taught as a special subject cooperation in building creameries, slaughter-houses and egg-collecting centres grew spontaneously among those engaged in agriculture—on their own initiative and with their own leadership.

Askov, the largest of the Folk High Schools, has about 300 students for its winter course. The others have on an average 50 or 60 students. The International People's College at Elsinore which receives students from all classes of society and which has an international teaching staff and student body has this winter 136 students, 36 being foreigners. In summer the number of foreign students is comparatively larger. The Folk High Schools have in recent years spread to the industrial workers and it may be that they will perform a similar mission among these as among the farmers.

Dairying in the Maritime Provinces

By M. CUMMING.

Live Stock vs. Crop Farming.

The rearing and selling of livestock in contrast to the raising and selling of crops is vital to the building up and even to the maintaining of soil fertility. The farmer who raises and sells grain or hay or other farm crop removes from his farm all the elements of fertility contained in these crops and unless the crop has a market value much in excess of the value of its fertilizing ingredients, he will find it practically impossible to make amends to the soil.

The farmer who raises and sells beef removes about 25% and the farmer who produces and sells butterfat about 5% and butterfat plus hogs about 10% of the fertilizing elements contained in the fodders raised to feed the livestock which produces these products. Barnyard manure is the medium by which the remaining 75% to 95% of the fertilizing elements is returned to the soil. In addition, barnyard manure contains organic matter popularly called humus, a vital factor in soil fertility, which is lost to the farmer who sells crops in their natural condition.

Live Stock Farming Constructive.

In practice, the good livestock farmer not only conserves most of the fertilizing ingredients which are removed from the soil by his crops but, because of extra nitrogen obtained from the air through clover growing, through mineral matter brought up to the surface by deep-rooted plants, and finally by contributing the fertilizing elements contained in purchased feeds, actually increases farm fertility. Anyone, who has a knowledge of farming communities of the Maritime Provinces can recall numerous farmers who have increased the crop producing capacity of their farms two and three-fold through the constructive effects of livestock and good farming methods.

The importance of "majoring" in livestock is often overlooked, at least for a period, on rich farm lands such as those of Western Canada. But, in the Maritime Provinces, where soils are of only average or slightly higher fertility, the practice is inescapeable.

Dairy Cattle Economic Producers of Food.

Cattle constitute the most important branch of livestock in these Provinces, notwithstanding which the principles described in the foregoing are alike applicable to other classes of livestock—sheep, hogs, poultry, and horses. Of the two classes of cattle, beef and dairy, Maritime farmers have gravitated strongly towards dairy cattle. Their care and

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management require a great deal more work but, from a given amount of feed, a dairy cow will produce about six times as much edible products as a fattening steer, with a cash value, depending upon market conditions, from two to three times as great. There are counterbalancing advantages in favor of beef raising including the need of less elaborate equipment and a great deal less work. But, on most farms and in most countries where the soil is not extra rich, the signal advantage which belongs to the dairy cow as an economical producer of food has made her queen of the farm. Beef reigns on wide, extra fertile farms, of which there are few in the Maritime Provinces. For the most part, conditions in these Provinces outstandingly favor dairying.

Dairying Largest Source of Farm Income.

Dairying provides the largest source of income of any branch of agriculture in the Maritime Provinces. The value in Nova Scotia in 1936 was $6,495,000 in comparison with $4,067,000 from fruits and vegetables, $2,548,000 from farm animals, and $1,216,000 from poultry and eggs. In New Brunswick, dairying also led decisively in that year with $5,025,000 credited to dairy products, $3,421,000 to farm animals, $1,164,000 to fruits and vegetables, and $1,323,000 to poultry and eggs. In Prince Edward Island, dairying also led in 1936 but by a lesser margin than in the other Maritime Provinces, the value being $1,594,000 for dairy products in comparison with $1,429,000 from animals, $823,000 from poultry and eggs, and $172,000 from fruits and vegetables.

Butter Profitable Source of Dairy Income.

In all the Provinces approximately 50% to 60% of the income from dairying has been derived from butter, about 33% from fluid milk, and most of the balance, in Nova Scotia, from ice cream and condensed milk, and in the other Provinces from ice cream and cheese.

Fluid Milk Market Limited.

As to these sources of income, there seems little prospect of any noteworthy change in the fluid milk market although the consumption of milk in urban centres is less than one pint per head and much below the quantity which physicians consider to be desirable for the best health conditions. Yet there has been no material change in market demand for fluid milk for a long period.

Limited Prospects for Advancement in Cheese.

New Brunswick and Prince Edward Island jointly produced, in 1936, 695,000 pounds of factory cheese worth $93,200. No factory cheese is produced in Nova Scotia and, in all the Provinces, the amount of home made cheese is nominal. The value of cheese imported into the three Provinces is nearly four times as great as the value of the cheese now manufactured, being about $350,000. The fact that the Maritime Provinces import so much more cheese than they produce has been considered by some as evidence of the opportunity to develop cheese making in the three Provinces. However, most who have studied the subject, believe there is little likelihood of extending cheese making unless conditions change. The principal reason is that when cheese is made, farmers must deliver their fluid milk in fresh condition six times every week whereas creamery managers require delivery of a much less bulky product not more than three times per week in summer and only twice per week in winter. This condition creates a marked premium in favor of creameries versus cheese factories in most communities of the Maritime Provinces where the population is widespread and where, as a result, factories have to draw their product from long distances. The balance is all the more in favor of butter because, over a term of years, the cash return to the farmer sending cream to creameries has been greater than that to the farmer sending fluid milk to the cheese factories and, in addition, the former has had for use on his farm the

skim milk with which to feed various classes of farm animals.

Butter Offers Large Prospect.

As to butter, there has never been any time when there has not been a market for the butter produced in the creameries of the Maritimes and a potential market for a great deal more. Past experience justifies confidence in a continuation of this marketing condition. Prices have been largely a little better than world prices with freight and tariff differentials. Explanatory of the latter Maritime Province farmers, as well as all Canadian farmers, have benefited from a protective tariff of 5c per lb. on direct shipments from New Zealand and Australia; 8c per lb. for shipments from Great Britain, 14c per lb. general tariff and 12c per lb. intermediate tariff, beside which there is protection against dumping.

Because of conditions described in the foregoing, Canadian farmers have received considerably higher prices for their butter than farmers in most parts of the world, especially during periods of depressed markets. For example, when butter was commanding last year a price of about 15c. per lb. in London, England, the corresponding price in Nova Scotia was about 23c per lb. The differential is by no means as great at the present time when butter has advanced approximately 15c per lb. in London and about 10c per lb. in Canada.

Nova Scotia imports approximately 4,000,000 lbs. of butter per annum as against about 6,000,000 lbs. produced in creameries and 5,000,000 lbs produced in home dairies. The actual figures have never been assembled for New Brunswick and Prince Edward Island but there is evidence that the two Provinces together import about the same quantity as Nova Scotia. It may therefore be stated that the total importation of butter for consumption in the Maritime Provinces amounts to about 8,000,000 lbs. per annum. Needless to say, the times appear to be somewhat out of joint when Provinces that are considered to be so well adapted to dairying should be under the necessity of importing this substantial quantity of butter to supply their own needs. The writer is one of many who believe that, whatever may be said or written about the importation of other food supplies into the Maritime Provinces, it should not be necessary in the case of butter unless the butter importations were offset by at least a corresponding butter export. Apropos of this view, there is set forth, in the following paragraphs, the small amount of increase that would be necessary to wipe out the present adverse balance.

Production per Cow Capable of Large Increase.

Based on numerous actual figures and some estimates, it is calculated that the average Nova Scotia cow, during the year 1936, produced 143 lbs. butterfat, equal to 179 lbs. butter. The estimates from the other Maritime Provinces are practically the same. In contrast to this, the average production of butterfat in 677 herds, in Nova Scotia for which records were kept in the year 1936, was 275.7 lbs. butterfat, equal to 344.6 lbs. butter. Many herds registered higher production and individual cows produced more than double this quantity. This average for the 677 herds is 165.64 lbs. butter above the general average for the Province.

The number of milch cows in the Maritime Provinces at the present time is estimated at: Nova Scotia, 115,700; New Brunswick, 111,400; Prince Edward Island, 46,100; a total of 273,200. If just a quarter of the increased production of the Nova Scotia herds, in which records were kept, over the general average herd production, was effected in all the Maritime Provinces, there would be an increase of 11,484,400 lbs. butter, sufficient to wipe out the adverse balance and leave about 3,000,000 lbs. for export.

Methods of Increasing Production per Cow.

Two principal methods of improvement have built up production in the better

herds of these Provinces: (1) breeding and selection; and (2) feeding and management.

Good Breeding Important.

There have been so many demonstrations of improvement in production by the use of good sires that one wonders more farmers have not taken advantage of this method. The fact remains that, whether it be due to lack of faith or to indifference, there are numerous farmers in the three Maritime Provinces who have, as yet, made little effort to improve the breeding of their cattle. Fortunately, it is believed that their numbers are growing less. At any rate, great efforts have been exerted by Departments of Agriculture and by various leaders in agriculture to impress upon farmers the possibility of improvement through better breeding. It is but reasonable to look forward to greater achievements along this line in future years.

Better Feeding Essential.

The second method, better feeding, has also been widely adopted but costs have prevented the masses from making material changes. Hence, particular stress is now being laid upon better methods of feeding that will involve a minimum outlay of cash. It has been urged that, to a greater extent than now obtains, it will pay the average farmer to grow his grain feed rather than to buy it—a point which is thoroughly approved by numerous progressive farmers of the Provinces but which, if one may judge by cultivated acres, has not yet impressed itself on the mind of the average farmer. Likewise, it has been strongly advised that the present acreage of roots (Swedes and mangels) of one-third of an acre per farm in Nova Scotia and New Brunswick and about two-thirds of an acre per farm in Prince Edward Island, should be materially increased, especially when it is considered that the cool, humid climate of these Provinces is particularly suited to this class of crops. But, it must be admitted that, except on a few farms, there has been little evidence that the teaching has been endorsed.

Pasture Improvement Vital.

Latterly, in fact within a very few years, it has been strongly advised that improvement of pastures by top-dressing with fertilizer offers a valuable means of increasing dairy production at a minimum expenditure of labor and cash. This method has been widely adopted in Germany, England, New Zealand, and on a considerable number of farms in Nova Scotia to say nothing of other parts of Canada and the United States. The writer was so much impressed with the possibilities of this practice that, twenty-five years ago, he established at the Agricultural College, Truro, the first large demonstration in pasture improvement on the Continent of America. Little interest developed in the practice at that time but the years of depression have directed attention to costs of production to such an extent that pasture improvement has now received attention in a great many parts of the world. The value of this method is all the greater when one considers that the price of butter in summer time, when it can be cheaply produced from pastures, is not much lower than in winter, in contrast to the wide spread in years gone by before the days of large cold storages.

British Grass Improvement Policy.

Added prestige has been given to pasture improvement by the announcement of the Land Fertility Committee of the British Ministry of Agriculture that, commencing September 6, 1937, a contribution of one-half of the expenditure for lime and one-quarter of the expenditure for basic slag will be made by the exchequer to any occupier of agricultural land in the United Kingdom. Associated with this announcement appears an article in the Journal of the Ministry of Agriculture for October 1937 entitled "Britain's Grassland Must be Improved", in which the use of lime and basic slag for this purpose is strongly recommended.

Some Past Losses.

During the last thirty years, 21,596 so-called farm holdings in the Maritime Provinces were abandoned, a loss of 19.4% and during the same period there was a reduction in the number of dairy cows of 36,458, a loss of 12%. Most of the abandoned farms were either small properties occupied by part-time farmers who earned considerable of their livelihood in pursuits other than agriculture, or were "marginal" lands that offered small opportunity for development. While there are no actual figures covering the point, it is altogether likely that the abandonment of these holdings involved a loss of dairy cows considerably greater than the actual loss of 36,458 cows. This points to a small increase in the cow population on the presently occupied lands.

A Much Bigger Gain.

However, the outstanding development during this period has been the increase in production per cow of approximately 1,000 lbs. of milk and 50 lbs. of butter per annum. It is in the same direction that, we believe, we should look for progress in the immediately succeeding years. That there is ample scope for this progress is clearly indicated by the figures quoted in the preceeding paragraph on "Production Per Cow Capable of Large Increase."

Conclusion of the Whole Matter.

A shrewd farmer recently epitomized the subject, we believe, very sagely when he said, "I do not want to keep the largest number of cows that the feed in my barn will sustain but I do want to keep the smallest number of cows that will turn that feed into the largest quantity of marketable product."

"Good cows, well and economically fed" should, we believe, be the slogan for every Maritime Province dairyman. As this objective is approached, the cow population will take care of itself.

Nova Scotia's Propositions to the Rowell Commission

By G. F. CURTIS

THERE was more than ordinary curiosity attending the submission of the Nova Scotia brief: there was a positive element of dramatic interest. Already Manitoba and Saskatchewan had been heard from and the emphasis they had placed on the need for a thorough overhauling of the structure of Confederation had alarmed some circles in Canada into excited protest. The Premiers of the three Maritime Provinces had at once dissociated themselves from the suggestion that the matter was to be regarded as a contest of the East against the West; but, beyond the denial of a united opposition to the Western proposals, nothing definite was known.

The first significance of the Nova Scotia brief therefore lies in the fact that it envisages the problem before the Commission in large terms. The method of approach is similar to that adopted by Manitoba and Saskatchewan. There are important differences in detail—less stress, for instance, is laid on the dangers arising from the huge totals of provincial debts—but the general line taken is the same. The central position is that no improvement can be expected without fundamental constitu-

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