

Britain. It is not unreasonable to expect that, if they were aware of the situation, they would buy British goods rather than goods from other countries. Britain and the other Dominions are buying so heavily from Canada at present that their debts are mounting up. These countries are glad to be able to discharge these debts by selling their products to us.

Canadian consumers, however, cannot be expected to know of, let alone understand, all these problems unless more effort is made to inform them. From its financial and production policy, it is obvious that the government is aware of the importance of guiding consumption in war-time. But so far it has not given the consumers a chance to play their full part. Now that Canadian industry has entered the phase of so-called "full employment," these problems will grow more and more acute, and

the imposition of the price "ceiling" has increased the need for educating consumers. No longer will shortages be indicated by price movements.

Ignorance among consumers should surely be a matter of grave concern to the government. There is little doubt that Canadian industries can only continue to fill their ever-increasing war orders, if the government takes still further action to restrict the production of non-essentials. But Canadians will not demur at further government interference with the supply of their luxuries and non-essentials if they know such restriction is necessary for an all-out war effort. And surely the government will find willing co-operation from citizens more helpful than the uninformed criticism and dissatisfaction which so often surrounds the government's war policy.

Some Aspects of Agriculture in the Maritimes

By J. E. LATTIMER

DEVELOPMENT OF AGRICULTURE

THE Maritime Provinces have an area just a trifle larger than England without Wales, with a population in 1931 of 1,009,103 that has increased to 1,120,486 in 1941. The total area of the region has slight relationship to the development of agriculture as only a small portion is improved farm land. In 1931 only about 30 per cent of the total 32 million acres was in occupied farms and only about 9 per cent of the total was improved farm land. Thus, in the Maritime Provinces there were only 2,901,698 acres or 2.9 acres per person of improved land, while in the Dominion as a whole there were about 86 million acres or 8.5 acres per person. Improved land comprises that which was plowed

or mown or might be mown with a machine, but does not include natural pasture. The 91 per cent which was unimproved land contained considerable natural pasture and some waste land but the bulk was in forest in some stage of development. These facts point to the importance of lumbering in the area but might lead to some surprise that it is a deficit area for many farm products.

Again it must be remembered that this picture applies only to the area as a whole. Within the area great variations exist. Prince Edward Island, as is well known, is the leading province of the Dominion in proportion of improved land to total. In that province in 1931, 85 per cent of the total area was in farms and of the area in farms, 61 per cent was improved. In Nova Scotia 32 per cent of the total area was in farms with 20 per cent improved. In New Brunswick 23 per cent of the total was in farms with 32 per cent improved.

EDITOR'S NOTE: Dr. Lattimer is Professor of Economics at Macdonald College, Ste. Anne de Bellevue. He has during the last summer, undertaken for the Dalhousie Institute of Public Affairs, an investigation of the effects which the war has so far had on agriculture in the Maritimes. The above article is an outgrowth of the work done for that purpose.

It was not always thus. In the area as a whole in 1891, the percentage of all land in farms was 36, and the improved portion was 13 per cent. In the forty year period, between 1891 and 1931, census reports record a decrease of 2 million acres in land in farms and a decrease of over 2 million acres in improved land. This shows that during the period there has been a substantial reversion of farm land to bush.

This reversion of farm land to timber is by no means a movement peculiar to this area. It has been taking place in the New England states generally and in the state of New York. It is a movement that has been encouraged in some areas of some of the other provinces of Canada. Clearing forests and trying to farm land that later reverts to timber is a very costly experiment. It might be less costly to perpetuate forestry by developing silviculture and thus make

province. This means that the clovers and particularly alfalfa are hard to grow unless lime is applied. And yet, the region is generally a dairy section. Clovers and particularly alfalfa are good cow hays. This is one problem. Throughout the area the shortness of the growing season precludes the possibility of growing corn either for husking or silage. This is another limitation. The length of the growing season and the small proportion of improved land to people, promote the production of crops that require only a short growing season and the expansion of dairy farming. Hence the bulk of the area is devoted to hay and pasture.

Even such generalizations require modification within the area. Not all of the area has a market that stimulates dairying. And the length of the growing season varies. The averages for the period from 1914 to date are given for the four Experimental Stations in the area.

	Charlottetown P. E. I.	Nappan N. S.	Kentville N. S.	Fredericton N. B.
	days	days	days	days
Average frost-free period	153	117	132	135

the products of the forest an annual and permanent harvest. The area has an opportunity to carry out such a policy since the bulk of the total land is still in forest in some stage of development.

UTILIZATION OF IMPROVED FARM LAND

The 9 per cent of improved land is worthy of attention in detail. Soil, climate and precipitation, combine both to limit choice of crops to some extent and at the same time to make the area particularly suitable to certain special crops. Variation in soil, topography, and climate within the area combine to promote specialization in different districts. There are a few characteristics that apply generally. For instance, the soil is generally acid as is the condition in the New England states and in the Province of Quebec, particularly in the eastern portion of that

The variation in the frost-free period which is a good indication of the growing season—though not quite the same thing—is quite marked at the four stations. Yet the variation in the frost-free period may be great within a few miles of where these records were available. The writer saw corn frozen white in the Wentworth Valley on August 26 in 1940, in the same county as the Nappan Experimental Station. The variation in the length of the season between Kentville and Nappan amounts to 15 days. These two stations are in the same province. This variation helps to account for the prevailing specialization in crop production.

The marine climate with more abundant rainfall than some other parts of Canada contributes also to making it a hay and pasture rather than a grain country. The forage is used chiefly for cattle, but

sheep are reported on a greater proportion of the farms than for the country as a whole and poultry is also slightly more widely distributed. The greatest difference for the Dominion is in the presence of orchard and potato crops for which the climate and soil are specially suitable. The degree and direction of specialization in comparison with the Dominion may be noted from the following figures.

to criticise such a system of farming. The purpose is to reveal the facts. The conclusion must be that farms are neither as self-sufficing now as they once were nor are they now as self-sufficing as some might think. Whether they are as self-sufficing as they should be is another matter, a matter of very great moment and one which, if it is to be discussed intelligently, requires a knowledge of conditions prevailing.

	Maritimes	Canada
Total number of farms.....	86,334	728,623
Percentage reporting hay.....	91	61
“ “ potatoes.....	84	69
“ “ oats.....	63	66
“ “ wheat.....	12	44
“ “ barley.....	11	30
“ “ orchards.....	50	17
“ “ poultry.....	81	80
“ “ cows.....	80	76
“ “ horses.....	70	80
“ “ hogs.....	60	60
“ “ sheep.....	28	18

This record of the year 1931 reveals the degree of specialization that was at that time prevalent, even in an area that is generally considered devoted to mixed farming. From the comparison given it might be expected that the area would be on an export basis for apples, potatoes and hay. Such is the case. It might also be expected that the area would be an importer of grains. This is also true. These are generally well known facts. What these figures do reveal, is the possibility of domestic trade between farms in the area. Though this is a hay area 9 per cent of the farms must buy hay if they use it. The percentage of farms depending on buying potatoes, if they use them, is 16 in a potato country. The most widely distributed grain crop, oats, is absent on 37 per cent of the farms, wheat on 88 and barley on 89 per cent. Only half of the farms report orchards.

There was no poultry reported on 19 per cent of the farms in 1931, no cows on 20 per cent, no horses on 30 per cent, no hogs on 40 per cent and no sheep on 72 per cent. There is no intention here

The reporting of the presence or absence of certain crops or lines of livestock is only part of the story. It is a necessary factor in revealing what can be done, but the proportion of land that is devoted to certain crops is a necessary supplementary record.

RELATION OF AGRICULTURE TO POPULATION

The Maritime Provinces in 1931 had roughly one-tenth of the population of the Dominion and one-thirtieth of the improved farm land. In 1940, a good year generally, the area had less than one-thirtieth of the field crop acreage but the estimated value of the field crops amounted to one-sixteenth of the total. This reveals the higher prices prevalent in the area than for the Dominion as a whole as well as the fact that the area is a deficit area in field crops.

The proportion varies in certain crops. In 1940 the area had one-twenty-eighth of the total acreage in oats of the Dominion but the farm value of this crop was one-fifteenth of the total. The proportion

of hay was one-eighth and of both potatoes and other roots one-fifth. The proportion of apples was one-quarter.

In livestock the area carried in 1940 one-twelfth of the sheep, one-sixteenth of the cattle, one-seventeenth of the hens and chickens and one-twenty-ninth of the hogs on the farms of the country.

For some other important comparisons values must be resorted to. In 1940 the area was credited with one-sixteenth of the dairy products of the Dominion by value, one-twelfth of the fruits and vegetables and one-quarter of the value of fur farming products. This brief resumé does not pretend to be all inclusive, but it covers some of the products important in the area. It indicates that the area has developed a considerable amount of specialization in farming, that it produces more than it uses of some goods and less than it uses of others. Interprovincial trade has become important in many farm products.

The picture of the three provinces taken together is too general perhaps to apply to any one of them. Yet within the provinces themselves the variation is so great that county divisions must be considered. The specialization that has recently developed has really taken place in comparatively few spots within the area. Interprovincial trade is important as previously pointed out, but more important than this perhaps is the trade within the provinces. This may be examined by the use of county census figures for the area.

There are many ways in which county comparisons may be made. The general method is to consider returns per farm. That may be fine for some purposes. It has, however, one objection which is that using the farm as the unit generally results in considering all farms as one family farm. Many farms are supporting more than one family or at least are supposed to. Again returns per farm

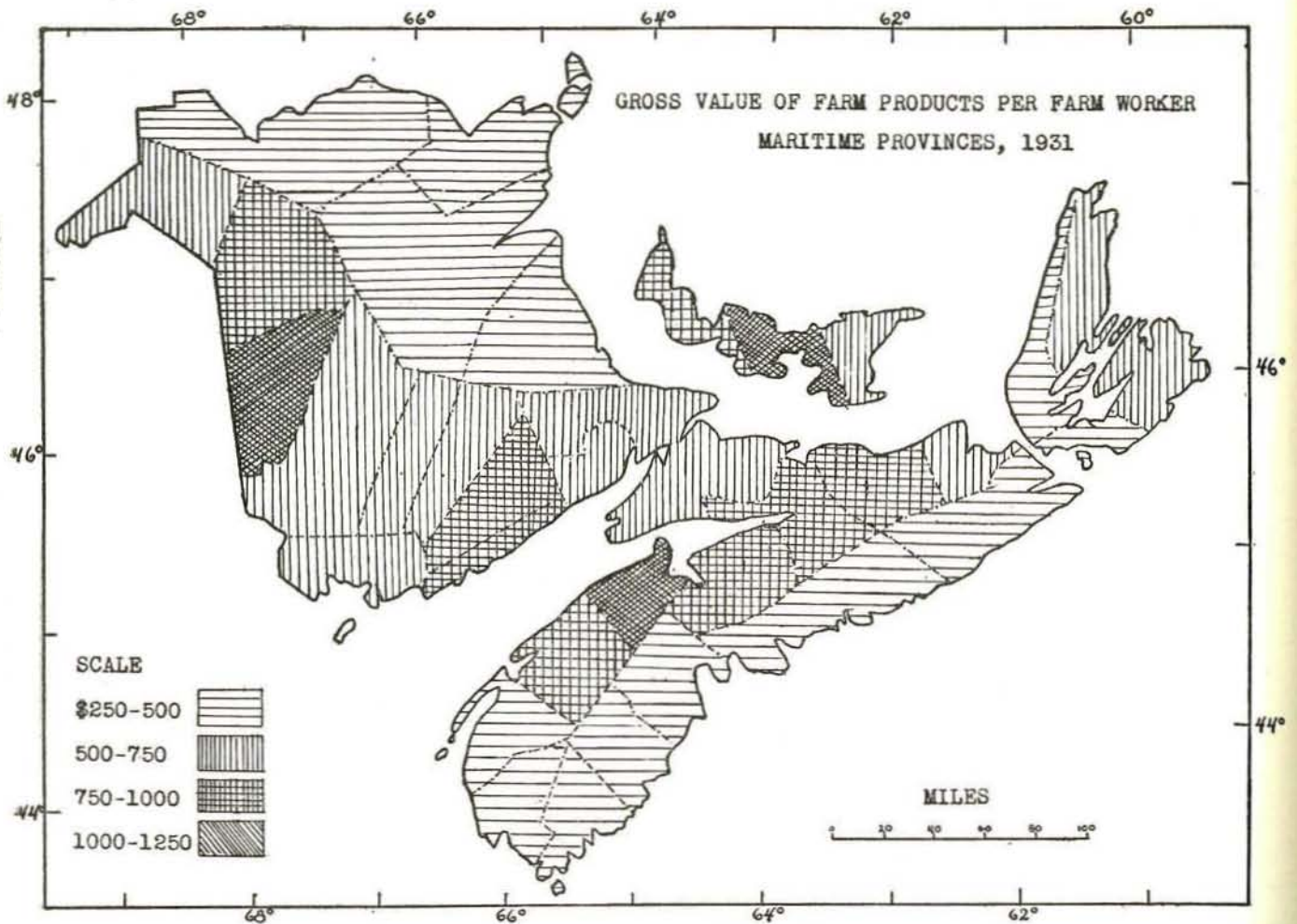
do not consider the number of workers per family. In this case the number of permanent male workers in farming has been compared with the gross value of farm products in 1930, the last year for which figures are available. This shows the estimated value of the output per man by counties. It should be a fair indicator of the efficiency with which farming is carried on in the different areas.

COMPARISON BY COUNTIES

The map, on the next page, showing the county sub-division of the Maritime Provinces, reveals by the shading the gross value of farm products in 1930 per worker in agriculture. The heavier shaded portions are the counties with the most valuable output per worker. Four classes are shown, the highest coming between \$1,000 and \$1,250 and the lowest from \$250 to \$500.

The county comparison is a remarkable revelation. The first impression probable to those acquainted with the area might be that the counties showing the most value produced per man are those counties which are noted for specialization. This is apparent in considering King's County, Nova Scotia and Carleton, New Brunswick. In Queens, Prince Edward Island, which also comes in this class this explanation is not so easy from the point of view of specialization. We may defer a county comparison for the Island for a moment.

The map indicates that the high output per worker occurs where farming is more specialized. This would not have surprised Adam Smith or any other economist since his time. The difficulty already referred to shows plainly that specialization is only one of possibly many factors. Differences in the area of improved land per worker is another important factor, shown in the following table.



OUTPUT PER MAN

The map and the table taken together make it clear that those counties which cultivate the most intensively also work

potatoes might amount to reasonable employment and income. Yet the counties where this was true, are precisely those where the valuable crops per acre were

OUTPUT PER MAN

Value of Products Per Worker	No. of Counties	No. of Workers	Acres Improved Land	Acres of Improved Land Per Worker
From \$1,000 - \$1,250	3	14,474	632,061	44
750 - 1,000	7	24,033	830,548	35
500 - 750	12	35,531	958,824	27
250 - 500	13	42,610	506,199	12

the most acres per man. This has also been found in more specific studies of smaller areas.¹ There are no doubt many reasons why this occurs which we need not discuss here. The result was that in 1930 well over one-third of the workers in the farming business produced a gross product valued at less than \$500 and averaged the cultivation of 12 acres of improved land. That area of orchard or

not produced. On the other hand, in the three counties where the output per man was more valuable, the acres cultivated per worker were 44, almost four times as much.

It must be stated that the transient labour employed is not shown in this table. Neither has the extra cost of fertilizer, feed and seeds been taken into account. Even when this has been allowed for, the variation is still wide.

If more uniformity in income is re-

(1) Cumberland County Survey. Nova Scotia Department of Agriculture. October, 1941.

quired, then, the small areas must carry on more intensively or enlarge their operations. Extensive methods on small areas cannot avoid inequality of income as compared with larger areas practising

more intensive methods. Any general rise of prices will increase the variations in output and income as it has been expressed in these terms, "Them as has gets."

Nova Scotia Apple Marketing Situation

By A. E. RICHARDS

WHEN war broke out an abundant crop of apples was hanging on the trees in the Annapolis Valley. Under ordinary circumstances 85 per cent of the packed crop would be exported overseas, most of it going to the United Kingdom. Early in September 1939, it was learned that as a result of priority cargoes very little if any space would be available for Nova Scotia apples. Approximately one and one-half million barrels of apples which had cost the orchardist an equal amount in dollars to grow seemed destined to rot on the ground. The prospect was even darker than that for the 2,500 growers and their families had counted on the sale of the crop to help pay their debts and buy their groceries. The Nova Scotia apple industry was the first Canadian major war casualty.

By virtue of the powers conferred under the War Measures Act, the Minister of Agriculture was authorized to take action to meet the emergency. The Minister could not deal with individuals or with separate shipping houses. That would be an impossible administrative task. Following the principle of local control and by the elective ballot of all the apple growers, the Nova Scotia Apple Marketing Board was set up to enter into an agreement with the Dominion Government and act as a central selling agency for the entire crop.

Under government guarantee the grow-

ers received approximately 75 per cent of their pre-war returns for the 1939 crop. The processing plants in pre-war years had handled an average of 400,000 barrels of apples per season. Through plant expansion, double shift and top-speed operation by March 31, 1940, 1,500,000 barrels of fresh apples were evaporated, canned or turned into apple juice and other apple products and their food value conserved.

THE 1940 CROP

In order that growers might use the document as a basis for financing the production of their crop the government concluded an agreement for the marketing of the 1940 crop in April of that year. Under the plan growers were guaranteed 80 per cent of the 3-year (1936-37-38) average net return for the higher grades and sizes of selected varieties which were considered desirable for export. Marketing limitations were applied in order to discourage the production of odd varieties, low grades and small sizes.

Financial position of the grower. In an attempt to determine the relative financial position of growers in the Annapolis Valley during recent years, the Economics Division, Dominion Department of Agriculture, examined and analysed the individual orchard accounts of 55 representative growers for the period 1937-40. The average standing as at December 31 after credit had been allowed for the sale of the entire crop was a debit balance of \$179 in 1936, a credit balance of \$2 in

EDITOR'S NOTE: Dr. A. E. Richards is Economist with the Department of Agriculture in Ottawa. He has given special attention to the problems of the Canadian apple industry and has previously contributed an article on the subject in PUBLIC AFFAIRS of August, 1940, Vol. IV, No. 1.