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## AGRICULTURE IN THE MARITIME PROVINCES

THE POSITION OF AGRICULTURE in the economy of the Maritime Provinces merits study. Since World War II, shifts in markets for agricultural exports have focussed attention on the industry as a whole. A decrease in demand so severely reduced the price of fox pelts that fox ranching, first begun in Prince Edward Island before the turn of the century, has virtually ceased; the loss of overseas markets has resulted in contraction of the apple industry in the Annapolis Valley, Nova Scotia, by more than half; limitation of markets for potatoes, a third major export, has been marked by some reduction in acreage, especially in New Brunswick, and there has been an increase in the Canadian tariff as a protective device. A trend towards farm abandonment also has been running its course. Meanwhile, the Maritimes have continued to import a wide range of agricultural products, some of which, it would appear, could be produced profitably within the region. In view of the gradual expansion of local markets, including Newfoundland, as a result of an increase in population, and of the difficulty of securing important new export markets for agricultural products, an impetus has been given to the production of alternative commodities either for export or for domestic consumption. Agriculture remains, nevertheless, one of the low-income sectors of the regional economy. Neither the complexity of the problems confronting the industry in the present nor the character of changes over a long period is widely recognized. Accordingly, the purpose of this paper is to trace long-term movements in order to indicate the locational advantages of different branches of farming in the Maritimes. In addition, it will examine the relative significance of land, capital, and enterprise as factors affecting the development of agriculture.

Census statistics would seem to indicate that from the close of the nineteenth century Maritime farming has been struggling under serious geographical handicaps. In a period of settlement during the last century, the number of farms in the Maritime Provinces increased to 120,616 in 1891, the area of occupied farm land to 4,221,579 acres, and the area of improved land to 4,221,579 acres. Since 1891, however, the

trend has for the most part been downward. In the four decades from 1911 to 1951, the number of farms decreased 44,276 or 42.4 per cent, the area of farm land 3,261,679 acres or 29.6 per cent, and the area of improved land 1,157,009 acres or 33.3 per cent. When these changes are compared also to the decline in the farm population from 413,382 in 1931 to 312,185 in 1951, a decrease of 24.5 per cent, one can see the extent to which farms have been abandoned. In general, the greatest absolute and proportionate decreases occurred in Nova Scotia and the smallest in Prince Edward Island.

The situation in the Maritime Provinces, and also in eastern Canada as a whole, is in contrast to that in western Canada, where the area of occupied farm land has been increasing. Nor has there been as significant an increase in the average area of farms in the Maritimes as in the West. This is especially true of the area of improved land per farm. Although Prince Edward Island has been consistently above Nova Scotia and New Brunswick in this respect, the figure remains smaller than in most other provinces. In 1951, for example, the average area of improved land per farm in Prince Edward Island was 63.7 acres compared with 28.1 acres in Nova Scotia and 38.1 acres in New Brunswick. In Quebec and Ontario, improved land per farm was 65.7 acres and 85.1 acres respectively. Much higher figures, of course, would obtain in the Prairie Provinces. Obviously, the figures of the forthcoming census are awaited with interest.

In view of a general trend on this continent towards larger farms and a consequent increase in the scale of operations, it is significant that in Nova Scotia (and to a lesser extent in New Brunswick), where the area of improved land per farm is relatively so small, farm abandonment has been so great. There is no reason, however, to conclude that farm abandonment in the Maritimes has resulted in a decline in the total volume of agricultural production. The adoption of improved techniques that lead to an increase in output per worker can both cause and compensate for the abandonment of farms. It is probable that gains in productivity over the years have been sufficient to offset the effects of declines both in employment and in the use of land. In one study it was estimated that between 1881 and 1921 the increase in production per worker in agriculture in Nova Scotia was 48 per cent, and the suggestion was made that similar advances had taken place in New Brunswick and Prince Edward Island.<sup>2</sup> During the last two decades the index of farm production clearly shows an expansion of production in Prince Edward Island and little change, with perhaps a slight decline, in Nova Scotia.<sup>3</sup>

During the last decade and a half, the production of poultry, eggs, and blueberries in the Maritimes has increased rapidly, but the production of certain other

commodities has expanded more slowly. Ease of shifting to the production of different agricultural products has tended to vary inversely both with the length of time that must elapse between the making of an investment expenditure and the beginning of the flow of income, and with the extent to which the change has involved the utilization of large quantities of land in individual farms and in total acreage. For example, the raising of cattle for beef has been encouraged as a means not only of reducing dependence on imports but also of utilizing grass lands and thereby counteracting the trend towards the declining use of land in agriculture. A change of this nature, however, besides requiring relatively long-term investment, emphasizes the limitations on the area of suitable agricultural land that is available. Since it apparently also involves a change from small farms, so characteristic of the Maritimes, to much larger farms, it will have far-reaching consequences. Short-run problems tend to hamper long-run adjustment. Thus environment and organization place limitations on agriculture. What, then, in the Maritime Provinces, is the character of the environment for agriculture? This question can be most effectively answered in relation to its historical development.

## II

Agriculture in the Maritimes received an impetus early last century from the fisheries and the timber trade.<sup>4</sup> Expansion was influenced both by the immediate demands of the staple industries and by soil and climate. The lumber industry created a demand for horses, hay, oats, and foodstuffs. The fishing, shipbuilding, and mining industries created demands for meat products.<sup>5</sup> In Nova Scotia, agriculture was encouraged by commercial interests as a means of supporting the fisheries and of reducing dependence on the United States, but Nova Scotia's advantages in the production of livestock were handicaps in the production of wheat and flour.<sup>6</sup> In New Brunswick, the dominance of the timber trade both encouraged and hampered the expansion of agriculture, whereas in Prince Edward Island production increased in response to markets on the mainland and in Newfoundland. A series of crop failures in Nova Scotia and New Brunswick in the 1840's was accompanied by adjustment to the abolition of the Corn Laws in England in 1846 and to the virtual removal of the preference on timber in 1851, and was followed in the years from 1854 to 1866 by a period of reciprocity with the United States. But the rapid increase in grain shipments from Chicago and the introduction of improved methods of refrigeration in the meat trade from the mid-West in the 'sixties, together with a flow of agricultural commodities from the St. Lawrence region, meant effective competition for the Maritime Provinces in the production of wheat (for which their

climate was not especially suitable) and of livestock (for which they did possess some advantages).<sup>7</sup>

Despite the competition of other regions, agricultural development in the Maritime Provinces continued during the last half of the century.<sup>8</sup> The industry progressed from a state of relative dependence on the support of other branches of the regional economy to a position of relative independence. The abolition of absentee ownership in Prince Edward Island in 1875 opened the way for more direct participation of producers in the agricultural industry. Further, the construction of railways in the Maritimes opened tracts of land, and the development of steamships effected more regular connections with England and Newfoundland, and also with the United States and the Caribbean. In the 'seventies and 'eighties, mixed farming became more widespread when the livestock industry expanded with increased exports and dairying with increased domestic demands.

The effect of high prices for meat in England in 1873<sup>9</sup> can be seen in the shipment of cattle and meat from Canada and the United States in 1874<sup>10</sup>. The United States developed a trade in both livestock and meat, whereas Canada concentrated on the shipment of livestock. The livestock trade of the Maritimes followed the pattern of Ontario and Quebec and afforded producers an escape from the competition of both livestock and dairy products from the Central Provinces. In 1879, cattle and sheep for export from New Brunswick were shipped from Quebec because of lack of steamship connections at Saint John.<sup>11</sup> The first shipment from Nova Scotia was made early in 1880.<sup>12</sup> The raising of cattle for beef developed rapidly in the marshlands of Westmorland and Albert counties, New Brunswick, and of Cumberland county, Nova Scotia, where the larger producers stall-fed as many as 200 or 300 cattle during the winter. In 1881, Nova Scotia with 300,000 cattle and 400,000 sheep sold 60,000 cattle and 150,000 sheep. The industry flourished until it was adversely affected in 1892 when England listed Canada among the countries subject to the restrictions of the quarantine law. Although Canadian shipments of livestock expanded until the curtailment of western ranching in 1912, and were resumed after the First World War, the raising of cattle declined on the marshlands in the Maritimes.<sup>13</sup> In general, there was a shift to dairying, and, with a gradual reduction in the market for hay, the dykes protecting large sections of the marshlands passed into a state of disrepair.

The development of dairying was associated with the establishment of cheese factories and creameries.<sup>14</sup> The making of cheese in factories began in the State of New York around 1851, spread to Ontario in 1864 and to Quebec in 1865. In the Maritimes, the first cheese factory was opened at Sussex, New Brunswick, in 1869, to

be followed by another at Paradise, Nova Scotia, in 1870. Creameries were established later, beginning in Quebec in 1873 and in Ontario in 1875. The first creamery in New Brunswick was opened at Sussex in 1884, the first in Nova Scotia as Nappan in 1892. Prince Edward Island was handicapped in the early development of dairying because of its geographical position and a shortage of hay.<sup>15</sup> Although a cheese factory was established at Little York in 1882 and another at Hunter River in 1883, the dairy industry was retarded until the introduction of Indian corn in the 'nineties and until the assistance of federal personnel was obtained in the establishment and supervision of cheese factories in 1891 and the few succeeding years. Creameries were established at Tryon and Crapaud in 1894 and at Charlottetown in 1895-96. The relatively late entry of Prince Edward Island into the dairy industry was followed, however, by a rapid increase in the number of factories and in production, especially of cheese, by the turn of the century. Disadvantages in the livestock trade and in the early development of the dairy industry were overcome. Difficulties in the livestock trade in the mid-nineties resulted in concentration on the dairy industry in Prince Edward Island.

In 1901, the production of cheese in factories in Prince Edward Island was 4,457,579 pounds, almost double the combined production of New Brunswick (1,892,686 pounds) and Nova Scotia (568,147 pounds). The production of butter in creameries was 562,220 pounds in Prince Edward Island, 334,211 pounds in Nova Scotia, and 287,314 pounds in New Brunswick. In each of the Maritime Provinces, as in Ontario and Quebec, virtually all cheese was produced in factories, whereas a large proportion of butter was produced on farms. The production of dairy butter was 1,398,112 pounds in Prince Edward Island, 9,060,472 pounds in Nova Scotia, and 7,843,033 pounds in New Brunswick.<sup>16</sup> In Nova Scotia and New Brunswick the production of butter and cheese was below domestic consumption. Prince Edward Island, on the other hand, exported both butter and cheese, some of the cheese finding its way into the large Canadian export trade to the United Kingdom. Generally, the raising of hogs and the growing of forage and root crops were associated with dairying. The dairy industry contributed, therefore, to the expansion of mixed farming.

The development of specialized areas is shown clearly by the expansion of the apple industry in relation to markets in the United Kingdom and of the potato industry in relation to markets in Newfoundland, central Canada, the United States, and the West Indies. The Annapolis Valley, Nova Scotia, offered a suitable environment for the growing of apples, and improvements in rail and ocean transportation by the last quarter of the century made possible the shipment of this fruit to England. The industry was based largely on the production of apples of cooking varieties on a large number of relatively small farms, and, as the trade developed, about 80 per cent

of the crop was exported annually. From the 1880's until the outbreak of war in 1914, shipments went forward almost exclusively to the expanding city of London. Attempts to develop a trade with central and western Canada and South America were unsuccessful. Shipments to England were reduced between 1914 and 1919 but were resumed in the 'twenties on a large scale to London, Liverpool, and Glasgow, and on a small scale to Europe. In the 'thirties, when exports to the United Kingdom from the United States decreased following the Ottawa agreements of 1932, Nova Scotia became the largest supplier of apples to the United Kingdom. The volume of exports was 1,230,406 barrels in 1921, 1,219,025 barrels in 1931, and 1,772,783 barrels in 1938.<sup>17</sup> In 1939-40, exports were negligible, and the marketing of the apple crops during the Second War and early post-War periods depended upon arrangements with the federal government.

Since 1945, exports have been small, and reduction in the size of the apple industry has been imperative. The number of trees and the volume of production have been decreased by about 60 per cent. It has been estimated, however, that on the average 2,000,000 bushels of Nova Scotia apples can be marketed annually in eastern Canada either as fresh or processed apples.<sup>18</sup> In addition, about 300,000 bushels are produced in the lower Saint John Valley, New Brunswick, and are sold chiefly in New Brunswick and Quebec.

The potato industry developed in relation to expanding markets in the United States. Availability of cheap water transportation led to a large volume of exports after 1850.<sup>19</sup> However, the imposition of a tariff by the United States in 1874 and a tendency towards soil exhaustion, particularly in Prince Edward Island, were responsible for a decline in production until World War I.<sup>20</sup> Thereafter, with improvements in the methods of cultivation, the production of potatoes for seed became increasingly important. In warmer climates the vitality and productiveness of the soil diminishes with each successive crop and the seed must be renewed to obtain satisfactory yields. The industry has developed, therefore, in relation to both domestic and foreign markets, the product being classified either as seed or table stock.

A decline in prices in the early 'twenties was accompanied in 1922 by a duty under the Fordney-McCumber tariff, and exports of potatoes from the Maritimes to the United States declined.<sup>21</sup> A revival of trade in the late 'twenties was followed by duties in Cuba in 1929 and in the United States in 1930 under the Hawley-Smoot tariff. A reduction in the American duty was effected under the Trade Agreements of 1935 and 1938, and potato producers enjoyed a period of relative prosperity. The Steagall Amendment of 1942 provided for wartime and post-war price support for potatoes and resulted in a large increase in Canadian exports. The Geneva Trade

Agreements of 1947 contributed to this expansion by securing for Canada an increase in the tariff-quota on seed potatoes exported to the United States from 1½ to 2½ million bushels.<sup>22</sup> As Canadian exports of seed potatoes consist almost exclusively of shipments from the Maritime Provinces, the benefits of these measures to Canada accrued chiefly to producers in the Maritimes.

The effect of the widening of markets in the United States during the 1940's is reflected in statistics of the potato industry in the Maritimes.<sup>23</sup> In Prince Edward Island, acreage increased from 40,300 acres in 1941 to a peak of 48,800 in 1946 and then decreased to 47,200 in 1949. Production increased from 5,372,000 bushels to 9,599,000 and to 12,890,000 bushels in these years respectively. In New Brunswick, acreage also increased from 44,100 acres in 1941 to 64,800 in 1946 and then decreased to 55,100 acres in 1949. Production increased from 8,820,000 bushels to 15,118,000 bushels and to 16,899,000 bushels. In Nova Scotia, the number of acres decreased gradually from 18,600 in 1941 to 13,800 in 1949, while production remained relatively constant at 3,162,000 bushels and 3,151,000 bushels. In 1949-50, Canadian exports to the United States were 9,281,127 bushels, of which the Maritime Provinces supplied 9,123,643 bushels. Of this quantity, Prince Edward Island supplied 45.5 per cent of the total and 66.6 per cent of the seed, whereas New Brunswick supplied 52.2 per cent of the total and 82.2 percent of the table stock. Exports from Nova Scotia were small. Exports from the Maritime Provinces to all markets outside Canada were 11,341,824 bushels, slightly more than one-third of the production of the three provinces and only 291,869 bushels less than the total Canadian export.

Although the price of potatoes was supported in Canada by the federal government in 1946, 1948, 1950, and again in 1955, the end of the American program of price support for potatoes was accompanied by a decrease in production in the Maritimes. In 1951, production declined about 25 per cent in the United States and 34 per cent in Canada. In that year, production fell to the low level of 5,920,000 bushels in Prince Edward Island, 9,525,000 bushels in New Brunswick, and 2,034,000 bushels in Nova Scotia. Since 1951, an increase in production to levels comparable to those in the period 1945-1949 has been achieved on less than the former acreage.<sup>24</sup>

In general, the period since 1949 has been critical. It has been marked by strong pressure by producers against upward revision of freight rates in order that they might maintain access to markets in central Canada and by their support of upward revision of the Canadian tariff to a level comparable to that of the United States. As in the apple industry in Nova Scotia in the 1940's, there has been temporary resort to a marketing board in Prince Edward Island and New Brunswick.<sup>25</sup> The potato industry, however, has been exposed to less violent shifts in markets than has

the apple industry, although both are now confronted with similar problems in that expansion depends chiefly on the securing of additional markets outside the Maritime Provinces. It is possible that exports of apples from Nova Scotia to the United Kingdom and Europe will increase during seasons of small crops in these countries or when foreign currencies become more readily convertible into dollars. On the other hand, the size of the potato industry will be determined by the limited possibility of expansion of exports of potatoes to foreign countries, and — unless it is offset by increases in population in both the United States and Canada—by a decline in *per capita* consumption.

Fox ranching also once held a strong export position along with apples and potatoes, and the importance of this branch of farming should not be overlooked. The industry began experimentally in Prince Edward Island in the late 1880's, and, in the first decade of this century, ranchers were sending furs to London for prices reported to be as high as \$3,700 per pelt. In 1913, in addition to those engaged individually in the industry in Prince Edward Island, 130 companies had been formed with authorized capital exceeding \$13 million.<sup>26</sup> By the early 'twenties, live foxes had been shipped to all the northern States, all provinces of Canada, Scotland, England, Norway, Sweden, France, Germany, Switzerland, and Japan.<sup>27</sup> The annual value of production exceeded \$2,000,000. In 1931, there were 3,000 fox farms in the province producing 50,000 pelts annually, and, although prices were low during the Depression, fox ranching was more profitable than any other branch of agriculture. In the mid-thirties there was competition of more silvery furs produced in the United States, and, while European buyers continued to purchase the darker ones, there was a shift to the production of generally lighter pelts. The development of mutations such as platinum foxes afforded a stimulus to the industry during World War II and the early post-War period. After 1950, however, owing to a changing demand for shorter types of fur, such as mink, the ranching of foxes became unprofitable and has ceased as an industry. Nevertheless, for more than half a century, it played a dynamic role in the economy of the Maritimes, especially in Prince Edward Island, where it constituted a major source of income and of funds for investment in other branches of agriculture.<sup>28</sup>

These other branches, in Prince Edward Island as in Nova Scotia and New Brunswick, include the growing of small fruits and vegetables, the production of poultry and eggs, as well as dairying and the raising of livestock. A summary of these developments since 1900 will complete this survey.

The growing of small fruits and vegetables has become a small but important part of agricultural production in the Maritimes and in certain districts has tended

to be a specialty. The commercial production of strawberries, one of the most important of the small fruits, has been successful in the Annapolis Valley and near Masstown in Nova Scotia, in the Sackville and Grand Lake areas of New Brunswick, and in Prince Edward Island. The strawberries have been sold fresh or canned and, in recent years, increasing quantities have been frozen. Where conditions have made possible a sufficient volume of production, a similar pattern of processing and marketing has pertained to other fruits and vegetables, including raspberries, corn, peas, and beans. During the last two decades, also, progress has been made in the production of blueberries, particularly in Cumberland County, Nova Scotia, and Charlotte County, New Brunswick.<sup>29</sup> The product is sold fresh, canned, or frozen, and large shipments are made annually to the United States. The profitability of the industry has attracted American investment funds. The volume of output exceeds 4,000 tons, worth more than \$750,000. There appears to be opportunity for further expansion of the production of blueberries, and in some degree of small fruits and vegetables generally, as a result of the extension of the marketing season by greater use of modern methods of storing and handling these crops.

Since 1945, the production of poultry and eggs has also expanded, and, with value of products worth approximately \$20 million, stands next to dairying as the chief source of farm cash income. In the 1940's, a centre of the industry developed in the Annapolis Valley where a shift from the production of apples was taking place and where enterprise either possessed or was able to secure investment funds for the financing of large-scale operations. Markets being available and a federal policy of freight assistance on feed grains imported from western Canada having reduced the cost of grain, the way was open for the development of the poultry industry on a large-scale commercial basis.<sup>30</sup> The winter brooding of chickens to bring them into production in middle or late summer has had the effect of moving the season of high prices of eggs forward from autumn to summer and of reducing seasonal price changes.<sup>31</sup> Unfortunately, however, expansion of production in other parts of Canada as well as the Maritimes culminated eventually in federal price support for eggs. It would appear, therefore, that the poultry industry has reached the profitable limits of expansion and that little increase in production can be expected in the immediate future.

Since 1900, there has been a reduction in the number of cheese factories and in the production of cheese, a consolidation and concentration of creameries in the more favourable milk producing areas, and a large increase in the production of creamery butter. In 1921, the production of creamery butter was 5,356,842 pounds and of cheese 3,811,601 pounds, whereas in 1958 the production of creamery butter was 19,361,000

pounds and of cheese 1,615,000 pounds. The production of butter on farms in 1958 was 1,917,000 pounds, making the total production of butter approximately equal to 21,278,000 pounds or about 1,278,000 pounds greater than in 1901.<sup>32</sup> The production of milk per farm has been low and has resulted in seasonal shortages of milk and cream for factories. Limitations on dairying have also placed limitations on the raising of hogs.

The production of milk has increased, however, and in the last two decades a change in the pattern of consumption can be seen in the increase in sales of whole milk and also of ice cream. From 1951 to 1958, for example, the production of milk in Prince Edward Island increased 18.8 per cent to 234,577,000 pounds, in Nova Scotia 3.6 per cent to 414,252,000 pounds, and in New Brunswick 2.6 per cent to 461,281,000 pounds.<sup>33</sup> With sales comprising 44.03 per cent of total milk production, Nova Scotia ranked next to British Columbia in the high proportion of its production marketed as whole milk and cream. The sale of fresh milk being subject to public regulation and controlled prices, this branch of dairying is becoming more firmly established. Apart from the production of fluid milk, however, there has not been strong inducement to dairymen to increase the size of their farms and to produce milk primarily for the production of butter, cheese, and concentrated and powdered milk.

Limitations of the dairy industry have led to greater emphasis in the last decade on the raising of livestock as a means of stimulating agriculture and of arresting the abandonment of farms. The production of beef, veal, and pork in the Maritimes is considerably below the consumption of these products in the four Atlantic Provinces. Imports of meat products into the Maritimes and Newfoundland annually have been estimated to be approximately equivalent to 130,000 cattle, 45,000 calves, and 400,000 hogs.<sup>34</sup> The raising of hogs, like the production of poultry and eggs, can be carried out on both small and large farms by importing feed grains from Western Canada. On the other hand, the production of beef and veal, and also of lamb and mutton, depends more clearly on the availability of adequate pasture and an abundance of grass or hay.

While the basic conditions for the production of beef can be found in the Maritimes, certain obstacles hamper the expansion of the industry.<sup>35</sup> Although the climate is relatively humid, uplands may be dry and pastures light. Also, the natural pasturing season is relatively short. As the reclamation of marshlands around the Bay of Fundy proceeds, these lands may play an important role again in the raising of cattle. However, even here, besides the problem of ownership of scattered pieces by individual farmers, there are the heavy expenses of dyking, draining, and maintaining. Furthermore, as the total area of marshlands does not exceed 50,000 to

75,000 acres, the newly reclaimed areas by themselves cannot support an increase in production sufficient to offset imports. Consequently, the achievement of a closer relation between domestic supply and demand seems to depend upon a more general integration of beef production with other branches of agriculture. But it is difficult to make cattle raising a specialty on small farms except as a part-time occupation. Assuming that a beef farm should possess perhaps 200 acres of hay and pasture land in order to yield an income equivalent to that of a dairy farm of 60 to 80 acres, technical difficulties frequently arise either in securing land in the same general area to consolidate into an economic farm unit or in combining land for grazing with land for producing winter feed. Thus, the existence of many small farms, themselves often related to the character of the terrain, results in institutional barriers which prevent the ownership or rental of specific pieces of land. Nevertheless, to the extent to which regional self-sufficiency in the production of beef, veal, and pork can be accomplished, a means of supporting farm income will have been found. But in so far as this objective must be associated with a trend towards farms with larger acreages of improved land, its achievement will depend in part on the speed of transfer of some farm families to other occupations.

### III

It appears, therefore, that the agricultural frontier in the Maritime Provinces has not been a soft or easy one. Geography, topography, and the scattered location of agricultural land have placed limitations on the industry. Agriculture was fostered early in the last century as a source of staples for the fisheries and the timber trade and, later, for mining. Disadvantages in the production of cereals were evaded in the last quarter of the century by a shift to dairying and the raising of livestock. Following developments in the United States and central Canada, the dairy industry grew in New Brunswick and Nova Scotia in the late 'sixties and 'seventies and in Prince Edward Island in the 'nineties. After 1900, a long period of adjustment began as seen in the decline in the number of cheese factories and in cheese production, in the consolidation of creameries, and in an increase in the production of creamery butter. The livestock industry flourished in the 'eighties and 'nineties with exports of cattle and sheep to the United Kingdom.

After 1900, the decline in the number of cattle, sheep, and hogs was closely associated with other phenomena such as the deterioration of the marshlands and the general trend towards farm abandonment. However, problems in the livestock and dairy industries were rendered less acute by the rise of exports of apples, foxes and fox pelts, and by the expansion of the potato trade. In respect to these commodities,

obstacles presented by the agricultural frontier were minimized or evaded. Success or failure depended upon the relative significance of land, capital, and management as factors of production. The ranching of foxes was less dependent on special features of environment that are peculiar to the Maritime Provinces than it was on management and finance. The growing of apples and potatoes could be carried out on relatively small farms, and large crops could be produced in relatively small geographical areas. Land was not a limiting factor for these crops. Similarly, in recent years, the production of blueberries has been profitable on low-grade or waste land, and the rise of the poultry industry on a large scale and expansion in the production of hogs have not depended primarily upon the area of available land.

The limitations of resources and markets and the competition of other regions have profoundly affected the development of agriculture in the Maritime Provinces. Shifts in markets for exports have focussed attention on the production of commodities for domestic consumption. There are far-reaching consequences in a shift from the production of commodities of high bulk and low value (such as apples and potatoes) for export by means of cheap water transportation, to the production of commodities of low bulk and high value (such as meat and eggs) for shipment to domestic markets by road or rail. There are pressures towards more extensive use of land in the production of beef, veal, mutton and lamb, and its more intensive use in the production of small fruits and vegetables. In the raising of poultry and hogs, land may serve chiefly as a site for buildings. The established trend in agriculture towards larger output per farm requires increased investment per farm and accentuates the problem of the large proportion of small, and also marginal, farms in the Maritimes. Changes stemming from the centralizing effects of increased investment are apparent in farm organization, especially in such branches as the beef industry, so heavily dependent on land. Stronger measures of public support may be needed in these branches than would normally be expected.

In general, however, in the Maritimes as elsewhere on this continent, the choice is largely between a large agricultural industry — in terms of farm population and labour force — and a prosperous industry. Although conditions in agriculture are not unrelated to both the size and rate of growth of other parts of the regional economy, a solution to some of the more acute problems of agriculture will go far towards raising *per capita* incomes in the Maritimes as a whole.

#### NOTES

1. *Census of Canada*, 1921, Vol. V, Table II, p. xiv; *Ibid.*, 1931, Vol. VIII, Table I, p. xxvii; *Ibid.*, 1941, Vol. VIII, Table 29; *Ibid.*, 1951, Vol. VI, Part I, Tables 15 and

16. It should be noted that a change in the definition of "farm" in 1951 resulted in a larger decrease in the statistics than would have been shown otherwise.
2. A. B. Balcom, "Agriculture in Nova Scotia since 1870", *The Dalhousie Review*, Vol. VIII (1928), pp. 29-43.
3. *Index of Farm Production* (Ottawa: Dominion Bureau of Statistics, 1958). Forest production on farms, important especially in Nova Scotia and New Brunswick, is not included in the index of farm production.
4. H. A. Innis, *The Cod Fisheries*, Revised Edition (Toronto: University of Toronto Press, 1954), p. 268; J. W. F. Johnston, *A Report on the Agricultural Capabilities of New Brunswick* (Fredericton, 1850).
5. H. A. Innis and A. R. M. Lower, *Select Documents in Canadian Economic History, 1783-1850* (Toronto: University of Toronto Press, 1933), p. 687.
6. V. C. Fowke, *Canadian Agricultural Policy* (Toronto: University of Toronto Press, 1947), p. 34.
7. S. A. Saunders, "The Maritime Provinces and the Reciprocity Treaty", *The Dalhousie Review*, Vol. XIV (1934), pp. 364-366; Fowke, *op. cit.*, pp. 188-189; Charles H. Lugin, *New Brunswick (Canada), Its Prospects and Advantages* (Fredericton, 1886), pp. 9-11.
8. *A Guide Book For Intending Settlers*, Sixth Edition (Ottawa, 1885), p. 54; Innis and Lower, *op. cit.*, pp. 688-689; Lugin, *op. cit.*, pp. 9-11.
9. J. H. Clapham, *An Economic History of Britain*, Vol. II (Cambridge: Cambridge University Press, 1932), p. 280.
10. Fowke, *op. cit.*, p. 191; D. B. Tyler, *Steam Conquers the Atlantic* (New York: Appleton-Century, 1939), p. 363.
11. Innis and Lower, *op. cit.*, p. 692.
12. *Report of the Central Board for Agriculture* (Journals of the House of Assembly for Nova Scotia, 1880), pp. 2-3.
13. *Official Handbook Relating to the Dominion of Canada, 1890* (Ottawa: Canada Department of Agriculture, 1890), p. 51; Fowke, *op. cit.*, pp. 194-196. For a review of problems of shipments of cattle from Canada to England in the 1920's, see *Shipping Cattle to Britain, Experiments in the Shipment of Live Cattle and Beef to England* (Ottawa: Dominion Experimental Farms Service, 1926), Bulletin No. 62, New Series.
14. J. A. Ruddick, *An Historical and Descriptive Account of the Dairy Industry of Canada* (Ottawa, 1911), pp. 19-27.
15. Innis and Lower, *op. cit.*, p. 696.
16. Ruddick, *op. cit.*, pp. 19-20; H. A. Innis (ed), *The Dairy Industry in Canada* (Toronto: Ryerson Press, 1937), pp. 64-65.
17. W. V. Longley, *Some Economic Aspects of the Apple Industry in Nova Scotia* (Halifax, 1932), pp. 148-149; *Report of the Department of Agriculture and Marketing, Nova Scotia* (Halifax, 1943), pp. 190-191.
18. *Report of the Royal Commission Investigating the Operation of Public Cold Storage Plants in Relation to the Apple Industry of the Annapolis Valley* (Halifax, 1957).

19. Innis and Lower, *op. cit.*, p. 695.
20. *Ibid.*, p. 694; S. A. Saunders, *Economic Welfare of the Maritime Provinces* (Wolfville, 1932), p. 85.
21. For a detailed history of the American duty on potatoes, especially in respect to the season of the year when the duty applied, see S. A. Saunders, *An Economic History of the Maritime Provinces* (Ottawa: King's Printer, 1939), pp. 49-51.
22. *Report of the Tariff Board on Potatoes*, Reference No. 117 (Ottawa: Queen's Printer, 1955), pp. 30, 46-49.
23. *Submission of the Potato Industry of Prince Edward Island in the Matter of Tariff Board Reference No. 117* (Charlottetown, 1955), pp. 15-20.
24. *Quarterly Bulletin of Agricultural Statistics* (Ottawa: Queen's Printer, January-March, 1957), Table 2.
25. L. E. Poetschke and W. Mackenzie, *The Development of Producer Marketing Boards in Canadian Agriculture* (Edmonton, 1956), pp. 58-62.
26. *Yearbook of the Province of Prince Edward Island* (Charlottetown, 1913), pp. 27 ff., p. 80.
27. *Annual Report on Agriculture, Prince Edward Island* (Charlottetown, 1924), p. 33.
28. For example, in Prince Edward Island in 1926, when revenues from foxes exceeded \$3 million, fifty new foundation dairy herds were established. See *Annual Report on Agriculture* (Charlottetown, 1926), pp. 13-14.
29. G. C. Retson and E. S. Eaton, "The Blueberry Enterprise in Nova Scotia and New Brunswick", *The Economic Annalist*, Vol. XXV (1955), pp. 36-39.
30. *Imperial Oil Review* (Toronto: Imperial Oil Limited, August, 1957), pp. 14-15.
31. G. C. Retson, *Commercial Poultry Farming in Nova Scotia* (Ottawa: Canada Department of Agriculture, 1952), pp. 25-26.
32. *Statistics of Dairy Factories, 1923* (Ottawa: Dominion Bureau of Statistics), pp. xi-xiii; *Dairy Statistics, 1958* (Ottawa: Dominion Bureau of Statistics, 1959), Table 5, p. 11.
33. *Dairy Statistics, 1953* (Ottawa: Dominion Bureau of Statistics), Table 2, p. 11; *Ibid.*, 1958, Table 2, p. 8.
34. See E. P. Reid and J. M. Fitzpatrick, *Atlantic Provinces Agriculture* (Ottawa: Canada Department of Agriculture, 1957), pp. 29-33; also, *Proceedings of the Special Committee of the Senate on Land Use in Canada* (Ottawa, February 28, 1957), p. 87.
35. See W. M. Drummond and W. Mackenzie, *Progress and Prospects of Canadian Agriculture* (Ottawa: Queen's Printer, 1957), pp. 159-160. Some important aspects of sheep raising are discussed by G. C. Retson in "Decline of Sheep Production in the Maritime Provinces", *The Economic Annalist*, Vol. XXIII (1953), pp. 128-129.