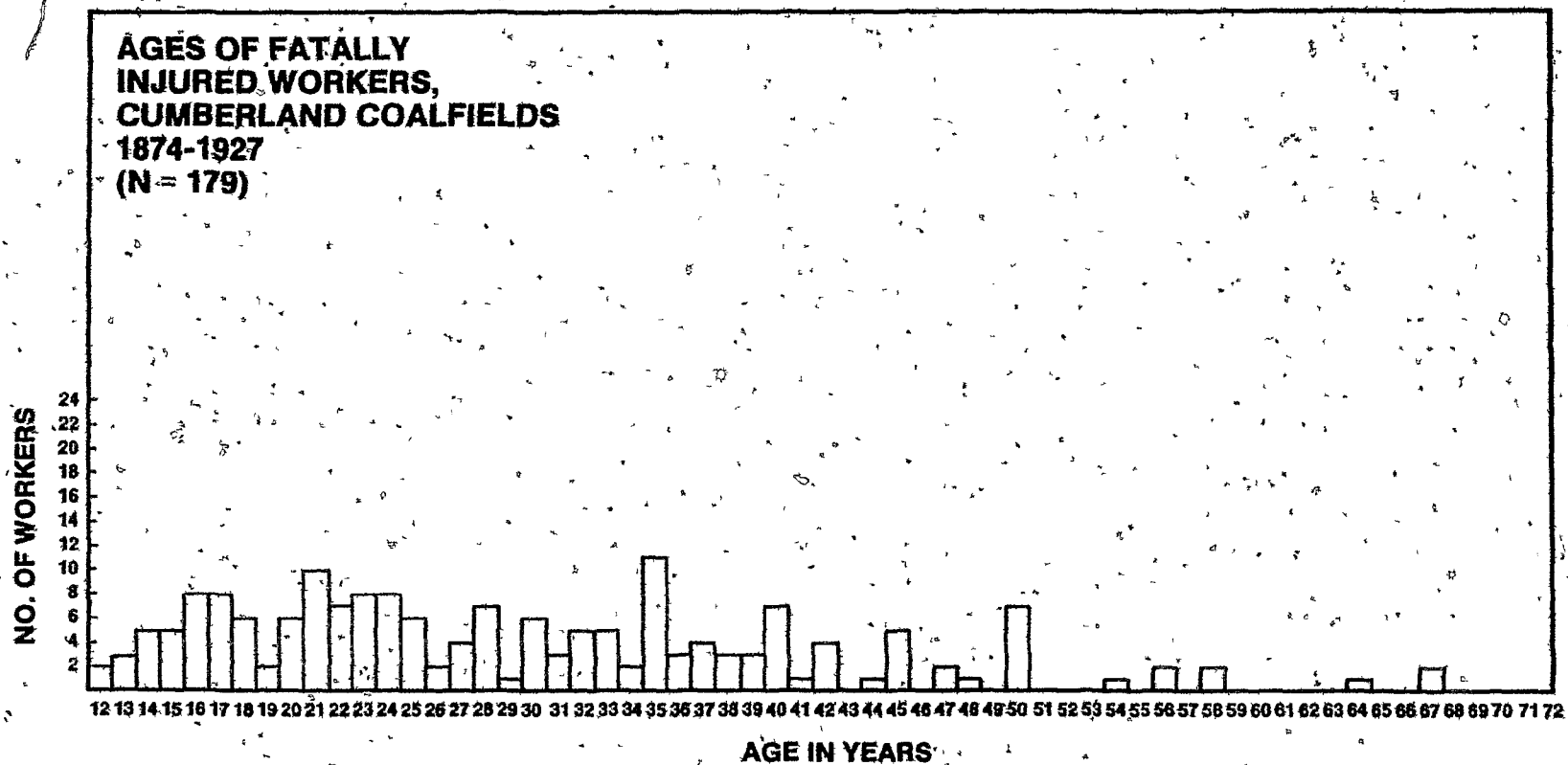


Figure Seventeen



general conflagration represents a qualitative change from the house fire which gave it birth. As a fact of natural history the explosion was a determined event, but judged from the standpoint of social history it might be regarded as an aberration. The interpretation is of some consequence, because on it hinges any argument concerning the improvement or worsening of mining conditions.

Disregarding the explosion, the number of fatalities shows an impressive rate of increase from the nineteenth to the twentieth centuries, notwithstanding the emergence of tough mine inspection. Coal mine fatalities averaged 2 a year in the 1880s, and even this relatively low average was boosted by the unusual mining conditions of Chignecto, where spontaneous fires created unusual dangers. Apart from the Disaster, the rate for the following decade was 1.7 per year. In the first decade of the twentieth century the general average rate was 3.5 per year, while the following decade witnessed an increase to an average 4.6 per year. The period 1921-1927 saw a slight decline to 4.1 per year. In other words, if we take the 'normal' and undramatic accidents in the mines, it is by no means clear that the record can be seen as one of constant improvement. This does not justify a one-sided pessimistic appraisal of mine safety. The absence of deaths by explosion after 1891 suggests the effectiveness of mine safety measures, such as the abandonment of powder in Springhill. Cumberland County by this measure may be seen as a mining area in which authorities (prompted strongly by the working-class movement) intervened decisively against mine explosions. This entailed the removal of the explosion as a cause of death in the period following 1891, at precisely the same time that Americans were to first attempt to

master this problem.¹⁹⁴ Even if it took 125 deaths to force such decisive action as the removal of powder from the gassy mines, the drastic measure taken by the provincial government should stand as a monument to the efficacy of direct state intervention. However, the government's record in other areas was less impressive, and the problem of increasing depth is reflected in the growing number of deaths due to haulage and falls of coal and stone.

The causes of fatal accidents in the mine were many and may be classified in a number of ways; Using the scheme in the classic monograph on this subject by Albert H. Fay,¹⁹⁵ we may analyse the fatalities this way:

Table Seven. Causes of Coal Mine Fatalities in Cumberland County, 1873-1927

(According to Classification of Fay)

Surface	15	(5%)
Shaft (slope)	34	(12%)
Miscellaneous Underground	21	(8%)
Explosives	3	(1%)
Gas and Dust	127	(46%)
Mine cars and locomotives	22	(8%)
Falls of rock and coal	53	(19%)

These results place Cumberland County in the 'western' category of mines analyzed by Fay, since in structure its fatalities matched those of Oklahoma, although the percentage of men killed by falls of rock and coal was even lower than that recorded for that state. Cumberland County, had

it been an American state, would have had the smallest percentage of fatalities caused by a fall in rock and coal, and the fourth largest percentage killed by explosion (exceeded only by New Mexico, Oregon and Utah).¹⁹⁶ The structure of death in the pits thus reflected the underlying geological features of the coalfields, which were gassy and characterized by strong roofs.

Another set of categories by which the structural history of coal mining fatalities might be assessed is provided in Table Eight, which also indicates variations over time in the causes of accidents. This table provides additional evidence for our thesis that the mine safety record cannot be interpreted simply as one of progress. The danger of being killed by a fall of rock or coal increased from 1873 to 1927, and the number of fatalities within the haulage system suggests the increasing threat posed by the underground railway systems of the mines. The unhappy consequences of chute loading are also suggested: the steeply inclined chutes and the use of gravity to move coal in the mine clearly involved serious risks for the workers.

Were the Cumberland mines more or less dangerous than those of other areas? The answer depends upon the precise periodization selected and the basis of comparison. Accounts published in the 1890s stressed that the Nova Scotia coalfields, including Cumberland, enjoyed the dubious distinction of being the most dangerous in Britain and the United States.¹⁹⁷ Such remarks were substantiated by statistics influenced by the Explosion, which claimed more lives than any other nineteenth-century colliery explosion in North America, with two exceptions.¹⁹⁸ Although the statistics have not been systematically

Table Eight. Causes of Coal Mine Fatalities in Cumberland County, 1873-1927.

<u>Cause</u>	<u>1873-1927</u>	<u>1873-1880</u>	<u>1881-1890</u>	<u>1891-1900</u>	<u>1901-1910</u>	<u>1911-1920</u>	<u>1921-1927</u>
<u>Underground:</u>							
Overcome by gas	3		3				
Falling down chutes	6				5	1	
Fall of stone or Coal	53	1	6	9	10	13	14
Explosions	129		2	125	2		
Struck by Trip Rake or Cage	56	1	7	8	14	18	8
Miscellaneous and undetermined	13		2	2	3	3	3
<u>Surface:</u>							
Construction	1				1		

Table Eight (Cont.)

<u>Cause</u>	<u>1873-1927</u>	<u>1873-1880</u>	<u>1881-1890</u>	<u>1891-1900</u>	<u>1901-1910</u>	<u>1911-1920</u>	<u>1921-1927</u>
Struck by Railway Car	5	1	2	1	1	1	2
Miscellaneous and undetermined	9	6	0	1	3	3	3

compiled, it seems virtually certain that the large number of disasters in Nova Scotia--including not only the Springhill Explosion of 1891 but three major disasters in Pictou County--would bear out this general pattern in the nineteenth century. ¹⁹⁹

Statistics for mining fatalities must be considered carefully before conclusions are drawn. In a major controversy with mine owners J.B. McLachlan argued that the fatality rate in Nova Scotia collieries was an exceptionally high one in the western world; his opponents cited the higher fatality rate in British Columbia collieries. ²⁰⁰ As with many other kinds of statistical series, those relating to coal-mining fatalities are highly sensitive to the period selected and the care with which the results are assessed. David Jay Bercuson had produced statistics purporting to show that Nova Scotia had a coal-mining death rate less than half that prevailing in the western coal mines in the period 1907-1916. To a large extent the result is a product of a focus upon a period dominated by famous western mining disasters; had the analysis gone a few years further, or back to 1891, it would not have sustained his optimistic appraisal, nor his assumption that the primary explanation for the east/west differential lay in the expertise of Nova Scotia miners and their managers. As even more troubling aspect of his statistical appraisal is his erroneous comparison of British Columbia fatalities per million long tons with Nova Scotia fatalities per million short tons, a procedure which systematically inflates the differential between west and east and removes the possibility of a serious comparison. ²⁰¹ The question of fatality rates in eastern and western Canada is still open, and awaits further historical work.

In the absence of a major national study, we must content ourselves with comparisons between Cumberland County, all of Nova Scotia, and the United States. For the period 1873-1927 the Cumberland mines had an average yearly death rate of 11.02 men per million long tons, or 9.84 men per million short tons. From 1873 to 1914, the Cumberland coalfields had a fatality rate of 13.6 men per million long tons or 12.1 per million short tons. American mines in the same period had an average yearly rate of 5.65 men per million short tons. The Cumberland rate was slightly higher than the provincial rate as a whole. In the period 1901-1914, for example, the Cumberland rate was 6.4 men per million short tons; that of the province was 5.0. Tables Nine and Ten summarize the statistical knowledge we now possess concerning comparative fatality rates in the coal mines.

Table Nine. Death Rates Per Million Short Tons, Cumberland County, Nova Scotia and the United States.

Year	Cumberland County	Nova Scotia	United States
1874	17.3	7.2	9.3
1875	—	2.3	9.5
1876	9.6	3.8	9.2
1877	8.3	8.3	7.3
1878	7.9	12.7	6.4
1879	—	3.4	6.8
1880	—	46.7	5.2
1881	4.9	4.0	6.0
1882	—	1.3	5.7
1883	21.6	10.7	6.6
1884	3.2	3.2	6.2
1885	9.7	9.9	5.9
1886	4.0	3.0	5.2
1887	8.9	5.3	4.9
1888	—	1.0	5.6
1889	—	3.6	5.2
1890	—	5.9	5.0

Table Nine (Cont.)

Year	Cumberland County	Nova Scotia	United States
1891	213.8	5.6	6.1
1892	5.8	5.1	6.0
1893	4.4	3.0	5.4
1894	1.6	4.5	5.9
1895	7.1	4.7	6.0
1896	1.9	3.2	5.9
1897	6.8	3.1	5.1
1898	5.5	5.5	5.0
1899	—	5.7	5.1
1900	5.4	6.2	5.7
1901	3.7	3.5	5.4
1902	4.9	4.3	5.8
1903	5.9	5.3	5.5
1904	4.2	4.4	5.9
1905	7.2	3.5	5.8
1906	4.2	4.3	5.3
1907	1.8	5.6	6.8
1908	14.4	6.1	6.0
1909	3.3	5.8	5.7
1910	12.9	5.1	5.6
1911	10.1	5.1	5.4
1912	7.1	5.2	4.5
1913	4.3	4.5	4.9
1914	5.9	6.0	4.8
1915	8.2	4.7	4.3
1916	4.2	5.7	3.8
1917	2.8	4.0	4.1
1918	9.6	13.4	3.8
1919	9.0	20.7	4.2
1920	1.3	3.6	3.5
1921	6.9	4.1	3.9
1922	7.7	4.8	4.2
1923	6.8	3.7	3.7
1924	10.4	4.6	4.2
1925	3.7	5.6	3.8
1926	2.7	4.9	3.8
1927	3.0	4.4	3.7

Source: Mines Report (1944), p. 186; (1940), p. 114; Albert H. Fay, Coal Mine Fatalities in the United States 1870-1914 (Washington, Department of the Interior, Bulletin 115, 1916), pp. 10-11.

Clearly the answer to our question can only be a complex one. Overall, Cumberland County's average annual fatality rate of 9.52 exceeded both the Nova Scotia and the American equivalents (6.14 and 5.45 respectively). However this was hardly a stable relationship. In 29 out of 54 years the Cumberland County rate was lower than that of the United States, and for 31 out of 54 years it was lower than the provincial rate. If we remove 1891 from consideration in the preparation of all three average annual rates, the Cumberland rate of 5.66 is lower than the provincial rate (6.14) and just higher than the American rate (5.45).

Table Ten provides an additional element to the comparative consideration of fatality rates and tends to confirm the pattern which we have been suggesting may be found in the statistics.

Table Ten. Death Rates Per Thousand Employees, Cumberland County, Nova Scotia and the United States.

Year	Cumberland County	Nova Scotia	United States
1874	4.6	1.6	3.9
1875	---	.5	3.1
1876	3.0	.9	2.8
1877	2.6	2.2	2.8
1878	2.3	3.5	2.6
1879	---	1.0	3.3
1888	---	16.2	2.2
1881	3.7	1.4	2.9
1882	---	.5	2.8
1883	7.5	3.7	3.3
1884	1.2	1.0	2.8
1885	4.5	3.4	2.6
1886	1.8	1.1	2.3
1887	4.0	2.3	2.2
1888	---	.4	2.6
1889	---	1.4	2.4
1890	---	2.6	2.5

Table Ten (Cont.)

Year	Cumberland County	Nova Scotia	United States
1891	78.2	22.3	3.1
1892	n.a.	n.a.	3.1
1893	1.1	1.3	2.7
1894	.6	1.9	2.7
1895	3.5	1.9	3.0
1896	.8	1.3	2.9
1897	2.8	1.5	2.6
1898	1.8	3.1	2.7
1899	—	3.1	3.1
1900	1.8	3.3	3.4
1901	1.2	1.8	3.3
1902	1.6	2.6	3.4
1903	2.1	2.8	3.5
1904	1.3	2.2	3.5
1905	2.1	1.9	3.6
1906	1.2	2.3	3.4
1907	.4	3.0	4.8
1908	3.8	3.3	3.6
1909	.8	2.8	4.0
1910	3.3	3.3	4.0
1911	3.4	2.9	3.7
1912	2.8	2.6	3.4
1913	1.7	3.5	3.7
1914	2.2	2.5	3.2
1915	3.3	2.5	3.3
1916	2.0	2.2	2.7
1917	1.3	7.0	8.4
1918	4.2	9.5	11.8
1919	3.6	1.5	1.9
1920	.6	1.9	2.3
1921	2.3	1.9	2.4
1922	2.6	1.3	1.6
1923	2.8	2.0	2.5
1924	3.7	2.1	2.1
1925	1.2	1.5	1.6
1926	1.2	2.4	2.4
1927	1.2	2.2	2.2
Avg.	3.7	3.0	3.2

Source: See Table Nine.

This is an even more striking confirmation of the structural peculiarity of the Cumberland mines, which created relatively low death rates with the great exception of the Explosion. The pattern of mining fatalities in Cumberland County was peculiar: death was concentrated in a few exceptional periods, while 'routine' fatalities were somewhat less common than in other coalfields. This structure was the consequence both of geology and of social history: Geologically the mines tended to have stable roofs, many of them had not attained a great depth, and those of the Joggins coalfield were not particularly prone to explosions or fires (with the significant exception of Chignecto). However, as the mines deepened and the pressure of the superincumbent strata became more of a problem, the number of deaths rose, particularly in Springhill as a consequence of bumps. In human terms, the level of fatalities was affected by the legislation put in place by the provincial government, which removed the powder from gaseous mines and imposed restrictions on the entry of workers into full mining employment. The non-recurrence of gas explosions in Springhill after 1891 may stand as a legitimate monument to the working-class movement, which (with misgivings) pushed the withdrawal of powder. Consequently we are faced with a level of fatalities determined by two separate structures, which responds additionally to such forces as the First World War and the recruitment of new workers during the strike. For all the inevitable uncertainty which attends the explanation of the pattern of fatalities, one clear pattern emerges: that of a human and protective structure, imposed in the 1880s and 1890s in response to the perils of mining, whose effectiveness was gradually eroded and diminished as the requirements

of capitalism pushed the mines deeper and deeper into the ground.

The Cumberland mines were more dangerous than the North America north, but this danger was of a particular sort, concentrated particularly in 1891 and the early 1920s. There would be a slow, steady growth in the incidence of 'routine' fatal accidents, such as those involved with haulage and hoisting. But paradoxically there could also be a sense that mining dangers had been successfully withstood, through an aggressive and systematic safety campaign. In the small mines, often beyond the reach of the deputy inspectors, there would be less reason to hail the victory of mine inspection. There was a balance within the mine between the protective structures of the trade union and the mine inspectors, and the inherent (and increasing) problem of hazard caused by the growth of the mine. Only in particular phases (1981, 1918-1925 in Springhill, 1909-11 in Chignecto, 1904 in Joggins) would the mines seem to require radical restructuring in order to safeguard their economic potential. David Darcuson has suggested that the high incidence of fatal accidents in western mines may have been a contributing factor to the growth of radicalism. Yet this question is probably more complex than he suggests.²⁰² It is by no means clear, from the available literature on mining disasters, that the experience of massive mining calamities has been generally seen as a radicalizing one. David Frank has noted the political impact of the explosion at Dominion No. 1 in 1917,²⁰³ but such politicisation of disaster seems to have been rare in Nova Scotia, and unknown in Cumberland. Rather than arguing that conservatism might have resulted from the peculiar structure of fatalities in Cumberland, one might make the opposite argument: that workers had, in the case of the

banning of powder after the Explosion, a clear example of the importance of political strength. Rather than a series of huge disasters that placed enormous stress on the survivors, Cumberland miners responded to a series of small accidents, culminating in the succession of bumps in Springhill which together claimed no fewer than twenty lives. Only on rare occasions were specific allegations made regarding management carelessness. The question of mine safety could raise profound doubts about the structures of industry. But it did not do so automatically. A high level of fatal accidents could be regarded as a part of coal-mining life, or as proof of the "carelessness of workers." How the death rate was interpreted—and consequently what it "meant"—was governed more by the political context within which it evolved than by the numbers themselves. The disaster which created the greatest outcry was not the most serious in the province's history. The objective history of coal-mining fatalities cannot provide us with an easy way of assessing the impact of coal-mining deaths upon the miners themselves, a topic which will be pursued in a later chapter.

Let us briefly summarize the main features of the structural development of coal mines in Cumberland County. As giant machines for the production of coal, coal mines each had to integrate the functions of production, transportation, maintenance, distribution and management. The functional imperatives were such that change within the mines came slowly, leaving many small groups of workers in positions of power. Because of the fragility of the mine as a structure—the imminent physical peril which attended a deliberate or accidental cessation of pumps, for example, or the shutting down of the ventilation system,—the

workers enjoyed a natural power quite different than that offered by any other industrial setting. Mining was not prone to radical change: archaic features of production resisted the efforts of scientific reformers. As mines became deeper, they reached the point of diminishing returns, a fact which made reinvestment of profits in new mining systems more difficult precisely at the time it was most necessary. We can not emphasize too often, or too forcefully, the great, over-arching paradox of the coal mines: the paradox of the massive machine, which produced coal and incidentally shaped and killed men, the very epitome of heavy industry, and the physical embodiment of the cumulative labour of past generations, which nonetheless was puny in comparison with the forces of the earth, which sheltered distinctive groups of men and gave them a chance to build a distinctive outlook, which could only be built by men--usually with the modest hand-pick--and which was shaped by men as it shaped them in turn, which was simultaneously a uniquely historical workplace and at the same time the peculiarly contingent and even fragile realm where nature capriciously negated the schemes of man. Marked deeply and forever by the circumstances of its birth and the force of natural facts, the mine was constrained in its growth: only certain possibilities were open, only certain structures could evolve. Here was historical solidity, here was the source of that archaism which confronted and confounded the efficiency experts. But, by a strange twist, constraints, archaic methods, naturally determined possibilities did not represent stability or even permanence. The temporal boundary between present and future was always deep in shadow. If men were shaped by the sheer weight of the past in the coal mines (more than

anywhere else, one thinks here of Springhill and its massive labyrinthine mines, whose maps call into one's mind the image of the twisting streets of a ruined city), if they were inexorably imprisoned within the structural logic which drive the mine forward, they were also forced to call upon this past in moments of danger, to become working historians with a command of precedent and custom, just in order to respond to the emergencies of daily mining life. They were forced to understand this structural logic, and make it serve their purpose—or rather purposes, for we are speaking of groups of men with radically different goals.

We stand, at the conclusion of our analysis, a long distance from a simple technological determinism, and equally far away from a simple culturalism, no less reductionist and ahistorical in its approach to the workplace. Against technological determinism we insist upon the primacy not of the machinery in the mine, but of the socio-economic structures, the social relations of production, embodied within the structural logic of the mine. The determinism we accept is that of the combination of the social relations and forces of production, whose active interpenetration formed the base of all activity in the mine. To understand the mine means understanding the integration of its functions, functions independent of individual will, but ultimately dependent upon the class purposes they served. The machine had an internal logic, but it was kept going by men with divergent programmes and entailed different perspectives. Liberal critics, for example, who harped on the carelessness of individual miners (criticisms which in certain cases seem to have been justified) rarely stopped to consider the structural logic which forced the miner to choose between safety and earnings.²⁰⁴ This machine imposed

by its very internal logic the necessity of such tragic choices, such limited and contingent exercises of 'agency'.

The distance we have travelled from the culturalist approach to work, in which the physical realities of work are reduced to the status of backdrop in the theatre of 'working-class culture', is of course very great. The mine was no mere 'stage' or 'context' or 'workplace'. It was a dynamic force, greater than the sum of the individuals found within it, the expression of the integrated functions which they performed. Only if we accept the fundamental thesis that there was an internal logic to the mine can we understand anything about the coal miners or their history.

Many institutions in capitalist societies involve the collision of mutually incompatible interests, but in the mine this common collision was intensified by the peculiarities of its structural logic. So fragile a machine could easily be held hostage by any group of workers with the will to do so. Here there is a great paradox. The very working environment which exemplified regimentation and proletarianization (it is no accident that a disproportionate number of industrial novels focus on coal mines) was also one of the most free, a place where regimentation enjoyed few genuine victories. This paradox is explainable only through the structural analysis of the fragility of the coal mine, its vulnerability to the environment.

There is one further paradox to explore. Just as the mine was a combination of fragility and strength, so too was it a temporal paradox, a uniquely historical structure which preserved the past, but equally an environment which denied its inhabitants any certainty. Everywhere

one found the heavy and ineradicable marks of the past, but only the most enigmatic indications of the future. Plans were always contingent upon the unforeseen consequences of activity underground. The brief prepared by the Cumberland Railway and Coal Company in 1909 put it well: after listing all the troubles in its operation, it remarked, "The contingent account in mining is never closed."²⁰⁵ But Henry Swift unwittingly put it better, when on 20 February 1891 he closed his daily letter to the general manager of the Springhill mines with the words, "All in order so far as I know."²⁰⁶ His last written words; he died the next day in the great explosion.

Notes

- 1) H.A. McKnight, The Great Colliery Explosion at Springhill, Nova Scotia, February 21, 1891 (Springhill, n.d. [1891]), p. 7. McKnight's account is preferable to any other because of its sober tone and local knowledge.
- 2) Amherst Evening Press, 23 February 1891.
- 3) Morrow, Disaster, p. 82.
- 4) Mines Report, (1890), Appendix [Edwin Gilpin's Report on the Colliery Disaster], p. iv.
- 5) McKnight, Explosion, p. 10.
- 6) Ibid., p. 11.
- 7) Morrow, Disaster, p. 64.
- 8) Ibid., p. 33.
- 9) McKnight, Explosion, p. 19.
- 10) Mines Report (1890), p. v.
- 11) Ibid., p. xxii.
- 12) Ibid., p. vi.
- 13) Morrow, Disaster, p. 110.
- 14) Mines Report (1890), pp. vi-vii.
- 15) See the excellent descriptions of mining in Caleb Pameley, The Colliery Manager's Handbook (New York and London, 1904), H. Stanley Jevons, The British Coal Trade (Newton Abbot, 1969 [1915]), Herbert W. Hughes, A Text-Book of Coal-Mining, For the Use of Colliery Managers and Others (London, 1904), chapter VI; Frank Kneeland, Getting Out the Coal (New York, 1926); Keith Dix, Work Relations in the Coal Industry: The Hand-Loading Era, 1880-1930 (Morgantown, W. Va., 1977); Sir Andrew Bryan, "Coal-Mining," in Trevor I. Williams, ed., A History of Technology, Vol. VI, The Twentieth Century c.1900 to c.1950 (Oxford 1978), pp. 360-361.
- 16) Pameley, Handbook, p. 242.
- 17) H. Stanley Jevons, British Coal Trade, p. 203.
- 18) See PANS, RG 21, Series "A", Vol. 15, File "Examinations re Mines Regulation Act": "The long wall method possesses the following advantages

All the coal is removed in the first workings, the Settlement of the Surface is gradual and uniform there is no expence for Narrow Work, the mine is more easily ventilated there is a minimum liability to falls and gob fires A large percentage of lump Coal is secured the Cost of timbering and haulage is reduced Ample room is afforded for the Storage of waste instead of hoisting it to the Surface long wall method is adopted to the mining of deep lying Seams of coal owing to the enormous roof pressure or thin Seams lying at a moderate depth when the complete removal of coal is important."

- 19) Harrison F. Bulman, "Longwall Working, With Special Reference to the Arrangement of Labor," The Colliery Engineer (September 1888), pp. 27-29.
- 20) W.E. Lishman, "Coal Mining Methods in Nova Scotia," Transactions of the Mining Society of Nova Scotia, Vol. X (1905-1906), pp. 61-62.
- 21) Kneeland, Getting Out The Coal, p. 228.
- 22) Macleod, "Mining Reform," p. 536.
- 23) Macleod, "Mining Reform," p. 342.
- 24) J.F. Kellock Brown, "Longwall Machine Mining," Transactions of the Mining Society of Nova Scotia, Vol. XIX (1914), p. 164.
- 25) J.G. Rutherford, "Modifications of Working Coal Lately Introduced in Nova Scotia. I: Pictou County," Transactions of the Mining Society of Nova Scotia, Vol. I, Part IV (1892-1893), p. 52.
- 26) Besides Rutherford, three other managers presented papers on modifications in mines in 1892-3 to the Mining Society: James Maxwell of Acadia Colliery, James Baird of the Joggins, and Charles Archibald of the Gowrie Colliery in Cape Breton.
- 27) Rutherford, "Modifications," p. 47.
- 28) Mines Report (1866), p. 19, describes the system at Maccan as follows: "The workings in this district have been made of a modified form of the long-wall system of working. Pillars 12 feet square and 12 feet apart are left to protect the level or horse-road, and the Coal is then taken away in lifts of 24 feet, kept a little in advance of each other."
- 29) Mines Report (1873), p. 14.
- 30) Mines Report (1878), p. 13.
- 31) James Baird, "Modifications of Working Coal Lately Introduced in Nova Scotia, III. Joggins Mines, Culberland County, N.S.," Transactions of the Mining Society of Nova Scotia, Vol. I, Part IV (1892-1893), pp. 55.
- 32) Ibid., p. 26.

33) Mines Report (1891), p. 10.

34) Mines Report (1896), p. 8. The same pattern is discerned in the United States: see Dix, Work Relations, pp. 7-8, for a discussion of the "strategic advantage" enjoyed by coal miners in mines worked by the longwall method. See Trades Journal, 4 February 1885, for allusions to disputes over longwall in Joggins.

35) There were partial attempts to introduce longwall mining in Springhill in the 1880s, which however involved only certain levels on a limited scale. Discussions of how miners were to be paid in the longwall section of the mine may be found in the Springhill Minutes, 10 September 1885.

36) Mines Report (1906), p. 9.

37) Mines Report (1911), p. 166.

38) Mines Report (1911), p. 169.

39) Mines Report (1915), p. 137.

40) Mines Report (1922), p. 40.

41) Mines Report (1925), Table No. 22, pp. 104-105.

42) Mines Report (1866), pp. 65-66.

43) On "forewinning the pillars" (adapting bord-and-pillar workings to the entire removal of the pillars within a few years), Henry S. Poole, the mine inspector made remarks which underlined the skills demanded by this method and the advanced position of Cumberland: "This system might be more generally and advantageously practised than it is. It is most systematically conducted at the Joggins and Spring Hill in Cumberland, in the workings of the Acadia and McBain seams of Pictou, and at Gowrie at Cape Breton. The great extent of lost and wasted pillarage in some pits suggests that temporary expediency and easy indifference has indefinitely postponed the introduction of a system that at first and until workmen are skilled and accustomed may give some additional trouble and anxiety." Mines Report (1877), p. 5.

44) Minutes of Testimony, Royal Commission on Coal Mines, Nova Scotia, 1925, Microfilm, PANS, Testimony of Walter Herd, p. 4061.

45) J.C. Nicholson, "Past and Present Methods of Working No. 2 Mine, Springhill, N.S.," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXV (1922), pp. 470-471.

46) Ibid., pp. 475-479. The method was criticized by other mining men in attendance at the meeting.

47) George S. Rice, Occurrence of Bumps in the Springhill No. 2 Mine of the Dominion Coal Company, Limited (Halifax, Department of Public Works and Mines, 1925), pp. 8-9.

The way in which statistics were reported by the Department of Mines makes it somewhat difficult to ascertain exactly what percentage of coal was mined by various methods. In 1915, the Mines Report (pp. 146-147) reported the following totals for work of various types in Cumberland:

JOGGINS MINES					
Colliery	Narrow Work	Hand Room	Pillars	Longwall	Total
Joggins No. 7	1,000	15,000	10,000	127,150	153,150
Black Diamond	750			6,583	7,333

SPRINGHILL MINES				
No. 2 Mine	165,886		106,221	272,107
No. 3 Mine	107,764		26,941	134,705

This confirms the pattern noted in the literary sources. The development of longwall mining in Springhill can be traced from the following company estimates:

CUMBERLAND RAILWAY & COAL COMPANY							
Colliery	Percentage of Output from Longwall						
	1925	1926	1927	1928	1929	1930	1931
No. 2	8.9	55.2	61.5	46.5	66.3	71.4	70.6
No. 6	---	---	---	---	2.6	44.6	72.1
No. 7	---	---	---	23.5	36.4	51.2	93.0
ALL SPRINGHILL	4.9	31.9	32.1	30.0	44.4	60.6	60.0
ALL DOSCO							
COLLIERIES	2.6	6.6	12.4	20.4	28.0	31.7	36.7

Source: "Statement Showing Percentage of Longwall Coal Produced from Individual Collieries and the Percentage of Same on Total Output from All Collieries, Yearly Since 1925," PANS, RG 21, Series "A", Vol. 43, No. 17.

48) Mines Report (1872), pp. 45-46.

49) Macleod, "Mining Reform," p. 352.

50) Mines Report (1874), pp. 9-10. See also H.J. Thorkelson, Air Compression and Transmission (New York, 1913), especially pp. v-vii.

51) Maritime Mining Record, 29 October 1902.

- 52) T.J. McKavanagh, "Electricity in Mines," Transactions of the Mining Society of Nova Scotia, Vol. XIII (1908-1909), pp. 75-82.
- 53) C.H. Wright, "Electrical Applications to Mines," Transactions of the Mining Society of Nova Scotia, Vol. XVI (1911-1912), pp. 1-16. Drummond's comments are found on p. 14. Similar misgivings emerge from the correspondence of Edwin Gilpin with J.R. Cowans of Springhill. He was particularly worried about the freezing and ice of winter and the possible risk of fires from excessive current. PANS, RG 21, Vol. 29, A, Letterbook of the Department of Mines, Edwin Gilpin to J.R. Cowans, 16 December 1901; 27 December 1901; 23 January 1902; 28 January 1902.
- 54) [Royal Commission on Electricity in Coal Mines], Electricity in the Mines of Nova Scotia. Report of Commission Appointed Under Chapter 16, Acts of 1913 (Halifax, 1914), pp. 7-9.
- 55) Mines Report (1877), p. 4.
- 56) Ibid., p. 28.
- 57) Mines Report (1908), p. 47.
- 58) Mines Report (1910), p. 117.
- 59) Mines Report (1911), p. 167.
- 60) Ibid., p. 169.
- 61) Mines Report (1914), p. 65.
- 62) Springhill Minutes, 19 February 1885.
- 63) Mines Report (1902), p. 10.
- 64) Mines Report (1913), p. 97.
- 65) Mines Report (1927), p. 67.
- 66) The explosion in 1956 was triggered by an accident with the electric cable on the main slope.
- 67) Mines Report (1927), pp. 296-297.
- 68) R.G. Haliburton, The Coal Trade of the New Dominion, p. 10.
- 69) William Blakemore, "Is there an Economic Limit to the Output of a Coal Mine?" Transactions of the Canadian Mining Institute, Vol. I, No. 1, (1895), pp. 257-262.
- 70) J.G. Hudson, "Notes on Coal Cutting Machinery at the Collieries of the Dominion Coal Company," Transactions of the Mining Society of Nova Scotia, Vol. III (1894-1895), p. 95.

- 71) G.O. Macdonald, The Coal and Iron Industries of Nova Scotia (Halifax, 1909), p. 68.
- 72) For the miners' response to the machines, see the Mines Report (1874), pp. 7-8; Grand Council Minutes, September 1895, p. 300; September 1899, p. 342.
- 73) Mines Report (1882), p. 27.
- 74) Coal-cutting machines were adopted in the Strathcona mine in River Hebert East in 1907, the Joggins mine in 1911, the Bayview Mine in Joggins in 1923, and the Lawson Mine in Maccan in 1924. See Mines Report (1907), p. 13; (1911), p. 168; (1923), pp. 45-46; (1924), pp. 74-75; (1926), p. 65.
- 75) Duncan Commission Evidence, Testimony of James McLeod, p. 3636, p. 3665.
- 76) Ibid., p. 3667.
- 77) Mines Report (1873), p. 12.
- 78) J.F. Kellock Brown, "Longwall Machine Mining," Transactions of the Mining Society of Nova Scotia, Vol. XIX (1914), pp. 164-187.
- 79) Hugh B. Gillis, "The Use of Mechanical Loading Machines in Mines," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXIV (1921), p. 310.
- 80) Macleod, "Mining Reform," pp. 333-335.
- 81) Ibid., p. 337. See also Edwin Gilpin, Coal Mining in Nova Scotia, p. 43.
- 82) Swift Letterbooks, Swift to Cowans, 9 June 1890.
- 83) Transcripts, Joggins, p. 21. This was also true in some Cape Breton mines.
- 84) Mines Report (1870), p. 63; (1927), p. 283.
- 85) Frank, "Cape Breton Coal Miners," p. 281, n. 10.
- 86) Macleod, "Mining Reform," p. 338.
- 87) William Blakemore, "The Introduction of Endless Haulage into Cape Breton," Journal of the Mining Society of Nova Scotia, Vol. III (1894-1895), p. 82.
- 88) Ibid., p. 83.
- 89) Maritime Mining Record, 11 March 1903.

- 90) Mines Report (1876), p. 91.
- 91) Mines Report (1913), p. 232.
- 92) Mines Report (1892), p. 6.
- 93) Ibid.
- 94) The remarks may be found in the discussion following Blakemore, "Endless Haulage," p. 92.
- 95) Mines Report (1902), p. 9.
- 96) Mines Report (1911), p. 165.
- 97) Mines Report (1913), p. 100.
- 98) Mines Report (1915), p. 137.
- 99) Swift Letterbooks, Swift to Cowans, 15 January 1890.
- 100) Ibid., 31 January 1890.
- 101) Ibid. See also Swift's analysis of the heavy costs of hand-pushing in his letter of 12 March 1890: "Went down to No 5 Slope and went through most all the working places, and after carefully looking into the Matter of Cost I cant see how we can reduce it much owing to the extension of the Levels to the East which are in something over one thousand feet and all the coal to be hand pushed out which adds very materially on to the Cost".
- 102) Ibid., 12 February 1890; 7 March 1890.
- 103) Hugh Archbald, The Four Hour Day in Coal (New York, 1923), p. 61.
- 104) Swift Letterbooks, Swift to Cowans, 29 March 1890.
- 105) Mines Report (1862), p. 2.
- 106) Mines Report (1866), pp. 68-69.
- 107) John Rutherford, The Coal Fields of Nova Scotia, p. 162.
- 108) Mines Report (1873), p. 7.
- 109) Mines Report (1874), p. 14.
- 110) Mines Report (1874), pp. 27-28.
- 111) Mines Report (1875), p. 33.

112) Mines Report (1891), p. 10.

113) Mines Report (1882), p. 2.

114) Mines Report (1875), pp. 32-33. The problem of using waste coal rejected by the screens is described in the Mines Report (1877), p. 29: "As something like one-third of the produce of the Black seam has been going hitherto to the waste heap, it is satisfactory to know that a use for a portion of the duff has been found under the colliery boilers. Doubtless in time a local demand will arise for all the small coal produced, especially if previously prepared by washing. Of the slack coal sorted by the rotary screen, the coarsest portion answers for the locomotive, and finds a sale for stove purposes."

115) Mines Report (1892), p. 7. The screens and conveyance systems newly installed at No. 2 Slope in 1896 are described in the Mines Report (1896), p. 9. A new system of conveying culm to the boilers (the Jeffery patent coal conveyor) could move 20 tons of culm per hour to the colliery boilers.

116) Mines Report (1911), p. 165.

117) Duncan Commission Evidence, Testimony of Walter Herd, p. 4065 and pp. 4093-4094.

118) Albert Dawes, "The New Coal Raising and Screening Arrangements at Jubilee Colliery Sydney Mines N.S.," The Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXIV, (1921), p. 299.

119) See, for example, Trades Journal, 6 July 1887.

120) The management of Joggins attempted to extend the tendering system to include all the places in the mine at their discretion--a demand that the workers resolutely resisted. See Joggins Minutes, 17 August, 1895.

121) Particularly in Springhill, where the upper pillars were taken out too close to the slope. See Swift Letterbooks, Swift to Cowan, 31 January 1890.

122) The drainage of the earliest Joggins mine was described by Walter R. Johnson, The Coal Trade of British America, with Researches on the Character and Practical Values of American and Foreign Coals (Washington and Philadelphia, 1850): "At Bridgeport, Little Bras d'Or, and the South Joggins, the mines have thus far been drained by horizontal drifts. At the last mentioned point, the coal is also carried out on the same level, and put on board of vessels, laid up at high tide, directly at the mouth of the drift" (p. 13).

123) Mines Report (1885), p. 46; (1886), pp. 20-21.

124) Mines Report (1885), pp. 45-46.

- 125) Mines Report (1927), pp. 294-295:
- 126) Mines Report (1876), p. 41 and p. 92.
- 127) Mines Report (1888), p. 4.
- 128) PANS, RG 21, Series "A", Vol. 8, File "Coal Mines, Reports and Returns, 1889," Edwin Gilpin to J.R. Cowans, n.d.
- 129) Swift Letterbooks, Swift to Cowans, 29 June and 30 June 1890, reveal the acute worries of the company in the face of heavy rains.
- 130) Mines Report (1906), p. 9; (1908), p. 47.
- 131) J.C. Nicholson, "The Fire in No. 3 Slope, Springhill, N.S." The Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXIV (1921), p. 292.
- 132) Mines Report (1863), p. 7.
- 133) Mines Report (1866), p. 67.
- 134) Mines Report (1876), p. 39, p. 89.
- 135) Mines Report (1877), p. 5.
- 136) Mines Report (1884), p. 4.
- 137) Mines Report (1889), p. 14. It is suggestive of the real difference made by a "blow-down" fan that 14,000 cubic feet of air was circulating per minute in No. 5 mine at Springhill with "natural ventilation," compared with 41,700 cubic feet in the North Slope with a modern fan (as of January 1889).
- 138) Mines Report (1895), p. 19.
- 139) Mines Report (1896), p. 20.
- 140) Mines Report (1883), p. 5.
- 141) Maritime Mining Record, 4 January 1899, 22 August 1900, and 22 July 1903 provides documentation on the new ventilation system.
- 142) Mines Report (1927), pp. 290-291.
- 143) Trades Journal, 9 February 1881. Incidentally, this rank-and-file interest (often quite well-informed) in the latest scientific explanations of mine explosions and ventilation generally does not fully emerge from the excellent study of William Graebner, Coal-Mining Safety in the Progressive Period: The Political Economy of Reform (Lexington, 1976), which tends to accept the union leadership's self-conception as the spokesman of the workers.

- 144) Trades Journal, 21 October 1885.
- 145) Trades Journal, 25 September 1889.
- 146) Trades Journal, 18 December 1889.
- 147) PANS, RG 21, Series "A", Vol. 9, William Maddin to Edwin Gilpin, 25 December 1889.
- 148) PANS, RG 21, Series "A", Vol. 8, File "Coal Mines, Reports and Returns, 1889," Edwin Gilpin to J.R. Cowans, n.d.
- 149) Trades Journal, 28 March 1888. One should also note that a small explosion took place in Springhill in 1889 (Trades Journal, 25 December 1889) which was identical--except in its magnitude--with the one which killed 125 men in 1891. It too was caused by careless shot-firing.
- 150) Trades Journal, 7 October 1885.
- 151) Journal and Pictou News, 29 July 1891. Allegations that the company was not vigilant in its enforcement of ventilation laws were made by workers before an official investigation in 1891. See PANS, RG 21, Series "A", Vol. 14, File "Coal Mines, 1889-1895, Accidents, Explosions, Etc.," Investigation held on 9 May 1891 by Deputy Inspector Maddin at Springhill Collieries.
- 152) PANS, RG 21, Series "A", Vol. 14, File "Coal Mines, 1889-1905, Accidents, Explosions, Etc.," William Maddin to Edwin Gilpin, 28 December 1894.
- 154) Trades Journal, 14 March 1883.
- 155) Herald, 9 August 1910; 2 October 1910.
- 156) See, for example, the controversy over whether the company should supply sleepers or cap pieces in Springhill: Springhill Minutes, 6 December 1883.
- 157) Mines Report (1879), p. 17.
- 158) Statutes of Nova Scotia, 10 Edwd. VII, Cap. 37, "An Act to amend Chapter 8, Acts of 1908, 'The Coal Mines Regulation Act,'" laid down that in every mine, wherever required by the inspector or deputy-inspector, the coal, during the operation of holing or undercutting, shall be supported by sprags or wooden props, under the direction of a person appointed for that purpose. This provision was tightened by legislation passed in 1914. Under the Statutes of Nova Scotia, 4 Geo. V, Cap. 46, "An Act to Amend Chapter 8, Acts of 1908, 'The Coal Mines Regulation Act,'" the coal companies were under the implicit obligation to provide such sprags or wooden props, and it was also specified that "A sufficient supply of timber or other material suitable for supports shall at all times be kept at suitable and practically convenient places."

These legal reforms represented concessions to the workers' movement.

159) In 1927 the Cumberland mines used 4,884,704 lineal feet of timber, of which 2,513,858 was represented by checks and butts, the consequence of the "packs" characteristic of longwall work (Mines Report, 1927, p. 300).

160) Revised Statutes of Nova Scotia, Fourth Series, Chapter 10, 'Of the Regulation of Mines,' specified under the heading "Special Rules" that the owner or manager could make special rules and submit them to the Inspector for the approval of the Commissioner of Mines. These were to be "rules...for the conduct and guidance of the persons acting in the management of such mine or employed in or about the same as, under the particular state and circumstances of such mine, may appear best calculated to prevent dangerous accidents, and to provide for the safety and proper discipline of the persons employed in or about the mine, and such special rules when established shall be signed by the Inspector who is Inspector at the time such rules are established, and shall be observed in and about every such mine in the same manner as if they were enacted in this Chapter." In other words, within limits, the manager or owner were able to make their own laws, and these were backed up with full legal sanction.

161) A.W. Macdonald, "Notes on the Work of the Industrial Relations Department of the Dominion Coal Co. Ltd. and the Dominion Iron and Steel Company, Ltd.," The Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXIV (1921), p. 323.

162) Swift Letterbooks, Swift to Cowans, 26 February 1890.

163) Mines Report (1877), p. 28.

164) Mines Report (1879), p. 3.

165) Hugh Archbald, The Four Hour Day in Coal, is the classic statement of the problem. David Frank, "The Cape Breton Coal Miners," pp. 224-225, offers a convincing analysis of the traditional framework within which Cape Breton mine managers operated.

166) Swift Letterbooks, Swift to Cowans, 24 December 1889. Archbald, Ibid., p. 47 offered a perceptive observation of the structural tension implicit with Swift's position: "The trouble comes from requiring one man to do two things which require diametrically opposite conditions--engineering and supervision. Engineering requires that one have the opportunity to sit still in one place and watch and figure for days at a time if need be. The supervision of work requires that one should be constantly on the move, particularly in coal mining where work is so scattered."

167) Swift Letterbooks, Swift to Cowans, 6 January 1890.

168) Swift Letterbooks, Swift to Cowans, 29 January 1890.

169) Swift Letterbooks, Swift to Cowans, 31 January 1890.

170) See the "Orders" in the Swift Letterbooks, Swift to William Reese and William Conway, 18 February 1890.

171) Swift Letterbooks, Swift to Cowans, 15 February 1890.

172) Swift Letterbooks, Swift to Cowans, 5 March 1890.

173) Swift Letterbooks, Swift to Cowans, 20 January 1890.

174) Swift Letterbooks, Swift to Cowans, 18 January 1890.

175) Swift subscribed to the Practical Engineer (Swift Letterbooks, Swift to Practical Engineer Co., 22 February 1890), and contributed to the Colliery Engineer (see a letter from "H.S." in the Colliery Engineer, March 1891, p. 179), as did William Hall. When Swift died, the Colliery Engineer (the leading North American journal of its type) gave him a full obituary.

176) Maritime Mining Record, 20 March 1901: "Probably at no colliery in Nova Scotia is the system of daily reports from the under officials to the general manager so extensive and thorough as at the collieries of the Cumberland Railway and Coal Co'y. Indeed the system has been reduced to a fine science. Over a score of reports are received daily by the manager from the heads of the various departments. These include reports by the managers, overmen, night overmen, night examiners of the slopes. Also reports from pumpmen, stablemen, Lamp Inspector, Bank Foremen, Mechanical department, etc."

177) Maritime Mining Record, 9 July 1902: "To J.R. Cowans of Spring Hill, is due the discovery of the mine manager in the labor leader."

178) Swift Letterbooks, Swift to Cowans, 11 November 1890. Or, as Thomas Cantley of Pictou was to remark to J.R. Cowans, commiserating with him on the recent fire in No. 3: "As you state, the contingencies of mining certainly keep us on the ragged edge." Rex vs. Cowans and Dick, Record of Proceedings, Exhibit H/82, Thomas Cantley to J.R. Cowans, 22 November 1906.

179) Karl Marx, Capital: A Critique of Political Economy (New York: Modern Library edition, n.d.), p. 273.

180) See Wallace Clement, "The Subordination of Labour in Canadian Mining," Labour/Le Travailleur, Vol. V (Spring 1980), pp. 133-148, for themes developed in his Hardrock Mining: Industrial Relations and Technological Changes at Inco (Toronto 1981). My argument is not a critique of Clement's approach, which may well be suited to a present-day sociological treatment, but rather a questioning of its usefulness for

historical enquiry. It may well be that there is no such entity as 'Canadian mining' susceptible of treatment within one historical model.

181) See in particular W. Craig Heron, "Working-Class Hamilton, 1895-1930," Ph.D. Thesis, Dalhousie University, 1981, Chapter Two.

182) Mines Report (1867), p. 44.

183) George McHattie, "Progressive Coal Mining," The Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXV (1922), p. 333.

184) As noted in the Mines Report (1926) p. 9: "The coal areas of Cumberland County present some problems that will require further and more careful consideration, especially towards securing more uniform methods of operating. At present there is a tendency there towards small operations that are inclined to discontinue when, owing to deeper development, costs of production increase. The result is many abandoned workings and much waste."

185) For the agitation for better technical education, see Alex McNeil, "Technical Education," Transactions of the Mining Society of Nova Scotia, Vol. VI (1900-1901), pp. 62-77; A.H. MacKay, "Leading to Technical Education," Transactions of the Mining Society of Nova Scotia, Vol. VII (1902-1903), pp. 49-54; J.E. Woodman, "Some Aspects of Technical Education," Transactions of the Mining Society of Nova Scotia, Vol. VII (1902-1903), pp. 65-74 (with a discussion on pp. 74-83). Obviously there was considerable interest in mining circles in the concept of technical education, and it may well be that the province's particular interest in coal mining explains the precocious development of the technical education movement.

186) Rolande Trempe, Les Mineurs de Carmarx 1848-1914, I (Paris, 1971), p. 116.

187) Arthur Taylor, "Labour Productivity and Technological Innovation in the British Coal Industry, 1850-1914," Economic History Review, Vol. XIV, No. 1 (1961), p. 66.

188) PANS, RG 21, Series "A", Vol. 5, File "Coal Mines, 1887, Correspondence," H.A. Budden to Edwin Gilpin, 3 May 1887.

189) For example, in response to management's resistance to a price increase in a difficult place in Springhill, the workers threatened "to reduce their output of Coal to 150 Per day," according to the Springhill Minutes, 16 October 1884—but this did not become the official policy of the union. See also this interesting reference in the Grand Council minutes, September 1900, pp. 362-363: "Bro. Grear [sic] of Holdfast introduced the matter of curtailing the output in order to keep up the price of coal. This could be done by working only five days per week instead of six, which tends to glut the market. If a day

could not be dropped in each week, then less coal might be sent up which would tend to have the same effect. A motion to refer this matter to all the subordinate lodges for their discussion and the result forwarded to Grand Sec. who will act in the matter as seems best to suit the occasion was passed."

190) Herald, 4 July 1906.

191) Drummond, Reminiscences, p. 16. For an account of the European experience, see Joel Michel, "Politique syndicale et conjoncture économique: la limitation de la production de charbon chez les mineurs européens au XIX^e siècle," Le mouvement social, No. 119 (avril-juin 1982), pp. 63-90.

192) Report of the Board of Conciliation in Dispute between the Cumberland Railway and Coal Company, of Springhill N.S., and its Employees, Labour Gazette (August 1909), p. 213.

193) Amherst Daily News, 2 February 1906.

194) See Graebner, Coal Mine Safety, Chapter 2.

195) Albert H. Fay, comp., Coal-Mine Fatalities in the United States 1870-1914, with Statistics of Coal Production, Labor, and Mining Methods, by States and Calendar Years (Washington, Department of the Interior, Bulletin 115, 1916), pp. 23-27.

196) Ibid.

197) Macleod, "Mining Reform," p. 373, citing the writing of Frederick I. Hoffman.

198) Fay, Coal-Mine Fatalities, pp. 69-73.

199) Pictou County must have been one of the most dangerous coalfields in the English-speaking world; see J.M. Cameron, The Pictonian Colliers (Halifax, 1974), pp. 163-253.

200) Herald, 15 November 1910; 3 November 1910.

201) David Jay Bercuson, "Labour Radicalism and the Western Industrial Frontier: 1897-1919," Canadian Historical Review, Vol. LVIII, No. 2 (June 1977), p. 169.

202) Ibid.

203) Frank, "Cape Breton Coal Miners," pp. 226-229.

204) Dix, Work Relations, Chapter 3.

205) Labour Gazette, August 1909, p. 209.

206) Swift Letterbooks, Swift to Cowans, 20 February 1891.

CHAPTER SIX
THE EXPERIENCE OF WORK

Chapter Six
The Experience of Work in the Coalfields

1. The Mining Mentality

The coal mine was a machine for the production of coal, each one of its human and mechanical parts contributing to the functioning of the whole. But the human beings within this machine had ideas, principles, emotions, and traditions. This subjective life of the mine must be explored if we are to understand this history in all its complexity. The functioning of the machine was directly influenced by this subjective factor. The struggle for mine safety transformed the techniques of production, and the activities of the organized workers changed the social relations within the mine. But in fact we must go much further than this, and argue not only that the objective world of machines and things was influenced by the struggles of labour, but that this world of machines was intertwined with the subjective realm. The mine was experienced, and the men who underwent this experience moulded the mine as it moulded them. This should not lead us to reject the primacy of the economic, nor the value of the base and superstructure model. It merely calls for an approach to the base which sees it as a logically fundamental (rather than temporarily prior) concept of socio-historical causation, and as such bound up with the creation of ideas and the agency of men.¹ It was because the mine existed both as a physical structure and as the vital nucleus of a mentality that it was by far the most important force within the coalfields.

There are many traps to avoid in any exploration of the mentality of the mine. The classic approach is that of left-wing social realism, which viewed mining work as the most degrading and wretched imaginable. Work in

the mine was the epitome of the negation of human freedom in this vision. The coal mine is seen as an ugly and dark hole in the ground where workers were forced to work in demeaning conditions at low rates of pay. Here was an industrial hell, and the coal miners were its damned, martyred victims.² The vision captures half a truth. But just as we have rejected interpretations of the mining community which lay excessive stress upon their isolation, so too must we reject one-sided approaches to mine work which mention only its negative features. The paradox of the mining experience is that freedom and necessity are both present in the mine, and experienced in more intense ways than in the rest of life. When actual coal miners appear within works of this social realist genre, they do as brutalized sub-humans or at best feckless children.³ There is no room for the intelligent miners who, with broken fingers and all the other stigmata of mining veterans, speak of the pleasures of the coal mine. There is no room for a more ambiguous vision, of men who saw both freedom and necessity in the mine, and accordingly both revered and hated it.

A second trap is to regard every aspect of the subjective life of the mine through the sturdy spectacles of class. There is a well-developed tradition in writing about the miner's work which stresses the contribution poor working conditions made to the creation of class consciousness. Living in isolated communities and working in unpleasant and dangerous surroundings, this tradition argues, the coal miners turned naturally to militancy and even socialism as an answer to their problems. We have already argued against the theory of 'isolation' as a covering explanation of coal-mining communities. The emphasis in this theory upon the homogeneous character of the working population has also been implicitly undermined by our analysis of the structure of the workplace. It seems almost

redundant to stress the inadequacy of the theory as an approach to the subjective aspects of coal mining, except that such approaches command wide support and actually contain more than a grain of truth. There was, in the mass proletarian populations created by the mining industry, a certain structural preparedness for radical doctrines. Moreover, there is a solid case to be made for the unusual influence of radical doctrines within the mining population. Insofar as the traditional interpretation of the miner as the "archetypical proletarian" has brought out these features, it has served a useful purpose.

However, it is obviously inadequate as a general approach to the subjective aspects of coal mining. There are a number of points against it. The most important is that the coal miners, here and elsewhere, show a marked variation in their political allegiances. An approach which stresses radicalism as the essential aspect of the mentality of the mines falls down before the evidence of other traditions which have as much claim as radicalism to the attention of the historian. What the traditional left-wing approach misses is the ambiguity of the mining mentality, which can sustain different ideologies and remain nonetheless a coherent and identifiable tradition. In reading the mentality of the mine as a working-class "culture" inclined to socialism, the social realist tradition overlooked deeper aspects of the problem. For example, many of the most profound experiences provided by the mine were shared by workers and the officials. Officials (and managers who had graduated from the underground) were within the same mining experience, understood the same problems, often saw things in the same way. As the officials were increasingly recruited from the miners themselves, their attitudes became less distinct from the men they supervised. No one who has interviewed any mining official in

the County today, from those who attained the lowest rungs in the hierarchy to those at the very top, can fail to be impressed with the similarity between their outlook and that of the workers. The intuitive finding points us in quite another direction than that of seeing the mine as a place where workers were spontaneously turned against the capitalist order. In some respects the class divisions were less visible in a coal mine because the person who fulfilled the managerial functions for capital was often a man who spoke, dressed, and thought in much the same manner as his workers. This hardly nullifies the fact of class. Only if we see class as a 'cultural' category does the cross-class character of the mining mentality present difficulties. But it does pose problems for a mechanical model of the miners' consciousness, which cannot be reconciled with a world view shared by many bosses and workers. It is additionally compromised by the fact that the miners sustained a whole range of ideologies both before and after their radical phase, without changing their conditions of employment. Our critique of the tradition thus rests on two fundamental points: the equation of miners and radicalism is not historically constant (with the changes in the miners' political affiliations not readily linked with the changes within his workplace) and the tradition overlooks those elements of the mining mentality which united miners and bosses, mitigating rather than accentuating the 'class' reading of the work experience.

The underlying difficulty is one of attempting to reduce the miners' outlook to an identifiable political position, rather than first attempting to explore this outlook in its own right. The mining environment is more complex, more charged, and more interesting than the older tradition allows. Mining experiences could be absorbed in conflicting ways. One could sustain

a liberal ideology by drawing upon those aspects of the miners' work which stressed manliness and independence, or a tory paternalism by emphasizing the importance of leadership and discipline (not to mention patronage).

But for all this historical variety of political expression, there was a mining mentality, a world-view of obscure, unconscious elements which united the men in the pit.⁴ Had contemporary theoretical work not demonstrated the difficulties of the concept of culture in this context, we might be tempted by the abstraction of a "work culture" used by other authorities.⁵ Yet mentality probably describes better the problem we are attempting to solve, for what we are trying to describe is a constant, the principle through which the subjective life of the mine was possible and was unified across objective class lines. Our mode of argument must, in any exploration of this type, be focussed on the underlying generative structure, a structure which we may know only indirectly through the facts of subjective expression. The characteristic approach of this kind of argument is a 'transcendental' one, that is, the reconstruction of the necessary conditions of possibility for the empirical order. It is assumed that it is possible and desirable to specify generative structures (on the model of contemporary theories of language) which explain how change and improvisation may occur in an orderly and regular way.⁶ We might say that we are trying to understand the 'subjective grammar' of mining, meaning by this that the shared attitudes and dispositions in the mine were subjective but not peculiar to the individual, and capable of maintaining a single identity while facilitating transformations. Put very bluntly, our hypothesis is that miners in Cumberland County (and in many other parts of the world) shared a mentality which was created in the mine. Through this

shared mentality the workers internalized the objective structures of the mine, and were able to master a common code. This was a sort of immanent law, laid down in each agent by his earliest upbringing and reinforced powerfully throughout his mining career, which made possible the spontaneous co-ordination of practices in response to the daily emergencies of life.

We see this pre-conscious, disciplined co-ordination most dramatically in instances of mining disasters. The sudden awakening of the mass of coal miners when their comrades are trapped in the mine, their disregard of any danger in the attempts to rescue them (giving their own lives in the process in certain instances), their stoical calm in the face of catastrophe: all these aspects of mining life are commonplace in the literature.⁸ But their interpretation has varied remarkably, from middle-class authors pleasantly surprised that the workers they had previously described as being reduced to barbarism have suddenly developed humanitarian instincts, to socialists who saw in the miners' heroism an anticipation of their utopian aspirations. What might be stressed about the miners' behaviour in times of catastrophe is the shared code of collective discipline and courage it reveals, something 'pre-political' in its formation. Probably other men, faced with life-and-death situations, would respond individually, in an equally heroic way. But the point is that the miners internalized a daily life-and-death mentality, by virtue of the harsh and inescapable uncertainties of the mining environment. It was this objectification of the mine which re-emerged in times of acute stress, when the miners tended to astound the world with their stoicism and a strange collective altruism.

Perhaps the closest analogy we have to the miners' outlook is that of soldiers at the front, facing collectively the reality of death and

fear, a reality faced only through conquering fear." It is hardly an original comparison. Louis Simonin made it as early as 1867 in his description of French miners as "les Soldats de l'abime."⁹ Carter Goodrich used the metaphor of men at the front in his famous study of work traditions in the American mines,¹⁰ The word often invoked is "fatalism," meaning imperturbability in the face of death. Yet it is far more likely that miners, rather than being uniquely unmoved by the prospect of death, merely acquired a mentality which allowed them to survive in a highly uncertain environment. Through this stoicism one could overcome the dangers inherent in mining work. Miners learned to suppress their fear. Once in the mine, thoughts of the falling roof or the possibilities of an explosion were banished, or rather collectively repressed, present only as an unspoken assumption, a structuring absence.

A further connection is that the mine was, in Nova Scotia, an exclusively male milieu. Women did not work underground, and had only a small representation in the company offices. The code of the mine was very much one of manliness. There was pride taken in physical strength, understandably enough given the connection between strength and earnings. There was a strong tradition of camaraderie and friendship. However enthusiastically religious and political divisions were sustained above ground, they seemed to vanish below. There was a prohibition on pushing political and religious issues underground. The permissible expressions of division were those of jokes, nicknames, personal teasing; it was said that once a joke was successfully made about a man, it would stick for years. Many of these jokes seem to have been common throughout the coal mines, as part of a shared folklore of mining that survives best in songs.¹¹ The miners, like soldiers, were unified by a sense of discipline. There

was little sympathy lost on a miner who lost his job because of dangerous practices. With its compulsory searches for matches and the quasi-judicial powers wielded by mining officials, the mine had an authoritarian element within it, always softened by the workers' independence and collective strength.

It was a highly collective outlook. Once within the mine the individual subordinated himself to the traditions of his fellow workers and the requirements of the mine itself. Survival in the mine required collective unity. The support of fellow workers was crucial to the individual. Here lies the essential reason for the spontaneous, organic solidarity of the coal miners. This sense of the collective did not necessarily exclude the officials, who could earn special respect by their steadfastness and bravery. Officials who continued to work during a strike did not encounter much bitterness from the workers; everyone knew that they were supposed to continue working. (Many company men, the records of 1890 suggest, wanted to join the strikers). The exercise of authority in the mine could engender conflicts. If the boss was overbearing or refused to acknowledge the competence of the men, he would be attacked. The other side of the coin of quasi-military discipline was the firm insistence that the bosses understand the workers. Since many of the decisions in the mine had to be entrusted to the rank and file, the overman had little choice but to rely upon the good judgement of the men. A wise management did not attempt to rule the workplace with a rigid bureaucratic system. John Brophy, in his reminiscences of work in the American mines, captures perfectly the euphemisms and circumlocutions which softened the exercise of discipline.

In non-gaseous mines, the pit boss would go through the mine regularly, visiting each workplace once or twice a week. He could usually assume that the men knew their business, and just drop in to look around and chat a while. If he noticed some little slackness--maybe timber not as close to the face as it should be--he would say, "It seems to me you had better get a prop set up there; you've got them a little far back." And the miner would answer, "Yes, I was just about to do that; I'll get it up right away." This was considered a suggestion, not a reprimand, though one the miners always followed.¹²

In an inquest for Natale Gualtieri, killed by a fall of coal in Springhill in 1895, it became clear that some miners had been troubled by the timbering practices in Gualtieri's place, since the props were not quite as close to the face as the overman and other miners thought proper. No one had directly ordered the practice to be changed--it was a matter of judgement, in this case a risk that did not pay off.¹³ Unless one were willing to respect the coal miners' judgement in such questions and rule through indirect suggestion, one stood to lose a great deal of time and energy in quarrels with the miners. Henry Swift, who did attempt to impose direct rule, paid dearly for it. But even after the miners struggled bitterly with Swift, they turned out en masse for his funeral. There was much about the miners' outlook that was collective without necessarily being class conscious.

The position of the officials was ambiguous because they served the interests of the workers as well as those of the company. It was as much in the workers' interest to keep a mine operating safely as it was in the interests of capital. The position of the foreman in many other industries was a battleground gradually ceded to management and scientific planning.¹⁴ The struggle in the coal mines was, as usual, more of a compromise. Because of reforms initiated by the labour movement, a larger and larger percentage of the mine management was made up of local men, who had risen

through the ranks. Such men had absorbed a great deal of the mining outlook and did not think of themselves as being a great deal better than the men they supervised. They saw themselves as "mining men," and had a sound knowledge of the individual miners under them. The general tendency within the historiography of work is to view the evolution of supervision as the triumph of impersonal supervision. In the coal mines this tendency was reversed. A greater gulf existed between the overmen and the miners in the 1890s than in the 1930s; by the later decade, the mine management had been largely taken over by Nova Scotians. It is one interesting aspect of this change that first names were commonly used in the mine in conversations between bosses and workers.¹⁵

The collective unity of the mine was not the result of a conscious strategy of management, imposing its interests upon the workers. It rather represented the subjective side of the unifying conditions of existence of the workingmen, conditions shaped primarily by the work itself: Brophy suggests as much in his reminiscences of mining life:

Probably most important to the miner was the discipline of the work and of his fellows. The flow of the mine cars was one form of discipline. A man's car should be filled and ready to go when it was his turn to get an empty. If he fell behind the pace set by the other miners, he would have to admit that they were better men than he. Loyalty to his fellow workers required a very alert awareness of danger every minute that he spent in the mine. . . . Nobody could work in this kind of situation, where every man had to depend on every other man, if he was not respected as a practical miner.¹⁶

As one miner from River Hebert remarks, "No individual works in a coal mine. You're all together down there."¹⁷ These remarks show the impact of the interdependence of all the mining functions upon consciousness. But they also show how much more there was to the formation of the miners' consciousness than a passive absorption of technology. The interdependence

of the miner became intertwined with concepts of manliness and loyalty, and survival of the individual became synonymous with identification with the group. Engendered by the objective structures of the mining economy, the code of the mine allowed men to survive within these structures and even formulate strategies for their change.

2. The Formation of the Mining Mentality

The occupational solidarity of the miners had deep roots in the coal-mining families, where children acquired a fundamental understanding of the roles they were expected to fulfill in life. This understanding in turn reflected the underlying socio-economic base of the community.

Women were excluded from production, and in most families were restricted to the role of housewife. Since the coal miners had proverbially large families,¹⁸ the domestic routine of women was extremely demanding. Rising at 4 a.m. to get the fires on, preparing food for the miners' lunch, superintending the shopping, looking after many small children, trying to curb the coal-dust which settled so determinedly upon floors, ceilings, and clothing, washing the miner's clothes, making his supper, and in the evening sewing or participating in voluntary activities: it was a schedule as disciplined and as demanding as the miners'. One miner suggests the extent of women's work in the mining environment: "Look, I don't know what you'd call her [his mother]. She cuts my hair, she used to half sew my shoes, she used to make my clothes. I don't know if she's a tailor, a shoemaker, or what she was--or a breadmaker. You had a big family and that's what you had to do in them days."¹⁹ Some measure of the wife's responsibilities emerges from the testimony of Elisha Paul before the Labour Commission in 1888:

Q. Have you any idea of the cost of the necessaries of life, bread, meat, vegetables, tea, sugar and such things, also clothing at Springhill as compared with, say, Halifax? A. No; I have no idea....

Q. Can you tell us what you pay for a four-pound loaf of bread? A. No; I cannot—I don't have to buy it....

Q. How long does a gallon [of oil] last you? A. I let my wife manage the house and buy things, and I don't know much about that business.

It was a sexual division of labour that was strictly enforced. A common element of humour even today is found in the suggestion that a coal miner was found baking a cake, or in other compromising positions.²¹

Within this somewhat patriarchal world, the boy received his earliest lessons in how to be a person. The mine was already an active force in his life, present in the strict segregation of the sexual division of labour, and in the 'pit talk' favoured by coal miners (a language of mining women found hard to understand). There was an expectation that a boy would enter the mine, although the attitude to juvenile labour changed from the 1880s to the 1920s. In the 1880s the labour of boys was accepted as a necessary part of the family economy. The additional income provided by the boys, often staying within their families into their twenties, was necessary for families that aspired to independence and home ownership. This fact emerges from the testimony of the miners in 1888, who seem to have felt guilty about it.²² Just as the acquisition of one's own home in Springhill tied one more closely to the coal industry, so too did the economic sacrifices this acquisition entailed tie one's whole family more closely to the mines. The remarks of the miners before the commission suggest that the coal miners sensed the strain in the ideology in independence which had to lead them in such conflicting directions. It seems a mistake to suppose that all miners were simply resigned to seeing their boys in the mine.

Yet dependence of the entire family on the mine entailed a coming of age for the boys. Pre-conditioned by their upbringing, boys were anxious to start working in the mine. Boys started work as young as nine. In the 1881 manuscript census we find no nine-year-olds, but two boys aged 10, three aged 11, seven aged 12, two aged 13, and five aged 14. The boys themselves might take the job on impulse. One miner recalls joining the workforce one day on his way home from school, simply because he could no longer bear sitting at a desk.²³ The day of entering the mine was usually a happy one. It represented a declaration of independence for the boys, and caused a wonderful change in their status at home. Now their sisters waited on them and they were treated like men. Many boys were anxious to go mining and win their spurs. One miner recalls putting on two overcoats to convince a mining manager that he was 14, when in fact he was only 12.²⁴ Another remembers going to the mine as part of a series of adult experiences: "At fifteen, I wanted to work, because I was getting pretty big. And I started smoking, you know? And I got caught. So I decided to go and register at the post office. Mrs. Purdy [the post office woman]... Mrs. Purdy, I said, 'I'm sixteen years old today. I want to register.' She registered me. That afternoon I went down and got a job with the company."²⁵ Clearly going to the mine was seen as a rite of passage.

Boys often went mining over the objections of their families. Many miners remember family struggles over this issue--one place in which mining novels ring true to life, although an interesting contrast between art and history is that the novels stress the intervention of mothers, while the actual memories of the miners indicate opposition by many fathers. One boy, from a family of eight, went out to work to help his family get by,

but over the opposition of his father. He got on by lying about his age. On the second day of his work in the mine, he saw two dead miners being taken from the pit while he went to work. When he got home, his mother asked him, 'Now don't you think you'd better give up the mines?'²⁶ Another remembers making many frustrating trips out to Nos. 6 and 7 as a lad of 16, only to find that he was constantly being refused. Finally, after mentioning his problem to his father, he was chagrined to discover that it had been his father all along who had told the mine management not to take him on. "I don't want you to go into the mine," he remembers his father saying, "I want you to be somebody in the world."²⁷ There were many conflicting emotions aroused by having children in the pit. One mine boss of the 1920s claimed that unless a boy was very poor, he would not be given a job.²⁸ The law itself, which in this instance reflected a changing attitude on the part of the workers, made child labour increasingly less common, by progressively raising the age limit, so that by the First World War children were no longer supposed to be involved in mining.²⁹ It was really a question which reflected the deep ambivalence that miners felt towards their work. There were striking parallels between miners and other skilled craftsmen, but this hesitation to initiate their sons into the mine sets them apart. There were very strong imperatives in both directions. One reads in the records of the union rather desperate pleas on the part of fathers to place their sons in the mine:

Jeff Hibberts states he got three boys laying around and eating every thing and the Company won't give them work without permission from the Local. It was moved and seconded that we give the Company no permission to hire on new men....³⁰

Boys were forced to compete with each other in a desperate search for jobs in the 1920s.³¹ Those who maintained a home were to take precedence over

boys who wanted to work, the union ruled in 1923.³² Clearly there was an evolution in the workers' attitudes, from an acceptance of boys' labour in the 1880s (although this acceptance was tinged with guilt) to a general rejection of boys' labour in the 1920s. One important factor was the growing dearth of secure jobs in the coal industry, which forced the union to adopt the restriction of child labour as a protective device. But we should not overlook the more generally protective attitude towards children evident in the 1920s.

Those unaccustomed to mining life found certain aspects of the situation violated their sense of what childhood ought to be. There was thinly-disguised revulsion when families claimed compensation for their children killed in the Explosion of 1891—a sordid controversy on this issue went on for years, and left the impression that mining families were anxious to profit from tragedy.³³ In an important case in Joggins, in which the company was accused of negligence in the maintenance of hoisting ropes and consequently in the death of a young boy, the boy's guardian raised with the deputy inspector the possibility of claiming some part of the money the company would have to pay. Those who condemned this approach out of hand had not understood the full tragedy of the situation, which was that the structure of the economy demanded that families choose between poverty or having their boys work. Childhood was shortened; the transition to manhood drastically reduced to a year or so. Local folklore—and it might even be true—loves stories of boys who started in the mine still believing in Santa Claus.³⁴ There can be no doubt that the mines provided a quick education in realism.

For some boys this education was frightening. One had a recurring nightmare for years afterward of being pushed off a cliff—a response to

his first journey in the trolley which carried him into the pit.³⁵ Another remembers his first encounter with a ghost in the mine. Sent by the overman to trap a door on another level, the boy was instructed to walk up a travelling way until he reached the designated level. "Up he started. "I got a couple of hundred feet up the travelling road when this groaning started...I heard moans and groans--I said to myself, 'That's a ghost.' I kept going up and going up. A great big grey cloud...started down. Boy, when I seen that, down the hill I went." An unsympathetic overman explained to the boy that all he had heard and seen was the Cameron pump, starting up and emitting exhaust into the air.³⁶

There is a general consensus that most boys quickly overcame their initial fears. Much depended on the kind of job they had. Surface jobs were relatively routine: sometimes under the supervision of one's father, more often slight work thought inappropriate for a man. One nine-year old who started work in 1893 was given the task of spreading ashes on the Springhill race-track owned by the company--until it was found that he was too small to handle the ash-cart, whereupon he was given a job underground.³⁷ Another job a boy could fill would be oiling coal cars with beef tallow,³⁸ or taking the tallies off the coal cars as they came up.³⁹ The main jobs for young workers were underground. Apologists for child labour, on those rare occasions they articulated their beliefs, based much of their case on the undemanding nature of the jobs in the mine. There was a certain justification to this. One of the commonest jobs, trapping the ventilation doors, involved very little physical labour. "There's no work in it," remembers one miner.⁴⁰ It merely involved pulling the door open to allow the horse to go through. The greatest enemy was boredom, the lonely waiting in the dark. Managers regularly were faced with

trapper boys who had fallen off to sleep.⁴¹ Trapper boys would leave their positions, whether to relieve themselves or to break up the monotony of the eight-to-ten-hour days; the results were often confusing and occasionally tragic. The first underground fatality recorded for Springhill was the death of a 12-year-old boy, David Ferguson, who on 3 November 1877 left his post as a trapper boy and "climbed up the balance way where he had no business to go. He was most unfortunately met by the counter-balance box, run over, and killed."⁴² There were to be many more boys who were lost in the mine, or bored to tears by the unyielding tedium of such a job, which must have been so difficult for any normal youngster.

Not all the children's jobs were so monotonous, or so physically undemanding. In the days of chute loading boys were set to 'pulling the rag,' which was an almost unbelievably crude method of getting the coal down into the coal cars. Here is one description, which comes from the 3800-level in the North Slope: "...[W]e used to pull them long rags of canvas, about 25 feet long, hook it into your belt and haul it up to the chute there, where the miners were digging and shovelling their coal back. And we load up them rags and ride them down--tip them all up like a sack of oats, only twice as long, and go down over them sheets. We used to have a bar about 40 feet above the bottom, and when we hit that bar--we used to have a lamp hanging there--we'd grab that bar and let that thing go on without us." Backs were skinned raw from hitting the timbers, and the method as a whole, while undoubtedly far more exciting than trapping a door, sounds dangerous.⁴³ Shoving down the coal meant shoving down the coal with one's feet. "The miners would come out with a ginney [about a half-box of coal]--dump it on a sheet, and we'd push it down," recalls a veteran. "You'd wear out a pair of overalls in about a week."⁴⁴ Other

boys came prepared with a canvas on the trousers to avoid wearing out their pants.⁴⁵ They are jobs which add a new vividness to the term 'labour intensive', but gruelling as they sound, boys preferred to do this than trap door. They were less isolated in these jobs. Two boys would together pull the rag; and four boys might be found in one place. For all its roughness it was probably more satisfying than trapping door. The job of turning the fan was another turn-of-the-century task which children performed. This was a boring business of turning a fan, non-stop, to aid ventilation in awkward places (as when men were cutting a place up on an angle). It was like turning a grindstone, and if you got tired and stopped, the men would call out, "Come on, turn the fan on."⁴⁶ "If you stopped for a minute and changed hands," remembers one miner, "they'd yell, 'Turn on that fan.' And they didn't call you sweetheart, neither."⁴⁷ Boys would carry lamps to and from the lamp cabin for repair or refilling; they would drive horses in the mine, and they would do all sorts of other jobs.

The work was often rough and exhausting, or excruciatingly dull: but the essence of the situation was a far cry from the brutality of the Montreal cigar factories or even the Halifax cotton industry. There were aspects of the mine which softened the impact of mining labour on the young. The boys often traded jobs among themselves, to break up the monotony of the work: this informal regulation of work seems to have gone on without company approval, but gone on nonetheless.⁴⁸ Many jobs seem to have inspired the boys, either to drive the horses hard in competitive exercises, or just by giving them an opportunity to see a fascinating environment. Is this fascination so hard to understand? It was a strange, dark, noisy environment, full of secret passages and experienced in the

company of friends. One must also remember the pattern of kinship in the mining community. Many boys worked with their fathers as loaders. They would pick up a lot of mining lore that way. It was not a situation that should be romanticized, for the normal tensions of the mine could be magnified by the tensions of father/son relationships. The miner who remembers the frequent conflicts he had with his father, nonetheless concludes: "Papa was pretty good--you'd learn your trade, you see?"--the ambivalence and conclusion are common memories.⁴⁹ However difficult the relationship might be, it placed a limit on how far one could go in victimising the boys. There were often not only brothers and one's father in the mine, but uncles and cousins as well. An unjust dismissal of a boy would be raised in the union and contested vigorously.⁵⁰ Managers would occasionally swing their cane at boys--William Hall, for one, denied ever whipping the boys, but somewhat incongruously proceeded to praise the wholesome discipline of a good lashing.⁵¹ It does not appear that anything like deliberate cruelty was practised on the boys, and given the detail in which these mines are known, the absence of anything suggesting the cruel punishment of boys is reasonably conclusive. Managers would bluster and threaten, in the approved manner of the Victorian paterfamilias; it does not seem to have gone much beyond that.⁵²

Nor is it clear that the option of direct coercion would have paid much of a dividend. The evidence is clear: the boys were transformed by the mine, transformed into a tough and resilient group of workers capable of defending themselves. They developed with surprising speed the instinctive unity and independence that were associated with the adult miners--with such speed that one suspects they were influenced by their fathers at an early age. Whatever the impact of such early childhood

socialization--which cannot really be documented in satisfactory detail-- it is plain that the children absorbed with remarkable swiftness the language of mining.

The boys were militant, disciplined, and united--all this at the age of twelve or fourteen. One might draw parallels with the activities of street gangs in Halifax and Saint John, which were likewise cohesive and disciplined. But the mine boys were really a more serious problem, for two important reasons. One was that they were necessary for the functioning of a crucial part of the capitalist economy. The mine was a machine which had to integrate many discrete functions, two of which (maintenance and transportation) lay within the province of the boys. Remove the ventilation system, and the mine had to stop; remove the drivers and there was no one left to remove the coal. In contrast with street arabs, the mine boys could close down the central nucleus of a town of five thousand people. Secondly, and going beyond the 'functional' to the 'strategic', the mine boys' militancy was an indication of the deep structures of solidarity within the mine. Without this pervasive solidarity the boys' strikes would easily have been broken, either by other boys, or unemployed miners, or by the boys' fathers, exercising their paternal rights. These things did not happen. The web of solidarity held, even at the most vulnerable point at which the earnings of one group-- and the most important--were threatened by the militancy of a much smaller one. Here too the coal boys' situation was unique, since it implied a solid support from other workers.

The boys' strikes--impetuous and caused by relatively small issues-- were a real nuisance to the company and cost the men many working days. Why wouldn't the miners do something? The answer was contained in a newspaper story on one of the many juvenile strikes:

It is said that parents ought to control their children in such a case. I have heard, even working-men say it. And perhaps they were right as regards children, but there are no children working in the mine. They may be children when they go in at ten or twelve years of age, but a fortnight or so thoroughly works that out of them. They then become very old fashioned boys. They get inured to all sorts of danger and hardship; they have, in a word, to think for themselves; as regards their work. As a matter of necessity, and as a matter of course they soon presume to think for themselves on all matters, their parents to the contrary, notwithstanding. Then it is necessary to lead them. They won't be driven; they won't be ignored. They have the whip hand in every sense. The men know this. The management ought to know it.⁵³

The management was reluctant to learn this lesson. Henry Swift refused to deal with the question in anything other than hostile terms. He writes to Cowans on 14 May 1890:

Met Reese

Who informed me that some of his Boys was getting rebellious and that some of them had been that way for a month

Told him to Consult McInnis in the Matter and to exchange them to the other slopes which changes their Company & surrounding and have its effect When Boys are Kept Working togheter [together] they are always Combind togheter for some Mischief and there are Matters which always require fright to deal with them⁵⁴

And again on 14 November 1890:

Had a Committee of Boys to the house this evening about rates of wages

Refused to treat with Boys and told them to send either the Pioneer Committee or their parents⁵⁵

And again on 29 November 1890--he has by this time precipitated a strike:

Boys Came down in the afternoon and asked Me if McDonald was going to get his work again I told them No they went of [f] again have heard of nothing since

They are evidently backed by a large Majority of the Men. Something will have to be done towards weakening their power. Kindness and steady work do not seem to be of any use or have any desired effect

The More we do and the More we can do for them
 the steadier the work the greater their
 independence⁵⁶

Few citizens of Victorian Canada would have disputed Swift's right to dictate terms to his unruly little labourers. But we grasp the essential differences of this experience of mining when we realize that such strictness could not work. Even Swift, whose sterling qualities as a mining man did not make him a genius at human relations, caught the truth of the situation. Let us give him one more quote, one which really reveals how this situation was created and how difficult even the most strong-willed manager would find it to change this deep-seated mentality:

In the afternoon about 2 P.M. [2 December 1890] the So Called Committee of Boys Came into My Office asked them what they were after this time one said Mr. Swift we came to tell you we are going to start work in the Morning again who told you to go to work again the father of McDonald is going to Settle the Matter by law He said Mr. Swift it is not our fault about the stop it was the Lodge's fault and there was Some Mistake in the Case I hesitated a few Minutes and had thought to tell them to Come again at 7 P.M. and in the Meantime telegraph you I then thought conversation in A.M. better to let them Start I told them not to Come to me again as a Committee Never intended to recognize them again I Gave them a downright Good talking to told them that their actions were a disgrace to them their parents and in fact all Springhill One McMullen who has very little home restraint replied well Mr. Swift the men transact their own business and we thought we could do ours which I considered a very frank acknowledgement as to the old [adage] "Cock Crows the Young one learns."⁵⁷

Could one ask for a more revealing episode? Even after Swift has delivered his great tirade, even after he has threatened never to recognize them again (a rather odd thing to say after he had just finished negotiating a return to work), after all this young McMullen has a rather self-assured reply to make to him. Independence was the right word. The young ones

did indeed learn--early and well.

They learned certain lessons of collective discipline, they learned loyalty to one another. It was not necessarily the same thing as learning the techniques of class. Many of the boys' actions bear the telltale marks of immaturity. It was simply a fact of life in the Joggins that the boys would leave the mine for baseball games--so much a fact of life that these little 'strikes', which had the effect of shutting down production, were scarcely noticed in the press.⁵⁸ More dangerous than this was the setting of a small fire in the mine in Springhill--something of great danger in the pit.⁵⁹ There were valid reasons why observers thought that the men would want to stop the boys' actions. One of the strikes in Springhill concerned the dismissal of the boy McDonald--the subject of the preceding long quotation from Swift. "Besides the charge of neglect of duty it is alleged that he has been guilty of the most immoral and abominable practices, in the east slope, where he was employed as a horse driver. Daniel Boran, another driver, has made an affidavit before Stipendiary Bennet, in which McDonald's alleged crimes are set forth. A veterinary surgeon's report also contains much that is wholly unfit for publication." The union challenged the truth of the charge and it was never conclusively proven. But even though the original news story claimed that it had been the original desire of management "to withhold the story of immorality from the public, out of sympathy for the boy's relatives," the claim was overturned by the subsequent use management gleefully made of this story in later disputes.⁶⁰ The boys made excellent material for newspaper editors anxious to show the irrational side of workers. Much of this commentary was highly prejudiced. But it probably did capture one element of the situation: the possibility that the boys were somewhat impetuous. On at least one occasion the boys were not

supported by the men in a strike in the early twentieth century.⁶¹ By and large the solidarity of the mine remained intact, but it was a possible division which management could exploit. Various expedients, such as organizing a subordinate lodge of the union, were tried: this did not win the approval of management. Finally youthful workers found themselves in the U.M.W., but by this point the minimum age of work had risen and the problem had changed in character.

The pit boys received an education in mining; they were socialized by the pit as profoundly as by their families, which, given the way kinship and work were connected in these communities, was not that surprising.

"Long before your city boys are astir the pit boy is awakened by the steam whistles, which blow three long blasts every morning, thus warning him that it is time to get up," wrote a special correspondent of the Morning Chronicle.

Breakfast partaken of, he dons his pit clothes, usually a pair of indifferent-fitting duck trousers, generously patched, an old coat, and with a lighted tin lamp on the front of his cap, his tea and dinner cap securely fastened on his back, he is ready for work. He must be at his post at 7 o'clock. Off he goes, and in a few minutes with a number of others he is engaged in animated conversation, and having a high old time generally, as he is lowered to the bottom of the slope....

...At twelve years of age and upwards, working down in the dark pit all day, a boy expects to have his outing in the evening. Hence they meet in little groups on street corners, or wherever there happens to be an attraction, and make things as lively as possible. At work they are up to all sorts of tricks. Full of mischief, they are continually surprising each other with new pranks. They are--most of them--great swearers... And the "greeny" fares badly enough when he enters the pit for the first time. His face is painted with black oil and other handy colors, until he resembles a full blooded Sioux on the warpath. If his hair happens to be long the boys step up behind, burn off the long ends, blow out his lamp and disappear in the darkness. Of

course, with the prevailing darkness, there is unlimited scope for this sort of mischief, and the pit boy enjoys it.⁶²

It was a very different boyhood than Victorians thought admirable. Even the Journal and Pictou News, the voice of the union, thought the initiation rites were severe. "Four or five half grown up boys set upon a quiet loader as he was going to his work along the level of the West slope. They used him roughly, kicking and striking him. If this is the initiation given to strangers or green-horns, it is high time the matter was looked into and stopped."⁶³ A hazing ritual of unusual severity and coarseness was the occasion of a long conciliation case in 1894: it involved sending a new recruit into an abandoned balance used as a latrine.⁶⁴

There can be no doubt that the rituals of the boys were rough. Contemporaries were right to make the pit boys the special objects of solicitude. The Boys' Brigade in Springhill, numbering 50 in 1891 and organized by the Presbyterian Church, was aimed specifically at the pit boys.⁶⁵ The Critic hailed the coming of new haulage methods, which would remove the boys from the pit forever, and end the "latitude" which had been morally and intellectually injurious to them.⁶⁶ Throughout the period the emphasis was placed on the degeneration of the pit boy, and not upon the coal companies which employed them. These and the government escaped censure. In 1888, Robert Drummond was happy that the pit boys, in vivid contrast with the factory children of Quebec, were able to read and write.⁶⁷ The deaths of young boys were almost always attributed to personal carelessness; there was rarely any critical comment. Contemporary critics were worried about the pit boys' morality (their drinking customs were notorious) and education, and incensed about the pit boys' strikes, which seemed to place whole communities in the hands of a few irresponsible

youngsters. Springhill pit boys were the centre of attention, and it appears that the young workers in the town deserved their reputation as the province's most militant.⁶⁸ The attitude of pity and outrage we are apt to have today when faced with child labour was not present in the nineteenth century. It was more a question of regarding the boys as incorrigible delinquents, or as hopelessly misguided youngsters who merely needed a strong hand to set them straight. The Amherst Daily News was entirely typical in its belief that the unrest of the boys would be corrected by a generous application of the "parental slipper."⁶⁹

In truth it makes more sense to see the boys not as victims or incipient criminals, but as a special category of new workers, responding with spirit and even intelligence to their new situation. Few observers troubled to note that most of the struggles fought by the boys were successful.⁷⁰ Few observers thought to wonder why it was that the miners supported the boys so consistently. The boys received a rough education in the ways of mining, and they in turn moulded each other through collective ritual and struggle. There was much to admire in the spirited way in which they responded to the realities of the mine and learned its particular language.

Once one entered the mine, how did one advance within it? There were very few established rules about the way workers were promoted. Generally a boy would first start out as a trapper boy, then move up to shoving down, pulling the rag or driving horses; then he would become a brakeholder on the incline or counterbalance or a cage-runner putting on full boxes on the balance and taking off empty ones; then he would move up to loading, helping two men take out the coal, and finally he would advance to 'the picks'--become a fully-fledged miner--or to company work.⁷¹ These

steps sound a lot more precise than they really were. The major criteria for advancement seems to have been size. Two cases in 1927 before the union showed the controversy that promotion could create. Brother Lees reported that because of his short height the boss would not promote him, even though he was 18 years old. Another worker illustrated the same problem:-

Jack Hayes brought up a case stated he was to [0] old for a job on the handle as he was 18 years old and the boss told him he wasn't big enough to earn a man's pay but if he got permission to stay on his own job at the same rate he was satisfied. The Union stated that it would not be right for him to work on that job for lower pay as he is entitled to a man's pay now...⁷²

The union tried to enforce certain standards for promotion, but especially before the War, a great deal depended upon your size and nerve. Negotiating a raise or a new position was a matter of personally approaching the management. "In the early days, you wouldn't get a raise, you had to go and see the general manager," recalls one miner. "You wouldn't go in a crawl, you know. I went down to see him one day for a raise—I was only getting 61 cents—Oh, he says to me, 'You're pretty small,' and he took and picked me up and put me on the desk. And I said, 'The money's pretty small, too.' 'Oh,' he says, 'All right,' and he wrote me out a paper..."⁷³ That's the way it was done. The rule of thumb in the nineteenth century was that boy's work stopped at the age of 17 or 18; then one became a loader. Now began the boys' immersion in the functions of production and his informal training as a miner.

Of all the major occupational categories in the mine, that of the loader underwent the most important changes. In the nineteenth century the loader was employed by the coal cutters; in the twentieth century he tended to be a company hand. The task of loading could be arduous—

especially in places where the pillar size entailed shovelling the coal twice to get it out. Very often the boy would now load for his father and pick up the tricks of the trade from him. Once he got to shovelling, a boy would, "if pretty smart, ... get some old miner to help him." Elisha Paul told the Labour Commission in 1888.⁷⁴ In the 1890s and later, the qualifications for mining coal became more and more stringent. A man had to wait at least one year before he advanced to the picks when new legislation requiring such certification was introduced in 1891.⁷⁵

The boys did not become miners through a long process of apprenticeship in the mine. The classic boys' jobs were not intrinsically connected with actual coal mining. But they did serve an equally valuable apprenticeship in solidarity and in grasping the complex of assumptions and values which would stay with them to the end.

3. The Coal Miners: Independence and the Question of Skill

The absence of anything resembling a normal period of apprenticeship for coal miners is one indication that their position cannot be equated with that of the urban craftsmen. Such craftsmen were able to defend their traditional skills by means of long periods of apprenticeship. In this process the subjective values of craftsmanship could be transmitted. (It is another matter to decide what balance was struck between the 'exclusive' and the 'class' components of craft ideology). Coal mining was altogether different, in that the boys within the mine were not preparing to be miners, except in the very general sense of acquiring the 'common sense' of the pit.

There is a naive tendency to view the question of skill as a simple matter of objective taxonomy. A man is skilled, or he is not: certain

'objective' facts (such as the number of movements requiring small-motor muscle co-ordination or a theoretical knowledge) are assumed to provide an adequate explanation of the reason for the classification. The female dressmaker, never considered a skilled artisan in the nineteenth century, presumably needed fewer co-ordinated movements or a less refined knowledge of her art, than the male tailor, who is rarely omitted in any list of the 'skilled workers'.⁷⁶ While it is likely that most 'crafts' depended upon at least some distinctive grasp of a body of knowledge, measurable in objective terms, the possession of such a body of knowledge did not guarantee the creation of a craft, nor did a craft's ability to protect itself in the labour market have any direct or simple relation with the possession of certain skills. We trace the existence of craft to the degree of control employers and workmen could exercise over the labour process, and over the position of the group of workers within the labour market. The process of capital accumulation often brutally exposed the claims of craftsmen to a special mastery of a discipline, and showed, even in the absence of technological advances, that such claims could be overthrown in a free labour market.

These considerations are particularly important in any description of the coal miners. Was the coal miner a skilled worker? The history of coal mining in early Europe is ambiguous. J.U.Nef notes that slaves were the most common laborers in mines in medieval mining and also registers the use of convicts and Christians in Roman mines, but he also notes the thirteenth-century organization at Liege of coal miners into a leading municipal gild.⁷⁷ Historically one could argue that the perception of coal mining varied, from utter contempt for the occupation in the Roman Empire, to the honour and dignity of a gild. The same dichotomy persisted in

the modern industrial period in the United States, where one found coal mines worked by convicts and coal mines universally acknowledged to be centres of skilled workers.

There were three main obstacles to general acceptance of the coal miner as a skilled worker. The first was that the coal miners' skills were highly contextual. Rolande Trempe notes this in her precise analysis of the difficult question of the miners' qualifications. Most of the components of underground work did not require great ability and were acquired rapidly, she notes, but what was less automatic was the knowledge of how precisely to deploy these practices within an overall context.

[F]lorer un trou de miné, entailler une sous-cave, étayer une galerie, ce n'est pas seulement appliquer sa force physique et son adresse, c'est aussi faire preuve d'intelligence... En aucun cas, en effet, ces travailleurs ne peuvent agir comme une force brute, exerçant son énergie aveuglément à l'attaque de la veine ou du roc. Il leur faut tenir compte des variations de pente, des changements qualitatifs de la roche, qui peut être plus ou moins résistante au pic ou à l'explosion... Le bon ouvrier n'est donc pas seulement celui qui manie bien son pic mais celui qui calcule l'emplacement des ses points d'attaque, mesure sa charge d'explosif, apprécie avec justesse la force et le sens de la poussée qui s'exerce sur son boisage..."

These were real capacities that undeniably made one worker able to mine more efficiently than another. Yet, Trempe continues, "La compétence ainsi acquise après de nombreuses années de pratique constitue-t-elle une qualification? Elle n'a de valeur qu'à la mine et n'existe qu'en fonction d'elle; en dehors d'elle elle disparaît."⁷⁸ Royden Harrison makes the same point in a different way, when he notes that the coal miner did not actually produce an article instantly recognisable as a product of skilled labour.⁷⁹ Outside the mine the coal miner's reasonable claim to be considered a skilled worker received scant recognition.

Combined with a somewhat lurid image of coal-mining life, the absence of a distinctive product of skilled labour left the coal miner without a secure position.

Even within the mine the question of skill is complex. The skills of the miner were important in determining the percentage of round coal, the total productivity of the pit, and the quality of the coal raised (judged by the presence of impurities). But their most crucial manifestation was in the coal miner's capacity to survive in the pit: Trempe says of the miners, "S'ils doivent faire preuve d'intelligence et de réflexion dans la conduite de leur travail, une grande capacité d'attention et de l'esprit d'observation leur sont aussi indispensables pour sauvegarder leur sécurité. Autour d'eux tout est menace. Ils doivent être sensibles au moindre bruit, aux odeurs mêmes; être capables de déceler d'un coup d'œil le jeu anormal d'un boisage, l'aspect inhabituel de leur lampe, la résonance inaccoutumée du pic."⁸⁰ Was such caution a "skill"? Surely it was; in the sense of knowing what signs to read, when to sound the alarm, when the roof was about to cave in. But the essential point is that such skill possessed use-value for the miners, but not exchange-value. It was not readily translatable into cash and pertained only to the miners' safety. Even within the mine, then, the coal miner's skills of survival, of inestimable value to himself, were of minimal economic value to his employer. One could be proud of such skills, but they were not useful bargaining counters.

By a certain cruel irony we read most about the skills of Nova Scotia colliers in sharply-worded criticisms in Mines Reports and in inquests. "Most of the casualties [sic] caused by falls of coal and stone were due to the neglect of the persons injured, to set props and sprags or remove blocks of coal and stone known to be loose and unsecured," H.S. Poole

noted severely in 1872. He went on to analyze in harsh terms the various accidents of the year, for example this one from Victoria Colliery:

Edward Winter was a filler in the pit, and on the morning of the 6th September having some spare time on his hands and desirous of learning how to cut coal, went into one of the rooms where Malcolm McNeil and John Carey were at work and asked Carey for a "spell of the pick;" his request being granted he began to work at a block of coal left in the holing. He struck but a few blows before a mass of coal weighing over a ton broke away from the face and falling on him crushed him instantly to death. The seam being highly inclined when the working face is holed and sheared, masses of coal are apt to break off suddenly especially where a "lype" runs through the coal.

The miners were greatly to blame for allowing the inexperienced man to work where he had met his death, Poole concluded.⁸¹ The analysis is founded on the assumption that coal mining is a highly skilled business. But it is a recognition of the collier's skill which tended to emerge most plainly in just this way: in the appraisal of its absence. One might say, with a certain exaggeration, that the most convincing evidence of a collier's skill was his emergence from the pit unscathed. There is the problem. The skills of survival certainly possessed a use-value for their possessor, but they had little value in exchange. They often tended to go against the imperatives of production. The careless shot-firing in Springhill from 1888 to 1891 had a real economic rationale: it would take time and waste money to be careful. The skill--prudence, caution, watchfulness, judgment--was somewhat intangible, difficult for outsiders to grasp. No one has ever written a rhapsody for a well-timbered place in a coal mine, although many mine inspectors and juries have written bitter lines on those which were badly-timbered. The miners' skills were known to be objective and important to the men who had them, but this competence gave them no honour outside the mine.

It was a situation of cognitive dissonance, of radical tension between subjective perception and external observation.

The particular skills of the miner and the dangers of employing inexperienced men were stressed time and again. At Chignecto, where men were hired without many questions asked in the early 1880s, it was said: "Engineers and other mechanics are made slowly; miners are produced in the twinkling of an eye. It is no wonder that accidents are so frequent."⁸² The Springhill News and Advertiser reported that immigrant miners were often very inexperienced, and gave as a recent example an Armenian miner in Springhill who had found his way out of the mine by lighting matches on his way up.⁸³

Third, the coal miner was a vulnerable figure in the labour market. Because many of his skills did not relate directly to production, but more to his own safety, employers had little to lose in employing newcomers. Most probably they lost something (although it would appear to be a subject which cannot be quantitatively studied) through the lower productivity of new employees, but they also gained a great deal by weakening the collective strength of the workers. From the earliest days of Springhill the miners from old mining families had dismissed the qualifications of the "hemlock butchers" or newcomers from agricultural areas.⁸⁴ With time such men would become good miners, but those farmers who flocked to the pit in pursuit of easy money faced a "severe lesson," warned the Trades Journal.⁸⁵ Whether or not the majority of the newcomers adapted to mining, and how long it took them to do so, are open questions. But the essential point is that the miners' abilities within the pit did not protect them from the competition of newcomers to the mines.

Men who made the transition from the lumber camps or farms to the mine would also possess the physical strength required for mining. A description of 1887 of the miner's work underlines the physical challenge of it:

The miner on entering his 'place' in the pit at once divests himself of all clothing, save his nether garment and, what the Scotch national poet would have called, a cutty sark. He evidently means work, and he does work. He makes a start and for eight, nine, or ten hours there is no "let up," but a steady strike and strain and striving till the required boxes are out. The moisture once started is not allowed, at any time, to dry on his skin; he must eat little, and what he does eat must be light, and eaten hurriedly, or he will stiffen during the shift. He may be called upon frequently to exert his utmost strength till his head reels, and the keenest pains dart through his body. After the first hour in the mine, he works in air vitiated with powder smoke, and oil smoke. The air he breathes is mixed with poisonous gasses. He is surrounded by unseen dangers. 86

This description occurs in the midst of a polemic on behalf of the miners' claim for better wages, but it still rings true. The hard physical labour of the coal miner, in the dirt and darkness of the mine, made his job similar to that of labourers in the fields and lumber camps. Lumbermen could draw upon their knowledge of the woods in timbering places within the mine.

There is no easy answer to the question of the miner's skill. The problem really casts doubt on the "skilled/unskilled" dichotomy as a universal key to labour history. The coal miner was a man with one foot planted in the world of the craftsman and the other in the world of the common labourer. What was unique about his position was its surprising advantages, for unlike many small groups of artisans the coal miners had a potential for mass social power, and unlike many labouring groups,

they had a cohesiveness and élan which stemmed from their functional importance and their common traditions.

There is a noticeable difference between memories of mining in the Joggins and Springhill coalfields. One more often encounters outright dismissals of the idea of the miner as a skilled workman in the Joggins. One miner, asked if his father had helped him to gain experience in the mine, laughed and remarked: "It was just a daily routine, mostly all the time. You go down with your picks and your shovels, and dig and load and get as much as you could out and make as much money as you could and that's all there was to it...There wasn't much 'experience' in that."⁸⁷ At the Strathcona Mine, another remembers, the miner had to do everything for himself--it was "really poor coal mining."⁸⁸ Working in the small mines near Chignecto was gruelling. Coal was not undermined but "shot out of the solid," so that the skills of the miner were not as essential. In the one-horse mines workers were responsible for a wide range of jobs, and could put in a 13-hour day. They had little sense of themselves as skilled craftsmen.⁸⁹

There are different memories to be attended to in Springhill. Many factors help account for the greater sense of the skills of the miner: the deep psychological investment in jobs which lasted a lifetime, the much greater stability of the community, a larger population which could sustain a sense of mining as honourable work. The most significant single factor was the banning of powder in 1891. This imposed an altogether different logic on the mines, and gave the traditional Springhill miners a degree of protection in the labour market.

"Some people think that a miner just goes down there and works away," one miner remarked indignantly. "But mining is a profession--or some

word to that effect. Mining is like anything else--it's like carpentry work. You've got to know what to do, you've got to know how to do it... There is skill in it. A lot of people think, 'A dirty old miner, a dirty old miner,' you see? But it's a skillful job."⁹⁰ It is a typical comment, defensive and almost angry, directed (mistakenly) at the assumptions thought to be present in an outsider. Springhillers were rather proud of their distinctive skills, which made the local mines unattractive to outsiders. Even the peculiar safety hazards of No.2 became part of the local mining lore, something which set the men apart from other provincial miners. "There was a lot here who couldn't make their salt," it is proudly remembered:

Q. You need to be pretty skilled to work in this coal? A. Yeah, after the 1891 they wasn't allowed to shoot in Springhill, see.

Q. So that it made it hard for the strikebreakers? A. Yes....See, this coal here, especially in No.2, it run in big lumps, and you couldn't just pick the coal out and get any amount of coal, you see, because you had to know just how to do it. You had to go in behind the lump, you see, you had to maybe work an hour or so, get a little soft place maybe that wide, dig right in till you got to the back of it, like that lump would be maybe five or six feet thick. And when you got to the back of that, you got ten or twelve foot prop, and three or four men would get on to it, and pull on it, and pull it out. You couldn't break that lump in the face, you had to pull it away from the face.⁹¹

This was a method of mining different than other places: in some ways it resembled drawing pillar, the most skilled and most dangerous of the traditional work of the miner.⁹² It required a knack, gained only through experience. Once the mine started 'bumping' miners learned how to make the bumps work for them by estimating how best to attack the seam. No.2 mine preserved the hand-pick technology and the individual judgement

of craft mining, even although this preservation took place in a highly unusual setting. There was also more emphasis in Springhill on sorting out stone from the coal. There was a body of opinion that claimed that a certain amount of stone was bound to be mixed with the coal, but other miners (and the company of course) claimed that a careful miner could, by working the seam in the right way, remove the local stone without getting the coal mixed up with it.⁹³

In Springhill, and the larger mines of the Joggins coalfield, the coal miners had a strong sense of their independence. In the absence of direct supervision (impossible in this environment) the miner took on responsibility for many decisions: one of the more frequent complaints to be found in the union minutes is the difficulty of obtaining the presence of an overman when one was needed. You were "pretty much your own boss in the pit," it is said.⁹⁴ Miners in charge of their own place developed a strong proprietorial interest in it. They expected to have the place reserved for them in the event of illness.⁹⁵ In some respects the traditional bord-and-pillar mine resembled a series of independent workplaces, run by two miners and possibly a loader, who themselves looked after the day-to-day running of their place.⁹⁶ Places were named after the men who worked in them by the miners. The working arrangements in the mine made possible a psychology of independence. The frequent interruptions in work and the general inefficiency of the mines--the consequence, as we know, of the many functions which it had to integrate--had the result of giving workers the time and opportunity to talk together, and 'pit talk,' here and elsewhere, helped the miners to form a collective outlook. Thus when we speak of independence we mean both an individual independence--the miner taking on responsibility for his own workplace--and a collective independence, the freedom of the workers to

discuss things together. The coal miner, wrote Andrew Roy in an article reprinted in the Trades Journal, was "in a sense his own boss, and when cars are scarce and work slack during working hours, he spends much of his idle time with his fellows in the mine. At these social gatherings, the question of wages and every possible grievance of the miner is discussed from one standpoint only, and he has become in consequence the best special pleader in the world. Every person who fails to view the matter in the same light that he does, is regarded as an enemy of workingmen--as a mere tool of the mine operator."⁹⁷ "As sea toilers when engaged at their work are shut out from sight of land, and its boundless freedom, so miners are, when at their work, shut out from the light of day, from the sunlight, from the freedom of surface life. Ever groping in semi-darkness, guided in their getting about by artificial light, they become canny, suspicious of hidden danger, ever on the defensive, and it is but natural that in a measure it stamps itself upon their demeanor, above as well as below ground," agreed a correspondent of the Halifax Herald in 1921.⁹⁸

But it is essential to avoid a crude stereotype of miners which underlies many such discussions. The emphasis on the 'balkiness,' suspiciousness, canniness of the miner's character bear the obvious imprint of ideology. The insistence on 'isolation' as a factor in creating this distinctive mentality misses the fact that other workers, working in similarly isolated circumstances, did not develop such traditions. It was the particular nature of this 'isolation' that must be noticed. Isolation from the management permitted comradeship among the men. The most isolating of workplaces was paradoxically one of the most collective. Moreover, the multiplicity of distinct functions which the coal mine

necessarily integrated allowed a heterogeneous workforce to be simultaneously a deeply unified one. So many broad generalizations about the character of the miners--miners separated by wide cultural gaps in any case--may be brought back to this complex diversity within unity, which gave the miner the capacity to resist, to defend his own interests. The mining environment multiplied the grievances of the workers, it gave these grievances a peculiarly intractable character, but at the same time it created the massed force which could see these grievances removed and gave this force of the workers an equally singular power. In the absence of a technological revolution in mining, the miners know as much about their workplace as their bosses. They knew the places in greater detail than the overmen. This knowledge was of course biased in their own interests, just as the knowledge of the officials was prejudiced in favour of the company. But it was factual knowledge nonetheless. These coal mines stood at the opposite pole to the completely automated workplace today, where the 'logic' of the operation is imbedded within the machinery itself: here the workers knew their workplace intimately because its very survival depended upon their judgment.

To cite just one illustration of this practical knowledge: in 1895 the miners of Joggins were involved in a dispute over wages with their manager. It was the type of issue which proliferated in the mine, where conditions varied so markedly: the question of whether a place deserved better rates because of the inherent difficulties of producing coal from it.

The Manager Allowed the Men, were making a good average wage, and, He would shut the Mine down before he would pay any more. Committee Examined the Places and found Clay in Top Board East 2'1" and 3' feet, further down the Balance. the

Average thickness of Clay through the entire Balance 2'5". And the Average Coal in the Balance 3'8"... The Check Wayman brought in a report as to the number of Boxes sent from East Balance and the Average per Place for the proceeding [preceding] three Days was Five and a third 5 1/3 Boxes per Day

The members of Holdfast Lodge in Joggins resolved to demand 70c per box in these places. What is so arresting about this case is the practical knowledge the workers could bring to bear upon it. It is by no means exceptional.⁹⁹

This working-class competence was the result of the partial nature of the technical revolution in coal mining. Because of the evolutionary and gradual character of this development, workers were able to build traditions of autonomy. To adopt the metaphor of Richard Edwards, the coal mine was indeed a 'contested terrain,' but the struggle was extremely protracted and the results unclear. The miners' independence was asserted over and over again. It took the form of the autonomous invention of new ways of doing things: one miner invented an entirely new method of chute loading using abandoned pipes in the mine.¹⁰⁰ Skills were picked up informally: one miner acquired a specialized skill in splicing mine ropes on his own, the 'education' for a subsequent job as a rope inspector.¹⁰¹ The miners were often keen to assert their right to leave the mine whenever they chose, once their day's work was done--although this particular custom was questioned by management.¹⁰² The coal miners of Nos. 6 and 7 mines in Springhill dictated how long the bankhead staff would work: only when the miners got the amount of coal out that they wanted would the datal men (men paid a daily wage by the company) be allowed to go home.¹⁰³ The custom of leaving work was prevalent in parts of the Joggins coalfield as well, although it does not appear to have had quite the same hold.¹⁰⁴

As the mines went deeper, it became easier for management to exert a stricter control over miners leaving the pit. The tradition of independence took the form of poetry about the workplace, deprecating this or that individual, or commenting on the mining life. It was a powerful legacy. The imposition of longwall changed the context of coal mining, but it did not undermine in a radical fashion the tradition of independence.

This tradition was one which permeated a working-class perspective. It was easily drawn upon by radical opponents of autocracy in the mines. But it was not, by itself, either specifically working-class or radical. It cannot be considered working-class in and of itself, for managers and overmen might well be influenced by it. The management of the coal mines was increasingly drawn from the mine itself; it was well-known that the best way to become an official in Springhill was to be active in the union. Such men did not abandon their old habits of thought overnight. They would not insist upon rigid hierarchies and unyielding rules, except in questions of safety, and they retained a style of dealing with men that was direct but unpretentious. One rarely addressed the boss as "Mr." in the mine. Nor was this tradition of independence necessarily a radical one. A management which accepted this degree of autonomy and tried to live with it would not be troubled with industrial discontent, provided wage levels were maintained as well. The path taken by various collieries in Pictou is suggestive of just this sort of long-term accommodation. By itself the tradition of independence did not entail a challenge to management. It became one only if there was a concerted attempt to transform the way coal was mined. Only under duress would this tradition become a radical one.

The heart of the tradition of 'independence' lay with the coal miners, and they enjoyed a commensurate status. In the records of the union one finds many cases which reveal the leading role taken by the coal miners, and certain indications that tensions existed among the various groups in the mine and between the men of the surface and those of the underground.¹⁰⁵ But it would be a grave exaggeration to make this favoured position of the coal miners into something analogous to craft exclusivism. The objective structures of the mine did not favour the growth of such a mentality, because they gave to each group of workers the power to shut the mine down. They forced workers to be collective in their outlook. Miners who were unpleasant to drivers might find themselves without their fair share of the coal cars. These objective realities became embodied in an ethic of egalitarian solidarity. Miners defended the rights of other workers and fought on their behalf. On at least one occasion they turned down wage gains for themselves in order to give them to the less advantaged datal employees. On the surface, machinists and other craftsmen existed in the larger mines who too might have formed an exclusive elite, but they did not do so. There were practical considerations to bear in mind. Because many mining families had members employed at various jobs in the pit, the economic interests of the coal miner was often identical with those of his son, the cage-runner: both contributed to the family income. One must also remember the life-cycle of mining work. Once one grew too old to keep on mining (for some men this point was reached by the age of 60, for others much earlier because of accidents) one could gracefully retire to an easier job on the surface. Close to 10% of the employees of the Cumberland Railway and Coal Company were older than 50 in 1908.¹⁰⁶ Provided one escaped death in the pit, one had every

prospect of ending one's working days in a surface job--or even doing some of the work normally done by boys. Consequently one had a vested interest in improving standards for such jobs and making sure they were maintained. Miners knew they were not going to mine coal indefinitely. These objective facts were embodied within (and consequently concealed by) the mining habitus, by the deep structures of solidarity which defined the miners' outlook. It is unrealistic to imagine that individuals in this context made an objective appraisal of their interests on the many occasions they were required to behave in an 'altruistic' fashion. There was a deeply implanted mechanism which guided practical decisions in such matters, which only in retrospect and at one remove from the situation is revealed to be a functional adaptation to the mining environment.

The work of the miner was physically demanding. It was stressful. Some men could not adapt to it and demanded other kinds of work. Others found this work almost pleasurable. The farmers who took it up rejoiced in the absence of the harsh sun, and many men enjoyed the physical energy released in such hard labour and the camaraderie of the mine. They might well be attitudes which flourish once the practical possibility of returning to the mine has vanished, but they are held by men who have the badly injured hands and the bad lungs that come from a long mining life. It was hard to wean men away from the mines. Once they had been deeply socialized as youths in the pit, the lessons were hard to forget. Those who went on to factory jobs would marvel at the divisiveness of the factory world:

"Everybody was pulling agin' each other," remarks one miner who tried it. ¹⁰⁷ They would miss the jocular atmosphere of the pit, and the familiarity with fellow workers. Once a nickname was applied to a man, it would stick for life. "I never had any regrets about working in the pit, never had any regrets about it. The pit was a good place to work. Nobody bothered you

a hell of a lot. You done your work and then...that's just about all there was to it. You had lots of fun sometimes--talking, joking, everything."¹⁰⁸ They missed the friendship with their butties--such working relationships could go on for over ten years, and many men who worked together in the pit became close friends. The miners love stories of men who, despite passionate political prejudices on the surface, formed close bonds underground. Many of these stories are probably true. Some explain this deep attachment to mining in terms of some sort of racial inheritance. "It's in the blood," explains one woman whose husband was lost in the latest disaster.¹⁰⁹ This way of looking at it is a popular acknowledgement of the depth and tenacity of the mentality we have been describing, a way of explaining the enduring attraction of coal mining which seemed to confound all rational calculation. Faced with this tradition, shallow analysis comes up with 'isolation', 'the absence of alternatives,' 'no education.' Miners are advised to move away, to try another line of work. Such appraisals miss the true nature of the problem. Miners, in a unique and unlikely historical conjuncture, had been given the opportunity to humanize a workplace, to raise the possibility of freedom in the dark dominion of necessity. They had created a supportive tradition, they had built an industrial community where what a man did would be remembered, where he would have his closest friends. Who would willingly trade such a rich experience of solidarity for the impersonal, powerless life of the factory worker?

This is why the miners would hang on so long to their jobs, even though the industry seemed close to collapse and the mines grew more and more dangerous each year.

It was not the same in every mine. This intense loyalty is most clearly expressed in Springhill. The large mines of Springhill were

well-equipped: twentieth-century miners had washhouses, riding rakes, a durably installed union. There were few problems (after 1891) with ventilation, and the mines were not particularly wet. In most parts of the mine there was ample working room. Most miners consider the Springhill mines to have been model mines; some are lyrical in their praise. If only the bumps had not killed so many men....

The situation in the Joggins coalfield is quite different. Here it is not uncommon to find men who have worked for ten different companies, over a period of 25 years. Men moved from mine to mine; odd as it may appear, these small rural mines were less able to sustain the weight of a tradition, simply because of the extraordinary mobility of local labour. The miners were increasingly drawn from the rural milieu, which also meant that those who worked in 1920 might not have had much idea of the traditions of the coalfield.

But beyond this, the coal mines of this district were far worse to work in. The thin seams completely transform the job of mining coal. A miner recalls one night he was crawling down but found himself stuck. He reached up and slid down on his side. The space was too thin to allow him to go down on his side. He finally slid down on his back and bumped his nose on the roof of the mine. It is with a certain understatement that he concludes, "That's a little too thin."¹¹⁰ Getting from one level to another in a River Hebert mine is a question of sliding and slithering—there is not enough room to crawl. The miners tell the story of the collier who came to River Hebert and was aghast at such conditions. "God gave me two feet," he is said to have exclaimed, "and he didn't mean for me to work on my knees."¹¹¹

Working in such confining conditions was a difficulty, but many men in the district report getting used to it. What was worse was the wetness of many of the mines. When the Green Crow mine was opened men would work in puddles of water; they would lie down in the water and let it run over them while they cut coal. Descriptions of this work make it sound like some of the most degrading work ever performed by coal miners: "You was wet. The water would freeze on the machines. You'd lie right in the water--you'd be cutting and the water would run right over you. You had to sit home about half an hour before you got your shoelaces off--they were frozen right solid."¹¹² Another remembers the feeling in his legs: two sticks rubbing together, because the wet overalls had long since frozen solid in the bitter cold. He offers the typically understated judgment that the mine probably did not live up to the Coal Mines Regulation Act.¹¹³ The verdict of another is a trifle less cautious: the Green Crow was "deep and wet and hateful."¹¹⁴

Many other mines were wet, if not quite this dreadful. There were no wash-houses in this district. Men would have to walk home--often for miles, for this was a district of dispersed settlement--in their wet pit clothes, shivering in the winter wind. The standards were lower in almost every respect--wages, hours, safety. Men report working two consecutive shifts on a regular basis, 16 hours a day, in some surface jobs.¹¹⁵ The standards were all taken from the lumber camps: the employers had not been brought up in the mining environment. Miners were not allowed to go home early once the day's work was finished, and they were expected to do a lot of things for themselves. "You had to load the coals and push the cars yourself--it wasn't too pleasant, either....I wouldn't say it was too much of a mine," remarks one miner of Strathcona.¹¹⁶

The many bootleg pits of the Joggins coalfield would resemble Strathcona in the meagre facilities and the demands placed upon the miner, but the absence of normal structures of authority made the atmosphere at such pits quite different. These illegal mines were rarely harassed by the authorities. In the twentieth century the miners were forewarned of visits by the deputy mine inspector, who invariably noted in his report that the mine was not working when he visited it. Men in charge of the mine would obtain a slip for a load of coal from a recognized mine, and change the date on this one slip every day. Nobody was paid a wage: whatever proceeds a group of men received for their coal would be split evenly among them. Closely related, although legally distinct, were the very small pits run by men on a legitimate basis, such as the "Toad" mine in the 1920s. This mine employed eight men, and used a horse-gin: 30 tons of coal would be produced for local markets every day. Although one man was legally the proprietor of the mine, he would not consider himself to be the boss. Such mines would resemble an enterprise of fishing co-adventurers, with the interesting distinction that while in fishing the co-adventurers were increasingly class-divided, here they were truly working on the basis of an equal sharing of benefits and risks. 117

Even in this strange coalfield, with its recurrent reproduction of pre-capitalist mining and the extremely arduous nature of much of its mining work, one can detect the emergence of a distinctive outlook on the part of coal miners. It has different contours and a different history than the mentality of Springhill. Shifting from mine to mine, many of them extremely oppressive and some of them operated on a petty commodity basis, the miners' outlook was less easily distinguished from that of the lumberman or the farmer. As the coalfield underwent its strange mutation

from monopoly capital to petty commodity production, the mentality of the miners became less and less distinct. But it did not disappear. Even men who went through the horrible experience of the Green Crow express, regret at the end of the days of coal mining. "A tough job," in the words of one, "but you get to miss it after awhile."¹¹⁸

4. The Realm of Uncertainty

The fundamental attitudes of the coal miners were not only shaped by the experience of work. They were moulded too by the prospect of death and the climate of uncertainty this engendered. The coal miner was by definition a man who worked with a sword hanging over his head, and this had profound consequences for his mentality. The presence of death in the pit created an even more intense experience of solidarity for workers, who realized that the accident which had claimed one worker could have just have easily taken themselves. It has been argued that the process of dying was gradually privatized in bourgeois society, so that most people have no direct access to it.¹¹⁹ Death in the pit was a different matter. It was more akin to death in war, in its inevitability and its collective nature. Death unified the men and concentrated their energies. It invested with a new seriousness the questions of control over production.

Death arrived in so many ways in the mine. Falls of stone and coal, which claimed 53 men and boys in this period, could kill very rapidly and without warning. It would all be over so quickly that one's fellow workers might not even realize it had happened. This was the way William Harroun died in 1895, as described by his fellow workers at the inquest:

I was working in No. 2 shute of the 1900 level west side on Saturday the 26th day of January in a bord on the West side. We started a cut that morning, or in other words, the shift

before us started it, we were driving up what is called to the lodgment, the roof was bad at that place, when we left off the day before we had got to a hard place, on the 26th the roof seemed to be better, as near as I could tell we were about 3 feet as near being up with the cut as the day before, and we had about 3 feet of a fall, the roof seemed to be hard and sound, when I was working I said to deceased I would go down and shovel the loose coal over that was at the foot of the bench. I just stepped off the plank I was working on, I had just stepped down about 10 or 15 feet, but before I got to where the shovel was, the stone fell, I then looked around to where deceased had been working and I thought I saw him fall. I said to the others who were working with us, "Did Bill get out"? one said "he is under the stone". I went to go into the corner where deceased had been working but James Harroun was there first, who said, "My God he is dead", we took hold of him to pull him out but his right foot was caught, Wilson and I took hold of him and James Harroun dug out under deceased's foot, and we then pulled him out. ¹²⁰

I was filling coal right below him and was looking up all the time for fear lumps of coal would roll down and hurt me. I saw the deceased straighten up and look as if he was looking towards the open end, just then I saw the stone drop, it fell from the open end first and came across the face to where he the deceased was standing. ¹²¹

Although Harroun did not die until some hours had passed, he never regained consciousness.

It was a good example of the sudden, somewhat inexplicable accident of a type common in the mine. Could anything have been done to avert it? Thomas Pigott thought not: he judged the timbering in the place (which he inspected on behalf of the union) to be adequate, with the exception of one prop which had been knocked out. ¹²² Many deaths in the mine, in particular those caused by falls, were difficult to blame on anyone or anything. They resulted from the structure of mining practices--in this case, the dangers inherent in drawing pillar.

The death of Natale Gualtieri on 16 January, 1895, which we have already cited as an example of the circumspect manner in which suggestions were made in the pit, also shows how complex the question of causation could be. His death was very sudden. Gualtieri's partner Joseph Austello testified at the inquest that the stone had fallen ten minutes after they had started working; there was no warning, "the roof was quiet and the fall came just in a minute, deceased had not time to say anything to me other than to call out 'Joe'." The jury ruled that Gualtieri had come to his death "accidentally and by misfortune...and not otherwise."¹²³ William Maddin, the deputy inspector of mines for Cumberland, argued in a different manner in a private letter to his chief, Edwin Gilpin:

...the time has now come when the mode of working at that depth [2600 feet] with the pressure they now have, requires remodelling, especially the bottom coal where the roof is [chiefly] fireclay ...I am of opinion that deceased came to his death by pure accident as the piece of roof that killed him was liberated by a lipe which was hidden a few inches in the low side rib, and could not be detected until the roof fell. The coal is only 3 ft 6 or 8 inches thick and it is impossible to use booms while taking the Coal out in boxes unless they would strip the roof, which would be very expensive. Consequently those places are timbered with props and caps. It is a fireclay roof and the pressure is very great so you can see why I say it is time that the system of working should be changed.

It was an ambiguous argument. Legally the company bore no responsibility. But at the level of structural analysis it seemed evident that the system of timbering was at fault. Such criticisms were rarely made public by the Department of Mines.

Death in the mine through fall of coal often came swiftly and without warning. If one had to die in the mine it was best to die this way. It was the sort of fatality which impressed everyone with its suddenness and

unpredictability. In 1906, the Herald published striking first-person testimony from Joggins which dramatized the speed at which a comrade was wiped off the earth. Ira Ripley left for work at 4 p.m. and returned at 10:30 p.m. as a corpse into his own house. His butty, who happened to be his brother, captured the suddenness of his death:

I was cutting and Ira was shovelling. He remarked to me that he was tired. He had to walk a step or two in shovelling the coal. "Looking up he saw that there was one corner which needed cutting to square up the "face" and he said: "I will square up that corner if you will go and get an auger." I was on the point of saying "I will finish this and you go and get it, when I remembered that it would be easier on his legs if he finished it, and I went for the auger. Coming back I heard the other men talking but did not hear Ira's voice. I knew he would be talking if he was there, for he was always cheerful. Going up to the place I saw his lamp but could not see him. I looked around the prop and saw his legs and hips, then I saw the piece of "top coal," on his head and breast. When I turned the coal off him I saw he was dead. The piece of coal had fallen and struck him on the head, making a terrible gash above the right temple, and crushing the bridge of the nose flat. There was a great cut under the chin. One would hardly recognize the man if they were to look upon the face. The man who worked next to him did not know anything about the accident until his "butty" came back, though only twenty-five feet away.

It was the kind of death which strengthened a belief in blind fate. So did miraculous escapes from such falls. Harry Cottingen, a miner at Springhill, was working with his partner on the night shift. Cottingen was partly stooping, shovelling out the cut down coal, when an immense jagged rock, weighing 400 pounds, suddenly crushed through the thin coal in which it had been concealed. It slid down the miner's half-bent body and crushed him to the loose coal. The miner suffered broken ribs, his companion escaped unharmed.¹²⁶ It seemed to defy all logic. Concealed by the seams themselves, large rocks would tumble down: if one concentrated

very hard, one might hear the "working" of the roof, but in a mechanized mine there was no way of hearing the sound. In the River Hebert mines, workers were threatened by the trunks of fossilized trees which could come plummeting down to the floor of the mine.¹²⁷ Apart from improving the quality of timber and exercising as much care as possible, there was little the coal miner could do to avoid a fall of roof. Striking down the cautious and the incautious, without warning and with terrible speed, the falls of roof seemed to stress the collective fate of the miners.

The mine was a small transportation system, and consequently combined with all the perils of an underground environment the hazards associated with nineteenth-century railways. Trips would come cascading down the slope, killing workmen caught in their path; workers who wandered into the wrong passage would be smashed by the ballast box. Although legislation providing for man-places within the mine helped to some extent--by giving workers a chance to get to the space before the coal car hit them--it was too expensive either to design a haulage system which provided for a continuous walking space beside the tracks; or build a signalling system which would have instructed workers when it was safe to use various roads.¹²⁸ Consequently the individual deaths have to be interpreted in light of the underlying structure of mining which implicitly stressed production over safety.

The deaths resulting from the workings of the transportation system resembled and differed from those caused by fall of roof. They tended to be swift and without warning, but in contrast with other accidents they could give rise to very specific charges against company practices. Death from roof falls, related at the structural level to the quality of timber, was rarely directly attributable to it: the train of causation was at best

a probable one. But in the case of accidents caused by a frayed mine rope or a faulty car coupling, the responsibility could be placed with greater assurance upon the shoulders of management.

The death of Robert Bigney in the East Slope at Springhill suggests the sort of questions which this kind of accident raised. Bigney was 18 years old, the sole support of a widowed mother, when he died in 1881. He was employed as a cage-runner. While running boxes on the cage, one of the wire ropes to which the ballast box was attached suddenly snapped, throwing Bigney onto the track of the ballast box. Death was instantaneous.¹²⁹ At the inquest the deputy shiftman, Roderick McPherson, testified that he had not inspected the rope on that day, and in fact he was off work. McPherson had received no training in how to examine the rope, but he knew enough to know that the rope in question was not new and was in fact "worn a good deal in some places." The company had not sent a man to examine ropes when McPherson was off, because it had no available substitute. The jury concluded that while the death could be termed accidental, "we find that the said rope has not been inspected according to the rules and regulations made and prescribed by law."¹³⁰ No charges were ever brought against the company because of this incident. No questions were asked about the value of this mode of loading, which placed young workers at heavy risk, working with boxes and brakes of uncertain strength.¹³¹

The death of Amos White, 14, a point-tender on the main slope of the Phenix Coal Company, Joggins, raised equally difficult questions about responsibility and safety. The coroner's jury ruled that the boy had come to his death on the night of 5 November 1889 by accident and no blame could be attached to anyone. Only after this verdict was reached did

controversy begin about the real nature of his death. Gaspard Hebard, noting that the boy was the "principal sustainer for his Poor and Old widowed mother," and also anxious to recover some damages for himself as guardian, wrote to the department of mines charging that the company had been careless in its operations. The boy had been killed by run-away boxes in the main slope, at a particular place called the Horse Shoe Bend, where his duty was to turn the switch from the main track of the slope into a side track. Hebard charged that the bankhead staff had been unable to see the rope and judge whether or not it was safe:

On that same night there were no lights on Bank head, only the small ordinry [ordinary] lights used by miners held in there Caps, and often the wind blew them out, thereby leaving the Chain man in doubt whither the rope was safe or not. Likewise the foreman The principal man man [sic] on Bank head was not examined time of inquest; Also Four men were sent to repair the place where boy was killed and the rope was reshakled before the Jewry arrived on Bank Head. Enoch Hill, Head Machinist, said, That He did not examine rope since Sunday before the accident-- The Underground Manager (Mr Burk) made oath,--That the rope was good for Three months, And that same Rope had to be repaired or reshakled Three times since on 9th, 15th and 21st Nov^r and lastly had to be replaced by a new one.¹³²

Not neutral testimony by any stretch of the imagination--but not to be lightly dismissed either, given the company's own admission that the Mines Regulation Act was not rigorously enforced. The charge is given additional weight by a similar case at the Joggins three years later, in which the coroner's jury returned the verdict that a coal miner "met his death" by the breaking of a bad rope, owing to error of judgment in using same, but attach no blame to any person or persons."¹³³ It was a strange verdict, although judgments like it were common enough in the coalfields.

Everywhere the problem of coal cars could be found. In Maccan, the underground manager and his coal cutter were both crushed when a car,

loaded with coal, broke away from its chain and ran back, forcing them beneath its wheels.¹³⁴ Workers on occasion would ride up on full coal cars running the risk, sometimes unsuccessfully, of being crushed against the roof.¹³⁵ Doubts were expressed about the safety of more conventional ways of going to and from work. Workers took a strong interest in the positions of various men in the riding rake, and demanded that the companies take their picks down for them. Henry Swift, normally not disposed to take his workers' point of view, thought the miners had a point: the transportation system created unusual dangers when it involved bringing men down with picks.

There is Considerable Confusion in a morning at the riding rakes with the Men and their picks and drills there is a box attached to the riding rakes to put the picks in and drills this box being in the front end does not Come over the bank head and consequently men have to walk a little distance down the slope to put their picks in the box and to avoid this they pass the tools over one another heads and some of them take the picks in the seats with themselves should the Rideing rakes go off [f] the track there is a liability of them sticking the picks in one another altogheter it is a dangerous practice¹³⁶

How much more dangerous was the business of going to work in Chignecto, where one was required to carry one's pick down a far steeper slope than Springhill's. The press discussed a strike on this issue in 1904 as an example of the frivolous reasons men could find for going on strike; it actually demonstrated a prudent regard for safety.¹³⁷

Everywhere derailments threatened men and production,¹³⁸ everywhere men were confronted with the intractable (and not fully understood) problem of metal fatigue. A small miscalculation could spell death. The communication system by which the engine-men decided whether to hoist men or not was rudimentary, and could easily create dangerous situations.

William Maddin described one accident at Springhill that was caused by the engineman looking for a second in the wrong direction:

In reference to Scott Killam death it was this way himself And 3 or 4 More Men was At No 7 Station And the cage was at the bottom of the pit, one hundred feet below And they rapped the cage to No 7 Station the cage came And posed [paused] for A Moment or So and Killam jumped on As he jumped instead of the cage ldeing [lowering] back on the caps it Started up And Killam was caught Against the top, one of the Men with him roped [signalled] hold the cage, Stoped And he fell back to the bottom of pit Some hundred feet

The Engine Man says that as the cage was near No 7 Station A Man in the Engine House Spoke to him and he turned to hear what the man Said And let the cage go to [o] far pass the Station An he thought he would go on to the next Station

Now I would Say there Should be indicators on thos Engins So that the Enginman would have Sufisent notice Approaching Stations

The engineman was to blame; thought Maddin, because he had not followed normal procedure in starting up the engine after he passed the station. ¹³⁹

Maddin urged the company to install signalling wires and rappers in all the balances, as all the other major collieries had done. The company did not readily comply, for Swift may be found writing to Cowans on the matter the following year, noting that if the company troubled to install one or two such warning devices, any jury investigating an accident would concede that they had at least shown a spirit of intention to comply with the law. ¹⁴⁰ There is incontrovertible evidence, in other words, of the company breaking the law and getting off with a warning, on a question which was of urgent importance to the men.

Surface accidents abounded. At Springhill the company was explicitly criticised by a coroner's jury for its carelessness when scaffolding

collapsed beneath a worker building a new bankhouse.¹⁴¹ (The first death at Springhill was in fact related to construction and not to mining). The surface had all the dangers of a construction site and rail-yard. Many of the bankheads were not equipped with a lighting system, and men would find themselves in the way of locomotives and coal cars.

Of all the ways one could meet death in the mine, mine explosions loom largest in our minds. As the statistics of the previous chapter indicated, this is something of a mistake, since less than half of the mining fatalities were caused in this way. Death in explosions is difficult to describe generally, ranging from the slow poisoning of the after-damp to the swift death in falling stone and mine timber. It was a mining peril which emphasized the unity of everyone who worked underground, for gas killed indiscriminately.

It is difficult to determine where the burden of responsibility lay in the case of the problem of gas in the Cumberland mines. Swift's letters, which take the reader right up to the very morrow of the disaster, reveal a persistent effort to control gas. On 23 December 1889: "Went down to No. 5 Slope and through all working places found them in very good Condition Counter Level West giveing of [f] Gas heavily and Cautioned men to be Carefull Found all slow lights of Safty lamps down the Mine..."¹⁴³ The imposition of safety lamps was a wise precaution. Similarly when Swift discovered in the East Slope conditions which were very dry and dusty, he observed,

I am not much afraid of any danger from dust when the Ventilation is allright and no laying gas around it is when gas is ignited and dust is present it is a tendency to aggravate or make any explosion worse than it would be Instructed Overman Conway some time ago to have barrels placed different points and Kept filled with water and powder Kegs to be kept on hand ready for any emergency

Swift was appalled when working conditions deteriorated and gas accumulated; when a miner inadvertently destroyed the effectiveness of the ventilation system by failing to replace a board, causing a heavy build-up of gas, Swift noted angrily that "Had the Gas Got ignited it would have blown down this skipping board destroyed all the evidence of the Real cause and would have been attributed to some mysterious freak in nature or Coal dust".¹⁴⁴ Swift was quite willing to impose closed lights in the pit, even though miners complained vociferously about the reduction in their earning power, caused by the reduction in visibility.¹⁴⁵

The evidence does not suggest that Swift was responsible for the explosion of 1891. His letters reveal to us a man who was conscientious and determined to preserve the safety of his mine. The decision of the jury examining the evidence in this case was to exonerate the company.¹⁴⁶ Just before the explosion Swift had made a presentation of several volumes to the library maintained by Pioneer Lodge: among them was Edward Hermon's Prevention of Explosions and Accidents in Coal Mines.¹⁴⁷

But like so many other questions raised by death in the mines, the question of responsibility for the Explosion of 1891 was not really settled by the inquest which followed. The records of the Department of Mines reveal a more complex picture. In 1889 a minor accident was reported in a Springhill pit: the men had neglected to examine the place for gas and two were slightly burned in the East Slope.¹⁴⁸ A man was burned as he passed a gassy place with his lamp on his cap: it was on the Main Slope, which had never before been troublesome even though men had been passing by the place every day.¹⁴⁹ Maddin, in his blunt manner and coarse English, diagnosed a serious problem in Springhill in 1889, remarking on a third case of burning in Springhill, in a place which the fire-boss had

pronounced clear of gas:

Now there is some one wrong in this case. And this is the third case of burning. And no place to draw a line. Has the Men rite to examine there place, Any place, A man gets burnt by gas there might be gas enough to cause an Explosion that would destroy life. And property.

The mine was not that gassy and the law was being complied with, but Maddin predicted that there would be an explosion if greater care was not taken. 150

From Swift's letters we also know that fired-out-shots--shots which sent a long flame into the air--were reasonably common. He disciplined workers for firing a shot without the presence of a fireman on 30 December 1890. 151 He responded to reports of flashing shots on 28 October 1890:

I have been thinking of what Joseph Maddison said Yesterday and looking at his Report last Evening regarding the flashes

Judging from the report One would be led to believe there had been something rather serious. I don't think much of a flash from a shot if no laying gas around or dust around. 152

But on the basis of the evidence in his letters, it appears that the requirement that places be tested before shots were fired was disregarded. The explosion, on the best evidence available, was caused by the gas and dust in the mine being ignited by a defective shot. If the circumstances seemed unusual and, given Swift's preoccupation with safety, highly unfair, it must be said that no explosion could have occurred without a shot being authorized in an explosive setting. The explosion would have been averted had powder not been used in the mine as soon as gas was noted in it: the law of 1891, resulting from the explosion, was a legislative acknowledgement that the conditions had been lax.

The responsibility for the Explosion did not lie with one man, but with the structure which made it impossible to respond to safety problems in a way which jeopardized profits.

This working environment was always poised on the very edge of catastrophe: everyone inside the mine ran the risk of dying, and dying in a collective way. The miscalculation of one could easily become the downfall of all. Alarm could sweep the mine in a wave of fear, overcoming the miners' stoical attitude towards danger. A small boy set off a general panic in the West Slope by mistaking the smoke of lime for damp: he emptied the mine by raising the cry of explosion.¹⁵³ Such fears were anything but irrational. In the mines of Springhill after the explosion, higher levels of gas were tolerated because powder was no longer used in the pit and locked safety lamps were used. According to at least some workers, bratticemen were under orders to keep the accumulation of gas in the mine secret. Although William Maddin blamed fault-finders anxious to discredit the management for the fears of the men, an investigation instigated by Pioneer Lodge led Edwin Gilpin to the conclusion that the company had violated the law on questions of gas. Gilpin's comments in 1892 on the chronic problem of gas at Springhill were a model of the circumlocutions favoured by the department of mines. There was clear evidence that the company had broken the law, as Gilpin acknowledged:

I consider that Ferguson [the company official] should not have removed totally the brattice in the third head, unless there was some special necessity for his departing from the general rule of the pit, and that he committed an error in judgement in doing so, as there did not appear to have been any necessity for doing so.

I would also draw attention to the fact that the place did not appear to have been visited by an official of the pit during the day, as intended by the Act.

But he did not believe there was sufficient grounds for the prosecution of the management, as one could reasonably infer that "some cause outside the working itself may have unavoidably led to the accumulation of Gas and the alteration in the system of working was made so far as the evidence shows by the overman without permission from the Underground Manager."¹⁵⁴ In other words, so long as the problem of gas could be shown to be the unintended consequence of the underground manager's decision, rather than its direct consequence, the law should not apply. It was a strange doctrine to espouse if one were actually determined to make the mines safe working places, but consistent with a determination on the part of the state to protect its revenue and property. Faced with mine explosions which would damage its property and future monies, the state intervened dramatically; but the little mundane difficulties--even the day-to-day run of fatalities--never aroused the state to make the Mines Regulation Act effective. No mine manager ever went to jail for violating the mine law in Cumberland County, although violations of the law--judging by the records of the Department of Mines--were commonplace.

The uneven approach of the Department of Mines became even more clear in the case of the small mines of the Joggins field. Chignecto had been a troublesome mine since its beginnings: the coal was prone to spontaneous combustion and the mines were extremely gassy. Two boys were injured in a small explosion in 1905, and A.V. Cameron, the deputy inspector, urged the adoption of safety lamps.¹⁵⁵ As conditions at Chignecto worsened James Baird (the former manager of the colliery) called for a government enquiry. He criticised the response to an explosion in the mine which killed the mine examiner and his helper as they made their rounds in the early morning. The coroner's jury had ruled that there had been no gas:

they returned a verdict that the lights carried by the examiner and his boy were the cause of the explosion. But if that was so, Baird reasoned, then there must have been gas in the mine to set the explosion off--and how else could one explain the telltale signs of death by afterdamp? He had been promised a commission of inquiry into the dangers of mining in Cumberland County, but the government had merely sent one man to Chignecto for two hours to learn the company's side of the story. If there was no enduring danger, why had the government ordered safety lamps put into the mines?¹⁵⁶ "If an unknown force--not gas, mind you, can create such havoc once, why may it not again? If it can destroy wholesale in one mine in the district, why not in another?" a correspondent of the Herald wondered.¹⁵⁷

These questions raised the spectre of a general investigation into the quality of mine inspection. Coal-mine laws were routinely disobeyed at the Joggins, argued one correspondent. Mines in the area went for as many as four months without an underground manager, working two lifts with nothing but an overman in charge and also running at night without even the overman to look after things--in direct violation of the law. The Joggins also worked without properly certified men to hoist men out of the pit.¹⁵⁸ In the Joggins coalfield unions would appeal to the department to improve the quality of its inspection; to enforce the law.¹⁵⁹ At the Bush Mine, the boiler used to leak and the water gauge would plummet--but the men would be instructed to start the fire and put the water back in it, thus taking the chance of a boiler explosion every day.¹⁶⁰

Exhausted bankhead staff at the small mines, charged with the responsibility of watching the boiler, would fall asleep and run the risk of a large bankhead explosion.¹⁶¹ Whatever the accomplishment of coal mine inspectors may have been in Nova Scotia, it is difficult to be impressed with the effectiveness of the Department of Mines in the Joggins coalfield.

Fire rivalled gas explosions as a menace in the mine. Brattice cloth was easily set on fire from the miners' lamps. Just how easily a mine fire could start is suggested by an account filed by A.V. Cameron, the deputy inspector, on the disastrous fire which damaged the Joggins mine in 1904 (and helped bring down the precarious company which owned the mine). One man in the pit had carried an open light to attend to the pump at the bottom. This open light was the customary "tea-pot" pattern. He reached a stopping near the bottom, took the light from his head, and after getting through looked back to see if anything had caught. The stopping was made of wood; a small opening covered with canvass had been left in it to allow the boxes to be hoisted up and down the slope, and the boxes had left the canvass frayed and ragged at its edge. It was this old ragged canvass which caught fire from the open lamp. Smoke filled the mine; despite the best efforts of the men, the fire could only be contained by flooding the mine up to the level of the brattice. The management argued that the employees had been instructed informally that safety lamps, or at least closed lights, were to be used in such cases. Although the pit had a long record of poor gas conditions, the department had not insisted upon safety lamps. 162

The mine fires would become entrenched and burn slowly, and there was often a genuine doubt whether the mine was safe to reopen. No. 1 Slope of Springhill was afflicted with a fire in 1897. It was fought hard all year, with steam and water and earth. Finally, in September 1897, the company judged the situation safe. "No trace of smoke nor fire or even damp has been seen or detected for probably six months.... We propose as soon as we have a good supply of water, to turn off the steam, and let the metals cool down, and note what the effect will be, without opening up at

all. If no trace of fire is discovered, we will then, I think probably open up one of the lower stoppings on the Fanway side...and attempt to explore the District," J.R. Cowans, superintendent, informed the Department of Mines.¹⁶³ After what was presumably a rather worried reply, he wrote again, "I note your remarks in this connection and I assure you it is our intention to proceed very cautiously...We trust and think that the Fire is absolutely out, and that there will be no difficulty in opening up on either side, but you may rely upon it, we will prepare for the worst."¹⁶⁴

Could one ever prepare for the worst in a coal mine? The environment of the mine was so harsh; it rewarded slight human miscalculations with such disproportionate pain. The campaign against the fire went well--so well that the inspector, the superintendent and the underground manager could make an official visit to the burning district to watch the progress of the battle. Here in the East Slope the progress had been remarkable, and final success seemed at hand. The official party reached the burning district. The roof fell in very near them, filled full of burning debris. James Ferguson, one of the first Springhill miners and a hero of the 1891 Explosion, was trapped by the falling roof. He was completely enclosed by the debris. His companions worked feverishly to release him, but as soon as they cleared away one load of stone, another fell in to take its place. The burning debris formed an oven, and for some time Ferguson's cries could be heard by his helpless rescuers. There was nothing that could be done for him.¹⁶⁵

Anyone who worked in a coal mine lived and worked on the margin. The least mistake, the least weakness or inattention, could result in death. Childish playfulness was harshly rewarded. Percy Hyatt, 13 years old,

following a whim with which any parent is familiar, met his death on the bankhead: here was the coal conveyor, used for conveying coal to the boilers, and the boy balanced himself on the chain and allowed it to carry him along. While doing so he caught one of his feet in a link of the chain and was dragged along through a very small hole in the boiler house wall and torn to pieces.¹⁶⁶ What often were impressed upon the mind were the cruel uncertainties of this life. How strange were its punishments and rewards! A young man, coupling a line of coal boxes in No. 2 mine at Springhill was thrown back when the whole train of them suddenly started. The rake passed over his body. The miners expected to find him dead, but although his head, face and body were severely cut, he still survived and recovered completely.¹⁶⁷ Conversely, William Cherrie, a young Scots collier in Springhill, was killed on the railway level where the coal was hauled by steam power. What seemed odd about his death was his reputation for extreme caution. He and his partner made enquiries about the safety of travelling along this particular route, and had estimated the time of the trips. But their caution was not rewarded: the collier made only a short distance along the railway level when the trip killed him instantly.¹⁶⁸

The precarious nature of life came to the fore during the many bumps in Springhill. The bumps were terrifying in their unpredictability. George Rice, who did a comprehensive study of the problem, pointed out that the bumps--bursting of the coal seam as a result of the pressure of superincumbent strata--reversed the normal hierarchy of mining dangers by making ordinary work in the bords more dangerous than drawing pillar. Apart from that, the phenomena seemed to defy prediction.¹⁶⁹ You could not measure the air to determine when a bump was going to occur, nor do any-

thing else. Only a major structural change could influence the bumps, and that was beyond the daily lives of the miners. It was a terrifying business, because the bumps were certain to occur: rather than an extraordinary disaster which, once finished, could be placed out of mind, the bumps went on for years, spreading a disaster out from week to week. The first bump in Springhill was in 1904, and the first victim was 15 years old. Ephriam Bradley "was sitting close to the fatal spot, whip in hand, while the fillers were loading the coal box team he was driving. Then in an instant, came the tremendous bumping and cracking and the shooting down of tons of coal, and another young life was fiercely crushed out." An older miner remarked, "Bumping...is a frightful experience and always makes my hair stand on end." It resembled an underground earthquake, bringing the roof and the pavement close together with a tremendous noise. 170

For the next 54 years the bumps were to dominate the lives of Springhill miners, at first only as part of a generally hazardous workplace, but at the end as the greatest single threat to the community. They were a curious form of danger, more pronounced in Springhill than in other mining communities. They were strangely abstract in their origins, and the most divergent theories explained their presence. It seemed to violate commonsense that men could die because the roof was too strong--that the mine would be wrecked by the very strength of the forces which held it together. But such was the case. It was a hazard that seemed peculiarly suited to the collective and structural nature of coal mines, caused by the structure as a whole, and not by any individual, and consequently bringing death without favour to the miners who had the bad fortune to be caught in one. Not all the bumps were dangerous; of 347 bumps recorded from 8 October 1924 to 26 June 1932, only four brought death to workers. 171

But in the early 1920s especially, the number of dead men rose steeply, and an almost palpable atmosphere of gloom and panic can be sensed in the records of the union. The bumps imposed a new landscape of doubt on the mine--in particular No. 2 of Springhill. Bumps in room-and-pillar work were horrific, because the complex workings made it easy for miners to be trapped. One man, who strongly believes that the company was right to bring in longwall mining as the bumps started to affect No. 2 mine, remembers the terror of them:

...I remember the last bumps they had in room-and-pillar work. Remember a young fellow who was driving a horse, young Bobbie--what was his name now? it wasn't a Springhill name...he was driving a horse in one of the levels and they were working room and pillar and she [the mine] bumped. She closed in ahead of him and closed in behind him. And he was in the front box, and the horse was kicking the box. And they were two days getting him out. And of course by that time the horse had kicked itself so it was half dead, they had to destroy it. They got the young fellow out, he never was the same, though....

"Nobody," he concludes, "knows anything about those bumps that wasn't in them."¹⁷² The bumps in bord-and-pillar work added to the already formidable list of mining dangers the possibility of entrapment.

5. The Practical Humanism of the Miners

How did the workers absorb these harsh events? Let us remember that fatalities were only one aspect of an incalculably larger phenomenon of mining accident, for which the statistics are sketchy but suggestive.¹⁷³

Nor should we overlook the important role played by industrial disease, for much as contemporaries laughed at the possibility of respiratory diseases caused by the mining environment in the nineteenth century, it is difficult to think of a reason why the mine dust Swift noted so often would not have had the same effects it has today.¹⁷⁴ Only "miner's anemia"

received much attention in the mining circles of Nova Scotia.¹⁷⁵ By concentrating on deaths in the mine we have unavoidably underestimated the true impact of mining on the bodies of men. By focussing on the experiences of men underground we have underestimated the extent to which the world of underground work touched everyone--because everyone was dependent upon it. Workers could not develop an aloof, instrumental attitude to such a workplace, whose shadows suffused their lives.

The military analogy developed by Goodrich is suggestive here. The coal miners were in much the same position as soldiers at the front, living with the constant threat of death. Theirs was the disciplined psychology of the trained soldier. If one may speak of a philosophy of the coal mines, it is that of stoicism. There are documents, as well of intuitions, which suggest that the miners developed an impressive capacity to endure physical pain. We find one in Swift's letters, when he describes an accident to a trapper boy.

[Went] to Visit the place where the Boy Named Price was hurt yesterday unloading a [Band] of Booms had knocked out an high side prop which Caused a Boom to fall and struck him on the head and causing his face to Come in Contact with the edge of a flat sheet similar to what is used in the Bankhead which was reared up on its edge The poor little fellow was very fortunate in not haveing his face Cut in Two by the Sheet His upper Jaw Bone is broken below his Nose and the lip was drawn in the round in Such a Manner that the Drs [doctors] was some time before they could understand it. Considered his upper lip was cut of [f] having Come to the Mine to look for it I hear to day he is nicely he never fliced [flinched] or Complained being a hardy Smart little fellow¹⁷⁶

And another in the Springhill newspaper, which additionally reveals the rather matter-of-fact way of accidents could be treated around the pit:

A very sad and nearly fatal accident took place on Thursday last when John McAulley, son of Ronald McAulley, nearly lost his life. He was knocked

over by a full rake on the turn out, which bruised him considerably. His scalp was almost torn from his head. The boy showed the greatest pluck. The bottomer accompanied him, we understand, to the bank head. There he was told to go to the doctors.... The boy took his lamp to the cabin and then walked to Dr. Cove's alone, where the kind hearted Doctor and his assistant did the best they could for him. After washing the blood from the head it was found that the scalp was separated from the skull and the little fellow sat while Dr. Cove put in eleven stitches.

One miner, suffering from black-lung, remembers his frequent injuries in the pit with this comment: "Well, I was cut up a few times--you don't call them injuries here. They'd sew you up and that's it. You get after a while you're so case-hardened to it you don't mine it."¹⁷⁸ There is a widely-shared pride in having endured the disasters of the pit, which are stamped as decisively upon the popular memory as battles in a war. This attitude to pain was intertwined with the ideals of manliness and physical courage. One of the most profound aspects of the coal miners' outlook can be found here, in his esteem for forbearance and bravery. These were, to be sure, general traditions, but the coalfields nourished a particularly strong articulation of such ideals. Purely local traditions--more powerful because they are so rooted--were passed on through the generations of acts of heroism in disaster, although (once again) one is struck by the more retentive class memory in Springhill than in the Joggins coalfield. Such a system of values is easily dismissed as a species of machismo, but such a dismissal would be superficial. For one thing, the courage extolled in stories from the mine is demonstrated by men in a collective situation, aiding fellow workers. Additionally, what is celebrated does not bear much relation to the fatuous pursuit of danger and excitement for its own sake, but rather the human response of men to dangers which they are forced to confront as part of their work. What is involved here is an instinctive

humanism, made possible by the mining environment and consciously perpetuated through tradition and precept.

The 1891 Explosion was the source of many of the stories which comprised the heroic tradition. The exploits of Dannie Robertson, a young driver, are still recounted today. Robertson was driving a rake of empty boxes at the time of the explosion into the level on the west side. He was knocked backward into the box by the first blast of the flame; his horse was killed instantly. After lying dazed for a few minutes, he was brought to his senses by the sound of crashing timber and collapsing roof. Springing up from the box, he discovered that his clothes were on fire, his horse dead, and he was alone. He threw off his coat and vest, and started to find his way out. Then he heard the cries of Willie Terris, a trapper boy, who had saved his own life by hiding under his seat. Although Robertson was almost delirious with the pain of his burns, he took Terris on his back and ran with him to the safety of the slope.¹⁷⁹

A similar, but less famous, incident involved yet another fire in the Joggins mine on Christmas Eve, 1908. "In some way not yet explained the Brattice cloth, a device consisting of burlap or canvas curtains in screens which cross the chute enabling the free circulation of air, caught fire, and before the unfortunate men were able to escape they were so seriously burned that death in...two cases...resulted almost instantly," according to the report in the Amherst Daily News.¹⁸⁰ What is interesting is that one of the men who suffocated, John H. Coleman, Jr., was not trapped behind the blazing screen at the time of the fire; he could easily have escaped the mine. Instead he rushed to the screen in an effort to save his companions, and died himself in the attempt.

An even more startling instance of altruism is provided by the miners of Chignecto, where workers of the Steel Company of Canada colliery (organized in Progress Lodge of the Provincial Workmen's Association) went on strike in 1883. After three weeks one or two of the workers were persuaded to return to work by stories circulated by the foremen which claimed that the Lodge had lost the support of the trade union. Two workers who returned to work were overcome by "white damp" or carbonic oxide. The gas had accumulated in the pit through the mishandling of the ventilation by management (according to the coroner's jury). Although the mine was being worked by enemies of the trade union, trade unionists flocked to the mine to rescue the men.

There had been some feeling between the union and the anti-union men, and those in the pit were anti union men, but in the hour of peril these differences were forgotten... Fourteen "union" men pressed hurriedly forward on the rescue. This was a work of known danger and besides there was an unknown element of risk involved as every moment might be increasing the sulphur fumes, and render existence below impossible. The men lit their lamps and went down. Some of them fell fainting in their tracks and were carried back by their companions, and it was not till over two hours after the alarm was first given that the bodies of the dead and living were laid at the bank head and delivered to the families.

The Chignecto Post proceeded to underline the moral: "The miner's life is often rude and rough, he is sometimes ignorant and led to excesses, but these things are far outweighed by the nobler side,--in the hour of deadly peril, he is always found to be the hero. The history of the Nova Scotia mines is full of instances of heroic self sacrifice, of cases where men have flung their lives away for others." It was not so frequent, one might add, that a miner, in the midst of a bitter strike, would lay down his life for strikebreakers, as was the case at Chignecto. 181

The collective struggle of the miners within the mine created a strong sentiment of solidarity which manifested itself suddenly in time of crisis. Many left-wing historians and commentators have stressed this tradition of 'blood on the coal,' and made the point that mining perils turned men against the system as a whole. Compared to the risks taken by those who held shares in coal companies, the risks taken by miners were enormous. Mining accidents demonstrated the brutality of capitalism and consequently turned men against it.

While this argument contains important moral truths, it falls down as an analysis of what actually occurred. The experience of death in the pits did not, by itself, radicalize, or even intensify a feeling of class difference. The greatest crowds that turned out for the funeral processions after the 1891 Explosion came to watch the ceremonies for Henry Swift. He was a man who had been despised by the miners less than a year before; he was now something of a hero. The company donated land for burial plots for the Explosion's victims and did everything to impress the local population with its compassion and concern. ¹⁸² (It then proceeded to disregard the laws regarding ventilation). Employees who were injured in the pit were entitled to easy jobs around the mine; the company boasted that it had kept workers longer than other coal companies. (Of course this policy was both imperfectly followed and contained elements of self-interest). The point is not that the conclusions drawn by the socialist historians are wrong, but that they were not drawn by the miners themselves. There is very little evidence to suggest that mining accidents stimulated radicalism. Only within an ensemble of other factors can we draw any connection between fatalities and a critical appraisal of capital in the coalfields.

Rather the legacy of mine danger was altogether more ambiguous. It created a vivid sense of occupational distinctiveness. Those who had worked in the mine were convinced--probably with good reason-- that those who had not shared this experience could never understand it. Like men returned from the front, they were struck by the gulf which existed between their world and the surface. One could draw upon this occupational separateness to create an awareness of class, a sentiment of unity with other workers--but this sentiment did not emerge with mechanical regularity from the mine. One could, with greater ease, build upon this sense of difference a parochial populism, based on defending 'our men' against outsiders who cannot understand them, or perhaps a liberalism, stressing the urgent need for miners to have representation in government to secure legislation in the interests of their trade. In a directly political sense, the most one can attribute to the psychology which emerged from the mine is a strong conviction of a common interest among miners. It is a simple historical fact that the nineteenth-century disasters, as well as those after our period, gave rise to no sustained critique of mining companies. Indeed, the Explosion of 1891 elicited only minor criticism from miners. What political impetus was generated by the Explosion was quickly absorbed and channelled by the reforms of the mining act carried out by the Liberal government and (indirectly) the trade union.

It was also possible to treat the deaths in the pit in a fatalistic way. It was believed by many miners that if they were going to die in the mine, there was little they could do to influence the decision. Such beliefs were fortified by the inevitable stories of those who were fortunate enough to miss going to work on days when they would certainly have been killed, or those who were killed or injured through the most unbelievable bad luck.

In this realm of uncertainty one turned instinctively to supernatural explanations and portents. Madame Coo, whose prophecies we have already encountered before the 1891 Explosion, was a potent force in the coalfields. Miners went off work in Springhill in 1902 in response to a Madame Coo prophecy.¹⁸³ Robert Drummond of the P.W.A., ever the Scottish rationalist, chided the Pictou colliers for their belief in Madame Coo, but he himself attributed his own narrow escape from death in the pit to Providence.¹⁸⁴ In 1895 the prediction of "some gypsey" brought a few miners out of Joggins mine, although not so many that the mine had to close.¹⁸⁵ A somewhat different superstition in Springhill posited a link between visits of high company officials and a death in the mines.¹⁸⁶

But in a more profound way there was a connection between the dangers of mining life and working-class protest. The shared experience of the mine created an egalitarian and collective ethos. Bonds between workers in the pit and between families on the surface were thought to be very close. This intangible quality of mining towns, a subtle, penetrating solidarity, is not easily documented, but no one disputes its real power. Collective house-building and collections for injured workmen were two aspects of this tradition of mutuality. "There's a close bondage in a mining community," one Springhill miner generalized. "People would come to your support if you were down."¹⁸⁷ One of the more moving personal documents saved by individuals in Springhill is a battered subscription book, which records the donations given by the miners to help an injured comrade. Such support was not soon forgotten.

The intense solidarity of the mining community was the gift of the mine. It was born of the uncertainty of coal-mining life. Social psychologists have noted a similar pattern in analogous situations, such as natural

disasters or fires. Under the force of the natural disaster, boundaries between people are effaced, and there is a strong sense of united purpose. A severe disaster which obliterates the community creates a profound personal disorientation, an overwhelming sense of loss and emptiness as one's traditional world is swept away.¹⁸⁸ But the annual deaths in the mine never approached a level which would undermine the bonds holding people together. No doubt many men and women, faced with natural disasters, respond with unselfishness and bravery. But very few people live in communities which, year in and year out, face the possibility of disaster and the certainty that some men will not return from the pit.

One would be hard pressed to prove those intuitive perceptions. There is some evidence of this practical humanism in the documents of the union locals. We read in the records of Holdfast Lodge in 1898, "Bro. Logue brought up the case of Bro. Pratt who is sick and needs a nurse and it is the opinion of the members that the Lodge should take some steps to pay the nurse." It proceeded to do so.¹⁸⁹ Or we can turn to the records of 1905: "A request by Bro. Philip Como asking assistance by this Lodge to send some body to sit up with John Brine who is laid sick and no person to look after him at nights. Moved and Seconded by that Bro. Philip Como be paid his days pay while he was needed."¹⁹⁰ Bonds formed in such conditions of adversity would not soon be forgotten.

The solidarity of a common bereavement was a powerful influence in the coalfields. In Springhill the twentieth-century bumps could be felt through the town, and quickly created a sense of common danger. Once a bump had been felt, one man recalls from his childhood, he would face to the fence of the Springhill mine and watch for his father to come out of the lamp cabin. He would peer through the dark, trying to recognize his

father, and when finally he identified him by his particular walk, he would race home with the news, "He's alright!"¹⁹¹ It was an individual drama, but a collective one as well. Everyone with men in the mine would have worried in the same way.

The funerals of the mining town were impressive displays of the solidarity of the community. In Springhill, a hearse was provided by public subscription in 1880, although by 1888 its dilapidated appearance was provoking adverse comment.¹⁹² The tradition in the 1870s and 1880s in the town was to stop work from the day of the death until the day of the funeral; however, by 1887, the pits worked full blast even on the funeral day.¹⁹³ The Trades Journal ran brief reviews of town funerals, as in the case of the funeral of John Scully, "the largest ever witnessed in Springhill," for which the members of Pioneer Lodge turned out "in full force and in regalia."¹⁹⁴ After the death of James Ferguson, his brother Orangemen walked in procession, and, according to the newspaper, "the large turnout showed the respect in which he was held."¹⁹⁵

The public displays of grief after the Explosion on 1891 were overwhelming. Ministers attempting to read portions of scripture were often overcome with emotion. Wakes were held throughout the town, and the houses at night were brightly lit, as was the custom. Mourners drifted from house to house during the night.¹⁹⁶ The fraternal orders and the trade union came out in force.

All of this suggests profound connections with other workers, who also insisted on a decent funeral. But what was perhaps unusual was the intense bargaining between the workers and management over the question of the appropriate rituals for death. Mass funerals were common in port cities, where workers ceased work for the occasion. But there appears to be a contrast between the pattern in the coalfields and the pattern elsewhere,

in that here the workingmen successfully defended their right to stop work for a funeral, far into the twentieth century.

In Joggins in 1898, the manager of the mine requested the master workman of Holdfast Lodge to tell the men to send a delegation to a funeral, instead of stopping production. The minutes, however, note that "it was moved and seconded that we lay idle tomorrow for to bury the dead Brother." In the margin the secretary added the instruction, "Bros to attend in a body."¹⁹⁷ Clearly the manager and his workers had different perceptions of what the proper ritual was. In 1906, the Joggins miners marched all the way from Joggins to the Maccan River Bridge in a funeral procession.¹⁹⁸ In honour of Felix Landry, the pit was closed for three full days in 1910.¹⁹⁹

The same pattern is to be found in Springhill. What had been perceived as a weakened tradition in the 1880s was a strong one in the 1920s. The historian Jean Heffernan describes the funerals of the U.M.W. "There was a time when a funeral in town was really something. The band would be in attendance, the Fraternal Orders would march as well as the Mine Workers. Sometimes as many as a thousand people would be there."²⁰⁰ The right to observe death in this way was defended tenaciously by the U.M.W. against company pressure. This struggle brought to light a profound difference between a utilitarian orientation, geared to continuing production, and a humanist conception, which considered it a matter of tremendous importance to remember a fallen individual.

Even through the troubled 1920s the U.M.W. always found money for the dead. In 1921 it donated \$500 to the upkeep of the cemetery grounds.²⁰¹ When Hezekiah Jones met his death in No. 2 mine in 1922, the U.M.W. bought "one of the best lots in the Cemetery" for him, as he had no known relatives.

He was laid to rest in a grave deeded simply to the "Springhill Miners."²⁰²
 After the bump in December 1924, named the "Jack Sweeney" Bump for the man
 who was killed in it, the management requested that the union allow men
 to repair the damaged mine. The union adamantly refused to grant the
 request, because funeral arrangements were considered of greater urgency.²⁰³

It was not quite true, then, to describe death in the community as a
 great leveller. In some ways it became a point of contention between the
 company and the coal miners, and on this point the miners usually won.²⁰⁴
 Death brought to the surface an underlying difference in approach. But
 outside this kind of struggle, it unified the coal miners and their families.
 In both Catholic and Protestant families a crowd would gather at the home
 of the bereaved family; it was not considered right to leave the home
 until the funeral, and lodge members or other friends would stay up the
 night. Death created tight bonds between families and neighbours, bonds
 of shared grief and fear.

The deaths in the pit were remembered in a way which reinforced their
 symbolic importance. To have an ancestor named upon the monument in
 Springhill, or the more recent monument in River Hebert, is an important
 indication of one's place in the community. One hears, again and again,
 stories of disasters and calamities in the coalfields. They are not told
 in a sensationalist way. A common theme is that of mistaken identity, as
 in this story from an explosion in the Joggins coalfield in the early
 1930s. The bodies of the men were carried out of the pit, and an anxious
 father arrived to get his boy.

He said, "Any of them up yet." And I said, "Yes,"
 I says, "Sam Thompson." He said, "Where's the body?"
 I say, "Over in the men's waiting room." He says,
 "Come on over." So we went over. He said, "That's
 my John." I says, "No, that's not John. They found

him by the switch," He said, "That's John," And John had a gold tooth, and he went over and raised the lip and, sure enough, it was him. You see, his face was as black as could be, you know. Couldn't recognize him that way.²⁰⁵

The same theme is found in the story of the mother, who after searching through the bodies for her boy, was finally able to identify him only by the traces of her needle on the shirt of an anonymous corpse. She could only exclaim, "This is my poor boy!"²⁰⁶

Such memories are everywhere in the coalfields, and collectively they form a powerful tradition. It is not so much a tradition of folklore as a tradition of indigenous working-class history, accurately preserving the truth of the past. Such traditions bring death within a human frame of reference. They help undermine the bleak anonymity of death by showing it to be a collective human experience. Such stories are about the collective and public character of death in the coalfields, which blurs the lines separating one individual from another, and united all the coal-mining families in their grief.

Were the coal miners distinctive in their traditions? In our present state of knowledge, precise comparisons with other workers are difficult to draw. Other occupations as dangerous as coal mining often entailed a highly heterogeneous workforce spread across a vast area (such as seafaring), or a workforce living within a much larger group whose proximity diluted the power of the work tradition. Perhaps here we need to pay more heed to the isolation theorists, and grant that the overwhelming domination of a coal population by miners meant that traditions in the workplace acquired a far greater power and durability as they became the general 'common sense' of a community. Does any other group retain so vivid and particular sense of past calamities as the miners? In their perception

that coal miners were able to form the common tradition of a whole community, the isolation theorists have valuably stressed the basis of community life in the mine itself.

The coal miners fought tenaciously and endured hardships with stoicism, both inside and outside the mine. Of all the region's workers none fought so consistently and so determinedly for their rights. To penetrate to the essence of this special position requires us to see the distinctive language absorbed since childhood by the mine workers and their distinctive grasp of their workplace. In this workplace no decisive technical advance had transformed the miner into a mere detail labourer, and his outlook reflected his position of power. One could cite dozens of testimonials to his stubbornness, such as this one by George McHattie, a mining expert:

...I suppose no class of labour the world over is harder to handle than the pit-worker. The nature of the work he faces from day to day in the thick darkness of the mine certainly does not tend to the production of an angelic disposition. Rather the miner is prone to dis-satisfaction at his position in the order of things. He usually relishes, and thrives on, complaints, which readily lead to rows. This situation anyone who has dealings with him knows only too well. A great deal of diplomacy is needed in handling the mine worker.

Such managerial discussions give us one view of the problem; McHattie proceeds to discuss the miner's perception of himself in terms of his importance in the industrial economy. What McHattie, and others like him, missed were the structural reasons for the miner's attitude, the attitude managers diagnosed as "baulkiness" and "conservatism" but which might simply be termed "independence" and "resilience". These structural reasons lay within the functional integration of the mine, which bestowed upon each group of workers the ultimate power to shut down production. Until

the mine could be transformed into a continuous-process machine, in which the logic of production lay imbedded within the machine itself, it would be dominated by the workers themselves--men who knew as much about mining as their supervisors, and who had every reason to think their interests (and possibly even their survival) depended upon their own activity and struggle. But there was more than a structure involved here, there was a mentality, shaped by the imminence of death and the collective solidarity of men who faced it together, along an industrial front which demanded of each man that he be strong, resourceful, and courageous. And even more: a mentality, absorbed from childhood, which combined independence and collectivism, self-reliance and mutual aid.

Everywhere in this dark dominion created by necessity we find paradoxes. The coal miners were cruelly oppressed and worked in an appalling environment, but they had the freedom to create their own traditions which were strengthened by the collective experience of death. The coal mines served the interests of class, but they did not automatically create an awareness of class injustice: there were no analyses in the nineteenth century which connected the labour of young boys in the pit with the wealth of Montreal, obvious as the connection is to us. The same language which united the mining men divided them from the rest of the society, which understood little about mining life. The mentality created by the coal mine could be read in a 'class way,' and if one succeeded in merging a mining and a socialist outlook, the two were powerfully reinforcing--but this linkage was not an automatic one. The coal mine created a unifying context of discipline--shared by everyone--through the imperatives of its ventilation and pumping system and the hazards they entailed, but this same discipline could be turned against the mine itself when workers seized

the opportunity to abandon the pumps. The discipline and unity which were created by necessity consequently also served the cause of freedom.

In the end it may be 'paradox' is the wrong word, especially when we try to form a moral assessment of the experience of coal mining. It is hard to think of a more savage industrial environment. Only by a conscious effort can we abstract images for ourselves from these deaths and this suffering. Can we imagine what it was like to be a child in the Explosion of 1891--one of the boys the rescuers discovered in the midst of the smoke and debris, lost and bewildered, crying out for his mother? Or the son whose father was trapped by the legs in a bump, who had to decide whether he would obey his father when he begged him to cut off his legs so he could get out? The experiences are too extreme for us to enter, but we can imagine the horror of them. Year in and year out the mines claimed their quota. And the situation did not improve with them: it worsened. By the end of its life as a major mining centre, Springhill knew that the disaster was coming: men would be sick with worry before they went to the mine, but still they went. It is as if the society had agreed to sacrifice its best men and boys to some unforgiving deity--and it was all to benefit a few Montreal capitalists, who never dirtied their own hands or put their own lives at risk. Had Gesner realized that his great dreams of an industrial empire in Cumberland would lead to little children dying miserable deaths in the pit, would he have been able to argue for progress in so complacent a fashion?

Yet this moral condemnation, true though it is, conveys only one term of the unresolvable contradiction. It is also hard to think of an environment where workers en masse enjoyed such freedom from supervision, such an opportunity to create and sustain their own distinctive mentality.

Men would not want to leave this workplace, however dark it was. They would humanize and civilize it, through their unions, their subscriptions for wounded comrades, their underlying loyalty to each other. In the dark dominion they made a compact with each other, and the influence of their collective strength and self-activity was to be felt throughout the province. It is not a paradox, but a moral antinomy, that the most savage workplace was also the most civilized, and that the dark dominion of necessity gave birth to the struggle for industrial freedom.

Notes

- 1) For an exposition of this 'active' view of the base, see Lucio Colletti, From Rousseau to Lenin: Studies in Ideology and Society (London, 1972), pp. 65-70. There are real affinities here with the position of Raymond Williams, Politics and Letters: Interviews with New Left Review (London, 1979), pp. 350-358.
- 2) For a superb critique of social realism applied to mining, see Robert Colls, The Collier's Rant: Song and Culture in the Industrial Village (London, 1977).
- 3) See Hugh MacLennan, Each Man's Son (Toronto, 1951).
- 4) For a discussion of the concept of "mentality" (the awkward translation of mentalité), see J. Le Goff, "Les mentalités: Une histoire ambiguë," in J. Le Goff and P. Nora, eds., Faire de l'histoire (Paris, 1974), Vol. III, pp. 76-94.
- 5) See Alan Campbell, The Lanarkshire Miners, Chapters 2 and 8.
- 6) See Pierre Bourdieu, Outline of a Theory of Practice (Cambridge, 1979 [1977]), p. 80.
- 7) Ibid., p. 81.
- 8) Colls, Collier's Rant, pp. 120-121.
- 9) Louis Simonin, La Vie souterraine. La Mine et les mineurs (Seysssel, 1982 [Paris 1867]).
- 10) Carter Goodrich, The Miner's Freedom, pp. 19-20.
- 11) Archie Green, Only A Miner, p. 295, reprints the introduction to "Sixteen Tons", which contained the phrase, "A mind that's weak and a back that's strong." Exactly the same terms were used as a fond form of teasing against William "Doc" Hayes, the leader of the U.M.W. in Springhill, after an incident involving his holding ten empty boxes on the East Turn (Transcripts, Springhill, p. 163). It is merely one example of a shared occupational tradition among coal miners.
- 12) Brophy, A Miner's Life, p. 41.
- 13) PANS, RG 21, Series "A", Vol. 9, Inquisition upon the body of Natale Gualtieri, 22 January 1895, Evidence of William Stevenson and Charles Rennie.
- 14) See Joseph Melling, "Non-Commissioned Officers: British employers and their supervisory workers, 1880-1920," Social History, Vol. V, No. 2 (May 1980), pp. 183-221.

- 15) Transcripts, Springhill, p. 119.
- 16) Brophy, A Miner's Life, p. 41.
- 17) Transcripts, Joggins, p. 61.
- 18) The average size of families headed by miners in Springhill in 1881 was 5.83. No attempt can be made here to ground the impression of large mining families statistically; for a discussion of this subject, see Michael R. Haines, Fertility and Occupation: Coal Mining Populations in the Nineteenth and Early Twentieth Centuries in Europe and America (Ithaca, N.Y., Western Societies Programme Occasional Paper, No. 3, 1975).
- 19) Transcripts, Springhill, p. 112.
- 20) R.C.R.C.L., Evidence of Elisha Paul, p. 272. Also Transcripts, Springhill, p. 88. "Most of the women kept control over the money because the men were on different shifts and they weren't home to pay for anything, so the man would come home with the envelope and he'd give it to the woman. As a rule."
- 21) Transcripts, Springhill, p. 114.
- 22) Notice this section in the testimony of Henry Rea, which suggests regret at the limitations placed on his sons' education as well as recognition of the necessity for it:
- Q. How long were you in earning the money which paid for that house? A. Well, if I had no help but myself I think it would take me a good long spell, because I think for a man with any family it is just as much as he can do, if he has an ordinary family, to live.
- Q. You had some boys working with you? A. Yes.
- Q. At what age did your boys go to work in the mine? A. Somewhere about twelve or between that and thirteen.
- Q. You kept them at school as long as you could? A. Not as long as I should have liked, but they felt as if they would sooner work than go to school; they were not doing much at school so I let them go in.
- R.C.R.C.L., Evidence of Henry Rea, p. 304.
- 23) Transcripts, Joggins, p. 20.
- 24) Transcripts, Springhill, p. 55.
- 25) Transcripts, Springhill, p. 58.
- 26) Transcripts, Springhill, p. 66.
- 27) Transcripts, Springhill, p. 73.

28) Transcripts, Joggins, p. 1.

29) According to the first mines regulation act, no boy under ten years of age was to be employed above or below ground. Boys from 10 to 12 years of age were not to be employed more than 60 hours in any one week, nor more than ten hours in one day. Employees in charge of hoisting men were to be over 18 years of age, and if a boy gained employment as a result of misrepresentations by his parents, his parents were to be deemed guilty of an offence against the act. (Revised Statutes of Nova Scotia, Fourth Series, 1873, Chapter 10, 'Of the Regulation of Mines.') In 1891, this section was changed. By the new law passed in that year, no boy under the age of 12 was to be employed in or about any mine below ground or above ground; and no boy of 12 years or over was to be employed unless he was able to read, write, and to count "as far as division," and furnish a certificate to that effect from a licensed teacher. Boys were not to work more than 54 hours. (Statutes of Nova Scotia, 54 Vic., Cap. 9, 'An Act to amend Chapter 8, Revised Statutes, 'Of the Regulation of Mines.') A decade later the law was tightened by inclusion of a provision which placed the onus for non-compliance on the owner or manager, unless it was proven that reasonable steps had been taken to publish and enforce the law. (Statutes of Nova Scotia, 1 Edwd. VII, Cap. 27, 'An Act to amend the Coal Mines Regulation Act.') An amendment in 1923 ruled that no boy under the age of 16 years of age was to be employed in or about any mine. (Statutes of Nova Scotia, 13 Geo. V., Cap. 54, 'An Act to Amend the Coal Mines Regulation Act.')

30) Springhill Minutes, 8 January 1927.

31) Springhill Minutes, 15 October 1921.

32) Springhill Minutes, 20 January 1923.

33) Amherst Evening Press, 22 April, 7 September 1891; Journal and Pictou News, 30 September 1891.

34) Transcripts, Springhill, p. 12.

35) Transcripts, Joggins, p. 87.

36) Transcripts, Springhill, p. 154.

37) Transcripts, Springhill, p. 160.

38) Transcripts, Joggins, p. 66.

39) Transcripts, Joggins, p. 19.

40) Transcripts, Springhill, p. 39.

41) Transcripts, Springhill, p. 75.

- 42) Mines Report (1877), p. 58.
- 43) Transcripts, Springhill, p. 15.
- 44) Transcripts, Springhill, p. 30.
- 45) Transcripts, Springhill, p. 15.
- 46) Transcripts, Springhill, p. 75.
- 47) Transcripts, Springhill, p. 113.
- 48) Transcripts, Springhill, p. 113.
- 49) Transcripts, Joggins, p. 30.
- 50) For example, see this case in the Joggins Minutes (19 July 1905): "Bro tom Livingston Said his son was discharged Some Six Weeks or two months ago in order to save trouble he kep the boy Home as the boy could not get along with Coleman the overman (as he Coleman) Seemed to have some sort of spite to the Boy..." The case was strenuously fought by the Lodge.
- 51) R.C.R.C.L., Evidence of William Hall, p. 294.
- 52) One Cape Breton manager punished his boys for accidentally breaking a puncheon in the mine by withdrawing their annual Christmas treat. Trades Journal, 9 January 1889.
- 53) The Journal, 21 January 1891.
- 54) Swift Letterbook, Swift to Cowans, 14 May 1890.
- 55) Swift Letterbook, Swift to Cowans, 14 November 1890.
- 56) Swift Letterbook, 1 December 1890.
- 57) Swift Letterbook, 2 December 1890.
- 58) Herald, 15 August 1905; 7 June 1906.
- 59) Swift Letterbooks, Swift to Cowans, 11 December 1890.
- 60) Morning Chronicle, 2 December 1890; 4 December 1890.
- 61) Amherst Daily News, 14 April 1905.
- 62) Morning Chronicle, 4 December 1890.
- 63) Journal and Pictou News, 21 October 1891.

- 64) PANS, RG 21, Series "A", Vol. 13A, file "Coal Mines, 1887-1898, Disputes," Case of Jesse Armishaw.
- 65) Journal and Pictou News, 28 October 1891.
- 66) Critic, 4 December 1891.
- 67) Trades Journal, 9 May 1888.
- 68) Springhill boys evidently led strikes in Cape Breton too: Herald, 14 July 1899.
- 69) Amherst Daily News, 8 July 1905.
- 70) Of the 14 boys' strikes in Springhill from 1879 to 1927, 11 were clearly victories; the remaining three were compromises.
- 71) R.C.R.C.L., Evidence of Elisha Paul, p. 270.
- 72) Springhill Minutes, 21 May 1927.
- 73) Transcripts, Springhill, p. 33.
- 74) R.C.R.C.L., Evidence of Elisha Paul, p. 270.
- 75) Statutes of Nova Scotia, 54 Vic., Cap. 9, "An Act to amend Chapter 8, Revised Statutes, "Of the Regulation of Mines," The section reads: "And in no mine... shall any person not now employed as a miner be given the picks to work as a miner unless he has been employed in a mine, in some capacity, for the space of one year; no one shall be given charge of a 'working face' in a mine who has not worked previously in a mine for the space of two years; nor shall any one now a miner be employed after the first of January to mine coal who is not a holder of a certificate of service. And no one not now a miner shall be 'given the picks' to work as a miner until granted a certificate of competency after examination by the Board of Examiners appointed for the purpose of granting certificates as managers, overmen, or shot-firers, or by an examining board to be hereafter appointed, who shall have power to frame laws and conditions under which said certificates shall be granted."
- 76) R.J. Morris, "Whatever Happened to the British Working Class, 1750-1850?" Bulletin of the Society for the Study of Labour History, 41, (Autumn 1980), p. 14.
- 77) John U. Nef, The Conquest of the Material World (Chicago and London, 1964), pp. 23, 26-27.
- 78) Rolande Trempe, Les mineurs de Carmax, Vol. I, pp. 112-113.

- 79) Royden Harrison, "Introduction" to Royden Harrison, ed., Independent Collier: The Coal Miner as Archetypal Proletarian Reconsidered (New York, n.d.), pp. 4-5.
- 80) Trempe, Les mineurs, Vol. I, p. 113.
- 81) Mines Report (1872), pp. 43-44.
- 82) Trades Journal, 21 March 1883.
- 83) Springhill News and Advertiser, 5 November 1902.
- 84) Robert Drummond, Recollections and Reflections of a Former Trade Union Leader (Stallarton, n.d. [1926], p. 43.
- 85) Trades Journal, 30 June 1880.
- 86) Trades Journal, 13 July 1887.
- 87) Transcripts, Joggins, p. 34.
- 88) Transcripts, Joggins, p. 31.
- 89) Transcripts, Joggins, pp. 36-37.
- 90) Transcripts, Springhill, pp. 92-93.
- 91) Transcripts, Springhill, p. 33.
- 92) See the discussion of "drawing pillar" in David Frank, "Cape Breton Coal Miners," p. 224.
- 93) Transcripts, Springhill, p. 35.
- 94) Transcripts, Springhill, p. 11.
- 95) Springhill Minutes, 30 January 1926.
- 96) Springhill Minutes, 27 March 1926.
- 97) Trades Journal, 11 August 1880.
- 98) Herald, 22 June 1921.
- 99) Joggins Minutes, 4 September 1895.
- 100) Transcripts, Springhill, p. 32.
- 101) Transcripts, Springhill, p. 30.
- 102) Springhill Minutes, 2 February 1918.
- 103) Transcripts, Springhill, p. 34.

104) In July 1904 the boys of Joggins successfully fought a strike on the issue of being allowed to leave work once their work was finished, rather than putting in a set number of hours. Amherst Daily News, 16 July 1904.

105) See the Trades Journal, 18 May 1881, for a separate vote held by surface workers on a question pertaining to them. The miners deliberately abstained on the issue.

106) Report of Commission Appointed under Chapter 16, Acts 1907, Entitled 'An Act Respecting Old Age Pensions and Miners' Relief Societies,' JHA 1908; p. 132.

107) Transcripts, Springhill, p. 113.

108) Transcripts, Springhill, p. 168.

109) Transcripts, Springhill, p. 54.

110) Transcripts, Springhill, p. 54.

111) Transcripts, Joggins, p. 50.

112) Transcripts, Joggins, p. 51.

113) Transcripts, Joggins, p. 89.

114) Transcripts, Joggins, p. 68.

115) Transcripts, Joggins, p. 12.

116) Transcripts, Joggins, p. 31.

117) Transcripts, Joggins, p. 70.

118) Transcripts, Joggins, p. 4.

119) Cf. Phillipe Aries, L'Homme devant la mort (Paris 1977).

120) PANS, RG 21, Series "A", Vol. 9, Coroner's Inquest, 20 January 1895, Testimony of John Merlin.

121) Ibid., Testimony of William Wilson.

122) Ibid., Testimony of Thomas Pigott.

123) PANS, RG 21, Series "A", Vol. 9, Inquisition on the body of Natale Gualtieri, 18 June 1895.

124) PANS, RG 21, Series "A", Vol. 9, Maddin to Edwin Gilpin, 24 January 1895.

125) Herald, 15 February 1906.

126) Amherst Daily News, 17 February 1899.

127) Glara Dennis, More About Nova Scotia, My Own, My Native Land (Toronto, 1937), pp. 81-82. The miners called the fossil trees "pots" and the places they fell from "pot holes."

128) The law in 1873 (Revised Statutes of Nova Scotia, Fourth Series, Chapter 10, 'Of the Regulation of Mines') specified that every underground plane on which persons travelled which was self-acting or worked by an engine, windlass, or gin, "if over thirty yards in length, was to be provided with proper means of signalling between the stopping places, and with sufficient man-holes for places of refuge every twenty yards. Every road on which persons travelled and on which horses or other animals drew more than ten tons of coal per hour, was to be provided with man-holes every fifty yards. An amendment (Statutes of Nova Scotia, 52 Vic., Cap. 22, 1889, "An Act to amend Chapter 8 of the Revised Statutes, 'Of the Regulation of Mines,') specified that unless the inspector provided an exemption in writing, companies were required to provide proper means of signalling between the lower end and the entrance of every working back or counterbalance used for raising or lowering coal or other minerals. In 1891 (54 Vic., Cap. 9, 'An Act to amend Chapter 8, Revised Statutes, "Of the Regulation of Mines,"') the fifty-yard provision was changed to 25, but travelling ways requiring places every 50 yards did so only if there was not standing room of at least two feet. In 1923, it was determined that every road on which a horse or other animal was used underground, or by which it had to pass to get to its work, was to be of sufficient dimensions to allow the horse or other animal to pass without rubbing itself or its harness against the roof or sides, or against any bar or prop—an unenforceable provision (Statutes of Nova Scotia, 13 Geo. V, Cap. 54, 1923, "An Act to Amend the Coal Mines Regulation Act.").

129) Trades Journal, 26 October 1881.

130) Trades Journal, 12 October 1881.

131) For a similar accident involving brake-holding on a balance, see Trades Journal, 26 December 1883, and also Springhill Advertiser, 28 November 1895.

132) PANS, RG 21, Series "A", Vol. 9, Gaspard Hebard to Edwin Gilpin, 26 November 1889.

133) Acadian Recorder, 16 September 1892. It is also germane to note this frank note in the Mines Report (1915), p. 114, à propos of a similar accident at the Joggins: "Death was result of defective rope. Inspection and lubrication neglected."

134) Harald, 3 February 1909.

135) Mines Report (1909), p. 127. Another Springhill miner was killed after he impaled himself on his pick on the way to work. Amherst Daily News, 20 April 1900.

- 136) Swift Letterbooks, Swift to Cowans, 21 February 1890.
- 137) Amherst Daily News, 12 January 1904; Herald, 13, 14 January 1904, (In this last-mentioned story the affair was referred to as a "trivial-matter.")
- 138) Swift Letterbooks, Swift to Cowans, 15 January 1890.
- 139) PANS, RG 21, Series "A", Vol. 9, Maddin to Gilpin, 9 October 1889.
- 140) Swift Letterbooks, Swift to Cowans, 6 January 1890.
- 141) Trades Journal, 9 September 1885.
- 142) Swift Letterbooks; Swift to Cowans, 23 December 1889.
- 143) Ibid., 4 January 1890.
- 144) Ibid., 5 February 1890.
- 145) Ibid., 13 June 1890.
- 146) See Morrow, Springhill Disaster, Chapter XI.
- 147) Trades Journal, 18 February 1891.
- 148) PANS, RG 21, Series "A", Vol. 9, William Hall to Edwin Gilpin, 19 July 1889.
- 149) PANS, RG 21, Series "A", Vol. 9, Hall to Gilpin, 18 September 1889.
- 150) PANS, RG 21, Series "A", Vol. 9, Maddin to Gilpin, 31 July 1889.
- 151) Swift Letterbooks, Swift to Cowans, 30 December 1890.
- 152) Swift Letterbooks, Swift to Cowans, 28 October 1890. Incidentally, H.S. Poole also regarded the safety conditions in the mine inadequate before the explosion: see PANS, RG 21, Series "A", Vol. 6 (1896), J.R. Cowans to Gilpin, 20 February 1896.
- 153) Amherst Evening Press, 21 December 1891.
- 154) PANS, RG 21, Series "A", Vol. 9, Gilpin to C.E. Church, 23 May 1892.
- 155) PANS, RG 21, Series "A", Vol. 9, A.V. Cameron to Gilpin, 11 August 1905.
- 156) Herald, 9 August 1910.
- 157) Herald, 2 October 1910.

- (2)
- 158) Herald, 7 July 1904.
- 159) Transcripts, Joggins, p. 50.
- 160) Transcripts, Joggins, p. 36.
- 161) Transcripts, Joggins, p. 35.
- 162) PANS, RG 21, Series "A", Vol. 9, A.V. Cameron and D'Arcy Weatherbee to Gilpin, 13 February 1904.
- 163) PANS; RG 21, Series "A", Vol. 9, J.R. Cowans to Gilpin, 11 September 1897.
- 164) PANS, RG 21, Series "A", Vol. 9, Cowans to Gilpin, 18 September 1897.
- 165) Amherst Daily News, 8, 9 December 1897.
- 166) Amherst Daily News, 28 October 1903.
- 167) Amherst Daily News, 27 April 1905.
- 168) Amherst Daily News, 12 September 1905.
- 169) Rice, Occurrence of Bumps, pp. 30-31.
- 170) Herald, 2 January 1904.
- 171) Rice, Occurrence of Bumps, Supplement.
- 172) Transcripts, Springhill, p. 131. Dannie Boutillier, Springhill's workplace poet, captured the tensions of working in No. 2 Mine:
 "When you're doing your bit down in Number Two pit,
 In that old bumpy hole in the ground;
 You just work in suspense, from the time you commence
 Till your shift's up, and you're "homeward bound"...
 There are times when I think that some day she will sink,
 And they'll never save one of the crew.
 Thoughts like that are the kind that go through a man's mind,
 When you work down in old Number Two."
 Dannie Boutillier, The Old Home Town (Springhill, 1962).
- 173) According to one calculation, Springhill recorded 71 accidents from 1898 to 1908, 28 of which were fatal. See Helen Goodwin, "Community, Class and Conflict: The 1909-1911 Springhill Coal Strike," Honours Thesis, Dalhousie University, 1980, p. 44.
- 174) Swift Letterbooks, Swift to Cowans, 4 January 1890; 11 June 1890.

- 175) F.W. Gray, "Ankylostomiasis: 'Miners' 'Anemia': A Resume of European Experiences," Transactions of the Mining Society of Nova Scotia, Vol. XI (1906-1907), pp. 75-116. The disease achieved its first legislative recognition in the Statutes of Nova Scotia, 5 Geo. V, Cap. 1, 1915, "An Act to Provide for Compensation to Workmen for Injuries Sustained and Industrial Diseases Contracted in the Course of their Employment."
- 176) Swift Letterbooks, Swift to Cowans, 4 October 1890.
- 177) Springhill News and Advertiser, 20 November 1897.
- 178) Transcripts, Springhill, p. 112.
- 179) Morrow, Disaster, pp. 84-86.
- 180) Amherst Daily News, 26 December 1908; Herald, 28 December 1908.
- 181) Trades Journal, 28 February 1883; see also 14 March 1883 for harsh criticisms of the company by the coroner's jury.
- 182) Morrow, Disaster, p. 115.
- 183) Maritime Mining Record, 18 June 1902.
- 184) Drummond, Reminiscences, pp. 21-22.
- 185) Amherst Semi-Weekly News, 19 March, 5 April 1895.
- 186) Trades Journal, 1 August 1888.
- 187) Transcripts, Springhill, p. 74.
- 188) See Erikson, Everything In Its Path, pp. 186-245.
- 189) Joggins Minutes, 13 April 1898.
- 190) Joggins Minutes, 27 December 1905.
- 191) Transcripts, Springhill, p. 164.
- 192) Trades Journal, 7 July 1880; 25 July 1888.
- 193) Trades Journal, 13 April 1887.
- 194) Trades Journal, 2 September 1885.
- 195) Amherst Semi-Weekly News, 5 April 1895.
- 196) Morrow, Disaster, pp. 72-73.
- 197) Joggins Minutes, 13 February 1898.

- 198) Joggins Minutes, 17 April 1906.
- 199) Herald, 29 May 1910.
- 200) Amherst News and Sentinel, 17 June 1952.
- 201) Springhill Minutes, 10 September 1921.
- 202) Springhill Minutes, 11 March 1922.
- 203) Springhill Minutes, 8 December 1924.
- 204) See Springhill Minutes, 31 March, 7 April 1923. It was true that the miners conceded that only the particular mine in which the fatality occurred would stop work for the day, but they continued to close the entire complex down for funerals. The company would thus lose one full day's production plus whatever time remained in the mine in question. Given that the No. 2 mine was both the most important and the most dangerous, this concession was not as significant as it might first appear; most fatalities occurred in the one mine.
- 205) Transcripts, Joggins, p. 22. The names have been changed to preserve anonymity.
- 206) Morrow, Disaster, p. 69.
- 207) George McHattie, "Progressive Coal Mining," p. 336.
- 208) Morrow, Disaster, p. 83.
- 209) Transcripts, Springhill, p. 124.

CHAPTER SEVEN
THE POLITICS OF PRODUCTION

Chapter Seven The Politics of Production

The discussion of the objective structural development of the coal mines and the emergence of a mining mentality lays the basis for a third analysis of the history of the mines, focussing on the struggles within the mine between workers and management. A central element of the analysis is the reconstruction of the mine as a system of power. Within this system the workers and mine management pursued their own strategies which reflected the material interests of their respective classes, and fought symbolic struggles in which they sought to impose the definition of the social world most in conformity with their interests. In the formation of a class strategy, the field of social positions was reproduced in transfigured form.¹ If our first stage of analysis has been one of objective structuralism, in which the mine was seen as a machine which necessarily integrated discrete functions, and if our second emphasized the subjective appropriation of the facts of mining life, we are now aiming at an integration of these levels of analysis within a third, the concrete analysis of strategies and conflicts within the mine. The analysis of practice must be based upon, but also transcend, the study of the objective and subjective realities of the past.

This approach to the study of politics within the workplace differs in emphasis from two major traditions, to which it is nonetheless profoundly indebted. The first tradition, initiated by Marx and continued by Harry Braverman, tends to interpret the history of work through the perspective of the accumulation of capital.² The pursuit of efficiency and the degradation of the once-integrated work of the craftsman into

its component parts are seen as manifestations of the immanent law of capital, and the question of workers' resistance is given less emphasis than the dehumanization of work. The approach tends to emphasize the extent to which the labour process could be shaped to meet the needs of capital, and to place less stress on the obstacles placed in the path of capital by the workers.

The second tradition, that of workers' control, takes its bearings from the struggle waged by many workers for control over the productive process. Workers' control is at once a slogan, a description, and an embryonic theory of the workers' movement. As a slogan, workers' control is a phrase which sums up the demands of the most radical elements within the workers' movement after the First World War, for socialized production governed by workers' councils. As a descriptive term, workers' control has come to designate all those aspects of production which were governed by the workers' collective or individual decisions. The sphere of "workers' control" is thus that which is controlled by the workers, whether this means the "traditional" control enjoyed by craftsmen over how their time was allocated, or the "revolutionary" controls exercised by factory councils whereby workers collectively made all decisions governing production. As an embryonic theory of the workers' movement, the theory of workers' control has most often posited a connection between purely defensive control struggles (such as the defence of craft traditions) and aggressive control struggles (such as general strikes and syndicalist movements).³

These two traditions are not mutually exclusive, but they do present rather different analyses of the labour process. The key area

is the interpretation of the history of the trade-union movement. For writers in the first tradition, notably Richard Edwards, the question of the strategy of the workers is not posed, so that the participation of the labour movement in the creation of various forms of control is an unexplored topic.⁴ Writers in the second tradition tend to argue that a tradition of workers' control may be traced from the "functional autonomy" of the craftsman to the rank-and-file rebellions of contemporary factory workers, but they tend to overlook the periods in which forms of workers' control coexisted with, and perpetuated, stable capitalist production. The innocent reader of much North American labour history which focusses on work relations might well wonder how production for profit was possible at all, given the scope and power of the movement for workers' control.

The study of the labour process in the Cumberland coalfields may draw upon a voluminous and rich body of documents, especially the records of the local trade-union movement. These records take us far beyond the world of the trade-union leadership and allow us to enter the day-to-day world of the mine. They are particularly good for Springhill, somewhat less so for Joggins. Analogous records do not exist for other area mines. In contrast with other historians of the labour process, we are not plagued with an absence of first-hand information. However, much of this information resists an easy interpretation. The character of the available sources, and the distinctive traditions of coal mining, have made it difficult to place the Cumberland coal mines directly within either of the two main paradigms in the historiography of work. Three main difficulties present themselves: (1) no one force within

production could unilaterally set down its own rules for the conduct of work, (2) there were marked discontinuities in the evolution of work, drastic changes which the evolutionism of the main traditions makes difficult to explain, and (3) throughout the period the state exerted an influence, and even intervened decisively, to change the way the mine was governed.

The discussion of the politics of production will proceed in four stages. The first will be the presentation of the concept of the industrial regime, made up of processes of work control, class strategies and ideologies, and the organizational requirements of the mine as a system of production. This concept will then be brought to bear on the history of work in the Cumberland coalfields in three separate sections, each devoted to a type of regime and the elucidation of its structure.

1. The concept of the industrial regime

An industrial regime is a historically-specific ensemble of formally or informally specified rules and traditions for the regulation of the workplace, both its day-to-day activities and its long-term trajectory. Any industrial regime must face certain central problems, notably the integration of the external demands placed on the enterprise by its economic environment with the internal technical aspects of the enterprise, and the social integration of diverse individuals in the workplace within a context of shared rules governing work.

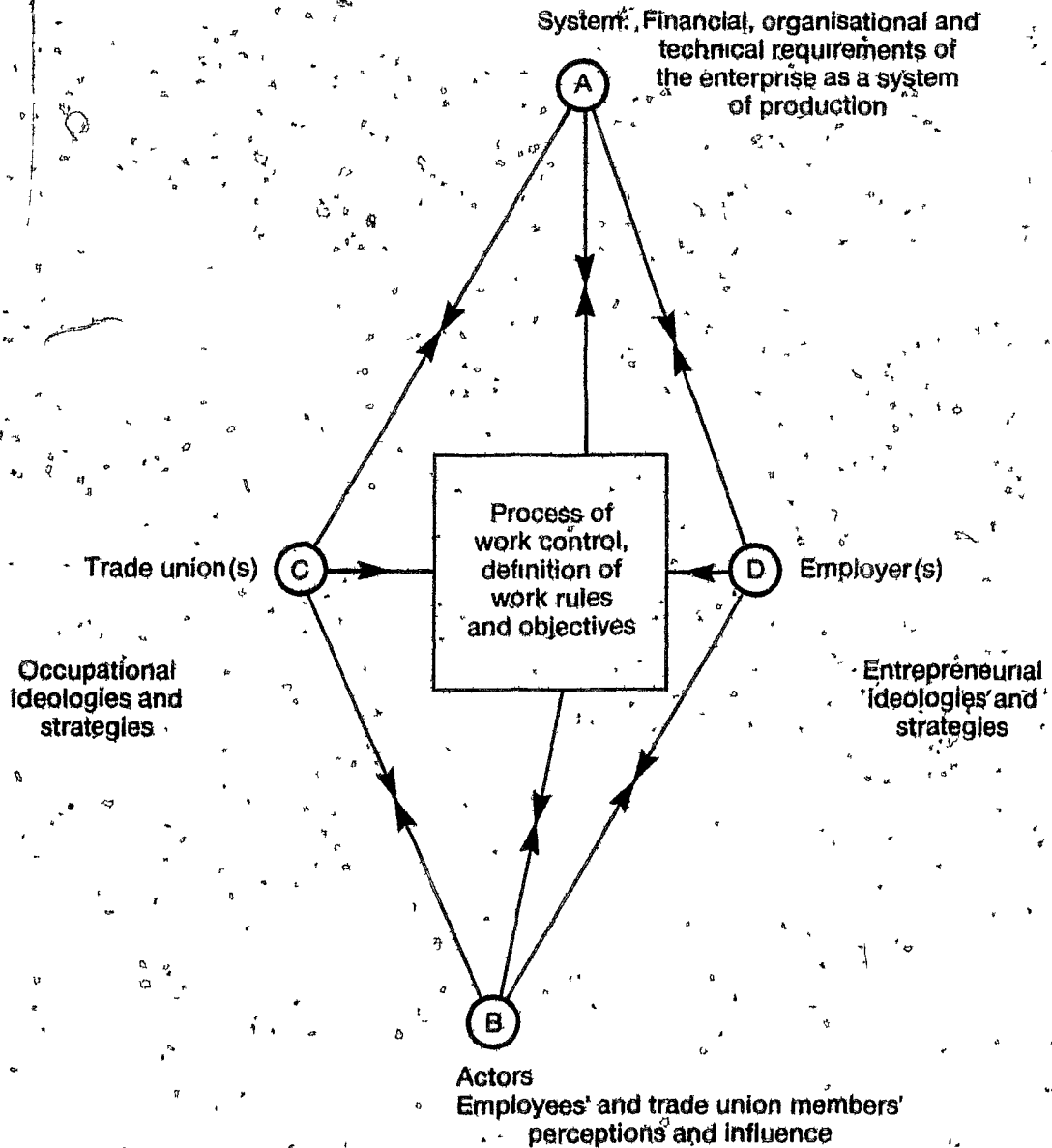
The concept of the industrial regime is meant to suggest a parallel with the world of politics, and it entails a reading of the workplace as a compact polity, with traditions, rulers, conflicts and

cohesion. The nature of the regime is determined by the manner in which authority is exercised. Just as there may be debate about the precise meaning of such designations as 'fascism' or 'democracy,' so too there can be intensive debate about the character of an industrial regime. Such political abstractions are not necessarily meaningless merely because they are not perfectly precise. The concept of an industrial regime is not intended as a precise abstraction which will define all of the essential characteristics of a given workplace with mathematical certainty, nor as an 'ideal-type' to serve as a kind of universal measuring-rod. It is rather intended as a way of summing up certain evident features of a workplace and relating these to the underlying system of power. By describing the political regime of a country we designate its ruling ideology, its institutions of power, the character of its ruling class, and so on; we do not necessarily commit ourselves to propositions which suggest that the political character of the regime is a reflection of the ideas of the masses. A regime governs and limits the way a society may evolve without necessarily being in control of all of its social forces. Similarly an industrial regime is governed by men who do not exert a total control, and it is a mistake to deduce from its official philosophy a general analysis of the actual situation. For example, a highly rigid and dogmatic dictatorship, in both political and industrial life, might evoke a concerted movement of democratic resistance. We would be right in describing such a regime as autocratic, without necessarily passing judgement on how successfully it combatted democratic opposition.

The concept of an industrial regime incorporates aspects of the two central paradigms which have governed the historiography of work. From the side of the logic of capital—which views the evolution of work from the "top-down"—it takes the thesis that the workplace be seen as an integrated system. Perhaps the most useful recent elaboration has been the concept of work control, emphasized particularly by Peter Bowen. A system of work control, in Bowen's functionalist theory, comprises a social field made up of four interacting and interdependent variables: the organisational and technical framework of the production unit, the rank and file, the trade unions, and the management. We thus find a parallelogram of forces, as his diagram suggests.⁵ This model consists of two major dimensions. The horizontal dimension links employers and organized labour directly to the control process (i.e. the making of rules for the regulation of work and its rewards). The vertical dimension links the requirements of the company and the expectations of employees with the control process. What is useful about the model is the emphasis it places on the systemic constraints encountered by any single individual within the workplace. It also formalizes the perception of a diversity of interests, which may not always take a dualist or oppositional form.

This functional interpretation of the workplace (and the similar writings on the socio-technological environment by E.L. Trist and others⁶) makes a solid contribution to the discussion of work, but by placing exclusive emphasis on the single enterprise it tends to see the workplace unrealistically as a pluralist institution. The realities of the wage relationship and the enduring fact of class conflict make it

Figure One. A model of work control in industrial organisations



Source: Peter Bowen, *Social Control in Industrial Organisations*, p. 13.

difficult to adopt this pluralism as a working model. While the parallelogram is suggestive, it tends to cancel the real polarization which the workplace, (particularly a mine) may engender. The concept of an industrial regime transcends the functionalist approach. The relationship of the concept of the "system of work control" to the concept of an industrial regime is analogous to that between a formal presentation of the functions of government, with boxes and arrows designating various paths of authority, and a concrete analysis of the political conjuncture.

The notion of the industrial regime also differs in its central emphasis from the thesis that nineteenth-century workers shared a "culture of control," an essential component of workplace relations. Economic issues, in this approach, are generally seen to involve more fundamental questions of control. This struggle for control mounted by workingmen is interpreted as a struggle over the question of "workplace hegemony," and consequently the very existence of the capitalist order. The theory of the culture of control seems to shorten or nullify the distance between defensive and aggressive workers' control, and to read into the workers' struggles a revolutionary ethos which the record cannot sustain. On the other hand, it has made the useful point that issues concerning wages may imply broader challenges to certain aspects of managerial control, so that a dispute over piece rates may also entail a critique of autocracy.

By using the concept of a "regime" in preference to these alternatives, we are advancing an approach which seeks to avoid an "essentialist" reading of history. One might plausibly interpret this evidence by

stressing the workers' search for power within production and the success they enjoyed in defending customary workplace prerogatives, or by underlining the managerial pursuit of efficiency through scientific management and the manufacturing of consent. Both these approaches, which have inspired many studies, seem to carry the risk of reductionism. This analysis attempts to avoid this pitfall by using the structuralist concept of a "field of force," within which the two contending forces within production are located. Within this analysis the traditions and forces within production are seen as mutually determining, and the field of force created by their interaction is what we have called a regime, a relatively stable set of rules and practices through which production was regulated. Both classes in production attempted to dominate the field of force and impose upon it a pattern which corresponded to their material and symbolic interests. Neither class, in the mining environment, could achieve a final or decisive success. The mines may be unique in offering a genuine opportunity for workers to mount an entrenched campaign of resistance to any concerted attempt to change the relations of work. While other workplaces may well have embodied in their very structures the principles of scientific management or the dehumanization of work, the mines, by virtue of the large number of functions which they had to integrate and their historical rootedness and inflexibility, were not susceptible to successful modernization campaigns. The capacity of capitalists to mould the labour process in the Cumberland mines was always limited by the aspirations of labour and the environment of mining.

Each regime ran the mines in the interests of capitalists. At no

time did workers demand an unequivocal right to rule the mines. At the most they demanded their nationalization. Nor did workers ever win the right to influence the structural development of the mining complexes— which mines were to be opened, at what pace other development work was to proceed, when mines were to be closed. A determined sceptic could quite rightly judge that workers' control did not encompass many of the most crucial aspects of industrial life. At no time did the miners make full use of their indispensability to the system.

At the same time the coal miners mounted the strongest critique of industrial autocracy yet heard in the province, forced the 'overthrow' of one regime, and struggled determinedly for their rights. Their struggles in the workplace, initially defensive in character, went far beyond the defensive in the end. The determined romantic may quite rightly see in the miners of Cumberland County an authentic embodiment of working-class insurgency.

Three different types of regime characterized the established coal mines of Cumberland County. The first was that of paternalist control, the second autocratic control, and the third bureaucratic control. These designations reflect the assumptions of the mine managers and within each regime there were opponents who often subverted the intentions of its rulers. In Springhill there was a progression, possessing an arresting clarity and precision, from one regime to the next: paternalist control in the period 1873-1888, autocratic control from 1888 to 1917, and bureaucratic control from 1917 to 1927. Each one of these regimes entailed a certain ruling ideology and a certain type of opposition. In the Joggins coalfield the patterns are less clear, but at the risk of a

certain over-simplification one may say that the same progression occurred there, although at a different speed and with a more paternalist and authoritarian outcome.

These regimes were never defined as such by contemporaries, but they are not just conventional or fictive constructions imposed upon history in the interests of tidying up its complexities. They express the rules and procedures which had to be present, given what we can find out from empirical data. The procedure by which evidence is evaluated is a structural one, in that an attempt is always made to specify necessary structures which must underlie a given document or event. Only by this structural analysis can we hope to find sense in the hundreds of human decisions recorded in the local lodge records and the newspapers.

The paternalist regime was one in which the mine was largely governed by tradition and unwritten conventions. The central figures in the mine were the general manager and the underground manager. This was a regime characteristic of mines without mining machinery, dependent upon the skills of the collier and the manual labour of helpers and drivers. The paternalist regime did not entail the direct supervision of labour, and many of the decisions affecting the underground were left in the hands of the workers themselves. The wage system was determined more by custom than by the market. A secure trade union enjoyed bargaining rights, and won many of the cases it brought before management. Workers were influenced strongly by an ideology of manliness and independence, but this was not seen as radically opposed to a respect for the general manager and his position. No drastic steps were taken to undermine the

workers' position in the labour market. Most of the bargaining within the mine was done in an informal way, without a written collective agreement, but there were informal understandings in the mine concerning the rule of precedent and the proper conduct of negotiations. A paternalist regime entailed a strategy of "morally uplifting" the workers, but it did not mean that there was no militancy, that workers' rights were not defended, or that the mine manager could do whatever he wanted with respect to the regulation of work.

From 1888 to 1917 a totally different regime prevailed in Springhill, that of autocratic control. The management uprooted the paternalist system and attempted to exercise all the important powers in the mine. This was done in order to better integrate the mine within the emergent system of monopoly capitalism, and possibly as a local response to new doctrines of scientific management. The management's ideology was highly authoritarian and it followed a strategy of eliminating the union. Custom was supplanted by unilaterally imposed schedules, work rules, and increased supervision. The organization of work was to be streamlined and productivity precisely measured. The coal mine was to be regimented, and traditional habits (such as leaving the mine at the conclusion of one's work) eliminated. The heavy-handed authoritarianism of the regime and its complete disregard for the customs and usages of the pit led to a ferocious debate within Springhill. It was very much like a fanatical dictatorship attempting to impose its will upon an undisciplined and traditional society. The response was a defense of traditional workplace prerogatives which gradually became a general critique of autocratic management. By resisting this autocratic

regime the miners won more direct freedom for themselves than they had enjoyed before or would enjoy again. Only through the decisive intervention of the state was this workers' movement contained, and the long-term interests of capital safeguarded. By attempting to establish total control over the mine, the autocratic management of the period 1890-1910 virtually lost all its workplace power. (In the Joggins autocratic managements governed from 1884 to 1896; there was a partial evolution of bureaucratic forms after that).

Finally, from 1917 to 1927, the two coalfields diverged quite radically in their workplace relations. The Joggins coalfield reverted to paternalist management (a reflection of the weakness of its postwar labour movement) while the Springhill coalfield witnessed the efflorescence of a bureaucratic regime, created by labour, capital, and the state. This was a power-sharing formula whereby the trade union was made secure by the state and the contract was for the first time made the central focus of industrial negotiations. The rule of contract required the combined efforts of labour, management, and the state: labour, to create the bureaucratic organization necessary for the enforcement of discipline; capital, to agree to the creation of an 'internal state' within its workplace, within which the worker enjoyed 'constitutional' rights to lodge grievances in exchange for the loss of his right to go on local strikes; and the state, the real motivating force behind this new industrial regime, which it co-administered through the judiciary, the Department of Labour, and the Department of Mines. Workers under this new regime lost significant rights in the workplace, both to the employer and to an emergent labour bureaucracy.

2. The Politics of Paternalism, 1879-1888.

Paternalism means the care or control of a country, community, or a group of employees in a manner suggestive of a father looking after his children. It is a term with a host of connotations. H. Clare Pentland captured one kind of "paternalism" in his description of the timber handlers of early nineteenth-century Quebec, with father and son working for the same merchant, and the merchant and his son looking after "their men," down through the years.⁸ Patrick Joyce, in his study of the factory and politics in the North of England, sees paternalism as acceptance of the social order of the factory on the part of the workers, and a sense of mutual constraints, "bounds beyond which the superior as well as the inferior could not trespass," within a relationship of deference and subordination.⁹ A paternalist regime was implicitly one which was not dependent upon explicit coercion. Paternalism thrived best in the most stable economic environments, according to Joyce, and entailed stable and harmonious labour relations. A connecting thread between the various usages of this term appears to be a personal rule by the manager or employer, whose power stemmed from a 'natural' right to rule the workplace. A paternalist employer regarded his workers as something more than mere 'hands,' and he viewed his authority within the factory or mine as the expression and validation of a sense of superiority, as natural a role as the father's leadership of the Victorian family. A further aspect of paternalism was the extension of the authority of the employer beyond the confines of the workplace to take in many aspects of social and political life. In the strongly paternalist traditions of Lancashire, intermarried elite families

commanded the loyalty of their workers and exercised tremendous political and social influence over them.

The concept of paternalism fits the Nova Scotia coalfields reasonably well from 1879 to 1900, provided it is taken in a broad sense. If by paternalism we mean the mine managers' role as leaders of the coal mine and the special respect accorded them by many workers, then the designation can be accepted without difficulty. Such paternalism coexisted with traditional workplace controls exercised by the miners as part of their tradition. Paternalism and such traditional or 'organic' controls were not at war, and could easily be placed within a unifying framework. There were many instances of miners following the political lead of the mine managers, and mine managers who made public displays of their benevolence. The gifts made by managers to the poor at Christmas were well reported.¹⁰ There is also evidence of the mine managers exercising control over the morals of their employees, as evidenced by the discharge of men who appeared before police court.¹¹ The leader of the Provincial Workmen's Association expressed his irritation with the public manifestations of paternalism in his report of 1892:

To us it may seem strange--while taken as a matter of course by outsiders--that the bulk of [public] advice is given to workingmen. One would almost be tempted to conclude from the fatherly fondness they profess for their welfare, while having so little advice to tender employers, that the workingmen must not only occupy the people's heads, but the people's hearts. We might almost be persuaded to come to this conclusion were we not satisfied that the employees are looked upon as wayward sons, and the employers as indulgent benefactors. Too much, far too much, is said of the attitude of the men towards the masters; and too little of the dealings of the masters toward the men. The men are advised to adopt a conciliatory spirit. Why is the same advice not given to the masters? 12

The Trades Journal made fun of the Pictou Colonial Standard for its slavish adherence to the views of the mine managers. It predicted its editor would be brought before a court for a breach of moral law, and the indictment would read: "[T]hat you...did on 1st November last, and on other occasions, knowingly and willfully bow down thyself and serve, the likenesses of certain men styled managers and did after an abject manner worship them, all of which is a breach of the second clause of Chapter 2 of the "Moral law" etc."¹³

Paternalism is a complex notion, because it involves the systematic creation of symbols which euphemise the realities of power. In this sense it is sharply contrasted with autocratic control, which functions on an overtly coercive basis. Paternalism invested workers with certain rights and constrained the employer by certain moral obligations. It involved the mutual recognition of traditional prerogatives, within an environment overwhelmingly dominated by custom. A system which was governed by paternalism also fostered an insistence upon the independence of workingmen and their right to stand up for themselves. "Be independent, warned a Springhill correspondent of the Trades Journal, or you'll run the risk of having "C.R.C.Co." burned on your forehead!"¹⁴ Such comments are numerous, which reminds us that paternalism did not, in this variant at least, mean an absence of public criticism. Because the mine manager personified the mine and its work relations, because he was supposed to lead the men outside the workplace, his failures and his idiosyncracies were held up for public inspection: No rhetoric was more ruthless than that directed against mine managers during protracted coalfield strikes, such as the Lingan struggle in Cape Breton. The

intense power of the manager crystallized issues of control and gave them a personal dimension. The Trades Journal makes its most serious and telling points in the guise of personal commentaries. This seems to suggest a rather weak variant of paternalism existed in Nova Scotia, at least after 1879--a paternalism which coexisted with deeply-rooted attitudes of independence and autonomy. The historian who sets out to prove the servility and meekness of the miners in the 1880s must be prepared to avert his eyes when he reads much of the evidence.

The establishment of the first durable miners' union in 1879 gave the coal miners an institutional basis from which to criticise the excesses of paternalism. The Provincial Workmen's Association--in its first year named the Provincial Miners' Association--was started by the miners of Springhill in 1879 in the midst of a strike sparked by a wage reduction. Such wage reductions had run through the 1870s in virtually every sector of the economy, and almost all the protective institutions of the local working class had been vanquished. The strike in Springhill was a continuation of this pattern, with the directors of the Spring Hill Mining Company pressing for a three-cent per box reduction, over and above a similar reduction only months before. Robert Drummond, the bankhead boss, took the side of the workers and publicised the profits of the company. The workers won the strike, and the Association spread quickly to Pictou County and eventually to Cape Breton. Although the coal miners of Cumberland County had been on strike before (Joggins in 1864, Springhill in 1876), this was the first time they had achieved anything like stable organization. In Cumberland the union's lodges in the period 1879-1890 were Pioneer Lodge (Springhill),

Brunswick Lodge (Joggins), Progress Lodge (Chignecto), and Concord Lodge (Amherst). Pioneer Lodge, the first base of the new union, was often thought to be the model lodge of the order. The union is commonly associated with the legislative reform of the mining industry and the extension of the franchise. Historians have also described its subservient attitude in collective bargaining and the generally conservative stand it took on social issues.¹⁵ These historical interpretations are one-sided and distorted, however, by their neglect of the local level, where the P.W.A. can be shown to be a militant defender of the miners' rights in the workplace, comfortable with the tactic of the strike and forceful in its relationship with management. This misinterpretation of the P.W.A. is also conditioned by a neglect of the structures within which trade unionism evolves; many of the dismissals of the P.W.A. based upon its ineffectiveness as a province-wide body neglect the structural context, i.e., the fact that within the paternalist regime the most essential decisions were local ones, especially those which helped sustain the complex patchwork of rates and customs governing wages. Only within the structure of its day can the effectiveness of the P.W.A. be judged realistically.

Under the by-laws of the P.W.A., every lodge was to have at all times a standing committee and a managing committee, the first to be nominated by the Master Workman (chairman) of the Lodge, and the second to be elected by its members.¹⁶ The standing committee was to look after union business--signing up new members and such--and the managing committee was empowered to "enquire into all grievances affecting wages or work, which members may make to them, and after ascertaining the

facts of the case, bring the matter before the Lodge with their report thereon....¹⁷ The members of the committees were exhorted to "undertake no important step without the sanction of...[lodge] members," a democratic injunction that was by and large obeyed.¹⁸ From what remains of the local records of the P.W.A.--some coverage in the union newspaper, and the minutes of Pioneer Lodge in Springhill from 1882 to 1886--the union appears to have been an effective, democratically-controlled and vigorous agency for workers' control.

The inner workings of the managing committee in Springhill are preserved in the local records. It clearly was not a bureaucratic structure; there was a frequent turnover of officers and elections were contested. Although one occasionally reads of the committee receiving payment for time lost when its members had to look into difficult cases, this hardly constituted an important aspect of lodge life. Nor were the members of the managing committee beyond the criticism of the rank and file. Its decisions were often subjected to what the Lodge secretary, with a certain impatience, once called "the usual long discussion."¹⁹ When a case was lost, the workers affected would refer it back to the committee for another try. Sometimes the committeemen complained that the members were sending them into management's lair with arguments which were easily refuted.

Bro Fletcher stated that he would like for brothers to tell the truth as the committee were getting in to trouble trying to hold up their points as some of the brothers said that they were not making one dollar a day and Mr. Leckie [the superintendent] brought in Mr Cooper with his books and read over all the names in West Slope for January show that \$1.60 was the average wage 20

Fletcher went through the same embarrassing sequence a little over a month later:

Bro Fletcher went down to see Mr Hall [mine manager] and told him that the men in West Slope were not getting out their coal, when Mr Leckie came in and said Fletcher are you telling more lies again that Bro Chandler was only 37 boxes behind his number in the place of Sixty Seven it was to be hoped that when a Brother brought in a grievance that he would be Sure to give a true one and not make to many mistakes which happen to often 21

The life of the committeeman clearly had its difficulties. Negotiations took place in a rather informal manner, and he had to match his wits against those of the employers. What one notes with surprise is the language of negotiation. There was an informality and bluntness that stemmed from the local character of the mine, from the relative ease with which grievances could be settled. Meetings of the entire lodge were often interrupted to allow the committee to go to the manager's house, and resumed when the committee came back with a settlement.²²

In this one respect labour relations in Springhill in the 1880s resembled the rather idyllic portrait painted by C.W. Lunn in his novel of Springhill, with its contented workmen and theatrically judicious employers.²³

But this was a more complex world than Lunn realized. Workers and employers established ways of coping with issues in the mine, a structure of implicit and explicit rules within which there was a certain reciprocity of rights. This structure had to be respected; to go outside it was to court explicit conflict. Lunn was mistaken, then, in believing that the era of the P.W.A. was relatively free of conflict. Pioneer Lodge went on strike four times from 1882 to 1886 and

threatened to go out on strike a further 23 times; an actual or impending strike was a factor in just under a fifth of the cases handled by the Lodge. Pioneer delegates to the Grand Council of the union--the provincial ruling body--defended the continuing existence of the central body by arguing that by appealing to it for sanction to strike, they had forced management to yield on many occasions.²⁴ For political reasons they did not mention the numerous occasions the Lodge had gone on strike without the sanction of the central body.²⁵

Conflict was inescapably part of the world of coal mining.

Management might be familiar and reasonably accessible, but nonetheless unyielding. In 1884 a frustrated Managing Committee reported to the membership that it had been unable to find the manager to get him to settle the question of local stone, a long-standing grievance. Exasperated beyond endurance at the lack of progress, the Lodge sent the Committee out once again to locate the manager. As the minutes of 19 February 1884 record: the Committee "went out and after some time returned reporting they could not get a chance to speak to the manager who was engaged in a prayer meeting the Com[mittee] advised the men to stay home tomorrow and let the manager look for the com. awhile;..."²⁶ The manager came to terms after a two-day strike. On other occasions the management seem to have been harried and worn down by the demands of the men. Superintendent R.G. Leckie can be seen, through the union minutes, responding with anger to the almost intolerable pressure exerted by the lodge in the short strike waged in 1885; he threw a committee from the union out of his office while a strike was in progress, and then later apologized, explaining that "he would lit this pass as

he was cross and tired last night."²⁷ One is interested both in the evidence of conflict and the language in which the apology was expressed--suggestive of a perception on Leckie's part that the relations with his men could not profitably be allowed to worsen beyond recall.

The paternalist regime faced trade unionism with initial reluctance. Shortly after the strike of 1879, the union was met with the blatant victimisation of its Grand Master, Robert Wilson, who was dismissed on a charge of firing a fast shot.²⁸ There had been nothing gentle about the company's tactics in the strike, which included mass evictions from company housing. Nonetheless the stern anti-unionism of 1879 seems quickly to have evaporated. Eleven months after the strike William Hall, the general manager, was publicly congratulated by the union for "his changed attitude towards the lodge, and for the gracious manner he now received committees from the Lodge, as compared with a year ago." Here was a lovely little vignette of the paternalist regime; as Robert Drummond remembered the scene, Hall "bore no look of perplexity. He did not take it as a roguish reminder of former antipathy."²⁹ Two years later the workers outdid themselves by giving Hall a loving cup, a token of their high esteem. These paternalist gestures have to be seen in two ways, as gestures of subordination, but also (as anthropologists have long reminded us) strategies whereby relations of reciprocal rights and obligations could be built.³⁰

The arrival and gradual acceptance of the trade union completed the parallelogram of forces which shaped the process of work control. Did the union alter the situation? The question cannot be answered,

because no adequate account exists of the traditions or customs of workers before 1879. One account, from Pictou, stresses a craft-like control over the labour process in the 1840s:

...the colliers are considered as tradesmen, and as such paid high wages. They fix their prices and will not consent to admit any other persons into the works. Two-thirds of their work can be done by common labourers and yet they insist upon doing the whole themselves at [exorbitant] wages...In the same pit labourers perform services equally severe for three shillings per day; but these men are not allowed to touch the work of the miners. Sometimes the miners take an apprentice who by the payment of a fee obtains the standing of a miner, but the employer cannot send a single man among them. 31

If this account accurately conveys the nature of the very early labour process in the coal mines, it suggests that the period between the 1840s and the 1880s was one in which the 'craft' aspects of mining, such as the strict control of apprenticeship and the unilateral fixing of prices, had been eroded.

The paternalist regime, after the acceptance of trade unionism, functioned according to tradition and precedent, mostly worked out over many years by the miners themselves and considered a 'natural' part of coal mining, but partly elaborated through a process of negotiation between the union and the company. The employer determined the general context of the work process and set its objectives, but the trade union insisted upon maintaining prices and the fair allocation of places within the mine. Management had the right to allocate the places, but only if it observed certain limits laid down by the men. The men themselves had the right to select the partners with whom they worked.³² Many decisions were made without the formal intervention of the trade

union. The management was Conservative in its political orientation, and devoted to the moral improvement of the men, to whom it donated a reading room, and for whom it helped organize a benefit society. The ideology of the union was one of individual improvement, temperance, and independence. It opposed attempts to interfere with miners in their places, unless such interference could be shown to have a solid basis in the pursuit of mine safety. It is misleading to measure the P.W.A. against the standards of either nineteenth-century craft unionism or twentieth-century industrial unionism. It was not exclusivist in its orientation, and could not easily control access to the mines. (Nor could its successors). In contrast with a modern industrial union, the P.W.A. was not sustained by a compulsory check-off, did not have a collective agreement, and did not enjoy a closed shop. Perhaps the most confusing thing about the union was the striking individualism of its members. Although the lodge imposed certain restrictions, no standard rate was forced upon the coal miners. Consequently it is difficult to determine what impact the lodge had on the preservation of collective wage levels. The evidence (presented in a subsequent table) suggests that the daily average wages ranged from \$1.87 in 1886 to \$2.08 in 1891, in the period 1883-1891; the range of variation around the average of \$1.98 was slight. Whether the miners of Springhill earned better wages than unorganized miners elsewhere is an unanswerable question.

Much of the evidence of the paternalist period can be read in two ways. One could easily stress the abject failure of the lodge and its inability to become a fully-fledged industrial union. The documents suggest a perennial problem with overcrowding the mine, an inability to

maintain a standard rate, the continuing use of poor places as a disciplinary device, and so on. Workers denounced such conditions with passion. On the other hand, the very existence of these critiques, the success enjoyed by the lodge in defending individual wage cases, and the lodge's ability to win concessions from management suggest that a portrait of the paternalist period as one of unalloyed tyranny would be overdrawn and inaccurate. Nor can the traditional view of the P.W.A. as a cautious and accommodating union survive the evidence that Pioneer Lodge, its 'model' local body, frequently threatened to go on strike, and actually did so on four occasions.

What seems to emerge from the evidence is the marked individualism of the coal miners and the divided nature of the workforce. Pioneer Lodge was almost completely dominated by coal miners, a reflection of their central position within the labour process. The miners within this workforce were a kind of elite, with an autonomy at work far greater than the surface workers, shiftmen, or the labourers they themselves employed. Yet the coal miners did not really form a labour aristocracy as the craftsmen did in the cities of the region. The activists of the P.W.A. sought to extend membership to everyone in the mine.³³ The Grand Council of the union was equally concerned that the mine labourers become involved. That there were both differences in outlook between labourers and miners, and a conscious attempt to bridge them, came out clearly in a discussion over the wage question in Springhill in the Grand Council in 1887. Henry Rae, a prominent P.W.A. supporter, noted that there recently had been "considerable discussion over the wage question in Spring Hill," and added

The laborers complain that the wages received by them are not sufficient to purchase the necessities of life. The members of 'Pioneer' consider the assertion well founded. The laborers also complain that being in the minority in the lodge their claims have been overlooked... 34

Another delegate from Pioneer Lodge, who agreed that the surface men thought the miners "did not give them much attention or consideration," suggested that the miners forego a pay raise and give the labourers a chance to improve their earnings.³⁵ In 1888, when the company posted a notice declaring that no loader's wage would be received in the office above \$1.25 per day (it was the custom to have the office deduct the pay directly from the miners' wages), the Trades Journal noted:

This is one of your Pictou dodges. But the men are bound to stand by the loaders, and see they get fair play. There are some loaders loading three and four men's coal, and this new rule, if in force, would be a reduction of 25 to 50 per cent. 36

The miners clearly were a kind of elite, but the imperatives of mining (the need for the integration of the work of many kinds of workers) and the realities of kinship made their relationship to loaders, labourers, and surface workers a complex and ambiguous one.

The heart of the traditional controls of the workers lay in the power and independence of the skilled colliers, but there was a genuine ambivalence in the kind of trade unionism this created. The same isolation and dispersal of coal miners that made it hard for management to exert unified control over the workplace made it difficult for a trade union to organize it as well. To transform the latent, deep mentality of solidarity into an active and overt unity required an unceasing creativity. There was no legislative protection for trade

unionism: although trade unions had been thought legal since 1864, they were not guaranteed any workplace rights by the law. It was perfectly possible for a trade union to languish and die through exhaustion or inactivity. Pioneer Lodge in Springhill sought to achieve a deduction for the union at the company office (a "check-off"), but was unsuccessful. Thus everything depended on the discipline and organization of union members, who alone could keep the Lodge going.³⁷

Creating an alliance among independent colliers, and between them and other workers of the mine, was a difficult business. The records of Pioneer Lodge abound with cases which reveal how hard it was to enforce a common standard of wages. Every man made his own contract, although within limits governed by the Lodge. (The Lodge laid down, for example, that the miners were to pay their loaders no more than one dollar, although this limit was not successfully administered).³⁸ The question of miners loading their own coal and thereby depriving the loaders of work was particularly difficult.

Some Brothers Stated in Lodge that Niles and butty were back in their old place and still loading their own coal and Shoving it down and carrying timber which all the brothers in the hall thought was the worst kind of black legging and thought they should be runned out of the place if the report be true which there is no doubt about it after what proffe [proof] was showing in the lodge 39

--so goes one indignant splutter in the Springhill minutes. (The members were subsequently cleared of the charge). William Hall, cracking a joke which doubtless did not endear him to his workers, thought it amusing that Pioneer Lodge wanted a boy to hand out the picks to avoid the problem of them being stolen: "He could not see why he had a right to

put a boy there to give the picks out as he thought that we whear all brothers and they shouldnt take other picks."40

It was a fissiparous realm which only the most determined lodge could dominate. It bore a certain resemblance to property-holding in the middle ages; each place theoretically owned by the company but dominated by a team of miners, subject to only occasional inspections. Our labour historiography has stressed, quite rightly, how this isolated mining gave the miner tremendous freedom from company supervision, but it must also be noted that it made the miner a difficult man to organize and discipline.

The mine under the paternalist regime was a patchwork of traditions and customs, a workplace run on the basis of common law. If there were written rules (the evidence on this point is very thin), they have not survived. But more importantly, they did not make much impact on the union sessions, where everything was conducted according to precedent and tradition. Perhaps the mine, this uniquely historical workplace, was particularly prone to a kind of 'common law empiricism,' which was strengthened as well by the incomplete transformation of the labour process. Certainly Henry Swift, who was part of an effort to reform this untidy and complex realm, understood this aspect of the mine very well, as he reveals in a discussion of a small disturbance in 1890:

Men out on account they say of excessive docking for Shortage & Stone well for stone there may be some Consideration but for shortage I have no sympathy for some of the boxes come up scandalous short It is what I call putting it on the Bank Foreman they request the Manager to get the coal loaded by Company hands and make a reduction in the box I say have nothing to do with loading there coal it would in my opinion be opening a back

door for trouble some future day that is one thing to be careful in establishing precedents for they are always stuck for the future and come up when you least think

Understandably Swift was an eloquent advocate of written rules: "What we want about the Colliery is a good Code of Rules Regulation for the guidance of all parties and these strictly enforced," he writes in 1890.⁴¹ His great rule book was not to come for a further two decades.

The records of Pioneer Lodge suggest not only an exaggerated respect for tradition and precedent, but the functioning of the lodge as a working-class court of law. Members were "tried" for their failure to maintain certain standards, particularly those relating to the price of coal; one member, charged with "contempt of Lodge," was taken to Magistrate's Court.⁴² Under the rules of the P.W.A., if a member refused "to stand trial when duly summoned, it shall be considered as a acknowledgement of his guilt, and the Lodge, in his absence, may pass sentence from which there shall be no appeal."⁴³ It sounded much worse than it actually was. Most of the 24 cases brought before Pioneer Lodge from 1882 to 1886 were dropped; only one was clearly sustained. Pioneer Lodge was far more clement in its administration of justice than the P.W.A. rules implied. It had a tremendous enthusiasm for invoking precedent, and careful records were kept of lodge decisions. The care taken to keep such records and the detailed commentaries they contain again suggest that the exigencies of mining impressed upon the coal miners the need for a certain grasp of the past, a certain command of precedent. The records also suggest how hard the building of a

unified movement could be in this environment.

Was this paternalist regime a general phenomenon spread through the Cumberland coalfields, or was it confined to Springhill? The question is extremely difficult. The evidence is too incomplete to allow a certain judgement one way or the other. A strike at Chignecto in February 1883 is suggestive. Much of the strike was taken up with the alleged use of bad language by the manager. He felt impelled to write to the union newspaper to defend himself, although he did so with a certain equivocation.

Considerable stress is laid on the awfull language uttered by me--well, Mr. Editor I did utter it and hundreds of the members of the Lodge would have done the same thing in my place....

The manager proceeded to cite his defence of incorporation of the P.W.A. as an example of his favourable views.⁴⁴ That he bothered to write at all is an interesting reflection of a somewhat complex situation. We also know that in January 1884 Chignecto miners were faced with an ingenious attempt to reduce their wages by tampering with the size of the box; the correspondent of the newspaper, in a good statement of the doctrine of reciprocal rights, wrote that "Mr. Baird [the manager] should give his standard; if a box goes over that weight let him have it, if under let him give a little. There should be give as well as take in justice."⁴⁵ In the course of a strike the management brought in strikebreakers, but the collapse of the local union, Progress Lodge, was more directly brought on by the crash of the industry in Chignecto.

It is probable that the miners of West Cumberland were quite similar in their outlook to the other miners of the county, simply because many of them came from Pictou and Springhill. There was a

chronic shortage of labour in Chignecto, and wages and standards had to be maintained to some level in order to retain a largely floating population. The Trades Journal captured the situation succinctly in a brief article on Chignecto in April 1884:

Up till Saturday last the mine was still idle, only having worked one day in three weeks. The mine worked Tuesday the 25th, but it is thought that it was worked merely to keep the men from leaving. Mr. Baird, the manager, has said he is going to start the mine full blast on the first of April. It is to be hoped he won't make April fools of the men. 46

The point of the story is that the men, met with unemployment, highly unsatisfactory conditions or poor wages would simply pick up and leave; they had had little time to develop a lasting attachment to Chignecto in the first place. Although managers would have had to come close to the provincial standard in conditions and wages--in order to retain the skilled colliers, whose short supply is amply documented--the transiency of the workers almost certainly militated against any complex development of workers' control. Much the same may be said for River Hebert, where the rhythm and amount of work were strictly determined by the availability of shipping.⁴⁷ By the end of April 1884, out of nine officers of Progress Lodge in Chignecto, only two remained in the mine.⁴⁸

It is much the same at the Joggins, which also neared collapse in the mid-1880s. Here negotiations between the manager and the men had the rawness of labour relations in the lumber woods--which might indeed have served as an inspiration.

A Committee of a lodge in Cumberland County were deputed to see the manager of a coal mine not a hundred miles from the Joggins. The committee proffered the request of the lodge, when the manager drew off his gloves and said, "let me have a stump."

to place my back against, and I will lick the whole crowd of you." The right man wasn't on the Committee that time, or there would have been a bee on that managers nose, and a bill on the side of his eye. 49

This from a P.W.A. lodge correspondent, the same union that is supposed to have been so addicted to industrial servility. But the incident reveals as well a certain rough-and-ready autocracy that does not fit our conception of reciprocal rights in paternalism. This impression is confirmed by the strike which followed, with a certain inevitability, in May 1884. The company suspended payment of wages to its employees, and the manager, B.B. Barnhill, declared a lock-out: he also posted notices warning the men to give up possession of their houses before they drew their pay or face 100% rent increases. He also threatened to discharge every officer of the union, promised to give every man ten dollars who left the P.W.A., and made plans to replace all his workers with men from other parts of the province. The situation soon took on a violent aspect. A black miner came to see Barnhill about the possibility of getting his wages--the miners had not been paid for five months for their labour--and Barnhill responded in his usual direct manner.

Mr. B. said he would not give it until the man had left the Company's house. The miner then asked him to give him as much money as pay the expenses of removing. Mr. B. would not, but instead picked up a piece of iron and threw it at the miner. Luckily it missed him. The miner in his turn picked it up and fired it at Barnhill and, being a more accurate marksman struck Mr. B. on the head causing blood to flow. The sight of the blood caused Mr. B. to swoon and he was led home by the underground boss. Though Mr. B. was the aggressor, and set a bad example, it is a pity the miner threw the piece of iron at all. Being a powerful man he

could easily have laid the agent across his knee, and given him a proper, and some might say deserved, spanking. 50

We can learn something of the attitude of 'independence' even from an incident which revealed the limits of management autocracy—for the tone of this passage conveys an acid critique of managers of Barnhill's type.

Still it is worth noting that Barnhill succeeded in driving Brunswick Lodge out of the Joggins, breaking the strike and the spirit of the men. Many moved away. A majority, however, signed a document severing their connection with the P.W.A., and became the only large body of coal miners in Nova Scotia not to be organized in the union. The Trades Journal dismissed the Joggins miners as "the most curious class of workmen in the province," who had been incapable of union discipline, indulging in little strikes, and impossible to keep in line. The charter of the Lodge was suspended.⁵¹ Although this incident is sometimes interpreted as evidence that the P.W.A. would suspend the charters of Lodges who went on strike without permission, it shows only that the union would give in before the inevitable. Had Brunswick Lodge won its strike, there is no question that it would have maintained its connection with the union—until the men signed the document, the coverage in the union newspaper had been completely supportive. After this defeat the miners of Joggins sank even further into unsteady work and delayed wages;⁵² the town was described as being overrun by liquor-sellers, with the covert agreement of the management, a sign (thought the Trades Journal correspondent) of the management's disregard for sobriety and independence.⁵³

Plainly it is impossible to say that the paternalist ethos one finds in Springhill can be taken as a representative indication of the coal mines throughout the County. One should still note the individualism and independence that comes through in these accounts from the rougher Joggins coalfield. Even in a mining area marked by acute instability and still imprisoned within the logic of mercantile capitalism, we sense an independent spirit, a stubborn resistance to the impositions of mine managers.

The paternalist regime can be explored further by examining in greater detail the way cases were handled in Springhill. The lodge handled 137 cases in the period 1882-1886, about 36 cases a year.⁵⁴ The membership in good standing of the lodge in 1884 was 317 in February and 286 in September, so it is plain that a minority of workers belonged to the union, and a minority of these raised cases in the lodge. The statistical examination of grievances in union records is highly delicate, because a sudden burst of cases of a certain sort might reflect either a new enthusiasm for trade unionism or a sudden crackdown by the company. (In this respect the grievance statistics are very much like crime data). It is dangerous to read too much into the absence of a given issue in the official grievance record, because this may indicate either that the issue was solved without recourse to the union or that the workers were so powerless that the issue could never even be approached. It is important to remember that the P.W.A. (unlike the later union) played a fairly passive part in the generation of grievances. A majority of all cases were brought up by one member or one team. It was up to individual members or teams to bring issues to the union; the union

rarely generated issues of its own accord. Of the 128 cases which can be assigned a general location, 88.3 per cent originated in the underground. A total of 92.9 per cent of the cases concerned the mining and loading of coal; the only other categories of work worth mentioning were those of timbering and tracklaying (1.8 per cent) and shift work (1.8 per cent). The skilled miners' domination of this union was far out of proportion to his presence in the workforce. This may again pose certain unavoidable problems of evidence, since it may lead us to look at the mine too exclusively through the eyes of the miner.

The length of time cases lasted in the minute books is another indication of how this regime worked. By far the greatest number of cases (68.6 per cent) were settled within seven days. Looking at cases which were contested by management (49, in number), we establish that 40.8 per cent were concluded within seven days, but 18.4 per cent took as many as fourteen days to settle. The mean duration of such contested cases was 13.1 days, in contrast with the general mean of 9.4. One case lasted 49 days before it was settled.

The issues covered by these cases encompassed most features of underground working life. To orient discussion we may focus on five particular areas: hiring, discharge, mine management, wages, and other issues.

The contradictions of paternalism emerge with particular clarity in a consideration of hiring. Of the 18 cases raised in Pioneer Lodge about hiring, a third were won outright by the workers, one was a complete defeat, and the remainder had an ambivalent outcome (either the case was dropped, or a compromise of some sort was reached, or the

outcome was unknown). An example of a success was the case of Bro. Shipley, reported in the minutes of 8 November 1883. "Bro Shipley Said he was laid off [f] work for a long time he also Stated When he was Well The Boss Said He had No Work For Him." The managing committee interceded with the manager, and Bro. Shipley was guaranteed a place as soon as possible.⁵⁵ The case of William Schurman also suggested the value of the lodge in its struggle to obtain work for members, and conveys something of the flavour of negotiations within a paternalist regime. "A grievance of Bro Wm Schurman that when he asked for work he had been insolently answered by the underground manager and given no satisfaction" was referred to the managing committee on 22 May 1884. On 29 May the managing committee "reported seeing Manager about Schurman's case which was satisfactorily settled."⁵⁶ On 26 June 1884, "Bro Hughes Said he had Been out of work for three Weeks and wished the Lodge would do Something for him." The following week the managing committee reported that his case had been satisfactorily settled.⁵⁷ The defence of a worker's employment was involved in a strike in 1886. On 4 February 1886 Bro. Robbins stated that he had been told he was not going to get work for some time and complained that he had been "passed over." The lodge passed a motion that "the committee see manager and deman[d] work for them by Monday or we stand with them". The lodge went on strike and obtained work for Robbins (and better conditions for the men of his slope).⁵⁸

Many of the compromises worked out in hiring cases enabled workers to keep on working. A common compromise was to offer a coal miner a job loading coal if there was no place for him.⁵⁹ This compromise may

well have reflected the interests of the other union members as well, who preferred seeing unemployed miners take loading jobs than witness a wholesale overcrowding of the pit.⁶⁰ In the case of the Noiles Brothers, who were without a place in the mine, the manager stated that he would give the brothers a place when he had one suitable for them, although another official was reported to have said that the "brothers wear no benefit to him." The manager advised the official to give the Noiles brothers work, and if he had no place, to give them shift work.⁶¹

The cases are only possible within a certain implicit structure of understandings and assumptions. In a purely atomistic setting, governed strictly by the laws of labour supply and demand, the worker enjoys no 'proprietary' rights to a job. The cases cited above do not suggest a regime in which workers enjoyed no rights to their places within the mine. They rather suggest a process of negotiation, a sharing of control over hiring. Even cases which were not successfully concluded (from the individual worker's point of view) do not undermine the hypothesis that a process of negotiation was involved here. In the case of James McEwan, who complained that William Hall would not give him work, the managing committee went to the company officials and was told that "they could not make places for to suit him." The union decided to ask if the member could obtain a position in the difficult and unrewarding 'Stoney/Balance'. The company in return offered the member a job loading, "if he could get any one to take him." Finally, "after considerable discussion it was moved and 2nd that Bro McEwan case be dismissed."⁶² Besides showing us something about the mentality of the mine--where workers collectively "dismissed" a case--this case

incites questions about the nature of workers' power within this regime. There were plainly some workers the managing committee was prepared to fight hard for, as evidenced by the strike of 1886, and some it was not. The worker's individual rights depended, to some extent, on the respect and standing he enjoyed in the lodge. Formally he had no legal right to employment; in reality he had the customary right to a job, provided he enjoyed the support of the lodge members.

The lodge's success in defending the rights of individual members was a contrast to its failure to combat the overcrowding of the mine. There is a real difficulty in assessing this problem. The miners persistently complained that the pit was 'overcrowded,' with too many miners overwhelming the haulage system or being forced to double up in places. The interpretive difficulty is that of gauging how serious a problem this was. The evidence provided by average daily incomes sustains the miners' claim that downward pressure on wages was exerted (at least partly through overcrowding) in the years 1885 and 1886, but contradicts their more lurid descriptions of wage reductions. It is also a matter of degree. Only in 1888 did the critique of overcrowding the mine reach a swelling chorus, and it was then thought that the company's policy had drastically changed. Finally, the miners' case that the company systematically overcrowded the mine should be viewed in the context of the genuine difficulty any mine management faced in co-ordinating the many functions the pit had to perform, such as production and haulage.

The question of overcrowding is at the centre of the politics of production in the 1880s. Writing in the Trades Journal, a "Stone

Boulder" from Springhill discerned a motive behind overcrowding in the mine:

"I believe there is a purpose in the overcrowding of the mine, which the men will feel if they don't waken up a bit. There are none of the miners who seek to deny brothers from other localities a share of their work, but if this crowding and squeezing of men into the mine is not put a stop to, and at once, then the pay of the old residenters will not alone suffer, but the new comers will wish they had never come at all. Why do the bosses overcrowd the pit? Why are they getting a little bit saucier than they were? Why are they seeking to lower the prices, and curtail the allowance 'for stone in a bord'? Ask those fellows (brothers?) who loaf about the streets on Thursday evenings, in order to be seen by the Underground or some of the other bosses. There are no doubt some contemptible men among the workingmen. No unity, all jealousy in some of them. 63

Leaving aside this rather remarkable turn of phrase—"saucier bosses!"—we want to note the interconnected analysis presented by this miner, in which hiring was seen as a moment of a more general struggle for control, manifested in unemployment, in lowered prices, in the whole understanding of the workers' self-respect and independence. This is not an exceptional quotation: many more made the same connections between hiring, paternalism and the ideology of independence.

Through the 1880s the question of the company hiring too many men for the economic welfare of the individual mine workers was raised repeatedly.⁶⁴ Miners believed that the manager had felt free to overcrowd the mine because of low attendance in the Lodge. Only a sense that the union was strong would deter him, argued a Springhill correspondent: "[W]hen the manager learns the attendance is slack, he concludes the men aren't greatly concerned, and does exactly as he pleases." The manager seemed to be forgetting past promises to hire no new hands while

old ones were without employment; it needed union pressure to keep the manager "honorable and upright."⁶⁵ The management claimed that a surplus of men was required because of high rates of absenteeism.⁶⁶ Even after intimating to workers that trade would be slow in months to come, the management continued to hire men.⁶⁷ The grievance persisted throughout the period of the paternalist regime, and seemed to resist the efforts of coal miners. One Springhill observer noted,

We have been nearly seven years organized and there is still with us an evil that has never been removed, and it is a most serious one; I refer to the wrong and the evil of overcrowding the mine. I fail to see how the company can make a larger profit, by employing one thousand men and boys, than by employing seven hundred when they only have an output sufficient to give employment to the latter number. Early last fall the lodge requested the manager to hire no new hands. He gave no practical heed to their request, but kept filling up the pit with new men, and what is the result? Just this, that many families to day have not the necessaries of life. Is the manager culpable and responsible for this? He is. If a manager induces another to go into a business which will not give him sufficient to maintain his family, and when his going into that business impoverishes others, I think he has committed a heinous crime, especially when his only object is to keep his other employees so poor that they cannot be else than slaves. 68

Again one is impressed by the connections drawn, in this case between dependency upon the coal company and a systematic reduction in living standards.

No policy put forward by Pioneer Lodge in the period seems to have had much impact on the systematic overcrowding of the mine. The union did not follow a consistent policy of enforcing the closed shop. Certainly it made strong representations to newcomers to the mine to

join the union.⁶⁹ The Standing Committee drew up a list of all the non-union men about the mine in 1884, but was disappointed in its efforts to recruit them. Real impatience was expressed in a resolution passed in October 1884: "[T]hat we take no Scrabs in to our Lodge On Motion it was past that after this Day When the Standing Com ask a Man and he Refuses to Join that we Work no longer With him or take him in the Lodge."⁷⁰ Although Pioneer Lodge did browbeat one man into joining the Lodge by threatening to have him dismissed, a policy of having all non-members fired was dropped in April 1886.⁷¹ Pioneer Lodge settled for an ineffective policy of moral suasion.⁷²

The hiring of too many men for the haulage capacity of the mine was a fundamental problem. Men might put in three days' work a week, and still be unable to get their coal taken away.⁷³ It is easily understood why the miners embraced with so much enthusiasm a political solution to the difficulty which imposed a two-year training period upon all new men before they were given the picks.⁷⁴ But even this protection was systematically undermined, by lax enforcement and by the union's own policy of allowing exceptions in the case of machine miners.⁷⁵ Probably the immense pressures placed upon all barriers to a free labour market by the new forces of monopoly capitalism would have entailed the emasculation of such protective policies in any event.

Hiring thus presents us with a clear portrait of the realities of a paternalist regime. The manager and his officials had the last word about hiring. They hired too many men, in the opinion of the men, and were able to do it without forceful working-class resistance. The

system entailed some of the classic symptoms of deference. Workers were to be found waiting on street corners to catch the eye of the boss, to ask him for the favour of a job. The coal miners' position was weakened by the numbers of men who crowded the pits. His position was not one of craft control, in which skilled workers could protect themselves in the labour market. Moreover, the workers were not always able to defend their jobs through their union.

That is the view of the situation as it might have been presented by a union militant, addressing his brothers in a rousing speech. But the ambiguity of the situation lies in the fact that the militant was able to make his speech, or write to the union newspaper, or bring cases before his lodge. There was in fact a balance here that did not always work against the workers. Individuals could win their jobs back, provided they were men who enjoyed the respect of the lodge. The contemporary critique of paternalist control only made sense on the basis of an alternative conception of independence. This regime of paternalism does not appear to be explained by a notion that a deferential outlook had established deep roots in the workers. Instead it appears to be explained as a governing practice which entailed a division of power and a debate between proponents of deference and proponents of independence.

Similar points can be made about the question of discharge. Only eight cases are reported in the minutes, four of which were indecisive, and the remainder of which were split between workers and the company. The reinstatement of discharged men after the intervention of the managing committee was announced on 8 January 1885.⁷⁶ On the other hand,

the miners were unable to defend one of their members discharged by William Hall for refusing to work overtime. Hall evidently told the committee that "Bro Bradley discharged himself and that he would not get his work back again."⁷⁷ Given the perceived overcrowding of the mine and the presence of non-unionists, there is some evidence to suggest that unionists were not opposed to dismissals of some workers, particularly liquor-sellers or loafers. The correspondent in the Trades Journal remarked,

Mr. Leckie has informed the committee that he intends to bundle off the premises a lot of loafers who won't work, in order to make room for steady workmen. There are a number, it seems, who are only fit for work about half the time. Let him use the sickle righteously. 78

The management's right to discharge was limited by agreement with the union that fourteen days' notice would be given.⁷⁹ What is striking is the very low number of discharge cases. Although this might be explained in terms of deference, a more plausible inference is that discharge was not customarily used as a disciplinary device. It is otherwise difficult to conceive why workers who fought so resolutely over other issues would have maintained a discrete silence on this one.

Perhaps the most important area of mining practice influenced by workers was the day-to-day realm of mine management. Such practices included the allocation of jobs or shifts, the equality of access to the mine transportation system, questions of getting to and from work, the quality of powder and picks, the methods used in timbering, the promotion of workers and the conduct of supervisory personnel.

The most noteworthy issues of mine management (represented by 44.4% of the 27 cases of this type) was that of equal access to coal cars.

Throughout North America miners traditionally insisted upon each team getting the same number of coal cars as others (the 'square turn'). John Brophy, who noted that the flow of mine cars was one form of discipline, suggests that "The one factor outside his [the miner's] control was the turn of the cars. The drivers who brought the empty cars back to the workplaces were supposed to deliver them to each in turn, because each miner was entitled to an equal chance to get out coal." The driver who played favourites, and the miner who benefitted from such cheating, were breaking an unwritten rule in the mine.⁸⁰ The doctrine of the 'square turn' was in fact a form of restriction of output and a way of enforcing a standard rate. The zealous miner tempted to overwork himself might well be restrained by the common demands of the transportation system. On 29 January 1885, for example, the lodge heard the case of Noiles & Co., who were reported for "loading their coal twice," which evidently meant obtaining a free turn on the coal cars. They were cleared on the charge.⁸¹ More common were the charges brought against the management by members that they were not getting their coal out. The men of the North Slope complained in December 1883 of a chronic shortage of boxes. "Bro Wylie and others complained of not getting coal out, saying they were getting fewer boxes now than before the com[mittee] were seeing manager about this trouble, after considerable discussion the com were instructed to see manager again and tell him the coal must be taken out or there would be trouble," proclaims the report in the minute book.⁸² The manager assured the miners that he intended to resolve the problem at once. A frustrated lodge told the manager on 24 January 1884 that "he had only 3 working days more to get

ready for taking out coal." The manager's response was, according to the lodge minutes, that "he was doing as well as he could and if there was to be trouble he could not help it..."⁸³ The case appears to have been settled, if the silence in the minutes is any indication. The common response of management, when faced with criticism that coal was not being taken out, was to promise to do better.

This suggests the unwritten nature of many of the work rules characteristic of the paternalist regime. The lodge adamantly insisted upon the doctrine of the equal turn, and refused to allow any compromises even in cases where miners wanted compensation for difficult places.⁸⁴

Miners were also anxious to enforce certain standards governing transportation to and from work. On 17 January 1884, the managing committee was "instructed to tell the manager the travelling road in north slope must be made fit travel on." The manager promised to fix the road.⁸⁵

Workers also brought grievances about the way promotion was handled. Tom Brown Jr. brought in a grievance on 17 April 1884. Young Brown wanted to go loading, but the management informed the managing committee that he was considered too small for the job. The case was then left in the hands of the committee, who were instructed to "get the Boys father to go to the Manager With Them." The manager promised to settle the case satisfactorily.⁸⁶ This is the commonest type of promotion case: boys who wanted to be loaders, but were judged too small to make the transition.

Mining methods and safety were also raised in grievance cases. One brother charged that he had been threatened with discharge because

he used sleepers instead of cap-pieces in timbering (a cap-piece was less expensive). As the manager explained, sleepers were scarce and he requested that the men use as few as possible, although he noted that "No man was compelled to hew cap pieces and if suitable material was not provided the men were at liberty to use sleepers."⁸⁷ The quality of the picks provided by the company, and the powder sold through the company store was also subjected to criticism. Miners were particularly concerned about the picks and made the appointment of a regular pick boy a major demand.⁸⁸

What dominates these mine management issues is the personal individual character of each grievance. One searches in vain for a general appraisal of safety conditions, but one finds in the newspaper an abrasive critique of the mine management, which was advised to see that "thoroughly competent men are employed as firemen, and not send incompetent men solely because they are tools and black legs."⁸⁹ One also searches in vain for such issues as the formation of the working teams or the transition to the full status of miner. These issues were settled without recourse to the union--one suspects through the operation of traditions accepted by both labour and management. Throughout the period of paternalism, one finds no generalized criticism of industrial autocracy, but harsh appraisals of "saucy bosses," no general statements about the evils of capitalism, but stirring appeals to the mine manager to be honourable and end the overcrowding of the mines which so threatened workingmen. Paternalism meant the domination of ideology by the personal and the particular, and it was in these terms that the workers fought, with some spirit, for their rights.

On wage issues, the paternalist regime followed this same pattern. There was no wage scale, regular bargaining, or uniformity. Everything was based upon rule-of-thumb empiricism and custom. E. J. Hobsbawm, in a seminal essay, suggests that this was a common feature of negotiations in early nineteenth-century Britain. Short-term calculation, custom and empiricism determined wage levels more than coherent rational analysis. Only after time did workers and employers master the 'rules' of the capitalist labour market by adapting their demands and expectations to what the market could bear. In the first stage workers fixed their basic asking price for labour by non-economic criteria, and employers measured the degree of labour utilization by custom, or empirically, or possibly not at all.⁹⁰ Hobsbawm's analysis suggests essential features of wage regulation under the paternalist regime. The situation was one of transition. Gradually the P.W.A. brought miners to an awareness of the 'new rules of the game' by insisting on the importance of market conditions. But throughout the 1880s the Springhill mines were run on a chaotic and disorganized wage system.

There were conscious doubts about how far a coherent strategy could be worked out for Springhill. Could wages ever be made fairly uniform? Men in 1888, eager to get work in an overcrowded mine, would agree to work a balance at a lower rate than in the adjoining balance.⁹¹ The physical conditions of the mine tended to discourage uniformity, as a delegate to the Grand Council of the P.W.A. suggested in 1889:

Bro. P. McKay was puzzled as to what opinion to express in reference to Spring Hill. He had worked in many coal mines but a stranger place than Spring Hill to work in he had never entered. It would be a difficult matter to get all the men in Spring Hill

on an equal footing. There were too many sub-
divisions both as to rates and to places. No
two pair of men were on the same footing as two
other pairs. 92

In such a setting, the contract made between the miner and the company was no mere vestige of petty production: it had the real significance of a wage rate determined on an individual basis, limited only by management's willingness to pay and the normative standards of the worker. Even the very concept of paying all workers on the same basis could be questioned in this setting. 93

In the traditional mine of the 1880s there was no collective agreement by which miners regulated the price of their labour, nor even a list of prices setting down the price of certain tasks. Payment, for the miners, was by the box (not by weight). One box weighed 1650 lbs. (or .737 long tons). Miners were also allowed to claim yardage for 'narrow work,' the development work by which the roadways and slopes of the mine were built. The miner was expected to pay for his own powder, the services of a loader, and for the house coal he received from the company (at a reduced rate). These payments were deducted from his paycheck. After a difficult struggle, payment was on a fortnightly basis. 94 Apart from this somewhat complex situation for the coal miners, three other modes of payment could be found in the mine: monthly salaries for officials; sub-contracted wages for the loaders (paid through the miners), and daily wages for the company hands. As Table One suggests, the tendency in the period 1883-1890 was one of stability. However, these averages pertain to the coal miners, and the wages of other workers (apart from the officials) were somewhat

lower, while the average household income of mine families would be considerably higher.

Table One

Average Wages of Coal Miners in Springhill, 1883-1909

Year	Daily Average	Index (1900=100)	Yearly Average	Index (1900=100)
1883	\$1.98	87.2	\$572.22	93.3
1884	2.03	89.4	539.98	88.1
1885	1.90	83.7	494.00	80.6
1886	1.87	82.3	471.24	76.9
1887	2.02	89.0	555.50	90.6
1888	1.96	86.3	421.40	68.8
1889	2.01	88.5	508.53	82.9
1890	2.01	88.5	452.25	73.8
1891	2.08	91.6	536.64	87.6
1892	1.96	86.3	n.a.	n.a.
1893	2.09	92.0	317.68	51.8
1894	1.93	85.0	432.32	70.5
1895	1.84	81.0	325.68	53.1
1896	1.95	85.9	503.10	82.1
1897	1.83	80.6	559.98	91.4
1898	1.92	84.6	468.48	76.4
1899	1.91	84.1	460.31	75.1
1900	2.27	100.0	612.90	100.0
1901	2.83	124.7	648.07	105.7
1902	2.62	115.4	634.04	103.4
1903	2.88	126.9	754.56	123.1
1904	2.98	131.3	560.24	91.4
1905	2.97	130.8	665.28	108.5
1906	3.18	140.1	772.74	126.1
1907	3.14	138.3	675.10	110.1
1908	3.00	132.2	687.00	112.1
1909	2.89	127.3	641.58	104.7

Sources: Maritime Mining Record, 10 December 1902, p. 15; Report of Board in Dispute Between Cumberland Railway and Coal Company, of Springhill, N.S., and its Employees, in the Labour Gazette, Vol. X, No. 1 (August 1909), p. 214. Yearly averages computed by multiplying the daily average by the number of days worked and dividing by the number of workers. Incidentally the statistics reported by the newspaper and by the Commission (see Table Two) correspond with each other closely. The survival of these wage records is extremely lucky, because the discussion of miners' wages has hitherto been confined to rates as opposed to earnings.

The absence of formal mechanisms and documents of wage negotiation does not mean that the miners were at the mercy of the coal company. They fought for traditional, normative standards of a 'fair day's wage for a fair day's work.' A Springhill delegate to the Grand Council put these normative expectations in a poem: "Eight hours work, Eight hours play, Eight hours sleep, Two-fifty a day," but he aimed a little high. It would appear that the 'standard rate' accepted by the men under favourable conditions was 55¢ per long ton in the period 1880-1884. A living wage was thought to be between \$1.40 to \$1.80 per day.⁹⁵ In the Report of the Department of Mines in 1880 the yearly rate (allowing for deductions) was put at about \$239 for colliers, \$145 for mine labourers, and \$105.40 for boys.⁹⁶ Daily wage rates for juvenile workers in Springhill were said to average 40¢ to 50¢; cage-runners in particular received much lower pay than their counterparts in the major Pictou collieries.⁹⁷ Some of the best evidence we have of the 'normative wage' is to be found in the Report of the Labour Commission, in which miners expressed discontent at low wages of \$1.50 to \$1.60 per day; they disagreed with E.B. Paul, whose own idea of the normal wage was over \$2.00 per day. The company itself produced estimates as follows:

September 1887		
North Slope	\$2.02 1/3	
West Slope	\$2.12 1/3	[average 2.07]
East Slope	\$2.05 1/5	
December 1887		
East Slope	\$2.15	
West Slope	\$1.92 1/7	[average 1.98]
North Slope	\$1.85 3/4	98

This suggests a marked deterioration of wage levels from 1887 to 1888, a development confirmed by many other sources. However, the rates quoted by the company probably did not include deductions for the loader, which

might have reduced them considerably and brought them into harmony with the other available evidence.

Obviously, anything to do with the miner's wage is complicated. The most important thing to bear in mind is that the miners' normative wage--which ideally was a standard amount for all workers at the same job--came into irreconcilable conflict with the realities of coal mining and the strategies of the company. Isolation in separate bords, the different challenges of the mining environment, the conscious and deliberate dividing policy of the company, the differences between the working abilities of various workers, and finally the profusion of different modes of wage payment: all these told against a standard rate for labour in the pit. While certain factors--mostly subjective, egalitarian ideas--stood against complete anarchy, they could not counteract so many other forces. We do have a sense of coal miners having a deeply-held intuitive sense for what a fair day's work entailed. When brothers were 'in trouble,' when they 'could not make a wage,' the Lodge had an instinctive knowledge of what the right level was. Then even such normative rates have to be placed in the context of unsteady work and overcrowding of the mine. After much negotiation a wage reduction was negotiated in 1885; in line with a verbal agreement, the reduction was followed by a 5 percent increase in 1888. The incident, as discussed in the P.W.A.'s Grand Council, affords us a superb glimpse of the complications of colliery wage negotiations.

Early in the past winter the manager gave a 5 p. cent increase but the percentage was added to the net amount of money drawn from the office by the men, and was therefore not 5 per cent

increase on the amount of coal cut, net equal to 2 per cent increase on the rate for cutting. There had been reductions in various ways. Two years ago, after men had driven a board [sic], and it fell to them to 'draw a pillar,' the pillar price was only two cents less than board price. The pillar price is now from 7 to 9 cts less than board price. It was a fact that eight cents per day only had been made some months by some of the men. 99

In this way an apparent increase could, if coupled with reductions in other areas, be transformed into a real reduction.

Wage issues took a bewildering variety of forms. By far the most critical were the struggles over places thought by the miners to be deficient--where the normative wage could not be made. Of the 72 cases in the union records, just under a third (32%) involved a charge that a place was deficient and the miners were not able to make a wage.

The most important cases, according to the minutes, arose from a balance in the North Slope. As an article noted in 1884,

The North Slope coal gets harder the further West it is worked. The manager even admits that is now a third harder to dig than where the slope was sunk. The men in the last balance on that side have been asking for an advance of 4 cents. 100

This balance was nick-named the "hard" or "stoney" balance, because of its difficult conditions. On a variety of occasions the lodge threatened to go on strike on behalf of members who reported themselves "in trouble" in the balance, and the issue came to a head when the management toured the balance in June 1885. It informed the men it could pay for no more than fourteen inches of stone.¹⁰¹ The men insisted on better pay or other places.¹⁰² The manager then proceeded to take a pool of the workers concerned, and they reported they would abide by a majority

decision not to work at the suggested price. The lodge then decided to "stop the places," i.e. ordered its members not to work in them at the company price. The management in retaliation refused to provide work for members who had left the balance on orders from the lodge. Disgruntled and unemployed miners were told by the company that they could apply to the lodge, the originator of this stubbornly defended policy, if they wanted to get their jobs back. At long last a compromise was reached: work on the balance would be stopped and the men affected could double up with miners on the West Slope.¹⁰³ (These facts may well help explain the drop in average daily wages from 1884 to 1885).

It was a case which was mainly about wages: had management paid the price demanded by the workers, the trouble would not have arisen. But the implications it raised for a host of other issues affecting mining life are obvious. Miners took the decision to "stop" the working of the contested places, and by their decision they altered the development of the mine itself. By their action they created new and explosive issues relating to hiring and discharge. As with so many other issues raised in the mine which seem simple at first sight, the question of the stoney balance, fought out fiercely in 1884 and 1885, really entailed profound decisions which touched all aspects of mining life.

The approach to the P.W.A. which emphasizes its preoccupation with moral and legislative reform has not given due attention to the tenacity with which lodges defended the miners' wages. The reason for this is probably that the hard bargaining over wages took place on a very local level, and on a place-by-place basis within the mine. On 3 May 1883 Brother Andrew Scott "Brought in a greavance about his level not being

"paid enough," which was left in the hands of the committee. On 17 May 1883 Scott complained that the manager had not yet inspected his place. When the case came up a week later the lodge demanded a rate of \$1.00 per yard and the same price on the box. On 31 May the manager was reported to have said that he would not give anything on the yardage rate, but might make a concession on the box. On 2 June 1883 he had given Scott an additional 3 cents on the box, but on 7 June the lodge threatened a strike if the manager did not concede a higher rate. On 14 June the manager said that he might give Scott more for his place, and the lodge sought the sanction of the Grand Council for a strike. Finally on 21 June an acceptable compromise was reported.¹⁰⁴ To carry on this negotiation from 3 May to 21 June presupposed a fundamental disagreement over the proper level of the wage, and a willingness on the part of both labour and management to keep negotiations going over a long stretch. The episode also reveals how confining the stereotype of the P.W.A. as an accommodating union can be. The manager who met the managing committee for weeks on end over this one place would not have described Pioneer Lodge as a company union.

These deficiency issues took so long and consumed so much energy because they raised difficult questions about objectivity. A good deal lay in the eye of the beholder. In a case raised on 22 November 1883, it was decided that the men working in pillars should approach the committee to explain what rate they were being paid. On 30 November, after the lodge decided the rate was too low, it approached the manager. He first refused to consider the request for other places, but finally he conceded the point, adding that "he asked the Com not to blame him but if he was put on oath he considered the places paid."¹⁰⁵ Because there are so many different-

places in the mine with such radically contrasting conditions, the enforcement of a clear standard rate was difficult. But nothing could be more evident than that the miners fought fiercely for a normative wage level. Time and again they threatened to go on a general strike in the interests of miners in one place. On 19 February 1884, after Brothers Carmichael and McNeil complained that they had been forced to drive a balance over the stone for 46 cents a box ("a price altogether insufficient"), "The Man'g Com were instructed to go and tell the Manager he must pay 60 cts a box and \$1.50 a yd for this place or give the men another place or we would stop untill he is ready to do so." The manager offered the men the chance to appoint a committee to examine the place and see if it was indeed unfairly priced. After the committee did so, the strike was called off and the rates settled-- although some miners wrote to the Trades Journal to complain that the committee had come too close to the company's own offer.¹⁰⁶

Deficient places were contested fiercely by the union and denounced passionately in the press. Some of the places in Springhill were so wet, wrote a correspondent with pardonable exaggeration, that miners would be well-advised to bring their diving suits.¹⁰⁷ Deficient places were used deliberately as a punishment for miners who complained too much--so charged the Trades Journal, at any rate. "The low coal is a Siberia to which men are banished when they dare to speak and look for their rights. Have a proper price for low coal and then this banishing will stop, but not till then," remarked the newspaper in 1887.¹⁰⁸ The company gave newcomers the best places and its old veterans were given the deficient ones, a further complaint argued: "Men fresh from the

back woods are being given the picks. When is this kind of work to be stopped; giving new men good places and sending the old hands to the penitentiary because they make a demand for justice."¹⁰⁹

Questions involving deadwork--work not directly remunerative for the miner, such as laying track and timbering--also involved intricate questions of control. An ironic question-and-answer session in the Trades Journal outlined the issue with pungency. The fictional investigator and the miner have gone down the travelling road, tramped through a stone drift, and then up to a balance, which the investigator noted required him to heave himself up at an angle of almost 45°. Finally they attained the working place of the miner.

We then went into a place, that appeared to me about the size of the level, and feeling a little fatigued, I proposed a rest. While resting the following conversation took place between us.

"So this is one of the levels?" Miner, ["]10
 no, this is one of the regular bords, or breasts."
 Is this the width that bords are usually driven in
 Mines? M[iner]. No sir, they drive them, 15 and
 sometimes 18 feet wide, in all other mines. Why
 then do they drive them so narrow here? M. So that
 they may get three fourths of the coal, at 6 and
 8 cts a box less. How do you make that out?, M.O,
 very easy, the men have to drive the place, lay the
 rails, and put timbers 3 feet apart, and the company
 gets the benefit of the road, and timber. Does the
 company pay you nothing extra for laying roads and
 timbering? M.No, we get 36 cts per box and no
 extras. I suppose it costs the company considerable
 to move this small coal from the pillars? M.Not a
 bit of it, the men have to do it for nothing. And
 is it not cleaned away in other mines. M.Yes, but
 if you spoke about it here, you would be told, that
 36 cts pays for everything. They do not consider
 that men had to work hard, in driving the place 13
 feet wide, 3 feet narrower than any similar work
 in the province. What difference would it make to
 you, if you had it 15 instead of 13 feet wide?
 M.Well it is just here: You see that bench of coal

there, and where it is cut alongside? Yes. M. Wall, now, when we put a shot in here, it will blow all that coal, to within 2 feet of the high side. It won't pay to put a shot in what remains, so we have to pick or wedge it off, thereby making a lot of small coal which we get nothing for, now, if it was 15 feet wide, we would have a good shot, and not one fourth the small coal and much less labour. 110

It is a remarkable glimpse of the underground that is buried in this modest little interview! Once again, a simple wage issue--the miners would like to be paid extra for laying rails and putting in timbers--leads to the most comprehensive arguments against the mode of driving bords. The miner does not mean to mount a general critique of mining practice. He nonetheless arrives at one, step by careful step, following purely pragmatic ideas about how best to conserve his wages. In the end his criticism even takes in defective mine inspection. Yet the critique is not posed in a way which allowed its readers to make these structural connections easily--it is still immersed in the particular and personal.

A total of 22.3 per cent of the wage cases involved dead work. Issues included non-payment for the shoving of coal (settled satisfactorily in July 1883), and the payment of special rates for timbering, as illustrated by the case raised by Daniel Campbell in March 1885, who complained that the management gave no allowance for timbering his uncommonly wide place, whereupon the lodge instructed the committee to tell the manager that if he wanted places 15 feet wide he would have to pay higher rate or "bring them down to the right thing." 111 It was a judgement which suggested little doubt that there was a traditional manner of mining to which the company ought to adhere.

In general, the lodge did reasonably well on wage cases, winning 24 out of 72 cases outright, with 17 unknown, 9 cases dropped, 2 for

which no result is relevant, 13 ending in compromise, and 6 outright losses. (One further case sustained a charge against a member). Of the cases with known results, 43.6% were union victories, which changes the highly negative impression of deficient places as forces of discipline conveyed in the trade-union press. The detailed consideration of the history of Pioneer Lodge tends to undermine the view that the absence of a formal collective agreement entailed the complete subordination of labour in the mine on wages questions. When William Hall appeared before the Labour Commission in 1888 he was asked about this question of regulating the price of labour.

Q. How do you regulate the price--just by personal inspection? A. Yes.

Q. The men have no say in the matter? A. Yes; they have a great deal to say in the matter and they do not be long telling you about it either. 112

Hall spoke, as we know, from an experience of dozens of conflicts and disputes over wages, and he captured with precision the characteristic emphasis of the paternalist regime on personal evaluation and independent individual opposition.

A crucial episode which revealed the ambivalence of paternalism was the acceptance of the miners of a wage reduction in 1885. This question was debated very arduously in the union, and prominent lodge members debated with each other on the basis of their reading of the coal industry. That the company had consulted the workers was seen as a wonderful change from the old unilateral imposition. Robert Drummond as leader of the P.W.A. hailed it as the sign of a new era. He was particularly impressed by the company's willingness to open its books and take its employees into its confidence, rather than resorting to

the "despotism" Drummond had cursed in 1879.¹¹³ Historians generally interpret the wage reduction as proof that the P.W.A. accepted the doctrine that wages should follow the price of coal--a doctrine, incidentally, not peculiar to the P.W.A. What has been traditionally left out of the picture is the deal the men extracted in return for the reduction. In exchange for three cents off the box of coal, the men prepared a document which was signed by both management and men--in effect, Springhill's first contract. This document was considered so precious that special arrangements were made to keep it in the safe of the Pioneer Co-Operative Society, a precaution which unfortunately did not preserve the agreement for our day.¹¹⁴ This document covered mining conditions in some detail: for example, it specified whether or not pits would remain open in the event of a breakdown of the pumps.¹¹⁵ Every subsequent dispute was fought by the men threatening to withdraw their document, and hence their wage reduction. By this tactic they won overtime pay for an overworked fireman, and guarantees from management that the coal would be taken out of the mine; they won agreement that places would be singled out and a boy hired to hand out picks.¹¹⁶ The reduction may be viewed as a paternalist exercise, and the workers as willing participants. But in fact it revealed how complex a paternalist regime was, because the workers extracted so much in return for the reduction, and it also showed the gradual emergence of the new rules of the game, whereby wages would be consciously regulated by the market.

Finally, we need to consider the intangible issues raised by the lodge. These included questions of internal union organization, such

as union dues, and more general social issues, such as housing and medical care. Perhaps the most relevant issues are those involving symbolic language, for these will enable us to reach a concluding assessment of the paternalist period.

A wide variety of cases secondarily involved symbolic issues, but some grievances were put forward purely on the grounds of honour and respect. As one of the many grievances initiated by the stoney balance, the Lodge demanded a retraction of the company's statement that the union itself was responsible for throwing men out of work. The secretary (who regularly expressed his impatience with the loquacity of lodge members) noted that after a "Lenthey discussion over the matter which it would puzzle a lawyer to write down the Pro's and con's," the lodge sent a committee to go to the office "to make the managers take back the lies," which mission was carried out successfully.¹¹⁷ It is surprising how thoroughly impregnated the lodge records are with a strong sense of manliness and individual self-respect.

In general terms the paternalist regime allowed for a sharing of power, always with the significant proviso that the company managed its own business affairs. This was not a setting analogous to an autonomous craft workshop, in which artisans made their own rules for work. Of the 100 cases in the records for which a result is known, the workers won 43, the company 31, and 24 were compromises. If we narrow the focus to those which we know were contested by the company (i.e., eliminating all those cases which either did not have the company as a target, such as union discipline, or those which raised points with which the company

expressed no disagreement), we find that out of 49 cases, 28.5% were won by the workers, 32.6% by the company, and 34.7% were compromises. (4.1% cannot be determined). Here was the balance of a paternalist regime, which gave some rights to workers without a formal acknowledgement of their position.

The symbols of the paternalist regime were all susceptible to a dual reading, and this dual reading stems from the balance of class forces revealed in the lodge records and elsewhere. Many symbols suggest deference. Besides the presentation of the loving cup to William Hall by the employees, there is the judgment recorded in the lodge minutes—evidence that seems weightier because it was not intended for public consumption—in which the workers record their opinion that Leckie, their manager, was a "perfect gentleman," because he wanted to set up a reading room for his men.¹¹⁸ Correspondents in the Trades Journal, possibly with a touch of irony, referred to the manager as the "genial papa."¹¹⁹ After 1888 Leckie's image as the fair-minded father took on a new lustre.

The same union men who expressed this opinion in their lodge minutes also gave favourable consideration to strike threats and crossed the rubicon four times. From the organized workers—who wrote frequently to the Trades Journal—we find this polemic against the proposed wage reduction, in which the paternalist gestures were ruthlessly mocked.

In last issue notice was taken of a letter sent by the Managing Director in answer to one sent by the men through the Man. Committee to him. I am not going to make any comment on that note any farther than to remark that the iron under the velvet was clearly shown, and that many were confirmed in their first opinion that the M[anaging] D[irector] was—too sweet to be wholesome.... T[he] days of being made to swallow taffy enough to receive a reduction with a

hurrah, are past, and while respecting truth and honesty in employer and employee, we know how to treat the opposite when forced upon us. 120

Or this rather sarcastic report of discussion between the company and the men:

WHAT MR. L SAYS.

...That they have lost the contract for the I.C.R. (the workmen have a lingering doubt about the statement).

That if there is no compromise work next month will be slack. (The workmen think if the Co'y have lost the I.C.R. work will be slack, compromise or no compromise.)

That the Co'y may retaliate if the men don't compromise by getting men from foreign countries. (The workmen think this cure would be found worse than the disease).

That when the new hands come the old hands may be prepared to leave. (The workmen say that sufficient unto the day is the evil thereof). 121

We do not know who wrote these comments, apart from their certain origins within the more militant wing of Pioneer Lodge, but the entire record of trade-union activism which we have considered at length rules out the possibility that they are just isolated outbursts. There is, in this sharp critique of a man "too sweet to be wholesome," a certain resistance to the paternalist regime and its presuppositions.

Which of these images captures the truth? They both do. An industrial regime does not presuppose ideological uniformity, and it may preside over radically different tendencies. Paternalism, particularly of the relatively attenuated sort we find in Springhill, influenced the terms of those who attacked it. These personal attacks on Leckie are the opposite side of the same coin as the gifts: they likewise confirm the personification of power within the pit. Paternalism created a language of gestures and moments whereby, even in their most determined

conflicts managers and men nonetheless acknowledged the reciprocal rights of each other in production. Without explicit recognition, the union was recognized as a legitimate power within the mine, to which the management would have to attend; without an explicit doctrine of management rights, workers implicitly acknowledged the authority of the mine-manager and his overseen. In this regime based, very largely, on the unspoken,¹²² the gestures of reciprocity--gifts to managers, gifts to union lodges--took the place of formal recognition.

This paternalist regime was ultimately based on the material realities of production. The miner's need to make many decisions about his work forced the management to reach some sort of accommodation with him. The realities of nineteenth-century mining split the workers up and made the control exercised by them a question of individual rights. We find in the mine of this period much evidence of worker's control, but not of workers' control. Both capital and labour faced the same divisive realm. It was a realm far more governed by custom, rule-of-thumb empiricism, and precedent, than by science, intensive supervision, or logic. It was a common-law domain, an old-fashioned, limited monarchy, not a workers' democracy, but not a grinding dictatorship either. Robert Drummond liked to tell the story, doubtless apocryphal, of the general manager who, in conversation with his workmen, said of the new arrangements in the coalfields after the emergence of the P.W.A.: "I am afraid that from being liberals or conservatives [in politics] you are strongly leaning towards republicanism [in industry]." "Oh no," came the reply, "not so big a step as that. We aim at a change of government possibly, our chief aim, however is to replace an autocratic by a limited monarchial form of government. We would like to have some little say in

matters in which we are vitally interested."¹²³ Drummond had a vested interest in presenting the P.W.A. as the miners' salvation from serfdom, and the evidence of early nineteenth-century autocratic rule has yet to be systematically studied. But his story makes a good point. A limited monarchy was a fair description of the mine during the paternalist period, a monarchy hedged about by old customs and countless little obligations. Just as a monarchy depends, in large part, on the shrewd manipulation of symbols and the preservation of links between rulers and ruled, so too did paternalism require its symbols and the mutual acceptance of limits beyond which neither party could go. True to his liberal faith, Drummond believed that this regime could be improved and preserved in the monopoly phase of the industry. Instead the miners of Cumberland County were to discover that monarchy in the coalfields could entail the Divine Right of Kings.

3. The Politics of Autocracy, 1888-1917.

The paternalist regime collapsed suddenly in 1888. The workers had little to do with this drastic change. It resulted from a shift in the strategy of the company, signalled by the downfall of R.G. Leckie and the arrival of J.R. Cowans. The burden of contemporary explanation for this sudden transition was to attribute it to the irascible personality of Cowans, who bore a certain resemblance to one of Stephen Leacock's plutocrats. But there would be dangers in attributing everything to the personality of the new general manager, because in fact the changes were underway already before his arrival in 1889, and

because they corresponded to a much more general pattern, evident throughout North America, of attempts to rationalize work.

Cowans advocated scientific management, taken in its broadest sense as the doctrine that detailed supervision and a structure of rewards and punishments should be imposed upon workers to make them work at maximum intensity. He followed this programme because he believed in it intensely, but also because the advent of monopoly capitalism made the reduction of costs and the maximum utilization of labour of utmost importance. After 1893 Cowans was faced with competitors who could undersell him, and he responded by working out private pricing arrangements and by trying to make his workplace more productive and efficient. He was a man acting under immense intellectual and economic pressures, to which he responded without finesse or subtlety. He was also in a highly peculiar position of being both the general manager and one of the principal stock-holders in the company, which meant that his decisions in Springhill were not questioned by the board of directors in Montreal. His power in the workplace partly stemmed from his power within the company, which was a throw-back to earlier forms of business organisation.

From June 1890 to December 1911 there were 28 strikes in the town of Springhill, the last of which lasted for nearly two years. There was no comparison between these strikes and the short stoppages under the paternalist regime. The strikes of 1890, 1897, 1899, 1903, 1905, 1907, and the great strike of 1909-11, bore to the strikes of 1880-1888 the same relationship that a war has to a minor quarrel. No other community in the Maritime provinces matched this record. Springhill was seen as an unusual case by commentators of the time, who contrasted its strike

records with the "generally peaceful" relations in other coalfields.¹²⁴ How could one explain this phenomenon? The management blamed outside agitators, lazy workmen, and an absence of sobriety, none of which successfully explained why these phenomena existed to such an extent in this particular colliery or why the situation had changed so drastically. The workers blamed Cowans, and suggested a stark contrast between the managements of 1879-1889 and 1889-1911. "Before the advent of the present general manager the relations between management and men were peace and harmony. Every confidence was placed in manager R.G. Leckie, who always showed a disposition to reason with his men and concede any demands considered fair and just," a miner in 1907 argued. We know, of course, that the paternalist manager had in fact been confronted with many conflicts--as early as 1886 the Herald remarked, as it would do many times again, "Springhill is becoming a bye-word for strikes...."¹²⁵ But let us return to our miner in 1907: "It took J.R. Cowans nearly one year to bring the Springhill men to the point of striking; and since that time, according to his figures, there have been 21 strikes at these mines. In truth, there have been many more small ones which probably they are ashamed to publish, for the reason that it would show a lack of tact and judgment on the part of the officials...." Reaching a stirring climax, the writer concluded:

The manager in charge at Springhill cannot appreciate that a man working in his mines at Springhill is STILL A MAN, and after 18 years of experience he has not yet learned that the miners are rational, intelligent beings, with a more than ordinary amount of general information, and education, and while they are amenable to reason, will not submit to be dogged or driven.... 126

Cowans, according to another P.W.A. man famed for his statesmanlike approach, had stirred up considerable friction between workers and management. "The men claim," E.B. Paul said, "that he does not keep his promises. Whether that is true I cannot say. They also assert that he has made extensive improvements on his property, and they do not feel that they should be made the sufferers therefor."¹²⁷ Cowans could hardly have been a better example of the age of plutocracy, with his palatial home, his race track and racing horses (even his children had their own race horses!), his gracious 'cottage' at Parrsboro, a huge home once occupied by Charles Tupper. Added to such conspicuous consumption was his irascible authoritarianism. It would be difficult to imagine a more explosive technique than the one used by Cowans. He would bluster, insult committees sent to interview him, and say things which were never forgiven--and then make the concession demanded by the men. His authoritarian manner clearly infected his officials. Miners looked on with wonder as the mine filled with Englishmen with pretensions to aristocratic culture, or graduates of military colleges who were used to unquestioning obedience.¹²⁸ One indication of the response of miners to these officials may be had from a complaint in 1891:

New rules have been made by the ever aggressive management of this place, which are, in themselves, a direct violation of the agreement entered into with the men. A new handle has been put in the resurrected hatchet, which, after being ground and sharpened, is cutting very keenly. Men are being taken out of the pit for docks, while some others are compelled to listen to abuse heaped upon them by a tyrannical boss. One case before us, especially marks the ingratitude of the U[nderground] M[anager]. A young man, who for nine years has steadily and faithfully served the company, as a servant, finding

it necessary for the better maintenance of his widowed mother to earn more money, applied for the picks. His request was met by the reply that he could go loading, later on, that he could go helping. Is this the due reward of faithfulness? Has man sunk so low and become so blinded by his prejudice that he really believes it to be principle? If this be so, if in his zealous servility he stoops to things unbecoming manhood, then let him know that there is an independent mind placed in the breast of every man which, goaded to a crisis, will recoil and turn on his oppressor. 129

Miners loved to call such autocratic managers "Pasha" after the character in the Arabian Nights who, desiring absolute supremacy over his officials, suppressed or slaughtered them at will.

It was not just rhetoric. There was a qualitative difference between the criticism inspired by Leckie and that which was heaped upon the new management. It was as if the miners were confronting some monstrous and hideous challenge to everything they believed in. The miners were almost at a loss for words when they tried to describe the enormous changes in the pit. One miner walking through Springhill heard a news vendor crying out the news of the exploits of Jack the Ripper in London. He read the headlines: "All London in a state of terror. Two other victims added to the Whitechapel mystery."

As I was about to make some comment on this dastardly crime, my attention was claimed by a friend, who beckoned me out of the crowd, and communicated to me the following piece of intelligence: "There has been another victim sacrificed to the shrine of tyranny." Having many friends in the locality, I anxiously enquired who it was, and on being informed, I could not find words to express my indignation. But suffer me now to say, that in this case the victim was a worthy man, who had been in the employ for about sixteen years, and who, for a very slight mistake, was suspended for one month, and presenting himself at the expiration of this unjust sentence, he was told that his services were no longer required.... Now Sir, how is so much horror expressed at a crime,

that happened four thousand miles away, when we see, if not as bad, nearly so, passing in our very midstI claim that when a man is deprived of the means of earning a livelihood, merely to satisfy the tyrannical mania which has infused itself into the nature of certain officials in this locality, that only in name does it fail to be as heinous as the Whitechapel mystery. 130

They were harsh words, harsher than had been heard in Springhill, even during the 1879 strike. Miners seemed to be confronted with an outright attack on their entire system of values--everything that had slowly acquired the force of tradition in the pit. The P.W.A. encountered many questionable dismissals and a stubborn refusal to negotiate such questions.¹³¹ Talk of a big strike started in 1888. Every little grievance contributed to a sense that the management had broken the old system of negotiation:

It is seldom against any one great act of injustice, perpetrated by the employer--and plainly evident to the general public--that workmen are given a chance to 'strike'. The management are generally too shrewd for that. It's the pin pricks; individual cases of injustice; petty spite showing itself here and there; reductions attempted on men who are likely to bear them without looking for what is right; other men forced to work the same sort of places at the same reduction, simply because the others had done so, and so on. Except in their lodge rooms, or other places of resort, the matters are never talked of. The outside public never hears of any trouble. The pin pricks increase till the whole body becomes sore, and 'breaks out' apparently without any cause. ...A "Gradgrind" in any concern is not an amiable character, but is by no means a fictitious one...It may now be accepted as a fact that, just so long as workmen will allow it, they will be robbed of their rights. There is no known limit to the greed of capital. 132

Reading such comments makes one feel that one has entered a different world, a world suddenly, without the subtlety and self-deception of paternalism, a world headed for an explosion.

Every aspect of the mine was transformed. Dismissals were not negotiated, and places were assigned without consultation or the possibility of redress. In the East slope, some members of the lodge had worked in a pillar for over two years. By the customs and usages of the mine they had a right--almost a proprietary right--to that place. By the 'common law' of the pit it was theirs to work for as long as they could make a wage in it and management was content with the quality of the coal. But no more. The place was stopped to allow repairs to another incline; when the repairs were finished, the underground manager calmly presented it to immigrants. Approached by the Lodge to redress this wrong, he told them that rather than have the former occupants work the place he would have the rails and sheets removed and the place stopped. It was, for the miners, an outrageous affront:

The battle cry 'To arms' must be sounded. We must throw off the iron yoke of tyranny. It has been demonstrated of late that justice is not a guiding principle with the officials.... Disunited the workers are as chaff. United they are a power capable of bringing tyrannous bosses to their senses. 133

A suggestive conclusion: it radically denounces tyranny but holds out hope for a return to sanity, once misguided individuals in the mine have seen the error of their ways. Many miners clung to the hope that the old system would return, even as they prepared for clashes which would end it forever.

The men soon discovered that the management had instituted a system of spying on them.¹³⁴ They discovered that the company had cleverly retracted a promised 5 per cent wage increase by putting it on the price per box and not upon timbering or yardage.¹³⁵ They discovered galling

cases of discrimination in wages--with preference given to new and inexperienced men, in direct violation of their subjective belief in the miner's skill:

Things are managed here after this fashion:--
 Ordinary man, established citizen, who has been in the employ from 10 to 15 years, worked 7½ days [in the month]; wages from 28 cts. upward. Carpet bag crowd--changing every 3 or 4 months--that worked, from 15 to 20 days, wages from \$1.50 to \$2.00 per day--not many of this class. The last class, skilled imported labor, largely non unionists, time worked, every day; wages about \$4.00 per day; private contracts, etc. 136

The miners charged the company systematically discriminated against hiring trade unionists, while at the same time preserving an open door to any inexperienced immigrant who wanted to work. ¹³⁷ "Pioneer Lodge is determined to have the work equalized and the hiring of men stopped," the Trades Journal correspondent warned the company. "We mean business this time." ¹³⁸ The company was not listening.

The coal miners bore some resemblance, in their collective trauma, to craftsmen suddenly confronted with a management determined to eliminate their skills. But there was a fundamental difference. In many, if not most, cases, craftsmen stood little chance; the machines could be destroyed or resisted, but ultimately they would win. These coal miners did not face that problem. No machine could replace them. At best one could effect a complete change in the workforce, but new workers stood as much chance of acquiring militant traits as old ones. The peculiar features of the coal mines gave the miners a fighting chance to resist the new system--and in Springhill they resisted for almost a quarter of a century.

It would be a mistake to follow the coal miners' perception of these events in 1888-1890 too closely, and overlook the other aspects of this question. The management was not acting, as miners frequently alleged, in a purely spiteful or irrational manner. There was a theory behind this programme, however capricious it might seem to the men who were most affected by it. The Mines Report in 1894 would call it "consolidating and simplifying the work."¹³⁹ Cowans, who called himself a "man of system,"¹⁴⁰ aimed at a scientific regulation of wages in the pit. He instituted a contest among the miners to see which team could load the most coal, and offered bonuses to teams exceeding the pit average.¹⁴¹ He sought to eliminate the informal restriction of output which had flourished under the previous regime.¹⁴² He commissioned a detailed inventory of the pits.¹⁴³ Tremendous emphasis was placed on improving the quality of coal and making methods of mining more effective. As Swift noted in a letter to Cowans in 1890:

One...matter which ought to seriously engage our attention is to devise some method to get a larger % of round Coal from place where the large box goes to the working face the great object with the mine of Springhill in the past has been Quantity not Quality, a prevalent idea being that the more Coal was broken up the more space it would fill in the box, object measure not weight a box of slack being of equal value to the Miner as a box of lumps, therefore no encouragement to take special care of the coal. This is a question for the future.¹⁴⁴

To the same purpose the company insisted that the men exert themselves to pick out the stone before they loaded it, and instituted a contest to see which team would load the most boxes counting those which had been 'docked' for excess stone.¹⁴⁵ When the cost of mining coal increased in February 1890, the company instructed Swift to make a thorough report

into the reasons for it.¹⁴⁶ The company also demanded full and complete costs sheets, although Swift was to complain that the ones they came up with over-simplified the costs of mining and made it difficult to understand which supplies and jobs were being referred to.¹⁴⁷

This last complaint is somewhat revealing. It suggests that this programme of reform was formed with some other industrial environment as its model—quite possibly the iron industry, where Cowans had learned his first industrial lessons. Expectations and standards were drawn into the coal mines from outside. It can be easily seen that this scientific appraisal of the coal mines left little room for the old traditions of the colliers. The idea that an entrenched union might have a significant role to play in the mine was judged to be ridiculous. Here is Swift commenting on a delegation from the Lodge:

Had Committee from Lodge this Afternoon in regard to getting away the Coal from Men in East Slope Mr Ferguson in the Chair as usual and with the usual dictation You Must do this and You Must do that— Or we will see Mr Cowans You Know what our agreement is with him and you are a party to it ...I want to do what is near right and square with all men I will listen to any greivence, and from any workman and if well founded will have it put right soon as possible and to take Men Coal away daily.barring accidents

But to be dictated to by Ferguson I dont intend to put up with it With the boast of all his Legions behind him 148

Swift, raised in the mines, did acknowledge the presence of the union. Cowans, on the other hand, aimed to eliminate Pioneer Lodge completely. Swift gradually came round to his point of view, influenced by the polarization of classes in Springhill. In September 1890 he noted a deputation of the lodge which sought to win an advance in the price for

certain difficult places:

Committee Came again this evening looking for an advance of price in Seven places or otherwise Fresh places for there Men Cave them No Satisfaction whatever Mr Ferguson told me that if it was necessary some of the new hands would have to be discharged to make room for change of places for those who requested some price on their places I made no reply Intend next time to tell them that the Management reserves the right to employ and discharge who they think proper 149

No negotiations! It was a startling doctrine to enunciate in Springhill. Under the paternalist regime the management had never refused to negotiate, and had even been heard to apologize for impoliteness. Swift's attitude was akin to that of the pugilistic Barnhill of Joggins, but while Barnhill faced a relatively inexperienced union in an impoverished and stagnant coalfield, the Springhill autocrats were up against men who had been unionized for a decade, had grown accustomed to rights in the mine, and were entrenched in the workplace and in the community.

Swift would stand by his officials all the way. He never backed coal miners in disputes with officials, no matter what the particulars of the case. A miner came to him to ask his intervention in a case involving an allegedly unjust suspension by a boss named McInnis. Swift heard him out, and backed up the official, noting in a letter to Cowans: "Should I begin to interfere between McInnis and any of the Men he might as well leave as he would never have any peace again and when the least trouble would arise they would always expect Me to Settle such affairs".¹⁵⁰ The old idea of appealing one's case to a higher level of management was clearly dead. Confronted with frightened boys, who worried that the cage they had been asked to run was dangerous, Swift instructed the boss:

"Told him any man or Boy who refused to do his duty to Suspend him." 151

It was not, in itself, an irrational approach. The coal mine was a private corporation, devoted to making a profit for its owners. Baulky workmen, saucy boys, obstinate unions, out-moded traditions: they all had to go. The company had to win its aggressive pursuit of contracts, it had to develop fast in order to stay even with its competitors in Pictou and Cape Breton, and it had no room for rebels or malcontents. Such attitudes were probably widely diffused throughout the employing class of Canada. They are a rational reflection of the objective position of the bourgeoisie, and serve it well as a justification for a whole host of practices. But they were not useful preconceptions to bring to the job of running a coal mine. For reasons we now understand, the workers were entrenched here and their traditions not easily dislodged. There was no technical discovery which would help mine managers make it otherwise.

By its provocations the company was driving the workers to an unprecedented awareness of their class position. Capital and labour were on a collision course, and so many issues and grievances had accumulated in two short years that this collision, when it came, was bound to be devastating in its impact. The storm came in June, 1890.

The strike of 1890 turned on the controversial question of docking for stone in coal and light weight. A. D. Ferguson, the leader of Pioneer Lodge in this period, outlined the issue to the Amherst Daily Press:

The miners contract to dig a certain amount of coal for a certain amount of money. The coal is sent up in boxes supposed to hold 1,650 lbs., which is

considered the standard weight. The boxes used in the Springhill collieries have a capacity of 37½ cubic feet, and instead of containing the standard weight will hold, it is alleged, from 1,800 to 1,900 lbs. When these boxes are sent up, if they appear to be short, or contain stone, the box of coal is docked, that is confiscated by the company.

According to Ferguson, at the East Slope in January, 542 boxes of coal had been docked. From January to March the miners had lost \$1,614; at that rate the coal cutters would lose \$6,456 in the year. The committee of the Lodge argued with Cowans for five weeks before finally calling the strike. The miners noted that changes within the company had transformed the demeanour of the general manager; he had returned from Montreal boasting of the control exerted within the company by his father and uncle. The men complained that the places in the mine forbade any rigorous enforcement of a docking policy. With boxes holding from 1,700 to 1,900 lbs., it did not seem unreasonable that some small pieces of stone would escape detection; boxes with pieces of stone no bigger than a man's hand had been docked by the company. The old management had not enforced docks against the men in anything like the same manner. The docks against many employees would simply be cancelled at the end of the month. The new management allowed the cancellation of no docks. Swift argued that the company and the community would suffer if the miner were allowed to put quantities of stone in his box. 152

This strike soon became a grand remonstrance against the new system in all of its aspects. The new authoritarianism in the mine was criticised. "When some of the workmen were in difficulty regarding their work the manager would not hear what they had to say, treating them as dogs, and not men, thereby causing bickerings and ill-feeling," the

Lodge argued. "The workmen claim to be honest, respectful and industrious, and demand of the officials common courtesty." The coal miners noted and condemned the new intransigence in negotiating prices for deficient places. They argued that the new system did not work efficiently, and entailed a great deal of deadwork.

The miners have not in the past got the necessary material, such as rails, sleepers and timber, without which it is impossible to work to advantage. The men, on account of not being kept supplied with these things, or from getting inferior material, are greatly hindered in their work. The men in Springhill, from this cause, are forced to do extra work, work not entailed on miners in other parts of the province.

The list went on and on. "There is partiality shown. If it is law for one man to be lowered to and hoisted from his work, the law should apply to all." "Men should not be discharged to satisfy the whimsy or a disposition to tyrannize, of petty bosses, who know little--nothing--about the position they are set to fill. Some of the workmen are now suffering from this cause, and the men insist that such childish procedure be dispensed with in future." This letter, containing the distilled grievances of two long years, nonetheless concludes: "The above, by no means exhausts the list of grievances."¹⁵³

No previous strike in Cumberland County had involved this bitterness. At first the workers were divided: men on construction work continued at work, although men from the union visited all of them trying to persuade them from working in repairs in the slope.¹⁵⁴ There were less gentle methods used to gain collective unity. Swift reported one to Cowans on 26 July:

Some of the outside men rather timid going to work this morning owing to the Picture of a Coffin and Words

Death to blacklegs being inscribed on the flat sheets in East slope bankhead having been put in during the evening or night

I ordered watchman to order all Men and boys away from around the works, friend or foe send all alike....

...My Gates having been removed from there places during the night I feel no ways alarmed but will give them a warm reception who Meddle with Me 155

Swift rather enjoyed the sense of adventure and combat entailed in this strike. He entertained high hopes of splitting the workers' ranks. "I had an application from one of the Strikers there appears to be divisions coming in amongst them Many seems getting very anxious for work," he reported to Cowans on 9 August 1890.¹⁵⁶ He was not inclined to negotiate with the men. The company could win, the miners would be firmly put in their place, the programme of modernization could proceed.

Then disaster struck. On 12 August 1890 Swift wrote to Cowans:

Received Committee representing Pumpsmen Firemen Enginemen and Repairsmen who handed me a written notice Stating that unless a Settlement was arrived at with the Miners that they above Mentioned would Cease Work tomorrow 13th at 6 P.M. Almost impossible under Circumstances to fill their places 157

These men went off on schedule. It was a decisive, fateful step. Never before in Cumberland County had striking workers entirely abandoned the mine. With no one to man the pumps or feed the boilers, the mine would begin to flood. It was a qualitative change in the character of the strike. The minor acts of sabotage--graffiti on the bankhead, ripping down Swift's gates, setting bush fires--now gave way to this act, an unprecedented collective sabotage of the pit. Swift, who even after the pumpmen were withdrawn clung to his authoritarian style, gradually realized that the workers had played a very strong card. He wrote to

Cowans on 15 August:

Water being now rising in the Mines all pumps being stopped. Nothing alarming can go on safely untill Monday when it will become either a question of settlement or flood the lower 1900 ft lift in the East

Cant be called a square weapon Stopping pumps shows a weakness in Some Quarter or other and Most Certainly the last Card to be played on their part in this Game

Stopping pumps is Something unheard of in the Annals of Coal Miné Strikes and this Certainly Cowardly Action Nothing Manly in it 158

From the workers' point of view, it was a logical tactic, although there were few precedents for it. Management had attacked virtually every aspect of the traditional structure of control. It had publicly insulted the workers, and refused to negotiate. During the negotiations the hatred of the men for the new management was intensified. Summoned to the general manager's office, committees would be met with a blunt refusal to negotiate. Discussions with Swift created new levels of acrimony and hatred, as suggested by this description of a session with him:

On entering the room he [Swift] was asked what he had to say on the situation, and after a few childish remarks he wandered away from the real point at issue, and began to boast of his qualifications as a coal digger, but as his calibre in that direction was known to a majority of those present, he was simply told that the room was full of men who could dig more coal than he....The men being in waiting in the lodge room, the committee gave the foregoing report, which was received with laughter. 159

When Swift then made an unacceptable offer to the miners, and then withdrew it, the correspondent of the Lodge remarked: "Picture to yourself a baby of huge proportion addressing himself to men and telling them that he withdrew something they had already told him they refused to consider, and by so doing you will strike the general makeup and intelligence of Manager Swift." 160

Withdrawing the pumpmen was a very large gamble, because it threatened the entire town with economic ruin. But it was a logical response. The company had destroyed the traditions and assaulted the cherished values of its workers. What could be more logical than an equally destructive response by the workers? And it should be noted that it worked. Virtually all the points were conceded to the men,¹⁶¹ The intervention of Premier W.S. Fielding underlined the direct power that the coal miners had. The appointment of the first checkweighman meant a new standing had been achieved by the union.

The victory was at best a partial one, however, because the company proceeded to undertake a conscious, implacable campaign against the trade union and its militants. Following the strike there would be no room to manoeuvre in negotiations governing local conditions. Swift, who put the most astonishing things in writing, actually states in the letter to Cowans which announces the end of the strike:

While haveing ended [the strike] by Makeing Some Concessions I consider prefereable rather than having to resort to flooding the 1900 foot Working East Slope which would certainly have wreaked Havoc with the workings

Exclusive of time and expense in pumping it out again the Advantages given I intend to Curtail in Some other form when started I dont anticipate having anything for this Sort for some time again 162

The evidence suggests a hard line was followed on virtually every basic question in the coal mine. From 1890 to 1900 Pioneer Lodge was in retreat, its members victimised, its wage standards undermined, and finally its very existence eliminated (from 1897 to 1899). What the Springhill Advertiser termed "discrimination bossism" dominated the mines.¹⁶³

Robert Drummond of the P.W.A. noted the pervasive spirit of unrest at Springhill and found the answer in "discrimination," by which he meant the absence of any standard rules. "One of the secrets of the frequent differences at Springhill is the fact that the chief [Cowan was called 'the chief' almost universally, except to his face] gives his subordinates instructions to keep down expenses. This, they attempt to do by a system of cheese paring, a cent or two off this place one day, and a cent or two off another place the next. The bosses vie with each other to put out cheap coal. Do they gain the approbation of their chief at the expense of consistency and honor[?] What of their manhood? Is it being sacrificed in order that their positions be retained?"¹⁶⁴

William Maddin, the deputy mines inspector, noted the same spirit when he went to Springhill in 1895:

I have visited Springhill Mines And find them in good condition yet I am Sorry to Say that there is Men loosing Work for Want of timber The truble is Always in chutes And the Men and Management cannot agree on price for taken timber up And Seting it. There is Something rong with Men and Management. 165

'Outsiders' were startled by the acrimonious atmosphere in the mine and by the frequent small strikes.

Pioneer Lodge won most of these strikes. In 1897, indeed, it boasted of the prestige it enjoyed for never having lost a strike.¹⁶⁶ The small strikes were seen as the natural outcome of 1890. "That strike," noted the Saint John Sun, "was the precursor of all the smaller and continuous strikes and troubles which have been the heritage of the town since that date."¹⁶⁷ The Montreal Record noted that the men were being forced into such tactics by the continuous pressure of the management.

"[W]e are afraid that the management at Springhill have for the past few years been inclined to adopt the worst kind of policy in their treatment of the workmen. A policy of nagging and squeezing, constantly, may work for a time, but only for a time. Men may put up with a great amount of these, but the time comes which, when, the strain being too intense, they revolt, and in turn inaugurate a policy hard to justify."¹⁶⁸ The P.W.A. won the strike in 1897 as well, which was sparked by a unilateral imposition of new trolley times by Cowans, which would have had the effect of imposing a twelve or thirteen hour day. This strike was on the verge of settlement several times, but Cowans would on each occasion refuse to sign an agreement, noting some small problem or difficulty.¹⁶⁹ Once the agreement was signed Cowans broke it with impunity.¹⁷⁰ The policy of attrition continued.

When the union collapsed in 1897, in the midst of a serious slump in the coal industry and the failure of all its efforts to preserve its standing in the mine, the system of autocracy was triumphant. Despite the episodic victories of Pioneer Lodge, the regime had been steadily gaining ground, promoted by a determined and strongly-motivated general manager. Cowans was determined to cut costs in order to compete with the Cape Breton collieries, and a major aspect of this was the imposition of a more effective discipline. For Cowans the non-union period was one of orderly progress. He was able to reduce the wages of his workers in October 1897.¹⁷¹ He was able to disrupt the new checkweighman in his work, explaining to Edwin Gilpin:

The Complaint about the new checkweighman not being allowed to count the tallies, is absolutely correct. This is a privilege which the men cannot legally

claim on behalf of their check-weighman, and the new appointment is a man that I do not care to grant this privilege to. 172

He followed the disorganization in the union ranks with undisguised pleasure. After the union was re-established, initially on a very weak basis, Cowans said that he would not receive any committee from the lodge, and any committee presenting itself would be summarily discharged from his employment. 173 His correspondence with Gilpin suggests the use of informants.

Some time ago a few disgruntled ones tried to reorganize Pioneer Lodge but did not succeed in gathering in the men. I understand that at no time they have had an attendance of more than thirty to forty, some of these boys and outsiders, and at the last few meetings from ten to fifteen represent the band...I write you in order that you may be posted, in case this little hole and order meeting up town address you on the subject of Checkweighman. 174

He imposed new disciplinary measures upon the mine. Rates were set without negotiation, and a gate was placed upon the waiting head and locked, to prevent men leaving the mine except at the will of officials. 175 This was considered an absolute outrage, the very nadir of authoritarianism. Referring to the erection of such a gate on an old travelling way in No. 1 Slope, a miner noted:

Now a barred gate has been put up and it is kept locked until 4:30 p.m. Men ascending this slope are forced to wait behind this barred gate until the hour mentioned, caged there like so many sheep in a pen as the manager called them when he invited a friend to peep behind the bars and "look at my sheep." There one sees weary men awaiting the pleasure of the management to turn the key and let them out of what for the time was durance vile. 176

It is hard to believe that even Cowans made the comment attributed to him, but what is important is the miners' perception and memory, the deeply-felt

sense that their pride and human worth had been attacked. We see again the distinctive qualities of the coal miner in these comments: many other industrial workers faced locked compounds and strict regulation of entry and exit from the workplace, but the coal miners interpreted these measures as hostile and inhuman gestures.

When Cowans learned that Pioneer Lodge was being reorganized, he responded in his inimitable manner. In 1897 he posted this notice throughout the town:

Important Notice.

To whom it may concern.

I understood during my absence an attempt was made to reorganize Pioneer Lodge. Nine unconstitutional strikes in eight years. From a two days stand about the suspension of a boy for committing an act of bestiality in the pit, to a nine weeks' stoppage over the appointment of a Manager is the record of Pioneer Lodge and we want no more of it. Neither Pioneer Lodge or any other Lodge will be recognized by the Management. I hereby give warning that no communication from any Lodge will be considered and members of any lodge committee representing themselves will be discharged. By order.

(Sgd.) J.R. Cowans,
General Manager. 177

There was plainly an element of irrationality in Cowans's approach. He was not content to win a victory in a strike; he had to write to the newspapers suggesting that the members of the union deliberately staged strikes to give themselves a chance to get drunk.¹⁷⁸ (Given the increasingly teetotal nature of the union leadership, the charge must have seemed particularly unfair). The coal miners would later report their sense of outrage that "respectable committees" were often "insulted, called hoodlums, and ordered out of the office with abuse and blasphemy" by petty officials, and could only obtain access to Cowans by appealing to his personal secretary.¹⁷⁹ Mackenzie King, for one, tended to boil

the Springhill problem down to one of a contemptible manager.¹⁸⁰ Such explanations obviously leave far too much to psychology. Cowans was only possible within a given structure; moreover, his programme made sense, particularly as a response to competition from other collieries. If Springhill were to achieve ascendancy and if Cowans were to maintain his financial position, the old traditions of the coal miners had to go. Scientific management of the coal mines could proceed on no other basis. Men no more irrational than Cowans followed his plan of breaking up the union movement, with great success. What was mistaken about the whole conception was its neglect of the coal-mining environment, and particularly its assumption that old traditions could simply be trod under foot.

The miners responded to this programme with anger: as one observes in their 'personal' attack on Swift, they used the language we would expect from men who valued mining skills. Swift's character was impugned on the grounds that he could not mine coal as well as his employees. Subsequent responses followed two main patterns. There was a conscientious effort to restore the ancien regime. Conciliatory gestures were made, as if miners hoped to regain the reciprocities of the paternalist regime merely by resurrecting its rituals. In 1900 the miners bought Cowans an expensive hall clock as a wedding present.¹⁸¹ But the turn-of-the-century records of the Lodge reveal how completely this strategy failed. During negotiations regarding the time for the trolleys in the mine, the manager stormed out of the room and the issue was not resolved.¹⁸² When the Lodge attempted to secure wage increases from him, he first summoned two members out to Springhill Junction, and then explained to them that he was unable to discuss the matter at any length because he was going

away for weeks. The committee boarded the train and discussed the demand well into New Brunswick, before concluding that the unacceptable offer made by Cowans was the best they could hope to get.¹⁸³ What is fascinating about this little vignette is that Cowans planned this gesture ahead of time!¹⁸⁴ Here was a situation which seemed to slip out of the traditional controls miners had evolved. Miners would often speak with regret that the manager had not seen their point of view. But they also turned to a militant industrial unionism, which was increasingly socialist in its inspiration and tone. By 1907, capital and labour in Springhill were polarized, and class-consciousness on both sides had attained a new level.

When Pioneer Lodge was reborn after 1899 it resembled the first Pioneer Lodge only in its name: everything else was different. The revitalized P.W.A. was far more concerned with imposing common standards on the industry. The lodges of Cumberland (now Pioneer and Mechanics in Springhill, Holdfast in Joggins, Shamrock in River Hebert) made a more determined effort to organize all groups of workers.¹⁸⁵ Delegates of Cumberland County tended to speak with a radical voice—more radical than the norm. They tended to favour alliances with other workers, the establishment of a labour party, and open industrial struggle (rather than arbitration, which had proved a disillusioning experiment in Springhill).¹⁸⁶ J.S. Price of Springhill noted at a meeting of the Grand Council in 1905: "There are but two classes in this country. The working class and the capital class. The third party has to be brought in to decide, and I have no confidence in the results obtained through that party, as class opinions and money generally decides."¹⁸⁷ The

P.W.A. used to argue that a harmony of interests existed between manager and worker, which respect for traditional rights would preserve; now many of its members were arguing that the classes had inherently different interests, and would inevitably come into conflict.

That these developments should occur within the P.W.A. will surprise only those who have adopted too simple a notion of that union's history. In fact the P.W.A., in the period 1898-1908, embodied many of the attributes of "new unionism," including a respect for militancy and a willingness to organize the unorganized. It retained a decentralized structure which was more typical of an early craft union, but this if anything intensified the militancy of local lodges. Control strikes could be launched with the permission of a local sub-council. Since the Cumberland Sub-Council was dominated by Joggins and Springhill miners--men who were naturally sympathetic to redressing their own grievances--it exerted virtually no restraining influence upon local militants.¹⁸⁸ Indeed, when the coal miners attempted to promote the U.M.W. as opposed to the P.W.A., they stressed that the more centralized U.M.W. would make it more difficult to conduct local strikes.¹⁸⁹ Although some groups of workers (such as boys) were not included in the Lodge, they could count on its support. The level of organization was very high, yet it was maintained through constant activity and not through a check-off at the office.¹⁹⁰ Mechanics, skilled workers, unskilled workers and boys each had the ability to go on strike, and could count on the support of others. This was the most explosive of all possible structures, since it combined the massed power of industrial unionism with the unrestricted autonomy wielded by small groups of men.

The period 1900-1907 was one of exceptional conflict in Springhill. Autocratic control met its match in the miners, who, after a decade's hesitation, fought hard for their traditional right to independence. From 1903 to 1907 especially the workers entered a profoundly creative phase. Ironically, it was in the period when the management offered them the least that workers took the most. The workers themselves effectively wielded veto power over discharge and hiring; they influenced the management of the mine and exerted strong pressure on wages. There was no other period in which the direct power of the workers was greater. Following categories set out in our discussion of the paternalist regime, let us note how this regime worked in five areas: hiring, discharge, mine management, wages and other issues. It is not possible, unfortunately, to compare the two regimes quantitatively, but the qualitative evidence is sufficient to establish most of the important points.

The question of hiring did not have the same urgency in this period that it had before, partly because the coal economy was booming to such an extent that there was a scarcity of workers. Under this structure, workers achieved for the first time a completely closed shop. It appears that virtually everyone in the mine save the boys had been organized by the P.W.A. lodges by 1903.¹⁹¹ The closed shop was totally effective in 1907. (The P.W.A. mounted a province-wide campaign for it in that year-- an important development which is often overlooked in discussions of events leading up to the great strikes of 1909-11).¹⁹² For reasons which were not the consequence of working-class activity, the union was never threatened by the massive overcrowding of the nineteenth century. In 1905, "some of the older workmen from the Old Country, and the United

States" complained that "on account of lack of room all cannot be employed full time."¹⁹³ Even this suggests that newcomers to Springhill were confronted with a viable protective apparatus which gave native workers preferential hiring in the pit. One should also note here the very real impact of provincial legislation requiring two-year certificates for men at the face. Pioneer Lodge demanded and received political influence over the composition of the board empowered to grant certificates to miners.¹⁹⁴

The issue of discharge loomed larger, and formed the substance of many of the strikes fought in this period. In no other part of the region did workers mount so impressive a defence against management's right to discharge employees. As a newspaper report noted in 1906, there seemed to be two irreconcilable rights involved: the right to independence and work, and the right to discipline and fire. As the Herald put it: "with the company it is a question of regulation, and with the boys it is a question of upholding the right of a person to keep his own job if he so desires provided there is no breach of discipline."¹⁹⁵ But given this conflict, what was the company's actual right to dismiss workers? In 1906, according to the boys of Springhill, management did not have the right to dismiss a boy who refused to accept another job in the mine. In November, they went on strike because a trip runner formerly on the 2,600-foot level was moved to the 3,200-foot level, and the trip runner at the latter level placed at inferior employment. It was a routine reassignment, but the boys considered it unjust, and carried their point. They also demanded reinstatement of a loader who had been dismissed by the management for loading boxes half full.¹⁹⁶ The outcome was

indecisive, but it raised the question of how the mine should be run.

As Cowans remarked, with characteristic irony: "We own the works, we pay the wages; we have some right to say where and how our employees shall work."¹⁹⁷

Not only boys raised these questions of discharge. A good example of the company's provocative discharge policy was provided in 1907. Two men were discharged because a boiler had been damaged by being allowed to run dry. The company, unable to determine which man was at fault, fired them both. Mechanics' Lodge of the P.W.A. threatened to go on strike and won their full reinstatement.¹⁹⁸

The classic instance of a contested discharge was the strike provoked by the firing of J.W. Hyatt. Hyatt had been injured in a fall of stone in the mine; he had been discharged from the company's employment on a previous occasion. The company alleged that Hyatt was an incompetent worker who could not be entrusted with the care of the lamps; they also pointed out that Hyatt had provocatively refused employment at the picking table, as an alternative to his work in the lamp cabin.¹⁹⁹

The miners did not actually contest the allegation that Hyatt had not done his job particularly well. They did point out that if Hyatt had been guilty of handing out unsafe lamps, the officials responsible should have been sacked as well. But for the miners the individual merits of Hyatt were not the issue: what mattered was that Hyatt stood for all the men who had been crippled in the mine, and as such he had a moral right to a suitable job. It was an insult to the coal miners to give Hyatt a job

at the picking table, where he would have to stand all day.²⁰⁰ As one correspondent noted, it was a conflict which seemed to pit two

philosophies of work against each other.

It is scarcely to be expected that the company can establish a precedent under which it is possible for the works to become manned to a large extent by men who are maimed, even though they become that way in the faithful discharge of their duty as employees of the company. It must be borne in mind that in these days of sharp competition, employers are compelled to base the success of their operations on the estimated value of the service of able-bodied men, men who are capable of rendering a good day's work for a good day's pay.

But this management philosophy was challenged, the correspondent noted, by the alternative ethic of the men.

But the humane view forces itself to the front just as prominently to the employees as the other view of the situation stands out in bold relief to the employers. The ambitions and wants of the maimed man do not decline with his physical ability. 201

What makes the period of autocratic control so interesting is that, at the height of their real power, the workers could impose their view of employment on the mine. Hyatt was reinstated in a more suitable position.

The management would later boast that it had a policy of retaining the services of injured workmen. It did not, for understandable reasons, reveal how this policy had been moulded by the workers themselves. 202

The ability to discharge is a fundamental weapon in the employer's arsenal; if it is damaged, one expects the ability to dominate the workplace to be damaged as well. It seems to have helped undermine the authority of the underground boss. A distressed friend of the company (who signed himself with the unlikely nom de plume "Springhill Miner") thought that the boys' successful defence of their right to a job was undermining all discipline and order in the mine.

...the boys employed in the Springhill mines want to dictate to the management just where each one shall work and how much he shall do, for it is already known that the boys went on strike solely because the management wanted two of their number to work at a different place....It is a pretty state of affairs when the manager of a mine or a factory, or of any other work, cannot remove a boy to some other place of work....

The correspondent went on to note the unscrupulous methods employed by the boys to get their way. Coal miners who were unwilling to join the boys on strike would find the boys unwilling to take their coal away once the strike was finished. What was worse, the boys were impudent to examiners, deputies and road bosses: if such men wanted "a driver and his trapper to haul a load of timber inside after he has hauled his coal out, he is just as likely to be told to go to hell as not, and then to be called all the names possible." How could any company run its business "when the boys are going to be boss?"²⁰³

The letter was quite correct to note that, from time to time, dissension between men and boys did crop up in connection with the numerous short strikes. But in general, one is struck by the number of times the men joined the boys on strike, without complaint. Even the Grand Council of the P.W.A. was surprised and disturbed by this rather phenomenal unity, which was responsible for so many of the strikes in this hyperactive district. The management simply lost control of its personnel policy. Earlier Pioneer Lodge had insisted on fourteen-days' notice of discharge; in its militant reincarnation the Lodge questioned the company's right to fire, period. What is even more striking is the fact that of the seven strikes fought on the issue of discharge, six involved employees previously rather neglected by the skilled miners (trapper boys, drivers,

firemen): the frontiers of control for the workers were being pushed back to include new groups, who absorbed the ethos of the coal miners and who were protected by them. And if these groups were well-defended, the miners themselves must have been virtually free from the threat of being fired.

On questions of mine management, the workers tended to make their views known only in connection with other issues. Mine safety was a preoccupation; but the Springhill mines were not prone to explosions after the removal of powder. Workers refused to work in No. 3 mine until management carried out the work of sealing up certain parts of the fire district.²⁰⁴ In this demand the miners could claim the support of Edwin Gilpin.²⁰⁵ There were also struggles over timbering practices²⁰⁶ and over attempts by management to intensify and lengthen mine work.²⁰⁷

The longest and most serious strikes concerned wages. It was in this period that the coal miners took a decisive step towards demanding what the market would bear, by co-ordinating their wage demands. In 1900 the P.W.A. demanded a general increase in pay. There was an unprecedented demand in Springhill for a 15-per-cent hike; the employees won 10 per cent. This was followed by a 12-per-cent hike on 1 January 1901, for a total of 22% in one year alone. Moreover, to quote the rather colourful language employed by the company in its submission to a 1909 conciliation board: "Besides these two general increases on all earnings since 1899, concessions after concessions have been wrested from the Management at the point of the pistol, till wages have soared in the several Departments to the impossibility of producing results financially under which the Company can exist."²⁰⁸ The company argued that since 1899, miners had

advanced their earnings by 60 to 70%, railway engineers by 62%, stationary engineers by 60%, railway firemen by 52%, railway conductors by 51%, stationary firemen by 50%, railway brakemen by 41%, machinists and blacksmiths by 34%, and unskilled labourers by 34%. Here, the company argued, was the reason why the firm was losing money. The men were demanding extortionate wages and producing less coal. "Miners' wages have increased no less from lowest to highest average than 74 per cent., while in return for these enhanced wages, miners have of their own design restricted output to the ruinous extent of 38 per cent. per man per day, which is practically a reduction of 60 per cent. in production... For \$1.35 average increase in wages daily, miners are giving 2.22 tons less in return in production in the same seams with more superincumbent pressure to assist in mining, improved machinery for handling the coal taken, barring accidents, from miners as it is made."²⁰⁹ The company made the extortionate demands of the miners a prime focus of its propaganda campaign in the years 1900-1910, and it would appear that its approach was quite successful in diminishing public sympathy for the miners' cause.

Nothing about wages in the coal mining industry is simple. Complete payroll data do not exist. We know from other sources that the prime motivation behind the increases at the turn of the century was the sudden increase in the price of coal; the 22% wage increase was not extorted from the companies, but granted without much of a struggle.

If we look more carefully at the estimates provided by the company, and compare these with statistics for the same years provided by the Department of Mines, a somewhat less lurid image of the trend in wages

emerges. Table One analyzed the average wages of coal miners in Springhill from 1883 to 1909. It demonstrates that the largest jump took place in 1900 and 1901, with the general wage increases of those years, not contested by the company. It also demonstrates a 40% increase in the wages of coal miners from 1900 to 1906, followed by a fairly sharp decline to 1908-1909. This is an interesting finding, because it shows us how the company, taking 1897 as its base year in many of its polemics, distorted the actual movement of wages by focussing on the year in which the miners' wages were at their lowest. (This is surely rather suggestive evidence as well of the power and importance of the trade union in defending wage rates). The impression of the miners' rates changes dramatically if we look at yearly averages (which of course takes into account unsteadiness of work). Here the gains appeared to be altogether more modest. The company's allegation that coal miners had increased their wages by 60% to 70% from 1899 to 1909 was based on a simple division of the yearly estimates (which does indeed produce the figure 71.7%), but it is the kind of statistic which reflects quite clearly the bias of those who compiled it.

It is more meaningful to look at the index numbers, taking 1900 as our base year. This establishes that the miners' wage was 4.7 per cent higher than in 1900 (looking at the yearly average), or 27.3 per cent higher (looking at the daily average). The company had indeed made concessions which conceivably damaged its capacity to survive, but the most crucial were made at the turn of the century and were conceded, not at the point of a pistol, but through province-wide collective bargaining. If the wages of the miners were indeed a problem for the

company, this was a reflection of the new disciplined bargaining mounted by provincial coal miners.

Table Two, calculated on the basis of slightly different statistics, show that while the payroll increased by \$459,827.77 (121% of the 1895 estimate of \$377,239.36) to reach \$837,067.13, the average per miner increased by 63%, from \$1.17 per day to \$3.00.

Table Two

Annual Wages in Springhill, 1895-1908.

Year	Wages	Average per Employee	Average per Man-Day	Average per Ton	Average per Miner
1895	\$377,239.36	\$484.26	[\$2.73]	\$0.99	\$1.83
1896	\$379,445.34	\$359.32	\$1.39	\$0.92	\$1.95
1897	\$273,121.45	\$301.79	\$0.99	\$0.85	\$1.83
1898	\$324,968.89	\$380.08	\$1.56	\$0.96	\$1.92
1899	\$367,864.91	\$368.23	\$1.52	\$1.00	\$1.90
1900	\$492,955.49	\$450.60	\$1.67	\$1.15	\$2.27
1901	\$602,426.43	\$428.46	\$1.87	\$1.47	\$2.51
1902	\$684,015.64	\$445.03	\$1.83	\$1.42	\$2.63
1903	\$778,405.88	\$535.35	\$2.04	\$1.56	\$2.88
1904	\$874,621.21	\$493.58	\$2.63	\$1.79	\$2.98
1905	\$674,073.70	\$376.16	\$1.68	\$1.41	\$2.97
1906	\$789,813.47	\$464.59	\$1.91	\$1.63	\$3.18
1907	\$684,435.35	\$445.02	\$2.07	\$2.02	\$3.14
1908	\$837,067.13	\$484.98	\$2.12	\$2.01	\$3.00

Sources: Report of Board in Dispute Between Cumberland Railway and Coal Company, of Springhill, N.S., and its Employees, in The Labour Gazette.

X, 1 (August 1909), p. 211 and p. 214, and the Reports of the Department of Mines (Nova Scotia), 1895-1908.

The company's claims cannot be dismissed altogether. It is certainly true that coal miners in Springhill were well-paid by provincial standards. Table Three, which takes a look at provincial averages, concocted from some unknown melange of collieries but presumably reflecting mostly Cape Breton, makes a suggestive comparison with those years which it shares with Table One. Clearly the Springhill miners started out at roughly the provincial average, but consistently widened the margin.

Table Four, built from estimates of much less official weight, is interesting because it suggests independent confirmation of some of the patterns which emerge from the other tables; it places the major transition at the turn of the century, and leads us to suspect that the claim that miners were making extortionate demands from 1905 on less credible. Table Five is perhaps the most interesting of these statistical excursions. It reprints an actual extract from the company's wage books--an extract used by the company in its propaganda against the miners. The daily rates paid for the pillar coal are high by the standards of the early twentieth century. One notes the extraordinary diversity of rates within the same small area, the wide variety of deductions taken off, and the large amount of broken time.

This last table helps solve a mystery which tended to elude those writers who focussed only on the high wages for coal miners. As polemicists liked to argue, the miners' grumbling seemed to have no foundation. If the pay in the coal mines was so bad, why did miners who had had ample opportunity to try other coalfields or even other lines

of work not stay away?²¹⁰ In fact, the problem appears to have been less that the miners were collectively being pauperized, and more that the wages system seemed to be arbitrarily established. There seemed to be little justification for differences in various wage levels.

It is easy to see why Springhill was infused with conflict in the early twentieth century. The company could point to declining profits and pressure from other companies: the coal miners' wages need to be reduced. Coal miners, newly impressed with their own indispensability, demanded the full market value for their labour, and were incensed at the absence of a uniform standard in the pit. As David Frank has argued in another context, two historical cycles converged: the coal company needed to exert pressure upon the miners' wages precisely at the time that miners were most able to defend them.²¹¹

Again we need to remind ourselves that the question of wages can never be interpreted solely in terms of 'bread and butter issues', however important such issues were. Wages were partly determined in this period by the provincial struggle of the miners in a period of price increases, but also by the hidden struggles within the pit, over many different issues.

Table Three

Wages and Hours of Labour for Certain Classes of Mine Employees in Nova Scotia, 1901-1921

Date	Average earnings contract miners		Day rate qualified miners		Drivers boss		Labourers, surface	
	Wages	Hrs.	Wages	Hrs.	Wages	Hrs.	Wages	Hrs.
1900	2.27	8	1.55	8	1.45	10	1.17	10
1901	2.61	8	1.60	8	1.45	10	1.29	10

Table Three (Cont.)

Date	Average earnings contract miners		Day rate qualified miners		Drivers- boss		Labourers surface	
	Wages	Hrs.	Wages	Hrs.	Wages	Hrs.	Wages	Hrs.
1902	2.55	8	1.65	8	1.58	10	1.29	10
1903	2.78	8	1.65	8	1.58	10	1.29	10
1904	2.71	8	1.65	8	1.58	10	1.29	10
1905	2.87	8	1.65	8	1.58	10	1.36	10
1906	2.91	8	1.79	8 ^{3/4}	1.61	10	1.40	10
1907	2.95	8	1.83	8	1.71	10	1.40	10
1908	2.86	8	1.83	8	1.76	10	1.40	10
1909	2.96	8	1.87	8	1.76	10	1.40	10
1910	2.87	8	1.88	8	1.80	10	1.42	10
1911	2.91	8	1.88	8	1.80	10	1.43	10
1912	3.01	8	1.94	8	1.82	10	1.48	10
1913	3.07	8	2.07	8	1.86	10	1.57	10
1914	3.14	8	2.06	8	1.95	10	1.60	10
1915	3.22	8	2.16	8	2.00	10	1.62	10
1916	3.72	8	2.42	8	2.32	10	1.85	10
1917	4.63	8	2.94	8	2.63	10	2.24	10
1918	5.61	8	3.42	8	3.04	10	2.80	10
1919	5.52	8	3.55	8	3.32	10	2.96	8½
1920	6.08	8	3.83	8	3.65	8	3.21	8½
1921	6.66	8	4.38	8	4.20	8	3.76	8½

Table Three (Cont.)

Hours of labour in Nova Scotia, have in most cases been eight per day with ten in some cases for actual miners, that is, coal cutters, etc., and ten per day for coal handlers, etc., and ten or twelve for engineers, firemen, pumpmen, etc.

*Including coal cutters on day wages, battricemen, bricklayers, and timbermen.

Source: Department of Labour, Canada, Wages and Hours of Labour in Canada, Report No. 3, issued as a supplement to the Labour Gazette, Vol. XXII (February 1922), p. 25.

Table Four

Aggregate Estimates of the Springhill Payroll, 1873-1907

<u>Date</u>	<u>Total Paid Out</u>	<u>Total Per Person</u>	<u>Total Per Man-Day</u>
August 1882. (4 Weeks)	\$ 17,500.	\$ 38.80	\$1.56
February 1889. (2 Weeks)	\$ 20,000.	\$ 19.12	\$1.82
January 1896. (4 Weeks)	\$ 41,000.	\$ 38.82	\$1.81
February 1896. (4 Weeks)	\$ 37,000.	\$ 35.03	\$1.63
March 1896. (4 Weeks)	\$ 41,000	\$ 38.82	\$1.81
1897, (Year)	\$270,121.45	\$298.48	\$.98
November 1903. (2 Weeks)	\$ 37,000.	\$ 25.44	\$2.32
August 1904. (2 Weeks)	\$ 27,000.	\$ 15.23	\$1.78
June 1905. (Day)	\$ 2,000.	\$ 1.16	\$1.16
August 1905. (2 Weeks)	\$ 35,500.	\$ 19.81	\$2.12
January 1906. (2 Weeks)	\$ 35,000.	\$ 20.59	\$2.04
February 1906. (2 Weeks)	\$ 36,000.	\$ 21.18	\$2.22
June 1906. (2 Weeks)	\$ 36,000.	\$ 21.18	\$2.22
1907. (Year)	\$634,435.35	\$412.51	\$1.92

Source: Cumberland County and Halifax press.

Table Five

Wages Paid for Pillar Coal on the 2,600 and 3,200 Foot Levels, May and June, 1907

2,600 Pillar Coal, May 1907

Tally No.	Name	Days	Rate per Day	Gross Amount	Deductions	Net Amount
4	Moses Welch	22	\$3.15	\$69.30	\$ 3.05	\$66.25
	Pat Kennedy	22	3.15	69.30	4.47*	64.83
	Pat McCarthy	21	3.15	66.15	4.32	61.83
	John Mont	21	3.15	66.15	6.07	60.08
	A.E. McPherson	26	3.15	81.90	4.40	77.50
	W.J. McDonald	21	3.15	66.15	2.29	63.86
	Alex Bigney	25	3.15	78.75	4.82	73.93
	T. McAuloney	21	3.15	66.15	3.77	62.38
	Jas. McPherson	25	3.15	78.75	3.62	75.13
	J.E. McPherson	24	3.15	75.60	1.42	74.18
	R. McAulay	15	3.15	47.25	2.12	45.13
	John McAulay	16	3.15	50.35**	1.07	49.28
	14	John Morris	23	3.76	86.50	2.57	83.93
W.A. Hall		23½	3.76	88.38	2.32	86.06
Ed Hall		19	3.76	71.46	4.27	67.19
P. Heron		26	3.76	97.79	10.72	87.07
W. Price		24½	3.76	92.15	11.67	80.48
J. Lonsbury		24½	3.76	92.15	10.97	81.18
A. Hobd		26	3.76	97.79	1.37	96.42
V. O'Rourke		23	3.76	86.51	3.68	82.83
26	Wm. Watkins	21½	3.385	72.79	3.07	69.72
	Calvin Ward	20½	3.385	69.41	6.37	63.04
	Geo. Newman	26	3.385	88.03	2.22	85.81
	Ed. Davis	26	3.385	88.03***	1.67	86.36

Table Five (Cont.)

Tally No.	Name	Days	Rate per Day	Gross Amount	Deductions	Net Amount
	Wylie McPherson	25	3.385	84.63	4.97	79.66
	Wm. W. Booth	25½	3.385	86.35	3.77	82.58
	Eugene Guthro	24	3.385	71.09	10.37	60.72
	J. Blockley	24	3.385	81.26	3.43	77.78
	Alex Blue	20	3.385	67.72	9.67	58.05
	M. McKinnon	23	3.385	77.83	4.17	73.66
33	Geo. Lysaigh	26	3.32	86.31	1.50	84.81
	W. Brinkman	26	3.32	86.31	8.00	78.31
	J. Emberley	23	3.32	76.37	3.75	72.62
	Thos. Chell	23	3.32	76.37	9.10	67.37
	J. Pittaway	20	3.32	66.63	2.30	64.33
	Jas. Dansen	25	3.32	82.98	1.65	81.33
	Thos. G. Long	24	3.32	79.66	1.45	78.21
	J. Wilkinson	26	3.32	86.31	8.03	78.28
39	Dan A. Gillis	24	3.445	82.71	2.30	80.41
	Thos. A. Murphy	26	3.445	89.53	4.90	84.63
	John Cromey	26	3.445	89.53	3.15	86.38
	Alex A. Gillis	20	3.445	68.95	5.70	63.25
	Geo. E. McKay	25	3.445	86.14	3.68	82.46
	John O'Hanley	23	3.445	79.24	4.72	74.52
	Arthur Paul	20	3.445	66.95	3.20	63.75
	Thos. Small	22	3.445	75.79	3.80	71.99
41	Fred Simpson	17	2.8475	48.41	2.58	45.83
	Wilfrid Arsno	21½	2.8475	61.25	8.57	52.68

Table Five (Cont.)

Tally No.	Name	Days	Rate per Days	Gross Amount	Deductions	Net Amount
3,200 Pillar Coal, May, 1907						
33	Richard Piggott	18	\$3.9875	\$ 71.80	\$ 1.95	\$ 69.85
	Nick Megoney	19	3.9875	75.79	4.60*	71.19
42	H.J. McDonald	15	4.2925	64.39	4.35	60.04
	Wilton Cameron	15	4.2925	64.39	1.25	63.14
2,600 Pillar Coal, June, 1905.						
4	Moses Welch	22½	\$3.28	\$ 73.77	\$ 3.02	\$ 70.75
	Pat Kennedy	23½	3.28	77.05	7.67	69.38
	Pat McCarthy	20½	3.28	67.23	4.07	63.16
	Jno. Mont	15	3.28	49.20	5.55	43.65
	Alex McPherson	18	3.28	59.04	2.47	56.57
	W.J. McDonald	14	3.28	45.92	1.97	43.95
	Alex. Bigney	22½	3.28	73.77	1.60	72.17
	T. McAloney	17½	3.28	57.40	2.95	54.45
	J. McPherson	20½	3.28	67.23	7.87	59.36
	J.E. McPherson	22½	3.28	73.77	1.17	72.60
	R. McAulay	18½	3.28	60.67	2.12	58.55
	J. McAulay	20½	3.28	67.23	1.17	66.06

Table Five (Cont.)

Tally No.	Name	Days	Rate per Day	Gross Amount	Deductions	Net Amount
14	John Morris	24	\$4.385	\$105.24	\$ 2.17	\$103.07
	W.A. Hall	23	4.385	100.87	3.17	97.70
	Ed Hall	23½	4.385	103.05	1.77	101.28
	P. Heron	23½	4.385	103.05	11.97	91.08
	Wm. Price	23	4.385	100.87	8.97	91.90
	J. Longsbury	24	4.385	105.24	10.07	95.17
	A. Hood	23	4.385	100.87	3.07	97.80
	V. O'Rourke	22	4.385	96.48	2.77	93.71
	Wm. Watkins	19	3.57	67.83	3.07	64.76
	C. Ward	22	3.57	78.54	6.37	72.17
	G. Newman	23	3.57	82.11	3.57	78.54
	Ed Davis	24	3.57	85.68	3.07	82.61
	W. McPherson	22	3.57	78.54	4.47	74.07
	W.W. Booth	22	3.57	78.54	2.87	75.67
Eugene Guthro	23	3.57	82.11	7.97	74.14	
J. Blockley	23	3.57	82.11	1.72	80.39	
Alex Blue	15	3.57	53.55	8.77	44.78	
M. McKinnon	21	3.57	74.97	4.07	70.90	
35	G. Lysaigh	23½	3.165	74.38	1.67	72.71
	W. Brinkman	18	3.165	56.98	8.47	48.51
	J. Emberley	15½	3.165	49.08	3.32	45.76
	Thos. Cuell	18½	3.165	58.57	1.72	56.85
	J. Pittaway	24	3.165	75.96	3.42	72.54
	Jas. Danson	19½	3.165	61.73	2.97	58.76
	Thos. G. Long	20½	3.165	64.90	2.47	62.43
	J. Watkinson	22½	3.165	71.21	1.47	69.74

Table Five (Cont.)

Tally No.	Name	Days	Rate per Days	Gross Amount	Deductions	Net Amount
39	D.A. Gillis	15	\$3.4966	\$ 52.48	\$ 2.22	\$ 50.26
	T.A. Murphy	16	3.4966	55.94	3.82	52.12
	John Cromey	23	3.4966	80.42	3.32	77.10
	Alex A. Gillis	21	3.4966	73.43	5.62	67.81
	G.E. McKay	21	3.4966	73.43	3.57	69.86
	J. O'Hanley	23	3.4966	80.42	4.07	76.35
	Arthur Paul	23	3.4966	80.42	5.82	74.60
	Thos. Small	23	3.4966	80.42	3.27	77.15
	Fred Simpson	19	3.48	66.12	1.67	64.45
	Wilfred Arseno	21	3.48	73.08	4.37	68.71
41	Jos. Hall	23	3.48	80.04	1.67	78.37
	Fred Gibbon	22	3.48	76.56	3.27	73.29
	Jas. Dunn	21	3.48	73.08	3.27	69.81
	Ed. McCarron	23	3.48	80.04	4.07	75.97

3.200 Pillar Coal, June, 1907

12	J.W. Kennedy	20½	\$3.215	\$ 65.90	\$ 2.77	\$ 63.13
	D. Alderson	20½	3.215	65.90	1.42	64.48
	H.J. McDonald	12½	3.215	40.18	2.22	37.96
	Milton Cameron	12½	3.215	40.18	1.47	38.71
12	H.J. McDonald	9	4.045	36.38		
	Milton Cameron	5	4.045	20.21		
	J. Alderson	3	4.045	12.13		
15	Ben Chase	21	3.035	63.73	1.97	61.76
	Geo. H. Willson	19	3.035	58.66	2.37	56.29

Table Five (Cont.)

Tally No.	Name	Days	Rate per Days	Gross Amount	Deductions	Net Amount
15	D. Blenkhorn	23	\$3.035	\$ 69.80	\$ 1.62	\$ 68.18
	D. Carrigan	23	3.035	69.80	3.27	66.53
19	Jude Budro	17	2.65	45.03	5.87	39.16
	Jas. McAloney	16	2.65	42.38	3.22	39.16
19	Richard Piggott	9	3.16	30.22	These men have work in another place.	
	N. Magenney	12	3.36	40.31		
	A. Gabriel	1	3.36	3.36		
	G.F. Harvey	19	2.315	43.95		
19	Robert Rector	16	2.315	37.00	6.83	37.12
	Phillip Arsend	18	2.315	41.63	1.17	35.83
	Wilfred Haymond	18	2.315	41.63	8.40	33.53
				41.63	2.07	39.56

Source: Herald, 24 July 1907.

* A small discrepancy, probably caused by typographical error, has been corrected by altering the value of the figure.

** Discrepancy probably caused by rounding.

*** Persistent discrepancies caused by some local consideration (such as overshove or allowance for stone).

From 1890 to 1911 the coal company and the coal miners of Springhill fought over wages--not merely the level of wages, but the mode of wage payment. Such struggles affected all questions of mine management. In 1909, for example, one of the major debates concerned the standard weight of a box of coal. According to an agreement made in 1893 between the company and the Grand Secretary, the signing parties agreed:

1. That all boxes be properly filled level full at the face.
2. That the Management see that all boxes are properly filled level full at the face.
3. That the "sender" or "senders" of any box or boxes, the contents of which are below six inches of level full on reaching the bank be fined twenty cents for short measure for each box.
4. That the Bankhead Foreman and Checkweighman determine all deductions for short measure.
5. That this agreement be adhered to until scales are placed on the bankheads. 212

According to the company, this legitimated their right to dock the miners, and to use the box as the standard unit of measurement in the absence of weigh scales. According to the miners, the company was denying them their rights to have the coal weighed, and was penalizing miners for stone in the coal when in fact this was caused by general mining conditions.

One strike must stand for many to prove our point that wage and control issues were intertwined. On 30 November 1903, the miners went on strike to enforce their demand that payment for coal be on the basis of measurement by the box rather than tally from the chute. The men working in No. 22 chute of No. 2 Mine were notified of a change from measurement to tally; these twenty men protested the matter, because they argued that the company itself wasted the coal at the chute. They argued that there had been a shortage of 1300 boxes in three months: "The management claimed a shortage," the miners protested, "and we showed them

just where the shortage was and what was responsible for it, first stone falling in the chute and loading in with the coal and sent to the stone bank; second boxes were overloaded about one tenth more than was demanded from the men; third we proved that boxes were loaded without tallies and came to the bank and the men would not get credit for it."²¹³ It was an issue created by the chute loading of this period. The coal produced by the men could not be kept account of separately at the bottom of the chutes, but the amount of coal produced by each pair of miners could be ascertained by the number of cubic feet the place had advanced over a given period; a certain number of cubic feet made a box. The company, however, found a persistent discrepancy between the "abstract boxes" produced by such lineal measurement and the actual boxes which it got at the surface. It wanted to pay by the actual box at the bottom of the chute, not by the abstract box at the top.²¹⁴

Under the traditional system, Cowans claimed, coal miners would waste the coal. The men pointed to the company's own sloppy mining methods as the root of the problem.²¹⁵ Cowans, with customary tact, retorted that the problem was the selfishness of the workers involved: the men in the chute earned between \$3.06 and \$7.12 per day. "It is not, therefore, a question of wage, as the men are making big pay in this chute, ... but another case of utter selfishness, where a number of the largest earners, while working on their own account driving the bords, refuse to share their labor with the rest of the men in the chute when drawing back the pillars... In other words, it is a grievance between the big-pay men and the comparatively little-pay men, and between the two, the company falls, or rather stands for the time being, until the men

between themselves have adjusted their differences....²¹⁶

It was a typical mining issue: a complex knot of conflicting interests and traditions, technical questions and raw emotions. It was typical, too, in that the modest little question of how men in one chute ought to be paid quickly prompted direct questions, publicly aired, about the company's competence and its unilateral right to determine the mode of wage payment.

Even a more directly economic issue raised general issues of control. In 1905 the company attempted to roll back the workers by 12½%.²¹⁷ According to the estimates later released by the company, this reduction was necessary because of the deterioration of the company's position in 1904, when the cost of producing coal (\$2.60 per ton) was greater than the selling price (\$2.45).²¹⁸ The company was essentially trying to undo the great victories of the P.W.A. at the turn of the century. The Provincial Workman responded to this challenge with a magnificent critique of virtually every aspect of the company's strategy.

The Chronicler says:--We are pleased to see the railroad fixed up, new bridges, fencing, house[s], elaborate water system; ventilating machinery, including a fine big boarding house; pumps; winding engines, and--why, yes--a park, with its incidental expenses; re-opening and fixing a section of main slope. It will be seen that all these expenses, thrown, perhaps into the debit side of a couple of balance sheets, would be likely to knock poor income out of line, whereas he would stand up more bravely, had these things been spread over a longer period.

Underground, there is of necessity a good deal of speculation in developing a mine, for instance, a 1,000 foot rock tunnel driven to no purpose, is unlikely and takes quite a junk off the profits.

Then again overcrowding the mines is decidedly an additional expense, in this way: The hoisting capacity of the slope plant remains the same, while the workings are opened out to a degree over and out

of proportion, consequently a greater space is submitted to pressure, which require to be timbered, often repeatedly in consequence of slow progress caused by inability to take the coal away. Now supposing that instead of opening out eight places in a "shoot" they were to open out six places only, and do this proportionately throughout the mine. The natural conclusion is that all things would balance more evenly, less roadways to timber, less men to pay for this work, while the company's loaders would be kept going; the cutters could proceed more quickly and finish their places, thus avoiding much doubling and reopening to a considerable extent, and thereby reduce the lumber bill, wear and tear, etc.

Sometimes much good can be done by striking out on a fishing expedition, and in a large pond one might or might not find much of a variety, yet if in possession of such a property, it is necessary in the interests of sound, healthy conditions that its owner watch out for the species known as, "departmental extravagance", laxity and dead-heads, on this point we do not commit ourselves, but the fact that the C R & C has 1700 on the pay roll, and out of this less than 500 cutters, seems to give room for a little curiosity as to what an exhaustive investigation would reveal. 219

It was a striking illustration of the interconnectedness of mining life: the simple demand for a reduction of wages brought a trenchant criticism of the mine. Could many other workers in so large an industry have mastered the intricate relationships of their workplace and analyzed questions with such acuity? Would many other workers have been able to withstand the company's pressure for a reduction and preserve the gains they had won?²²⁰

The workers' practical mastery of the mining environment gave them the power to withstand enormous pressure exerted by the company and 'public opinion.' They knew they were essential to the industrial economy, and they were now unified by an autocratic regime, which seemed to approach hysteria in its demand for a reduction. In 1906 the company posted

notices throughout the town blaming the workers for the crisis. Cowans argued that "prices on large contracts have declined, and that the continuance of high wages combined with the failure to supply the demands of the market by the 'gross unsteadiness' of the men, is causing the company to go behind month after month." Unless the men paid more attention to their work, the notice proclaimed, wages would have to undergo a large reduction. The response to the notice in Springhill was noted in the Herald:

The posting of notices about town at this time is significant, and when you refer to them in the discussion of matters with almost every man of standing here you are invariably met with a pretty knowing look, a smile, or such expressions as "bluff," "the old game," "have seen too many of them," "just a little attempt to scare somebody." "But," they add, "those days are over. If our employers have a case, let them produce facts and figures in support of their statements, and we will consider them with due attention..." 221

A one-industry town, one might have thought, would have conditioned men to a more frightened mentality vis-a-vis their employer. But instead we see a rather sardonic response to the threats of the manager--the response we would expect of independent men, convinced of their own knowledge of the realities of mining.

By 1907 the company and the men had fought to a standstill. The company had failed in its effort to win a wage reduction. Bristling notices, strikes, partial reductions cleverly conceived to hide their real import: nothing had worked. Wages had been defended with extraordinary tenacity.

Everything changed in 1907. It was the year of the Industrial Disputes Investigation Act, the federal government's major intrusion into

the world of industrial relations. By it the government required compulsory investigation of industrial disputes in utilities, railroads and coal mines; during the period of investigation, the terms of employment at the time of the dispute were frozen pending conciliation. Under the aegis of this Act, most of the coalfields were given collective agreements.²²² The Act was technically a very voluntaristic one. The conciliation board merely provided an opportunity for both sides to air positions and did not actually impose a settlement. But it had a coercive essence. It was imposed in an era of frequent military intervention in industrial disputes; refusal to comply with investigation of a dispute or to postpone a strike could be met by imprisonment or state violence. It made no guarantees that employees would not be dismissed before or after the process of negotiation; it thus paralysed workers at a crucial moment while giving the employer unlimited power to punish the unruly. Finally, it removed the element of surprise--the most important aspect of the frequent control strikes wages in Springhill--by making it against the law for workers, acting on their own initiative, to go on a quick strike.²²³ The control strike, so often a short, sudden response to a new situation at work, could not readily proceed in the new context of state intervention.

The year 1907 was a great watershed in the history of the miners of Springhill. For seven years they had built an unrivalled tradition of militant struggle, of autonomy at work. In April 1907 they went on strike to win the closed shop at the mine--successfully. But they now discovered, to their surprise, that they had acted illegally.²²⁴ They now entered into the strange and perplexing world of conciliation.

Springhill became the first major testing ground of the I.D.I.A. in the east, and proved beyond doubt the serious change which the state had effected in the workplace.

The first board to sit in Springhill set the pattern for most of them. The two cases before it concerned the rate of pay in counter level crossings in No. 14 chute of No. 2 Mine, and payment for local stone--the question of rates for stone found in pillars in a particular district of the mine. The management claimed that the first issue was the main case, and that the second had been "tacked on" by the men. With a great air of impartiality and fairness, the board awarded the first case to the men and the second to management. As John Moffatt of the P.W.A. pointed out, the first case involved a principle and \$100; the second involved several principles and upwards of \$90,000.²²⁵ The trouble partly stemmed from the assumptions brought to the proceedings by judges. The company flourished its financial statements and implied that it was about to go out of business, and the judges ruled on the basis of the balance-sheet rather than on abstract conceptions of justice and morality. But more importantly, outsiders were almost totally ignorant of the underground world. In 1907 and 1908 the boards of conciliation took confusing measures and positions regarding the stone-in-pillar question. One board ruled that an agreement on rates for stone in pillars made in 1890--how typical of the mines, this deeply historical environment, that men in 1907 would still be arguing over 1890!--was still in force; a long strike ensued during which the board's report was extensively used against the miners; and then the board's chairman proclaimed that his report had been "misinterpreted" and had merely been intended as an interpretation of the

past, not a ruling for the future.²²⁶ A long bitter strike had been fought on the question of wages, in which the judge's words had been used repeatedly and with devastating effect against the men--and with academic pedantry he then claimed that he had been misinterpreted! The men proceeded to call off their strike, accepting the 'revised' report, but the company refused to budge from the first report in its favour. In 1908 the union put an immense effort into preparing a comprehensive case against changes in the method of payment, and went so far as to get scientific evidence to prove management's estimates were far too high.²²⁷ It won this case as well, but since the company adamantly refused to acknowledge the report, the victory was hollow.

From 1907 to 1909 the company and the men prepared huge amounts of evidence against each other. One befuddled board after another had tried to sort out such knotty questions as whether or not the company had paid the same rate for stone from 1890 or 1893. They came into this battle-ground with no preparation, but with a great deal of power. It was significant that in the report of the board with the best representation of practical mining men (men not sympathetic to labour, incidentally) the union's case was given the best treatment.²²⁸ Certainly the boards of conciliation brought out in compelling detail the strength of the workers, their practical knowledge, their determination to set their own stamp on this mine.

But it was all for nothing: Cowans simply refused to acknowledge rulings which were against the interests of the company.²²⁹ With a certain magnificence, he simply refused to acknowledge the existence of boards of conciliation which he found inconvenient--although he never

failed to cite favourable rulings in his polemics against the union.

There can be no question that the Industrial Disputes Investigation Act set the stage for the defeat of the union, and the effective end of the remarkable structure of control in Springhill. It would take a long strike of 22 months to force the workers to yield. In this effort troops provided by the state would play an essential role, protecting the indispensable strikebreakers and breaking up crowds of men and women in the streets. The state would perform other functions by arresting U.M.W. organizers and issuing injunctions against picketing. Before 1907, labour had won a string of victories, which could be visualized as an unbroken heritage running back to 1879. (As we know, there were significant reversals in the 1890s, but even in this decade the major strikes were either victories or ended equivocally). After 1907 there was nothing but defeat. The long strike of 1909-11, the greatest moment of the workers' movement in Springhill, was the kind of savage and total defeat which changes the entire labour movement. The tradition of workers' control, this insurgent control formed in an autocratic milieu, fell victim not to some inevitable process of "modernization" or technical advance, but to the coercive discipline of the state.

It was not the same throughout the coalfields of Cumberland. The management of Chignecto, for example, negotiated with the U.M.W. and provided it with its only secure beach-head in Nova Scotia from 1909-11.²³⁰ At the Joggins the pattern was more reminiscent of Springhill: a violent protest against autocratic methods in the mid-1890s ushered in a durable contract by 1905.²³¹ Conflict in the Joggins coalfield never regained the heights it attained in the 1890s, when armed struggles broke

out between the company's supporters and the coal miners. But while any attempt to bring all the coalfields in under a model elaborated for Springhill is apt to fail, it is perfectly reasonable to see the similarities. In the Joggins, and throughout the western coalfield, the same evolution took place, only with a different temporality: a drastic reassertion of managerial control in the 1890s, followed by an acceptance of the contract. In no other centre did miners articulate a different philosophy of work as they did in Springhill, but there are enough incidents to allow us to think that their mentality was not completely different.²³²

The paradox of the period of autocratic control was that once workers were sufficiently unified, they subverted and transformed the autocratic regime into something close to its opposite. We sense this in the symbolic struggles they waged against the company. "Let everyone, from the general manager to the humblest employee, recognize the fact that every other one has rights, that they are entitled to be heard when they present a case," an advocate of the union urged in 1907.²³³ It was similar to the doctrines of the 1880s. But the regime had changed, and the language of independence had acquired a new meaning. Now the traditional celebration of the colliers' independence provided a basis for a thorough-going critique of industrial autocracy. "Can nothing be done with these strange men?" the company wondered in an advertisement during the Great Strike. "[T]hey have become possessed of the happy idea that 'the mines are grossly mismanaged,' and they would like to suggest how matters should be straightened out. 'Angels and ministers of grace defend us!' Every man Jack of them has his theory and no two theories

are alike. Every mother's son of them knows much better how to manage the mine than he knows how to mind his own business!"²³⁴ In its propaganda the company painted the strikers as irrational tyrants. It was of course struggling to convince the public, but there was probably in these outbursts a revealing indication of how mystified even Cowans was by his workforce. Why did they struggle so hard? What could they possibly hope to gain?

They murmur about "starvation wages" and "miserable pittance," yet of their own volition they have undertaken and accomplished 23 strikes in as many years, besides appropriating otherwise no very modest portion of their time in which they might have been turning an honest dollar.

NOTWITHSTANDING ALL THIS, not one of them has died of starvation to date; on the contrary, indeed; many of them own comfortable and well-furnished, modern homes--and have "a little sumthin'" in the stocking or the bank besides.

They've their jewelry, their millinery, their barbers and their booze.
 Their white vests, their cigarettes, their patent leather shoes,
 Their organs, their pianos, their harps and gramophones,
 Rich chains of gold, and ponderous rings with precious glittering stones.

"They have their jaunts to the United States, the old country, or the Pacific slope, as the spirit moves them--BUT,--herein is mystery--let the jaunt be where it will, THEY NEVER FORGET THE RETURN TICKET, and like homing pigeons, they come back without fail to--the harrowing Siberian conditions and "starvation wages" of poor old Springhill!"²³⁵ Like so many of the polemics of the company, this one is full of malice, even hatred. It is infused with a sense of class outrage--how dare these people aspire to such a standard of living, how dare they be so independent as to offer their opinions about the mine or travel freely to and

fro from Springhill? If only, the statements of the company seem to say, these strange men could be subdued.

It was the symbolic, political reflection of the underlying structures of the mine. To survive and prosper in an increasingly centralized industry, Cowans had to reduce his costs of mining coal; he had to choose between investment in fixed capital and preserving the wages of his men. But his objectives were stymied by the independent men of the mine. And so this structural conflict gave rise to frustrated polemics, and an unparalleled history of industrial strife. The workers lost, but so did Cowans; he left Springhill in 1910, to the relief of even the businessmen of Nova Scotia, not to speak of the miners themselves. Could it be that his polemics were given an added candour by his own realization that he was a defeated man?

The workers too fought out these struggles on a symbolic level. Their polemical exercises were less personal than those of the management, but no less biting. Responding to a booklet put out by the company, Seaman Terris, the socialist and trade union activist, tackled the question of the ultimate power in the mine: "Since labor creates capital, I must admit that the company is more dependent upon the men than the men upon the company." He also examined more immediate questions of mining efficiency. Had anyone ever seen a mine with so much timber rotting in its yard? Had not the worker a right to protest against extravagance and mismanagement, when his wages were affected by such problems?²³⁶ Other workers urged Cowans to leave. The problems of Springhill could be traced back to the management, which had refused "to receive a committee of men in a gentlemanly manner."²³⁷ They looked

back, implicitly, to a structure of reciprocal rights. But others pushed this particular criticism of bad manners into a general critique of autocracy. Mackenzie King was alarmed by the fanaticism of the men; so was the Canadian Annual Review, as it reported on the strong socialist presence in the town.²³⁸ Some miners, of course, were socialists before they arrived in Springhill. But socialist ideas made rapid headway among the indigenous miners as well, and flourished in the contested terrain of the mine. There is no evidence to suggest that more socialists were drawn to Springhill than to other mining centres; the distinctive political atmosphere of the community in the years 1907-1911 developed in the context of structural class conflict. It seemed that struggles within the workplace were giving birth to something much bigger, a socialist concept of industrial freedom. As one of the most articulate miners put it: "[A] time comes in the life of nations, it comes in the life of communities, and in the life of organizations when THEY CANNOT ENDURE ANY LONGER THE IMPOSITIONS FORCED ON THEM BY AN AUTOCRATIC AND OVERBEARING SPIRIT."²³⁹

4. The Politics of Bureaucracy, 1917-1927

The autocratic regime passed through four essential periods. From 1888 to 1890 it established itself, from 1890 to 1900 it wrested traditional controls from the workers' movement, from 1900 to 1907 it was subverted and undermined by the workers, and from 1907 to 1917 management authority was reinstated with the assistance of the state. This last period was in many ways the most complex of all, because in it a new regime was gradually emerging, a bureaucratic regime in which the

mine was governed by an expert management and through a collective agreement. The bureaucratic regime was a durable solution to the problem of industrial order, imposed by the state upon capital in the long-term interests of capitalism.

In some respects bureaucratic control was not a new phenomenon. The mine laws had long required the regular filing of returns from the mines, and thus a certain minimal attention to statistics. Bureaucrats such as Henry S. Poole and Edwin Gilpin were significant forces in the industry. The Industrial Disputes Investigation Act may be seen as an attempt to create a bureaucratic framework within which mining disputes could be settled. These were just beginnings, however, and only in the post-war period do we find the emergence of modern collective bargaining in the coal industry. The essence of a bureaucratic regime was the principle of fixed and official jurisdictional areas, ordered by rules. The authority to give commands required for the discharge of duties was distributed in a stable way and strictly delimited by rules concerning its means. These principles had long governed aspects of mining life. Springhill under Cowans had won renown for its regulations and its forms. But only when the principles of bureaucratic control were extended to labour relations can we describe the system of power within the mines as a bureaucratic regime. Until then the rules and procedures were limited in their application and subject to the direct action of the workers. A bureaucratic regime entailed the creation of a form of 'internal state' within which rules were formulated which elicited the co-operation of the worker and granted formal rights to his organization. The worker became an 'industrial citizen' with a set of contractually defined rights

and obligations, the right to 'industrial justice' through regular grievance procedures, and the right to seniority. Struggles were seen as aspects of "collective bargaining," which is characteristically oriented to the contract.²⁴⁰ As the contract became more and more complex and grievance mechanisms more sophisticated, a group of professional labour representatives emerged to take responsibility for much of the day-to-day bargaining.

The bureaucratic regime thus incorporated elements of earlier systems of power, while bringing these elements into a new relationship with one another. It is this kind of regime which is most accurately captured by Bowen's parallelogram of forces, since it tends to foster a certain division in outlook between the workers and their representatives, even those on a relatively low level. The central and irreplaceable element in this new regime was the contract. Under the bureaucratic regime business was most often conducted in writing and through formally designated structures.

Never before in Cumberland County had the contract loomed very large. In contrast with Cape Breton, where the P.W.A. negotiated controversial three-year contracts with the Dominion Coal Company, Springhill had never had a formal agreement that set out prices and mining practices in detail. The document of 1885 was the basis on which such a formal agreement might have grown, had not the autocratic regime so steadfastly refused to concede so much as a stable wage schedule. In contrast, workers in Joggins signed a simple contract in 1905, and those of Chignecto a more sophisticated one in 1909.

The workers wanted a stable framework which would limit the power of management. In 1906 workers in Springhill worked out at length and in detail a list of prices in the pit; they were continually put off by the management, which presumably wanted to go on wielding absolute power on such questions. When the third conciliation board prior to the Great Strike looked into the question of bringing industrial peace to Springhill, the wage schedule looked like the best bet. "Surely," the board's report argued, "Nothing more is needed...to show clearly the absolute necessity of a schedule. It seems clear to the board that if in the past, a schedule had been in operation in the Springhill colliery, very much of the friction and unpleasantness, which has so frequently occurred there between the company and its employees, would have had no existence.²⁴¹ The board attached to its report the wage schedule demanded by the men, with the recommendation that the company accept it, but the company was unyielding.²⁴² In contrast with Cape Breton, where from 1905 on a full-fledged contract placed limits on the right to strike,²⁴³ Springhill had no such arrangement; the Joggins coalfield had only the beginnings of one. Some Springhill miners argued that the acceptance of long-term contracts in Cape Breton had undermined the authority of the Grand Council of the P.W.A., and questioned the right of sub-councils to make such an important decision. "What we have to decide," thought Thomas Piggott of Pioneer Lodge, "is whether contracts are a help or a hurt to us. Whether we gain or lose by them. I am convinced that they tie our hands and restrict our liberties and are not a good thing to any union..."²⁴⁴

There is no easy answer to Piggott's question. Most labour historians have seen modern collective bargaining, including contracts

which are legally binding upon both parties, as the greatest achievement of trade unionism. They tend to overlook the drastic reduction in the direct power of the workers the acceptance of contracts entailed. The many control strikes characteristic of the autocratic regime now became illegal "wildcat" strikes; they lost their serious purpose and became mere spontaneous expressions of frustration. The contract exerted a moral and ideological force of extraordinary power. It was entirely appropriate to speak of the "sanctity of the contract," the belief that come what may, the fulfillment of the contract was essential. The ideology of the contract could appeal to very deep elements in the miners' psychology. Indeed we find the same language of honour and manliness which at one time had been used against the coal companies, used in the context of this new regime against trade-union militants who questioned long-term alliances with capital. It was the doctrine of the sanctity of the contract that forced the P.W.A. into an alliance with Dominion Coal, and the U.M.W. into an even more remarkable alliance with the British Empire Steel Corporation--in the latter case, through a contract that conceded the company's right to place controls over the political expression of local unions.²⁴⁵ It was this doctrine which completed the work begun by the Department of Labour in 1907--by removing the right to strike, except in closely supervised and exceptional situations.²⁴⁶

There was nothing 'inevitable' in the triumph of the contract in this form. Certainly a number of historians have posed the issue in this way: they suggest that the workers either faced a frontal (and almost certainly suicidal) attack on the wage system, or a system which brought capitalism under control and made it possible for workers to

live within it. Workers, however swayed temporarily by syndicalist sentiments, inevitably were forced to accept a "job-conscious unionism."²⁴⁷ What this way of posing the question overlooks, however, is the number of positions between modern bureaucratic unionism and revolutionary syndicalism: the position occupied, for example, by the first and second Pioneer Lodges of Springhill. There were no overwhelming technical reasons why bureaucratic unionism had to flourish. One cannot mechanically reduce the emergence of this structure of authority to some technical change in production: the mine of 1884 was really not that different than its counterpart in 1925, yet the structures of authority differed remarkably. Bureaucratic control was imposed by the state, using persuasion and coercion, and it was sustained through the active support of many workers, who believed it would codify but not diminish their power in the workplace.²⁴⁸ It also was supported by an emergent group of labour bureaucrats who had a vested interest in maintaining and even extending bureaucratic control, and who gradually occupied a different ideological and objective terrain than the rank and file.

The bureaucratic regime was born in the First World War and reflected the profound concern that wartime production be maintained. The P.W.A., which emerged victorious from the strikes of 1909-1911, was merged with the rival United Mine Workers of America (U.M.W.), which had been defeated in the long strikes, but had slowly regained strength in wartime. In 1917 the federal and provincial governments encouraged the formation of the Amalgamated Mine Workers of Nova Scotia to end the rivalry between the two unions. In 1919 the coal miners brought their union into the U.M.W., and it became District 26.²⁴⁹

The essential point about this transition, of which we have provided a very bare outline, is the leading role assumed by the state. The state placed strong pressures on the Dominion Coal Company to recognize the union and adopt the check-off for union dues. Had it not exerted such pressure, it would have faced the prospect of a social crisis during and immediately after the first World War. Whether there was in the state's policy of union recognition a far-sighted strategy of checking the radical tendencies of the miners (as one scholar has suggested) is not clearly established.²⁵⁰ The central point is that the state, interested in the preservation of social order, was instrumental in creating a new regime within the mines.

The workers endorsed the U.M.W. enthusiastically. It was seen as a more militant and effective alternative than the P.W.A., and the high support the new union commanded is not necessarily to be interpreted as support for its bureaucratic practices. The workers were strongly influenced by the history of the U.M.W. in Nova Scotia, and their left-wing leaders saw in the union a militant and effective organization with an important socialist contingent. In fact, there was another side to the union. Bureaucratic control and such questionable leadership practices as investing in Canadian coal companies and deriving benefits from business deals, characterized the union under the leadership of John Mitchell, its revered president.²⁵¹ The socialist challenge did little to change the U.M.W.'s underlying philosophy of the sanctity of the contract.²⁵² Within this union, tightly controlled by a centralized high command,²⁵³ the Nova Scotia miners wielded little influence. Ironically, they were in a much stronger position than their American

brothers to resist the attacks against them, and they did not run anything like the same risk of losing their basic trade-union rights. By selecting the U.M.W. as the vehicle of radical protest, the Nova Scotia coal miners showed how faithful they were to their own history, but they paradoxically guaranteed a conservative outcome in their attempts to preserve a radical tradition.

The attention of Canadian labour historians has often been drawn to the significance of the Second World War and the Rand Formula in the evolution of modern collective bargaining. But there was little in this celebrated formula which the coalfields had not already developed. Modern collective bargaining, with durably installed trade unions supported by a checkoff, was just as much the product of the First World War and the coming of the U.M.W. From the coalfields this formula would be extended to other large industries, often by trade unionists who had been moulded by their experiences in the coal industry.

Bureaucratic control did not evolve evenly. Cumberland County contained both its most developed and undeveloped moments. The Joggins coalfield, although formally organized by the U.M.W., reverted to highly autocratic forms of control which the U.M.W. did very little to counteract. Trade unionism was weakened by the regression of this coalfield to a petit-bourgeois capitalism dominated by small entrepreneurs. Springhill, by contrast, was the place where bureaucratic control blossomed, to an extent probably not equalled in Nova Scotia. In precisely the period that bureaucratic structures evolved in Springhill, the miners of Nova Scotia as a whole were brought into sharp conflict with capital. Springhill was admittedly exceptional in the relatively minor level of

radicalism in the 1920s and the rapidity with which the local union was bureaucratized. During the 1930s the Springhill miners would be known as the staunchest supporters of District 26 of the U.M.W. However, it would be a mistake to make too much of a case for "Springhill exceptionalism." Trade unionism in Springhill acquired at an early date the traits which it would possess throughout the coalfields somewhat later. Trade unionists in Nova Scotia in the early 1920s could look at Springhill as a model of their future. There were two themes running through the history of the 1920s: the theme of industrial warfare in Cape Breton, and industrial conciliation in Springhill. The dual policy of capital and the state expressed itself in a geographical dichotomy.

The case for Springhill exceptionalism is further weakened if we consider that the U.M.W. as a whole participated in the creation of this new structure. There was a great deal of hesitation about the long-term binding contracts. The first district-wide agreement between the U.M.W. and the employers imposing a new wage scale, contained a clause which provided that the one-year contract could be re-opened for revision after four months' time--a clause which proved far from binding upon management.²⁵⁴ A thorough Royal Commission surveyed the coal industry in 1920, after the miners complained of the company's unwillingness to negotiate. Appalled by the "prevalent custom...among the miners of taking what they term a 'holiday' or 'vacation' on...account of or because of some minor grievance, thereby curtailing that production which is so necessary to the life of the country," the Commission recommended that workplace grievances be settled through an Adjustment Board, to rule

upon all disputes arising during the life of the contract.²⁵⁵ Although the miners rejected this report because it tied wages to increased output, they did not reject the concept of settling grievances without strikes. In exchange for a good settlement on wages (basically confirming war-time gains against a management drive to reduce wages in a falling market for coal²⁵⁶), the officers of District 26 accepted an agreement which stipulated that "No stoppage of work shall take place owing to any dispute arising at any mine under the jurisdiction of District No. 26, except for refusal of employers to pay wages on the regular pay-day without satisfactory explanation, or danger to life and limb." The structure and function of the mine committee was spelled out in such a way that its duties were confined to disputes arising from the agreement itself. Unresolved disputes were to be referred to the district executive of the U.M.W. and the district superintendent; failing resolution at that level, the dispute was to proceed to arbitration, where majority decision was to be final and binding on all concerned. As with most U.M.W. contracts, the union explicitly conceded that the "right to hire and discharge, the management of the mine and the direction of the working forces are vested exclusively in the company, and the United Mine Workers of America shall not abridge this right." In return, the company promised not to discriminate against employees because of their affiliation with the U.M.W.²⁵⁷

The local right to strike was thus severely circumscribed. As J.B. McLachlan was later to observe, even the wages provisions of the new structure--seemingly its most attractive feature--left the worker unprotected against company assaults on deadwork rates and other items.

Apparent wage increases in this structure might actually represent wage reductions, and since the local right to strike had been bargained away, the local lodges had no means of redressing such grievances. 258.

From 1921 to 1926 the contract slowly extended its influence on the miners. When John L. Lewis, head of the U.M.W., suspended the autonomy of District 26 in 1923, he did so because he believed the union had broken its contract by engaging in a sympathy strike with the steelworkers. To some local men it came as a surprise that the contract was interpreted in so dogmatic a manner. 259 But there was a certain inevitability about the growth of legalism under the contract. Even left-wing miners in the U.M.W. found themselves simultaneously denouncing the doctrine of the sanctity of contracts and trying to get the employer to live up to the contract by paying agreed rates. 260 Within this new structure of bureaucratic control, where everything was official, legalistic, contractual, there was little room for spontaneous revolt—although the left, to its credit, used every possible device to use the rules to its advantage. 261

The acme of bureaucratic control was achieved in 1924, when the provisional president of the union (installed undemocratically in the wake of the suspension of the left-wing executive) negotiated the first genuine collective agreement in the coalfields, governing rates, working conditions and rules. The contract contained restrictions on the union's support for the radical Maritime Labour Herald and the 100% strike. It was rejected overwhelmingly by the miners. However, the company and the international union 'representing' the men argued that the men had implicitly accepted the contract by continuing to work under

its provisions. The Royal Commission headed by Sir Andrew Rae Duncan in 1926 paid close attention to workers' control and pit democracy, both of which were severely constrained by the provisions of its report which were accepted by the industry. Even the right to refuse to work was suspended: in the event a man refused to work because of an outstanding grievance, the mine committee of the union was called upon immediately to furnish a man or men to take his place. The union was called upon to provide its own strikebreakers. 262

It would be naive to forget the context in which this harsh bargain with hegemony was struck. Miners faced an employer who seemed intent on destroying their union, and a state which had shown itself ready to use violence. The undemocratic framework of 1926, which governed the coalfields for the next four decades, was not designed by the U.M.W., although the union's central doctrine of the sanctity of the contract and its bureaucratic methods had greatly contributed to its growth. It was not explicitly designed by the coal companies, although their intransigent refusal to concede living wages had precipitated the crisis which made it necessary. The central impetus from the start came from the state, which succeeded in transforming the politics of the workplace and in making the workers' movement a partner of capital.

Springhill developed bureaucratic control structures more fully and earlier than other mining centres. The leadership of Local 4514 of the U.M.W., the Springhill union, stoutly opposed all attempts of the left to use the new bureaucratic structure in a combative manner. Under the leadership of J.B. McLachlan and Robert Baxter, for example, the local union was asked to approve an attempt to transform a local Springhill

issue into a district-wide strike demand. The response of the local was that "we hand this case back to the Executive and tell them it is their case and deal with it."²⁶³ The union adamantly opposed the appointment of W.U. Cotton, a famous socialist journalist, as the union's statistician, a startling reversal of past associations with Cotton's Weekly.²⁶⁴ It turned a completely deaf ear to the idea (perhaps the most imaginative proposed by the left executive) of using a deliberate strike on the job to bring the company to heel. The clearest indication of the division between the Springhill local and the executive came in 1922: a resolution passed by the Local responded to the "left turn" of the union (in which a union convention pledged the body of the overthrow of capitalism) by calling upon the International President to take over the District.²⁶⁵ The idea of suspending district autonomy may have had indigenous roots.

The check-off of union dues and the closed shop were securely in place in Springhill by 1918 and never seriously challenged after that. The first contract in Springhill was the rudimentary wage agreement negotiated between Dominion Coal, their new employer, and the P.W.A. (Even initially, then, the rank and file of Springhill did not approve of their contract by a democratic vote.)²⁶⁶ The bureaucratic style was in evidence almost from the beginning. The union had changed its direction, and the employer was now distant from the community. In the 1880s the manager had been hounded in his home by disgruntled miners; now they dealt often with their employer through two levels: the upper echelons of their union and the General Superintendent in Cape Breton.²⁶⁷ Reliance was placed on the full-time officials of the union to settle difficult cases: one often has the impression that the local deliberately passed on awkward

questions to the district executive rather than admit defeat itself.²⁶⁸

The board member would be called in to Springhill and might thrash over nine or ten questions with management. It was often the case that he enjoyed no more luck than the local union.²⁶⁹

The control of the collective behaviour of the men increasingly passed into the hands of the union's full-time officers. The check-weighman, for example, became the unofficial statistician of the union, to whom workers had to report their earnings and losses each week.²⁷⁰

The bureaucratic mode of operation tended to make the full-time union officers distinct in outlook from the rank and file. Nineteenth-century cases involving 'contempt of lodge' were transformed into twentieth century trials for criticising full-time officials.²⁷¹

Brothers who were outspoken in their criticism at meetings were threatened with expulsion, although (in an arresting example of how entrenched the mentality of legalism had become) they were in the end given "suspended sentences" by the union.²⁷² Unguarded criticism of union officers was

brought up at meetings and members severely censured.²⁷³ While delegates from Pioneer Lodge had customarily been obligated to defend the positions taken by the membership of the lodge at conventions, now delegates were given a free hand in any matter that might come up. In effect, they were no longer delegates, but representatives.²⁷⁴

The man who typified the ambiguities of this new structure was William Hayes, the international board member who lived in Springhill. Hayes was very proud of the industrial peace in Springhill. Asked by the Duncan Commission to explain the differences between industrial relations in Springhill and those in Cape Breton, Hayes observed that

"...[W]e haven't a great deal of complaint in so far as the management is concerned in Springhill, we get along fairly good. We have our little fights, you know, and sometimes some fairly big ones. At the same time, I don't think there is very much hard feeling, that is, carried over from either side after having one of those differences in opinion."²⁷⁵ Hayes not only made this comparison, but he noted the wonderfully calming influence the new structure had had. Under Pioneer Lodge there had been endemic unrest, but now the check-off had erased the need for such conflict.²⁷⁶ Hayes accepted many of the more direct applications of corporate power: for example, noting the problem of overcrowding in the mine, Hayes accepted the argument that the company should prune away the men who had become a "burden on the industry."²⁷⁷ It was a revealing indication of the gulf between Hayes and the other workers that one of the miners addressed him as "sir" in his remarks.²⁷⁸

The new regime entailed profound changes in the workers' power in the mine. Under bureaucratic control, the company was able to proceed with a sweeping programme of change: It introduced longwall into No. 2 Mine, machines into Nos. 6-7, and was able to tamper with time-honoured rates for local stone. Each of these basic changes could be introduced with the formal consent of the union leadership, but no genuine consultation with the rank and file.

The introduction of coal-cutting machinery in Nos. 6-7 mines provides a good example of the working of the new regime. Under the contract, past customs and conditions present in the mine would prevail unless otherwise covered in the schedule. This would seem to be a protective clause for the workers. In this case the issue concerned the rates for a new type of work with coal-cutting machines. The company performed tests, and in

doing these tests men were brought into places formally belonging to other men. These workers were then expected to load the coal of other men (violating a longstanding mining tradition).²⁷⁹ But this was only the beginning. The company officials carried out the tests in such a way that an unrealistically high result was obtained from the machines; they then (the workers argued) set the rates too low. Under the test conditions, consideration had been paid for moving the machines; when the system was in actual operation, this consideration was withdrawn. When the rates were established they assured the men they would pay for all the shots fired in the affected places; when actual work started, the company paid for two shots for every four feet.²⁸⁰ These changes were introduced without informing the pit committee; the company imposed them unilaterally. It refused to adjust the rates as the roof conditions gradually worsened, further rendering the test results unrealistic. When the company was confronted with the evidence that it had changed conditions in Nos. 6-7 in violation of the agreement, it merely claimed that the men had previously been overpaid.²⁸¹ The tests had been sold to the workers as informal temporary tests, which would not constitute any sort of precedent. But the union found itself in the strange position of being party to an agreement which made these tests permanent aspects of coal mining. The rates for Nos. 6-7 were embodied in a written agreement which both the union president and the company assured the men was a temporary one. But once the new general contract came into effect, the "temporary" rates became one of those past customs and conditions which both sides swore to uphold. The result of this complex little imbroglio was not insignificant. It meant that the men of these mines had to

work under conditions they considered dangerous, unfair and unremunerative for four long years without having any possible way of changing them.²⁸²

The introduction of longwall in No. 2 Mine was an equally clear example of how the system of bureaucratic control guaranteed the company the right to do what it wanted. The introduction of longwall into No. 2 was the most controversial and important technical decision anyone had yet made about mining in Springhill. It was a sign of the new structure that so complete a change could be instituted in the mine. The underlying objective of the change was to reduce the problem of bumps in No. 2. William Hayes insisted that he had been consulted before the introduction of longwall. Other men could not remember any general consultation. The record of the decision to go to longwall is recorded in the union minutes, and it clearly entailed no bargaining between management and men. After the pit committee met with five of the coal company's top executives, it reported that "These men intend to change the system to the long wall, they said that it is the long wall system of [or] close the mine, that they are not going to take any more chance on the present system. They will start the long wall system on the 54 east [5400-ft. level, East side] as soon as they get clean up [after the recent bump]. The 54 west will also be long wall but those that are drawing pillars will take the pillar out.... This changing of the system means the throwing out of a large number of men."²⁸³ This is not the language of negotiation: it is the language of dictation. The men strenuously put forward other ideas, with the significant support of the town council. Why not reopen No. 3? Why not work on developing other properties? The company replied that "it is useless of talking of the re-opening

of No. 3, as it will not be producing coal for the next 20 years, as they have more coal in sight than they can sell."²⁸⁴ The town was thus condemned to live for the next three decades with the conviction that its major mine was going to be destroyed some day in a disaster.²⁸⁵ In this decision of life-and-death importance to the miners and the community the company had a completely free hand. There was nothing the union could do. It used this free hand to introduce longwall mining with rates the men thought unfair, and by using practices which they considered a violation of long-standing customs. The rates set for longwall work could not be changed to reflect the changing conditions of the mine. Longwall was introduced in a way which left the men with no alternative but to submit.²⁸⁶

These important events in the life of the mines tend to go against a Whig Interpretation of labour history, which stresses the new freedoms enjoyed by workers under modern collective bargaining in a stark contrast with the tyranny of previous kinds of negotiations. If anything, the bureaucratic regime seems to have made it possible for the mine management to institute far-reaching changes against the wishes of the miners, who had no chance to protest against these developments effectively.

But it would be a mistake to interpret the bureaucratic regime as a collapse of all workers' control. First of all, it must be remembered that the Springhill miners had endured the complete defeat of trade unionism, and the bureaucratic regime represented the recovery of some of their rights in the workplace. The U.M.W. in Springhill was not an ineffective union, and it fought hard both in individual cases and on general issues. The quantity of cases defended in the bureaucratic period

testifies to the energy of the local (although there was a certain incentive to prosecute cases by committee-men, who were paid for their time off). A total of 934 cases are recorded in the local records in the period 1917-1927. A higher proportion of workers were involved in cases in the generation of cases in the bureaucratic regime. Furthermore, the bureaucratic structure tended to place greater stress than the earlier period upon the collective grievance. Of the 713 cases which can be documented, 566 (79.4%) were raised by one member or one team, with the remainder brought up by groups of more men (96 cases or 13.5%), various committees (14 cases or 1.9%), or even by management (37 cases or 5.2%). It seems reasonable to interpret this finding as indicative of a structural change from the period of paternalism, in that the union appears to have played a less passive role in the creation of grievances, and that the management relied upon the union to a greater extent to appeal to its workforce.

Of the 749 cases which can be assigned a location, 668 (89.2%) related to the underground, 47 (6.3%) to the surface, and the remainder to the entire mine or the wider world. This again suggests a slight change from the nineteenth century, with its overwhelming domination by the underground. Even more striking, miners and loaders accounted for 451 of the 717 cases which can be assigned to an occupation, which at 62.9% of the total constituted a domination of the union by the miners, but a less radical domination than had prevailed in the earlier paternalist regime.

Both these findings seem to suggest that the bureaucratic regime allowed a broader range of members to participate and placed less emphasis

on grievances brought in to the union by individual miners or mining teams. The ability of a wider range of workers to participate in the affairs of the union suggests that bureaucratic control did entail a less confined concept of trade unionism.

The length of time recorded in the minutes suggests that the majority of cases (68.5%) were concluded within a week. However, 11.1% of the cases required at least 28 days to settle. Controlling for those cases which were not complete because of gaps in the record or because they occurred at the end of the minutes, we find that the mean length of time had increased by three days from the nineteenth to the twentieth centuries. Cases appealed to a higher body had a mean duration of 50.3 days, and the longest case on record lasted 287 days. This partly reflects the large number of cases processed through the machinery. But since the most contentious cases were appealed to the higher bodies--the executive or its representative--and these were the most time-consuming, it seems a reasonable conclusion that the bureaucratic regime required more time to handle the most serious cases. This may well reflect the difficulty in not allowing local strikes on contentious issues. The minutes explicitly record cases of members giving up in disgust before their cases were heard.²⁸⁷

Turning briefly to the specific cases discussed in this period, we find that the U.M.W. was equally concerned to defend the local workers against overcrowding, but enjoyed little more success in its hiring policies than the P.W.A. A total of 91 cases concerned hiring, about half were won by the workers and two-fifths by the company (48.5% and 40.9% respectively), with the remainder representing a compromise. The

most significant change was the resolution of the issue of the closed shop, and the breakdown of the miners' ability to obtain employment for their sons.

In the 1920s the labour market was overstocked, and the union faced the difficult business of getting rid of unwanted men. With many men looking for work, the union tended to lose control over the key hiring decisions, and this provoked many grievances. The company determined that older and married men would have the preference when a slack market forced the closing down of Nos. 6-7 in 1921.²⁸⁸ The large number of cases relating to Boys shows the harsh dilemma faced by the union. In some cases, the boys of No. 2 mine were forced into competition with the boys of Nos. 6-7 in a desperate search for jobs.²⁸⁹ Such incidents aroused bitter dissension and anger. The local was forced to rule against boys who wanted work to provide support for their families. It responded angrily when miners from Thorburn came to Springhill in search of work and appealed to the Thorburn local to look after its own.²⁹⁰ Power of hiring was shared with the company; workers continued to influence its policy. But while the union was transformed more and more into a hiring hall, it became implicated in all the decisions management made. It also enjoyed less success in obtaining employment for members and boys that it decided to support.

Questions of discharge had a greater prominence in the period of bureaucracy, because discharge was used frequently as a disciplinary device. Of the 86 cases fought on this issue, the workers won 44.3%, the company 32.9%, with 22.9% ending in compromise. This suggests not only that discharge was a more prominent feature of labour relations in

the 1920s, but that workers enjoyed real success in fighting it. Discharge cases, under the 1926 contract and well before it, received the top priority of all cases in the mine.²⁹¹ The union's success in defending the right of the member to his job was impressive. Given the much greater coverage of workers and the far larger number of cases, it can only be concluded that the U.M.W. offered workers greater protection against unjust dismissal than the first Pioneer Lodge did. On the other hand, it probably did not offer the same degree of protection as did Pioneer Lodge in the early twentieth century. The U.M.W. was not quite as militant as the second Pioneer Lodge: it allowed the discharge of individuals who had clearly violated the company rules, and seemed to be unable to combat a perplexing company policy of refusing to investigate the cases of individuals who had been discharged (because once they were discharged, they were no longer employees). But too much should not be made of this contrast. The U.M.W. offered strong protection against unjust (and perhaps even just) dismissal; and the minutes record many successful cases which in any other working environment would have been unthinkable, as in this case: "Skinner case (colored) Manager said that he chased the Deputy out of the bord with an axe, and he was discharged, after the case being argued between the Manager and committee, the committee told Skinner to go and get an order for work from the Manager."²⁹²

The records also suggest a far greater attention paid in the later period to questions of mine management. A total of 300 cases were fought on this issue, and there were striking contrasts with the nineteenth-century regime in emphasis. The problem of the equal turn, which had taken up nearly half the mine management cases in the 1880s, now was

reduced to a tiny proportion of the total. Instead the twentieth-century miners debated the allocation of jobs or shifts, safety, and the question of transportation of miners to and from work (logically enough, given the increasing extent of the mines). One is impressed with the traditional controls still exercised by the union. It was assumed, for example, that if two men wanted to trade places in two different mines, they would be allowed to do so with the union's permission.²⁹³

The twentieth-century miners also fought 338 cases on wages issues, giving less attention to deficient places than in the nineteenth century, but more to questions of holiday pay, payment for lost time, the union checkoff, and the setting of the wrong rate. There was little comparison between the two regimes here, because the miners had achieved a genuine standardization of wages. Although the crisis of the regional economy placed pressure on the miners' wage, these were still placed at \$6.65 for an eight-hour day in 1928-1929, according to provincial estimates.²⁹⁴ The defence of the wage standards against determined attempts to reduce wages was a genuine U.M.W. accomplishment. It cannot be said that the local union was lax in this regard.

Many of the cases fought in the period of bureaucratic control were precisely similar to those of the 1880s. In a classic deficiency case, for example, the union stopped places on No. 3 incline of No. 2 mine, which it insisted was not able to sustain a living wage. The company refused to budge, and in a conference with a committeeman said that it was "not particular if it starts for four years."²⁹⁵ This was not quite true, because a month later the company came back to the union cap-in-hand and requested that the union release the places it had stopped, in

exchange for a good deal in another level.²⁹⁶ The issue could just as easily have emanated from the mines in the 1830s.

The "other" issues indicate the broader range of the U.M.W., as compared with the P.W.A. A wide range of issues were represented in the 105 cases of this type, from the regulation of the company wash house (itself a significant achievement of the movement), questions about medical care, and even general concerns about mining development. Of particular importance were the 18 cases concerned with censuring members for misconduct. Particular stress was laid on the impropriety of criticising union officers or urging the breaking of the contract.

This interpretation of the bureaucratic regime has attempted to indicate its positive and negative features. There was a marked similarity between the paternalist and bureaucratic regimes. Although it would be wrong to imagine we can ever directly compare the success rates of the two periods, judged from the workers' point of view, it is interesting that workers won 33.4% of the cases of the 1917-1928 period, and lost 24.5%. This was roughly equivalent to the experience of the nineteenth century. What the statistics suggest is that the age of modern collective bargaining did not constitute a quantum leap forward in many areas of daily mining life. This result is somewhat surprising given the contrast that is usually drawn between the tough-minded effectiveness of the U.M.W. and the ineffectiveness of the P.W.A.

However, the statistics do not convey the full picture. They do not portray the tangible loss of workers' power in the mine which the cases of longwall mining and mechanization reveal. They cannot convey the qualitative shift, from the fundamental questions and choices faced by the miners in the period of autocracy, to the greater number of marginal

choices available to the miners in the 1920s. Nor do they measure the loss of power entailed by the trading away of the local right to strike, which the miners, despite mass insurgency against the U.M.W. in the 1930s (in which its new respectability came to the fore) were never able to regain. There was a profound ambivalence in accepting the U.M.W. as a partner in production, when this entailed a bureaucratic union participating in the gradual winding down of the industry. If the union to some extent merely adapted to new conditions of capitalist stability--moving from a "war of manoeuvre" to a "war of position," as Gramsci would say--it also gradually lost sight of the war altogether, slowly becoming incorporated within a state nexus from which there was to be no escape. Against too stern an economic determinism, one would want to defend the idea that workers themselves shaped their own destiny, in this case the gradual decline of militancy.

The voices that came from the mine in the 1920s, trapped forever in the dusty minute books of the U.M.W., remind us of the voices in the 1880s, and at the same time they startle us with a sense of novelty. It was clear that the miner's stubborn sense of independence made him a hard man to dominate. Committeemen showed this in a report of 11 November 1922, which stated that the "Manager used very vulgar and abusive language, which we should not stand for."²⁹⁷ It is there, too, in the peremptory manner of a request given the management in 1918: "Moved & sec. the Committee notify manager to single shift No 2 mine in 3 months time if not that they will be a difference in the rate and that will be what this Local will decide upon."²⁹⁸ These are the traditional voices of the miners, the voices we are used to hearing from them.

But there are other voices as well. There was the case in which the local decided to back the engineer to the hilt in his demand for better rates, only to meekly retract its demand when reminded by management that any strike would violate the contract.²⁹⁹ There was the Safety First campaign, organized by the company to dramatize the need for safety (and, perhaps, to pass the burden of responsibility on to the individual miner). It was a campaign greeted with a number of rude remarks: "Alex Ross about the rotten timber going down in No 2 Mine 5900 level. It was moved and seconded that this case be handed to the Committee and the Company should start at home instead of putting little slips in the envelopes about safety first."³⁰⁰ But many miners enthused about the Safety First movement and attended its meetings more faithfully than the meetings of their own local. And the voices are often mixed in paradoxical and bizarre ways, the sign of a structural change. The miners of Springhill joined in the strike of 1922, but before they did the company went over very carefully the details of keeping the mine free from water and promised to give the men 30 days' notice if there was any intention of starting production again.³⁰¹ There was Springhill's motion of 1925: "Mov & Sec that we stand by Our fellow workers, and also carry the sack and stand the gaff," a sign of solidarity with the miners of Cape Breton.³⁰² But then there is the truly strange clamour of discordant voices in July and August 1923. First in July the Local overwhelmingly rejected participation alongside the militant miners of Cape Breton in support of the Sydney steelworkers. Then in August it welcomed an offer from the Superintendent to supply a train from the company for the union picnic, as well as a dance stage to aid the festivities.³⁰³ Gifts are never

truly innocent. The grateful employees of William Hall who gave him a loving cup in 1882, and the generous workers who gave J.R. Cowans a handsome wedding present in 1900, all wanted something in return. The gift of company services for the union picnic was no more an altruistic, disinterested gesture than the others: it too beckoned its recipient to enter a relation of collaboration.

Bureaucratic control was not a complete defeat of the miners. Given the circumstances of their work, control in production had to be shared in ways which were more extensive than other industries. The miners would never be easily dominated. As the unemployment problem worsened, the U.M.W. lost ground and faced a serious challenge from the Amalgamated Mine Workers of Nova Scotia, a union which enshrined in its constitution the right of locals to go on strike over local grievances.³⁰⁴ Even this bitter opponent of bureaucracy was forced to recognize that the contract had come to stay. It proved to be a remarkably resilient formula, so much so that workers forgot its relatively recent invention or the possibility of a time when its worth had been debated. The contract was a potent instrument of class harmony, a compromise formula imposed on capital by a state, acting in the long-term interests of capital itself.

An incident in Cape Breton provides us with an appropriate conclusion to the study of this final phase of the politics of production in the coalfields. Ten years after the terminal point of this study, in 1937, the Sydney steelworkers won a union, largely thanks to Nova Scotia's new Trade Union Act. By this point many workers in North America were enlisted in the drive for mass industrial unions, under the generalship

of John L. Lewis, the same man who so forcefully defended the sanctity of the contract in Cape Breton. The Canadian organizer of this drive was Silby Barrett, who had imposed upon District 26 the contract which the membership had rejected.

Initially the Sydney steelworkers found their new organization meant a great increase in their power in the workplace. As George MacEachern recalls, suddenly foremen who had been used to badgering and bullying their employees found it was better to treat them respectfully. MacEachern, an experienced left-wing organizer, recalls the early struggles of the union in the mill:

We didn't start right away to negotiate a contract. Some of us weren't all that fussy about contracts. There were so many things that needed straightening out, we figured they'd be better straightened out by direct action. For years we'd been hearing that the contracts in the mines hadn't been that good. So we didn't press for one ourselves. We were afraid it would tie us down. We had recognition, and we'd go down with our grievances. We were kept busy. There were a lot of steel departmental strikes going on. The workers found that this was the only way they could get problems solved.

By now the sanctity of the contract had become a fixed tenet of the labour movement. Under the C.I.O. the long transition from insurgency to bureaucracy we have noted in Cumberland could be compressed to a period of a mere three years. MacEachern continues:

It wasn't until around 1940 that Silby Barrett pushed us to go for a contract. There weren't any clear-cut demands. We negotiated for what we could get which was nothing. The international union sent a man up to help us. He wasn't much help. He was a United Mine Workers man and a state senator, Sneed....We felt like Mr. In-between. We had the international office on one side and the company on the other. Both of them were trying to do a job on us. We weren't very happy. The

international policy was to get things the easiest way possible. They were a business union. They wanted to get a contract and they'd go to any length to get it. 305

And get it they did: a two-cents an hour increase. Bureaucratic control would preserve the union, but direct action became a memory. From the coalfields had emerged a potent formula indeed for industrial peace and the manufacture of consent.

Notés

- 1) Pierre Bourdieu, "Symbolic Power," in Dennis Gleason, ed., Identity and Structure: Issues in the Sociology of Education (Dimmifield, 1977), p. 115.
- 2) H. Braverman, Labor and Monopoly Capital (London, 1973).
- 3) See James Hinton, The First Shop Stewards' Movement (London, 1973); David Montgomery, Workers' Control in America: Studies in the history of work, technology, and labor struggles (Cambridge, 1979); Richard Price, "The labour process and labour history," Social History, Vol. VIII, No. 1 (January 1983), pp. 57-75.
- 4) Richard Edwards, Contested Terrain: The Transformation of the Workplace in the Twentieth Century (New York, 1974).
- 5) Peter Bowen, Social Control in Industrial Organisations: Industrial relations and industrial sociology: a strategic and occupational study of British Steelmaking (London, 1976), p. 13.
- 6) E.L. Trist, G.W. Higgin, H. Murray and A.B. Pollock, Organisational Choice: Capabilities of Groups at the Coal Face Under Changing Technologies. The Loss, Re-Discovery and Transformation of a Work Tradition (London, 1963).
- 7) Bryan Palmer, A Culture in Conflict: Skilled Workers and Industrial Capitalism in Hamilton, Ontario, 1860-1914 (Montreal, 1979), p. 91.
- 8) H. Clare Pentland, Labour and Capital in Canada 1650-1860 (Toronto, 1981), p. 54.
- 9) Patrick Joyce, Work, Society and Politics: The culture of the factory in later Victorian England (New Brunswick, N.J., 1980), p. 93.
- 10) Amherst Evening Press, 28 December 1891.
- 11) Swift Letterbooks, Swift to Cowans, 13 May 1890.
- 12) Grand Council Minutes, September 1892, p. 240.
- 13) Trades Journal, 22 November 1882.
- 14) Trades Journal, 25 May 1887.
- 15) The standard account of the union is Harold Logan, Trade Unions in Canada: Their Development and Functioning (Toronto, 1948), pp. 164-192; see also Eugene Forsey, Trade Unions in Canada 1812-1902 (Toronto, 1982), pp. 346-362, and Desmond Morton and Terry Copp, Working People: An

Illustrated History of Canadian Labour (Ottawa, 1980), p. 351. A more nuanced account is provided by Sharon Reilly, "The Provincial Workmen's Association of Nova Scotia, 1879-1898," M.A. Thesis, Dalhousie University (1979).

- 16) Provincial Workmen's Association of Nova Scotia and New Brunswick, Constitution, By-Laws, and Minutes of the Grand Council, typescript, Ottawa, Department of Labour Library, Vol. I, Constitution, Article 7, Section 1.
- 17) Grand Council Minutes, Vol. I, By-Laws, Rules for Subordinate Lodges, n.p.
- 18) Grand Council Minutes, Vol. I, Advice to Members.
- 19) Springhill Minutes, 12 January 1884.
- 20) Springhill Minutes, 24 February 1885.
- 21) Springhill Minutes, 16 April 1885.
- 22) Springhill Minutes, 14 June 1883.
- 23) C.W. Lunn, "From Trapper Boy to General Manager: A Story of Brotherly Love and Perseverance," Labour/Le Travailleur, Vol. IV (1979), pp. 211-240.
- 24) Grand Council Minutes, October 1886, p. 131.
- 25) Technically a lodge that went on strike without permission ran the risk of having its charter revoked; practically this never happened. However, no financial help would necessarily be given a lodge that went on strike without prior Grand Council permission in the nineteenth century. Grand Council Minutes, October 1884, p. 63, documents the leading case of the expulsion of a lodge, but for renouncing membership in the union, not for going on strike.
- 26) Springhill Minutes, 19 February 1884.
- 27) Springhill Minutes, 16 June 1885.
- 28) Trades Journal, 11 February 1880.
- 29) Drummond, Recollections, pp. 47-48.
- 30) M. Mauss, The Gift (London 1970), pp. 37-38.
- 31) Cited, J.S. Martell, "Early Coal Mining," p. 171. The description dates from 1842.
- 32) R.C.R.C.L., Evidence of Elisha Paul, p. 272.

- 33) Springhill Minutes, 17 August 1883.
- 34) Grand Council Minutes, October 1887, p. 159.
- 35) Ibid.
- 36) Trades Journal, 3 October 1888.
- 37) Trades Journal, 25 April 1888; 16 May 1888.
- 38) Springhill Minutes, 23 July 1885.
- 39) Springhill Minutes, 19 February 1885.
- 40) Springhill Minutes, 25 November 1884.
- 41) Swift Letterbooks, Swift to Cowans, 18 January 1890, 20 January 1890.
- 42) Springhill Minutes, 12 February 1885.
- 43) Grand Council Minutes, Constitution of the Provincial Workmen's Association, Article 6; Section 6 of "Rules of Subordinate Lodges."
- 44) Trades Journal, 21 February 1883.
- 45) Trades Journal, 16 January 1884.
- 46) Trades Journal, 2 April 1884.
- 47) Trades Journal, 16 April 1884.
- 48) Trades Journal, 30 April 1884. The same irregularity characterized the pit at Chignecto, which was said to be running 'fast and slow': Trades Journal, 13 February 1884.
- 49) Trades Journal, 8 March 1884.
- 50) Trades Journal, 11 June 1884.
- 51) Ibid.
- 52) Trades Journal, 27 May, 8 July 1885.
- 53) Trades Journal, 17 December 1884.
- 54) Data for this discussion are drawn from an SPSS systems' file. Cases are defined as all attempts by any people to solve particular problems through appeal to the lodge. They do not include general wage demands, collective political action, or the routine administration of

relief. Cases may be 'contested' by management, or they may represent no dispute with management—as in disputes with other members of the lodge, or suggestions for changes adopted without argument by the company.

- 55) Springhill Minutes, 8, 15 November 1883.
- 56) Springhill Minutes, 22, 29 May 1884.
- 57) Springhill Minutes, 26 June 1884.
- 58) Springhill Minutes, 4 February 1886.
- 59) Springhill Minutes, 8 February 1883.
- 60) Springhill Minutes, 6 December 1883.
- 61) Springhill Minutes, 13 November 1884.
- 62) Springhill Minutes, 25 January, 8, 15 February 1883.
- 63) Trades Journal, 5 October 1881.
- 64) See the analysis of Brophy, Miner's Life, pp. 54-55.
- 65) Trades Journal, 28 January 1885.
- 66) Trades Journal, 29 July 1885.
- 67) Trades Journal, 30 September 1885.
- 68) Trades Journal, 9 March 1887.
- 69) Springhill Minutes, 1 November 1883; 17 August 1883.
- 70) Springhill Minutes, 28 October 1884.
- 71) Springhill Minutes, 1 April, 12 May 1886.
- 72) Grand Council Minutes, October 1886, p. 128.
- 73) R.C.R.C.L., Evidence of Charles Runney, p. 285.
- 74) See these comments of a Springhill delegate in the Grand Council Minutes, October 1888, p. 185: "Bro Rae insisted that legislation should be demanded, having for its object the presentation [prevention] of unnecessary immigration, and the prevention of the overstocking of the 'labour market'. Labour at public works should be protected. We should approach our representatives with determination, and demand protection...." This quotation suggests the case with which miners,

thanks to public ownership of the resource, could make their economic grievances into political issues,

- 75) See Macleod, "Mining Reform" pp. 540-543.
- 76) Springhill Minutes, 8 January 1885.
- 77) Springhill Minutes, 8, 15 January 1885.
- 78) Trades Journal, 15 June 1887.
- 79) Trades Journal, 16 January 1884. An exception was made for discharge occasioned by an offence against the Mines Regulation Act.
- 80) Brophy, A Miner's Life, p. 42.
- 81) Springhill Minutes, 29 January 1885.
- 82) Springhill Minutes, 27 December 1883.
- 83) Springhill Minutes, 24, 21 January, 7 February 1884.
- 84) Springhill Minutes, 17 January 1884.
- 85) Ibid.
- 86) Springhill Minutes, 17, 24 April, 1 May, 1884.
- 87) Springhill Minutes, 6, 13 December 1883.
- 88) Springhill minutes, 26 February 1885.
- 89) Trades Journal, 30 September 1885.
- 90) E.J. Hobsbawn, "Custom, Wages and Work Load in nineteenth-century industry," in Labouring Men: Studies in the History of Labour (London, 1974 [1964]), p. 345.
- 91) Grand Council Minutes, April 1888, p. 174.
- 92) Grand Council Minutes, April 1889, p. 196.
- 93) Ibid., p. 195.
- 94) Trades Journal, 12 May 1880; 8 September 1880.
- 95) Grand Council Minutes, October 1890, p. 220; Springhill Minutes, 14 December 1882; 15 September 1884.
- 96) Mines Report (1880), p. 35.

- 97) Trades Journal, 16 June, 1880.
- 98) R.C.R.C.L., Evidence of William Hall, p. 300; Elisha Paul, p. 274; A. Ferguson, p. 283; A. Scott, p. 290. See also the Trades Journal, 4 February 1885, for a comparison of Springhill wage rates with those of Pictou County.
- 99) Grand Council Minutes, April 1888, p. 174.
- 100) Trades Journal, 16 April 1884.
- 101) Springhill Minutes, 15 May 1884; 8, 15 January 1885.
- 102) Springhill Minutes, 22 January 1885.
- 103) Springhill Minutes, 23, 29, 30 January 1885.
- 104) Springhill Minutes, 3, 27, 31 May, 2, 7, 14, 21 June, 1883.
- 105) Springhill Minutes, 22, 30 November 1883.
- 106) Trades Journal, 26 February 1884; Springhill Minutes, 19 February 1884.
- 107) Trades Journal, 11 July 1883.
- 108) Trades Journal, 30 March 1887.
- 109) Trades Journal, 11 May 1887.
- 110) Trades Journal, 30 June 1880.
- 111) Springhill Minutes, 22 March, 17 July 1883; 26 March, 1885.
- 112) R.C.R.C.L., Evidence of William Hall, p. 298.
- 113) Springhill Minutes, 5 March 1885.
- 114) Springhill Minutes, 28 April 1885.
- 115) Springhill Minutes, 9 April 1885.
- 116) Springhill Minutes, 26 February, 5 March 1885.
- 117) Springhill Minutes, 4 February 1885.
- 118) Springhill Minutes, 1 May 1884.
- 119) Trades Journal, 9 July 1884.

120) Trades Journal, 6 August 1884.

121) Trades Journal, 9 July 1884.

122) A significant reservation must be made for the growing body of written statute law passed by the legislature. The state placed limitations in 1873 upon the extent of child labour in the mines (limiting hours for children between 10 and 12 and excluding boys under 10). It also allowed employees to station, at their own cost, a person at the bankhead to check the weight of coal. General rules established the provision of places in the mine where men could evade coal cars and parameters for ventilation. Most importantly, the owner or manager of any colliery was empowered to make special rules, and submit these to the mines inspector for approval by the commissioner of mines; such special rules, once approved and posted, had the force of law, and an offence against these rules was taken as an offence against the law. The emphasis of provincial legislation was to make more exact and formal the chain of command in the coal mine; every coal mine, it was decided in 1884, was to be under the control and supervision of a manager, and the underground workings of every coal mine were to be under the daily charge of an underground manager and overseen, holding proper certificates. There was therefore a written framework within which the mines evolved. However, this framework was relatively loose. The role of the state within the paternalist regime was not one of a detailed supervision of the labour process. It does not appear that the collieries of Cumberland County adopted special rules in the period 1880-1888, judging by the union records and newspaper accounts. The existence of formal legislation therefore does not seriously challenge our interpretation of the paternalist regime as one largely characterized by informal, 'personal' bargaining. See the Revised Statutes of Nova Scotia, 1873, Fourth Series, Chapter 10, "Of The Regulation of Mines," and the Statutes of Nova Scotia, 47 Vic., Cap. 21, "An Act to further amend Chapter 10. of the Revised Statutes, 'Of the Regulation of Mines.'

123) Drummond, Recollections, p. 103.

124) F.H. Sexton, "Mines and Mining in the Maritime Provinces," in Adam Shortt and Arthur G. Doughty, eds., Canada And Its Provinces, Vol. XIV (Toronto, 1914), p. 683.

125) Herald, 13 February 1886.

126) Herald, 22 August 1907.

127) Herald, 22 March 1905.

128) Trades Journal, 28 January 1891.

129) Trades Journal, 14 January 1891.

- 130) Trades Journal, 24 October 1888.
- 131) Trades Journal, 15 August 1888.
- 132) Trades Journal, 26 September 1888.
- 133) Trades Journal, 6 June 1888.
- 134) Trades Journal, 26 September 1888.
- 135) Trades Journal, 12 December 1888.
- 136) Trades Journal, 6 March 1889.
- 137) Trades Journal, 17 October 1888.
- 138) Trades Journal, 6 February 1889.
- 139) Mines Report (1894), p. 6.
- 140) Herald, 24 July 1907.
- 141) Trades Journal, 11 December 1889.

142) This was the gist of Cowans' policy of docking all the boxes which appeared to be short-weighted or which contained an unacceptable amount of stone. Under the old management only certain miners had been docked for such problems--it was not often done. In his Recollections, Robert Drummond recalls the miners of Springhill in the 1870s going to great lengths to arrange the coal in such a way that the corners were left vacant, so that less coal was contained in each box (p. 16).

- 143) Swift Letterbooks, Swift to Cowans, 31 January 1890.
- 144) Ibid.
- 145) Swift Letterbooks, Swift to Cowans, 10 February 1890.
- 146) Swift Letterbooks, Swift to Cowans, 24 February 1890.
- 147) Swift Letterbooks, Swift to Cowans, 26 February 1890.
- 148) Swift Letterbooks, Swift to Cowans, 28 April 1890.
- 149) Swift Letterbooks, Swift to Cowans, 20 September 1890.
- 150) Swift Letterbooks, Swift to Cowans, 2 January 1890.
- 151) Swift Letterbooks, Swift to Cowans, 5 June 1890.
- 152) Amherst Daily Press, 10 July 1890.

- 153) Morning Chronicle, 10 July 1890.
- 154) Swift Letterbooks, Swift to Cowans, 25 July 1890.
- 155) Swift Letterbooks, Swift to Cowans, 26 July 1890.
- 156) Swift Letterbooks, Swift to Cowans, 9 August 1890.
- 157) Swift Letterbooks, Swift to Cowans, 12 August 1890.
- 158) Swift Letterbooks, Swift to Cowans, 15 August 1890.
- 159) Morning Chronicle, 10 July 1890.
- 160) Ibid.
- 161) Morning Chronicle, 21 August 1890.
- 162) Swift Letterbooks, Swift to Cowans, 20 August 1890.
- 163) Springhill Advertiser, 26 December 1895.
- 164) Ibid.
- 165) PANS, RG 21, Series "A", Vol. 8A, File "Reports and Returns 1895," Maddin to Gilpin, 7 February 1895.
- 166) Amherst Daily News, 20 January 1897.
- 167) Cited, Ibid.
- 168) Cited, Amherst Daily News, 27 January 1897.
- 169) Amherst Daily News, 29 January, 18 February 1897. So incensed was the Amherst newspaper that it called for Cowans's resignation (16 January 1897).
- 170) Amherst Daily News, 28 April 1897.
- 171) Amherst Daily News, 14 October 1897.
- 172) PANS, RG 21, Series "A", Vol. 6 (1896), Cowans to Gilpin, 30 October 1896.
- 173) Amherst Daily News, 2 March 1894.
- 174) PANS, RG 21, Series "A", Vol. 6 (1899), Cowans to Gilpin, 29 April 1899.
- 175) Herald, 5 August 1907.

- 176) Amherst Daily News, 25 September 1899.
- 177) Amherst Daily News, 26 August 1907.
- 178) Herald, 17 June 1905.
- 179) Herald, 23 August 1907.
- 180) King said of Cowans: "Cowans is a man of the type of which fortunately there are not many in this world. He is prepared to be generous at times and has been so on many occasions in the past, in dealing with his men, but he is full of obstinacy and once he becomes set in a particular position, would be prepared to ruin himself financially rather than yield...I have no love for Cowans, in fact I have a wholesome contempt for him in many ways, but in the situation as it is at Springhill his personality is a factor which in justice to all concerned should be considered." Mackenzie King to Harriet Reid, 1 November 1910, in William Baker, ed., "The Personal Touch: Mackenzie King, Harriett Reid and the Springhill Strike 1909-1911," Labour/Le Travailleur (forthcoming). It was of course in King's interest to minimize his own responsibility for the events of Springhill and focus exclusively upon the personality of Cowans.
- 181) Springhill Minutes, 8 February 1900; 1 March 1900.
- 182) Springhill Minutes, 22 March 1900.
- 183) Springhill Minutes, 19 April 1900.
- 184) Rex. v. Cowans & Dick, Exhibit H/33, J.R. Cowans to R. Morrow, 17 April 1900: "...I meet my men this A.M. on the train re demand for more wages."
- 185) Springhill Minutes, 9 April 1900.
- 186) Trades Journal, 11 December 1889, covers the first 'arbitration' at Springhill, withdrawn through a technicality by the lodge.
- 187) Grand Council Minutes, September 1905, p. 485.
- 188) Conservative members of the Grand Council sought to remove the power to call strikes from the local sub-councils (Grand Council Minutes, September 1905, p. 475) but without success; Pioneer Lodge of Springhill sought further decentralization of the right to strike (September 1906, p. 548), but in putting its request noted that it had been striking unofficially for the past nine months in any event.
- 189) Herald, 29 March 1909; 5 July 1909.
- 190) The Lodge had sought a company-supported checkoff, but this was not granted. (Grand Council Minutes, September 1906, p. 544). This had

the effect of unifying the miners behind the rival United Mine Workers of America, since the few men in the P.W.A. could not point to an agreement with a checkoff in Springhill as a rationale for continuing the old union.

191) Grand Council Minutes, September 1905, p. 469. Concern was expressed that the methods used in obtaining this support might create a law suit.

192) Herald, 1 April 1908.

193) Amherst Daily News, 5 June 1905.

194) Springhill Minutes, 1 January 1901.

195) Herald, 29 November 1906.

196) Herald, 21 November 1906.

197) Herald, 30 November 1906.

198) Herald, 5 January 1907.

199) Herald, 14 June 1905.

200) Herald, 13 June 1905.

201) Herald, 17 June 1905.

202) Report of Board in Dispute Between Cumberland Railway and Coal Company, and its Employees (1909), p. 211.

203) Herald, 5 December 1906.

204) Herald, 28 January 1907.

205) Herald, 25 January 1907.

206) Morning Chronicle, 10 July 1890.

207) Acadian Recorder, 10 January 1895.

208) Report of Board in Dispute (1909), p. 213.

209) Ibid., p. 215.

210) Herald, 29 July 1907.

211) David Frank, "Class Conflict in the Coal Industry: Cape Breton-1922," in Gregory S. Kealey and Peter Warrigan, eds. Essays in Canadian Working Class History (Toronto, 1976), p. 162.

- 212) Report of Board in Dispute (1909), pp. 197-198.
- 213) Amherst Daily News, 8 December 1903.
- 214) Chronicle, 3 December 1903; Amherst Daily News, 3 December 1903; Saint John Sun, 4 December 1903.
- 215) Amherst Daily News, 7 December 1903.
- 216) Saint John Sun, 4 December 1903.
- 217) Amherst Daily News, 15 March 1905.
- 218) Report of Board in Dispute (1909), p. 209.
- 219) Amherst Daily News, 21 March 1905.
- 220) Herald, 10 April 1905.
- 221) Herald, 10 September 1906.
- 222) See the Report of the Deputy Minister of Labour on Industrial Conditions in the Coal Fields of Nova Scotia (Ottawa, 1909), p. 33, for the estimate that three-fourths of the miners of Nova Scotia were working under I.D.I.A. agreements.
- 223) Herald, 7 October 1907.
- 224) Herald, 10 April 1907.
- 225) Herald, 29 July 1907; 2 August 1907.
- 226) Herald, 9 October 1907. Seaman Terris, Springhill's leading socialist, said of the intervention of the legal authorities: "My opinion is still the same--that men of the legal profession are about as capable to judge the miners' affairs, as a miner is to argue a case before the Supreme Court." Herald, 16 October 1909.
- 227) Herald, 10 January 1908.
- 228) Amherst Daily News, 23 January 1908.
- 229) In one characteristic gesture, Cowans told the press he intended to take his miners' petition for a new board of conciliation and frame it as a joke. Amherst Daily News, 25 November 1907. When the Patterson board ruled against him, he remarked that his company was "not interested in the result." Herald, 24 January 1908.
- 230) Amherst Daily News, 15 July 1908.

- 231) Herald, 16 May, 29 June 1906.
- 232) For example, James Baird of Chignecto was forced to resign in 1906 because he refused to deal with the P.W.A. Herald, 11 April 1906.
- 233) Herald, 10 April 1097.
- 234) Herald, 15 September 1909.
- 235) Herald, 23 October 1909.
- 236) Herald, 16 October 1909.
- 237) Herald, 2 November 1909.
- 238) J. Castell Hopkins, The Canadian Annual Review of Public Affairs 1910 (Toronto, 1911), p. 315.
- 239) Herald, 17 August 1909.
- 240) See Max Weber, "Bureaucracy," in H.H. Gerth and C. Wright Mills, eds., From Max Weber: Essays in Sociology (New York, 1958), pp. 198-244, and Michael Burawoy, Manufacturing Consent: Changes in the Labor Process under Monopoly Capitalism (Chicago and London, 1979), p. 113 and p. 119.
- 241) Herald, 24 January 1908.
- 242) Ibid. The company's central argument was that conditions in the mines of Springhill were so heterogeneous that it would be impossible to design a contract which could allow both standardization and flexibility.
- 243) Canada, Department of Mines, Mines Branch, Report on the Mining and Metallurgical Industries of Canada 1907-1908 (Ottawa, 1908), pp. 582-591.
- 244) Grand Council Minutes, September 1905, p. 528.
- 245) In the agreement between the British Empire Steel Corporation and the U.M.W., the union agreed to desist from using the check-off for the support of the Maritime Labour Herald. The pact was adamantly opposed by the rank and file, but the terms it imposed on the workplace held nonetheless. However, it appears that the provision against support of the Herald remained a dead letter.
- 246) The Montreal Agreement of 1921-1922 permitted local strikes in cases of safety and delay in payment.
- 247) Cf. Robert Hoxie, Trade Unionism in the United States (New York, 1917).

- 248) For a close analogy, see David Montgomery's discussion of the craft workers' strategy in Workers' Control in America, pp. 23-25.
- 249) David Frank, "The Cape Breton Coal Miners, 1917-1926," pp. 290-414; Paul MacEwan, Miners and Steelworkers: Labour in Cape Breton (Toronto 1976), pp. 53-150; C.B. Wade, "History of District 26, United Mine Workers of America, 1919-1941," unpublished manuscript, 1950, microfilm, PANS; Donald Macgillivray, "Military Aid to the Civil Power: the Cape Breton Experience in the 1920s," Acadiensis, Vol. III (Spring 1974), pp. 45-64.
- 250) Emil Bjarnasson, "Collective Bargaining in the Coal Mining Industry of Canada, 1825-1938," M.A. Thesis, Queen's University, 1965, pp. 67-78.
- 251) See J.O. Morris, "The Acquisitive Spirit of John Mitchell, U.M.W. President (1899-1908)," Labour History, Vol. XX (1979), pp. 5-43.
- 252) Bruno Ramirez, When Workers Fight: The Politics of Industrial Relations in the Progressive Era, 1898-1916 (Westport, Conn., 1976), Part One, has an excellent analysis of the U.M.W.'s support for trade agreements.
- 253) Melvyn Dubofsky and Warren Van Tine; John L. Lewis: A Biography (New York 1977), pp. 3-131.
- 254) Herald, 7 May 1921, for J.B. McLachlan's appraisal.
- 255) Report of the Royal Commission to Deal with Disputes in Connection with Coal Mining Operations in Nova Scotia and New Brunswick, Labour Gazette, September 1920, pp. 1168-1184.
- 256) Frank, "Class Conflict," p. 170.
- 257) Labour Gazette, January 1921, pp. 36-40.
- 258) See the Duncan Commission, Evidence of J.B. McLachlan, p. 981: "They could lay off all they liked," he said of the company, "But we couldn't stop."
- 259) C.B. Wade, "History of District 26," n.p.
- 260) Ibid.
- 261) Frank, "Class Conflict," pp. 172-175 for the 'strike-on-the-job' pursued by the left leadership. This tactic was not used in Springhill.
- 262) Agreement between Nova Scotia Coal Miners, United Mine Workers of America, District 26, and the Principal Mine Operators, Labour Gazette, April 1926, pp. 388-392.
- 263) Springhill Minutes, 22 October 1921.

- 264) Springhill Minutes, 10 September 1921.
- 265) Springhill Minutes, 30 August 1922.
- 266) The contract was accepted by Pioneer Lodge No. 2 of the P.W.A., set up in the course of the strike of 1909-11 by a handful of P.W.A. loyalists. This union never enjoyed any significant measure of support in Springhill.
- 267) Springhill Minutes, 1 June 1918, provides an early example.
- 268) Springhill Minutes, 13 July 1918.
- 269) Springhill Minutes, 15 November 1924.
- 270) Springhill Minutes, 8 June 1918.
- 271) Springhill Minutes, 9 May 1925.
- 272) Springhill Minutes, 9 August 1924.
- 273) Springhill Minutes, 8 September 1923.
- 274) Springhill Minutes, 30 March 1918.
- 275) Duncan Commission, Minutes of Evidence, Testimony of William Hayes, pp. 3994-3995.
- 276) Ibid., pp. 3973-3974.
- 277) Ibid., p. 3957.
- 278) Ibid., Evidence of Ebenezer Pike, p. 3623.
- 279) Springhill Minutes, 12 July 1921.
- 280) Duncan Commission, Minutes of Evidence, Testimony of William Mackey, pp. 3671-3679.
- 281) Ibid., Testimony of Ebenezer Pike, p. 3633.
- 282) Ibid., pp. 3636-3637.
- 283) Springhill Minutes, 9 December 1924.
- 284) Springhill Minutes, 16 December 1924.
- 285) Cf. Royal Commission Inquiring into Matters Relating to the Coal Industry of Nova Scotia, 1932, Minutes of Evidence--Springhill, PANS, Evidence of Archie Terris, p. 1048.

- 286) Duncan Commission, Evidence of William Hayes, p. 3692. Hayes characteristically remarked that the company's unilateral change had put him in "a bad position."
- 287) Springhill Minutes, 27 April 1918.
- 288) Springhill Minutes, 16, 20 July 1921.
- 289) Springhill Minutes, 15 October 1921.
- 290) Springhill Minutes, 19 March 1927.
- 291) Cf. "Agreement between Nova Scotia Coal Miners...And Principal Mine Owners," 1926, Clause 6, sub-section (e).
- 292) Springhill Minutes, 27 October 1923.
- 293) Springhill Minutes, 27 December 1924.
- 294) Department of Labour, Wages and Hours of Labour in Canada, 1920 to 1929 (Ottawa, 1930), Report No. 13, p. 34.
- 295) Springhill Minutes, 4 March 1922.
- 296) Springhill Minutes, 29 April 1922.
- 297) Springhill Minutes, 11 November 1922.
- 298) Springhill Minutes, 3 March 1923.
- 299) Springhill Minutes, 13 January 1923.
- 300) Springhill Minutes, 27 December 1926.
- 301) Springhill Minutes, 18 August 1922.
- 302) Springhill Minutes, 28 April 1925.
- 303) Springhill Minutes, 18 August 1923.
- 304) PANS, "Constitution, By-Laws and Amendments of the Amalgamated Mine Workers of Nova Scotia," District 26 Papers, microfilm.
- 305) In Gloria Montero, We Stood Together: First-hand Accounts of Dramatic Events in Canada's Labour Past (Toronto, 1979), p. 66.

CONCLUSION

Conclusion

Throughout this thesis an uneasy truce has been struck between structural determinism and voluntarism. In the first three economic chapters, it seemed particularly important to stress that the emergence of the coalfields was a social as well as a natural process, and also insist upon the ability of man to shape and transform the natural world. Chapter One stressed the importance of the King's policy and the General Mining Association's consequent monopoly in any explanation of the long retardation of the development of the coalfields. Similarly, the transition to industrial capitalism described in Chapter Two was interpreted as a socio-economic event directly influenced by the arrival of the railway and by the drive for Confederation. Political forces also affected the interpretation of mining laws, the growing scientific exploration of the area, and the tariff system. The third chapter, which opens with the matrix-event of the Whitney Deal in 1893, stresses the rôle of state policy in the transition to monopoly capitalism. In these chapters the economic base is not divorced from politics, and consequently cannot be seen as something which takes shape prior to human decision. The determination of the superstructure by the base is limited by the presence of these moments of structural transformation. Society moved in its base as well as upon it. Within the economic base one finds many crucial developments which can be attributed to human choice and agency. This is particularly true at times of the coal industry, which depended upon a resource owned by the crown. The political ability to restructure the industry was increasingly limited by the interests of the coalfields and the major social classes. Nonetheless, the critical shifts can only be

interpreted as the consequences of human decisions. The crucial constraint was that of nature, which set a pre-determined limit to the kinds of enterprise certain coal seams could sustain in a capitalist economy, and consequently the nature and size of settlements.

The same tension between voluntarism and determinism may be found in following chapters. Although geographical factors are stressed in Chapter Four, less emphasis is placed on the peculiar location of the coal miners, and more on the similarities between the miners and other people. The Springhill coalfield sustained a society which resembled other urban Nova Scotian communities of the day in its religious stability, civic pride, and a widely-diffused ethos of respectability. Springhill became something more than an extension of the mine. A more determinist emphasis, however, was placed upon the natural forces which constrained the Joggins coalfield and prevented it from developing a similar community. Here a rural society was seen as a social consequence of the endowment of nature, as this was appropriated within a capitalist society. Similarly, in Chapter Five, the structural development of the coal mines was interpreted as the growth of technology, and the mines themselves were seen as giant machines for the mining of coal, which in order to function had to integrate five distinct systems. This structural logic was seen as an inescapable technological fact of coal mining. But when applied to the world of the underground, this socio-technical interpretation explains why workers were free to pursue certain strategies and develop certain traditions. The technological constraints faced by improving managers were equally the social possibilities enjoyed by the miners. Such vital economic indicators as productivity levels were interpreted both

as objective indications of the efficiency of the mines as producers, and the level of class conflict at the point of production.

As both Chapters Five and Six indicate, the mines were something more than just workplaces. They contained the power to transform men. Mine explosions and bumps illustrate this potency of the mines, which were uniquely historical workplaces, embodying the past in their very physical structures. The emergence of a distinctive mining mentality, with its intense spirit of solidarity and the practical humanism born of the presence of death, testifies both to the harsh limitation the structure placed on human freedom and to the unusual autonomy at work the colliers nonetheless enjoyed. Freedom and necessity were both present in the mines; indeed, both were raised to a higher power in this unusual environment.

Finally, the strenuous conflicts between workers and employers for control of the mines suggest the active ability of men to pursue class strategies in the pit. Using the concept of the industrial regime, meaning by this the ensemble of rules and traditions through which the daily life of the mine was governed, Chapter Seven suggested that the Springhill mines were governed by three distinct regimes. From 1879 to 1888 a paternalist regime governed the mine on the basis of unwritten rules and traditions; a durably-installed trade union enjoyed a high level of autonomy and fought militantly for the miners. In 1888, this changed abruptly to a new regime, one of autocratic control, in which the management sought to take upon itself all power in the mine. The workers resisted with tenacity, and they were defeated only at the end of a strike lasting 22 months, broken as a result of state interference. Finally, a bureaucratic regime after the war centred on the written contract and its enforcement. The check-off, legalistic grievance

procedures, and the end of the local right to strike, all served to take power from the rank and file and place it in the hands of management and trade-union officers. The quasi-syndicalist ethos of Pioneer Lodge of the P.W.A. was transformed into the routinized business unionism of the U.M.W. This new bureaucratic regime was decisively influenced by the state, understandably anxious to impose class peace upon the coalfields. Since these changes in industrial regime do not correspond neatly with changes in technology, it seems likely that they are better explained by strategic differences between labour, capital and the state, rather than directly by structural factors. Nonetheless the contract, once it was durably installed, became a remarkably solid aspect of coal mining life.

The choice between determinism and finalism in social history is easily turned into a metaphysical or ethical question, especially when an a priori position for one or the other is made the litmus test of one's political worth. The dominant voluntarist position in labour historiography, because it is locked within this false dilemma, lacks a vocabulary for defeat. Reversals are seen as part of a workers' "culture" which has the capacity to mould perceptions from generation to generation. Momentary setbacks do not damage this tradition of resistance. There are many points of contact between this thesis and the traditional view of workers' culture, but there are also definite differences.

The traditions of the coalfields were determined by the coalfields' survival, and ultimately the defeat of the workers was complete and final. This is a sombre and oppressive history. The labour movement made a distinguished contribution to the region. From 1879 to 1911 no other

area can match Cumberland for its contribution to working-class protest. Both the Provincial Workmen's Association and District 26 of the United Mine Workers of America were born in Springhill. From the armed rebellion of the miners of Joggins in 1896 to the massive display of order and discipline in the long strike in Springhill of 1909-1911, the miners revealed their capacity to resist. As early as the 1880s Springhill gave a majority of its votes to a labour candidate. Before the war the Joggins and Springhill buzzed with labour agitators and socialists. We have only touched this whole world of working-class activism. But in our exploration of the structures of mining and the loss of the direct power of the workers we have started to explain why this vibrant labour tradition was utterly destroyed.

The tragedy of the Cumberland miners was that of a humanism which went undefended into the world. Ultimately in a capitalist society the structure has the last word. The miners' tradition was broken by the movement of the capitalist economy. Gradually coal came to be a marginal industry in the regional economy. The coal miners' position deteriorated, within a region which was slowly withering and turning in upon itself. From being the vital powerhouse of the provincial economy, the coalfields became the forgotten sites of a decaying industry. Life within the dying world of coal left the workers with few alternatives to submission.

A profound helplessness had replaced the miners' traditional activism. Gradually the coal mines became less and less congenial for the traditions of workers' autonomy. The coal miners' resignation was deepened by the bureaucratization of the union, which proved to be

a stalwart defender of the status quo. In the Joggins, the coal miners' frustration was evident in the course of a bitter, doomed strike in 1947 against the local operators of the mines. A more terrible fate awaited Springhill, where the community and the union were unable to change the strategy of very deep mining followed by the company. An explosion in 1956 and a bump in 1958 ended large-scale mining in Springhill, and the traditions which went with it. The coalfields were thus undermined by the very mines which had given them birth, and the vibrancy of the workers' movement became a memory.

To pose the question of human agency historically means the investigation of alternatives and possibilities. The mining communities of Cumberland in the 1920s seem to have had virtually no alternatives open to them. The power of the state and of capital had already crushed the long strike in Springhill, and whatever force could be mustered by the workers stood no chance. As the economic crisis deepened, the workers' movement faced the bleak world of mine closures and high unemployment. The achievements of the miners, particularly in civilizing the coal industry and humanizing the experience of work, were impressive. But this circle of human warmth and light was growing ever smaller. The implacable logic of the economy and the ruthless subordination of the labour process left the miners with few alternatives, until finally the darkness overwhelmed them and the traditions they had so painstakingly preserved.

APPENDIX ONE
A GLOSSARY OF COMMON COAL MINING
TERMS

A Glossary of Common Coal-Mining Terms

Adit. Horizontal or nearly horizontal passage from the surface by which a mine is entered and unwatered. In Nova Scotia, an adit was characteristic of the earliest phase of the exploitation of a coal seam.

After damp. A mixture of gases remaining in a mine after a mine fire or explosion, consisting of carbonic acid gas, water vapour, nitrogen, oxygen, carbon monoxide, and in some cases free hydrogen. Many deaths in explosions resulted from miners or rescuers breathing after damp. (Also called black damp, or simply damp).

Air compressor. A machine for compressing air to a pressure sufficient to work machinery.

Air course. A passage through which air is circulated, particularly a long passageway driven parallel to the workings to carry the air current.

Air shaft. A vertical opening into a mine for the passage of air.

Airway. Any underground gallery or passage through which a portion of the ventilating air current passes.

Anthracite. Hard black lustrous coal containing 85 to 95 per cent carbon (as against 70 to 85 per cent in bituminous or "soft" coal).

Anticline. A fold or arch of rock strata, dipping in opposite direction from an axis.

Auger. A tool for drilling holes in coal for blasting.

Back balance. An inclined passage running up at right angles from a main level in the mine. A balance car is attached to one end of the rope, and a carriage for the mine car is attached to the other. A loader car is run on the carriage and is lowered to the foot of the incline raising the balance car. The balance car in its descent raises the carriage when the carriage is loaded only with an empty car. (Commonly referred to as a balance).

Balance box. The box, filled with rock or other material, used to counterbalance the weight of the coal car.

Band. Slate or other rock interstratified with coal.

Bank. The area immediately surrounding the mouth of a shaft or slope; the landing at the top. More generally, all surface installations at a mine.

Bank boss. Foreman in charge of the bankhead.

Bankhead. The building and the machinery it houses on the surface of the mine, wherein the coal is removed from boxes, screened, and placed in railway cars. More generally, the surface works of a mine.

Barrier. A solid block or rib of coal, left unworked between two collieries or mines for security against accidents.

Bearing In. Cutting a horizontal groove at the bottom or side of the coal face.

Bench. One of two or more divisions of a coal seam, separated by slate, etc., or simply by the process of cutting the coal, one bench or layer being cut before the adjacent one.

Bituminous coal. Ordinary soft coal.

Black damp. A mixture of nitrogen and carbon dioxide. The average black damp contains 10 to 15 per cent carbon dioxide and 85 to 90 per cent nitrogen, and is formed by mine fires and the explosion of fire damp (it therefore forms a part of the after damp). This term is also used loosely to refer generally to carbon dioxide in the mining environment.

Blackleg. A derogatory term, common in the English and Nova Scotian coalfields, for a strike breaker.

Blast. The operation of blasting, or rending rock or earth by means of explosives. Also, an explosion of gas or dust in a mine.

Blower. A blowing out or forcible discharge of gas from a hole or fissure in a mine.

Boom. A wooden support of the mine roof, set horizontally.

Bootleg Mine. Term used in Nova Scotia for a coal mine operated without legal authority.

Bord. A passage excavated in coal, driven up the slope of the coal from the balance.

Bord-and-pillar method. Method of mining in which less than half the coal is taken on the first working. After the first working a body of coal, called a pillar, is left unmined to support the roof, and the mine has a 'checker-board' plan. Subsequently the pillars are taken out, generally by working back from the boundary of the mine to the slope.

Borehole. A hole made with a drill, auger or other tools, for exploring strata in search of minerals; for water supply, for blasting purposes, for proving the position of old workings, faults, and letting off accumulations of gas or of water.

Bottom. The landing at the bottom of the shaft or slope.

Bottomer. A man at the bottom of a mine slope or shaft who superintends the raising and lowering of the boxes.

Box. A vehicle in which coal is conveyed from the working places along the underground roadways and up the slope.

Brattice. A board or plank lining, or other partition, in any mine passage to confine the air and force it into the working places. Its object is to keep the intake air from finding its way by a short route into the return airway. Temporary brattices are often made of cloth. (Also used as a verb, meaning to provide with brattice for ventilation).

Brattice cloth. A heavy canvas, often covered with water proofing material, for temporarily forcing the air into the working face or other area.

Brattice man. A person who assists in the construction and positioning of brattices.

Broken ground. Rock strata where the walls are poorly defined and the general formation shattered; faulty or unproductive measures.

Brush. (1) To mix gas with air in the mine by buffetting it with a jacket. (2) To dig up the bottom or take down the top of an entry or room for the purpose of admitting cars where the seam of coal is too thin or shallow for their admission.

Brushers. Men who brush the roof, build packs and stoppings, and keeps roadways in repair.

Bump. A sudden breaking sometimes accompanied by a settling or upheaval of the strata in the mine, accompanied by a loud report, and the shock wave created by this upheaval transmitted through the roof whereby the pillars and timbers are struck. Bumps involved forces of two kinds: (a) direct pressures of the overlying strata which gave a unit stress on a pillar, large or small, in excess of the unit crushing strength of the pillar material, thereby creating a violent bursting effect; (b) indirect pressures transmitted by a shock wave. In Springhill, "local" bumps referred to violent bursting of coal under pressure while "general" bumps denoted both this bursting and the more diffuse damage created by shock waves.

Butty. A miner's working partner. (In England, one who takes a contract for working out a certain area of coal; this "butty system" does not seem to have been used extensively in Cumberland County).

Cap piece. A piece of plank placed on top of a prop.

Chain runner. A person who fastens and unfastens haulage cables to trips, and whose signals direct the haulage engineer to start and stop the trip.

Chaldron. An English measure derived from the usages of the Newcastle coal trade. The Newcastle chaldron contained either 53 cwt. or $52\frac{1}{2}$ cwt. of coal; it could be made up in either three wains of $17\frac{1}{2}$ cwt. or six carts of $8\frac{3}{4}$ cwt. One Newcastle chaldron equalled two London chaldrons. Walter Johnson's measurements in 1850 placed the average weight of a Winchester chaldron in Nova Scotia at 2,940 lbs. One Newcastle chaldron contained 72 bushels; a Winchester chaldron contained 36. Nova Scotians used both measures in the coal trade, and often neglected to mention which kind they intended.

Check battery. A wooden construction to close the lower part of a chute, acting as a check to the flow of coal.

Check-off. A method of collecting union dues, fees, and fines by withholding them from the miner's wages.

Checkweighman. (Also called a checkweigher). The miner's representative, chosen by election, who checks the weight of coal recorded in the miner's favour, when the coal boxes filled by the miners underground are weighed at the bankhead.

Chock. A square pillar for supporting the roof, commonly used in long-wall mining, constructed of prop timber laid up in alternate cross-layers (in 'log-cabin style') the centre being filled with waste.

Chute. (Sometimes written shoot). A channel or shaft underground, or an inclined trough above ground, through which coal falls or is "shot" by gravity from a higher to a lower level.

Clinker. The product of the fusion of the earthy impurities of coal during its combustion.

Coal. A carbonaceous substance formed from the remains of vegetation by partial decomposition.

Coal-cutting machine. A machine worked by compressed air or electricity, for undercutting or channeling a bed of coal.

Coal face. The working face of a bord or other chamber, composed wholly of coal.

Coalfield. A region in which deposits of coal occur, formed in a similar manner. In this thesis, all those human activities which serve to distinguish an area possessing coal seams of a common character and giving rise to communities of a common nature.

Coal measures. Those strata of the Carboniferous system which contain coal.

Collier. Strictly speaking, a man who mines coal with a pick. More generally applied to workers who undermined or dug the coal at the face.

Colliery. A place where coal is mined, including various mines, mine machinery, and surface buildings.

Company man. A man who works by the hour or by the day, such as track layers, timbermen, drivers, and cage-runners, as opposed to the miners who work under contract, as by the ton, yard, etc.

Correlation. The determination of the equivalence in geologic age and stratigraphic position of two formations or other stratigraphic position of two formations or other stratigraphic units in separated areas.

Crop coal. Coal of inferior quality near the surface.

Crosscut. A small passageway driven at right angles to the main entry to connect it with a parallel entry or air course.

Crushing strength. The resistance which a rock offers a vertical pressure placed upon it.

Culm. Waste or slack coal, consisting of fine coal, more or less pure, coal dust, and dirt.

Cutter. A term employed in speaking of any coal-cutting or rock-cutting machine; the man operating them, or the man engaged in underholing by pick or drill.

Cwt. An abbreviation for a hundredweight, or 112 pounds avoirdupois.

Datal men. Men on daily wage work, not on salary or paid by contract.

Davy lamp. (Also referred to as a "Davy" or "Davey".) A safety lamp invented by Sir Humphrey Davy in 1815 for the protection of coal miners. Its safety features consisted of a fine-wire gauze inclosing the flame to keep it from coming in contact with mine gas.

Deadwork. Work that is not directly productive of coal, even though it may be necessary for exploration and future production.

Deficient place. A working place in which men cannot make fair average wages, or in which they are faced with other mining difficulties, and for which they are given or demand extra pay.

Deputy. In England, an underground official who looks after general safety of a certain number of rooms or of a district--the lowest ranking official in the hierarchy. Used in Nova Scotia for underground officials, particularly examiners and shotfirers.

Dip. The angle at which beds or strata are inclined from the horizontal; also used more generally to describe direction downward to the deep.

Dirty coal. A coal seam with thick partings of fire clay; a very ashy coal.

Docking. Confiscation of coal by the company if in the judgement of officials a box was not fully loaded with coal.

Door. A movable frame or barrier of boards, or other material, usually turning on hinges or pivots, by means of which a passage way may be opened or closed. Doors were placed in the mines to prevent ventilating currents from taking a short cut to the upcast shaft, and to direct the current to the working face.

Downcast. The shaft through which the fresh air is drawn or forced into the mine.

Downcast fault. A fault which throws a coal seam downwards.

Drag. An appliance to be attached to the rear of a loaded train of cars to prevent their running down an incline.

Drift. A horizontal passage underground. A drift follows the seam, as distinguished from a crosscut, which intersects it, or a level or gallery, which may do either. More specifically, an entry above water level, driven from the surface in the seam, or a connecting passage between one mine and another.

Drive. To excavate horizontally.

Driver. A person who drives a horse in a mine, often a juvenile. (For this reason 'boy' is often used as a synonym of driver, even for workers who are not juveniles).

Drum. A revolving cylinder on a stationary hoisting or haulage engine, around which the hoisting haulage cable is wound.

Duff. The fine coal left after separating the lumps.

Duff bank. Area where duff and other waste is dumped from the mine.

Engineer. Any one who manages or runs any stationary engine or locomotive, an engine driver. (Gradually, however, the term engineer implied professional training in a branch of engineering).

Entry. A haulage road, gangway, or airway to the surface, or an underground passage used for haulage or ventilation, or as a manway.

Face. A point at which coal is being worked away.

Fault. A break in the continuity of a body of rock, attended by a movement on one side or the other of the break so that what were once parts of one continuous rock stratum or vein are now separated.

Feeder. A spring or stream underground.

Fire boss. An underground official who examines the mine for fire damp, and has charge of its removal.

Fire clay. A clay often found beneath coal beds; because it is comparatively free from iron and alkalis, it is not easily fusible and is hence used for fire bricks.

Fire damp. A combustible gas or "damp" made by decomposition of coal or other carbonaceous matter, and consisting chiefly of methane, CH_4 ; also the explosive mixture formed by this gas and air.

Floor. The rock underlying a stratified or nearly horizontal deposit; that part of any subterranean gallery upon which you walk or upon which a tramway is laid.

Footage. The payment of miners by the running foot of work.

Friable. Easy to break, or crumbling naturally.

Frog. A device made of rails secured to a plate, or bolted together through distance pieces, forming a connection of one track with another branching from or crossing it.

Gangway. The main haulage road or level, frequently called entry. (Not common in Nova Scotia; but usage is noted in the Joggins in the 1890s).

Gassy. Characteristic of or impregnated with gas, especially methane or other dangerous mine gases.

Gateway. A road or way underground for air, water, or general passage.

Gig. A winding engine.

Gin. A drum and framework carrying pulleys, by which the ore and waste are raised from a shallow pit. (Also called a horse gin, or a whim).

Ginney. A prop.

Ginney car. A small strong box for materials.

Goaf, gob. That part of a mine from which the coal has been worked away and the space more or less filled up; any pile of loose waste in the mine.

Haulage. The act or labor of hauling or drawing; the drawing or conveying, in cars, of the produce of the mine from the place where it is mined to the place where it is to be hoisted.

Haulageway. The gangway, entry, or tunnel through which loaded or empty mine cars are hauled by animal or mechanical power.

Heading. An interior level or airway driven in a mine.

Hoisting. Raising a trip or cage up from the mine to the surface. (A hoist is an engine for raising ore, rock, coal, etc., from a mine and for lowering and raising men and material. The term also is used to describe the amount of coal hoisting during a shift—e.g., "200 tons on first hoist").

Hole. To undercut a seam of coal by hand or machine; to make a communication from one part of a mine to another.

Horse. Any irregularity cutting out a portion of the seam.

Incline. A shaft not vertical, usually on the dip of a seam; any inclined plane, whether above or beneath the surface.

In situ. In its natural position or place; of a rock, soil, or fossil, when in the situation in which it was originally formed or deposited.

Intake. The passage by which the ventilating current enters the mine; the current itself moving toward the interior of the mine.

Jumping of a claim (or claim-jumping). Taking possession of a mining claim by stealth, or because it is liable to forfeiture owing to the requirements of the law being unfulfilled.

Kettle mine. A bootleg pit.

Lamp cabin. A place above ground, or underground near the pit bottom, where the safety lamps are repaired, cleaned, examined, lighted, and locked, before being handed to the workmen in cases where naked lights are not allowed to be taken from the bottom of the shaft.

Level. A passage, often slightly inclined, instead of on a 'horizontal level,' driven in the coal from the slope; off the level balances are driven off at right angles upwards into the coal, and from the balances bords are driven off at right angles into the coal. The coal from the bord is moved via the balance to the level, thence on the level to the mine bottom, and thence to the surface. (This nomenclature for these passageways is unusual in international mining, but the most common usage in Nova Scotia).

Lift. All the workings driven upwards from one level in a pitching seam.

Loader. A miner's assistant, who loads coal into boxes, and assists the miner(s) at the face.

Lodgment. A subterranean reservoir for the drainage of the mine made at the slope bottom, in the interior of the workings, or at different levels.

Longwall. A mining operation at a long coal face (wall), between parallel passages (levels), in which the whole of the seam is taken out and no pillars left, excepting pillars to protect the main slope and roadways. The face may be from fifty to one hundred feet in length.

Longwall advancing. Mining the coal outward from the shaft pillar, and maintaining roadways through the worked-out portion of the mine.

Longwall retreating. First driving haulage road and airways to the boundary of a tract of coal and then mining it in a single face without pillars back toward the slope.

Low coal. Coal occurring in a thin seam.

Lump coal. Coal in large lumps; the largest size brought from the mine.

Lype. An irregularity in the mine roof. A projecting rock in a mine roof that may fall at any time; consequently a source of danger to the miners. (Sometimes spelled Lipe).

Machine wall. The face at which a coal-cutting machine works.

Main entry. The principal underground road in a district.

Main-rope system. A system of underground haulage in which the weight of the empty cars is sufficient to draw the rope into the interior of the mine.

Man rake. A train of specially designed cars for the conveyance of miners up and down the slopes.

Miner. 1. One who mines, one engaged in the business of getting coal, and is paid a certain price for each ton of coal he digs or blasts from the solid seam, as distinguished from the labourer who loads the cars, etc.; 2. All classes of workers and labourers who work in a mine, digging coal, timbering, or making places safe.

Miners' anemia. Ankylostomiasis, a disease due to the presence of parasites in the small intestines. (Also called Miner's worm or tunnel disease).

Miners' asthma. Pneumoconiosis, a disease of the lungs due in large part to habitually inhaling minute mineral or metallic particles, such as coal dust. (Also called Miner's lung, black lung, etc.).

Miners' nystagmus. Infirmity of the eye prevalent among miners because of the strain on the eyes from working by insufficient light.

Naked light. A candle or any form of flame lamp that is not a safety lamp; an open light.

Narrow work. 1. All work for which a price per yard of length driven is paid, and which, therefore, must be measured. 2. Headings, chutes, cross-cuts, gangways, levels, etc., and all other working, prior to the removal of the pillars. 3. Any working place only a few yards in width.

Natural ventilation. Ventilation of a mine without either furnace or other artificial means, the heating being imparted to the air by the strata, men, animals, and lights in the mine, causing it to flow in one direction, or to ascend.

Outcrop. The coming out of a stratum to the surface of the ground; that part of the stratum which appears at the surface. It is not necessary that an outcrop be visibly presented on the surface, but only that it be so near to the surface as to be found easily by digging.

Overburden. The waste which overlies a body of useful material.

Overman. The foreman of the underground workings, ranking below the underground manager, usually in charge of a portion of a mine.

Pack. A wall or pillar built of gob to support the roof; also synonymous with "chock".

Parting. Layer of rock in a coal seam.

Picking table. A flat or slightly inclined platform on which coal is run to be picked free of stone.

Piece can. Lunch container for the miner. ("Piece," meaning a lunch, is Scottish in origin).

Pillar coal. Coal obtained by removing the pillars.

Pillar-robbing. The systematic removal of the coal pillars between rooms so as to regulate the subsidence of the roof and obtain coal.

Pitch. The dip or inclination of a vein or seam; the inclination of an ore body in the direction of its strike.

Place. The part of a mine in which a miner works by contract is known as his "place" or "working place;" generally corresponds to a room.

Pot. A rounded mass of roof slate resembling an iron pot and easily detached. (Fossil trees in the Joggins coalfield were termed pots, and could be very dangerous).

Powder. Explosive chemical used in powder form at the coal face to blast coal.

Prop. A timber set upright or at right angles to the dip, to support the roof rock.

Rake. A number of boxes drawn by any motive power, as for trip; a "riding rake" is a rake carrying men into and out of the slope.

Rapper. A layer or hammer at the top of a shaft on slope for signals from the bottom.

Ribbing. Enlarging a heading or drift.

Rise. The inclination of the strata when looking up hill. "To the rise" is directly up hill in an inclined coal seam.

Roadway. An underground passage, whether used for haulage purposes or for men to travel to and from work.

Roof. The rock lying above a coal seam.

Roof coal. That part of a seam of coal left for a roof.

Room. A heading or chamber.

Rope haulage. Any haulage system in which the cars are attached to ropes, usually employed on level or nearly level roads or entries.

Royalty. The amount paid by the lessee, or operator, to the owner of the land, mineral rights or mine equipment, based on a certain amount per ton or a per cent of total mineral production. In Nova Scotia, this was paid to the Crown.

Run-of-mine. Coal as it is dug in the mines, including lump and fine coal together, without any preparation or screening.

Safety lamp. A lamp, the flame of which is so protected that it will not immediately ignite fire damp. The flame is generally surrounded by a cylindrical covering of wire gauze, that protects the surrounding atmosphere from being fired, even though the gases within the lamp have reached the explosive proportions. When fire damp enters the lamp it burns, forming a bluish "cap" over the lamp flame, whence safety lamps are used in testing for this gas.

Screen. A sieve of wire cloth, gratebars, or perforated sheet-iron used to sort ore and coal according to size.

Screened coal. Coal that has been passed over any kind of a screen and therefore consists of the marketable sizes.

Seam. A stratum or bed of coal (or other mineral).

Second working. The operation of getting or working out the coal pillars formed by the first working.

Set. A timber frame for supporting the sides of a shaft or other excavation.

Shaft. An excavation of limited area compared with its depth; generally applied to vertical entries.

Shearing. The vertical side-cutting which, together with holing or horizontal undercutting, constitutes the attack upon a face of coal.

Sheet. Sheet-iron used in bords to help loose coal slide down to the level.

Shift work. Work performed underground for which wages are paid on a time basis.

Shooting off-the-solid. The mining of coal by heavy blasting without undermining or shearing it.

Shot firer. A man whose special duty is to fire shots or blasts, especially in coal mines.

Slack. Small coal. (See also Culm).

Slope. An inclined passage driven from the dip of a coal seam.

Small coal. Slack.

Sprag. 1. A short wooden prop set in a slanting position for keeping up the coal during the operation of holing. 2. A short round piece of hardwood, pointed at both ends, to act as a brake when placed between the spokes of a mine-car wheel.

Stableman. A man placed in charge of the stables and of the animals employed at a mine.

Stopping. Brattice or wall erected across old headings, etc., to confine the ventilating current to certain passages, or smother a mine fire.

Strike. The course or bearing of the outcrop of an inclined seam or structure on a level surface.

Tail-rope haulage. A system of rope haulage by which the full boxes, with the tail rope attached behind, are drawn by a main rope passing over a drum, and the empty boxes, with the main rope attached, are drawn back again by the tail rope passing over another drum.

Take up bottom. To remove rock from the floor of a roadway to increase the height.

Tally. The mark or number placed by the miner on every car of coal sent out of his place, usually a small metal ticket.

Thin seam. A coal seam less than three feet in thickness (in England), or about four feet (in Nova Scotia); the term is not that precise.

Timber. 1. Any of the wooden props, posts, bars, collars, lagging, etc., used to support mine timbers. (By extension, those steel joists or beams which in some mines have replaced wood--'steel timber'.) 2. To set or place timbers in a mine.

Trackman. One employed at mines to lay or repair track.

Trapper. A person employed in an entry to open and close a door for the coal cars.

Traveling road. An underground passage or way used expressly, though not always exclusively, for men to travel along to and from their working places. (Also called a traveling way).

Trip. A train of mine cars (see rake).

Trip runner. One who rides on trips and whose duty it is to throw switches, give signals, make couplings, etc.

Trouble. A dislocation or fault; any irregularity in a coal seam.

Tunnel. Strictly speaking, a subterranean passage open at both ends. (Loosely used for connecting passages between two mines.)

Turn. The number of cars allowed to each miner.

Turnout. A siding or by-pass upon an underground haulage-way.

Upcast. The opening through which the return air ascends and is removed from the mine.

Whin. 1. A whim or winch. 2. Thick-bedded rock composed of grains of quartz with argillaceous or feldspathic matter, or more generally, any hard resisting rock encountered by miners.

Win. To extract ore or coal.

Yardage. Price paid per yard for mining coal, or the extra compensation a miner receives in addition to the mining price for working in a narrow place or in deficient coal.

Adapted from Albert H. Fay, A Glossary of the Mining and Mineral Industry (Washington, United States Department of the Interior, Bureau of Mines, Bulletin No. 95, Second Edition, 1947), with alterations made for local usage. The glossary attached to J.M. Cameron, The Pictonian Colliers (Kentville, 1974), was also useful.

APPENDIX TWO

THE STATISTICS OF THE COAL TRADE

Appendix Two

The Statistics of the Nova Scotia Coal Industry, 1848-1927

The historian who studies the history of any Nova Scotia coalfield is blessed with an abundance of statistical information, contained in manuscript reports, in the publications of the Geological Survey of Canada, and most importantly in the Annual Reports of the Mines, issued each year after 1864 by the provincial government and published as part of the Journals of the House of Assembly. Most of the statistics cited in this thesis are drawn from this last-named source, which provides information on the production of the coalfields and on the workers from 1848 to 1927. (Information on coal mining before the start of the Reports is available in a general overview of the coal industry included in the Journals of the House of Assembly in 1863).

The statistics available in the Mines Reports are invaluable. From 1866 the Reports made available detailed tables on the mining workforce, which makes the Nova Scotia miners a uniquely well-documented group of Canadian workers. The Mines Reports of the 1920s documented many aspects of mining, including the amount of timber used and the kinds of production techniques employed. However, this statistical information is something of a mixed blessing. Few problems can be as complicated and frustrating as those presented by the mining statistics of the province, although there is much to be gained from a close study of them.

A first difficulty is knowing how far one should trust them. Are they accurate? Do they reflect political or economic interests?

No one could defend the accuracy of the statistics published by the Department of Mines in toto, simply because of the many arithmetic errors contained within them. The Mining Society of Nova Scotia heard scathing criticisms of the statistics published by the government in the 1890s.¹ The Herald in 1906 gave great play to the inaccuracies of the Cumberland mining statistics, which in 1905 had indicated that the Strathcona mine had produced 7,326 tons, while selling to the L.C.R. in the same year 13,530 tons. Evidently Euclid's maxim that the whole is greater than a part had been disconfirmed by the Department of Mines!²

Many more errors could be cited.³ These errors, however difficult they make the task of coding the Mines Reports, rarely make much difference to the overall totals. (In cases of obvious misprint—as when an extraneous zero appears at the end of an otherwise correct number—the obviously correct figure is taken). Such errors suggest harassed and overworked clerks, and not (contrary to the Herald's suggestion) darker motives.

The rule followed in coding the Mines Reports for the computer was that in each and every case a discrepancy arose, preference was to be given to the estimate taken at the more local level. For example, if the statistics reported for each mine in Cumberland County did not add up to the total reported for the County as a whole, the County statistic would be modified in accordance with the sum of the mine reports, and not vice versa. This rule seems to correspond with common sense, and is borne out by the instances of divergence between the printed report and the manuscript reports actually submitted by the companies. It provides us with a consistent way to read the material and correct the adding errors in the Reports. Although any empirically-minded historian

is apt to feel some what queasy about changing the public record, it seems justifiable to effect those minor changes which will bring the recorded aggregate statistics into line with the rules of arithmetic.

It follows that the county statistics reported in this thesis diverge from those reported in the Mines Reports, but the difference is not impressive.

If these minor errors were all the historian had to contend with, no appendix would be needed to justify the procedure. However, there are thornier and more interesting problems to be confronted. One of the best conundrums is presented by the earliest statistics of the coal trade in Cumberland, which are reported in chaldrons. How should these be converted into long tons so that some comparison may be made with later years?

M.J. Copeland, whose great scholarly work on the coalfields has been an immense inspiration for this thesis, converted chaldrons into long tons by multiplying by a factor of 1.5.⁴ In doing this he relied upon the tables published under the authority of S.P. Fairbanks in the Journals of the House of Assembly for 1863.⁵ However, this table does not in itself indicate what sort of chaldrons are being used as a unit of measurement.

The question is fantastically complicated. As is well known, the General Mining Association and the government of Nova Scotia were embroiled in a controversy in 1831, because the Association claimed that the 20,000-chaldron threshold specified for the beginning of the two-shilling royalty referred to Newcastle and not Winchester chaldrons.⁶ Clearly there was some confusion in provincial circles as to the proper

measure to be used for coal. The 'chaldron' or 'chauldron' was by its very nature difficult to convert into tons, because it was an English measure which was derived from the usage of the Newcastle trade (the word itself was based on "cauldron"). Even in 1694, when the first effort was made to standardize the measure by statute, the Newcastle chaldron was to contain either 53 cwt. or $52\frac{1}{2}$ cwt. of coal: it could be made up of either three wains of $17\frac{1}{2}$ cwt. or six carts of $8\frac{3}{4}$ cwt. No standard existed between the London chaldron and the Newcastle chaldron. In general, it was thought that one Newcastle chaldron equalled two London chaldrons.⁷ From this rather vague English precedent, Nova Scotians at least could arrive at a firm notion of how the two types of chaldron ought to stand in relation to each other.

But since the chaldron is a measure of volume, and not of weight, the actual conversion of chaldrons into tons should be based on an estimate of the actual weight of the chaldrons at the surface. Walter Johnson wrote a fascinating note on this subject in his invaluable study of the British American Coal Trade. Here is his synopsis:

1. In 1843, I found by actual weighing, in a box containing two cubic feet, that the average weight of a cubic foot in the marketable state is 52.08 pounds, and by carefully measuring the cars both at Pictou and Sydney, that they hold, when heaped to the height of five inches in the centre, 136.64 cubic feet. This gives the weight of one chaldron three thousand five hundred and fifty-eight pounds.
2. In 1835, Joseph Smith, Esq., found by the average of twenty-four trials of the weight of a car load, that the chaldron weighed three thousand four hundred and ninety-seven pounds.
3. In 1838, he weighed twenty car loads, from the average of which, the weight of a chaldron is three thousand four hundred and sixty pounds. The cars weighed, held one chaldron each.

4. Captain Brouard, of the Pictou and Boston Packet, taking on board ninety chaldrons in Pictou, delivers one hundred and ten in Wareham, and, as in the latter place, the chaldron weights two thousand and forty pounds, (as in Boston), in the former, it must have weighed three thousand six hundred and five.

5. In 1846, the Matilda's cargo, in Pictou, measured one hundred and thirty-two chaldrons when put on board, and one hundred and sixty-one were delivered in Wareham, showing the chaldron, in Pictou, to have weighed three thousand six hundred and one pounds.

6. In 1843, Samuel Cunard, Esq., stated in his letter to Lord Faulkland, hereto appended, that at the rate of eighteen shillings currency per chaldron, the cost of a ton of Pictou coal would be nine shillings and six pence sterling, or the weights are as 2.33 1/3 to 3.60, which makes the chaldron weigh three thousand four hundred and fifty-six pounds.

Johnson concluded from all these complex calculations that the weight of a chaldron, in Boston, was 2,940 lbs.⁸

This would offer some justification to the calculation of Copeland, since it would suggest a conversion factor of 1.31.

However, the measure used here is "Nova Scotia measure," and it is not apparent whether this is meant to be Winchester or Newcastle. From the relative size of the chaldrons he is discussing, it is evident that Johnson is referring to Winchester chaldrons.

The table in the Journals of the House of Assembly contains ambivalent indications in this regard, but it suggests that the Joggins estimates ought to be read as Newcastle chaldrons, because the base upon which the numbers are calculated is 72. (For example, there is one entry for 323 [chaldrons] 70 [bushels].) A tabulation based upon Winchester chaldrons would not list the number of bushels over 36; obviously once ~~the~~ bushels exceeded 36, they would be tallied as chaldrons. Consequently it appears that Copeland is in error, and that

the appropriate conversion factor would be between 2.6 and 3.0, rather than his 1.5.

This does not exhaust the subject—which demands the attention of a thesis by itself. Consider, for example, the marked discrepancies between the manuscript returns filed by the coal company and the government's printed report. By the estimate of Copeland, the right figure for Joggins in 1851 is 1,981 long tons (or 1320.6 Winchester chaldrons). According to the return filed by the collector of customs at Joggins (incidentally a man closely linked to the General Mining Association), the pit sold 2,482 chaldrons to foreign countries and sent a further 145 chaldrons coastwise, for a grand total of 2627 chaldrons. In his return of coal raised, sold and exported, Joseph Smith of the General Mining Association gave as the statistics of the year:

Total quantity raised and sold in chaldrons,
Newcastle measure=1197 chals., 58 Bush, 124
chals. small, and 15 bush. small. Number of
chaldrons sold for home consumption, Newcastle
measure=67 chals., 4 Bush, and 17 chals. 51 bush;
small. Exported to US: 214 chals, 36 bush large;
100 small; No. of chaldrons exported to neighbouring
colonies: 916 chals. 18 bush. large, 6 chals. 36
bush. small. 10

Now 1321 chaldrons Newcastle ought to equal 2642 chaldrons Winchester.

It should not equal 2627 chaldrons Winchester, although it is tolerably close to it. The committee of the Legislature which examined the question of the discrepancies between the customs and coal-mines returns, thought that the problem stemmed "from the difference between the Newcastle chaldron, on which duty is paid, and the Winchester chaldron, by which probably the entries at the customs are made." ¹¹ Probably this is so, but is not exactly right. Whatever the case, the estimate given by Copeland is demonstrably too low.

Copeland's estimates of early Cumberland production, must also be rejected because they overlook the factor of slack coal, and take account only of round coal sold.

The assumption that one Winchester chaldron was equal to 30 cwt., and that one Newcastle chaldron was equal to 60 cwt., seems to be substantiated by other sources as well.¹²

Can we conclude this discussion with proof that the conversion factor employed in this thesis, 3.0, is the correct one? No. All we can do is suggest that the range of error is probably not as large as that of Copeland's study. But the real number remains unclear, and may well be forever. It is not of much consequence in the case of Cumberland, where the early estimates are not that important in the general history of the industry. But for Pictou and Cape Breton, the question looms much larger, and will have to be answered definitively before serious work can be done on the early nineteenth-century industry. Until then the estimates of provincial coal production should be taken with a grain, if not a chaldron, of salt.

Equally thorny problems are raised by the way in which mines are identified and located in the Mines Reports. Only someone who has studied the industry already has any chance of locating mines and compiling the appropriate county statistics. The expedient adopted in this thesis, after much trial and error, was to designate "mining areas," which demarcated areas of the coalfields as the primary unit of analysis. This is at best a compromise between either treating the coalfields as units, (a defensible strategy for a provincial study of the entire industry but one which would leave us unable to pinpoint changes

in the internal history of the coalfields) or treating each mine separately (which would create enormous problems of locating missing data and of controlling the amount of detail in the exposition). The Mines Reports themselves are highly inconsistent in their approach to the data over time. In the 1860s results are commonly given by using the categories of area (such as 'Joggins' or 'Chignecto'); in the 1920s they are given under the names of companies (such as the 'Cumberland Railway and Coal Company'). The years between range haphazardly from one strategy to the other. (The 1890s are the most difficult in this respect, since in this decade the Reports simply neglected the small mines of West Cumberland).

Ideally one would like to be able to present the production of each individual mine through time. For some mines this should be possible. But the problems which would be raised by using the mine as a unit of analysis are formidable. How should a mine be distinguished from the colliery complex in which it is located? In Springhill, for example, the individual mines were interconnected in many ways (such as shared bankheads) and production figures are available for individual mines only in certain years. The problems of collecting data on the level of the individual mine are even more daunting in the Joggins coalfield, where mines changed names with distressing frequency, and companies moved in and out of production, often taking the same name to different parts of the field. Barring some breakthrough in the archives, it appears that the analysis of the data taking the individual mine as the unit is impossible.

It is not impossible to analyze the data by "mining area," however, thanks to the researches of the cartographers of the Department of Mines, who have located the many mines of the Joggins coalfield. This is a compromise which carries its own price, of course--it has the risk of jumbling together disparate companies, and many statistics (particularly those relating to the level of productivity) are averages based on a number of observations--but it seems the only approach that allows us to write at the appropriate level of generality.

These mining areas are not artificial creations but conform to the place-names used in the area. The boundaries, which are a bit vague in practice, had to be made very precise in the statistical analysis. The boundary between the Joggins and River Hebert West mining area was set as a north-south line passing through a point 10,000 feet inland from the coast at the town, which line coincides with the fault lying on the eastern side of the Hillcrest Mine on the Forty Brine seam. River Hebert West is divided from River Hebert East by the River itself, mines having bankheads on the west side of the River but exploiting seams beneath or on the other side of the river being assigned to River Hebert West. The boundary between River Hebert East and Maccan is given by the major fault lying between the Phoenix Mine on Joggins Seam and the Black Diamond Mine on the Jubilee Seam (12,600 feet to the west of the Maccan Bridge). The other boundaries are less problematical, because the mines are not so closely bunched together: considerable distance lies between the Maccan mining area and Chignecto (between the Eastern Coal Company in Maccan and the old Fife and Taylor Mine in Chignecto) and between the mines of Chignecto and the old Styles area.

No possibility of confusion exists in designating the mines of Springhill and Saltsprings.

These designations are not supposed to create uniform units of analysis, but merely to formalize and make specific the generally accepted place names of the locality. In some cases an arbitrary decision had to be made, and this decision was guided by the existence of a natural feature and the evidence of local residents. It must be noted that the designations used in the Mines Reports are quite often vague and misleading; Chignecto, for example, is often put down under "Maccan," and errors are even made about the location of mines in Joggins and River Hebert. The existence of the invaluable collection of coalfield maps in the collection of the Department of Mines is the only way such problems can be unravelled. In the end every mine listed in the Mines Reports could be located in the coalfields.

The Reports deal with production in a highly unsatisfactory way, since the vacillation between listing results by area or by company makes it difficult to apply a consistent set of criteria. (In certain years--notably the 1890s--the smallest mines of the Joggins coalfield were not listed at all. This indubitably reflects a real decline in production. But it would be rash to suggest that no production at all occurred in these areas: the record is simply too patchy to allow us certainty on this point). The inconsistency of the Reports poses a hard problem for anyone attempting to construct a consistent time-series. For example, no estimates by individual mine are available for manpower in the years 1917-1927 in the published tables in the Reports. In many cases this defect could be remedied by consulting the non-tabular form

of the report--where the number of men might be given (even if only in approximate terms). However, it was necessary in other cases to estimate the number of workers and the relative proportions of various types of workers on the assumption that the number of workers varied directly with the level of production (a reasonable assumption given similar geological conditions) and that the internal composition of the workforce was similar in the individual mines to its average composition (again a reasonable assumption given the identical conditions of the mines). The estimates of the kinds of workers active in the mines of the Joggins coalfield were prepared on the basis of these assumptions.

These problems are apt to confront anyone who works on the statistical history of the coal industry, but they assume their most intractable form in the Joggins coalfield, which was structurally unique in the province.

One of the most difficult problems posed by the Reports is the vascillation between calendar and fiscal years. Calendar years were used from 1848 to 1863; from 1864 to 1867 the estimates used fiscal years ending September 30; from 1868 to 1892 the government reverted back to calendar years, reverting once again to fiscal years in 1893 to 1927 as part of an overall 'modernization' of state accounting procedures in 1893. (Here was one more instance of a new emphasis upon scientific planning--one with lamentable results for the historian!) So we have four separate 'regimes'. It is in fact not as bad as it first appears, because the statistics of the 1860s are easily translatable into calendar years. The bigger problem is that of the statistics of the 1890s. Far more years are involved, and the stupid decision of the

government cannot be reversed: the data with which to do so do not exist. Consequently the estimates of the year 1893 (which in the original Mines Report are based only upon nine months) have been altered by the addition of the last quarter of 1892--in effect, they have been transformed into fiscal statistics. This entails double-counting the last quarter of 1892, but corrects the misleading impression of a sudden drop in production conveyed by the printed version of 1893.

Calculations of the types of workers in the mines are obviously essential to the enterprise of the historian. Here the statistics of the Mines Reports are not quite so erratic and changeable. True, the statistics of the 1860s rely upon a simple four-part categorization ("surface man/surface boy/underground man/underground boy") which yields in 1873 to the six-part typology (viz., Underground: Cutters, Labourers and Boys; Surface: Mechanics, Labourers and Boys). One crucial problem here is that the category 'miscellaneous' varied a good deal; I have assumed, on the basis of the evidence, that it is equivalent to the category 'construction' later used and my tables are based upon this assumption. From 1881 to 1914 the categories changed once again--the Underground categories were "Skilled Labour, Labourers and Boys," while the surface categories were "Mechanics, Labourers and Boys," with a general category for Construction (which is not given as applying either to the surface or the underground). Finally, in 1915, the categories underwent a major shift. Now only four categories were used: Surface, Underground Labour, Cutting Coal, and "Transportation, Commercial, Upkeep, Repairs, Construction." This last category is a real mish-mash. (Boys were no longer separately listed, a reflection of their declining role in production).

Can we assume that the colliers, coal cutters and underground skilled workers are all pretty much the same people? With reservations, I think we can. Probably the category 'skilled labour' used from 1881 to 1914 takes in some bratticemen and others; but many of the skilled men were considered to be 'colliers' even as they practised their separate skills. The worst problem is the shift in 1915. Is the remarkable decline of the level of colliers recorded by the statistics in 1915 a function of a real change effected by the war, or a statistical fluke created by a change of categories? The probable answer is the first, which is backed up by many literary sources; but there is real room for doubt here. More work will probably clarify the issue.

The problem of arithmetic error is even worse in the manpower statistics of the Mines Reports than it is in the other sections. Some of the calculations seem to have been beyond the abilities of the department's clerks. Here more than anywhere else the historian is ill-advised to take the department's aggregate measures at face value. They cannot be trusted. Every statistic concerning manpower must be recalculated from its constituent parts. At least 54 major inconsistencies have turned up in the tables. Only a reconstruction of the department's statistics is going to further our knowledge of the industry. This I have done for all the manpower statistics for Cumberland County. Most of the errors I have discovered are consistent with poor adding or typographical mistakes; most are of relatively small magnitude. But overall the level of error here will make it difficult to bring the various categories into a good relationship with each other, and unless the statistics can

be made to add up perfectly, the computer will do rather strange things with them. In particular, the category of "total man-days" is one which is apt to contain many errors--the consequence, no doubt, of the human problem of adding up so many huge numbers.

Nothing I have said here should imperil the status of the Mines Reports as an aid to our knowledge. Some day it will be possible to have a completely corrected and internally consistent statistical guide to this industry. Until then only the most careful and strenuous effort will allow us to read these statistics in a consistent way. One emerges from this sea of numbers with a far more precise and vivid impression of the coal mines, and this in itself vindicates the Mines Reports as a source for social history.

Notes

- 1) W.L. Libbey, "A Tabulated Statement of a Few Inaccuracies in the Mines Report, N.S., 1898;" Transactions of the Mining Society of Nova Scotia, Vol. V, No. 1 (1899-1900), pp. 28-30.
- 2) Herald, 6 June 1906.
- 3) For examples of a major discrepancies, see the Mines Reports for 1922 and 1927--the first of these provides an incorrect total for the quarterly mine sales, which is corrected only in the later report. In 1869 the production statistics by quarters do not add up to the reported total. The production reported by the companies does not add up to the reported total in 1885. Tables purporting to show the same totals in 1908 are different (that which is devoted to coal sold has been used because it corresponds with the county statistics.) These frequent errors make all the more necessary a general policy of recalculating the aggregate results of the Mines Reports.
- 4) Cope land, Coalfields, pp. 7-8.
- 5) J.H.A. (1863), Appendix 18.
- 6) Martell, "Early Coal Mining," p. 49.
- 7) Raymond Smith, Sea-Coal for London. History of the Coal Factors in the London Market (London, 1961), pp. 362-363.
- 8) Johnson, Coal Trade of British America, pp. 23-24. Johnson placed the "so called 'New Castle' chaldron" of Nova Scotia at 7,056 lbs. (p. 38).
- 9) J.H.A. (1851), Appendix No. 96, p. 487.
- 10) Ibid., p. 489.
- 11) J.H.A. (1852), Appendix No. 96, p. 487.
- 12) See, for example, RG 21, Vol. 461, No. 83.

BIBLIOGRAPHY

Bibliography

Primary Sources

Manuscript Collections

All Saints Hospital, Springhill

Papers of All Saints Cottage Hospital, c.1903-1921.

Account Book of an unidentified Springhill merchant, 1890s.

American Federation of Labor and Congress of Industrial Organizations
Headquarters, Washington, D.C.

Files of the Office of the President

Angus L. Macdonald Library, St. Francis Xavier University, Antigonish

Minutes of Pioneer Lodge No.1 of the Provincial Workmen's

Association (1882-1886, 1899-1901).

Minutes of the Dominion Coal Company Employees and Springhill

local of the Amalgamated Mine Workers of Nova Scotia (1917-1918).

Minutes of the United Mine Workers of America, Local Union

4514 (1923-1927).

Catholic University of America, Washington, D.C.

John Mitchell Papers.

Dalhousie University Archives, Halifax

DAL MS. 9, Papers of Pioneer Lodge, P.W.A. and Local 4514,
United Mine Workers of America.

DAL MS. 2 235, Papers of John and Robert Rutherford.

Minutes of Holdfast Lodge, Provincial Workmen's Association,
1894-1906 (microfilm).

Department of Labour Library, Ottawa

Minutes of the Grand Council, Provincial Workmen's Association.

John Moffatt, "The Provincial Workmen's Association of Nova
Scotia: Its Origin, Growth and Present Position," n.d.

(c.1904).

Department of Mines Library, Halifax

Map Collection.

Harvard University Graduate School of Business Administration,
Baker Library, Boston

R.G.Dun and Company Collection

King Seaman Museum, Minudie

The Diary of Gilbert Seaman.

Library of Congress, Washington, D.C.

Samuel Gompers Letterbooks.

McGill University Archives, Montreal

Papers of J.W.Dawson.

Metropolitan Toronto Central Library, Baldwin Room, Toronto

Woodhouse and Jeffcock, Civil and Mining Engineers, Westminster
and Derby, Report upon the Examination and Survey of a Portion
of the Cumberland Coal Field, 2nd January, 1866.

Mount Allison University Archives, Sackville

Fort Beauséjour Papers, The Diary of Amos Seaman.

Private Individuals

Como, Fred, Joggins, Registers of the Como Hotel, Joggins.

Moss, Alva, Springhill, Letter of Robert Drummond, 19 December
1910.

Wilson, J., Springhill, Account Book re John Malaly, Pay Slips of John Wilson, and Papers of William Conway, Mayor of Springhill.

Public Archives of Canada, Ottawa

RG 7, Department of Labour Records (Strikes and Lock-Outs Files),

RG 24, Department of National Defence Papers (Vol. 6514).

RG 26, Papers of Prime Ministers

Sir John A. Macdonald (microfilm), Sir Charles Tupper,

J.C.C. Abbott, Mackenzie Bowell, John Thompson (microfilm),

Wilfred Laurier (microfilm), Mackenzie King.

(Microfilmed papers consulted at the Public Archives of Nova Scotia, Halifax).

MG 29, Papers of Joseph Smith

Public Archives of Nova Scotia, Halifax

RG 1, Bound Volumes of Nova Scotia Records, 1624-1867 (Vols. 458-465).

RG 3, Records of the Executive Council of Nova Scotia.

RG 7, Records of the Provincial Secretary.

RG 12, Census Records.

RG 13, Customs.

RG 20, Lands and Forests (Vol. 380A, Titus Smith's Survey of Western Nova Scotia).

RG 21, Mines and Mining in Nova Scotia.

RG 28, Railways (Section 4, Vol. XVI; Section 1, microfilm).

RG 39, Supreme Court.

MG 1, Papers of Families and Individuals

Richard Brown (Vols. 151-159); Dawson Family (Vol. 1195 and manuscript file); P.S. Hamilton (Vol. 335); H.Y. Hind

(manuscript file); James D. McLennan (Vol. 571);

George Seaman (Vol. 798A); Charles Tupper (manuscript file).

MG 2, Political Papers

E.H. Armstrong, W.S. Fielding

MG 3, Business Papers

Cumberland Railway and Coal Company (Vols. 1728-1740).

MG 4, Churches and Communities

Temperance Reform Club (Springhill), minutes.

MG 20, Societies and Special Collections

I.O.D.E., Cobequid Chapter, Springhill, manuscript history (Vol. 1014, No. 1).

MG 100, Scrapbooks

Cumberland County, No. 184.

Miscellaneous, No. 188.

Springhill Miners' Museum, Springhill

Cumberland Railway and Coal Company, Explosion Time Book, February 21st, 1891.

Cumberland Railway and Coal Company, Time Book, August 1901.

Cumberland Railway and Coal Company, Time Book, September 1908.

Minutes of Local 4514, United Mine Workers of America, 1921-1923.

Government Documents

Canada, Census of Canada, 1871-1931.

Canada, Census of Canada, Manuscript Census Schedules, Cumberland County, 1871 and 1811 (microfilm at the Public Archives of Nova Scotia).

- Canada; Commission of Conservation, Sea-Fisheries of Eastern Canada (Ottawa, 1912).
- Canada, Department of Labour, Labour Gazette, 1901-1927.
- Canada, Department of Labour, Report of the Deputy Minister of Labour on Industrial Conditions in the Coal Fields of Nova Scotia (Ottawa, Sessional Paper No. 36a, 9-10. Edwd. VII, 1910).
- Canada, Department of Labour, Wages and Hours of Labour in Canada, 1920 to 1929 (Ottawa, 1930).
- Canada, Department of Labour, Wages and Hours in Canada, September, 1920, and September, 1921 (Ottawa, Issued as a Supplement to the Labour Gazette, February 1922).
- Canada, Department of Mines, Mines Branch, The Mining Laws of Canada: A Digest of Dominion and Provincial Laws Affecting Mining (Ottawa, Revised Edition, 1931).
- Canada, Department of Mines, Mines Branch, Report on the Mining and Metallurgical Industries of Canada 1907-1908 (Ottawa, 1908).
- Canada, Geological Survey of Canada, Report of Progress, 1871-1872 to 1910-1911 (Title varies slightly).
- Canada, House of Commons, Official Report of Evidence Taken During Session of 1921 Respecting Future Fuel Supply of Canada by a Special Committee of the House of Commons (Ottawa, 1921).
- Canada, Report of the Board of Inquiry into the Cost of Living (Ottawa, 1915), Vol. I.
- Canada, Report of the Royal Commission on Coal, 1946 (Ottawa, 1947).
- Canada, Report of the Royal Commission on the Relations of Labor and Capital in Canada (Ottawa, 1889).
- Canada, Report of the Select Committee as to the State of the Coal Trade, and into the Best Means of Promoting Inter-Provincial Trade, Journals of the House of Commons, Appendix No. 4 (1877).
- Canada, Royal Commission on the Coal Industry, Testimony, Amherst Monday February 12th, 1945, Vol. XV (mimeo, n.p., 1945).
- Canada, Royal Commission on the Coal Industry, Sitting at Amherst, Nova Scotia, February 12th-13th, 1945, Exhibit 69, Submission of the Municipalities of the County of Cumberland (mimeo, n.p., 1945).
- Canada, Royal Commission on the Coal Industry, Testimony, Amherst, N.S., Tuesday, February 13th, 1945 and Saint John, N.B., Thursday, February 15, 1945, Vol. XVI (mimeo, n.p., 1945).
- Canada, Royal Commission on the Coal Industry, Brief on Markets Submitted to the Royal Commission on Coal by Sales Department, Dominion Steel and Coal Corporation Limited, January 10th, 1945 (n.p., mimeo, 1945).
- Canada, Royal Commission on the Relations of Capital and Labour, Evidence Taken Before the Royal Commission on the Subject of Labor in its Relation to Capital in Canada, Evidence--Nova Scotia (Ottawa, 1889).
- Great Britain, Coal Industry Commission, Reports and Minutes of Evidence (London, Cd. 359, 11; 360, 12, 1919).
- Nova Scotia, Annual Report on the Mines (1862-1927). (Titles vary slightly. The Reports are also bound with the Journals of the House of Assembly for the following year.)
- Nova Scotia, Debates and Proceedings of the House of Assembly (1873, 1893-1901).
- Nova Scotia, Electricity in the Mines of Nova Scotia. Report of Commission Appointed Under Chapter 16, Acts of 1913 (Halifax, Commissioner of Public Works and Mines, 1914).
- Nova Scotia, Geological Survey. Report of Dr. D. Honeyman (Halifax, 1865).

- Nova Scotia, Journals of the House of Assembly (1848-1927).
- Nova Scotia, Regulations Governing the Use of Electricity in Coal Mines Under Section 40 of the Coal Mines Regulation Act, Now Chapter 1, Acts of 1927 (As Amended to October 16, 1929) (Halifax, 1930).
- Nova Scotia, Report of the Commission on the Hours of Labour (Halifax, Commission of Public Works and Mines, 1910).
- Nova Scotia, Report of the Royal Commission Respecting the Coal Mines of Nova Scotia (Halifax, 1932).
- Nova Scotia, Royal Commission--Coal Mines, Report of the Royal Commission, respecting the coal mines of the province of Nova Scotia, 1925 (Halifax, 1926).
- Nova Scotia, Royal Commission to inquire into the Coal Mining Industry of the Province of Nova Scotia, Minutes of Evidence, 1925 (microfilm at the Public Archives of Nova Scotia).
- Nova Scotia, Royal Commission on Coal Mines, Minutes of Evidence, 1932 (microfilm at the Public Archives of Nova Scotia).
- Nova Scotia, Statutes of Nova Scotia (1848-1927).
- Province of Canada, Parliamentary Debates on the Subject of the Confederation of the British North American Provinces, 3rd Session, 8th Provincial Parliament of Canada (Ottawa, 1951 [Quebec, 1865]).
- Springhill, The Financial Year Book of the Town of Springhill for 1895, Embracing Reports of the several Departments of Town Government and School Commissioners (Springhill, n.d. [1896]).
- Springhill, The Civic Year Book of the Town of Springhill for 1898 Embracing the Reports of the several Departments of Town Government and School Commissioners (Springhill, n.d. [1899]).
- Springhill, The Civic Year Book of the Town of Springhill for 1909, Embracing a Report of the Several Departments of Town Government and School Commissioners (Halifax, 1910).
- Springhill, The Civic Year Book of the Town of Springhill for 1910, Embracing a Report of the Several Departments of Town Government and School Commissioners (Halifax, 1910 [sic]).
- Springhill, The Civic Year Book of the Town of Springhill for 1911 Embracing a Report of the Several Departments of Town Government and School Commissioners (Halifax, 1912).
- Springhill, The Civic Year Book of the Town of Springhill for 1912 Embracing a Report of the Several Departments of Town Government and School Commissioners (Amherst, 1913).
- Springhill, The Civic Year Book of the Town of Springhill for 1914 Embracing a Report of the Several Departments of Town Government and School Commissioners (Amherst, 1914).
- Springhill, The Civic Year Book of the Town of Springhill, for 1915 Embracing a Report of the Several Departments of Town Government and School Commissioners (n.p., n.d.).
- Springhill, The Civic Year Book of the Town of Springhill for 1920 Embracing a Report of the Several Departments of Town Government and School Commissioners (n.p., n.d.).
- Springhill, The Civic Year Book of the Town of Springhill Embracing A Report of the Several Departments of Town Government and School Commissioners, 1929 (n.p., n.d.).

Convention Proceedings

- Amalgamated Mine Workers of Nova Scotia, Minutes of First Annual Convention of the Amalgamated Mine Workers of Nova Scotia Held in Sydney, N.S., October 23rd-27th, 1917 (n.p. [Sydney], n.d. [1917]).
- Amalgamated Mine Workers of Nova Scotia, Minutes of Second Annual Convention of the Amalgamated Mine Workers of Nova Scotia, Held in Sydney, N.S., November 19th-23rd, 1918 (Sydney, n.d. [1919]).
- Minutes of Special Joint Convention of the Coal Operators and Mine Workers of Nova Scotia (n.p., n.d. [1919]).
- United Mine Workers of America, Proceedings of the Twenty-First Annual Convention of the United Mine Workers of America (Indianapolis, 2 Vols., 1910).
- United Mine Workers of America, Proceedings of the Twenty-Second Annual Convention of the United Mine Workers of America (Indianapolis, 2 Vols., 1911).
- United Mine Workers of America, Proceedings of the Twenty-Third Annual Convention of the United Mine Workers of America (Indianapolis, 2 Vols., 1912).
- United Mine Workers of America, Proceedings of the Twenty-Fourth Consecutive and First Biennial Convention of the United Mine Workers of America (Indianapolis, 2 Vols., 1914).
- United Mine Workers of America, Proceedings of the Twenty-Fifth Consecutive and Second Biennial Convention of the United Mine Workers of America (Indianapolis, 2 Vols., 1916).
- United Mine Workers of America, Proceedings of the Twenty-Seventh Consecutive and Fourth Biennial Convention of the United Mine Workers of America (Indianapolis, 2 Vols., 1919).
- United Mine Workers of America, District 26, Proceedings of the Special Rank & File Convention of District 26 U.M.W. of A., New Glasgow, Nova Scotia, May 15-16, 1924 (Sydney, n.d. [1924]).
- United Mine Workers of America, District 26, Convention of District 26, United Mine Workers of America (n.p., n.d. [1924]).

Newspapers and other Periodical Publications

- Acadian Recorder (Halifax), 1872, 1880-1889.
- American Federationist (Washington), 1906-1909.
- Busy East (Sackville, N.B.), 1918.
- Canadian Mining Journal (Toronto), 1908-1910.
- Canadian Mining Manual (Montreal), 1890-1891, 1893-1903.
- Chignecto Post (Sackville, N.B.), 1895.
- Citizen (Halifax), 1872.
- The Colliery Engineer and Journal of the Mining Machinery and Mine Supply Trades (Shenandoah), 1888.
- The Colliery Engineer and Metal Miner (Scranton), 1888-1891.
- The Critic (Halifax), 1885-1890.
- Daily News (Amherst), 1895-1914.
- Daily Press (Amherst), 1890.

Eastern Labor News (Moncton), 1909-1913.
Evening News (Amherst), 1893-1894.
Evening Press (Amherst), 1890-1892.
Herald (Halifax), 1901-1921.
Journal (Stellarton), 1891.
Journal and Pictou News (Stellarton), 1892, 1894.
Maritime Labour Herald (Glace Bay), 1925.
Maritime Mining Record (Stellarton), 1898-1913.
Monetary Times (Toronto), 1867-1869, 1877-1882.
Monthly Bulletin of the Canadian Institute of Mining and Metallurgy
 (Montreal), 1926.
Morning Chronicle (Halifax), 1890, 1901, 1903, 1909.
News and Advertiser (Springhill), 1895-1902.
News and Sentinel (Amherst), 1954.
Novascotian (Halifax), 1848-1851, 1857, 1903.
Saward's Coal Trade Journal (New York), 1874.
Semi-Weekly News (Amherst), 1895.
Star (Montreal), 1895.
Sun (Saint John), 1901-1909.
Trades Journal (Springhill and Stellarton), 1880-1891.
United Mine Workers' Journal (Indianapolis), 1901-1909.
Weekly News (Amherst), 1894-1895.

Interviews

Tapes and transcripts are in the archives of Dalhousie University.
 Amherst: Interviews in 1979 with G. Sharpe, A. Nelson, E. Paul.
 Joggins-Chignecto: Interviews in 1979 with Mr. J. Anderson, B. Baird,
 A. Belliveau, Donald Blanch, Basil Brine, Wilfred Burbine,
 William Burbine, Miss S. Clarke, Mr. S. Como, H. Dale, J. Dauvin,
 E. Gates, Miss H. Harrison, Mr. V. Hoeg, M. Johnston, C. McAloney,
 C. Melanson, R. Melanson, B. Rector, J. Sutherland, D. Taylor,
 C. Vickery, F. Wilson, Mr. and Mrs. G. Wolfe.
 Montreal: Interview in 1982 with Miss Eleanor Cowans.
 Springhill: Interviews in 1979 with Mr. A. Allbon, C. Allbon, Mrs. I.
 Allbon, L. Barton, Mr. Donald Beaton, T. Beaton, B. Bell,
 W. Blenkhorn, P. Brenton, C. Burton, Miss B. Campbell, Mrs. W. Campbell,
 Mr. A. Casey, F. Casey, W. Chisholm, C. Colwell, J. Coon, Mr. W. Embree,
 Mr. and Mrs. A. Gabriel, Mrs. V. Gilroy, Mr. F. Hahnen, F. Hawker,
 J. Hebert, Miss J. Heffernan, Mr. T. Henwood, R. Hoffman, Miss C. Jones,
 Mr. J. Langille, Mr. and Mrs. E. Legrow, Mrs. L. Lockhart, Mr. H. Mackinnon,
 J. Matthews, Mrs. P. Mattix, Mrs. J. McKay, Mr. R. McSaveney,
 W. Miller, Miss A. Moss, A. Murray, Mr. H. Nelson, Mrs. P. Nodwell,
 Mr. N. Noiles, W. O'Rourke, Mrs. H. Pettigrew, Mr. E. Rasmussen,
 Miss C. Reid, Mr. M. Ruddick, C. Rushton, Mrs. H. Rushton, Mr. A. Smith,
 A. Spence, L. Swift, E. Tabor, L. Tattrie, V. Ward, Mr. and Mrs.
 H. Warren, Mr. F. White, Miss G. Wilson.
 Tatamagouche (Lake Road): Interview in 1979 with Mr. Trueman Geddes.

Contemporary Books, Pamphlets and Articles

- Acadia Coal Company, Special Rules for the Conduct and Guidance of the Persons Acting in the Management and of All Persons Employed in or about the Albion Mines (Halifax, 1880).
- Acadia Coal Company, Special Rules (Halifax, 1908).
- Ackermann, A.S., Coal-cutting by Machinery in America (London, 1902).
- Agreement Between Nova Scotia Steel and Coal Company, Limited and District 26, United Mine Workers of America (n.p., 1928).
- Agreement between District No. 26 United Mine Workers of America and Dominion Coal Company, Nova Scotia Steel & Coal Company, Cumberland Railway & Coal Company, Acadia Coal Company In Effect February 1, 1930--January 31, 1932 (Sydney, 1930).
- Agreement Between the Sydney Steel Plant Division of the Dominion Steel & Coal Corporation, Limited and Local Union 1064, Steel Workers Organizing Committee, Covering Hours of Labour Wage Rates Working Conditions (n.p. [Sydney], 1940).
- Amalgamated Mine Workers of Nova Scotia, Constitution, By-Laws and Amendments of the Amalgamated Mine Workers of Nova Scotia (n.p., n.d. [1933]).
- [Amherst Coal and Mining Company (Limited)], Prospectus (n.p., n.d.).
- [Anti-Monopolist (pseud.)], To the Honorable, The House of Assembly, In General Sessions Now Convened (Pictou, 1832).
- Archibald, Charles, "Modifications of Working Coal Lately Introduced in Nova Scotia, IV. Gowrie Colliery, Cape Breton," Transactions of the Mining Society of Nova Scotia, Vol. I, Part IV (1892-1893), pp. 58-60.
- Archibald, Robert, "Mines and Management," Canadian Mining Review, Vol. XVI, No. 3 (March, 1897), pp. 106-107.
- Bainbridge, William, A Practical Treatise on the Law of Mines and Minerals (London, 1841).
- Bainbridge, William, The Law of Mines and Minerals, with an appendix of mining precedents (London, 1900).
- Raid, James, "Modifications of Working Coal Lately Introduced in Nova Scotia, III. Joggins Mines, Cumberland County, N.S.," Transactions of the Mining Society of Nova Scotia, Vol. I, Part IV (1892-1893), pp. 55-57.
- Baker, William, ed., "The Personal Touch: Mackenzie King, Harriett Reid and the Springhill Strike 1909-1911," Labour/Le Travailleur (forthcoming).
- Bartlett, James Herbert, The Manufacture, Consumption and Production of Iron, Steel and Coal in Canada (Montreal, 1885).
- Bird, Isabella Lucy, The Englishwoman in America (Toronto, 1966 [1856]).
- Blakemore, William, "The Capacities of Coal-Cutting Machines," Canadian Mining Review, Vol. XIV, No. 12 (December 1895), pp. 229-230.
- Blakemore, William, "The Introduction of Endless Haulage into Cape Breton," Journal of the Mining Society of Nova Scotia, Vol. III (1894-1895), pp. 82-93.
- Blakemore, William, "Is there an Economic Limit to the Output of a Coal Mine?," Transactions of the Canadian Mining Institute, Vol. I, No. 1 (1895), pp. 257-262.
- Blakemore, William, "The Management and Control of the Colliery," The Engineering Magazine, Vol. XXI, No. 4 (July 1901), pp. 563-570; Vol. XXII, No. 5 (August 1901), pp. 735-740.

- Blenkhorn, A.S., Cumberland Squabbles. Paid For (n.p. [Halifax], n.d. [1837]).
- Boston Coal Mining Company, Limited, Boston Coal Mining Company "Limited." Organized by Special Act of the Legislature of Nova Scotia [Prospectus] (Boston, n.d. [c.1883]).
- Boutillier, Dannie, The Old Home Town (Springhill, 1962).
- Boutillier, Dannie, Poems for the People (n.p. [Springhill], 1954).
- Brown, J.F.Kellock, "Longwall Machine Mining," Transactions of the Mining Society of Nova Scotia, Vol.XIX (1914), pp.164-187.
- Brown, J.F.Kellock, The Mining of Thin-Coal Seams as Applied to the Eastern Coal-Fields of Canada (Ottawa, Department of Mines, Mines Branch; Bulletin No.15, 1917).
- Brown, J.F.Kellock, "Relationship of the Anthracite Fields to Canada," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol.XXVI (1923), pp:127-137.
- Brown, Richard, The Coal Fields and Coal Trade of the Island of Cape Breton (Stellarton, 1899 [1871]).
- Brown, Richard H., "Compressed Air at Sydney Mines, Cape Breton," Transactions of the Canadian Mining Institute, Vol.1, No.1 (1895), pp.53-55.
- Brown, Richard H., "Record of Borehole No.1 of the Standard Coal and Railway Company, Limited, about one-mile north of Halfway River Lake, Cumberland Co., N.S.," Transactions of the Mining Society of Nova Scotia, Vol.X (1905-1906), pp.162-169.
- Brun, Régis, "Un registre de l'état civil des habitants de Franklin Manor, des Champs-élysées, de Maccan et de Nappan," Cahiers de la Société Historique Acadienne, Vol.III, No.3 (octobre 1966), pp.89-136.
- Buckingham, James S., Nova Scotia, New Brunswick, and other Provinces in North America (London, 1843).
- Bulman, H.F., Coal Mining and the Coal Miner (London, 1920).
- Burchall, James T., "Electrical Coal Mining," Transactions of the Mining Society of Nova Scotia, Vol.I, Part IV, (1892-1893), pp.15-25.
- Burpee, Lawrence J., Sandford Fleming: Empire Builder (London, 1915).
- [Cahan, C.H.,] The Coal Deal: Speech of C.H. Cahan, M.P.P., in the House of Assembly (n.p. [Halifax] n.d. [1893]).
- Campbell, Duncan, Nova Scotia, In Its Historical, Mercantile and Industrial Relations (Montreal, 1873).
- Campbell, J.; The Cumberland Coal Fields, Nova Scotia, Report of J. Campbell (Practical Geologist) on the Coal on the South Shore of Chignecto Channel (n.p., 1871).
- Carroll, Peter Owen, Life and Adventures of Detective Peter Owen Carroll (n.p., n.d.).
- Casey, John, "Accidents in Coal Mines and Their Causes," Transactions of the Mining Society of Nova Scotia, Vol.XIX (1914), pp.80-96.
- Casey, John, "Safety and Mine Discipline," Transactions of the Mining Society of Nova Scotia, Vol.XX (1916-1917), pp.1-9.
- Chapman, E.J., Outline of the Geology of Canada (Toronto, 1876).
- Churchill, Charles, Memorials of Missionary Life in Nova Scotia (London, 1845).
- The Coal Question, The Whitney Syndicate Discussed (Truro, n.d.[1893]).
- Coats, R.H., Wholesale Prices in Canada 1890-1909 (Inclusive) (Ottawa, Department of Labour, 1910).

- Gockin, T.H., An Elementary Class-Book of Practical Coal-Mining (New York, 1906).
- Coll. Charles J., "Remarks on Some Recent Explosions in Coal Mines," Transactions of the Mining Society of Nova Scotia, Vol.XIII (1908-1909), pp.51-63 (with discussion, pp.63-67).
- Coll. Charles J., "Economical Suggestions," Transactions of the Mining Society of Nova Scotia, Vol.XVI (1911-1912), pp.17-38.
- Coll. Charles J., "Safety First," Transactions of the Mining Society of Nova Scotia, Vol.XIX (1914), pp.59-79.
- Coll. H.E., "Sinking and Timbering of the Allan Shafts, near Stellarton, N.S.," Transactions of the Mining Society of Nova Scotia, Vol.XII (1907-1908), pp.11-23.
- Coll. H.E., "Regulations Governing the use of Explosives in Coal Mines," Transactions of the Mining Society of Nova Scotia, Vol.XVI (1911-1912), pp.63-72.
- Constitution and By-Laws of the United Mine Workers of America, District 26, Nova Scotia (n.p., 1920).
- "Contrat entre les Acadiens de Menoudy et J.F.W.Des Barres en 1769," Cahiers de la Société Historique Acadienne, Vol.VI, No.4 (December 1975), pp.188-194.
- Cottage-Hospital, Springhill, N.S., Opened November 1st, 1893 (Official Programme), n.p. [Springhill] n.d. [1893].
- [Cumberland Copper Company, Limited]; Cumberland Copper Company Limited, Incorporated Under the Laws of the Province of Nova Scotia (n.p., n.d.) (Prospectus).
- Cumberland Railway and Coal Company, By-Laws, Rules and Regulations of the Cumberland Railway and Coal Co. (n.p., 1887).
- Cumberland Railway & Coal Co., Springhill, N.S., Official Schedule, Effective Feb. 13th 1926 (n.p., n.d. [1926]).
- Cushing, George H., "United States Bituminous Coals Available for Canada," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol.XXVI (1923), pp.236-246.
- Dawes, Albert, "The New Coal Raising and Screening Arrangements at Jubilee Colliery Sydney Mines, N.S.," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol.XXIV (1921), pp.299-308.
- Dawson, J.W., Acadian Geology (Edinburgh, 1855).
- Dawson, J.W., On the Conditions of the Deposition of Coal, More Especially As Illustrated by the Coal-Formation of Nova Scotia and New Brunswick (London, 1866). (Reprinted from the Quarterly Journal of the Geological Society, May 1866).
- Dawson, J.W., Air Breathers of the Coal Period (Montreal, 1968).
- Dawson, J.W., Acadian Geology, The Geological Structure, Organic Remains, and Mineral Resources of Nova Scotia, New Brunswick, and Prince Edward Island (London, 3rd edition, 1878).
- Dawson, J.W., "Abstract on the mode of occurrence of remains of land animals in erect trees at the South Joggins, N.S.," Transactions of the Royal Society of Canada, Vol.IX, Section 4 (1892), pp.127-128.
- Dawson, J.W., Fifty Years of Work in Canada, Scientific and Educational, ed. by Rankine Dawson (London and Edinburgh, 1901).
- Dennis, Clara, More About Nova Scotia, My Own, My Native Land (Toronto, 1937).

- Dick, W.J., Conservation of Coal in Canada, with Notes on the Principal Coal Mines (Toronto, Commission of Conservation, 1914).
- Dinn, J.R., "The Human Element in the Prevention of Accidents," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXVI (1926), pp. 493-502.
- Dobson, George, A Pamphlet Compiled and Issued Under the Auspices of the Boards of Trade of Pictou and Cape Breton on the Coal and Iron Industries and their Relation to the Shipping and Carrying Trades of the Dominion (Ottawa, 1879).
- Dominion Board of Trade, Proceedings at the Annual Meeting of the Dominion Board of Trade Held in Ottawa, January, 1871 (Montreal, 1871).
- Dominion Board of Trade, Proceedings at the Sixth Annual Meeting of the Dominion Board of Trade Held at Ottawa, on 18th, 19th, 20th and 21st January, 1876 (Montreal, 1876).
- Dominion Board of Trade, Proceedings at the Seventh Annual Meeting of the Dominion Board of Trade Held at Ottawa on 17th, 18th and 19th January, 1877 (Montreal, 1877).
- Dominion Board of Trade, Proceedings at the Ninth Annual Meeting of the Dominion Board of Trade Held at Ottawa, on 21st, 22nd and 23rd January, 1879 (Montreal, 1879).
- Donaldson, Francis, Practical Shaft Sinking (New York, 1914).
- Doughty, A.G., ed., The Journal of Captain John Knox, Vol. I (Toronto, 1914).
- Dowling, D.B., "Canadian Coal Resources," Transactions of the Mining Society of Nova Scotia, Vol. XVI (1911-1912), pp. 147-1-5.
- Dowling, D.B., Coal Fields and Coal Resources of Canada (Ottawa, Department of Mines, 1915).
- Drummond, Robert, "The Cumberland Coal-Field," appended to Richard Brown, The Coal Fields and Coal Trade of the Island of Cape Breton (Stellarton, 2nd edition, 1899), pp. 137-146.
- Drummond, Robert, "The Mine and the Farm," Transactions of the Mining Society of Nova Scotia, Vol. XIII (1908-1909), pp. 15-30.
- Drummond, Robert, The Sixties and Subsequently (n.p., 1912). (Paper read before the South Cape Breton Mining Society).
- Drummond, Robert, Memorandum on Reciprocity in Coal (n.p., 1910).
- Drummond, Robert, "Mining Fatalities," Transactions of the Mining Society of Nova Scotia, Vol. XIX (1914), pp. 49-58.
- Drummond, Robert, Minerals and Mining, Nova Scotia (Stellarton, 1918).
- Drummond, Robert, Recollections and Reflections of a Former Trades Union Leader (n.p. [Stellarton], n.d. [1926]).
- [Dun, Wiman & Co.], The Mercantile Agency Reference Book (And Key) for the Dominion of Canada (n.p., July, 1892).
- [Dun, Wiman & Co.], The Mercantile Agency Reference Book (And Key) for the Dominion of Canada (n.p., January, 1902).
- [Dun, Wiman & Co.], The Mercantile Agency Reference Book (And Key) for the Dominion of Canada (n.p., January, 1912).
- Ells, R.W., "The Progress of Geological Investigation in Nova Scotia," Proceedings of the Nova Scotian Institute of Science, Vol. X, Part 4 (1898-1902), pp. 433-436.
- Ells, R.W., "The Importance of a Knowledge of Geology and its Kindred Subjects to the Mining Engineer," Canadian Mining Review, Vol. XI, No. 1 (January, 1892), pp. 12-14.

- Fergie, Charles, "Notes on the Drummond Colliery, Westville, Nova Scotia," Transactions of the Mining Society of Nova Scotia, Vol.I, Part IV (1892-1893), pp.40-46.
- Fergie, Charles, "Ventilation," Transactions of the Mining Society of Nova Scotia, Vol.VII (1902-1903), pp.101-105.
- Fillmore, Roscoe, "Early Socialism in the Maritimes," Acadiensis, Vol.XI, No.2 (Spring 1982), pp.84-94.
- Fleming, Sandford, Report on the Intercolonial Railway Exploratory Survey, Made under Instructions from the Canadian Government in the Year 1864 (Quebec, 1865).
- Fleming, Sandford, The Intercolonial: A Historical Sketch of the Inception, Location, Construction and Completion of the Line of Railway Uniting the Inland and Atlantic Provinces of the Dominion, with Maps and Numerous Illustrations (Montreal, 1876).
- Fletcher, Hugh, "Geological Nomenclature in Nova Scotia," Proceedings of the Nova Scotia Institute of Science, Vol.IX, Part 2 (1898-1902), pp.235-244.
- Fletcher, Hugh, "Limits of the Workable Coals of the Cumberland Coal Fields in Nova Scotia," Transactions of the Mining Society of Nova Scotia, Vol.VII (1903-1904), pp.123-126.
- Fletcher, Hugh, "Section of Rocks from Shulie to Spicer Cove, Cumberland Co., N.S., in descending order;" Proceedings and Transactions of the Nova Scotian Institute of Science, Vol.XI, Part 3 (1908), pp.500-550.
- Fraser, Dawn, Echoes from Labor's War: Industrial Cape Breton in the 1920s (Toronto, edited by David Frank and Don Macgillivray, 1976).
- [Fundy Coal Company], Fundy Coal Company Ltd., Incorporated Under the Laws of Nova Scotia [Prospectus] (n.p., n.d.)
- Futers, T.C., The Mechanical Engineering of Collieries (London, 2 vols., 1910).
- [G.J.Adams & Co., Brokers, Montreal], Maritime Coal & Railway Company, Ltd. (n.p. [Montreal], n.d. [1904]). (Advertisement).
- Galloway, Robert L., A History of Coal Mining in Great Britain (Newton Abbott, 1969 [1882]).
- Ganong, W.F., ed., "The Cadillac Memoir of 1692," Collections of the New Brunswick Historical Society, Vol.XIII, (1930), pp.77-97.
- General Mining Association, Special Rules for the Conduct and Guidance of the Persons Acting in the Management of the Sydney Mines Colliery and of all Persons Employed in or about the same (n.p., n.d.)
- General Mining Association, Abstract of the Accounts Presented to the General Meeting of Proprietors Held at the Office on the 25th June, 1868 (London, n.d. [1868]).
- General Mining Association, Limited, Report to be Presented to the Proprietors at the Extraordinary General Meeting, on the 18th of May, 1870 (n.p. [London], n.d. [1870]).
- General Mining Association, Limited, Report to be Presented to the Proprietors at the General Meeting, on the 30th April, 1872 (n.p. [London], n.d. [1872]).
- General Mining Association, Limited, Report of the Half-Yearly Meeting, Held on the 28th November, 1876, at the Offices, 6 New Broad St., London (n.p. [London], n.d. [1876]).

- Gesner, Abraham, Remarks on the Geology and Mineralogy of Nova Scotia (Halifax, 1836).
- Gesner, Abraham, Reports on the Londonderry Iron and Coal Deposits and a Prospectus with a View to Form a Company to Work the Same, By the Proprietor, John Ross (Halifax, 1846).
- Gesner, Abraham, The Industrial Resources of Nova Scotia, Comprehending The Physical Geography, Topography, Geology, Agriculture, Fisheries, Mines, Forests, Wild Lands, Lumbering, Manufactories, Navigation, Commerce, Emigration, Improvements, Industry, Contemplated Railways, Natural History and Resources of the Province (Halifax, 1849).
- Gesner, Abraham, A Practical Treatise on Coal, Petroleum and Other Distilled Oils (New York, 1861).
- Gilbert, A.G., From Montreal to the Maritime Provinces and Back (n.p., 1967 [1867]).
- Gillis, Hugh B., "The Use of Mechanical Loading Machines in Mines," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXIV (1921), pp. 309-316.
- Gilpin, Edwin, "Canadian Coals--Their Composition and Uses," Transactions of the North of England Institute of Mining and Metallurgy, Vol. XXVII (1877-1878), pp. 213-241.
- Gilpin, Edwin, The Mines and Mineral Lands of Nova Scotia (Halifax, 1880).
- Gilpin, Edwin, Report on the Intercolonial Coal Company's Collieries (Montreal, 1886).
- Gilpin, Edwin, "Coal Mining in Nova Scotia," Transactions of the Canadian Society of Civil Engineers, Vol. II (1888), pp. 350-381.
- Gilpin, Edwin, "Notes on Some Explosions in Nova Scotia Coal Mines," Proceedings of the Nova Scotian Institute of Science, Vol. VIII, Part 1 (1890-1894), pp. 58-70.
- Gilpin, Edwin, "The Use of Safe Explosives in Mines," Canadian Mining Review, Vol. XII, No. 8 (August 1893), pp. 14-41.
- Gilpin, Edwin, "Explosions in Nova Scotia Coal-mines," Transactions of the Institute of Mining Engineers, Vol. VIII (1894-1895), pp. 143-158.
- Gilpin, Edwin, "Undeveloped Coal Fields of N.S.," Proceedings of the Nova Scotian Institute of Science, Vol. IX (1896), pp. 134-149.
- Gilpin, Edwin, "Some Analyses of Nova Scotia Coals and other Minerals," Transactions of the Nova Scotian Institute of Science, Vol. IX (1896-1897), pp. 246-254.
- Gilpin, Edwin, "The Minerals of Nova Scotia," in J. Castell Hopkins, ed., Canada, Vol. III (Toronto, 1898), pp. 386-389.
- Gilpin, Edwin, Underground Certificates in Nova Scotian Coal Mines (Newcastle-upon-Tyne, 1899).
- Gilpin, Edwin, "Mineral and Crown Land Grants in Nova Scotia," Transactions of the Royal Society of Canada, Vol. IX, Section 4 (1903), pp. 123-131.
- Graham, W.H., "Description of the New Wash-House at No. 2 Colliery, Dominion Coal Company Ltd., Glace Bay," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXVI (1923), pp. 453-492.
- Gray, Francis William, "Ankylostomiasis: 'Miners' Anemia': A Resume of European Experiences," Transactions of the Mining Society of Nova Scotia, Vol. XI (1906-1907), pp. 75-116.

- Gray, Francis William, Mining and Transportation (Toronto, 1909).
- Gray, Francis William, "The Recording and Use of Colliery Cost Data," Canadian Mining Institute, Quarterly Bulletin, No. 9 (February 1910), pp.45-61.
- Gray, Francis William, The Coal Fields and Coal Industry of Eastern Canada (Ottawa, Mines Branch, Bulletin No. 14, 1917).
- Gray, Francis William, "Canada's Coal Problem: A Further Study," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXV (1922), pp.293-309.
- Gray, Francis William, "The Development of the Coal Industry in Canada," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXV (1922), pp.310-328.
- Gray, Francis William, "Some Modern Methods of Using Coal," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXVII (1924), pp.588-595.
- Gray, Francis William, "Mining Coal Under the Sea in Nova Scotia, With Notes on Comparable Undersea Coal-Mining Operations Elsewhere," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXX (1927), pp.986-1074.
- Haanel, Eugene, "Address on the Work of the Canadian Department of Mines," Transactions of the Mining Society of Nova Scotia, Vol. XIII (1908-1909), pp.101-107.
- Haldane, J.S., Methods of Air Analysis (London, 1912).
- Haley, W.D., "Mine Timber: Its Conservation, Preparation, Storage and Treatment," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXX (1927), pp.1177-1196.
- [Hale, Robert,] "Journal of a Voyage to Nova Scotia Made in 1731 by Robert Hale of Beverly," Historical Collections of the Essex Institute, Vol. XLII, No. 3 (July 1906), pp.217-244.
- Haliburton, R.G., The Coal Trade of the New Dominion (Halifax, 1868).
- [Haliburton, Thomas C.], A General Description of Nova Scotia, Illustrated by a New and Correct Map (Halifax, 1823).
- Haliburton, Thomas C., An Historical and Statistical Account of Nova Scotia, 2 Vols. (Halifax, 1829).
- Hamilton, Frederick J., A Trip over the Intercolonial. Including Articles on the Mining Industries of Nova Scotia & New Brunswick with A Description of the Cities of St. John and Halifax (Montreal, 1876).
- Hamilton, P.S., Nova-Scotia Considered As A Field for Emigration (London, 1858).
- Hamilton, P.S., Union of the Colonies of British North America; being three papers upon this subject; originally published between the years 1854 and 1861 (Montreal, 1864).
- Harrington, Bernard J., The Life of Sir William Logan (Montreal, 1883).
- Hedley, John, A Practical Treatise on the Working and Ventilation of Coal Mines; with Suggestions For Improvements in Mining (London, 1851).
- Herd, W., "Notes on Working Two Coal Seams Lying Near One Another," Transactions of the Mining Society of Nova Scotia, Vol. XIX (1914), pp.97-102.
- Hickman, James S., and Sharp, E.N., Memorandum in re "The Styles Mining Company" (n.p., n.d. [1878]).

- Hill, Albert J., Report on Sea Area "A153." Joggins, Cumberland County, Nova Scotia (Sydney, 1897).
- Hind, Henry Youle, Eighty Years' Progress of British North America: Showing the wonderful development of its natural resources, by the unbounded energy and enterprise of its inhabitants; giving in historical form, the vast improvements made in agriculture, commerce, and trade, modes of travel and transportation, mining, and educational interests, etc.etc. (Toronto, 1863).
- Hind, Henry Youle, A Sketch of the Mineral Resources of Part of Cumberland County, Nova Scotia. With Reference to the Service of the Intercolonial and the Spring Hill and Parrsboro' Railroads (Halifax, 1872).
- Hind, Henry Youle, Report on the Point Aconi Coal Property, Sydney Coal Field, Cape Breton (Halifax, 1872).
- Hind, Henry Youle, Report on the Property of the Mineral Exploration and Mining Association of Nova Scotia (Halifax, 1873).
- Hind, Henry Youle, A Forecast of the Future of the Maritime Provinces (Saint John, 1876).
- Hind, Henry Youle, Report on a Topographical Survey of Part of the Cumberland Coal Field, With Notices of the Coal Seams, and Their Relations to the Iron Deposits of the Cobequids (Halifax, 1873).
- History and Description of The Styles Coal Mines, And Adjoining Area of One Square Mile. With Copies of Reports, Assays, &c. (Halifax, 1888).
- [Howe, Joseph], To The Electors of the County of Cumberland (n.p., n.d. [1852]).
- [Howe, Joseph], The Public Dinner at Amherst. Hon. Mr. Howe's Speech (n.p., n.d. [1853]).
- [Howe, Joseph], To the Electors of the County of Cumberland (n.p., [Halifax], n.d. [1857]).
- Howe, Joseph, Western and Eastern Rambles: Travel Sketches of Nova Scotia (Toronto, 1873).
- Hudson, J.G., "Notes on Coal Cutting Machinery at the Collieries of the Dominion Coal Company," Transactions of the Mining Society of Nova Scotia, Vol. III (1894-1895), pp.94-103.
- Hudson, J.G., "Accidents in Mines," Transactions of the Mining Society of Nova Scotia, Vol. XVII (1912-1913), pp.27-32.
- Hughes, H.W., A Text-Book of Coal-Mining. For the Use of Colliery Managers and Others (London, 5th edition, 1904).
- Hunt, E.E., Tryor, F.G., and Wilkits, J., eds., What the Coal Commission Found (Baltimore, 1925).
- Importance of the Canadian Coal Industry (n.p., n.d. [1897]).
- Ingersoll, L.K., ed., "Report by Captain John Robb, R.N., on the State of the Fisheries, the Condition of the Lighthouses, the Contraband Trade, and Various Other Matters in the Bay of Fundy, Made to his Excellency the Lieutenant Governor, 1840," The Grand Manan Historian, No.9 (1965), pp.6-28.
- Jackson, C.T. and Alger, F., "A description of the mineralogy and geology of a part of Nova Scotia," American Journal of Science and Arts, Vol. XV (1829), pp.132-160.
- Jevons, W. Stanley, The Coal Question: An Inquiry Concerning the Progress of the Nation, and the Probable Exhaustion of our Coal-mines (London, 3rd edition, 1906).

- Johnston, John, "Description of Haulage System Installed to take the Place of Horses at No.3 and No.4 Collieries of the Nova Scotia Steel and Coal Company, Ltd., at Sydney Mines, Nova Scotia," Transactions of the Mining Society of Nova Scotia, Vol.XIV (1909-1910), pp.89-92.
- Johnson, Walter, The Coal Trade of North America, with Researches on the Characters and Practical Values of American and Foreign Coals (Washington and Philadelphia, 1850).
- [Jones, E.A.], Copy of Correspondence referred to, between E.A.Jones and Mr.Sandford Fleming, C.E. (n.p., n.d.[1867]).
- Keefer, T.C., Philosophy of Railroads and Other Essays (Toronto and Buffalo, 1972 [1850,1853]).
- Kennelly, D.J., Reciprocal Coal with Canada would give the New England states cheaper fuel. An Answer to William Whitman, Protectionist (New York, 1892).
- Kerr, George L., Practical Coal Mining (London, 1904).
- Kneeland, Frank, Practical Coal Production, Vol.I: Preliminaries of Coal Mining, Vol.II: Getting Out The Coal (New York, 1926).
- Knight, Thomas F., Nova Scotia and Her Resources (Halifax, 1862).
- Leonard, R.W., "The Spring Hill Collieries," Transactions of the Canadian Society of Civil Engineers, Vol.II (1888), pp.404-410.
- Libbey, W.L., "A Tabulated Statement of a Few Inaccuracies in the Mines Report, N.S., 1898," Transactions of the Mining Society of Nova Scotia, Vol.V, Part 1 (1899-1900), pp.28-29. (Discussion, p.30).
- Lishman, W.E., "Coal Mining Methods in Nova Scotia," Transactions of the Mining Society of Nova Scotia, Vol.X (1905-1906), pp.60-65.
- [Lithgow, J.R.], A Letter to the House of Commons of Canada, on Behalf of the Coal Interests of Nova Scotia (Halifax, 1877).
- Lithgow, J.R., Tariff Literature: Letters for the People (Halifax, 1878).
- [Livesay, John], To the Honble. W.McDougall, Minister of Public Works (Halifax, 1867).
- Logan, William E., "Sections of the Nova Scotia Coal Measures, as developed at the Joggins, on the Bay of Fundy, in descending order, from the neighbourhood of the West Ragged Reef to Minudie, reduced to vertical thicknesses, 1843," republished with an introduction by Henry S. Poole in Proceedings and Transactions of the Nova Scotian Institute of Science, Vol.XI, Part 3 (1908), pp.417-499.
- Lunn, C.W., "From Trapper Boy to General Manager: A Story of Brotherly Love and Perseverance," Labour/Le Travailleur, Vol.IV (1979), pp.211-240.
- Lyell, Charles, Travels in North America, And Nova Scotia, With Geological Observations (London, 2nd edition, 1855), Vol.II.
- Lyell, Charles and Dawson, J.W., "On the Remains of a Reptile (Dinorpeton Acadianum, Wyman and Owen) and of a Land Shell discovered in the Interior of an Erect Fossil Tree in the Coal Measures of Nova Scotia," Proceedings of the Geological Society, Quarterly Journal, Vol.IX (1853), pp.58-63.
- [Macan Coal Company], The Macan Coal Mines in the County of Cumberland Nova Scotia (Boston, 1863).
- Macdonald, A.W., "Notes on the Work of the Industrial Relations Department of the Dominion Coal Co. Ltd., and the Dominion Iron and Steel, Company, Ltd.," Transactions of the Canadian Institute of Mining and Metallurgy and the Mining Society of Nova Scotia, Vol.XXIV (1921), pp.323-328.

- Macdonald, C.Ochiltree, Nova Scotia as a Manufacturing Field (Halifax, 1907).
- Macdonald, C.Ochiltree, The Coal and Iron Industries of Nova Scotia (Halifax, 1909).
- Macdonald, E.M., Recollections, Political and Personal (Toronto, 3rd edition, n.d.)
- McDougall, J.J., "Discussion on 'Longwall Operations, Sydney Mines, N.S.," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXVII (1924), pp. 500-509.
- McEachern, Alexander, "Explosions and their Causes, With Suggestions for Precautionary or Preventive Measures to be Observed," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXV (1922), pp. 490-502.
- McHattie, George A., "Progressive Coal Mining," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXV (1922), pp. 310-328.
- McKavanagh, T.J., "Electricity in Mines," Transactions of the Mining Society of Nova Scotia, Vol. XIII (1908-1909), pp. 75-82.
- MacKay, A.H., "Leading to Technical Education," Transactions of the Mining Society of Nova Scotia, Vol. VII (1902-1903), pp. 49-54.
- MacKenzie, J.G., "The Coal-dust Problem," Transactions of the Mining Society of Nova Scotia, Vol. XVI (1911-1912), pp. 113-128.
- McKnight, H.A., The Great Colliery Explosion at Springhill, Nova Scotia, February 21, 1891 (Springhill, n.d. [1891]).
- Maclean, John, comp., The Tariff Hand-Book Shewing The Canadian Customs' Tariff, with the Various Changes Made During the Last Thirty Years; Also the British and American Tariffs, in Full; and the More Important Portions of the Tariffs of France, Germany, Holland, Belgium, Italy and Switzerland All Taken from the Best Authorities (Toronto, 1878).
- McLennan, John S., "The Organization and Development of Dominion Coal Company, Ltd.," Journal of the Mining Society of Nova Scotia, Vol. III (1894-1895), pp. 76-81.
- McLeod, R.R., Markland or Nova Scotia. Its History, Natural Resources and Native Beauties (n.p. [Halifax], 1903).
- MacMechan, Archibald, ed., A Calendar of Two Letter-Books and One Commission-Book in the Possession of the Government of Nova Scotia, 1713-1741 (Halifax, 1900).
- MacMechan, Archibald, ed., Original Minutes of His Majesty's Council at Annapolis Royal, 1720-1739 (Halifax, 1908).
- McNeil, Alex, "Some Notes on the Proposed Revision of the Mines Act of Nova Scotia," Transactions of the Mining Society of Nova Scotia, Vol. IV (1898-1899), pp. 71-82.
- McNeil, Alex, "The Aim and Scope of the Mining Society of Nova Scotia," Transactions of the Mining Society of Nova Scotia, Vol. VII (1902-1903), pp. 61-64.
- McNeil, A.S., "Coal Mining in Nova Scotia: Some of the advances in practice & policy during '100 years' operation," Bulletin of the Canadian Mining Institute (October, 1921), pp. 894-904.
- McPherson, W. David and Clark, John Murray, The Law of Mines in Canada (Toronto, 1898).
- The Maritime Provinces: A Handbook for Travellers (Boston, 1883).

- [Magee, William H., Gillespie, Hugh, and Holmes, P.A.], Trustees
Circular Letter, Standard Coal Company, Limited
(Parrsboro, 1904).
- [Magee, William H., Gillespie, Hugh, and Holmes, P.A.], The Standard -
Coal and Railway Co., Limited. Incorporated under the Laws of
the Province of Nova Scotia (Prospectus). (Parrsboro, n.d.).
- [Mahon, J.C., Strachan, John, and Hanright, F.W.], The Standard Coal
and Railway Co., Limited (Parrsboro, n.d.).
- Marsh, Karl, "Mine Pumping Problems," Transactions of the Canadian
Institute of Mining and Metallurgy and of the Mining Society
of Nova Scotia, Vol.XXV (1922), pp.481-489.
- Mason, F.H., "Nova Scotia Coals as Steam Producers," Transactions of
the Canadian Mining Institute, Vol.I, No.1 (1895),
pp.73-80.
- Maxwell, James, "Modifications of Working Coal Lately Introduced in
Nova Scotia. II. Acadia Colliery," Transactions of the Mining
Society of Nova Scotia, Vol.I, Part IV (1892-1893), pp.53-55.
- Meissner, C.A., "The Modern Method of Coal-Washing," Transactions of
the Mining Society of Nova Scotia, Vol.VIII (1903-1904),
pp.101-105.
- Milner, W.C., Coal: Analysis of the Trade Between Canada and the
United States (Ottawa, 1904).
- Milner, W.C., "Reciprocity in Coal," Transactions of the Mining
Society of Nova Scotia, Vol.X (1905-1906), pp.148-161.
- Milner, W.C., "History of Albertite," Transactions of the Mining
Society of Nova Scotia, Vol.XVII (1912-1913), pp.62-69.
- Moffatt, John, Coal Cutting Rates in Nova Scotia (Stellarton, n.d.)
- Moffatt, John, Grand Secretary John Moffatt's Valedictory Report
(n.p., n.d. [1917]).
- Morgan, Henry James, ed., The Canadian Men and Women of the Time:
A hand-book of Canadian Biography of Living Characters
(Toronto, 2nd edition, 1912).
- Morrow, R.A.H., Story of the Springhill Disaster: Comprising a Full
and Authentic Account of the Great Coal Mining Explosion at
Springhill Mines, Nova Scotia, February 21st, 1891, Including
A History of Springhill And Its Collieries; Also, A
Description of the Underground Workings, Mechanical Operations
and Mysteries of the Mine; Reviews of other Great Coal Mining
Disasters; Coal and its History; Dangers of Mining Operations
and Safeguards against Accidents in Mines; Explanation of
Coal Mining Terms; Lessons from the Great Calamity, Etc.
(Saint John, 1891).
- Murdoch, Beamish, A History of Nova-Scotia, or Acadie, Vol.I (Halifax,
1865).
- Murphy, John, "Longwall Mining Operations in Jubilee Lower Seam, Sydney
Mines, N.S.," Transactions of the Canadian Institute of Mining
and Metallurgy and of the Mining Society of Nova Scotia, Vol.
XXIV (1921), pp.281-283.
- Nicholson, J.G., "The Fire in No.3 Slope, Springhill, N.S.," Transactions
of the Canadian Institute of Mining and Metallurgy and of the
Mining Society of Nova Scotia, Vol.XXIV (1921), pp.292-298.

- Nicholson, J.C., "Past and Present Methods of Working No.2 Mine, Springhill, N.S.," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol.XXV (1922), pp.469-480.
- Nicholson, Neil A., "Practical and Economic Mining," Transactions of the Mining Society of Nova Scotia, Vol.XIV (1909-1910), pp.83-87. (Discussion, p.87).
- Nicholson, Neil A., "Conservation of Nova Scotian Coal-Fields," Transactions of the Mining Society of Nova Scotia, Vol.XVII (1912-1913), pp.17-26.
- Nicholson, Neil A., "Coal-mining Accidents, their Causes and Prevention," Transactions of the Mining Society of Nova Scotia, Vol.XVIII (1913-1914), pp.1-11.
- Odell, C.M., "Men and Methods of the Early Days of Mining in Cape Breton," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol.XXV (1922), pp.503-530.
- Our Dominion, Mercantile and Manufacturing Interests Historical and Commercial Sketches of Halifax and Environs (Toronto, 1887)
- Pamely, Caleb, The Colliery Manager's Handbook: A Comprehensive Treatise on the Laying-Out and Working of Collieries (London, 1904).
- Parker, J.Lewis, The Great Coal Schoonets of New England (Mystic, 1948).
- Patterson, (Rev.Dr.)George, "The Early History of Mining in Pictou County," Transactions of the Mining Society of Nova Scotia, Vol.I, Part 1 (1892-1893), pp.57-62.
- Perley, Moses Henry, Reports on the sea and river fisheries of New Brunswick (Fredericton, 2nd edition, 1852)
- Phipps, R.W., Free trade and protection considered with relation to Canadian interests (Halifax, 1878).
- Poole, H.S., "Notes on the legislation affecting the working & regulation of mines in N.S.," Canadian Mining Review, Vol.XII, No.3 (March 1893), pp.35-36, 38.
- Poole, H.S., "Notes on the Legislation Affecting the Working and Regulation of Mines in Nova Scotia," Transactions of the Mining Society of Nova Scotia, Vol.I, Part IV (1892-1893), pp.26-40.
- Poole, H.S., "Cheap and rapid coaling in N.S.," Canadian Colliery Guardian, Series No.1 (Halifax, 1894).
- Porritt, Edward, Sixty Years of Protection in Canada, 1846-1907 (London, 1908).
- Porter, J.B., and Durley, R.J., An Investigation of the Coals of Canada With Reference to their Economic Qualities: As Conducted at McGill University, Montreal, Under the Authority of the Dominion Government (Ottawa: Department of Mines, Mines Branch, 1912-1915), 6 Vols.
- Prominent People of the Maritime Provinces in Business and Professional Life (Saint John, 1922).
- Purdy, Amos, To The Residents of The County of Cumberland (Amherst, 1901). [R.G.Dun & Co.], The Mercantile Agency Reference Book (And Key) Containing Ratings of Merchants, Manufacturers, and Traders Generally Throughout the Dominion of Canada, New Foundland, Magdalen Islands, St.Pierre et Miquelon (n.p., January, 1922).
- [R.G.Dun & Co.], The Mercantile Agency Reference Book (And Key) Containing Ratings of Merchants, Manufacturers, and Traders Generally Throughout the Dominion of Canada, Newfoundland and St.Pierre et Miquelon (n.p., January, 1932).

- Rice, George S., "Explosion Prevention in the Coal Mines of Alberta, With Special Reference to Applications of the Rock-Dusting Method," Transactions of the Canadian Institute of Mining and Metallurgy and of the Mining Society of Nova Scotia, Vol. XXX (1927), pp. 477-489.
- Richards, R.H., "The Relation between Technical Education and Industrial Progress," Transactions of the Mining Society of Nova Scotia, Vol. XI (1906-1907), pp. 27-43.
- Robertson, Robert, "Description of Electric-haulage plant in Operation in No. 5 Colliery, Sydney Mines, Nova Scotia," Transactions of the Mining Society of Nova Scotia, Vol. XIV (1909-1910), pp. 93-101.
- Robertson, Robert, "Some Notes on Longwall Practices in the Jubilee Pit, Sydney Mines, N.S.," Transactions of the Mining Society of Nova Scotia, Vol. XIX (1914), pp. 135-146.
- Robinson, John and Rispin, Thomas, Journey Through Nova-Scotia, Containing a Particular Account of the Country and its Inhabitants With Observations on their Management in Husbandry; the Breed of Horses and other Cattle, and every Thing material relating to Farming To which is added An Account of several Estates for Sale in different Townships of Nova Scotia, with their Number of Acres, and the Price at which each is set, (Halifax, 1945 [York, 1774]).
- Rose, Clifford, Four Years with the Demon Rum (1925-1929) (Fredericton, edited by E.R. Forbes and A.A. MacKenzie, 1981).
- Roy, Andrew, A History of the Coal Miners of the United States, From the Development of the Mines to the Close of the Anthracite Strike of 1902, Including a Brief Sketch of Early British Miners (Westport, Conn., 1970 [1905]).
- Royal Empire Society, London, Subject Catalogue of the Library (London, 1932), Vol. III.
- Rutherford, John, The Importance of Mining Records. A Letter to P.S. Hamilton, Esq., Chief Commissioner of Mines (Halifax, 1867).
- Rutherford, John, The Coal Fields of Nova Scotia (Newcastle-upon-Tyne, 1871).
- Rutherford, J.G., "Modification of Working Coal Lately Introduced in Nova Scotia. I. Pictou County," Transactions of the Mining Society of Nova Scotia, Vol. I, Part IV (1892-1893), pp. 47-53.
- Rutherford, J.G., "Unexpected Result of a Shot," Transactions of the Mining Society of Nova Scotia, Vol. IV (1898-1899), pp. 82-87.
- Rutherford, J.G., "The Early History and Progress of Coal Mining in Nova Scotia," Canadian Mining Review, Vol. X, No. 9 (September, 1901), pp. 201-203.
- Sailing Directions for the South-East Coast of Nova Scotia and Bay of Fundy, Compiled from Various Admiralty Sources (London, Hydrographic Office, Admiralty, 1875).
- Saunders, H.M., ed., The Life and Letters of the Rt. Hon Sir Charles Tupper (London, 1916).
- Sexton, F.H., "The Relation of Technical Education to Industrial Progress," Transactions of the Mining Society of Nova Scotia, Vol. XI (1906-1907), pp. 1-26.
- Sexton, F.H. and Hodge, Charles A., "Tests on Some Specimens of Nova Scotian Mine Timber," Transactions of the Mining Society of Nova Scotia, Vol. XVII (1912-1913), pp. 70-79.
- Simonin, Louis, La Vie souterraine. La mine et les mineurs. (Seysse, 1982 [1867]).

- [Spring Hill Mining Company], Prospectus of the Spring Hill Mining Company, Incorporated Under Laws of Nova Scotia, 1870.
c.72 (n.p., n.d. [1872]).
- [Spring Hill Mining Company], The Spring Hill Mining Company. Incorporated under Chapter 72 of the Laws of Nova Scotia, 1870 (n.p., n.d. [1871]).
- Springhill Coal Field and Acadian Iron Mines, Nova Scotia
(Broadsheet, n.p., n.d. [1866]).
- Springhill Methodist Church, Annual Report, 1912-1913
(n.p.[Springhill], n.d.[1913]).
- [Standard Coal and Railway Co.], The Standard Coal & Railway Co., Ltd. (advertisement, n.p., n.d. [1905?]).
- Steeves, Helen Harper, The Story of Moncton's First Store and Storekeeper: Life Around "The Bend" A Century Ago (Saint John, 1924).
- [Styles Mining Company, Limited], The Act of Incorporation and Bye-Laws of the Styles Mining Company (Limited) (Amherst, 1875).
- Thorkelson, H.J., Air Compression and Transmission (New York, 1912).
- To The Honorable, the House of Commons, of Canada, in Session Assembled: The Petition of the undersigned Coal Owners and persons interested in the Coal Trade and Shipping Interests of the Dominion (n.p., n.d. [1871]).
- [Tupper, Charles], Speech Delivered by the Honorable Provincial Secretary, (Dr. Tupper,) in the Constitutional Debate
(n.p. [Halifax], n.d. [1858]).
- [Tupper, Charles], Letter from the Hon. Dr. Tupper, C.B., to the Hon. James McDonald, M.P.P. (Ottawa, n.d. [1872]).
- Tupper, Charles, Recollections of Sixty Years (London, New York, Toronto and Melbourne, 1914).
- "Tyro" [pseud.], "A Visit to the Albion Mines," The Provincial or Halifax Monthly Magazine, Vol.I., No.5 (May 1852), pp:175-181.
- United Mine Workers of America, District No.26, Mining Rates, Effective February 1st 1937 (n.p., n.d.).
- Ure, A., A Dictionary of Arts, Manufacturers and Mines, containing a clear exposition of their Principles and Practice (London, 5th edition, 1859), 3 Vols.
- Vernon, C.W., Cape Breton, Canada, at the Beginning of the Twentieth Century (Toronto, 1903).
- [Victoria Coal Mining Company], Prospectus (Halifax, 1860).
- Volk, Carl, Haulage and Winding Appliances Used in Collieries (London, 1903)
- Waite, P.B., ed., "A Nova Scotian in Toronto, 1858," Ontario History, Vol.LV, No.3 (September, 1963), pp.155-159.
- Weldon, Richard, Speech of Mr. Weldon, M.P., on Nova Scotia Coal Deal (Ottawa, 1893).
- White, G.A., Halifax and Its Business (Halifax, 1876).
- Whiteaves, J.F., "Notes on the recent discovery of large Unio-like shells in the coal measures at the South Joggins, N.S.," Proceedings of the Royal Society of Canada, Vol.XI, Section 4 (1893), pp.21-24.
- Whitman, William, Free Coal: Would it give New-England Manufacturers Cheaper Fuel? (n.p. [Brookline, Mass.], n.d. [1891]).

- Wilmoughby, J., The Land of the Mayflower: Or, The Past and Present of Nova Scotia, Contrasted; With a Glance at the Probable Future (Halifax, 1860).
- Wilson, John M-C., The Labour Movement and the Church (Boston, 1922).
- Winslow, Arthur, "Mining Thin Coal Seams in Missouri and Kansas," The Colliery Engineer (March, 1892), pp.178-179.
- Woodman, J.E., "Some Aspects of Technical Education," Transactions of the Mining Society of Nova Scotia, Vol.VII., (1902-1903), pp.65-74. (Discussion, pp.74-83).
- Wright, C.H., "Electrical Appliances in Mines," Transactions of the Mining Society of Nova Scotia, Vol.XVI (1911-1912), pp.1-16.
- Wright, C.H., "Electrical Transmission for Mining and Other Purposes in the Maritime Provinces," Transactions of the Mining Society of Nova Scotia, Vol.XVII (1912-1913), pp.44-49.
- [Young, G.R.]; Resolutions on Coal Mine Question, Reported by Committee, Mr. G.R.Young, Chairman, March 31, 1848 (n.p. [Halifax], n.d. [1848]). (Broadsheet).

Secondary Sources

Unpublished Theses, Papers and Manuscripts

- Archibald, Bruce, "The Development of Underdevelopment in the Atlantic Provinces," M.A.Thesis, Dalhousie University (1971).
- Barton, Bruce C., "Mine Town: Effects of Single Industry Dependence and Mining Crisis Upon the Family," B.A.Thesis, Acadia University (1978).
- Bjarnasson, Emil, "Collective Bargaining in the Coal Mining Industry of Canada 1825-1938," M.A.Thesis, Queen's University 1965.
- Campbell, Bertha, "Street Names in Old Springhill," unpublished manuscript, n.d. (in the possession of the author).
- Chappel, Myrtle, "Fenwick 1778-1978," unpublished manuscript, n.d. (in the possession of the author).
- Clark, Allister Roy, "The Intercolonial: Its Influence on Canadian Development," M.A.Thesis, Acadia University (1953).
- Coleman, Margaret, "Acadian History in the Isthmus of Chignecto," National Historic Sites Service, Manuscript Report No.29 (January, 1968).
- Coleman, Margaret, "Acadian Social Life," National Historic Sites Service, Manuscript Report No.80 (March, 1968).
- Crawley, Ron, "Class Conflict and The Establishment of the Sydney Steel Industry 1899-1904," M.A.Thesis, Dalhousie University (1980).
- Frank, David A., "Coal Masters and Coal Miners: The 1922 Strike and the roots of class conflict in the Cape Breton coal industry," M.A.Thesis, Dalhousie University (1974).
- Frank, David A., "The Cape Breton Coal Miners, 1917-1926," PhD Thesis, Dalhousie University (1979).
- Frost, J.D., "Principles of Interest: the Bank of Nova Scotia and the Industrialization of the Maritimes, 1880-1910," M.A.Thesis, Queen's University (1979).
- Goodwin, Helen, "Community, Class and Conflict: The 1909-1911 Springhill Coal Strike," B.A.Thesis, Dalhousie University (1980).

- Grimmer, Frederick Dykeman, "The History of Cumberland County," M.A.Thesis, Acadia University (1951).
- Haliburton, Gordon MacKay, "A History of Railways in Nova Scotia," M.A.Thesis, Dalhousie University (1955).
- Hamilton, P.S., "History of the County of Cumberland," manuscript essay, 1880 (at the Public Archives of Nova Scotia).
- Harrison, Wilfred, "The Maritime Bank of the Dominion of Canada, 1872-1887," M.A.Thesis, University of New Brunswick (1971).
- Heron, W.Craig, "Working-Class Hamilton, 1895-1930," PhD Thesis, Dalhousie University (1981).
- Lambly, Peter D., "Towards a 'Living Wage': The Minimum-Wage Campaign for Women in Nova Scotia, 1920-1935," B.A.Thesis, Dalhousie University (1977).
- Lomas, Alton A., "The Industrial Development of Nova Scotia, 1830-1854," M.A.Thesis, Dalhousie University (1950).
- Macdonald, Joe, "The Roots of Radical Politics in Nova Scotia: The P.W.A. and Political Activity, 1879-1906," B.A.Thesis, Carleton University (1976).
- McDougal, David J., "The Acquisition of a Maritime Industry by Upper Canadians: The Case of the Cumberland Railway and Coal Company," unpublished paper presented to the Maritime Workshop, held in Halifax, 1981.
- Macgillivray, Donald, "Industrial Unrest in Cape Breton, 1919-1925," M.A.Thesis, University of New Brunswick (1971).
- MacKenzie, A.A., "The Rise and Fall of the Farmer-Labour Party in Nova Scotia," M.A.Thesis, Dalhousie University (1969).
- MacKinnon, Neil, "Nova Scotia from Reciprocity to Confederation: A Social Study of the Period," M.A.Thesis, Dalhousie University (1963).
- McKnight, E., "Labour in the Coal Industry of Nova Scotia During the Present Century," B.A.Thesis, Mount Allison University, (c.1932).
- Macleod, Donald, "Miners, Mining Men and Mining Reform: Changing the Technology of Nova Scotian Gold Mines and Collieries, 1850 to 1910," PhD Thesis, University of Toronto (1981).
- Magill, Dennis W., "Migration and Occupational Mobility from a Nova Scotia Coal Mining Town," M.A.Thesis, McGill University (1966).
- Merilees, A.Andrew, "A History of the Maritime Coal, Railway & Power Company, Limited," unpublished essay, n.d. (at the Public Archives of Nova Scotia).
- Miffen, Rev. P.S., "A History of Trade Unionism in the Coal Mines of Nova Scotia," M.A.Thesis, Catholic University of America (1951).
- Moore, Dan, "The 1909 Strike in the Nova Scotia Coal Fields," B.A.Thesis, Carleton University (1977).
- Moore, William Phillip, "Staples and the Development of the Capitalist Mode of Production: A Study of Mining in Canada 1845-1920," M.A.Thesis, McMaster University (1978).
- Morrison, James A., "Labour Management Relations in the Coal Mining Industry of Nova Scotia," M.A.Thesis, St.Francis Xavier University (1950).
- Murray, Elizabeth, "The Evolution of the Coal Industry in Springhill, Nova Scotia from Its Origin to 1972," unpublished research essay, n.d. (Miners' Museum, Springhill).

- Petersen, James O., "The Origins of Canadian Gold Mining: The Part Played by Labour in the Transition from Tool Production to Machine Production," PhD Thesis, University of Toronto (1977).
- Breston, Evelyn, "The Pit Committee in the Illinois Coal Fields," M.A. Thesis, University of Wisconsin (1923).
- Read, Lawrence, "Manufacturing in Cumberland County during the past twenty-five years," unpublished research paper prepared for the Nova Scotia Economic Council, n.d. (At the Public Archives of Nova Scotia).
- Reilly, Sharon, "The Provincial Workmen's Association of Nova Scotia 1879-1898," M.A. Thesis, Dalhousie University (1978).
- Schwartzman, David, "Mergers in the Nova Scotia Coal Fields: A History of the Dominion Coal Company, 1893-1940," PhD Thesis, University of California (1953).
- Scott, Bertha Isabel, "Coal Mining in Cumberland County," unpublished essay, n.d. (In the possession of Mrs. Elaine Mont, Springhill).
- Seager, Allen, "Class Consciousness, Class Anarchy: Three Alberta Coal Towns During the Great Depression," Paper presented to the Canadian Historical Association (1979).
- Shields, E.J., "A History of Trade Unionism in Nova Scotia," M.A. Thesis, Dalhousie University (1945).
- Snowdon, James A., "The Cumberland Basin Grindstone Industry," B.A. Thesis, Mount Allison University (1972).
- Somerhausen, Marc, "The Working Rules in the Bituminous Coal Industry," M.A. Thesis, University of Wisconsin (1922).
- Sprague, Jack D., "The Coal Trade in the Maritimes," M.A. Thesis, Mount Allison University (1932).
- Steele, Joseph, "The Big Strike, 1909-1910," M.A. Thesis, St. Francis Xavier University (1960).
- Sutherland, D.A., "The Merchants of Halifax, 1815-1850: A Commercial Class in Pursuit of Metropolitan Status," PhD Thesis, University of Toronto (1975).
- Trenholm, Hayden, "Radical Labour and the Catholic Church: The Case of Cape Breton," B.A. Thesis, Mount Allison University (1977).
- Wade, C.B., "History of District 26, United Mine Workers of America, 1919-1941," unpublished manuscript, n.d. (Available at the Public Archives of Nova Scotia on microfilm).
- Wallace, A.F.C., "The Ventilation of Coal mines: A Nineteenth Century Case of Social Conflict and Technological Failure," Paper presented to the Canadian Historical Association, 1982.

Books and Articles

- Acheson, T.W., "The National Policy and the Industrialization of the Maritimes, 1880-1910," Acadiensis, Vol. I, No. 2 (Spring, 1972), pp. 3-28.
- Acheson, T.W., "The Great Merchant and Economic Development in St. John, 1820-1850," Acadiensis, Vol. VIII, No. 2 (Spring, 1979), pp. 3-27.
- Adell, B.L., The Legal Status of Collective Agreements in England, the United States and Canada (Kingston, 1970).

- Aitken, Hugh G.J., "Defensive Expansionism: The State and Economic Growth in Canada," in Hugh G.J. Aitken, ed., The State and Economic Growth (New York, 1959).
- Alcock, F.J., A Century in the History of the Geological Survey of Canada (Ottawa, Department of Mines and Resources, National Museum of Canada, Special Contribution No.47-1, 1947).
- Alexander, David, "Newfoundland's Traditional Economy and Development to 1934," Acadiensis, Vol.V (Spring, 1976), pp.56-78.
- Alexander, David, "Economic Growth in the Atlantic Region, 1880 to 1940," Acadiensis, Vol.VIII, No.1 (Autumn 1978), pp.47-76.
- Allen, James B., The Company Town in the American West (Norman, Oklahoma, 1966).
- Allen, V.L., "The Origins of Industrial Conciliation and Arbitration," International Review of Social History, Vol.IX, Part 1 (1964), pp.237-255.
- Amsden, Jon, and Brier, Stephen, "Coal Miners on Strike: The Transformation of Strike Demands and the Formation of a National Union," Journal of Interdisciplinary History, Vol.VII (Spring, 1977), pp.583-616.
- Antler, Steven, "The Capitalist Underdevelopment of Nineteenth-Century Newfoundland," in Robert J. Brym and R. James Sacouman, eds., Underdevelopment and Social Movements in Atlantic Canada (Toronto, 1979), pp.179-202.
- Archbald, Hugh, The Four Hour Day in Coal (New York, 1922).
- Archibald, Bruce, "Atlantic Regional Underdevelopment and Socialism," in Laurier LaPierre et al., eds., Essays on the Left (Toronto, 1971), pp.103-120.
- Armstrong, Christopher, "Making a Market: Selling Securities in Atlantic Canada before World War I," Canadian Journal of Economics, Vol.XIII (1980), pp.438-454.
- Arnot, R. Page, The Miners: Years of Struggle. A History of the Miners' Federation of Great Britain (From 1910 Onwards) (London, 1953).
- Arnot, R. Page, A History of the Scottish Miners from the Earliest Times (London, 1955).
- Ashton, T.S., and Sykes, Joseph, The Coal Industry of the Eighteenth Century (Manchester, 1964 [1929]).
- Atkinson, Frank, The Great Northern Coalfield 1700-1900: Illustrated Notes on the Durham and Northumberland Coalfield (London, 1968).
- Aurand, Harold W., From the Molly Maguires to the United Mine Workers, The Social Ecology of an Industrial Union: 1869-1897 (Philadelphia, 1971).
- Avery, Donald, 'Dangerous Foreigners': European Immigrant Workers and Labour Radicalism in Canada, 1896-1932 (Toronto, 1979).
- Babcock, Roberts, Gompers in Canada: A Study in American Continentalism Before the First World War (Toronto, 1974).
- Baldwin, Doug, "A Study in Social Control: The Life of the Silver Miner in Northern Ontario," Labour/Le Travailleur, Vol.II (1977), pp.79-106.
- Baratz, Morton S., The Union and the Coal Industry (Port Washington, N.Y., 1973 [1955]).
- Barkhouse, Joyce, Abraham Gesner (Don Mills, 1980).
- Beach, H.D., and Lucas, R.D., Individual and Group Behaviour in a Coal Mine Disaster (Washington, National Academy of Sciences, National Research Council, Publication 834, Disaster Study No.13, 1960).

- Beck, J. Murray, The Government of Nova Scotia (Toronto, 1957).
- Beck, J. Murray, ed., Joseph Howe: Voice of Nova Scotia (Toronto, 1969 [1964]).
- Bell, Winthrop Pickard, The "Foreign Protestants" and the Settlement of Nova Scotia: The History of a Piece of Arrested British Colonial Policy in the Eighteenth Century (Toronto, 1961).
- Bentley, L.W., "Aid of the Civil Power: Social and Political Aspects, 1904-1924," Canadian Defence Quarterly, Vol. VIII (Summer, 1978), pp. 44-51.
- Bercuson, David Jay, "Labour Radicalism and the Western Industrial Frontier: 1897-1919," Canadian Historical Review, Vol. LVIII, No. 2 (June, 1977), pp. 154-175.
- Bercuson, David Jay, ed., Alberta's Coal Industry 1919 (Calgary, 1978).
- Bercuson, David Jay, Fools and Wise Men: The Rise and Fall of the One Big Union (Toronto and Montreal, 1978).
- Bercuson, David Jay, "Tragedy at Bellevue: Anatomy of a Mine Disaster," Labour/Le Travailleur, Vol. III (1978), pp. 221-231.
- Berg, Maxine, ed., Technology and Toil in Nineteenth-Century Britain (London, 1979).
- Bird, W.R., A Century at Chignecto: the key to old Acadia (Toronto, 1928).
- Bird, W.R., ed., Atlantic Anthology (Toronto, 1959).
- Blakeley, Phyllis, "Sir Samuel Cunard," Dictionary of Canadian Biography, Vol. IX (Toronto, 1976), pp. 172-186.
- Bliss, Michael, A Living Profit: Studies in the Social History of Canadian Business, 1883-1911 (Toronto, 1974).
- Bloch, Louis, Labor Agreements in Coal Mines: A Case Study of the Administration of Agreements Between Miners' and Operators' Organizations in the Bituminous Coal Mines of Illinois (New York, 1931).
- Bloch, Marc, The Historian's Craft (New York, 1953).
- Bourdieu, Pierre, Outline of a Theory of Practice (Cambridge, 1979 [1977]).
- Bowen, Peter, Social Control in Industrial Organisations: Industrial Relations and industrial sociology: a strategic and occupational study of British steelmaking (London, 1976).
- Braudel, Fernand, The Mediterranean and the Mediterranean World in the Age of Philip II (London, 2 Vols., 1973).
- Braudel, Fernand, Capitalism and Material Life 1400-1800 (London, 1973).
- Braverman, H., Labor and Monopoly Capital (London, 1973).
- Brehner, John Bartlet, The Neutral Yankees of Nova Scotia: A Marginal Colony During the Revolutionary Years (Toronto and Montreal, 1969 [New York, 1937]).
- Brookes, Alan A., "Out-Migration from the Maritime Provinces, 1860-1900: Some Preliminary Considerations," Acadiensis, Vol. V, No. 2 (Spring 1976), pp. 26-55.
- Brophy, John, A Miner's Life (Madison and Milwaukee, 1964).
- Brown, Robert Craig and Cook, Ramsay, Canada, 1896-1921: A Nation Transformed (Toronto, 1974).
- Brown, Roger D., Blood on the Coal (Windsor, N.S., 1976).
- Brown, Thomas J., Place-Names of the Province of Nova Scotia (n.p., 1922).
- Browne, G.P., ed., Documents on the Confederation of British North America (Toronto, 1969).
- Bryan, (Sir) Andrew, The Evolution of Health and Safety in Mines (London, 1975).
- Bryan, (Sir) Andrew, "Coal-Mining," in Trevor I. Williams, ed., A History of Technology, Vol. VI (Oxford, 1978), pp. 359-375.

- Brym, Robert, and Sacouman, James, eds., Underdevelopment and Social Movements in Atlantic Canada (Toronto, 1979).
- Buckley, Kenneth, Capital Formation in Canada, 1896-1930 (Toronto, 1974 [1955]).
- Bulmer, M.I.A., "Sociological Models of the Mining Community," The Sociological Review, Vol. XXIII, No. 1 (February 1975), pp. 61-92.
- Bulmer, M.I.A., ed., Working-Class Images of Society (London, 1975).
- Burawoy, Michael, Manufacturing Consent: Changes in the Labor Process under Monopoly Capitalism (Chicago and London, 1979).
- Burgess, Keith, The Origins of British Industrial Relations: The Nineteenth-Century Experience (London, 1975).
- Burley, Kevin H., The Development of Canada's Staples, 1867-1939: A Documentary Collection (Toronto, n.d.).
- Buxton, Neil K., Johnson, W., and Kirby, M.W., "Entrepreneurial Efficiency in the British Coal Industry," Economic History Review, Vol. XXV (1972), pp. 655-673.
- Cameron, James M., Industrial History of the New Glasgow District (New Glasgow, 1960).
- Cameron, James M., The Pictonian Colliers (Halifax, 1974).
- Campbell, Alan B., The Lanarkshire Miners: a Social History of their Trade Unions 1775-1874 (Edinburgh, 1980).
- Campbell, Bertha, "Early History of St. Andrew's Wesley United Church of Canada, Springhill, Nova Scotia Historical Quarterly, Vol. VI, No. 2 (June, 1976), pp. 173-192.
- Campbell, Bertha, "Early history of Presbyterians of Springhill, Nova Scotia," Nova Scotia Historical Quarterly, Vol. VII, No. 1 (March, 1977), pp. 1-30.
- Campbell, Bertha, Reading, Writing and Reminiscing: Springhill Schools in Retrospect (Oxford, N.S., 1978).
- Careless, J.M.S., The Union of the Canadas: The Growth of Canadian Institutions 1841-1857 (Toronto, 1972 [1967]).
- Garney, John, Lewis, James and Hudson, Ray, "Coal Combines and Interregional Uneven Development in the U.K.," in D.B. Massey and P.W.J. Batey, eds., Alternative Frameworks of Analysis (London, 1977).
- Cartlidge, Oscar, Fifty Years of Coal Mining (Charleston, W. Va., 1937).
- Challinor, Raymond, Alexander MacDonal and the Miners (London, 1967).
- Chandler, Alfred D., The Visible Hand: The Managerial Revolution in American Business (Cambridge, Mass. and London, 1978 [1977]).
- Chappell, Myrtle, The Chignecto, St. George and Fenwick Mines (n.p., 1977).
- Clark, Andrew H., "Titus Smith, Junior, and the Geography of Nova Scotia in 1801 and 1802," Annals of the Association of American Geographers, Vol. XLIV, No. 4 (December, 1954), pp. 291-314.
- Clark, Andrew H., Acadia: The Geography of Early Nova Scotia to 1760 (Madison, Milwaukee and London, 1968).
- Clark, Andrew H., "Contribution of Its Southern Neighbours to the Underdevelopment of the Maritime Provinces Area, 1710-1867," in R.A. Preston, ed., The Influence of the United States on Canadian Development (Durham, N.C., 1972), pp. 164-184.
- Clark, S.D., ed., Problems of Development in Atlantic Canada (Ottawa, Royal Society of Canada, n.d. [1975]).
- Clement, Wallace, Hardrock Mining: Industrial Relations and Technological Changes at INCO (Toronto, 1981).

- Coates, Ken, ed., Democracy in the Mines (Nottingham, 1974).
- Collard, E.A., "Lyell and Dawson: A Centenary," Dalhousie Review, Vol. XXII (1942-1943), pp.133-144.
- Colletti, Lucio, From Rousseau to Lenin: Studies in Ideology and Society (London, 1972).
- Colls, Robert, "'Oh Happy English Children!': Coal, Class and Education in the North-East," Past and Present, No. 73 (November, 1976), pp.75-99.
- Colls, Robert, The Collier's Rant: Song and Culture in the Industrial Village (London, 1977).
- Copeland, M.J., Coalfields West Half Cumberland County Nova Scotia (Ottawa, Geological Survey of Canada, Memoir No. 298, 1958).
- Court, W.H.B., Scarcity and Choice in History (London, 1970).
- Craven, Paul, 'An Impartial Umpire': Industrial Relations and the Canadian State 1900-1911 (Toronto, Buffalo and London, 1980).
- Creighton, Donald, John A. Macdonald, Vol. I: The Young Politician Vol. II: The Old Chieftain (Toronto, 1968 [1952, 1955]).
- Creighton, Donald, The Road to Confederation: The Emergence of Canada, 1863-1867 (Toronto, 1976 [1964]).
- Cross, Michael S., ed., The Frontier Thesis and the Canadas: The Debate on the Impact of the Canadian Environment (Toronto, 1970).
- Cross, Michael S., ed., The Workingman in the Nineteenth Century (Toronto, 1974).
- Curtis, C.H., The Development and Enforcement of the Collective Agreement (Kingston, 1966).
- Daigle, Jean, ed., The Acadians of the Maritimes: Thematic Studies (Moncton, 1982).
- Dales, J.H., The Protective Tariff in Canada's Development (Toronto, 1966).
- Daunton, M.J., Coal Metropolis: Cardiff 1870-1914 (Leicester, 1977).
- Dawley, Alan, Class and Community: The Industrial Revolution in Lynn (Cambridge, Mass., 1976).
- Dennis, Norman, Henriques, Fernando, and Slaughter, Clifford, Coal is Our Life: An analysis of a Yorkshire mining community (London, 1974 [1956]).
- Dix, Keith, Work Relations in the Coal Industry: The Hand-Loading Era, 1880-1930 (Morgantown, W.Va., 1977).
- Dobb, Maurice, Studies in the Development of Capitalism (New York, 1973 [1947]).
- Donald, W.J.A., The Canadian Iron and Steel Industry (Boston, 1915).
- Dubofsky, Melvyn, and Van Tine, Warren, John L. Lewis: A Biography (New York, 1977).
- Easterbrook, W.T., and Aitken, Hugh, Canadian Economic History (Toronto, 1975 [1956]).
- Easterbrook, W.T., and Watkins, M.H., eds., Approaches to Canadian Economic History (Toronto, 1967).
- Eavenson, Howard N., The First Century and a Quarter of the American Coal Industry (Pittsburgh, 1942).
- Edwards, Richard, Contested Terrain: The Transformation of the Workplace in the Twentieth Century (New York, 1978).
- Erikson, Kai T., Everything in Its Path: Destruction of Community in the Buffalo Creek Flood (New York, 1976).

- Evans, Chris, History of the United Mine Workers of America (Indianapolis, 3 vols., 1918).
- Evans, G.N.D., Uncommon Obdurate: The Several Public Careers of J.F.W. DesBarres (Salem, Mass. and Toronto, 1969).
- Fay, Albert H., Coal-Mine Fatalities in the United States, 1870-1914, with Statistics of Coal Production, Labor, and Mining Methods, By States and Calendar Years (Washington, D.C., Department of the Interior, Bureau of Mines, Bulletin No. 115, 1916).
- Fay, Albert H., A Glossary of the Mining and Mineral Industry (Washington, D.C., Department of the Interior, Bureau of Mines, Bulletin 95, 1947 [1920]).
- Febvre, Lucien, A Geographical Introduction to History (London, 1932).
- Febvre, Lucien, A New Kind of History (London, ed. by Peter Burke, 1973).
- Fergusson, C. Bruce, ed., A Directory of the Members of the Legislative Assembly of Nova Scotia 1758-1958 (Halifax, 1958).
- Fergusson, C. Bruce, "The Nova Scotian Institute of Science," Proceedings of the Nova Scotian Institute of Science, Vol. XXV, Part 4 (1962), pp. 215-251.
- Fergusson, C. Bruce, The Labour Movement in Nova Scotia Before Confederation (Halifax, 1964).
- Fergusson, C. Bruce, Hon. W.S. Fielding, Vol. I: The Mantle of Howe, Vol. II: Mr. Minister of Finance (Windsor, N.S., 1970).
- Fergusson, C. Bruce; ed., "The Old King is Back": Amos "King" Seaman and His Diary (Halifax, Public Archives of Nova Scotia, Bulletin No. 23, 1972).
- Fernow, B.E., Forest Conditions of Nova Scotia (Ottawa, Commission of Conservation, 1912).
- Fingard, Judith, Jack in Port: Sailortowns of Eastern Canada (Toronto, Buffalo and London, 1982).
- Floud, Roderick, An Introduction to Quantitative Methods for Historians (Princeton, 1973).
- Forbes, E.R., "In Search of a Post-Confederation Maritime Historiography," Acadiensis, Vol. VIII, No. 1 (Autumn 1978), pp. 3-21.
- Forbes, E.R., The Maritime Rights Movement, 1919-1927: A Study in Canadian Regionalism (Montreal, 1979).
- Forbes, E.R., "Misguided Symmetry: The Destruction of Regional Transportation Policy for the Maritimes," in David J. Bercuson, ed., Canada and the Burden of Unity (Toronto, 1977), pp. 60-86.
- Forsey, Eugene, Economic and Social Aspects of the Nova Scotia Coal Industry (Montreal, 1926).
- Forsey, Eugene, Trade Unions in Canada, 1812-1902 (Toronto, Buffalo and London, 1982).
- Foster, John, Class Struggle and the Industrial Revolution: Early Industrial Capitalism in Three English Towns (London, 1975).
- Frank, David, "The Cape Breton Coal Industry and the Rise and Fall of the British Empire Steel Corporation," Acadiensis, Vol. VII, No. 1 (Autumn 1977), pp. 3-34.
- Frank, David, "Class Conflict in the Coal Industry: Cape Breton, 1922," in G.S. Kealey and Peter Warrian, eds., Essays in Canadian Working Class History (Toronto, 1976), pp. 161-184.

- Frank, David, "Company Town/Labour Town: Local Government in the Cape Breton Coal Towns, 1917-1926," Histoire sociale/ Social History Vol. XIV, No. 27 (May 1981), pp. 177-196.
- Frank, David, "Richard Smith," Dictionary of Canadian Biography, Vol. IX (Toronto, 1976), pp. 730-731.
- Frank, David, and MacGillivray, Don, "Introduction," to Dawn Fraser, Echoes from Labor's War: Industrial Cape Breton in the 1920's (Toronto, 1976), pp. 3-21.
- Frank, David, and Reilly, Nolan, "The Emergence of the Socialist Movement in the Maritimes, 1899-1916," Labour/Le Travailleur, Vol. IV (1979), pp. 85-113.
- Frost, James, "The 'Nationalization' of the Bank of Nova Scotia, 1880-1910," Acadiensis, Vol. XII, No. 1 (Autumn 1982), pp. 3-38.
- Gaventa, John, Power and Powerlessness: Quiescence and Rebellion in an Appalachian Valley (Urbana, Chicago and London, 1980).
- George, Roy E., A Leader and a Laggard: Manufacturing Industry in Nova Scotia, Quebec and Ontario (Toronto, 1970).
- Gibson, Thomas W., The Mining Laws of Ontario and the Department of Mines (Toronto, 1933).
- Glazebrook, G.P. de T., A History of Transportation in Canada, Vol. II: National Economy, 1867-1936 (Toronto, 1970 [1938]).
- Goff, T.W., ed., Resource Material for Social Analysis of the Chignecto Region: A Preliminary Bibliography (Sackville, N.B.; Chignecto Research Group of Mount Allison University, Internal Note No. 7, 1978).
- Goodrich, Carter, The Frontier of Control: A Study in British Workshop Politics (London, 1975 [1920]).
- Goodrich, Carter, The Miner's Freedom: A Study of the Working Life in a Changing Industry (Boston, 1925).
- Gorham, Eville, "Titus Smith: A Pioneer of Plant Ecology in North America," Ecology, Vol. XXXVI, No. 1 (January, 1955), pp. 116-123.
- Graebner, William, "Great Expectations: The Search for Order in Bituminous Coal, 1890-1917," Business History Review, No. 48 (Spring 1974), pp. 49-72.
- Graebner, William, Coal-Mining Safety in the Progressive Period (Lexington, Ky., 1976).
- Gramsci, Antonio, Selections from the Prison Notebooks (New York, 1971).
- Gray, F.W., "Coal Seams and Local History," Dalhousie Review, Vol. XXII (1942-1943), pp. 93-102.
- Gray, F.W., "Fifty Years of the Dominion Coal Company," Dalhousie Review, Vol. XXII (1942-1943), pp. 460-469.
- Gray, F.W., "Pioneer Geologists of Nova Scotia," Dalhousie Review, Vol. XXVI, No. 1 (April, 1946), pp. 10-25.
- Green, Archie, Only a Miner: Studies in Recorded Coal-Mining Songs (Urbana, Chicago and London, 1972).
- Goodman, Paul S., Assessing Organizational Change: The Rushton Quality of Work Experiment (New York, 1979).
- Gutman, H.G., Work, Culture and Society in Industrializing America (New York, 1977).
- Haines, Michael R., Fertility and Occupation: Coal Mining Populations in the Nineteenth and Early Twentieth Centuries in Europe and America (Ithaca, Western Societies Program Occasional Paper No. 3, 1975).

- Hair, P.E.H., "Mortality from Violence in British Coal Mines," Economic History Review, Vol. XXIII, No. 3 (1968), pp. 545-561.
- Hamilton, W.B., "P.S. Hamilton--The Forgotten Confederate," Collections of the Nova Scotia Historical Society, Vol. XXXVI (1968), pp. 66-94.
- Hamilton, W.B., Local History in Atlantic Canada (Toronto, 1974).
- Hamilton, Walton H., and Wright, Helen R., The Case of Bituminous Coal (New York, 1925).
- Hann, Russell, et al., Primary Sources in Canadian Working Class History, 1860-1930 (Kitchener, 1973).
- Hannay, James, History of New Brunswick (Saint John, 1909).
- Harrington, Bernard J., The Life of Sir William E. Logan (Montreal, 1883).
- Harris, J.R., "Skills, Coal and British Industry in the Eighteenth Century," History, No. 61 (1976), pp. 167-182.
- Harris, Jane E., "Table Glass excavated at Beaubassin, Nova Scotia," Canadian Historic Sites, Occasional Papers in Archaeology and History, No. 13 (Ottawa, 1975).
- Harris, R. Cole and Warkentin, John, Canada Before Confederation: A Study in Historical Geography (New York, 1974).
- Harrison, Royden, ed., Independent Collier: The Coal Miner as Archetypal Proletarian Reconsidered (New York, n.d.).
- Harte, N.B., ed., The Study of Economic History: Collected Inaugural Lectures, 1893-1970 (London, 1971).
- Harvey, Katherine A., The Best-Dressed Miners: Life and Labor in the Maryland Coal Region, 1835-1910 (Ithaca and London, 1969).
- Heffernan, Jean D., "Recollections of a Nova Scotia Town," Bluenose Magazine, Vol. III, No. 1 (Summer 1978), pp. 1-12.
- Heffernan, Jean D., St. John's Church 75th Anniversary, Springhill, Nova Scotia (n.p. [Springhill], n.d. [1980]).
- Heron, Craig and Palmer, Bryan D., "Through the Prism of the Strike: Industrial Conflict in Southern Ontario, 1901-14," Canadian Historical Review, Vol. LVIII, No. 4 (December 1977), pp. 423-458.
- Hilton, Rodney, ed., The Transition from Feudalism to Capitalism (London, 1976).
- Hinton, James, The First Shop Stewards' Movement (London, 1973).
- A History of Coal Mining in Nova Scotia (Halifax, Nova Scotia Department of Mines, Information Series No. 2, 1978).
- Hobsbawm, E.J., Labouring Men: Studies in the History of Labour (London, 1974 [1964]).
- Hotchkiss, Willard E., et al., Mechanization, Employment, and Output Per Man in Bituminous Coal Mining, 2 Vols. (Philadelphia, U.S. Works Project Administration, National Research Project, in Co-operation with the Department of the Interior, Bureau of Mines, Report No. E-9, 1939).
- Howell, Colin D., "Reform and the Monopolistic Impulse: The Professionalization of Medicine in the Maritimes," Acadiensis, Vol. XI, No. 1 (Autumn 1981), pp. 3-22.
- Hoxie, Robert, Trade Unionism in the United States (New York, 1917).
- Innis, H.A., ed., Select Documents in Canadian Economic History, 1497-1783 (Toronto, 1929).
- Innis, H.A., Problems of Staple Production in Canada (Toronto, 1933).
- Innis, H.A., "Editor's Foreward" in E.S. Moore, American Influence in Canadian Mining (Toronto, 1941).

- Innis, H.A., Essays in Transportation (Toronto, 1941).
- Innis, H.A., "The Canadian Mining Industry," in H.A. Innis, Essays in Canadian Economic History (Toronto, 1969 [1956]).
- [International Labour Organization], The Protection of Young Workers Employed Underground in Coal Mines (Geneva, International Labour Office, Coal Mines Committee, 1948).
- [International Labour Organization], Productivity in Coal Mines (Geneva, International Labour Office, Coal Mines Committee, Fourth Session, Geneva, May 1951).
- Jamieson, Stuart, Times of Trouble: Labour Unrest and Industrial Conflict in Canada, 1900-1966 (Ottawa, 1968).
- Jevons, W. Stanley, The Coal Question: An Inquiry Concerning the Progress of the Nation, and the Probable Exhaustion of our Coal-Mines (London, 3rd edition, 1906).
- Jevons, H. Stanley, The British Coal Trade (Newton Abbot, 1969 [1915]).
- Johnson, Leo A., History of the County of Ontario, 1615-1875 (Whitby, 1973).
- Johnson, James P., The Politics of Soft Coal: The Bituminous Industry from World War I Through the New Deal (Urbana, Chicago and London, 1979).
- Jones, J. Harry, Cartwright, G., and Guénault, P.H., The Coal-Mining Industry: An International Study in Planning (London, 1939).
- Jordanova, L.J., and Porter, Roy S., eds., Images of the Earth: Essays in the History of the Environmental Sciences (Chalfont St. Giles, 1979).
- Joyce, Patrick, Work, Society and Politics. The culture of the factory in later Victorian England (Brighton, 1980).
- Katz, Michael, The People of Hamilton, Canada West: Family and Class in a Mid-Nineteenth-Century City (Cambridge, Mass. and London, 1975).
- Kealey, Gregory S., and Warrian, Peter, eds., Essays in Canadian Working-Class History (Toronto, 1976).
- Kealey, Gregory S., Toronto Workers Respond to Industrial Capitalism, 1867-1892 (Toronto and Buffalo, 1980).
- Kealey, Gregory S., and Palmer, Bryan D., Dreaming of what might be: The Knights of Labor in Ontario, 1880-1900 (Cambridge, 1982).
- Kernaghan, Lois D., "A Man and His Mistress: J.F.W. DesBarres and Mary Cannon," Acadiensis, Vol. XI, No. 1 (Autumn 1981), pp. 23-42.
- Kerr, Clark, and Siegel, Abraham, "The Interindustry Propensity to Strike--An International Comparison," in Arthur Kornhauser, Robert Dubin and Arthur M. Ross, eds., Industrial Conflict (New York, Toronto and London, 1954), pp. 189-211.
- Kinby, M.W., The British Coalmining Industry, 1870-1946 (Hamden, Conn., 1977).
- van Kleeck, Mary, Miners and Management: A Study of the Collective Agreement between the United Mine Workers of America and the Rocky Mountain Fuel Company, and an Analysis of the Problem of Coal in the United States (New York, 1934).
- Knapp, Charles E., "Folk-lore About Old Beau-sé-jour," Acadiensis, Vol. VIII (1908), pp. 203-216, 288-304.
- Knight, Rolf, Work Camps and Company Towns in Canada and the U.S.: An Annotated Bibliography (Vancouver, 1975).
- Laslett, John, Labor and the Left (New York, 1970).

- Laslett, John, "The Independent Collier: Some Recent Studies of Nineteenth Century Coalmining Communities in Britain and the United States," International Labor and Working Class History, No.21 (Spring 1982), pp.18-27.
- Le Goff, J., "Les mentalités: Une histoire ambiguë," in J. Le Goff and P. Nora, eds., Faire de l'histoire (Paris, 1974), Vol. III, pp.76-94.
- Lerner, Leonard, Miracle at Springhill (New York, 1960).
- Levere, Trevor H., and Jarrell, Richard A., eds., A Curious Field-book: Science and Society in Canadian History (Toronto, 1974).
- Eipton, Charles, The Trade Union Movement of Canada (Toronto, 1973).
- Logan, H.A., History of Trade Union Organization in Canada (Chicago, 1928).
- Logan, H.A., Trade Unions in Canada: Their Development and Functioning (Toronto, 1948).
- Longley, J.W., Sir Charles Tupper (Toronto, 1916).
- Lubin, Isador, Miners' Wages and the Cost of Coal: An Inquiry into the Wages System in the Bituminous Coal Industry and Its Effects on Coal Costs and Coal Consumption (New York, 1924).
- Lucas, Rex A., Men in Crisis: A Study of a Mine Disaster (New York, 1969).
- Lucas, Rex A., Minetown, Milltown, Railtown: Life in Canadian Communities of Single Industry (Toronto, 1971).
- Luntz, H.R., People of Coaltown (New York, 1958).
- McCann, L.D., "Staples and the New Industrialism in the Growth of Post-Confederation Halifax," Acadiensis, Vol. VIII, No.2 (Spring 1979), pp.47-79.
- McCann, L.D., "The Mercantile-Industrial Transition in the Metal Towns of Pictou County, 1857-1931," Acadiensis, Vol. X, No.2 (Spring 1981), pp.29-64.
- McCormack, A. Ross, Reformers, Rebels and Revolutionaries: The Western Canadian Radical Movement 1899-1919 (Toronto and Buffalo, 1977).
- McCormack, B.J., Industrial Relations in the Coal Industry (London, 1978).
- McDiarmid, O.J., Commercial Policy in the Canadian Economy (Cambridge, 1946).
- MacDonagh, O.O.G.M., "Coal Mines Regulation: The First Decade, 1842-1852." in Robert Robson, ed., Ideas and Institutions of Victorian Britain: Essays in Honour of George Kitson Clark (London, 1967).
- MacDonald, L.R., "Merchants Against Industry: An Idea and Its Origins," Canadian Historical Review, Vol. LVI (September 1975), pp.263-281.
- MacEwan, Paul, Miners and Steelworkers: Labor in Cape Breton (Toronto, 1976).
- Macgillivray, Donald, "Cape Breton in the 1920s: A Community Besieged," in B.D. Tennyson, ed., Essays in Cape Breton History (Windsor, N.S., 1973), pp.49-67.
- Macgillivray, Donald, "Military Aid to the Civil Power: the Cape Breton Experience in the 1920s," Acadiensis, Vol. III, No.2 (Spring 1974), pp.45-64.
- Macgillivray, Donald, "Henry Melville Whitney Comes to Cape Breton: The Saga of a Gilded Age Entrepreneur," Acadiensis, Vol. IX, No.1 (Autumn 1979), pp.44-70.

- Macgillivray, Donald and Tennyson, Brian, eds., Cape Breton Historical Essays (Sydney, 1980).
- McIntyre, Ronald H., The Collier's Tattletale (Antigonish, 1980).
- McKay, C.R., "Investors, Government and the CMTR: A Study of Entrepreneurial Failure," Acadiensis, Vol. IX, No. 1 (Autumn 1979) pp. 71-94.
- MacKenzie, A.A., "Amos Seaman," Dictionary of Canadian Biography, Vol. IX (Toronto, 1976), pp. 709-710.
- McKillop, A.B., A Disciplined Intelligence: Critical Inquiry and Canadian Thought in the Victorian Era (Montreal, 1979).
- MacKinnon, Clarence, Reminiscences (Toronto, 1938).
- Mackintosh, W.A., The Economic Background of Dominion-Provincial Relations (Toronto, 1964 [1939]).
- McLennan, Gregor, Marxism and the Methodologies of History (London, 1981).
- MacLennan, Hugh, Each Man's Son (Toronto, 1951).
- McNally, David, "Staple Theory as Commodity Fetishism: Marx, Innis and Canadian Political Economy," Studies in Political Economy, No. 6 (Autumn 1981), pp. 65-92.
- MacNutt, W.S., New Brunswick: A History: 1784-1867 (Toronto, 1969).
- MacNutt, W.S., The Atlantic Provinces: The Emergence of Colonial Society, 1712-1857 (Toronto, 1965).
- Macpherson, Alan G., ed., The Atlantic Province (Toronto and Buffalo, 1972).
- Macpherson, C.B., ed., Property: Mainstream and Critical Positions (Toronto, 1978).
- Marr, William L. and Paterson, Donald G., Canada: An Economic History (Toronto, 1980).
- Martell, J.S., "Early Coal Mining in Nova Scotia," Dalhousie Review, Vol. XXV (1945-1946), pp. 156-171.
- Marx, Karl, Capital: A Critique of Political Economy (New York, n.d. [1906]).
- Masters, Donald C., The Reciprocity Treaty of 1854 (Toronto, 1963 [1937]).
- Mathewson, S.B., Restriction of Output Among Unorganized Workers (New York, 1969 [1931]).
- Melling, Joseph, "'Non-Commissioned Officers': British employers and their supervisory workers, 1880-1920," Social History, Vol. V, No. 2 (May 1980), pp. 183-221.
- Miller, Carman, "Review" of C. Bruce Fergusson, W.S. Fielding, I: The Mantle of Howe. II: Mr. Minister of Finance, Acadiensis, Vol. I, No. 2 (Spring 1972), pp. 91-98.
- Miller, Carman, "The Restoration of Greater Nova Scotia," in D.J. Bercuson, ed., Canada and the Burden of Unity (Toronto, 1977), pp. 44-59.
- Milner, W.C., "Records of Chignecto," Collections of the Nova Scotia Historical Society, Vol. XV. (1907), pp. 1-86.
- Montero, Gloria, We Stood Together: First-hand Accounts of Dramatic Events in Canada's Labour Past (Toronto, 1979).
- Montgomery, David, Workers' Control in America: Studies in the history of work, technology, and labor struggles (Cambridge, 1979).
- Moore, Elwood S., Coal: Its Properties, Analysis, Classification, Geology, Extraction, Uses and Distribution (New York, 1922).

- More, Charles, Skill and the English Working Class, 1870-1914 (London, 1980).
- Moore, E.S., American Influence in Canadian Mining (Toronto, 1941).
- Moore, Robert, Pit-Men, Preachers and Politics: The effects of Methodism in a Durham Mining Community (Cambridge, 1974).
- Morley, William F.E., Canadian Local Histories to 1950, a Bibliography, Vol. I: The Atlantic Provinces (Toronto, 1967).
- Morris, Homer E., The Plight of the Bituminous Coal Miner (Philadelphia, 1934).
- Morris, J.O., "The Acquisitive Spirit of John Mitchell, U.M.W. President (1899-1908)," Labor History, Vol. XX (1979), pp. 5-43.
- Morris, R.J., "Whatever Happened to the British Working Class, 1750-1850?" Bulletin of the Society for the Study of Labour History, No. 41 (Autumn, 1980), pp. 13-16.
- Morton, Desmond, and Copp, Terry, Working People: An Illustrated History of Canadian Labour (Ottawa, 1980).
- Morton, W.L., The Critical Years: The Union of British North America, 1857-1873 (Toronto, 1964).
- Morton, W.L., Henry Youle Hind 1823-1908 (Toronto and Buffalo, 1980).
- Muise, Del, "The Making of an Industrial Community: Cape Breton Coal Towns, 1867-1900," in Donald Macgillivray and Brian Tennyson, eds., Cape Breton Historical Essays (Sydney, 1980), pp. 76-94.
- Muise, Del, "The Federal Election of 1867 in Nova Scotia: An Economic Interpretation," Collections of the Nova Scotia Historical Society, Vol. XXXVI (1967), pp. 327-351.
- Muise, Del, A Reader's Guide to Canadian History, Vol. I: Beginnings to Confederation (Toronto, Buffalo and London, 1982).
- Naylor, Tom, The History of Canadian Business 1867-1914, Vol. I: The Banks and Finance Capital, Vol. II: Industrial Development (Toronto, 1975).
- Nef, J.U., The Rise of the British Coal Industry, 2 Vols. (London, 1966 [1932]).
- Nef, J.U., The Conquest of the Material World (Chicago and London, 1964).
- Neill, R.F., "National Policy and Regional Underdevelopment," Journal of Canadian Studies, Vol. IX (May 1974), pp. 12-20.
- Nelles, H.V., "Introduction," to T.C. Keefer, Philosophy of Railroads and Other Essays (Toronto, 1972).
- Nelles, H.V., The Politics of Development: Forests, Mines and Hydro-Electric Power in Ontario, 1849-1941 (Toronto, 1974).
- Nicolls, J.H.W., Analyses of Canadian Coals and Peat Fuels, With Appendix Containing Supplementary Coal Ash Chemical Analyses (Ottawa, Department of Mines and Technical Services, Mines Branch, No. 831, 1952).
- Nowland, J.L., and MacDougall, J.I., Soils of Cumberland County Nova Scotia (Ottawa, Department of Agriculture and the Nova Scotia Department of Agriculture and Marketing, Nova Scotia Soil Survey, Report No. 17, 1973).
- O'Brien, Charles, Sir William Logan (Philadelphia, 1971).
- Odell, C.M., "Men and Methods of the Early Days of Mining in Cape Breton," Transactions of the Canadian Mining Institute, Vol. XXV (1927), pp. 503-529.

- den Otter, A.A., "Alexander Galt, the 1859 Tariff, and Canadian Economic Nationalism," Canadian Historical Review, Vol. LXIII, No. 2 (June 1982), pp. 151-178.
- Falmer, Bryan D., A Culture in Conflict: Skilled Workers and Industrial Capitalism in Hamilton, Ontario, 1860-1940 (Montreal, 1979).
- Panitch, Leo, ed., The Canadian State: Political Economy and Political Power (Toronto, 1977).
- Panting, Gerry, "Personnel and Investment in Canadian Shipping, 1820-1889," in Rosemary Ommex and Gerald Panting, eds., Working Men Who Got Wet (St. John's, 1980), pp. 337-360.
- Pariseau, J.J.B., Disorders, Strikes and Disasters: Military Aid to the Civil Power in Canada, 1867-1933 (Ottawa, 1973).
- Parker, John P., Sails of the Maritimes (Toronto and Montreal, 1960).
- Pentland, H. Clare, Labour and Capital in Canada 1650-1860 (Toronto, 1981).
- Porritt, Edward, The Revolt in Canada Against the New Feudalism: Tariff History from the Revision of 1907 to the Uprising of the West in 1910 (London, 1911).
- Price, Richard, "The labour process and labour history," Social History, Vol. VIII, No. 1 (January 1983), pp. 57-75.
- Pryke, Kenneth, "Labour and Politics: Nova Scotia at Confederation," Social History/ Histoire sociale, No. 6 (November 1970), pp. 33-55.
- Pryke, Kenneth, Nova Scotia and Confederation (Toronto, Buffalo and London, 1979).
- Raistrick, A., and Marshall, C.E., The Nature and Origin of Coal and Coal Seams (London, n.d.).
- Ramirez, Bruno, When Workers Fight: The Politics of Industrial Relations in the Progressive Era, 1898-1916 (Westport, Conn., 1976).
- Rawlyk, George, ed., Historical Essays on the Atlantic Provinces (Toronto, 1967).
- Rawlyk, George, Nova Scotia's Massachusetts: A Study of Massachusetts-Nova Scotia Relations, 1630 to 1784 (Montreal and London, 1973).
- Reilly, Nolan, "The General Strike in Amherst, Nova Scotia, 1919," Acadiensis, Vol. IX, No. 2 (Spring 1980), pp. 56-77.
- Rice, George S., Occurrence of Bumps in the Springhill No. 2 Mine of the Dominion Coal Company, Limited (Halifax, Department of Public Works and Mines, 1925; Supplement, 1932).
- Rickard, T.A., A History of American Mining (New York, 1932).
- Robin, Martin, Radical Politics and Canadian Labour, 1880-1930 (Kingston, 1968).
- Roland, Albert E., Geological Background and Physiography of Nova Scotia (Halifax, 1982).
- Rowe, J.W.F., Wages in the Coal Industry (London, 1929).
- Russell, Loris, "Abraham Gesner," Dictionary of Canadian Biography, Vol. IX (Toronto, 1976), pp. 308-312.
- Russell, Ralph, "The Story of Borehole 117: Prospecting for Coal on the Chignecto Peninsula, 1890-1904," The Occasional, Vol. VI, No. 2 (Fall, 1980), pp. 14-17.
- Sacouman, R.J., "Semi-proletarianism and Rural Underdevelopment in the Maritimes," Canadian Review of Sociology and Anthropology, Vol. XVII, No. 3 (1980), pp. 233-245.

- Samuel, Raphael, ed., Miners, Quarrymen and Saltworkers (London, 1977).
- Samuel, Raphael, "The Workshop of the World: Steam Power and Hand Technology in mid-Victorian Britain," History Workshop Journal, No.3 (Spring 1977), pp.6-72.
- Saunders, E.M., Three Premiers of Nova Scotia (Toronto, 1909).
- Saunders, S.A., "The Maritime Provinces and The Reciprocity Treaty," in G.A.Rawlyk, ed., Historical Essays on the Atlantic Provinces (Toronto, 1967), pp.161-178.
- Saunders, S.A., Studies in the Economy of the Maritime Provinces (Toronto, 1939).
- Saunders, S.A., Historical Summary of the Economic History of the Maritime Provinces (Ottawa, Royal Commission on Dominion-Provincial Relations, 1939).
- Scott, Bertha Isabel, Springhill: A Hilltop in Cumberland (Springhill, 1926).
- Schmidt, Ray, "Canadian Political Economy: A Critique," Studies in Political Economy, No.6 (Autumn 1981), pp.65-92.
- Scott, H.Percy, The New Slavery (Toronto, 1914).
- Sealey, Nanciellen, A Report on Preliminary Ethnographic Research in the Chignecto Isthmus Region (Sackville, N.B., Chignecto Research Group of Mount Allison University, Internal Note No. 11, 1979).
- Selekman, Ben M., and van Kleeck, Mary, Employes' Representation in Coal Mines: A Study of the Industrial Representation Plan of the Colorado Fuel and Iron Company (New York, 1924).
- Shannon, Josephine, "Two Forgotten Patriots," Dalhousie Review, Vol.XIV, No.1 (April 1934), pp.85-98.
- Shorter, Edward, and Tilly, Charles, Strikes in France, 1830-1968 (Cambridge, 1974).
- Simion, Louis, La Vie souterraine. La Mine et les mineurs (Seysssel, 1982 [Paris, 1867]).
- Sinclair, B., Ball, N.R., and Petersen, J.O., eds., Let Us Be Honest and Modest: Technology and Society in Canadian History (Toronto, 1974).
- Sinclair, John, Coal-Mining Economics: Organization and Management (London, 1957).
- Smart, R.C., The Economics of the Coal Industry (London, 1930).
- Smith, Raymond, Sea-Coal for London: History of the Coal Factors in the London Market (London, 1961).
- Somers, Gerald G., ed., Essays in Industrial Relations Theory (Ames, Iowa, 1969).
- Stearns, Peter N., Lives of Labour: Work in a Maturing Industrial Society (London, 1975).
- Stedman Jones, Gareth, Outcast London: A Study in the Relationship between Classes in Victorian Society (Oxford, 1971).
- Stevens, G.R., Canadian National Railways, Vol.I: Sixty Years of Trial and Error, 1836-1896 (Toronto and Vancouver, 1960).
- Stoianovich, Traian, French Historical Method: The Annales Paradigm (Ithaca and London, 1976).
- Suffern, A.E., The Coal Miners' Struggle for Industrial Status (New York, 1926).
- Taylor, Arthur J., "Labour Productivity and Technological Innovation in the British Coal Industry, 1850-1910," Economic History Review, Vol.XIV, No.1 (1961), pp.48-67.

- Taylor, A.J., "The Fossil Fuels," in Trevor I. Williams, ed., A History of Technology, Vol. VI (Oxford, 1978), pp.177-194.
- Teepie, Gary, ed., Capitalism and the National Question in Canada (Toronto, 1972).
- Tennyson, Brian D., "Economic Nationalism and Confederation: A Case Study in Cape Breton," Acadiensis, Vol. II, No. 1 (Autumn 1972), pp.39-53.
- Thompson, E.P., "The Moral Economy of the English Crowd in the Eighteenth Century," Past and Present, 50 (Spring 1971), pp.76-136.
- Thompson, E.P., "Eighteenth-Century English Society: Class Struggle Without Class?", Social History, No.3 (May 1978), pp.133-165.
- Thompson, James H., Significant Trends in the West Virginia Coal Industry, 1900-1957 (Morgantown, W.Va., n.d. [1958]).
- Trempé, Roland, Les mineurs de Carmaux, 1848-1914, 2 Vols. (Paris, 1971).
- Trist, E.L., Higgin, G.W., Murray, H., and Pollock, A.B., Organizational Choice: Capabilities of Groups at the Coal Face Under Changing Technologies. The Loss, Re-Discovery and Transformation of a Work Tradition (London, 1963).
- Trueman, Howard, The Chignecto Isthmus and Its First Settlers (Belleville, 1975 [Toronto, 1902]).
- Tucker, Gilbert N., The Canadian Commercial Revolution, 1845-1851 (Toronto, 1970 [1964]).
- Waite, P.B., The Life and Times of Confederation, 1864-1867: Politics, Newspapers, and the Union of British North America (Toronto and Buffalo, 1971 [1962]).
- Waite, P.B., Canada 1874-1896: Arduous Destiny (Toronto, 1971).
- Ward, B., Opencast Coal Reserves at Springhill (Halifax, Nova Scotia Department of Mines, Paper 79-2, 1979).
- Watkins, Harold M., Coal and Men: An Economic and Social Study of the British & American Coalfields (London, 1934).
- Webb, Sidney and Webb, Beatrice, Industrial Democracy (London, 1902).
- Weber, Max, "Bureaucracy," in H.H. Gerth and C. Wright Mills, eds., From Max Weber: Essays in Sociology (New York, 1958), pp.198-244.
- Wleck, Edward A., The American Miners' Association: A Record of the Origin of Coal Miners' Unions in the United States (New York, 1940).
- Wightman, F. Carman, The Development of Freemasonry in the County of Cumberland Nova Scotia 1822-1967 (Amherst, 1967).
- Wilbur, J.R.H., "The Stormy History of the Maritime Bank 1872-1886," Collections of the New Brunswick Historical Society, Vol. XIX (1966), pp.69-76.
- Wilkins, Mira, The Maturing of Multinational Enterprise: American Business Abroad from 1914 to 1970 (Cambridge, 1974).
- Williams, J.E., The Derbyshire Miners: a Study in Industrial and Social History (London, 1962).
- Williams, Raymond, Politics and Letters: Interviews with New Left Review (London, 1979).
- Williamson, Iain, Coal Mining Geology (London, 1967).

- Wilson, Alan, "Fleming and Tupper: The Fall of the Siamese Twins," in John S. Moir, ed., Character and Circumstance: Essays in Honour of Donald Grant Creighton (Toronto, 1970), pp. 99-127.
- Wilson, Alan, "Maritime Business History: A Reconnaissance of Records, Sources, and Prospects," in Glenn Porter and Robert Cuff, eds., Enterprise and National Development: Essays in Canadian Business and Economic History (Toronto, 1973), pp. 122-138.
- Winslow-Spragge, Lois, Life and Letters of George Mercer Dawson, 1849-1901 (Montreal, 1962).
- Wright, Esther Clark, "Cumberland Township: A Focal Point of Settlement on the Bay of Fundy," Canadian Historical Review, Vol. XXVII, (1946), pp. 27-32.
- Wynn, Graeme, "Late Eighteenth-Century Agriculture on the Bay of Fundy Marshlands," Acadiensis, Vol. VIII, No. 2 (Spring 1979), pp. 80-89.
- Young, James D., The Rousing of the Scottish Working Class (Montreal and London, 1979).
- Zaslow, Morris, Reading the Rocks: The Story of the Geological Survey of Canada (Ottawa, 1975).