

Whither Goest Thou?

Continued from page 1

Staffs, tremendous sources of available information, improved basic crop and livestock strains, new marketing methods, availability of fertilizer, limestone supplies, price supports, and other progressive factors, should be in a position to have established his production and marketing processes on a level far advanced from that of a half century ago. If our production has not substantially increased, we are forced to the conclusion that our producers in an increased sense have lagged behind their predecessors, and have not embraced to best advantage the facilities and opportunities that have been available.

The statistical information herewith compiled from our most accurate sources, the Dominion Bureau of Statistics, and the decennial census, is presented for the purpose of comparison and study. So also, the observed conditions obtained through close contact with conditions through the years for almost a half century period.

POPULATION

	1911	1951
Total	93,728	98,429
Farm (1931)	55,478-63%	46,855-47.4%

FARM HOLDINGS

	1911	1951
Total Occupied Farms	14,113	10,137
Total Land Area	1,397,760 acres	1,977,760 acres
Total Area in Farms	1,202,354 acres	1,095,304 acres
Average Area per Farm	86 acres	108 acres

CONDITION OF LAND

	1911	1951
Improved Land	769,140 acres	615,795 acres
Under Crops	489,944 acres	425,210 acres
Other Improved Land	433,214 acres	449,509 acres
Woodland	307,974 acres	346,191 acres
Other Unimproved	125,240 acres	103,318 acres

FARM VALUES

	1911	1951
Land and Buildings	\$31,110,000	\$87,153,205
Implement and Machinery	16,261,295	16,261,295
Average per Farm	2,304	4,729
Per Acre	254	234
Livestock	7,496,000	23,048,000

These figures are significant in that they indicate a drastically reduced farm population and the total number of occupied farms. The area in farms has also decreased, while the average acreage per farm has substantially increased. The change on the basis of taking the census would make some difference in the number of farms, and size of farm, but the figures as presented, nevertheless, are comparatively correct.

Under the item "Condition of Land" we note that there are almost 125,000 acres less improved land than in 1911, and at the same time 600,000 less acres under crops. The figures do not indicate an impressive advance in agriculture, but rather the opposite. As would be expected, farm values of buildings, implements of machinery, and livestock, are considerably increased. There is no doubt that there has been a very great improvement, particularly in the last few years, in the quality of farm buildings, and in the holdings in farm machinery. We must, however, in assessing ordinary farm and livestock values remember the tremendous difference in market levels of 1951 when compared with those of forty or fifty years ago.

FIELD CROPS

The following table covers production of field crops over practically the same period:

Crop	Year	1950 (1950 census)		Yield	
		Area	Yield	Area	Yield
Wheat	1900	42,000	738,600 bus.	3,500 ac.	91,000 bus.
Barley	1910	4,882	114,500 bus.	3,200 ac.	114,000 bus.
Oats	1910	184,000	6,200,000 bus.	95,000 ac.	3,400,000 bus.
Buckwheat	1910	15,000	597,000 bus.	63,000 ac.	2,700,000 bus.
Hay	1910	2,438	43,600 tons	245 ac.	3,825 bus.
Total Grain			7,693,700 bus.		6,208,825 bus.
Hay	1910	215,000	256,000 tons	196,000 ac.	197,000 tons
Potatoes	1910	30,610	5,010,166 bus.		
Roots	1930	53,000	11,992,000 bus.	42,000 ac.	6,160,000 bus.
	1911	7,900	3,800,000 bus.	7,500 ac.	5,000,000 bus.
	1930	14,000	8,000,000 bus.		

These figures indicate the change that has taken place in grain crops during the period under review. As is to be expected our production of wheat has deteriorated, although there is some slight evidence of revival in late years.

There has also been a very considerable lowering in the production of oats, and a corresponding increase in that of mixed grains. Buckwheat, which was once a substantial crop, has almost disappeared. It is interesting to note that in 1910 we had a production of almost 8 million bushels of grain, compared with something over 6 million in the 1950 crop. In the intervening years production of grain crops rose above or fell below these indicated levels. For instance, we had an estimated production of 7,596,000 bushels of oats alone in 1914. In the past year our grain production in the Province has been very favorable. In 1952 our production was something over 6,600,000 bushels. In looking over the production of grains on an acreage basis we cannot say that there has been very much of a change in yields. This has remained fairly stationary. In comparing these figures we must again refer to our opening suggestions, that improved varieties and other good husbandry influences should have created a substantial improvement in this respect. The figures do not indicate that this assumption is correct.

As far as potatoes are concerned, this crop has been extremely variable in its productive capacity, but disregarding the past two very favorable production years improvement in yields per acre is scarcely discernible.

Attention is drawn to our hay production which has gone down very materially below the level of earlier years. What is true of hay is also true in relation to our grassland pastures. To those of us who have watched our records there has been an obvious deterioration in our clover production and in our grasslands generally.

It should be pointed out in connection with our yield of field crops that in addition to the farm crops indicated there was in the former period a substantial production of field peas, field beans, rye, clover, and hay seed. Large quantities of vegetables, such as carrots, cabbages, and beets, were also grown, and shipped by vessel out of the Province. In addition gooseberries, currants, maple sugar, and even some tobacco was produced.

LIVESTOCK

	1911	1951
Horses	36,000	19,000
Cattle	113,000	97,000
Sheep	91,000	34,000
(In 1881 - 166,000)		
Pigs	56,000	72,000
Poultry	761,000	1,000,000
Wool	273,000 lbs.	109,000 lbs.

Pur Farming—supplied a revenue of upward of \$3,000,000 in some of the best years.

The story in connection with our livestock is disappointing. As is to be expected, horses have very greatly decreased in numbers. Our cattle population, however, is below former levels, and in some earlier years it was larger than indicated at the beginning of the period. In view of the great recession in horses and sheep numbers, our cattle population should be nearer to 150,000 in order to make up the deficiency. Sheep numbers are actually less than one-third of earlier figures. As a matter of fact in 1881 the census estimate on sheep was 166,000. Swine is considerably above former levels, but the figures are not the total yearly production, but rather the number of farms at the time the survey was made. Our poultry population is larger, and wool, as is to be expected, very much below earlier production. Fox farming, which brought in a tremendous revenue at one time, is almost now a negligible factor.

Regarding dairying, there is some difficulty in securing first hand information in this respect. In the earlier years there was a tremendous quantity of milk going into home manufacture. With all the developments that has taken place in improvement of dairy herds the increase in total milk production in the Province within recent years is not impressive. As a matter of fact the milk production in many years up to the 1940's was considerably less than in 1910.

In making the general survey, and comparing conditions, and in view of the tremendous amount of encouragement rendered through field services, new and improved breeds and varieties, and premiums on quality and grades, the figures would indicate that the overall situation presents a need for a very careful re-evaluation of our farm programs. An additional incentive within recent years that must not be ignored is the demands set up through world conditions and national supports that have been provided most farm products out of the revenues of the country, an influence entirely absent in early years.

We have not accurate figures on the number of abandoned farms in Prince Edward Island, but we do know that many farms have been abandoned, and a large percentage of others are only operated at partial efficiency.

There are one or two other factors, however, which must be considered in relation to our productive processes. In 1910 we knew very little about the use of commercial fertilizers. As a matter of fact, very little fertilizer was utilized previous to 1920, when modernistic practices in potato production took possession of our people, and it was generally thought that the millenium in farm economics had

arrived. Let us then study this for a while. Here are the figures of fertilizers imported in the Province:

SALES OF FERTILIZERS (Tons)

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
H. M.	27,071	18,929	22,205	28,494	12,866	7,025	9,644	11,440	10,167	10,759
F. M.	1,155	4,065	11,429	7,823	3,127	6,200	7,842	5,201	7,759	11,292
Totals	28,226	22,994	33,634	36,317	15,993	13,225	17,486	16,741	17,926	22,051

H. M.—Home Mixed; F. M.—Factory Mixed.

	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
H. M.	12,923	12,725	10,415	11,934	6,690	11,534	11,351	8,035	6,942	6,510
F. M.	8,692	8,124	13,358	11,041	15,866	27,858	31,889	40,019	49,783	45,280
Totals	21,615	20,849	23,773	22,975	22,556	39,392	43,240	48,054	56,725	51,790

	1948	1949	1950	1951	1952	1953
H. M.	6,212	4,896	2,280	1,620	1,353	
F. M.	55,357	46,536	44,999	33,637	41,514	
Totals	61,569	51,432	47,279	35,257	42,867	11,50,201

With reference to these figures, it will be noted that there was a break in the use of fertilizers in the 30's due chiefly to distress conditions and the fact that there was a decisive change in the quality of fertilizers. Low grade materials were eliminated, and highly concentrated materials were substituted. This throws out to some extent accurate comparisons. The latter day mixtures if compared with early purchases would be much higher in volume on a bulk plant food content. The figures possibly do not indicate correct tonnage entering the Province as some may have been imported by truck and other means. There also may be exports from the total tonnage indicated it must be pointed out, however, that Prince Edward Island production has received the impact of tremendous quantities of prepared plant foods within recent years that were entirely absent in producing our crops fifty years ago.

There is another important factor, however, that should have materially added to the incidence of production, and that is our activities in the import and export of feeds. In the earlier years there was a large export of grains from the Province of Prince Edward Island—too much possibly for the maintenance of fertility. At the same time large amounts of grains were consumed at home particularly in the horse and hog feeding. In these days, fertilizing supplements by a population who were not afraid of work were also secured. Vast quantities of seaweed, kelp, marsh and swamp mud, and shell mud, out of rivers, were saved, and supplemented the usual manure resources. Cow yards were very often filled three and four feet deep with these materials which effectively saved the seepage, and which provided a labour task that would appal our present-day producers. These practices have generally been discontinued. Export of grains from the farms has practically ceased, and the tide has turned the other way, with huge quantities of imported feeds entering the Province of Prince Edward Island. The figures in this connection since 1941 based on claims under the Freight Assistance Policy, provide interesting details. Up until October 31, 1953, Prince Edward Island imported 473,694 tons of feed on which Freight Assistance amounted to \$4,448,303.25 was paid. The following is the breakdown:

Quantities of Animal Feeds Imported Since October 1941 to October 1953 Under Freight Assistance Policy

	Wheat	Oats	Barley	Rye	Screenings	Millfeeds	Totals
117,270 tons	79,904	132,023	149	6,036	138,203	473,694	3,909,300 bus
3,909,300 bus	7,900	5,546,000	5,322	241,440	5,332,120	20,934,182	

Plus 20 per cent extra for other feeds. 520,433. 25,121,018. This import averages over 2,000,000 bushels per year for the period under review. In some of these years the figures would reach over 2,500,000 bushels.

This huge quantity of feeds is something that was not experienced at the beginning of the period under review. As a matter of fact, it was almost considered a disgrace for a farmer to have to buy extra feeds above that which he raised. The quantities indicated, too, are by no means total supplies coming into the Province. These are only the supplies on which Freight Assistance is paid, and Freight Assistance is not paid on bran, oilmeal, and other protein and feed supplements. It may very well be assumed that these supplements would increase the total tonnage by approximately 20 per cent. If this is converted to a bushel basis it would mean that the importation since 1941 in bushels would be 25,121,000, well over one-third of our total Prince Edward Island production. The cost in some years to our Island producers in feeds and fertilizers would be well up to 5 millions of dollars.

I would like to stress this particular situation: That from 1900 to 1910 we exported quite large quantities of raw products from the Province, and, at the same time, on the basis on which our agriculture was then conducted, we maintained a much heavier livestock population with the use of little or no commercial fertilizer, or the importation of feeds.

Conservation or Wastage

A great deal has been said about conservation of late years. It is a very respectful and dignified term, and our scientific and research men take a particular delight in tripping off the term very frequently in our discussions. Without entirely discarding the word "conservation," I will nevertheless deal with the following items under the term "wastage." Not long ago a man looking at one of our rivers when the tide was out, queried: "Where does all this mud come from, anyway?" I waved my hand at the adjacent farms, and said: "Your fertility has contributed to that. The mud is due to faulty farm practices, and has wasted into the rivers carrying with it your resources of barnyard manure and purchased fertilizers. These marshland areas build up in somewhat the same manner." Needless to say he looked at which with a searching glance of amazement. It is estimated that we have lost at least four to five inches of our top soil, and our practices to hold fertility and hold our soil together have deteriorated rather than improved. We need not go into detail at this time in respect to this. We need only travel throughout the Province of Prince Edward Island and see what has taken place with production, our hillside, our grass lands, hay and clover yields, feed supplies for our livestock, and to the numbers of livestock which farms are capable of maintaining, to convince ourselves that our conditions can be improved. Where do some of these weaknesses occur? It is impossible to go into a detailed examination of tillage practices. They are too obvious to need much comment. We would refer this group to a very excellent treatise on these matters prepared by the Island Branch of the A.I.C. The story is accurately and graphically told.

Let us move on, then, to a few other specific instances of wastage. What about our manures? What is the estimated financial loss in manures through careless handling? In the older countries, even on small farms, every barnyard has a cement cistern to preserve the liquids, and these are either sprayed directly on the crop, or interred beneath the soil surface to prevent evaporation. Every ounce in both the solid and liquid excrement is saved to the extent that it is humanly possible to do so. Only a very small percentage of our farm people are doing a really top job in the conservation of barnyard manure. As a matter of fact, manure is frequently left in outside piles, and is not moved maybe for two or three years. Frequently manure piles are taken to the field and dumped indiscriminately in raggy piles one hundred feet or more long. There is little attempt at conservation. As a matter of information the following table on manure production in the Province of Prince Edward Island is herewith presented:

COMPOSITION VALUE OF MANURE

Yield on P. E. Island—Solid Excrement, Liquids, and Bedding

Animal	Nitrogen lbs. per ton	Phosphoric acid lbs. per ton	Potash lbs. per ton	Value per ton	Total Manure tons	Total Value
Horse	13.20	4.40	11.80	3.05	160,000	\$ 488,000
Cow-Steer	11.70	2.80	9.80	2.60	900,000	2,340,000
Pig	11.20	6.12	9.80	2.82	300,000	846,000
Sheep	18.60	6.63	19.10	5.12	35,000	158,550
Hens	19.50	15.40	8.20	5.04	12,000	60,480
(100)						
Totals	15,767,000	4,863,800	12,682,400		1,307,000	\$3,611,030

It is difficult to state how much manure is applied naturally to the land on pastures. Possibly not over 30 per cent is saved directly in this way, and even much of this is wasted in pasture corners or where cattle congregate at night. There is no doubt that tremendous quantities of manure are lost on roadways, in the yards, fence corners, bush, and waste land. In many sections of the country young cattle and sheep are pastured during the whole summer on waste land and much of manure is never cultivated. We are assuming that at least 65 per cent of our manure is produced under stabling conditions and in yards, roadways, bush, fence corners, and waste lands. The figures dealing with the production of manure are conservative on the basis of tonnage produced per animal. The money value of manure is based upon the valuation of commercial fertilizers in 1953. It is evident that there is a tremendous total valuation from a fertilizer standpoint in the manures. Another valuation, however, that is not involved in the estimates is the loss of the tremendously important physical factors of manure on the soil, its retentive characteristics in binding soils together, and thus combating the usual processes of erosion, its influences on bacterial life, its possession of minor elements, and other factors. For the purpose of this article, we estimate a loss of 60 per cent on our total manure valuation, which means that 9,460,200 pounds of nitrogen, 2,918,280 pounds of phosphoric acid, and 7,609,440 pounds

of potash are wasted annually, with a monetary loss of at least \$2,167,000. And while this loss, a great percentage of which could be controlled, is suffered by our producers year after year, the slack is taken up by importations of necessary fertilizers to supplant the wastage. I submit, too, that there is a very definite wastage in our fertilizer applications. From our information in 1953 applications at least 83 per cent of the importation was potash fertilizer and we can assume that the bulk of the tonnage was used for this purpose. As a matter of fact in some sections almost 100 per cent of the fertilizer went to potato crops, and in these same areas there is a tremendous deficiency in grass, pastures, hay, and grain crops. In many sections the livestock population that has been under gradual contraction for years requires, in most years in midwinter, the importation of hay, sometimes costing between \$30.00 and \$40.00 per ton, to keep animals alive. The use of a substantial portion of this fertilizer in a well-balanced judicious farm program, involving improvement in pastures, hay, and grain crops, would gradually build up, not only the fertility of the soils and the number of livestock of the communities involved, but also the economic levels and insurance of protection for the people.

Perhaps it would be well to throw a little light in passing on the amount and value of fertilizing material removed from the soil by some crops, much of which is marketed or wasted. Here are a few:

	N.	P2O5	K2O	Value
Oats (50 bus.)	34 lbs.	14 lbs.	10 lbs.	\$ 7.24
Timothy Hay (2 tons)	60.	40.	90	18.00
Red Clover Hay (2 tons)	82.8	15.2	88	18.82
Turnips (15 tons)	54.	30.	115	17.27
Potatoes (300)	63.	27.	90	17.09
Oat Straw (Removed from 1 acre)	12.4	4.0	24.8	3.58

It should be mentioned in connection with a three hundred bushel crop of potatoes that the amounts removed and the value are for the potatoes alone, and do not take into consideration the tops usually burned, or the condition in which the potato land is left, usually very susceptible to leaching and surface loss. We wonder, too, regarding the economy of selling timothy hay or clover hay which can be purchased at the present time at \$12.00 per ton, and the cost of pressing is at least \$6.00 more. The value of oat straw is also fixed at \$3.58 per ton on its fertilizing value, yet to count fibre value, or its effect as an absorbent under hogs and other livestock. Even in view of this value the attraction of the beautiful glints against the night sky of burning straw stacks in the Autumn has an extremely fascinating attraction for many of our producers. If a fifty bushel crop of oats, and the straw which it grows, is removed from the field, the value on the fertilizer basis is almost \$15.00. It would take, in other words, the influence of the value of fertilizing materials in five tons of manure to replace the removal. The feeding of all these materials to livestock which return, after producing milk, pork, or beef, from 65% to 95% of the fertilizing constituents in feeds, would seem to be a wise policy and program for our producers.

The wastage in the potato crop is substantial. In many seasons producers scramble to grade, handle, and transport potatoes to a shipping point at prices below the value of the tubers for feed purposes, when compared with prices for grain and meal for hogs and other animals. For instance, during the present year the actual market value of potatoes has been less than sixty-five cents per hundred weight for the graded product. Crushed barley at the same time is selling at \$3.00 per hundred weight, with other grains and meals at a higher level. This would leave potatoes for feed valued at least at seventy-five cents per hundred weight, using the basis of four pounds of potatoes to one pound of meal, which is reasonable for boiled potatoes or hog feed. The argument that there is too much labor in handling potatoes for feed is simply indefensible. Is there any more labor in handling potatoes for feed, since no grading is involved, than is necessary in grading, sacking, and shipping them to market? One immigrant in this country secured, during the past Spring, large quantities of potatoes, free, which he gladly took home and fed to his hogs, while the former owner spent time and extra money in buying his hog feed from his dealer. Thousands and thousands of bushels of this fine livestock threaten their own economic values in livestock feeding by buying their requirements, sometimes at very high cost, from dealers and feed mills. Forty years ago almost every farmer owned a feed boiler and a large part of our potato crop was fed to hogs and marketed as a finished product. In the Scandinavian countries potatoes as a livestock feed are rated very highly, and boiled potatoes are frequently carried over for months to satisfy feed requirements. Some of the big farm business operators in parts of the United States divert large quantities of potatoes as a succulent feed for their cattle, and claim they secure results of a more remunerative nature from potatoes in the ration than they can from grass or other forms of silage.

Hog production as stated in the Province of Prince Edward Island at one time was carried chiefly on the potato crop. During the war, control prices on feeds, and on the ultimate product, developed a very easy and sure system of animal feeding, and the potato was thrown out of competitive practices and marketing conditions at the present time demand more searching investigation of the value of potatoes in the ration, and their utilization, particularly for the culms, or when the table stock potato market prices sink below their value, as a hog feed.

SEED GRAIN

The returns secured through our seed grain survey tell a story of wastage of our efforts in grain production. Here it is:

	Oats	Mixed Grain	Barley	Wheat
No. of samples collected	97	142	1	4
No. graded No. 1	11	48	-	-
No. graded No. 2	12	23	-	2
No. graded No. 3	15	16	-	-
No. graded Reject	59	55	-	2
Rejected for:				
Germination	1	-	-	-
Primary noxious weeds	46	-	-	-
Secondary noxious seeds	1	-	-	-
Excess other weed seeds	31	-	-	-
Cultivated crop seeds	9	-	-	-

The weeds found in the samples submitted ran the whole gamut of weed production, and included primary noxious secondary noxious, and many other weeds. In one-pound grain samples as many as 2,240 weed seeds were found in the samples selected in 1953, or a total of 223,480 weed seeds per acre, while in previous years the number would run much higher than this level.

One can readily understand the seriousness of this shortsighted practise in curtailing production. The use of a little care in cleaning primary noxious weeds has created a great difference in grain yields in these cases. Not only is there a general disregard of weed control in a large percentage of cases, but there is very little regard for the wastage created by some of our more serious weed infestations such as wild radish, mustards, and sow thistle. Control measures, at least for the former, are now within reach of practically every farmer. The use of a Custom spraying has been initiated, and should be encouraged to the fullest possible extent. The following weeds are found to have been seeded in our grain crops: Bladder Campion, Couch Grass, Ox-eye Daisy, Perennial Sow Thistle, Wild Mustard, Wild Radish, Common Ragweed, Curled Dock, Purple Cockle, Wild Oats, August Flower, Barnyard Grass, False Wild Oats, Fleabane, Green Foxtail, Yellow Foxtail, Hemp Nettle, Knotweed, Lady's Thumb, Lamb's Quarters, Loosestrife, Plantain, Sorrel, Spurges, Wild Buckw