DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
BRANCH OF THE LIVE STOCK COMMISSIONER

THE SHEEP INDUSTRY

IN

CANADA, GREAT BRITAIN

AND

UNITED STATES.

REPORT OF THE COMMISSIONERS

PUBLISHED BY ORDER OF THE HONOURABLE MARTIN BURRELL,
MINISTER OF AGRICULTURE, OTTAWA, ONT.
NOVEMBER 1st 1911

Suffolks Folded in November.

OTTAWA, November 1, 1911.

TO THE HONOURABLE MARTIN BURRELL,
MINISTER OF AGRICULTURE,
OTTAWA, ONT.

SIR:—

I beg to present herewith the report of Messrs. W. A. Dryden and W. T. Ritch, who were last year specially appointed to investigate, on behalf of your Department, the wool and mutton industries of Canada as compared with those of the United Kingdom and the United States. This report has been prepared for your information, with a view to the inauguration of a definite policy having for its object the development and extension of sheep husbandry in the Dominion.

I would recommend that the report be published and printed for distribution.

I have the honour to be,
Sir,
Your obedient servant,

J. G. RUTHERFORD,
Live Stock Commissioner.

To the Live Stock Commissioner,
Department of Agriculture,
Ottawa.

Sir,—

We beg to present herewith the report of our investigation of the sheep and wool industries as carried on in Canada, the United Kingdom and the United States, upon which, in accordance with your instructions, we have been engaged for the past year.

In this report, which naturally furnishes only a partial review of so large a subject, we have endeavoured to set forth the reasons for the regrettable decline of the sheep industry in Canada and, at the same time, to furnish such information with regard to the methods employed in other countries in the production and the marketing of both wool and mutton as may be useful in any efforts made to remedy this condition.

In furtherance of this idea we have added to the report certain recommendations, the adoption of which will, we think, tend to the encouragement and development of the sheep raising industry in this country.

We sincerely trust that the report, to the preparation of which our best efforts have been given, may be of real and practical service to the Minister and, through his Department, to the farmers and sheep men of the Dominion.

Respectfully submitted,

W. A. Dryden,
W. T. Ritch.

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INTRODUCTION

In entering upon a discussion of the sheep industry in Canada, we are faced immediately with the somewhat discouraging fact that sheep raising as a business has never assumed that importance in this country which it is usual for it to attain in the great agricultural countries of the world. In Great Britain, with its comparatively insignificant area, there are 31,852,777 sheep; in New Zealand 23,792,947; in Australia 92, 241,226 sheep of shearing age; in Argentina 67,211,754; in United States 51,216,000 including lambs; while in Canada there are but 2,106,000 head. That this situation is greatly to be regretted is now very generally acknowledged. The conditions in Canada, natural and otherwise, are such as to lead one to expect a continually expanding trade in this branch of animal industry. The soil and climate in every province of the Dominion are generally favourable and adapted to the keeping of sheep. Geographically the country is so situated as to give it a peculiar advantage as regards competition in the great meat consuming markets of the world. Notwithstanding these facts, the trade in recent years has continually declined.

In addition, however, to the possibilities for development which are fostered by natural conditions, there are other considerations to which it is important that recognition should be directed. One of the worst problems now confronting the Canadian farmer is that which is caused by weeds. Alike on the smaller farms of the East, where mixed farming is practised, and on the prairie lands of the West, where grain growing is more exclusively followed, the weed pest constitutes a menace to agriculture and entails from year to year a serious loss on the farmer. The economic necessity of an adequate remedy being found suggests immediately the practice of keeping sheep. The practical value of these animals in this direction will be referred to again in the course of the report. We are constrained to say here, however, that the possibilities for weed destruction, which would be promoted through an increase in the numbers of sheep, would alone warrant the undertaking of an extended campaign to encourage and develop our sheep industry.

One other significant feature remains to be alluded to. Scattered throughout the Dominion are areas of what is at present waste land, which, because of its hilly and mountainous character, it is impossible to profitably bring under cultivation. Such territory, being, for the most part well watered, is eminently adapted for the summer feeding of sheep. Although almost useless for other stock, sheep would do well and thrive on it and would thus add greatly to the resources of the districts in which such land is found. In Great Britain sheep alone have been able to render returns possible on the rugged highlands of Northern England and Scotland, and they are alike indispensable on the rich, fertile soil of the Lowland Counties, where the returns they make to the land are found to be essential to the continuance of intensive agriculture. We have both conditions in Canada—both waste land and fertile land—and we have therefore equal need to develop the resources of the one and the other, through the remunerative occupation of these by sheep.

The investigation in Canada proceeded province by province and is so considered in our report. While a number of farms were visited in each of the districts included in our itinerary, the most direct information was obtained through small meetings which were arranged for through the courtesy

of provincial officials in advance of the itinerary of the commissioners and which were attended by interested farmers of the surrounding neighbourhoods. No other method could better have served the purpose of the investigation, as the exact situation in each district, viewed from the standpoint of the local breeders, was clearly represented in their discussions of the problems which confronted them in their business. That the people desire information regarding sheep raising and that there is a growing interest in its possibilities was evidenced by their cordial attitude toward the work of the investigation and by their enthusiastic discussions regarding the whole movement. It is our candid opinion that no time could be more opportune for the successful inauguration of a comprehensive policy in aid of the sheep industry. A descriptive statement regarding the situation in the various provinces, as we saw it, is given in the chapters immediately following.

The report connected with the investigation in the United States gathers chief interest, perhaps, through the description of an important and suggestive undertaking in connection with the grading and marketing of wool. To handle wool properly, to present it for sale in marketable shape and to market it in an advantageous manner constitute one of the most significant of all problems that now face the Canadian producer. The waste which occurs in the production of wool, both in Canada and the United States, is a reflection upon our business ability. This waste is undoubtedly due to various causes and may not all be charged to the farmer. It represents nevertheless such a distinct financial loss as to have seriously retarded the growth of the sheep industry. For this reason, we have devoted a considerable portion of our whole report to a study of the wool question. While from the United States we gathered many useful suggestions, the comprehensive experiment undertaken in connection with the marketing of wool appears to be the most important. It contains features which, even if only in a modified form, we are hopeful may be found valuable for adoption in this country.

A series of chapters reports our observations, which extended over a period of about three months, of conditions and markets in Great Britain. The advanced system and methods which are characteristic of the production and marketing of mutton and wool, as of every other phase of British agriculture, will, of themselves, indicate the interest which attached to this part of the investigation. While both system and methods may profitably serve as guides in any progressive movement, which may here be undertaken, the existing situation was more particularly studied in the light of the possibility of a permanent market being established in Great Britain for our surplus wool and mutton, in the event of a prospective advance in the production of these commodities in Canada. The absorbing power of the British markets is undiminished and Canada's opportunities in finding a satisfactory outlet for her surplus produce were made the subject of careful thought and discussion in connection with our study of Britain's sheep and wool industry. In addition to this, however, we are hopeful that this section of our report may be found to contain much suggestive information regarding methods in operation which may induce the adoption of an improved system of sheep keeping in this country. It will be observed that immediately following this section are a few chapters dealing with the production and marketing of wool in other great sheep countries of the world. They serve to give a reasonably adequate idea of the nature of the world's trade in wool.

The three final chapters of the report aim to present a summary of the results of the whole investigation. They embody our estimate of the situation in Canada and our recommendations with reference to the adoption of a

policy to be undertaken in the interests of the sheep industry. That there is need of such a policy is very evident. That the Department would be justified in entering upon a progressive scheme of a comprehensive nature is now generally acknowledged. That the advantages to be gained, through a greatly increased production of mutton and wool in this country, would repay, many times over, a wise expenditure of money in giving effect to an energetic campaign is the opinion of those who have given the question serious study. We should not remain satisfied until statistics show a return of at least ten times the number of sheep as given by the present estimate and until sheep raising has established itself as a recognized factor in promoting the national prosperity.

CHAP. I.

THE SHEEP INDUSTRY IN EASTERN CANADA.

Prince Edward Island.

This small isolated province has very often been referred to as the "Garden of the Gulf," apparently for two outstanding reasons, the one being the natural fertility of the soil, and the other the almost entire absence of waste or rough land. Practically every square foot of the Island is arable and is at present under cultivation, consequently sheep breeding must be conducted under conditions adapted to mixed farming methods.

The Island is composed of 1,397,991 acres and according to statistics compiled by the provincial authorities for 1910, the number of sheep maintained is 75,000 head. These figures reveal a serious decrease from 166,496 in 1881, and 125,546 in 1901. Although the past year shows a slight increase over 1909, it is so slight that we may attribute it more to the annual variation than to any outstanding desire to enlarge the Island flocks. That this province is suitable for the production of high-class lamb and mutton is conclusively proved by the eagerness of American sheep buyers for the Island product. The New England States have been for many years the principal outlet for Prince Edward Island lamb and mutton as well as for very large quantities of other farm produce. During the season of 1910 and 1911 however, a large number of sheep and lambs were slaughtered at Charlottetown and shipped in a frozen state to places as far West as Winnipeg, this trade being due no doubt, to the fact that sheep and lambs were higher in Western Canada than in the Eastern States.

The popularity of the Island lamb and mutton must not be attributed to care in breeding operations, or to a selection of rams for mating purposes, but rather to the outstanding qualities of the natural grasses. It must here be stated that we did not find that breeding operations were carried on with any apparent fixed type or definite object in view. It is not uncommon for farmers to purchase from year to year, rams of distinctly different characteristics for successive use on their flocks. For instance, one man may use a Shropshire ram, or two of such rams in succession and, in a measure, secure uniformity in the product. For some reason or other, he will then follow by the use of such a sire as a Lincoln and another year change again and use a Southdown. What is even worse, very often no attempt is made toward securing the services of a pure bred sire. One of the ram lambs, possibly not the best of the lamb crop at that, is retained and allowed to be the sire of a product for which the breeder desires to receive the highest market price. Such a policy cannot possibly have the effect of increasing the hardiness or prolificacy of a flock. On the contrary, it results in a considerable number of small, weak and undesirable lambs. Such a system (or lack of it) must mean a market product of all types and qualities, which factor plays no small part in the price received when the stock is ready for sale.

Most farmers in Prince Edward Island make a general practice of growing hay, oats and potatoes and of selling them off the farm each year. This practice, according to their own evidence, is having a serious effect in depleting their

lands of soil fertility. Unless more live stock is kept and less hay and fewer potatoes shipped, the land will soon become so impoverished that crop raising of any kind will eventually be unprofitable.

It is the cutsom of all buyers of butcher stock to buy from the farmer his entire offering, good, bad and indifferent, giving him a lump sum for everything, or so much per pound live weight. This custom does not have the effect of teaching the producer the proportionate value of his good quality lambs as compared with those of inferior grade. If he received prices in accordance with proper value, he might then more readily understand that a part of his lamb crop, especially the young, thin lambs, could be retained for a certain period and finished to excel those sold off the grass, thus securing to their owner a price which would be found to yield more profit than he usually obtains by selling hay and grain from the farm. The price for lamb and mutton has been good during the past four years and breeders of sheep are generally satisfied in this regard. When we compare the prices received during this period with those received during a time when sheep were kept in comparatively large numbers, we find that they are now very much higher. Even at the previous low figures, sheep were considered profitable, therefore they should now be considered more so, on account of the increased revenue derived from them. The figures given below, show the comparative decrease in the number of sheep and the increase in price during the same period.

Year	No. of Sheep	Prices Received
1901.....	125,546	$1.50 to $2.50 per head
1907.....	71,470	4½c to 5c per lb.
1909.....	75,000	4½c to 5½c " "
1910.....	75,600	5c to 5½c " "

In 1905, the price of lamb was 2 cents to 2½ cents per pound, and in 1906, it was 3 cents to 3½ cents per pound live weight, yet farmers took more interest in sheep then than they do now.

Generally speaking, sheep on the Island are very healthy and free from disease. In some instances cases of stomach worms, tape worms, and wool balls were reported, but in most cases the owner did not know how to apply the usual remedies, or to take proper precautions. Dipping is a practice almost entirely unknown, the result being that ticks and lice are quite common and in many cases badly infest entire flocks. Castration and docking are also very generally neglected except that in some instances, where ewe lambs are retained in the flock, it is customary to dock their tails. In conversation with the buyers, we learned that practically all male lambs were uncastrated, and that under present circumstances they do not expect any reform.

In days gone by when wood lots were more frequent than now, the farms were divided and fenced into small fields by the use of poles or light timber available at that time. These fences are now old, and more or less in a dilapidated condition, while such repairs as have been made from time to time have only been sufficient to stop cattle. In most cases they have been strengthened or replaced by barbed wire which is preferred on account of its cheapness as compared with other types of wire fencing. Two or three wires will effectually stop cattle and horses, but offer no resistance to the wandering tendency of sheep, consequently they escape from the pasture field to the grain crops of neighbors and cause some annoyance. For this reason, many farmers have foolishly disposed of their sheep instead of erecting a general purpose fence for all kinds of live stock.

Dairying also has greatly increased in popularity and is considered sufficient reason for the neglect of sheep. When milch cows are kept to the full capacity of the farm, it is claimed that there is no room for sheep, as their habit of eating close to the ground deprives cattle of sufficient grass.

The extensive destruction of sheep by dogs, was the general complaint all over the Island. In some cases farmers had not only sustained serious losses, but repeated losses. Frequent depredations were spoken of near towns and villages, while isolated cases were recorded in every locality. Many farmers have discontinued keeping sheep on this account, while others who had not suffered any loss themselves, were so discouraged by the losses of their neighbors that they also discontinued sheep raising. We met a good many enterprising live stock men who were anxious to go into sheep raising more extensively, but who have hesitated to do so because there was no security from the depredations of dogs.

In the matter of securing pure bred sheep for breeding purposes, especially rams, considerable difficulty has been encountered in the past. The province of Ontario is considered to be the largest source of such supply, but owing to the great distance, one from the other, the Prince Edward Island breeder cannot conveniently secure sires to his taste. It must not be forgotten that there are on the Island a number of progressive men maintaining pure bred flocks who have a considerable number of rams for sale every year. These men also require high class rams to maintain the superiority of their flocks, and they should be good buyers from outside the Province. Due to past experience, much hesitation is manifested to do business by correspondence. This is a feature that should be readily set right by the seller as it is very evident that when a good price is paid and indifferent value received, serious damage is not only done to the buyer, but also to the seller's trade and reputation, while the whole transaction is detrimental to the live stock interests of the country. Native pure bred sires are not available in sufficient numbers to supply local demand, and if smaller breeders are persuaded to desist from the use of scrub rams, this supply would fall far short and should therefore be supplemented from outside. A movement in the right direction has already been inaugurated by the Federal Department through its public sales of pure bred rams. The influence upon the grade flocks in the districts where such rams have been distributed is striking and buyers have frequently commented on the improvement which has been made. The continuation and expansion of this policy will prove one of the most effective means of developing the sheep industry in the Maritime Provinces.

The urgent needs of Prince Edward Island in the interests of sheep raising are,—Instructive lectures, suitable fencing, strictly enforced dog laws, re-organization of the system of breeding in each district, regular dipping, castration, docking and a sufficient supply of pure bred rams. A special feature should also be made of the necessary care of the fleece and the proper method of shearing, packing and marketing the wool.

Although these points would be included in the course of lectures suggested, definite action should be taken towards improvement in the order mentioned. Sheep raising in this Province is a mixed farming problem only, and therefore different to those obtaining in the other Maritime Provinces where both mixed farming and hill conditions have to be considered.

Nova Scotia.

Sheep farming in this Province is of a very different character from that of Prince Edward Island. Here we find in contrast to the mixed farms of the Island, much rough, partly timbered land in many cases unsuitable for, and usually very difficult of cultivation. In many districts of this nature a large number of farms have been for some years totally abandoned, the result being that once good, well equipped places with useful buildings are now in a very dilapidated condition. These farms had gradually been depleted of their natural fertility, the practice having been to grow hay and grain for sale without a sufficient number of live stock being maintained for the purpose of returning to the land that which is annually sold from it. Although thus impoverished, there still grows over all these hills an abundance of short, sweet grass particularly suited for sheep raising. Often combined with the native wild grass is a liberal mixture of white clover which is considered to be one of the greatest delicacies that can be provided for sheep. In contrast to most other portions of the Dominion, these hills remain green throughout the entire pasture season. This is the result of very heavy dews and frequent showers, common alike to all the Maritime Provinces.

While ideal conditions prevail for the summer feeding period, we must not lose sight of the fact that, unlike some parts of England and Scotland where the high rolling hills resemble certain districts in the Maritime Provinces, a severe winter sets in with considerable snow and much frost, compelling the entire cessation of grazing. Preparation must therefore be made for winter care and hand feeding. The requirements for this period are much less in expenditure of capital and labour than in the case of other farm animals, and the necessary feed may, in most cases, be easily obtained on arable lands quite adjacent to the districts above described. Although such is the case, it is scarcely to be expected that hill sheep farmers would be heavy feeders of lambs for the market, but that it would be more advantageous for them to dispose of the entire lamb crop in the fall, except for a draft of young ewes to replace the old ones of the flock. Those in condition should find their way to the shambles while younger, immature lambs might be profitably fed in other districts, where hay is now sold off the farm and other feeds are produced in abundance. This practice is suggested by the fact that during the late summer and early fall very large numbers of lambs and sheep are shipped out of the Maritime Provinces, and in turn, during the succeeding winter, heavy shipments of frozen meat are brought in to supply the local demand in such centres as Sydney, Halifax, St. John and Fredericton. It would seem quite evident that after a little education of the consumer as well as of the producer, the practice of winter feeding should bear considerable expansion. The education of the consumer should be comparatively easy when once he learned the superiority in quality and flavor of locally fed and fresh killed mutton over that of the frozen article. The districts where these conditions are most pronounced are, Antigonish county, Guysboro county, part of Pictou county, Digby county and Cape Breton Island. Other parts of the Province are either devoted to special industries or utilized for mixed farming.

Certain sections of the districts already mentioned possess special advantages for sheep raising and it may be well to draw particular attention to them. In the first place we will refer to that part of Antigonish county which includes Cape George. This Cape is really a small peninsula, comprising approximately six thousand acres of high rolling hills which are clear

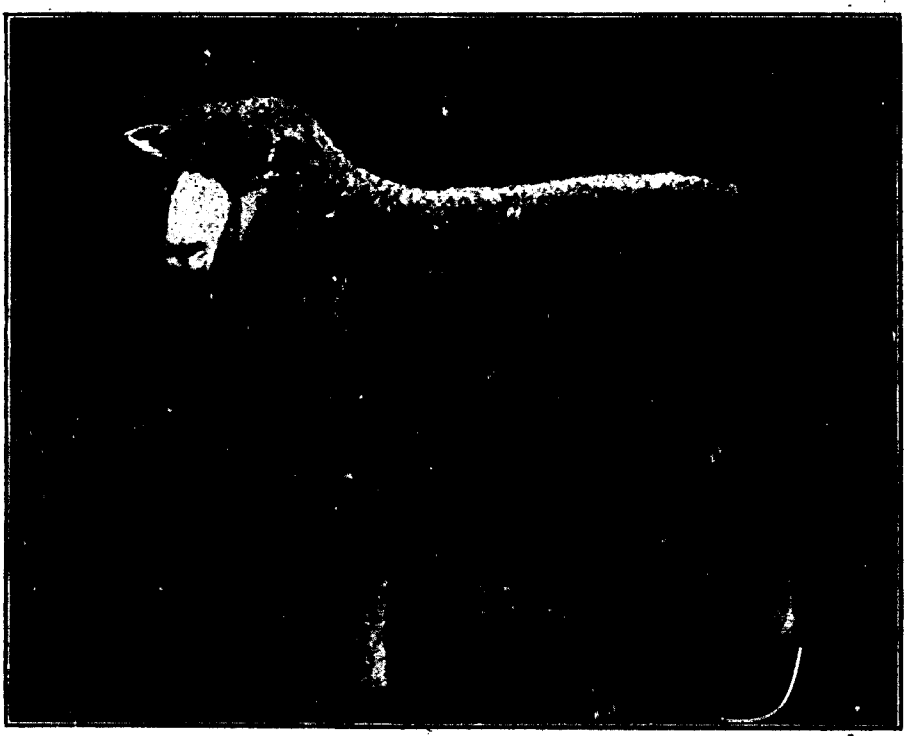


Fig. 1.—Lincoln Shearling Ram.

Fig. 2.—Lincoln Shearling Ewes in Full Fleece.

Fig. 3.—Cotswold Ram Lambs.

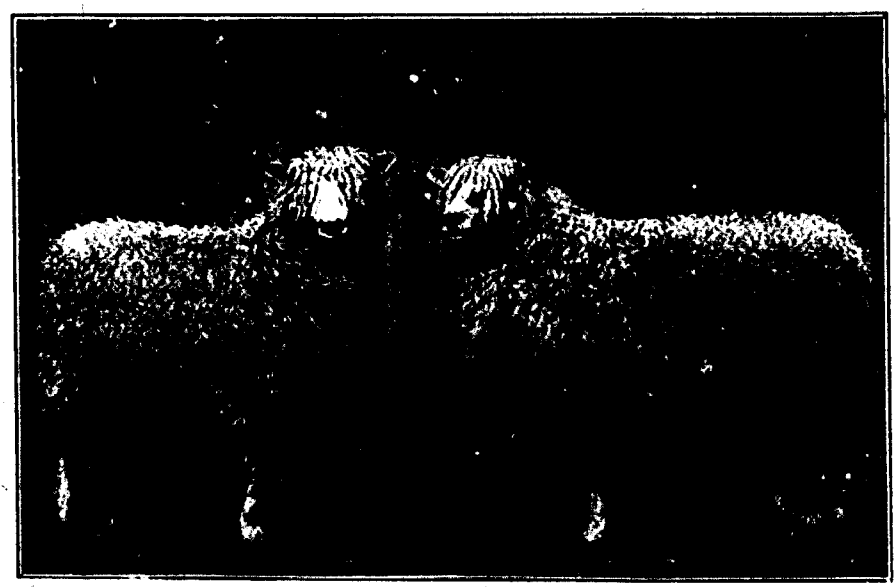


Fig. 4.—Cotswold Ewes.

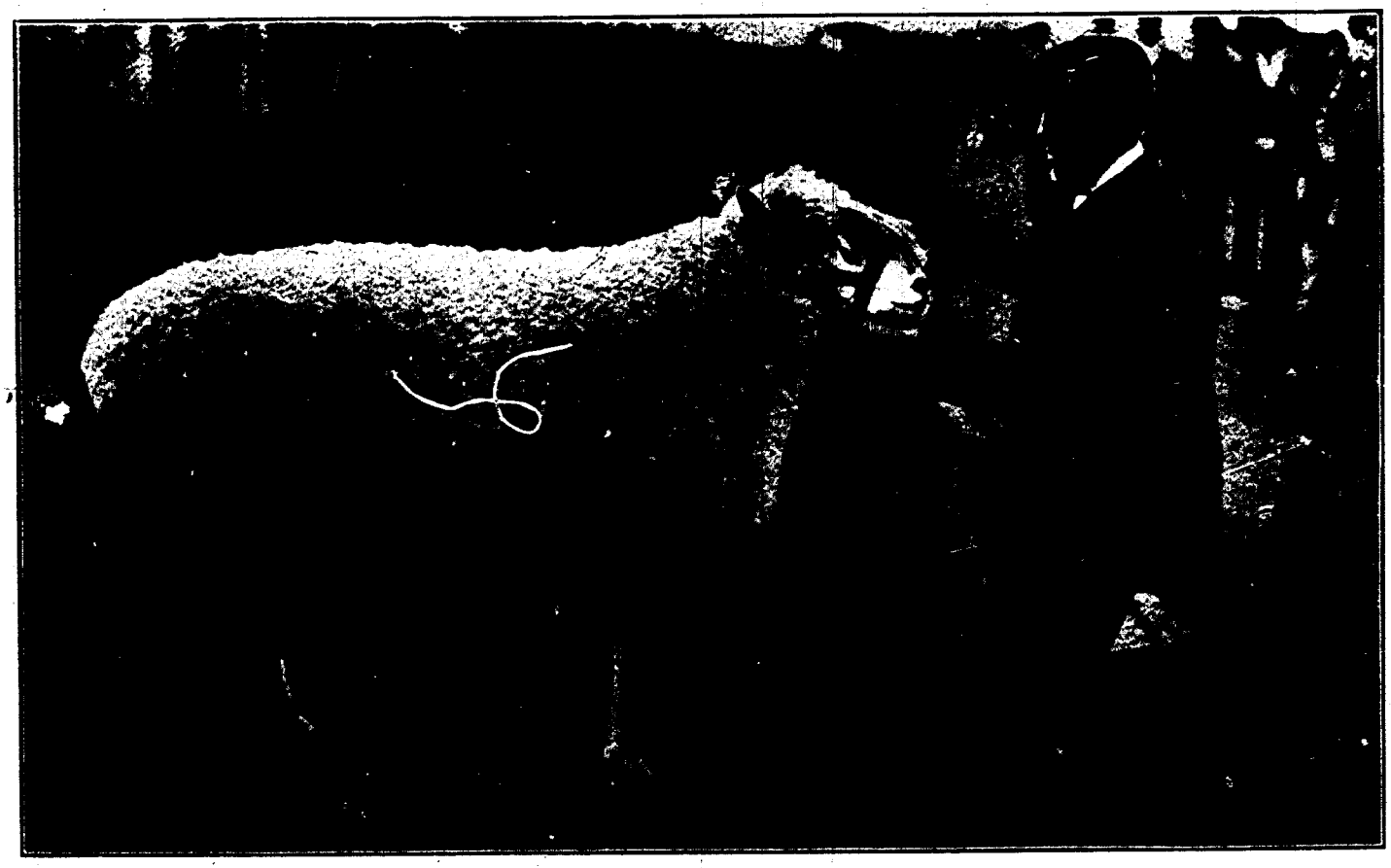


Fig. 5.—Cotswold Ram.

Fig. 6.—Roscommon Sheep.

Fig. 7.—Romney Marsh Shearling Ram.

Fig. 8.—Wensleydale Longwool Ram.

Fig. 9.—Wensleydale Shearling Ewes.

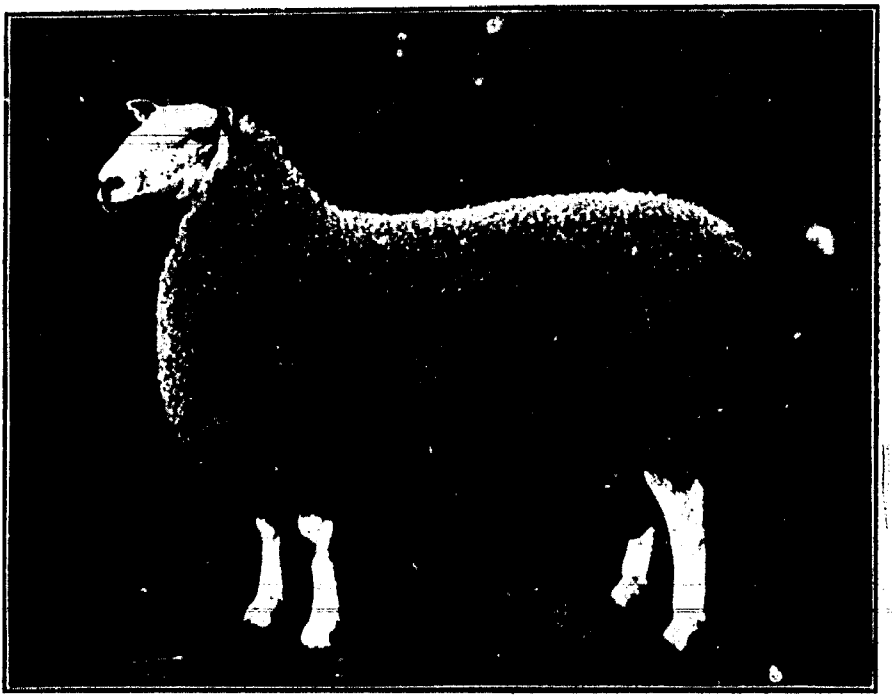


Fig. 10.—Border Leicester Ram.

Fig. 11.—English Leicester Shearling Ewes.

Fig. 12.—South Devon Ram Lambs.

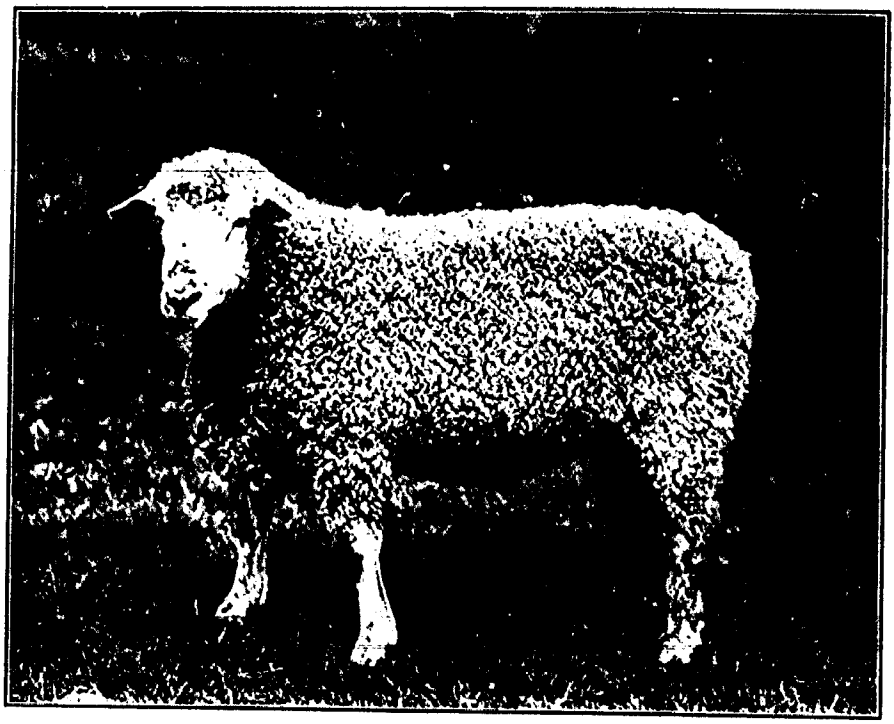


Fig. 13.—Dartmoor Ram.

Fig. 14.—Devon Long-Wool.

and covered with splendid grasses eminently adapted for grazing, while from every other aspect it is an ideal place for sheep farming. Lamb buyers from all parts of the Province, and also from Massachusetts, state that there is no district in Eastern Canada which produces lamb of such outstanding good quality and flavor. The Cape is divided into about twenty-five farms including eight or nine abandoned. The present occupants may be correctly described as fishermen-farmers, because they take more interest in what they get out of the sea than in the production of their farms. The distance across the isthmus, where the Cape abuts the main land, is under three miles from water to water. One of the chief advantages of such a situation would be the possibility of erecting a dog proof fence across this narrow neck of land, so that the Cape would be securely protected from any animal likely to interfere with sheep raising. The suggestion was made to us that a very profitable business could be conducted in sheep farming on this favorably situated peninsula, either by an individual or a company acquiring possession and running it on up-to-date methods.

Annapolis county also possesses a certain area where sheep raising could be profitably conducted, although it happens to present a somewhat different problem. In the far-famed Annapolis valley where the fruit industry is intensively followed, there is in connection with almost every farm so used, a portion lying up and over the mountains to each side, and this land is not utilized as it might be. Such portions of these fruit farms would carry many sheep, and with little expense, they could be advantageously used in connection with highly cultivated land. Back from the valley, there are many farms where sheep raising could be developed with much profit. In the neighborhood of Yarmouth, the climate is mild, the atmosphere rather humid and the grazing conditions above the average, so that everything indicates that sheep would also be a source of profit to farmers in that locality also.

There is one peculiar feature in connection with sheep raising in Nova Scotia which is unique as compared with any other part of the whole Dominion. On some of the bleak parts of the South Shore, and more especially on some of the numerous small islands, sheep are found in a wild or semi-wild state, procuring as food fresh kelp and other kinds of sea weed during the winter, with the addition of scanty withered grass during the summer. They live here unprotected and uncared for by man, and in time of storm no shelter is at hand except what nature provides in the form of rocks and a meagre second growth of spruce. That sheep will battle with and overcome the elements, and also thrive under such rough conditions, is proof positive that, by the aid of some judgment and care, a profitable industry could be developed in such districts with very little expense. During our investigation of Scotland we found that an old established and very remunerative sheep raising business is conducted on similar lines in one of the smallest and bleakest of the Orkney Islands, with the native dwarf sheep. The wild sheep on the South Shore of Nova Scotia are apparently of no particular breed type, and are reproduced much after the manner of other wild animals. That they are descendants of domestic breeds is generally believed, and their present condition has arisen through neglect and lack of interest on the part of former owners. Many of these islands are inhabited, but the sheep are owned chiefly by fishermen on the main land. During the winter season, considerable loss is sometimes experienced through high walls of ice forming round the shore. At low water, the sheep wander down through small gaps in the ice in search of kelp, and when the tide returns, some of them are often overtaken and drowned before they can find the

slippery ice gaps through which they descended to the beach. At such times these losses might be avoided by an attendant who would be able to assist the sheep in finding a means of escape from the inrushing tide. That sheep unaccustomed to such conditions would require to become acclimated goes without saying, but proof that they will acquire a taste for such marine food when nothing else is available, was noted in one instance where a well bred Shropshire ram was taken to one of these islands. After one year away from the easy life in which he had been reared, he was caught and inspected and found to be in good healthy condition. On inquiry, we were told that the meat of the older sheep was inclined to be dark, with rather a pronounced flavor, but this was not traceable in lambs finished on mainland pasture.

A notable feature of many parts of this Province is the fact that many of the best pastures are badly infested with weeds. In the great majority of cases these weeds happen to be disliked by cattle but are readily eaten by sheep. For a number of years a disease commonly known as Pictou Cattle Disease, originating in the county of that name, caused considerable mortality to numerous herds in the district. There was a great deal of uncertainty as to the cause, and no reliable cure or preventive was known. Many theories were advanced by various people and a number of experiments were undertaken by men of skill and experience, none of which resulted in a satisfactory solution of the problem. In the year 1903 however, a number of systematic experiments were conducted under the direction of Dr. J. G. Rutherford, Veterinary Director General, which proved conclusively the cause of the disease, and demonstrated the means of avoiding it. This disease only affects cattle and it was proved to be due to eating a weed commonly known as Rag Wort. Cattle naturally avoid it in summer pasture, but when a considerable quantity is included in the hay so that the latter becomes impregnated with its flavor, no preference is then shown, and it is eaten by the animal which in consequence develops the disease. Fields under cultivation are not very seriously affected, but those in grass or hay are more difficult to deal with in the ordinary manner. This is accounted for by the fact that such fields are often rough and sometimes more or less timbered or stony, and resort must be had to other means of eradication. Fields over which the sheep had been grazing were discovered to be almost free from the weed, and in 1905 experiments were inaugurated which proved conclusively that sheep will not only eat the weed readily, even in the presence of other feeds, but also that it had no damaging effect on their health whatever. In addition to the ordinary methods of cutting and picking the weed from the hay, or in the meadow, the sheep has been found to be the best agent in its destruction. It is a regrettable fact that more farmers have not employed such an effectual method of ridding their farms of this harmful pest. No effort should be spared in impressing those living in infested areas of the importance of sheep in this regard. Owing to the traffic in hay, this dangerous weed has already spread over half the Province.

Probably one of the most unfortunate features in connection with live stock breeding in this Province is the fact that farmers do not realize the great importance of proper or scientific mating. While driving one day we noticed some cows in a field which showed considerable dairy type but which betrayed the presence of a Hereford bull in the district. Upon inquiry we learned that the owner had been using for three successive crosses a good dairy bull of the Ayrshire breed, which practice had the result of fixing in his herd a type of dairy cattle of which he might reasonably be proud. Owing to the proximity of the Hereford bull and his apparent cheapness he bought him,

and thus destroyed the qualities he had spent the previous years in building up. This is only one instance out of many, and the same principle applies more forcibly to sheep breeding operations than to the breeding of other farm animals.

Regarding the drawbacks to sheep farming in this Province, they may be briefly stated as bad fencing, dogs and the absence of young people on the farms. Fencing conditions here are similar to Prince Edward Island, and there is less excuse for this being the case as timber is cheaper and more plentiful. The old pole fences are in a dilapidated condition and not repaired with sufficient care to stop sheep. Barbed wire fencing is quite common wherever the old rail fence has been replaced, while woven wire is very rare, the excuse given being the extra cost of the woven wire fencing.

The next drawback is dogs, and judging from the complaints raised at our meetings this Province suffers great loss from their depredations every year. At some of our meetings it was no uncommon thing for six farmers to rise up in succession, each describing his losses that year at figures ranging from eight to seventeen sheep killed, besides others injured. Others who had not lost any sheep during the past few years had given up keeping them as there was no security from dogs. Nova Scotia has a very good dog law, but it is not enforced, consequently sheep are decreasing and worthless dogs are increasing.

The absence of young people on so many farms is a serious problem and unless some profitable branch of farming, such as sheep raising is revived, or more enterprising farmers are brought into the Province, the future condition of agriculture will be disastrous in many districts. The young men upon most of the farms near the shores, devote their attention largely to fishing during the summer, and to lumbering during the winter. Naturally the farm received insufficient attention and little or no interest is taken in live stock. Lumbering also attracts a larger number of young able bodied men from the larger farms farther inland during the winter months when all kinds of live stock require most attention, consequently few farms carry their full complement of cattle and sheep. The mining industry however, has a more serious effect on agriculture than any other local industry. Large centres of population have developed in mining districts, and young men are attracted by good wages, shorter hours and city life. Such centres also attract many young girls from the agricultural districts with the result that only the old people are left on the farms. Faced with the difficulty of obtaining sufficient help, and also with the decreasing returns from the land, they become discouraged, sell out and retire. Many of these farms are now without occupants, because, with depleted soil and sparse population a keen demand is not exhibited for such property.

Some years ago, dairying was the cause of many farmers going out of sheep raising, because they had the impression that sheep and dairy cows could not be successfully run together on one farm. This may be the case on some farms near the cities, but the great majority of farms in Nova Scotia contain grazing land more suitable for sheep than for any other kind of live stock, while others have good pasture fields for cattle near the homestead and a large stretch of rough hill besides, sufficient to maintain a good flock of sheep.

The difficulty of obtaining pure bred stock was also put forth as an excuse for not keeping more sheep. Although a lame excuse in one sense and although Government sales of pure bred sheep have supplied much needed assistance, that there is such difficulty is undoubtedly a fact and the

great majority of farmers require to be educated to the importance of pure bred sires and even encouraged to buy them. So far as we can see, nothing would bring so much prosperity to agriculture in this Province as extensive sheep raising, and few provinces in the Dominion are better adapted or more favorably situated for the purpose. The first thing necessary is a vigorous campaign of education in sheep husbandry, to revive the interest and ensure success.

New Brunswick.

The physical conditions of New Brunswick are not unlike those of Nova Scotia except that the rolling tendency of the land is more abrupt and a much larger area is covered with timber. Climatic conditions are also similar with the exception of some of the hill country towards the western side of the Province where the winter snows and frosts are more severe. The area is 17,863,266 acres, and although the land is stony in some parts, it is naturally good and could be induced to produce abundant crops under more careful management. The valleys are generally fertile and in such localities farming is intensively followed. That sheep raising is a profitable branch of farming in these improved districts may be considered as a foregone conclusion, consequently they do not require special mention here. New Brunswick, however, has a good deal of other land where the conditions are such as to make it deserving of particular attention. The geographical location of the Province introduces new factors which bear still more seriously in their influence on agriculture than that of mining in Nova Scotia. The large cities of the New England States are comparatively near, and with their numerous mills and mines have offered much inducement to the young people, thereby producing a very unhealthy effect on agricultural interests; so much so, that the proportion of good farm land abandoned in this Province is greater than in any of the others. The movement of young people away from home to other work has resulted in the same condition as was observed to be the case in Nova Scotia.

In the rich low farms of the valleys, dairying is quite generally followed and with encouraging results in some sections. As most of the abandoned farms and also some that are still occupied are a considerable distance from the railway or other means of communication with large centres of population, the production of perishable produce cannot be pursued to much advantage, especially when it has to be marketed daily. Live stock, however, when ready for market, may be delivered at several seasons of the year, and may also be allowed to carry itself to shipping points, which is not so in the case of dairy and garden products. That the farm productions of such abandoned districts should be in the form of live stock can be distinctly understood without further explanation. Such country with high rolling hills and well watered pastures, growing various kinds of short, sweet natural grass and white clover, specially adapted for sheep, can be readily accepted as being suitable for their cultivation in quite considerable numbers. During our visit to this Province, our attention was continually directed to the presence, over much of this territory, of second growth timber. Much of this growth is worthless now, and always will be, in comparison with the land whereon it grows. Were it cleared away, we do not know of any country more closely resembling the hill districts of the South of Scotland and, except for the positive need of winter feeding, sheep could be handled in much the same manner. The advantages possessed by such districts for profitable sheep raising are so

palpable, that it would be a profitable undertaking to clear this worthless second-growth and then make sheep farming a specialty. This would undoubtedly bring new life and prosperity to those sparsely populated districts, and at the same time secure a source of revenue to the Province generally.

A certain proportion of the less fortunate farmers are not in close touch with up-to-date methods or new ideas. Their outlook lacks opportunity, their world is small, and outward signs of ambition or energy are lacking. The spirit of resignation is so prevalent that one is apt to conclude that there abounds a considerable amount of laziness amongst many of them. On second thought, however, one cannot adhere to this opinion as we believe that they are merely discouraged and that with the uplifting influences of reorganization and suitable education such indifference and lack of progressiveness would rapidly disappear.

The reasons stated for not keeping sheep were very similar to those reported in the two previous chapters, viz:—dogs, fencing, dairying and insufficient help. When carefully looked into, none of these reasons presents a sufficient excuse. The true reason is the entire absence of education in sheep husbandry and of information about the value and profit of sheep raising.

First, we will look into the dog excuse. The Province has a fairly good dog law, but it is not enforced. In many ways it resembles the Nova Scotia dog law, and is even more drastic in some respects because it gives the farmer full power to shoot any dog at sight, even if he should only be trespassing. If the existing law were strictly enforced the dog nuisance would disappear in a few months. The law is unfortunately, under present circumstances, in the people's own hands, and although they complain bitterly of their serious losses, they do not realise the importance of sheep raising, otherwise they would combine, and demand that the local authorities enforce the law rigorously. Until the farmers are educated to take more interest in live stock generally, and sheep raising in particular, it would be better for the Legislature to see that the law is enforced over the whole Province. While each municipality is allowed the option of operating the dog law, or setting it aside, it will always be practically impotent, and no good results will accrue. The present losses from sheep worrying are now so serious that education in sheep husbandry would be not only hampered but ineffectual, as losses at the very commencement would continually discourage farmers. At one of our meetings it was stated that a few years ago 500 sheep were killed in one season in the neighborhood of Woodstock. Although the losses in this Province are heavy and particularly discouraging, the same conditions prevail over all the Maritime Provinces. Nothing but education in sheep husbandry on the one hand, and the co-operation of the Provincial Authorities on the other, will end this disgraceful injury to one of the most important branches of agriculture, and the very one most needed at present in the Maritime Provinces.

The next excuse was fencing, but there is less reason for poor fences in this Province than in the others. Although "pole fences" are now out of date, they can be constructed to effectually stop sheep, and there are few farms in New Brunswick where the material for pole fences is not available. Such fences however, are not dog proof, and as many farmers as possible should be encouraged to erect woven wire. The barbed wire now used on many dairy farms should be discouraged wherever general live stock is kept.

Dairying is certainly a counter attraction to sheep raising in several districts, and while some dairy farms are profitable others are scarcely remunerative. Lectures on the advantages of dairying have resulted in some farmers taking it up when their local situation was not favorable for making

in a specialty. Lectures on sheep raising would in this way, soon arouse interest in this industry, and there are few places in New Brunswick where farmers would not find it more profitable than any other branch of agriculture.

Insufficient help is the weakest excuse of all, for although sheep require attention and intelligence, they require less labor and less expense than any other branch of live stock.

Hay is not cultivated and sold here to such an extent as is the case in Nova Scotia, but potato growing along the American boundary is now the chief occupation of many farmers. In such districts we found live stock scarce, and even the village butchers complained of the difficulty of obtaining either sheep or beef cattle, and they were obliged to draw their supplies from distant points. We did not investigate the possibilities of beef cattle raising in such districts, but we noticed that all these potato farmers possessed additional land suitable for sheep. Apart from complaints, drawbacks, want of interest and a still greater want of information, we found a good many bright intelligent farmers in this Province, who were both interested and enthusiastic in sheep raising. Some of them are very successful in this regard, and ought to be an example to their neighbors. At our Sussex meeting particularly we met a number of farmers who were quite ready to welcome and encourage any revival of the sheep industry.

Mr. J. E. McAuley, Lower Millstream, Kings Co., is a very enthusiastic owner of a small flock of grade sheep. He is very sanguine of the possibilities of sheep raising in New Brunswick and he thinks there is more money in that line than in any other for the Maritime farmer. Mr. McAuley's figures are interesting and although incomplete for total expense account, indicate that his sheep are a source of much profit.

ACCOUNT OF 1910.

Sales			Expenses		
230 lbs. wool at	.25	$57.50	For keep of 60 sheep from		
9 ram lambs at	$10.00 each	90.00	Dec. 15 to May 15.		
2 ewe " "	7.00 "	14.00	25 bushels oats at	$ .50	$ 12.50
20 " "	4.00 "	80.00	30 bus. turnips "	.30	9.00
13 " "	5.00 "	65.00	5 tons clover "	6.00	30.00
			Balance being profit		$255.00
		$306.50			$306.50

Mr. McAuley has placed no value on labor or on summer feed. Possibly these are of such small consequence that he does not consider the value anything. Even with every possible expense tacked on there would still be a big balance on the right side.

Quebec.

In Quebec sheep raising has for a very long period assumed a reasonable degree of importance in the agriculture of the province. Without going into history, it may be stated that at one time it was not unusual to find whole districts where p actically every farmer possessed at least a small flock. The spinning of the wool into the garments for the household made the keeping of sheep a necessity and the important part which these animals played in the life of the people will therefore be readily understood. The times have changed, however, and a serious decline in the industry is apparent. The

weaving of homespuns is not habitual with the present generation and the keeping of sheep, as a purely business enterprise, is slow to establish itself on a permanent footing in connection with the management of the Quebec farms. There is still, however, a nucleus both of inclination and of practice around which it should not be difficult to build up an extensive and satisfactory trade in mutton and wool. The taste of the Quebec farmer is by no means averse to the ownership of a small flock and there is that in the style of his life and work which peculiarly fits him to give that flock good care. It is questionable if a careful systematic campaign in the interest of sheep keeping would anywhere give better results than in this province.

Both North and South of the St. Lawrence there are two types of land, the one usually level, arable and fertile, and the other mountainous, partially covered with timber, but, for the most part well-watered. There are large districts where practically all the land is level and others again where it is practically all mountainous. It is not uncommon, however, particularly in the neighbourhood of rivers, to find a combination of both level and rough land upon the same farm. In deeding the land in Quebec, it has been the custom to survey it into narrow strips in such a fashion that the front has an outlet to a river, while, in the rear, the farm extends back over a mountain. Little more than the level land is as yet made use of for either the pasturing or feeding of stock, but, for this purpose, it is, as may be expected, eminently adapted. The resources of the rough land, which are such as to fit Quebec to become a great sheep-rearing province, have scarcely yet been touched.

It would be interesting to discuss at some length the possibilities for sheep keeping on the unbroken land referred to. For summer pasturage purposes, particularly for our hardier breeds it is peculiarly adapted. The supply of natural grass is sufficient, there is abundance of fresh water and the range is wide and altogether free from infection. The most effective method of stocking such land with sheep is the open question. Fences are largely impracticable on these wide ranges and the care of a shepherd is almost essential for most effective management. As it would be out of the question to expect each farmer to provide an attendant for his own flock, there is reason to believe that a co-operative system of summer feeding would be about the most feasible plan that could be adopted. A number of flocks could readily be handled by a reliable attendant and their several owners, after providing suitable winter feed, would be freed from further worry until the change of seasons should bring them again to winter quarters. The details of such a scheme, including methods of identification and sharing of expenses, need not be given here. It will be sufficient to say that we were strongly impressed with the conviction that the adoption of a system of co-operation in some such way would be both possible and desirable and that it would open up a fine field for the development of the sheep industry in this province.

As a question of possibly more immediate interest and necessity, we may now refer more particularly to the keeping of sheep on the level and cultivated areas where farming operations are permanently established. It is unfortunate that the industry has been suffered to deteriorate into a somewhat aimless and slovenly enterprise. The evident decline is the more to be deplored when we consider the splendid markets which are available in Montreal and the Eastern States, to say nothing of that which is possible through the building up of an export trade with Great Britain. That Montreal is but poorly supplied with good lamb and mutton is evident to anyone who knows anything of the markets of the city as also by the prices which are asked and paid for a really high class article. As we observed before, the Quebec farmer has

no special aversion to the raising of sheep ,but he lacks information regarding methods and management, and, in consequence, lacks the stimulus which the necessary knowledge would give him. He is one of the most apt of students, however, and this characteistic, combined with his natural thrift, are very certain indications that a campaign undertaken in his interests would be fruitful in results. An increase in sheep is an end worth much effort to attain as the soil needs the return which they will make to it and the land through the inroads of weeds is gradually losing its productivity. Quebec agriculture needs the stimulus such as it would receive through the reorganization and re-establishment of such a representative and important industry.

The breeders of sheep have suffered here, as elsewhere, from the ravages of dogs. The province has a useful dog law, but, notwithstanding the law, the dogs thrive and the sheep suffer. In the Eastern Townships, the losses resulting from sheep worrying by dogs, were much greater than in any of the purely French speaking sections of the Province. We must again emphasize the necessity of the rigorous enforcement of the regulations which have been enacted for the protection of the farmer.

When the time may come to outline a definite policy for this province, we would recommend that special attention be paid to careful selection of the breeds which are advocated for use in the different sections. We are strongly of the opinion that Down breeds should be given the preference. The carcasses of Quebec lambs are lacking in quality, are deficient in lean meat and have a tendency, when fitted, to carry a superabundance of fat over the back and ribs. In addition to this, the wool produced in the province is in sad need of improvement. That the larger Down breeds would be the most useful in effecting the necessary improvement was our conclusion after a careful study of the situation.

Regarding the Down breeds, it would be advisable for farmers in each county or district to adopt one type and stick to it. A variety of breeds in one district is neither economical nor satisfactory. These remarks apply chiefly to the French speaking sections of the Province.

In the Eastern Townships, the farms are mostly occupied by English speaking people. This district is widely known as being very fertile and productive, and has gained a favorable reputation through the development of dairy farming and horse breeding. The dairy output of this section is of considerable proportion and finds a splendid outlet in Montreal. The general system of farming in the Eastern Townships resembles that of Ontario in many respects. We met some enthusiastic and intelligent sheep breeders in this part of the Province, men who would readily encourage any revival of the sheep industry. We are confident that, with a good start on right lines, sheep raising could be developed in Quebec much more quickly than many people imagine.

Ontario.

The Province of Ontario comprises 141,125,330 acres, and maintains half the total number of sheep in the Dominion. It is considered the breeding ground for the supply of pure breds for the sister Provinces, but so far the greater portion of pure bred sheep has gone across the border to the United States.

In this Province, farming is carried on in an intensive manner, and when we find horse breeding, dairying, hogs, and beef cattle receiving a fairly careful and scientific study by farmers, we are much struck by the comparative

indifference towards sheep. That Ontario farms are suitable for growing sheep of the highest type is emphatically proved by the records of prizes won in International competitions.

While those engaged in breeding high class pedigree sheep exercise intelligence in the management of their flocks, the average farmer gives his but little attention. The latter keeps his sheep during the winter in the only place which remains available after accommodation has been provided for his other live stock, and in summer they are turned out to wander for the season, perhaps over some vacant area of rough land, or possibly only in the roads of the township. Not at all uncommon is the practice of allowing them the use of a back field, farthest away from the buildings or wherever the pasturage is not of much use for anything else, and in either case they are in constant danger from dogs or other animals.

For the most part, sheep keeping in Ontario must be largely conducted on good, rich land operated on the mixed farming principle. It is under such conditions that the largest number of sheep must be kept, and so it is our opinion that here where agriculture is so well organized, large increases in the flocks may be expected. The number of abandoned farms and the extent of waste land has not yet created a serious situation and while there has been a very large movement from country districts to other provinces in the West, and also to the cities, the result, as affecting the occupation of the land has not, so far at least, become so pronounced as in the Maritime Provinces. Farmers nevertheless experience considerable difficulty in securing sufficient labor for their needs, and in this regard the depopulation of rural districts is very serious.

The Ontario farmer has arrived at the stage where he can no longer depend solely on grain growing as the foundation of his prosperity. He realizes that his future as well as his present business depends on his production of live stock. This is very evident in most districts and marked attention is paid to every other line except sheep. This is proof that he has not yet learned the corrective value and importance of the latter animal for maintaining and increasing the productiveness of his farm. Much may be learned from the methods of English farmers. The extent to which their system is suited to Ontario conditions however, is a point for discussion, and one which will bear some experiment.

The fact that Ontario farmers have been taught by agricultural leaders that sheep require little attention, and also that their feed is a matter of little importance, has been one reason why laxity prevails in their management and care. Rather should the point be emphasized that by skilled attention, scientific breeding and good feeding, they will return more profit to their owner, directly and indirectly, than any other farm animal.

Great credit must be given the Provincial Department of Agriculture, for the progressive policy which has been pursued towards encouraging and developing the industries in which the Ontario farmer is engaged. It must be confessed, however, that sheep raising has not hitherto received its due attention. It is to be hoped that this important industry will henceforth be treated with more earnest consideration in connection with the various measures which the Department undertakes in the interest of better agriculture.

The reputation that Ontario has created as a breeding ground for pedigree sheep is an enviable one, and should be fostered with enthusiasm by all the breeders of the Province. Ontario's pure bred business owes its foundation, not to the home demand, but to the trade which has been

entered into with breeders in the United States. This is a trade very hard to handle and liable at any time to cease. Quarantine regulations, customs laws and the erratic demands of live stock associations in foreign countries, over which the Ontario breeder has no control, make expansion of trade a doubtful speculation. It was on the home demand that England's studs and flocks were first built up, and although her export trade in pure breds has been for many years a large and important one, its erratic fluctuations would still disorganize the business of the breeders were it not for the stability of her home trade. American buyers have generally been liberal customers and willing to pay good prices for their purchases, which have frequently consisted of car load lots. Their high prices and big purchases have invariably secured the choice of the offerings, consequently what was left for the home market was sometimes undesirable. A very common report in the Maritime Provinces and also in the West was one of dissatisfaction with purchases of rams in small numbers from Ontario breeders. This was of course where the business was transacted by correspondence, when the entire responsibility rested with the seller. Profiting by experience of past dealings, possible customers are now very reluctant to do further buying by letter. Many stated that they did not receive value for the money paid, while others who had ordered yearlings had received a lot which included sheep of considerable age, some actually having lost their teeth. These statements may possibly be the worst of a few bad cases, but reports were so general that good grounds must exist for dissatisfaction. Of course local buyers have very often discouraged Ontario breeders by offering ridiculously low prices for pure bred ram lambs, in some cases less than a dollar above butcher's value, for the offspring of expensive imported stock. This gave some Ontario sheepmen the impression that the small breeder in the other provinces could neither appreciate first class stock nor afford the price, consequently he was often supplied with the left-over culls remaining after the American buyers had made their selection. The small breeder in the other provinces was, however, a better judge of quality than some Ontario breeders imagined, and naturally resented the unsatisfactory value supplied. It is to be hoped that this mistake will not be repeated in future as the home trade is more important than many Ontario breeders realize, and with an educational campaign it would quickly assume an importance worthy of special consideration. With a fair start under intelligent guidance, the home trade will, in the near future, assuredly become similar in stability to that of the English home trade already referred to.

Another very important point is the influence which is now apparent on the flocks, through catering to the United States trade. When the sheepmen of the Western States began to realize that a combination of mutton and wool was more profitable for them than wool alone, their requirements created a demand for a large sheep with a heavy fleece of long wool, to cross on their small range bred Merino ewes. This was a big market and encouraged the production of breeds of large size and fatty inclinations, so that the flocks of Ontario are now mostly of this blood. Considered from the point of high class mutton market requirements, this would be detrimental to the best interests of the producer of good commercial flocks, and also to the producer of lambs for the early market. Such lambs would certainly command smaller prices in Great Britain. The big long wooled sheep of this description are bred pure in the Old Country with two objects in view,—crossing with the smaller mountain breeds at home, and the lean light-bodied Merino sheep abroad. This fatty mutton is unpopular, and is always about five cents a

pound below other breeds at the butcher's. The favorite mutton in England consists of Downs and mountain crossbreds, and although other markets do not discriminate to the same extent in price, the taste runs in the same direction. Already, there is a marked preference in this country for a more compact carcass of lean mutton. At all carcass competitions the prize is awarded to the largest proportion of thick lean meat. For the future welfare of Canada, it would be to the advantage of Ontario breeders to keep these points in mind.

A branch of sheep raising that proves to be very lucrative in districts adjacent to large centres of population is that of producing early fat lambs for high class retail trade. In the cities of Toronto and Montreal, quite an important business of this nature has sprung up during the past few years. Such is also possible in any other province where the demand is sufficient. Early lambs are sold usually to large restaurants, high class hotels and families of wealth, those which are ready before the general run, commanding high prices, even $10 each during winter and spring. The demand has never been fully supplied, and the price only commences to drop when the ordinary farm lambs begin to appear. The good milking qualities of Dorset ewes together with their readiness to mate at any season of the year, render them especially valuable for use as breeders of this class of lambs. The former characteristic will be readily recognized as being essential in forcing young lambs to early maturity, while the latter is of much importance in enabling the farmer to secure the lambs at any date desired. There is a splendid opening in many parts of Canada for the development of this branch of the sheep industry.

Dipping is practised by most of the large breeders of pure breds and they are firm believers in the benefits to be derived from it, but amongst the average farmers it is not often done. Many are aware of the advantages of dipping, while some fully realize the necessity of practising it regularly, and with a little more information and encouragement farmers generally might soon be induced to form the habit.

In the matter of castration much complaint has been voiced by the best buyers in our large markets. They state that the proportion of male lambs that come to market each year is so large as to create a condition entailing heavy loss upon the farmers as well as upon themselves. At some seasons a difference of 50 cents per cwt. is paid in favor of wethers, and an agitation to increase this difference to $1 per cwt. is now under way. Such a difference would have a very marked effect in future. Quite apart from the complaints originating in these quarters, the importance of castration to the breeder is quite appreciable. Early lambs killed very young do not of necessity need to be castrated, but those kept until weaning, or for winter feeding should in every case be unsexed. Immediately after weaning, and particularly as cool weather approaches, ram lambs become bothersome and besides reducing their own flesh, they worry and chase the ewes with similar result. No farmer would think of buying ram lambs for feeders if it were possible to secure wethers. Few producers would consider the very slight risk and trouble incurred by the operation provided that the difference in price were sufficient to make it worth while to castrate their lambs.

The reasons for the decline of the sheep industry in Ontario are similar in many respects to those mentioned in connection with other provinces in Eastern Canada, dairying, dogs and the low prices obtained for wool. To a great measure these apparently strong reasons would shrink into mere excuses with the spread of further information concerning sheep husbandry and marketing conditions.

Dairying is a very important industry in this Province and is given as one of the reasons for the decline of sheep raising. While there are many farms devoted exclusively to dairying which keep as many cows as it is possible to provide feed and pasture for, there are many other farms partially occupied with dairying where a few sheep could be kept profitably with good management.

The losses from dogs have been very serious for a number of years and many farmers have been driven out of the sheep business from this cause alone. Ontario has possibly the most effective dog law in the Dominion, and while it compensates for actual losses it does not provide sufficient protection for breeders, who consider this annoyance the most serious hindrance to increased flocks. When worried by dogs a few times in one season, with a few sheep killed and more injured, the flock is left in such shape that it can be of very little use for a long time afterwards. For this reason, many former breeders of sheep have disposed of their entire flocks, while others who would like to maintain a few as a side line, hesitate to do so on account of the sad experience of their neighbors. Dogs of a destructive character are allowed privileges and enjoy freedom not permitted to any other animal and why this is so is a little hard to understand. Any horse or bull doing a like damage in one night would be sufficient cause for the law to take action at once, and not only would any judge award damages in such cases but he would also give special injunctions that the owner should make sure in future that his horse or bull was tied securely. About a year ago the outbreak of rabies and the subsequent action of the Federal Government in issuing a muzzling order led to the much more strict enforcement of the Ontario dog law and with very beneficial results. We feel certain therefore that, with the general use of woven fencing, and a more rigorous enforcement of the dog law, sheep worrying would almost disappear and the confidence of the farmer would be restored by this double security.

The low price of wool is more frequently mentioned in this Province than in any other part of Eastern Canada, and it is unfortunate that this should be made an excuse for not keeping sheep as, quite apart from wool, they will pay better than any other branch of live stock. Wool, however, is the sheep farmer's by-product and he ought to get full market value for it always. The cause of the low price is the lack of education in handling and packing and the entire absence of marketing organization, two serious wants which unfortunately affect the whole Dominion. As this subject has been extensively dealt with in other chapters, further remarks are unnecessary here. Suffice it to say that a general revival of the sheep industry would speedily offer a satisfactory solution of the problems connected with the market value of wool.

Market Situation in Eastern Canada.

Eastern Canada, including Ontario, Quebec and the Maritime Provinces, has produced in the past more sheep than were consumed locally and exported annually some thousands of head. While there has been very little variation in the numbers produced in the country, the exports of sheep have continually declined as the following figures indicate.

Total sheep exported:—

Calendar year	1908	67,701
"	1909	50,443
"	1910	5,584

Of these totals the following went to the United States of America:—

Calendar year 1908	37,469
" 1909	44,790
" 1910	2,482

In comparison to the above figures, the exports to the United States for the two previous years are noteworthy:—

For five months ending Mar. 31st, 1906	57,200
" twelve " " " 31st, 1907	130,817

Sheep imported from United States to Ontario:—

For twelve months ending Mar. 31st, 1911	2,365
" three " from " 31st, 1911 to June 24th, 1911	14,276

These figures were supplied by the Health of Animals Branch and include all shipments where inspection is required, and, while not including all sheep exported to the United States, are given merely to show the trend of the market. Sheep shown as going to the United States include only those shipped to Buffalo. Many were exported from Quebec and the Maritime Provinces but as these are not inspected they are not on our list.

The contrast between the years 1907 and four years later is outstanding. At that time the United States were buyers from us to the extent of 130,817 head and for three months only, in 1911 we buy from them 14,276. These figures are significant and indicate beyond a doubt that consumption here is increasing out of all proportion to the supply. The taste for lamb and mutton has grown in Canada and even without considering the larger population the demand is on the increase. In conjunction with this condition in Canada, peculiar circumstances in the United States seem closely related. For many years the prices of United States markets were the guide for Canadian values, less freight and duty, so that during that period prices in Ontario and the Maritime Provinces were governed in that way. But at the same time that Canada began to consume all of her own product, the United States prices began to drop, and went so low that they ceased to be a factor on this side. This is explained by a succession of events of serious proportions which resulted in much loss to American sheep men. The range country of the Western United States is the principal factor in the production of American mutton, and so it may be understood that if a serious handicap is placed on the operations of the Western sheep men the whole Union is affected. The summer of 1909 was very dry and a scarcity of feed on the range did not leave the sheep in good rugged condition to endure the very hard succeeding winter. Losses amounted to millions of dollars and sheep men were much discouraged. However they had faith in the future and struggled along through another bad summer in 1910 only to find in the fall that money was hard to get and, not being permitted the use of more capital, they were unable to store up a supply of feed for winter keep. Faced with the general policy of retrenchment recently adopted by the banks of the West, and also by the fact that his notes were now falling due, there was no alternative for the sheep man but to cash in. The result was that in the fall of 1910, and well on into the winter, Western sheep flooded the markets of the United States to such an extent that, for a time, killers hardly knew how to handle them. This had the effect of demoralising prices in a very marked way, so that with the increased demand in Canada it was possible to ship to this country to the extent above mentioned.

With the rapid influx of settlers, general cutting down of range stock in the Western country has been going on for a number of years, and with

such enormous, abnormal reductions, the source of supply must be shrinking materially. Consequently, when once liquidation ceases, the American people must some day awaken to an amazing shortage in their stock of mutton. At the present rate of liquidation this time cannot be far away, and the home demands will then again far exceed the supply. If therefore, Canadian farmers are prepared for this turn of events they should be in a position to reap much profit from that source; the American demand is on the increase, the Canadian demand is on the increase; the American supply is very rapidly decreasing, the Canadian supply has very much decreased. It is very evident therefore that the Canadian farmer need have no cause for worry about his future markets, at least for many years to come.

CHAP. II.

THE SHEEP INDUSTRY IN WESTERN CANADA.

Manitoba.

The fame of Manitoba is world wide, but not for the sheep found there. The area is 41,169,098 acres, while the sheep population is only 30,266 head. The soil of the province is so rich and its climate so gracious that speaking generally the Manitoba farmer has never yet realized that he has any business with live stock of any sort. In the past, the province has devoted its energies almost entirely to the growing of wheat and this crop has been produced year after year from the same land which has not even received the ordinary benefits of the summer fallow, much less an application of stable manure. The farms have hitherto not been in serious need of sheep as soil builders. At present, however, those who have studied the situation emphasize the fact that long continued cropping has had its effect in many parts, and urge that if precautions are not generally adopted decreased yields are certain.

The most serious and one of the most objectionable features the Manitoba farmer has to face at the present day has developed through the increasing prevalence of weeds. That the weed pest is a burning question is very evident to any one travelling through this country during the hot weather months. A lack of thorough cultivation and loose methods generally have brought this condition about, since the virgin prairie did not possess in the beginning such rubbish as one may find there now. The weed eating abilities of sheep are known at least to some Manitoba farmers, since the returns for 1910 show the increase to be almost 100%. Great good may be accomplished by their cultivation on all wheat farms where weeds are on the increase. They will thrive for most of the season on the weeds of the summer fallow and in the fall will make a thorough job of the stubble fields. Unless kept from them until too nearly ripe practically every bad weed of the West is readily eaten and the benefit to be derived through their use is now a common subject of comment. In addition to being directly profitable they will maintain their reputation for this purpose also as scavengers of the prairie farms.

Manitoba winters will not permit of the bringing of fine wooled breeds to a high state of perfection, and it is probable that the system of farming will some day change so that the methods adopted by mixed farms in other provinces will be general here. Mutton sheep should therefore be the foundation on which to build. The sheep situation is however at present improving but slowly in Manitoba, as the minds of the people are not centred on this line, but towards increased efforts in growing wheat. A few successive failures in grain production; low prices, resulting from good wheat crops elsewhere, and continued difficulty in securing harvest hands for a short period each year, will all have some effect in persuading the wheat grower that, by the addition of live stock, he may so balance his operations as to overcome some of the troubles he now has to contend with.

In the past there has been no need for much fencing. In many cases farmers use no fence at all while others make use of three or four barbed wires

around a part of the farm, called the pasture, for enclosing a few milch cows and the work horses. The initial outlay thus required to enclose the entire property, and cross fence as well, would be considerable if woven wire were used, as on account of the higher freight such wire costs much more than in the East. The outlay necessary for a low sheep fence would not be so serious but the majority of farmers will want to erect a strong general purpose fence from 48" to 52" high. The difficulties connected with fencing and with wild animals are somewhat closely related. Happily no serious depredations by dogs were reported in any of the three prairie provinces, but their sheep are subject oftentimes to attacks by the small prairie wolf commonly called "coyote." This sly, sneaking, swift moving animal does most damage amongst the lambs and seems very often to be on hand at times when the mother ewe wanders off in search of feed, leaving the little helpless lamb asleep in the shade of nearby shrubs or trees. A strong, light well erected woven wire fence is claimed by many to keep these animals away and is especially effective when backed up by the use of a well directed shot from a rifle when the opportunity presents itself. At times when very hungry and bold and after having acquired a taste for good young lamb, these coyotes have been known to find the weak spots in wire fencing, but it is always asserted that if properly put up such fences are of great assistance in affording protection from these animals.

In Brandon, we had the privilege of investigating the cost of feeding sheep in winter and its results. One of the local butchers there has built up a large and profitable business through buying every fall stocker sheep in the Western States, and in Saskatchewan, feeding them up and killing them as required. The sheep were the most cosmopolitan crowd we ever saw, so far as mixed breeds were concerned. Many of them were hard feeding crosses, such as hill sheep and Merinos, yet they were all doing well and paying well. This butcher was occupying two acres of expensive land in the city and was obliged to erect a barn and special pens. He bought feed from local farmers and then hired a man to do the work. Yet the feeding operations alone yielded a handsome profit. If this were possible under such circumstances how much more profitable would it be for local farmers with quick maturing mutton breeds to feed them during the winter with what was grown on their own farms and thereby save all the extra expenses and intermediate profits which this butcher had to provide for. If farmers in the Province would once give sheep a fair trial, they would soon find them a most profitable investment, quite apart from their immense value as weed eaters and land fertilizers. Manitoba alone is capable of carrying more sheep than we have in the whole Dominion at present.

Saskatchewan.

By virtue of the wonderful abilities of this province for grain growing, it will take a great deal of preaching and teaching to move the wheat farmer from the chosen line which he has here adopted, and it is very probable that he will need to go through the same costly experience common to all other new countries where such privileges have also been abused.

A very large proportion of the population are interested solely in wheat growing and much of the land under cultivation is devoted entirely to this

Fig. 15.—A Cosmopolitan Lot, Brandon, Man.

Fig. 16.—Nine Dartmoor Ram Hoggets, at Great Aish, South Brent, Devon.

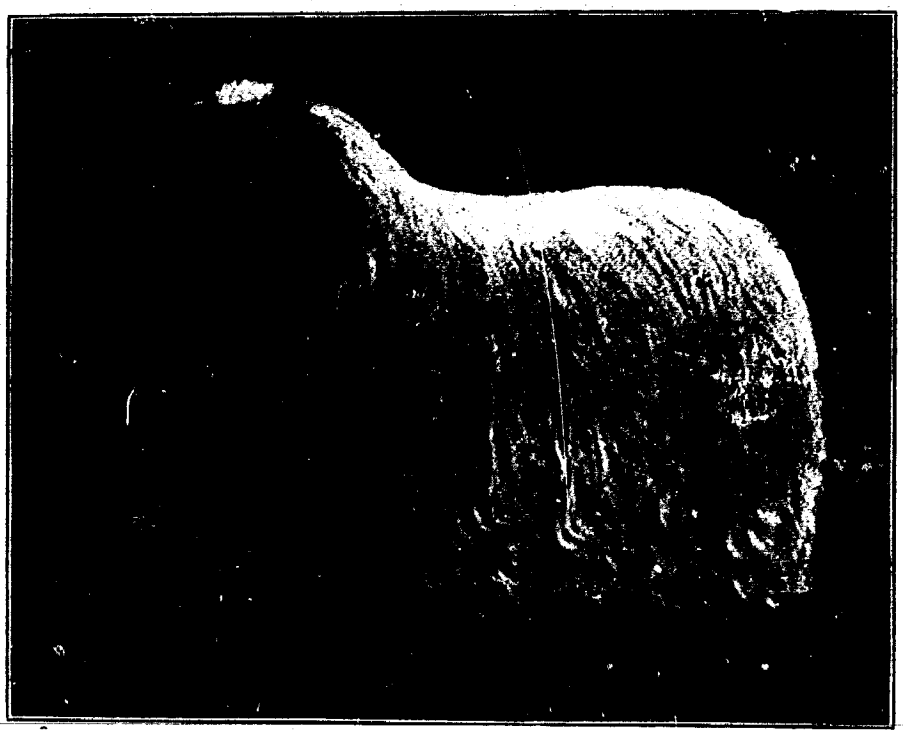


Fig. 17 Scotch Blackfaced Shearling Ram.

Fig. 18.—Scotch Blackfaced Ewe and Lamb.

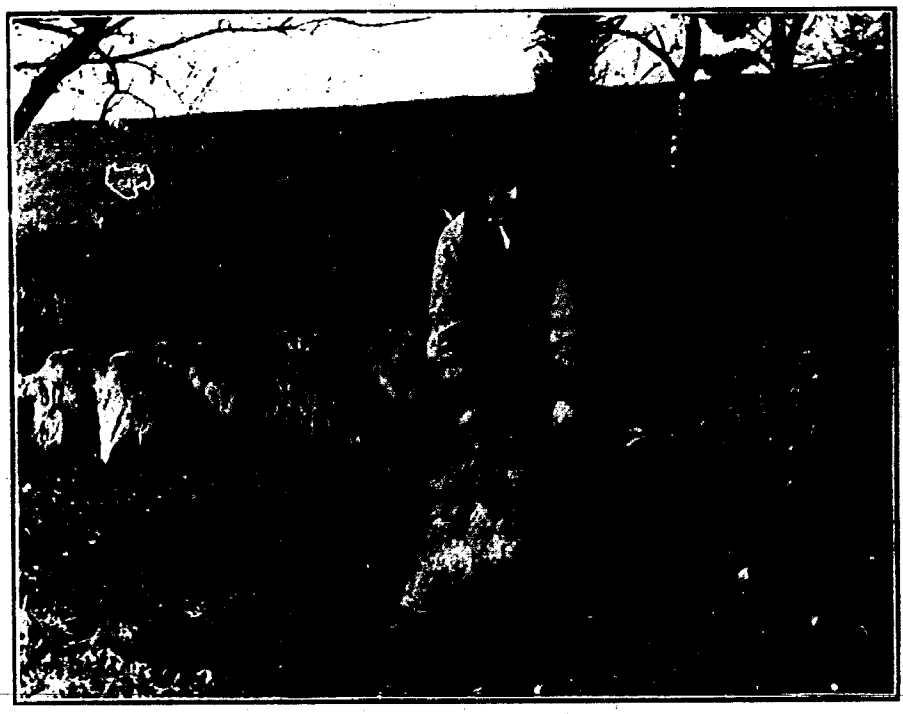


Fig. 19.—A Well Known Shepherd in Dumfries

Fig. 20.—Cheviot Sheep.

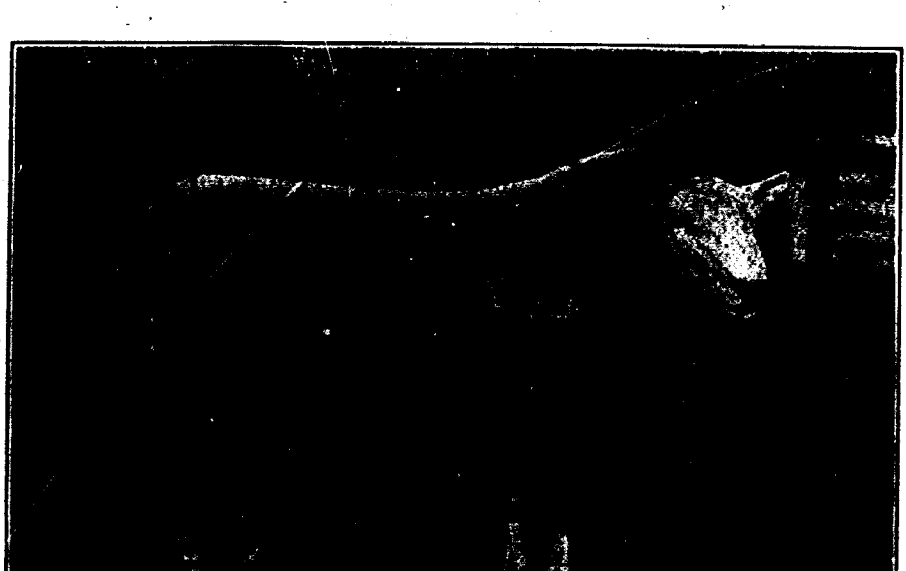


Fig. 21.—Two-Shear Cheviot Ram.

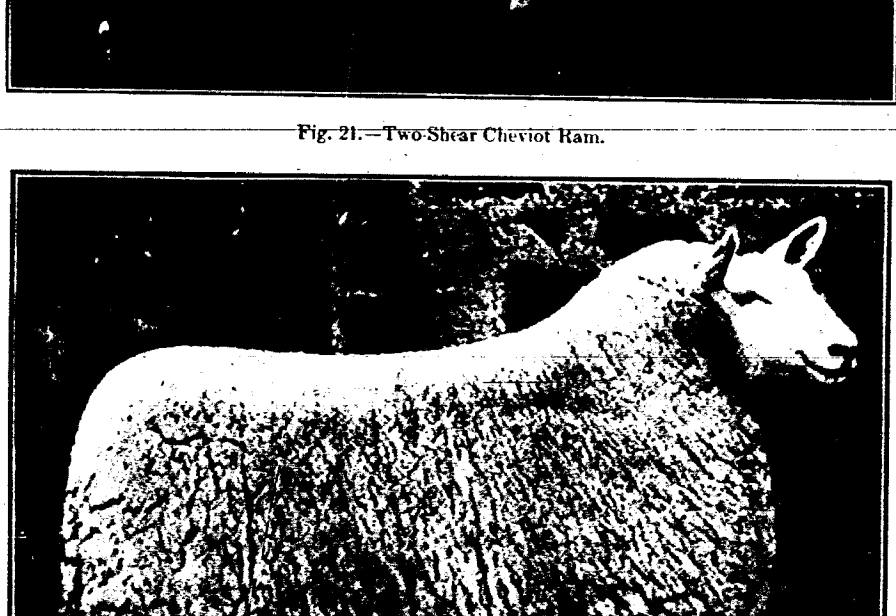


Fig. 22.—Cheviot Gimmer.

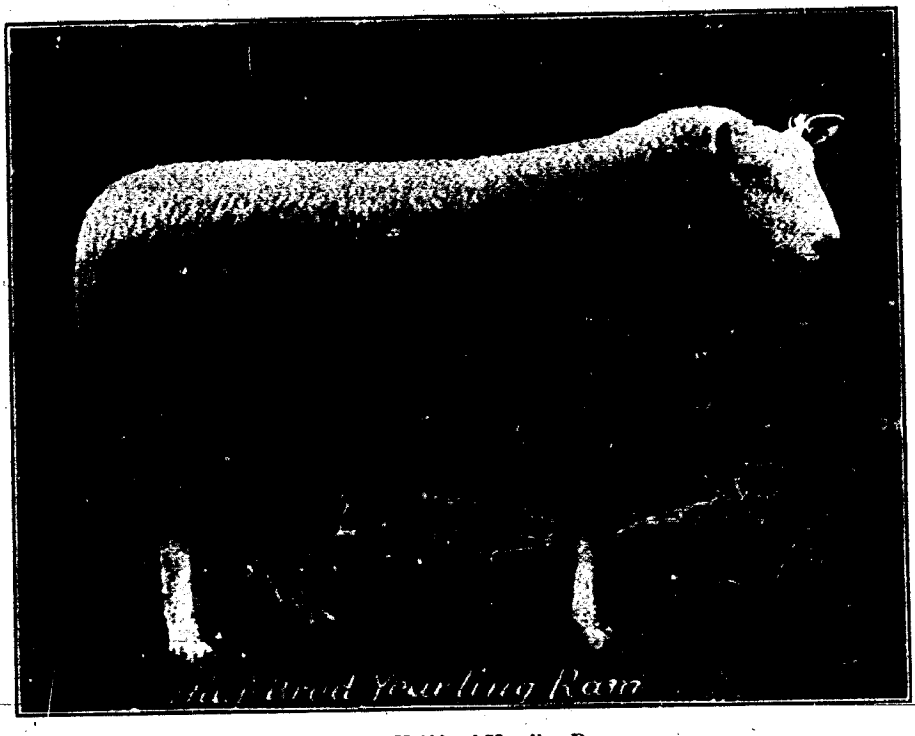


Fig. 23.—Half-bred Yearling Ram.

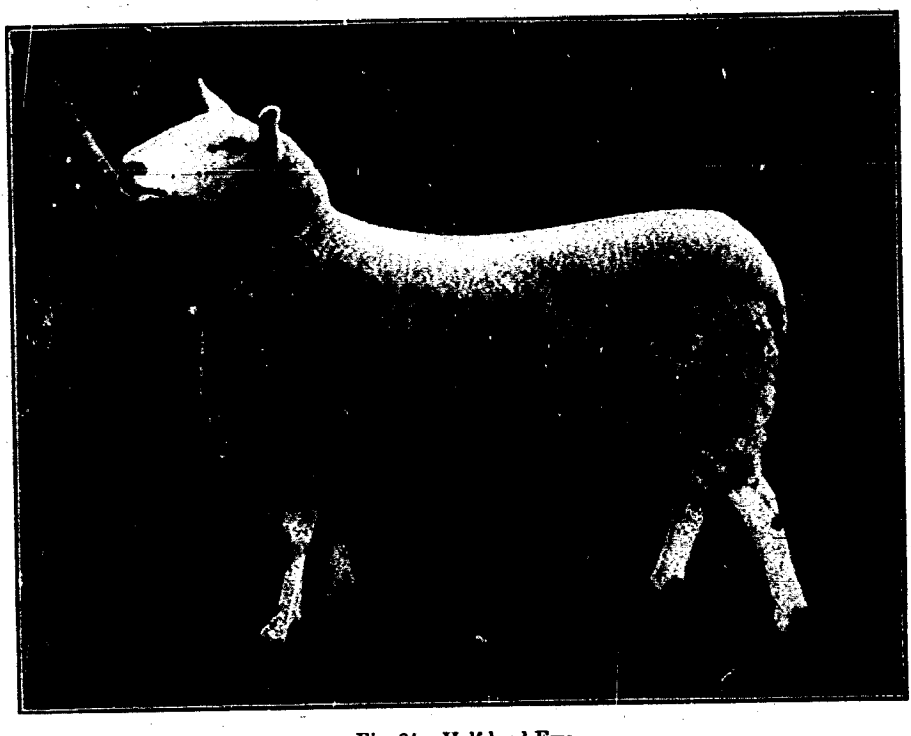


Fig. 24.—Half-bred Ewe.

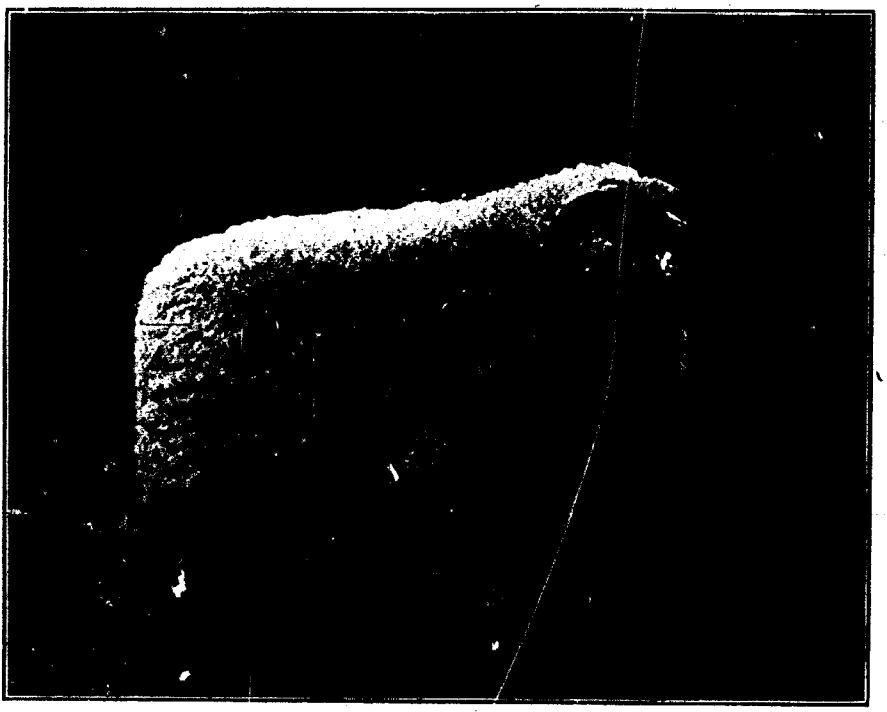


Fig. 25.—Lonk Ram.

Fig. 26.—Herdwick Ram.

Fig. 27.—Exmoor Horn Ram.

Fig. 28.—Welsh Mountain Ram.

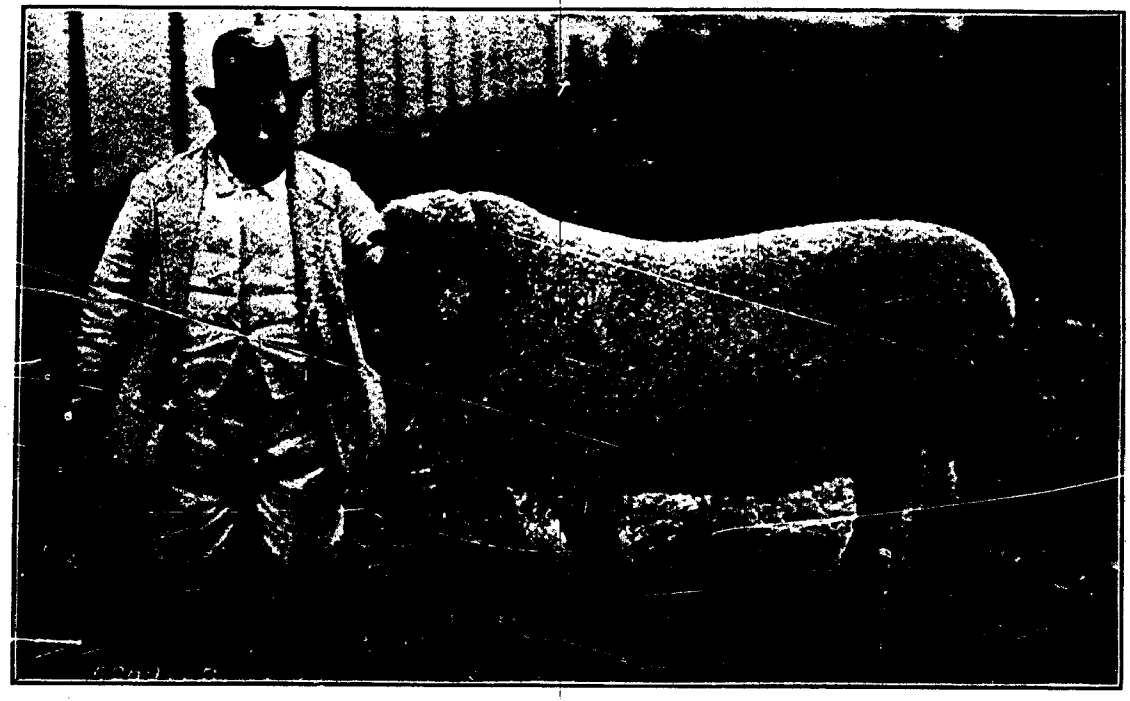


Fig. 29.—Oxford Ram.

crop, while thousands of acres are also set aside for oats. Conditions throughout these areas are identical with those referred to in Manitoba. The same necessity for checking weeds exists and the use of sheep in this regard is here just as important. The time has arrived when even if not compelled by legislation, each individual land owner should saddle himself with the responsibility of doing his share in the eradication of noxious weeds. The situation is a serious one, and the importance of personal enterprise should be emphatically driven home to all in sympathy with Saskatchewan's future welfare.

The keeping of sheep might interfere with the usual winter holiday taken by Western farmers, as attention and feed would be required throughout this season; but if the adoption of the work meant added profits it should be attractive rather than otherwise.

Northern Saskatchewan does not present, to such extent as the South, large tracts of unadorned prairie. Here the land is much more rolling, bluffy and well watered, offering almost ideal conditions for mixed farming. Settlers are adopting such a system for the most part, knowing that when wheat or oats do not come up to expectations their every source of income is not exhausted and they can rely on their other lines to carry them over to another season.

In all this western prairie country very large quantities of splendid rough feed are wasted annually. Good straw is burned and thousands of tons of roughage are destroyed in that way. Screenings from wheat are thrown out and allowed to rot which if used for the winter feeding of sheep might be turned into considerable added profit. In the few cases where this has been done the experiments have been considered a pronounced success and the men have been delighted. The fact that large numbers of sheep are bought annually by elevator and mill owners to eat up waste and rubbish from their cleaning mills is sufficient proof that this work might be profitably carried on in a smaller way on the individual farms. Local butchers find great difficulty in securing animals for their business during the winter months and many have equipped themselves with stables and yards close to town where they feed, for their own use, cattle and sheep, collected during the fall. Aside from the sense of security which they feel by having their supply at hand, it is paying them handsomely for their labor and expense. These men are not as a rule farmers or breeders by instinct, and would much prefer to be able to make their purchases from time to time in the neighborhood. Sheep are available for such feeding operations, as a little farther West, in the ranching country, many thousands of lambs find their way to the market at prices sufficiently low to permit of their being well fed for a short period.

Saskatchewan farmers refer to cost of wire fencing and coyotes as serious handicaps in connection with sheep breeding. Practically nothing else of an objectionable nature is known.

In the South Western part of the Province, the climate is warm and dry, the winter moderate and open, and the land rolling. Live stock live entirely outside, sometimes without any assistance whatever in the way of artificial feed and in the past this area has been almost entirely occupied by the rancher. The occupation of the land, however, by the incoming settler is rapidly encroaching upon the open range and in consequence the ranchman is gradually being deprived of territory which he has been accustomed to consider as his natural birthright. As the sections first taken up are those about the streams and water holes, the water supply not being abundant in this district, the situation is naturally aggravated. That the rancher feels

himself abused we have to admit though the policy of the Government in encouraging the permanent settlement of the land can scarcely be called in question. It is acknowledged that the adoption of dry farming methods or of irrigation systems will render practically all of this territory reasonably productive.

Notwithstanding this fact, the ranchman may justly have cause for complaint through his inability to secure a permanent lease which, in all cases, is limited by a clause which provides that he may be dispossessed of his holdings after two years' notice has been given. This insecurity of tenure, which debars him from equipping himself with necessary accommodation and appliances, is undoubtedly preventing the development of the industry even in such ways as would be in the best interests of the country. The areas upon which sheep may be run are restricted, and, outside of these areas, it is apparent that much grass is going to waste. The feeding of sheep and cattle for the reasons afore-mentioned has been abandoned in many districts which, in consequence, are now quite unused. The advantage of having this land eaten over by sheep is unquestioned, not only in order to utilize the crop of grass but also as a precautionary measure against the spread of prairie fires. It is not for us to criticise the policy of the Government but we feel that certain adjustments might be made by which, without interfering with the encouragement now given to the settler, much unoccupied land might profitably be utilized. We would heartily commend for consideration the undertaking of a scheme whereby the interests of the stockman and rancher, even although these be only temporary, may be satisfactorily conserved.

Alberta.

Sunny Alberta has always been considered the Canadian ranchman's paradise, but in this regard many changes are taking place. Northern Alberta has never been included in the ranch belt on account of longer winters with more snow. The wealth of the soil and other features in favor of mixed farming here present themselves and, as in Northern Saskatchewan, the farmers do not place all their eggs in one basket. Farming is not conducted on such a large scale as in the southern portion of the Province. The farms range in size from 160 acres to 640 acres, the majority being quarter and half sections. We do not find therefore large flocks of sheep maintained in the North. Quite a large number of farmers keep sheep in small flocks and find that they return good dividends on the capital invested. They are favored with being able to grow every year without fail an abundance of feed, and with this condition in their favor it must not be wondered at that live stock should be the important line for them to follow.

In Southern Alberta from a point 30 miles north of the Canadian Pacific Railway down to the International boundary open range conditions prevail. Owing to "Chinook" winds, very little snow remains during winter. When it does fall, it is shortly licked up by the warm currents of air from the Pacific. It very seldom lies on the ground long enough to form the hard crust over the surface which makes it impossible for stock, especially cattle, to find grass. In a part of what was formerly ranching country, irrigation and alfalfa are making great headway. A great deal of capital has been expended in providing irrigation for much of the district around and south of Calgary. All kinds of crops grow well and much success has been achieved where alfalfa has been tried. The great feeding value of this wonderful clover is known to everyone who possesses a knowledge of farming and where it can be grown

the fortunate man may find it to his interest to feed the entire crop rather than sell it. In large alfalfa growing districts, the great supply often reduces the selling price to such an extent that even when worth only $4 per ton on the market, it has been proved to return $10 per ton when fed to sheep. Sugar-beet growing districts also offer various by-products of value in live stock feeding. The beet tops very often lie on the ground and rot while if gathered and fed to sheep they have been found to furnish both cheap and satisfactory fodder. In all such districts therefore sheep feeding might form a very profitable side line and serve to return to the land, in the form of manure, that which is needed to maintain the productiveness of the farms. Under the present system of marketing our live stock, gluts and low prices prevail at certain seasons of the year, in the case of sheep particularly during the fall months. They are then bought and slaughtered and frozen to be held over for consumption during the succeeding winter and spring, when fresh mutton is not available. The chance offered to feeders of alfalfa, and sugar beet refuse is a striking one and might be taken advantage of very generally. This is being done in a small way by some farmers in Alberta and their experience is that in competition with Canadian frozen and imported frozen mutton, the home fed, fresh killed, commands a higher price and is in splendid demand, enough to guarantee liberal profits on the feeding operations. In this connection we have secured a very fine irrigation farm account and would especially refer the reader to it as given in our United States chapter.

As in the ranching portion of South Western Saskatchewan new conditions are changing the order of affairs in Alberta. The settlers are flocking into the province in very large numbers and are so cutting up the open range as to cause a decrease in the number of large bands of live stock. Much of the area of Crown lands will be open for lease for many years to come and some of it is said to be unsuited at present for agricultural purposes. The latter is often included in blocks of territory ranging from a quarter section to a whole township and if temporarily set aside for grazing purposes for the next 20 years would likely be productive of greater wealth than is the case under the present system of insecure lease-hold. These areas are often unfit for farming purposes on account of the light character of the land, and on account of rocks and rough hills but they would nevertheless support many sheep or other live stock. Owing to range restrictions sheepmen scarcely have an equal opportunity with horse- and cattlemen to obtain leases. Even in cases where a cattleman wished to change his holdings to sheep, he would not be allowed to remain in the same locality. It is evident therefore that the sheepman is laboring under a disadvantage and he may be excused for asking that he be allowed an equal privilege with other live stock men.

In order to ascertain in a measure the extent to which parts of the grazing country were being utilized, in the summer of 1910, a representative of the Southern Alberta Wool Growers' Association accompanied by a representative of the Provincial Government and also by an officer of the Health of Animals Branch, Dominion Department of Agriculture, made an investigation of a few of the valleys in the Rocky Mountains in the southern portion of the province. The result of this investigation shows that many of these valleys are totally unoccupied by man or beast and that a very large amount of feed is going to waste. On account of early falls of snow, the grazing in many places would be for a period of not longer than three months in the summer, but in some of them it was estimated that as many as 15,000 head of sheep might be accommodated for that time. These lands at present are not

available as sheep pastures, and are not used by cattle and horse men on account of flies and mosquitos being very troublesome at times. In such cases, as sheep are not affected by these pests, the valleys mentioned could be profitably eaten off by them.

A good deal of complaint was offered by the farmers in Alberta in regard to the difficulty experienced in securing breeding sheep. They are very often disappointed in orders by letter and as a consequence many of them are in the habit of using their own cross bred rams, a few of which they reserve from their lamb crop for breeding purposes. The foundation of all these western sheep flocks is the Merino or Rambouillet ewe which is obtained mostly from across the line in Montana and Wyoming. The price of wool during the past few years has not been high enough to warrant sheep breeding for wool production only, and so, with the Merino foundation at hand, the western sheep man is endeavoring to produce profitable market lambs and a good fleece of wool as well. Following this policy many have crossed with Cotswold and Lincolns and with good results. On the other hand the lambs from this cross are not believed to be so well able to stand the cold and snow of winter as those from a Down ram. The open nature of the fleece of long wool sheep does not give the protection to the skin that the close Down fleece affords. It is found too that after the use of Down rams for a few successive crosses there is loss in size and, to overcome this, the breeders turn back to the Cotswold and Lincoln. When the wool becomes too strong and open by this method of breeding they often introduce a dash of Merino blood if the ewes are large and vigorous. No general straight line system is adopted but each man struggles along, using his own methods and ideas as may suit his fancy.

Wool has a long way to travel from this western country to find a market which is exactly the opposite of the case as regards mutton. The freight on such long hauls is necessarily high and the growers' price received will be less than in the East by at least the cost of moving it. Inasmuch as the price of the world's wool is governed by prices paid in Great Britain it is interesting to note that several experimental shipments have been made to that country by the Southern Alberta Wool Growers' Association, and the encouragement offered by the increased price received was fairly satisfactory. A special chapter devoted to such experimental shipments will be found elsewhere in this report, and also a chapter on "Wool in Western Canada," which deals exclusively with the wool situation in Alberta and Saskatchewan.

British Columbia.

The deficiency in the supply of lamb and mutton to fill the requirements of local demand is pointed out in another chapter and for many years to come the British Columbia sheep breeder need look no further for a market. The breeder in this province is troubled in the range country by the ever coming settler and experiences some loss from wild animals, but when his flock is properly herded or his property fenced this loss is reduced. The cost of fencing is considered to be too high to permit of its general use and as in other parts of the West fencing has not been generally adopted. Sheep ranchers complain of the liberal allowance and protection afforded cattle and horse men and feel that somewhat unjust discrimination is made in their case. These matters have all been touched upon in connection with the other western provinces and so will receive here only passing notice. We will devote our attention more particularly to points of interest peculiar to British Columbia.

The climate in this province, especially in the valleys along the coast and on the adjacent islands, compares favorably with that of Great Britain. Vancouver Island possesses a good deal of rough land, on which grow splendid sheep grasses, and which is used somewhat for the cultivation of sheep. On account, however, of Indian dogs, panthers and other wild animals, in addition to the low price in recent years of wool, the number kept has steadily decreased. In the Southern part of the Island the climate is more adapted for sheep grazing during the winter than in the North. There is a good deal of rain at times during this period but scarcely any snow. Even in very severe winters sheep do not require much extra feed and then only for a few weeks. This fact is stated as merely showing the possibilities of the district but the practice is not recommended, as better farmers claim that best results can only be obtained by allowing a little extra feed every winter along with what the sheep pick for themselves. Much of the Island is covered with heavy timber and farming is not carried on very extensively in any part. In some of the valleys where the land has been cleared the soil is very rich and suitable for all lines of farming. Dairying has become popular and is receiving a good deal of attention. Many of these valley farms have some rough, partly cleared, hill land adjoining and on these places sheep are most largely kept. Were it not for the losses from panthers and dogs already referred to, more could profitably be maintained in such places.

On many of the smaller islands in the Gulf, ideal conditions prevail for the summer grazing of sheep, as dogs and wild animals are unknown. But it would be necessary to remove them for the winter or buy hay for feed, as we were told that these Islands do not possess sufficient hay meadows to supply the needs for winter. A very important sheep industry could be rapidly built up on the islands of the Gulf, by providing a little hay for winter feed.

On the mainland coast along the banks of the large rivers, notably at Ladner and Chilliwack, a great area of land has been reclaimed from the wash of the tide, by dykes. This soil being river deposit, is very rich and produces amazing crops of hay and oats. The climate in winter is mild with considerable rainfall. Sheep may be pastured out during the whole season in most cases without any assistance whatever. Rape, vetches and all kinds of roots grow well and with other conditions so favorable it must yet be shown why sheep could not be bred and cared for in the same manner as in parts of England. The breeds most popular are those of the Down class although other breeds do well also. If proper relationships were established, we do not see any obstacle which would prevent these districts from becoming the breeding grounds for the supply of rams and breeding stock to the ranges of Alberta and Saskatchewan. If intelligence and good management are applied the natural conditions are favorable for the production of the various breeds to a high state of perfection.

Vancouver and Victoria are large growing centres of population. Vancouver is the main port of Canada on the Pacific and the ocean traffic is a very important factor in her development. Shipping and travel in this direction are on the increase and will further enlarge, in all probability, during the next few years. Lumbering enterprises and the mining industry practically make Vancouver their headquarters, and if the present increase in business and population continues, this city will very soon be one of the most important commercial centres on the continent.

Victoria, the capital of the province, possesses an ideal location as well as a desirable climate, and provides an excellent place for people of wealth to make their homes. Many who have acquired sufficient of this world's goods are attracted here for these reasons, and all such people are good customers and liberal buyers of meats for their private tables.

These two cities therefore offer a good market for the producer of early fat lambs. The farm conditions are suitable and the market is a desirable one and such a combination cannot fail to be productive of fair results. Advantages here over other parts of Canada for this line are outstanding since the necessary hothouse methods required in the stiff, severe winters of the East would be entirely out of place in this equable climate. The similarity of the winters in Vancouver Island to many places in the south of England, ought to make possible the production of wool of excellent quality but so far, the results are disappointing. The fleeces we saw were as a rule in poor condition. Two causes are operative—the lack of information, and the rough condition of the woods in which the sheep are allowed to graze. Education of the farmer as to the proper care of the fleece is urgently needed here before he will be able to obtain the full market value for the quality of wool which the climate is capable of producing.

Market Situation in Western Canada.

From Ontario, west to the Pacific coast, there is a very decided shortage in the mutton supply, much greater than in any other part of Canada, and as the population increases out of all ratio to the producton of meats, this shortage is likely to become more pronounced in the near future. As noted elsewhere, the people of this new country have not been attracted thither by the opportunities afforded through the growing of live stock but rather on account of the possibilities for wheat growing. Thus, many thousands of people are added to the population of the West each year who are not producers of meats but are consumers only. So long as this condition prevails the shortage must increase.

During the fiscal year 1910-1911, 40,380 live sheep were imported into Western Canada for slaughter; and in addition to this 2,744,900 lbs. of dressed carcases were brought in from the United States of America, New Zealand and Australia, principally from the latter country. The dressed mutton is sold by the carcase at from 10c to 12c per lb., although very inferior stuff brings a much lower price. If the quality is considered, this must be recognized as a high price, and if the home grown is given any preference whatever, there should be a profit even in competition with what comes in from abroad. Then too, the supply from such sources is not likely to increase as in the large sheep producing countries referred to the same policy has been adopted to encourage settlement as we have noted in Canada. Therefore it would be natural to expect that instead of increased competition from these quarters less may be looked for in the future.

The figures noted above do not include importations from Ontario and the Maritime Provinces, which would increase the total which is brought in from outside very materially. That a very large trade has been carried on during the past year is easily apparent from the weekly market reports in the large centres of the East. The imported stuff from Australia and the United

States is largely of the merino class and is not considered by the epicure to be the choicest sort, especially after such a long trip in a frozen state. That brought in from Ontario is said to be too heavy and fat, and is sometimes hard to sell on that account. The Western farmer therefore has a very large demand right at his own door, and in his efforts to supply it he should aim to produce a better article than Australia frozen, and avoid getting it so fat and heavy as that which comes from the East.

CHAP. III.

THE WOOL INDUSTRY IN CANADA.

Wool in the Maritime Provinces.

Before commencing our investigation of the Sheep industry elsewhere, we were aware that much of the wool produced in the Maritime Provinces was "Tubwashed." While in Great Britain we made careful inquiry about this primitive system, and found that no trace of it existed—at least not as it is understood in the Maritime Provinces. In another part of this report we deal with this subject fully and devote a special chapter to it.

When we visited the Maritime Provinces in the winter months we were surprised to learn at all our meetings that "Tubwashing" was the general rule, and that exceptions were extremely rare. When we again visited that district in June to investigate grazing conditions, we saw some wool in the process of washing, some drying, some in the warehouse of the general storekeeper and some ready for shipping to mills in Eastern Canada. The whole system is just as primitive as it was a hundred years ago, and taking all things into consideration, we were surprised to find local manufacturers paying so much for it as they were doing.

Shearing in the Maritime Provinces is done in a rough and ready fashion with the common hand shears. Then the wool is all gathered up in a heap, black and white together, to await a favorable opportunity for washing. Next it is washed in a large tub, or other convenient utensil, and spread out on the grass to dry. When it is considered dry, it is sent to the local storekeeper who pays one price for cash and another for "trade,"—goods in exchange. Of course the greater portion of it is sold for trade, because that means about two cents a pound more than cash. When "sold" for trade the storekeeper usually credits the farmer with the amount, because the farmer is already indebted to the storekeeper for considerably more than the value of the wool. Even when sold for cash, the farmer naturally feels that he ought to purchase something from that particular store, even if he does not happen to be a regular customer. The country storekeeper, knowing that he is obliged to buy this product from the farmers, frequently pays exactly the same price he gets from the manufacturer, so that in many cases he turns the wool over for no direct profit. This is caused by local competition among country merchants who are anxious to retain their regular customers and make new ones if possible. They naturally expect to recoup themselves however, by the profits on the goods the farmer buys, so that they seldom fail to make the wool pay indirectly if not directly. The country merchant of course sells his wool to one of the local mills.

Local manufacturers also have agents who buy wool from large farmers and country merchants on commission, and in some cases wool is bought by the manufacturer's own representative. Transactions also take place between farmers and the mills direct. We were quite surprised to find, that in some cases manufacturers will even quote the farmer two prices—cash and trade. When a trade transaction takes place, the manufacturer supplies the farmer with woolen goods in exchange for his wool. So far as the farmer is concerned, he may probably receive as good, if not better, value than he does

rom the country store, but it strikes us as being bad policy on the part of the nanufacturer. Admitting that value on both sides has been quite satis- tory, the very fact that the manufacturer has sold woolen goods direct to he consumer, must eventually place him at a disadvantage with better class etailers. It can be readily imagined that retailers in the larger towns knowing that their regular or occasional customers had been supplied direct by the manufacturer, will naturally feel inclined to push imported woolen goods in preference to domestic. Of course, this is no concern of ours. We merely express our opinion of the matter, and the manufacturer ought to know his own business best. Looking at the question broadly, this system of selling for trade is both retrograde and unsatisfactory and a progressive country should turn to better methods. We were pleased to find however, that most manufacturers objected to wool being sold for trade, either to the stores or to other manufacturers.

The system of selling wool, in a district where tubwashing is the general custom is a small matter compared with the out-of-date system of tubwashing itself. We do not wish to attribute any blame to the local manufacturers. If they have accommodated themselves to the condition of the raw material in their own district, and built up a business in competition with other manufacturers using wool in a more suitable condition, no one has any reason to find fault with them. The fact must not be overlooked however, that the condition of the wool they are buying would make it almost unmarketable elsewhere.

Being washed after shearing, this wool would be classed as "scoured" in the United States, and faced with an extra high duty. In Europe it would find no market at all, unless it were sold at the price of unsorted pulled wool. In this way the farmer is completely in the power of the local mills, yet we find manufacturers offering 22 to 25 cents per lb. cash for it. Compared with 15 cents a lb., in Ontario for similar wool in the grease, this is quite as much as it is worth and, considering the limited uses of such wool, perhaps more than it is worth.

When once the various qualities of a fleece have been all mixed up through tubwashing, it is impossible to separate them properly. The so-called "sorting" of tubwashed wool in the local mills is only a partial sorting, at the best, and means a waste of time, tedious labor and extra expense, not to mention the fact that it is generally unsatisfactory, and less profitable to all concerned. Thorough and correct sorting is absolutely necessary when wool has to be manufactured into better class goods, and whenever wool is grown and put up properly, the manufacturer can afford to pay more for it. It also enables the grower to market his wool anywhere, instead of confining him to one local market.

From one end of Canada to the other, the unsatisfactory price obtained for wool is a serious problem and one of the chief excuses for the decline of the sheep industry. In the Maritime Provinces the case is somewhat different as these have a little wool problem all their own. The farmers there seldom complain about the price they get for their wool, in fact many of them boast of the good prices they receive for it. At many of our meetings they said "our wool is the best wool in Canada, because we have climatic conditions in our favor. Ours is a hilly country, we have plenty of natural grass, plenty of rain and fog and sea air like the Old Country, and consequently we get thirty and forty per cent more for our wool than the best sheep breeders in Ontario. Our local manufacturers advertise this fact, and New England drovers say we have the best flavored mutton in North America." We did

not deny the advantages of having some of the climatic conditions peculiar to the Old Country, although these are in evidence only for seven months out of the twelve, but we could not agree with them about the advantages they had over Ontario in securing higher prices for wool. Ontario wool, like the rest of Canada, is, as a rule, got up in poor condition, yet it has the advantage of being one step in the right direction,—the individual fleeces are rolled up separately. The prices of Ontario wool in the grease, although 30% to 40% below the tubwashed wool of the Maritime Provinces, are just equivalent after allowing for the shrinkage in washing. In the majority of cases Ontario prices work out a little better than those in the Maritime Provinces.

It is unnecessary under the existing circumstances to mention at present all the disadvantages of tubwashing. The farmers are better satisfied than elsewhere in Canada over their prices. Local mills have accommodated themselves to this drawback and can use up all the local wool produced. The trouble will begin when farmers produce a surplus over the immediate local demand. A revolutionary movement just now would upset everything because some would do it one way and some another. A season of education is the first thing needed and then a date fixed for changing to the improved method. Individual fleeces rolled up in a clean condition ready for grading and correct sorting would be welcomed by manufacturers, but this must be done by every one in the district at a fixed date to prevent inconvenience and misunderstanding. The first season would convince farmers of its advantages.

How this antiquated method of tubwashing got such a hold in this part of Canada, it is difficult to say. Probably the Scottish Highlanders, who settled here many years ago, were the first to introduce it. They were in the habit of doing it "at home" in this fashion for the old handloom weavers of Harris Tweeds and similar woolens. When the powerloom and the ready-to-wear factory revolutionized the industry so suddenly in Canada, the care and interest formerly taken in handling wool according to this primitive fashion, gave way, and resulted in adding carelessness to an already out-of-date method.

In some parts of Quebec, there are two forms of tubwashing,—the indifferent washing similar to the one described, and also a thorough washing of wool for the farmer's own use, which practically amounts to scouring. This is a relic of the old days of the French Canadian "Homespuns" and Handloom Woolens, which resemble very closely the product of the Scottish Highlander. Wool washed in this way also makes correct sorting impossible. In this age of fickle fashion, big mills and huge ready-to-wear clothing factories, the old system of handling wool is not adapted for modern manufacturing requirements. Immediate education of the farmer to the advantages of handling his wool in accordance with the present market demands is absolutely necessary.

Wool in Western Canada.

The Western Wool Question differs in many ways from the wool question of Canada generally, because it is more intricate, and presents sufficient peculiarities of its own for special attention in a separate chapter. Apart from certain details however, it is faced with the same problem, and in this respect it will be carefully considered in conjunction with the wool question of the whole Dominion.

What is known as "Western Wool" in the East, and sometimes as "Territorial Wool" in the West, refers to that produced by crossbred Merino

sheep in Southern Alberta and South Western Saskatchewan. A few flocks will be found beyond this district but they are chiefly graded up into mutton sheep, so that they may be left out of the question entirely. The range country, in the area named, is getting smaller every year, and not only smaller but much broken up in some places through the rapid influx of settlers. Through this cause alone, flocks have decreased seriously, while many sheepmen have gone out of business altogether. This is the chief cause of the decline and present unsatisfactory condition of sheep farming in Southern Alberta, and is specially dealt with in another chapter.

What we have to consider here are the minor causes of the present unsatisfactory state of the industry, causes which have been present all along, and causes which, if not removed, would alone be sufficient to stifle the industry even if the great question of the settler had never existed, or could now be solved satisfactorily. All these minor causes are embraced in lack of proper education and the entire absence of the necessary organization for marketing wool.

Want of organization is not only admitted, but is so well known to everyone that we may set it aside for the moment. Need of the necessary education is also admitted and even recognized, but the full extent of that need is not comprehended. The reason for this is not what one would call ordinary ignorance, but a misconception of the real situation, because the sheepmen of the West are bright and intelligent above the average. First, they have a wrong conception of Canada's real position, and second, they make Alberta the understudy of the wrong country. To the Western sheepman, there is only one infallible model, the United States. He looks upon Montana, Idaho and Wyoming as copybook headlines. This can be readily understood when one considers the comparatively close proximity of these States and their frequent intercourse with the Western provinces. The rest of Canada is no model for him, and sets him no example in range propositions. The only range flocks he sees are the flocks across the border, the only sheep papers he reads are printed in Chicago, and the only news he hears about conditions similar to his own comes from the United States. Canadian papers do not help him, because the intricate business in which he is engaged is not understood by ordinary agricultural journals. No one tells him what is being done in South America, South Africa, Australia or New Zealand, where his particular business is a success. All other classes of farmers have been educated and assisted in one way or another, in some branch of their operations, but the sheepman of the West with all his capital invested in one branch of farming, although in constant need of education, has never had any beyond what he picked up himself. He gets less help and less sympathy than any other class of farmer. The progressive improvements going on in mixed farming districts are encouraging and beneficial to each individual farmer, but the aggressive progress of agriculture in the ranch district fills the sheepman with anxiety because it threatens the very existence of his occupation in the near future. It is to be deplored that the problems arising out of these conditions have never been considered on their merits, nor a solution arrived at by a practical and impartial investigation of the whole question. The result of the much misdirected advice which he has received, has often led the sheepman to erroneous conclusions, so that instead of rectifying the difficulties with which he has to contend it has merely served to arouse in him feelings of dissatisfaction and discouragement. We cannot get away from the fact that he has been overfed on theories and starved for want of practical education and reliable information about other sheep farming countries.

Here is one instance out of many. Across the border, he sees the sheepman of Montana or Idaho with similar sheep, using similar methods to his own, and handling his wool in the same out-of-date fashion, or at any-rate very little better. His neighbors across the border obtain a higher price for wool because an artificial value has been created by a high protective duty. This does not only give him a love for high protection, but a love for the United States also, and he thinks his lot in Alberta or Saskatchewan a very hard one indeed. When he buys his woven wire fence he finds the price is high because there is a duty on it. He hears our woolen manufacturers grumbling because 30% and 35% duty is not sufficient protection for them, and he naturally concludes that existence without a substantial duty on wool is an utter impossibility. While agitating for a higher and more far reaching duty which was refused, he learns that the present duty, which he considered quite inadequate, has not been collected at all for several seasons. Now let us put ourselves in his position for a moment, remembering the limited amount of information in his possession,—and think the matter over seriously. Can it be wondered at that we find him both disheartened and disgusted?

The mixed farmer may answer that the sheep industry has been neglected alike all over the Dominion, but the mixed farmer has received considerable education in dairying, hogs, cattle and crop raising, while the sheepman on the lonely ranch, depending more on wool and less on mutton than the farmer, has been neglected entirely. The ranch sheepman did not ask for a higher duty on mutton but on wool, and was refused without, what he considered, a satisfactory explanation. Whether that was the case or not we cannot say, we only know that there was no alternative, and the information he really needed was not forthcoming.

Now, it must be distinctly understood that in making use of such delicate words as "duty" and "protection" we do not presume for a moment to venture our own opinions on such a question, or lend our sympathies in any direction, neither do we wish to interfere in the slightest with the views of others, because we are fortunately in a position to write a faithful report without touching any contentious topic. In making use of such words, we are merely voicing the sheepman's thoughts and explaining his position correctly, by stating all his excuses as well as his grievances, both real and imaginary. That this delicate subject was not one of his real or imaginary grievances it would be false to deny and foolish to ignore. Here is where some practical information would have saved the situation and produced prosperity and contentment on the sheep ranch, in spite of opposing theories at home and tantalizing artificial prices across the border. It could have been explained to him at the time that so far as his occupation was concerned, it was one problem in Canada and another in the United States. Alberta and Saskatchewan have the good fortune to be in Canada, and with the right kind of education and a suitable organization the sheepman there would very soon find his occupation more profitable than his neighbors across the line find it now.

Here are a few of the many important points which might have been brought under the notice of the sheepmen of the West, for their encouragement. Their attention might have been turned to other young countries where sheep farming is faced with exactly the same problem, viz.—natural conditions for producing wool far in excess of all domestic requirements. Then their attention could have been called to the great prosperity of those countries, and the high prices they obtain for their product in the free markets

of England, where prices are not dependent on the demands of one market alone, but where all the manufacturing countries of the world buy in hot competition on one spot, including the much envied United States,—which imports about two hundred and fifty million pounds a year. The sheep farmers in these new countries are comfortably settled, secure and prosperous, while many of them are very wealthy. They are not working so much on borrowed money, nor depending so much on the banks to carry them year after year, as are so many sheepmen in the Western States, neither are they living in constant terror of political agitation upsetting their prices.

Next their attention might have been called to the superior methods of sheep farming in those new countries, in contrast to their own haphazard way of crossbreeding, and their careless out-of-date system of handling wool; also to their indifference to the vital importance of periodical dipping, not only for the prevention and cure of external diseases and the eradication of vermin, but for the increased weight of the fleece and the improved quality of the wool fibre. In addition to this, they might have been informed of the improved methods of shearing employed elsewhere, together with the correct way of rolling up the fleece and tieing it, the right method of packing in its various details, as well as the importance of using the right kind of wool sheets. Last, but not least, the splendidly organized system which other young countries possess for exporting their products to distant markets, in addition to their local markets might have been described. Having directed their attention from vague theories and mistaken impressions to a practical solution of their present difficulties, a feeling of hopefulness could have been created, and the first move made in the direction of the necessary reformation.

Practical information of this nature was what the Western sheepmen really needed when they were informed, that assistance on lines similar to the United States was inexpedient for the general welfare of Canada under present conditions. Broadly speaking, the wool question of the ranchmen of Western Canada has a peculiar resemblance to that of other young countries, and the adoption of many of their up-to-date methods would soon result in producing a proportionate amount of prosperity, and also a feeling of contentment and satisfaction which has hitherto been unknown in that district.

How Wool is Handled in Canada.

From shearing to marketing, no country in the world handles its wool in a worse manner than Canada. As far as the wool of mutton breeds and crossbreds go, we do not know of any country where it is handled in such an unsatisfactory way and delivered in such bad condition. We regret that we have to make such a severe statement, but we must state the plain naked truth and when we have done this it will be easier to find a remedy for the trouble.

Dirty Fleeces.

The first thing to be considered is, how wool is grown in Canada. With the exception of Vancouver Island and a small portion of the mainland of British Columbia where the climate is similar to England, hand feeding in winter is a problem to be reckoned with in woolgrowing. Apart from the well known fact that the kind of feed has an influence on the wool, there is the trouble which comes from straw, hay, chaff and other vegetable matter getting into the fleece. To avoid this means special care, yet with the ex-

ception of a few farmers with pure bred flocks, gross carelessness has been the general rule. When the sheep are ready for shearing in the spring, the fleeces not only contain a large amount of small fragments of their winter feed, but a considerable amount of burrs collected in the fall. This form of carelessness means a serious loss to the farmer, even when the manufacturer is able to successfully remove the foreign matter with special machinery. The increased cost of production must be accounted for, therefore the manufacturer is compelled to pay several cents a pound less for wool in this condition.

Light.

Sufficient light in sheep barns is another thing overlooked. Most of the sheep barns in Canada are old-fashioned and as a rule generally dark, while in some we visited we required a lantern in the forenoon. Insufficient light, added to enforced confinement, during the winter, is not only detrimental to sheep as most farmers know, but we do not think any of our farmers realise the immense advantages of abundance of light on the fleece.

Cobwebs.

Cobwebs on barn roofs are found all over Canada, and cow barns and sheep barns are particularly bad. No one seems to take any notice of this, yet cobwebs are very injurious to wool. Small bits falling on the fleece or coming in contact with it in any way, clog the circulation of the yolk through the scales of the fibre, and impair the lustre. When dyed a delicate shade, this dullness is very marked. This may seem a trivial thing, but in hot countries where cobwebs are sometimes found in the rough brush of the sheep range, shepherds are very careful in preventing them from getting on the fleece, and wool buyers appreciate this precaution.

Rough Boards.

Very rough boards in sheep barns not only spoil the appearance of the fleece, but they would sometimes lead to a loss of two cents a pound on the shearling fleeces in a well regulated wool market. The first fleece is called "Hogg" wool, and is worth about two cents a pound more than two shear fleeces known as "Wether" wool, as will be found fully described in another section of this report. When wool is catalogued for a big sale, the description on each bale is checked before entry. If the description is wrong, it is corrected or entered with the doubtful mark for the convenience of intending buyers at the time of inspection. Now "hogg" wool can only be recognized, in the hurry and rush, by the characteristic appearance described in a chapter on this subject. When that appearance is absent, the intending buyers, having no time for careful examination and no desire to take any chances, only offer the price of "wether" wool when that lot is put up for sale. Smooth boards with a surface similar to those in the horse barn, will repay the farmer for the extra cost in one season.

Dipping.

Dipping is a subject frequently mentioned in this report, and its advantages are referred to so often that any additional remarks here would be superfluous. While we are going over the various faults in handling wool in this

country, we will merely enumerate this in passing, and emphasize one point. Apart from all its well known advantages to the sheep, its full value as a wool producer and fleece improver is not comprehended. Before Canada can compete with such countries as New Zealand and Britain in wool growing, dipping must be done twice a year. In the countries mentioned, it is compulsory, but its value as a wool producer is so well recognized that growers could not be induced to cease dipping, even if the compulsory law were suspended. In addition to stimulating the growth of the wool, it imparts a "bloom" to the fleece which gladdens the eye of the keenly observant and appreciative buyer. He never forgets the bloom, nor the "lofty, springy handle" and looks for that clip again next year. As soon as it is offered, he is the first man to open his mouth and the last man to be silent. When these two countries, with their open winters and humid atmosphere, find it so valuable, how much more important must it be in Canada with its hard winters, and dry feeding, not to mention the usual dry atmosphere of summer and early fall.

Washing.

Washing before shearing is a question which must be held in abeyance, as it depends so much on the demands of the market where the wool is sold. Manufacturers are somewhat divided on this point, because it is very often "overdone" or "underdone," and it is much better left alone than overdone, for all concerned. Wool merchants in other countries are always in favor of washing, and gladly pay the extra price, but it may be found inconvenient to Canada so that it is better to make a special effort to keep the wool as clean as possible in the meantime and await developments. Washing before shearing is simply done by driving the sheep across a stream, and those with heavy dung tags on the britch require a little extra attention. This should be done about a week before shearing.

The tub washing system of the Maritime Provinces, being chiefly confined to that part of the Dominion and distinct from the general carelessness farther west, has already been dealt with.

Shearing.

Having mentioned a few of the minor points we now come to shearing, and from this stage many serious faults are to be found. It is here where downright carelessness begins for which there is no excuse. Shearing in Canada is generally done on dirty floors littered with straw and other refuse. The hand shears are used in most cases, and they are often handled in a most ungainly and destructive fashion, resulting in jagged ridges, "steps and stairs," many "second cuts" and a most uneven staple. When the operation is complete, the fleece is bundled up any old way and tied with a string. The best cord used is dignified with the name of "wool twine," but it is in reality the vilest and most objectionable jute twine imaginable. When this is not used, something worse takes its place in the shape of sisal binder twine, or any kind of string and plenty of it, so long as it will hold the fleece together and add to its weight. Dung tags are seldom removed but rolled inside. The fleeces are then stuck in a corner until there is a chance of selling them, when as a rule they are thrust into the commonest of jute sacks.

Now the type of farmer who handles his clip in this fashion is invariably the chief grumbler about the faults of others. He never gets enough for his

wool. He talks about the high prices paid in other places for wool "inferior" to his. He will even tell you how much wool it takes to make a suit of clothes and figure out the intermediate profits. When wool belonging to this class of farmer is scoured, it is usually found to contain many kempy hairs, numerous diseased fibres, a large amount of second cuts and a serious lack of lustre and when combed it yields a high percentage of noil. There are other men just as careless as he is, who deliver their wool in the same bad condition, but they are easy going good fellows who seldom complain, yet feel discouraged with results. The latter type often have well kept cattle, and well fed hogs, because they have taken hints from the lecturers they have heard in farmers' institutes, but they never heard much about sheep and nothing practical about wool. "Sheep are a worry anyway and their wool doesn't pay for the trouble of shearing," they will tell you. Farmers of this description spoil the value of wool in their district so that others who have succeeded in breeding excellent sheep and are trying to pack their wool in good condition, can not obtain the price they deserve.

Packing.

Our best sheep farmers do not deliver their wool in the condition they ought to, far from it, but they take a pride in growing a good fleece, and handle their wool as well as they possibly can. If it is not satisfactory it is not their fault, because they have neither been favored with practical instruction nor encouraging prices. These men shear their sheep on clean floors, use machine clippers, wind each fleece in the correct fashion and tie it with a twisted band of neckwool. This is how it ought to be done. There is no excuse whatever for tying up a fleece with twine or cord of any sort. Nothing but a wool band will be tolerated in any good wool market. This statement applies to the fleece of any of the mutton breeds. Merinos and their crosses are exceptions, because their wool cannot be twisted into a secure band, and a special twine is used for this purpose. Formerly it was a fine glacé cotton cord, but now a new paper twine has taken its place. This new paper twine is the greatest boon ever invented for tying the fleeces of range sheep.

Our Western sheepmen have been in the habit of using a very stout, rough, jute twine, almost a rope, and in some cases binder twine. This has been the cause of considerable loss to them when exporting some "trial" shipments to Liverpool and Glasgow. Buyers of good crossbred wool would not entertain it at any price, and after considerable delay it was sold to manufacturers who use the cheaper kinds of South African wools. Last year, they only got 18 cents for it and were fairly satisfied with that. We ran across some samples of this wool in England, and obtained the opinion of some large buyers who spoke favorably of the quality and valued it at 26 to 28 cents per pound, at prices then ruling, but they objected to it on account of the twine and the sacks. A difference of eight cents a pound owing to bad twine and the wrong kind of wool sheets is very serious. Common jute sacks are used all over Canada and unless these are discontinued they will always mean a loss to the growers.

Ontario sheep breeders handle their wool fairly well for men who have never had any special instructions in packing for a well organized market. After a few lectures they might be able to put up their wool in a fit condition for the British market next year. Of course it would also be necessary to take more care than usual in keeping the fleece free from vegetable matter during the winter months, when the sheep are fed inside. Once their wool

Fig. 30.—Shropshires at Home (Folded on Rape).

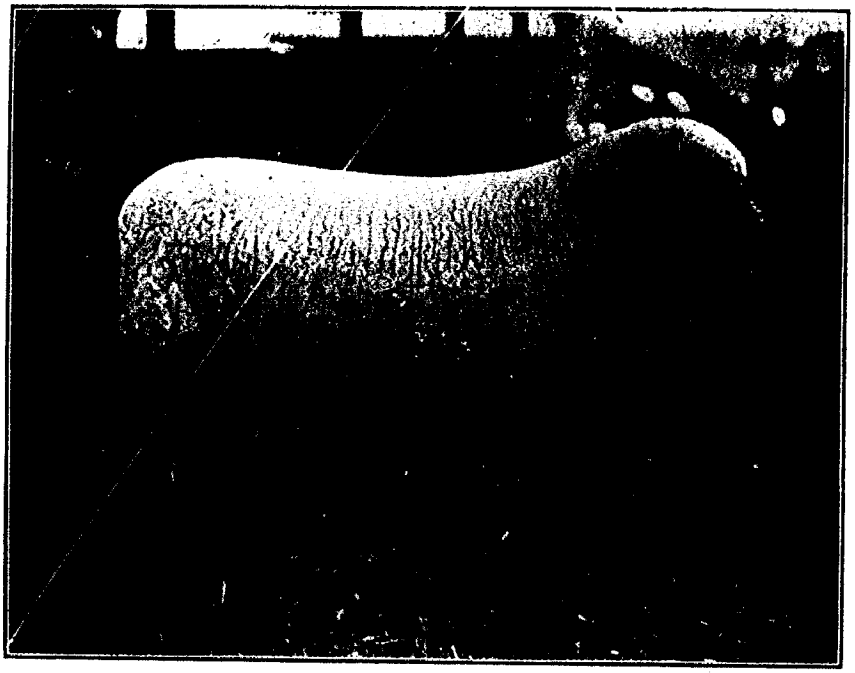


Fig. 31.—Shropshire Ram.

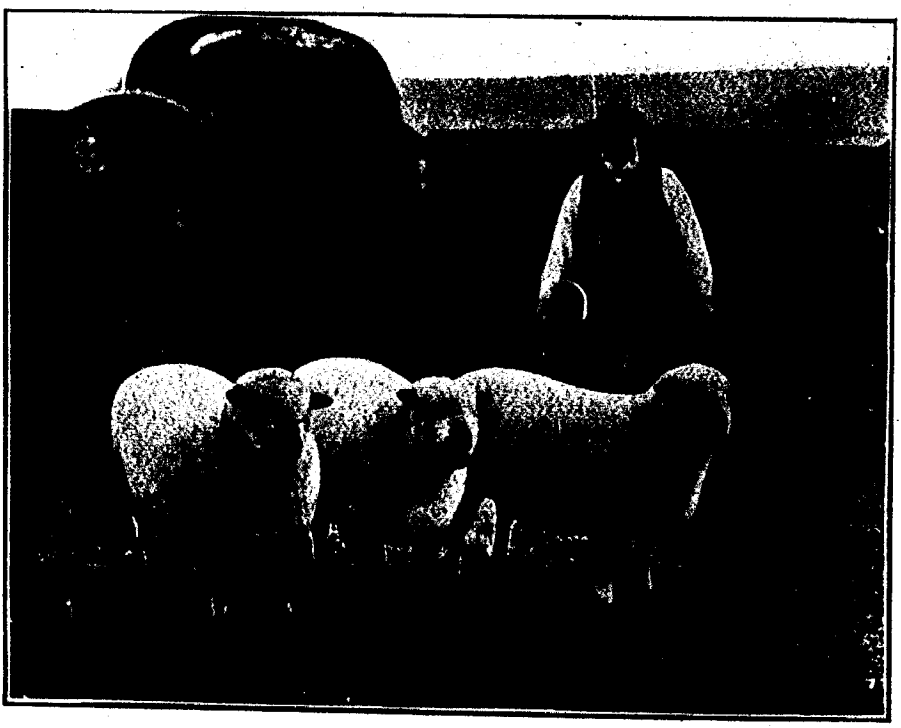


Fig. 32.—Some Champion Shropshires.

Fig. 33.—Kerry Hill Ram.

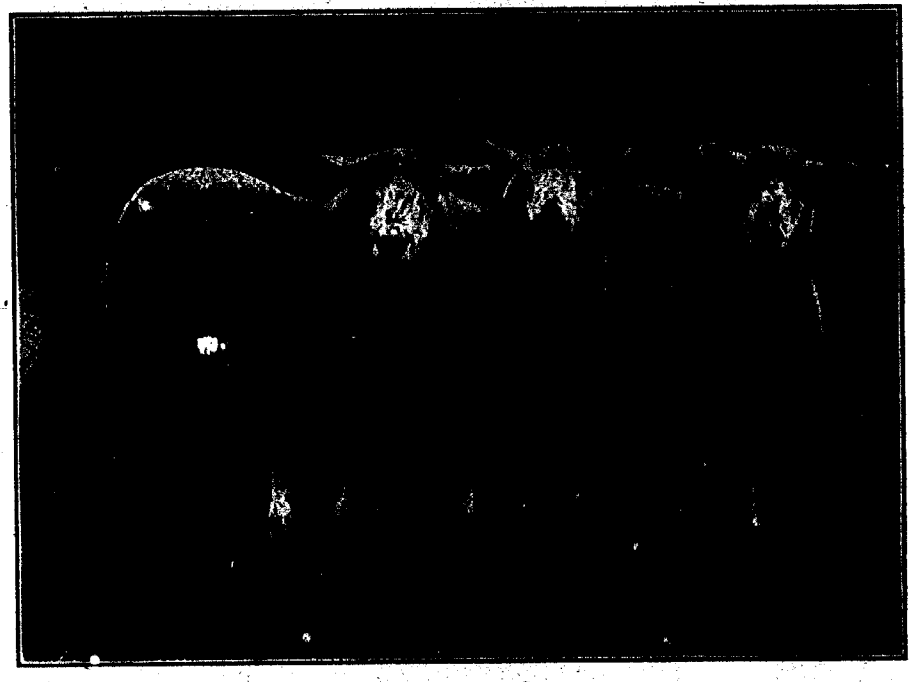


Fig. 34.—Kerry Hill Ewes.

Fig. 35.—Oxford Shearling Ram.

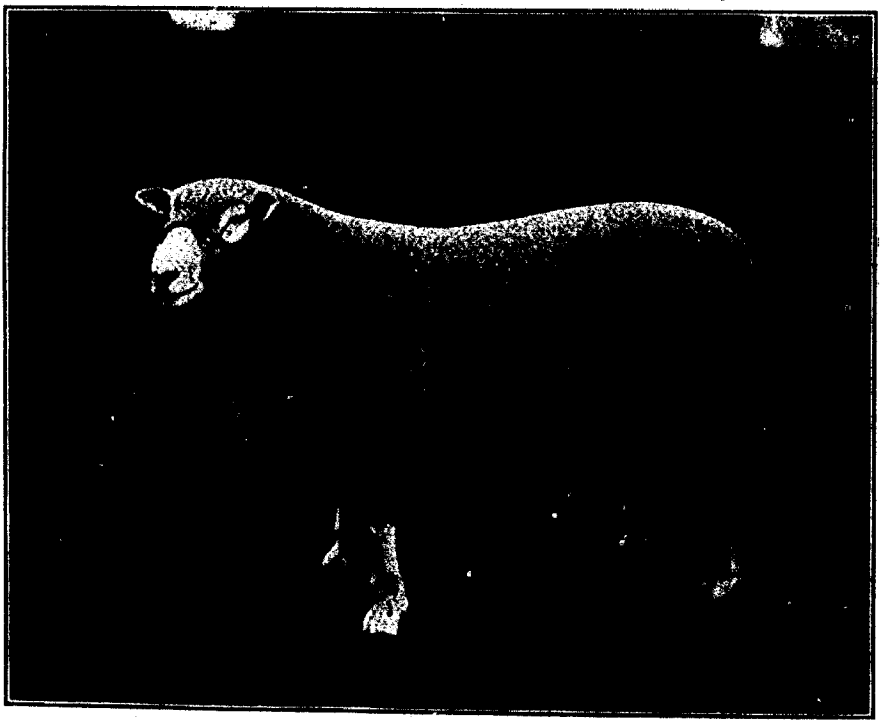


Fig. 36.—Ryeland Two-Shear Ram.

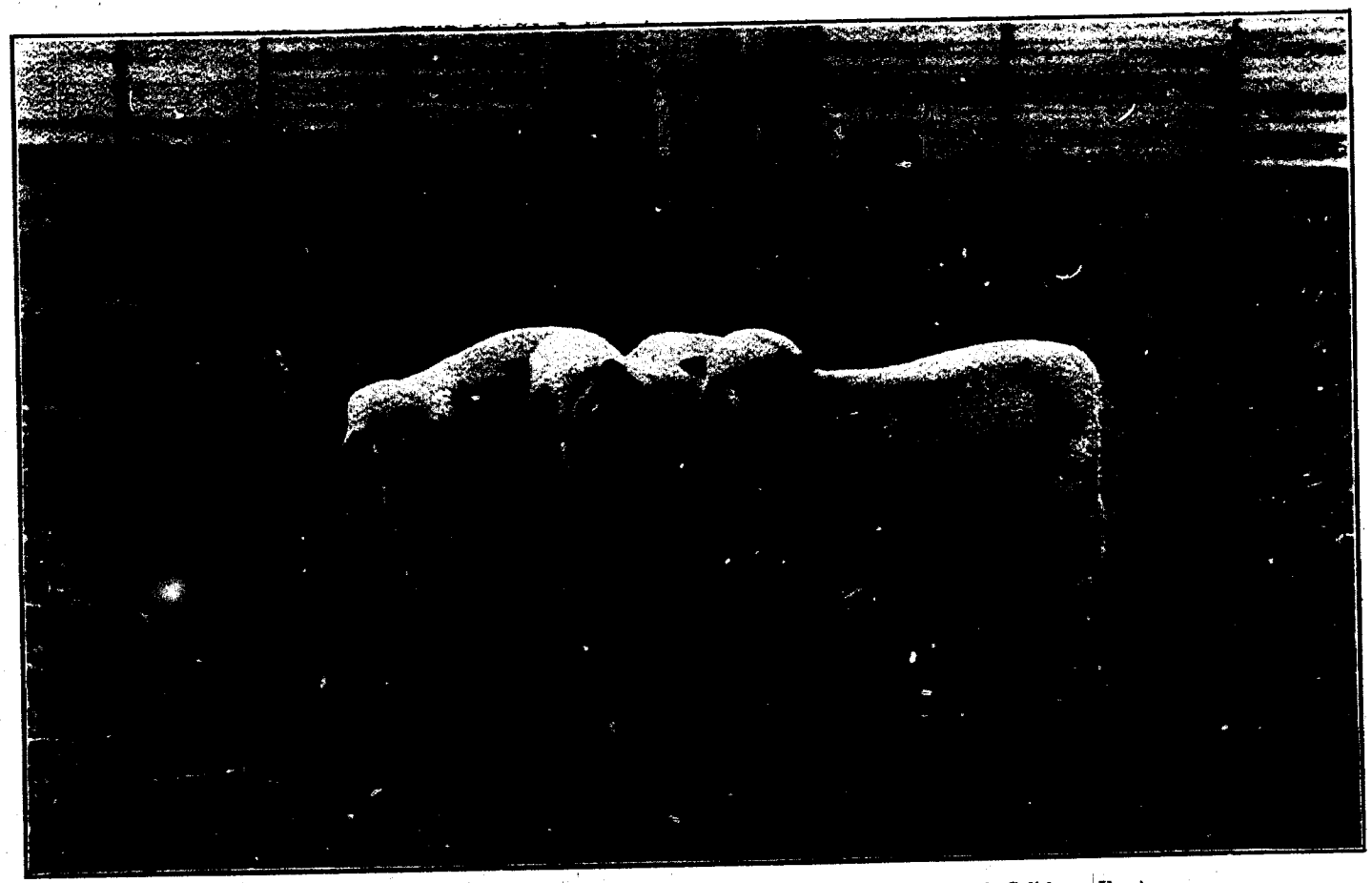


Fig. 37.—Champion Pen of Hampshire Lambs. (Photo, courtesy Jas. Flower, Chilmark, Salisbury, Eng.)

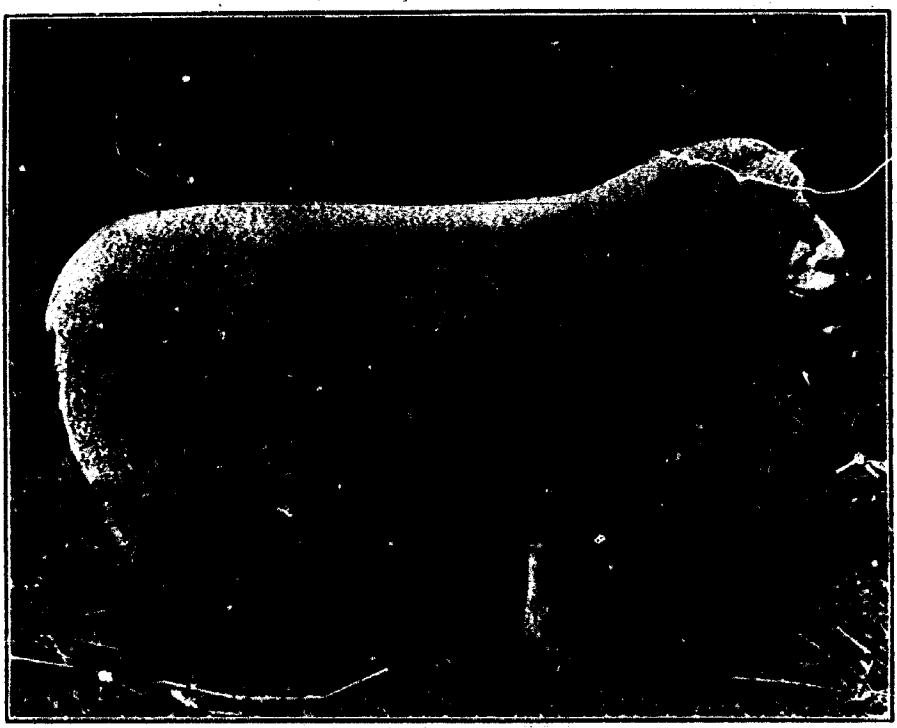
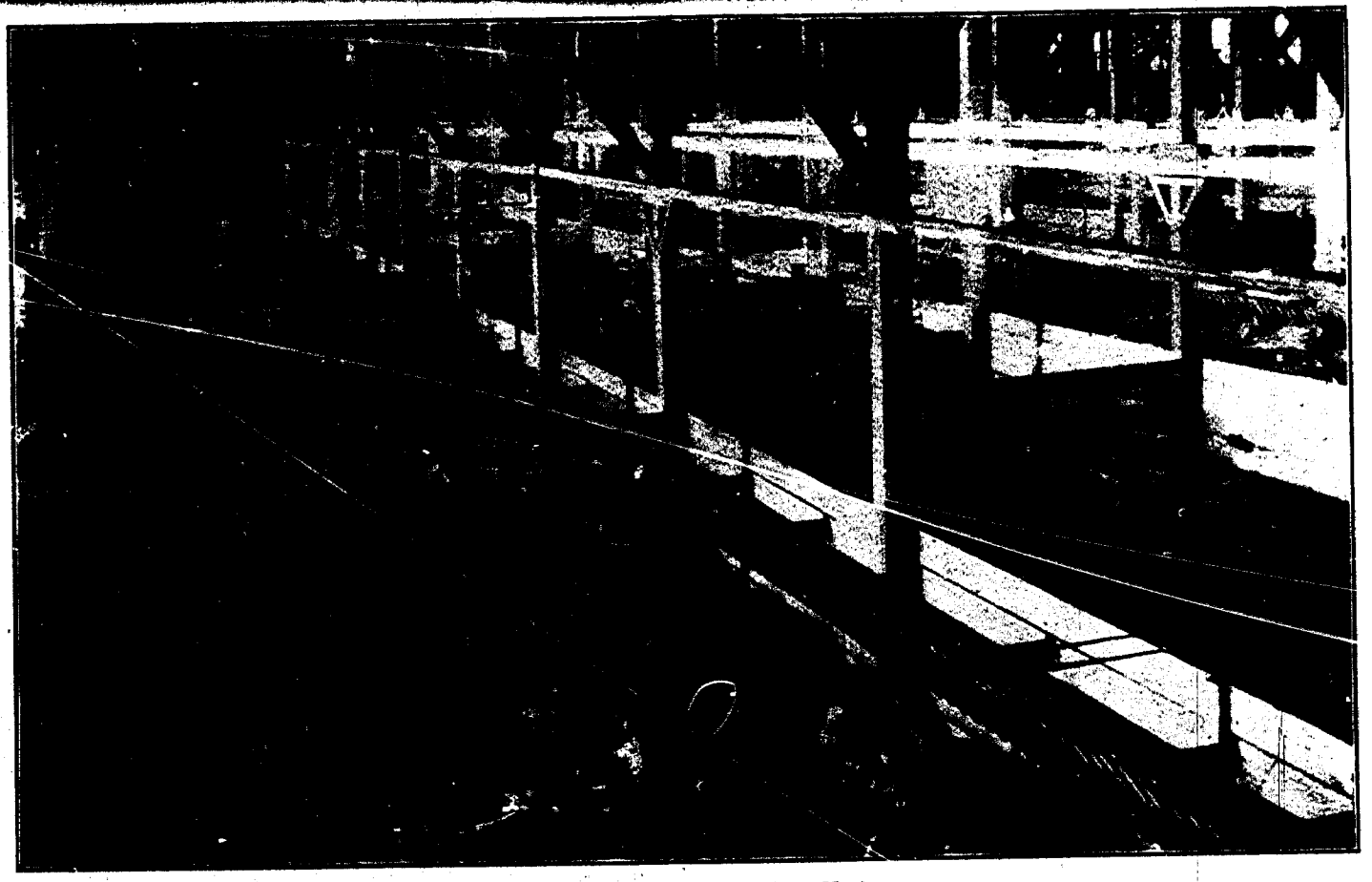


Fig. 38.—Southdown Ram.

Fig. 39.—Southdown Ewes.



g 40.—Sheep in the Chicago Stock Yards.

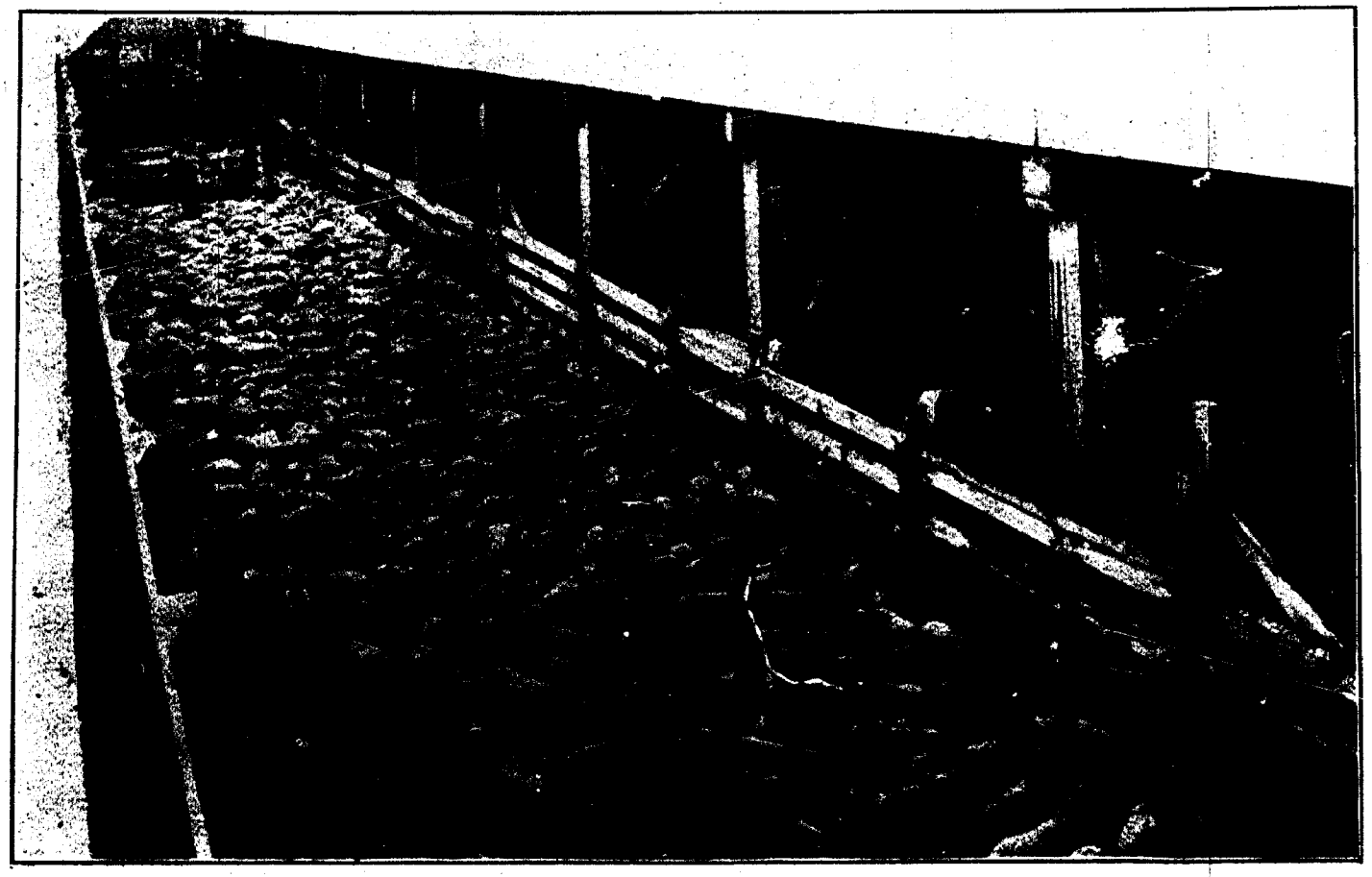


Fig. 41.—Utah Sheep in Chicago Stockyards.

is able to take its place on any English market, it will also command British prices at home. The average mixed farmer in Ontario however, is very careless in handling his wool and so far, has never attempted to keep it in proper condition like the pure bred sheep breeders. It will take two or three seasons of lecturing before his wool could be in the right condition for an auction wool sale.

In the province of Quebec, the farmers still cling to the out-of-date system of "tubwashing," similar to that practised in the Maritime Provinces, only they scour it and turn it out a little cleaner in most cases. In the Eastern Townships, some of the sheep breeders roll up the individual fleeces in a similar fashion to the Ontario breeders.

Marketing.

Although the want of practical education was noticed everywhere in our investigation, the need of some organized system of assembling and marketing was even more noticeable. In Great Britain, markets seem to be part of the people's nature, and their present organization is not merely a creation under pressure of necessity, but the evolution and development of an inclination which is always a step in advance of the demands of production. Every little village in England, commenced with the erection of a market cross, and so on from open markets to covered markets, market halls and exchanges. Nothing but the confusion and loss resulting through unorganized production, discovers to us the mistake of not having anticipated possible developments and future requirements. Such discovery is usually followed by a period of theories and experiments, before any step is taken in the direction of serious forethought and practical methods.

Some may argue that this is the usual drawback of a new country, but this is not the case. In Australia, New Zealand and even South Africa, market organization not only keeps pace with production but provides hints for improvement in old countries. As far as the sheep industry is concerned, South America is quite alive to the economic advantages of marketing organization, so that the producer may receive more, without the consumer having to pay more. In Australia and New Zealand, the early settlers contained a healthy sprinkling of business men with administrative ability and forethought. This accounts for their superiority in marketing organization and municipal government.

Farmers still cling to the out-of-date idea that woolen mills ought to be planted all over the country like flour mills. This was frequently suggested to us at our meetings, and we must remind them that small isolated concerns, hampered with local inconveniences, are no longer a factor in serious competition, nor in the production of cheap goods. The day of that is past, even in the old countries. The concentration of kindred industries, together with specialization and a huge output, is the chief factor to-day in reducing the cost of production.

It is not necessary to dwell longer on the carelessness and bad system of handling wool in Canada, and its serious results. If our leading sheep breeders are not already aware that the system is as bad as it really is, they know that the wool trade has been very unsatisfactory for many years in spite of all the theories advanced as remedies. They will now, it is hoped, welcome some information on the subject and lend their support to some

practical solution of the difficulty, as well as to the creating of some organization for carrying it into effect. Others, who have been too indifferent to give the matter any serious thought, or imagined that their present condition was good enough, will now be able to reconsider their careless methods, and contrast them with the improved methods of other countries where wool growing is a lucrative occupation.

Freight Rates for Canadian Wool

FROM ALL THE PRINCIPAL POINTS TO MONTREAL AND TORONTO.

From	Winnipeg.				Regina.				Calgary.				Lethbridge.				Vancouver.			
	Sacks.		Compressed Bales.		Sacks.		Compressed Bales.		Sacks.		Compressed Bales.		Sacks.		Compressed Bales.		Sacks.		Compressed Bales.	
	LCL	CL	LCL	CL	LCL	CL	LCL	CL	LCL	CL	LCL	CL	LCL	CL	LCL	CL	LCL	CL	LCL	CL
Classes.....	1	2	3	5	1	2	3	5	1	2	3	5	1	2	3	5	1	2	3	5
To	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.				
Toronto (lake & rail)..	139	119	98	65	226	191	155	98	294	248	200	129	284	240	194	125	Commodity Rates: Wool in grease, pressed, LCL 150 cts; CL 100 cts. Wool(scoured) CL 150cts. (pressed). Minimum carload weight, 24,000 lbs.			
" (all rail).....	164	139	112	71	251	211	169	104	319	268	214	135	309	260	208	131				
Montreal (lake & rail)..	139	119	98	65	226	191	155	98	294	248	200	129	284	240	194	125				
" (all rail).....	164	139	112	71	251	211	169	104	319	268	214	135	309	260	208	131	(Same as above).			

From	Fredericton.				Truro.				Halifax.				Antigonish.				Sydney.			
To																				
Montreal.....	48	42	36	24	50	44	38	25	50	44	38	25	54	48	41	27	58	51	44	29
Toronto.....	64	56	48	32	66	58	50	33	66	58	50	33	70	61	53	35	74	65	56	37

From Regina to Vancouver:—Less Carloads (1st class) 292 cts. Carloads 2nd class) 244 cts. 100 lbs. (Wool, in sacks).
" Calgary " " " " (" ") 195 " " (" ") 162 " 100 " (" ").
" Regina " " " " (3rd ") 196 " " (5th ") 134 " 100 " (" pressed in bales).
" Calgary " " " " (" ") 129 " " (" ") 87 ") 100 " (" " " ").

Note 1.—CL: Carloads. LCL: less than carloads. Note 2.—Shipper has the option of a carload minimum weight of 10,000 lbs. 2nd Class, or 20,000 lbs. 5th. class. Note 3.—Export shipments to Montreal are exclusive of port terminal charges.

CHAP. IV.

SHEEP HUSBANDRY IN UNITED STATES.

The United States at one time produced much larger quantities of meats than were required for home consumption and a very extensive export business was carried on in consequence. Since the rapid increase in population and wealth, and the decrease in range production, the supply has dropped to a near level with demand. The very best in all classes of live stock is now required for slaughter at home. The organization of the immense packing concerns, beginning at Chicago and spreading elsewhere, has created a market for many classes of meats which previously were a drug on the market and held down the average price of better stock. The numerous ways of preparing the many cuts and by-products, formerly wasted or sold at a sacrifice, have had much to do with the creation of a steady trade and an even market price for various qualities of live stock. The prices at present for the best quality on sale are not now governed by the markets in foreign countries, where shipments were formerly made.

Sheep producing two market products, namely mutton and wool, have not been entirely dependent on meat prices and so the encouragement or discouragement this industry has received in the past cannot be laid at the door of one market only. This class of stock has been a popular product of American agriculture in the past. The basis of the Industry has been the quantity and price of wool grown by the Merino sheep of the West. The fluctuation of wool values and the steady increased demand for mutton had the effect, however, of altering the system of breeding, so that at the present time the market for meats is an important factor in sheep breeding. The ranges are breaking up into smaller farms, the large flocks are gradually disappearing and there is a very decided annual decrease in the sheep population. The present outlook is for a steady demand and good prices for mutton and this demand will induce the smaller farms to keep flocks of sheep best adapted for that trade.

The States comprising the American Union represent many varying conditions in constituting the sheep industry of that great republic. From the warm semi-tropical states in the South to those in the North with a more changeable climate, and from the millions of acres of desert and range to the level rich farms of the Middle West, conditions of sheep farming are vastly different. The districts not possessing similar characteristics, physically and climatically, to those existing in Canada were not included in our investigation. Our object in visiting the United States was not merely to write an interesting account of conditions found there but to learn of their methods, in the hope that something could be gleaned from their experience which would be useful in Canada and applicable under similar conditions.

The New England States.

The farms of the New England and other Eastern states have had similar sad experiences to those reported in regard to the Maritime Provinces. Many good farms, once producing a large quantity of supplies for New York and

other centres of the East, and once the most valuable in the United States, have since been abandoned and still stand unoccupied. The Western states with their rich, arable prairie soils and the attractions of life in a new country, proved to be sufficient to depopulate in a large measure the rural sections referred to. The cities also did their share in bringing about this state of affairs. Farms, once valued at $100 to $150 an acre, depreciated very rapidly and now go begging at $15 to $25. High prices for farm products and such low values in farm lands within such a short distance of some of America's most desirable markets are beginning to attract many back to the land. In these districts during the past 20 years the number of sheep kept has been reduced by about one half. What other causes may have operated to this result we do not know, but, without question, those just mentioned have been important reasons. Nothing will bring about the production of more sheep without the return of the people to the land.

The Middle West.

In Ohio, Michigan, Wisconsin and Minnesota farming operations are carried on under mixed farm conditions, and especially in the first two mentioned, sheep breeding is a most important branch of live stock husbandry. The highest type of American Merino is found here and the breeders spare no effort to maintain the high character and reputation of their flocks. The foundation of their existence is the trade with the range States of the West where the blood of the Merino has always been popular in the formation of range flocks. There has been a tendency on the part of farmers to discard the fine wooled, special purpose breeds for the adoption of the mutton breeds. This slight reaction is no doubt in sympathy with the general tendency the world over for all sheepmen to have two strings to their bows and thus avoid heavy losses in a bad market, with only one product for sale.

A considerable trade market for early spring lambs, or hothouse lambs, exists in the large cities of the United States. This is quite natural, for men of large means are quite willing to pay good prices for a little fresh young lamb after being fed on inferior mutton and frozen lamb for most of the winter. This hothouse proposition is not one that is undertaken by everyone, but a few who are willing to give it the strict attention that it requires have been decidedly successful. The lambs are born to be ready for the market when a shortage exists and the price is relatively high. Ewes are required that will breed at the proper season or out of the ordinary time, generally considered the sheep breeding term. The lambs require to be ready as early as possible in the winter. The earlier they can be supplied the longer will be the season. A few good feeders have been able to produce lambs at the age of five and six weeks, good enough to command the highest market price, but in the majority of cases it takes from two to three months to get the required weight and quality. The ewes must lamb inside, of course, and both ewes and lambs must necessarily be fed entirely on stored feed. A few roots, or ensilage and good alfalfa or red clover hay constitute the feed for the ewes. Cracked corn, oil cake, oats and bran, with a little good clover hay form the feed for the lambs. The quarters for this business require to be airy, light, clean, dry and well ventilated, and free from severe draughts of cold air. The success of these operations depends entirely on close attention to details in regard to the comfort and health of the young lambs and if they are ready for sale at the proper time no difficulty is experienced in getting $8.00 to $10.00 each. This is rather high priced meat and the market is only limited by the proportion of population which is in a position to afford such luxuries.

The general methods of farm and flock management adopted by the sheep breeder of these States is very similar to such as obtain in Ontario. The high class breeders of registered sheep in Ohio and Ontario pay closer attention to the details of their business than does the average farmer breeder in either place.

Michigan still contains some very high class pure bred flocks but these have largely decreased of late years, partly on account of the introduction of mutton rams into the West and also because there were good profits in feeding sheep and lambs. Michigan engaged very heavily in the sheep feeding business for a number of years. She became the largest and most important in that line, by a long lead, of any in the American Union. These feeder-sheep were supplied from Chicago and the other large Western markets while many sheep and lambs were shipped direct from the range districts to the feeder in Michigan. These were put into yards in the fall and fed along for Eastern markets during the following winter. Most of this Michigan stuff goes to Buffalo and Pittsburg, and other Eastern cities. Some occasionally finds its way back to the Chicago Market for slaughter. While Michigan handles a very great many sheep each year she has decreased the actual number kept on her farms, and the probability is that if the farmers take up sheep breeding again as they did in former years, breeds of the mutton type will be those adopted in preference to the "all wool" kinds. In all these four States referred to the drawbacks were very similar, disease, dogs, fencing, dairying, etc., and were it not for the excellent demand for breeding stock in the West, fewer sheep would be kept than is even the case at present. Worms are a trouble, dogs are a very serious menace, and dairying interferes somewhat but the fencing question is not serious and is merely an excuse for the indifferent or lazy man who does not apply enough energy to his business to make a success of it.

The Ranching States.

The states of Montana, Wyoming, Idaho, Oregon, Utah and Washington represent conditions of a nature more like Southern Alberta, Southwestern Saskatchewan and parts of British Columbia. In the States mentioned, range practices are followed and many of the points of contention in Western Canada have been uppermost here as well. At one time the cattleman was king of the whole territory. He could roam where he wished and was molested by no man, except once in a while by the surly, retreating Indian, who was loath to surrender possession of the land which had been his property and his home for ages in the past. Cattlemen got to think, after a while, that theirs was the only interest and business which should thrive over this vast territory. They were on the ground first and so the sheep man, following, was considered an intruder and trespasser, and treated in raw Western fashion accordingly. The result eventually was that the whole matter was taken up by the Government and a new order of things followed.

The difficulties between the cattleman and sheepman as to rights on the range, especially on summer range, were somewhat hard to settle. Forest reserves in the beginning were free to all, one had as much right as the other, but now the management of such areas is entirely under the control of the Government. The authorities decide according to the feed produced, whether they shall be used for horses, sheep or cattle; they determine how many head of stock shall run on a given area; how many months it will support a certain number of animals, and they issue the necessary regulations to govern the

grazing of stock as well as the protection of the forest reserve. In comparison to the old system, the new order of things seems somewhat burdensome to the sheep men and with the majority of them is somewhat in disfavor. The whole system tends to encourage the ownership of smaller holdings, and the preference is given to those nearest the reserve. By the proper regulation and limit of stock on these reserves, however, the chances for over stocking are avoided, and each man has a reasonable guarantee that for the number permitted he is sure of sufficient feed.

About the time that the above policy was adopted the wonderful capabilities of the soil in certain sections were becoming more generally known. Irrigation schemes were under way and many settlers were attracted into the ranch man's country, much to his discomfort and annoyance. The cutting down of range operations is now of very large proportions. Many sheep owners have been reducing their flocks by half and even more, while still others have been obliged to sell out entirely. This has been going on for a number of years and still continues. Market authorities find difficulty in ascertaining just what the shrinkage in breeding stock will be, until liquidation may cease and operations reach a steadier basis. This stage will be reached in the course of time and then some idea will be possible as to normal supplies. That there is bound to be a shortage is the opinion of all experts and no one ventures to say just what that will amount to but all agree that it will be more serious than the average man dreams of.

In contrast to Canada, the United States possesses many millions of acres that, at present, must be considered as desert or waste land which cannot be used for any other purpose than the grazing of stock. In comparison to this country, the ranching industry will always be of considerable importance there. The good soil in the rich valleys all through the range sections is not of much account without the assistance of man in supplying sufficient moisture for steady growth. This is a land of much sunshine and little rain fall and, where moisture may be applied by irrigation, the productive power of the land is hardly to be imagined. In some districts particularly, and to a considerable extent everywhere, the cultivation of alfalfa has received a great deal of attention. Abundant crops are produced and may be relied on annually and its value for sheep feeding has been clearly demonstrated. A few years ago, when lambs were not considered as marketable, everything was held over from year to year for the clip of wool, and eventually either died or was sent to market as old ewes or wethers. After a little, when mutton received more attention and wool less, a great many lambs and yearlings were shipped out of the district to Chicago and other markets to be fed on the corn belt farms of the Middle West. The same sheep very often were returned after slaughter to supply the demand in the country where they originated. During late years, however, this also has somewhat changed, as much stock that was formerly shipped away in this condition is now fed locally in the alfalfa and sugar beet producing areas. Thus a very important branch of the industry is being carried on and all sheep from the West do not now go to market as feeders. When properly equipped and prepared for this work farmers are able to realize splendid profits in good seasons and some men are carrying on a very large business. The largest of these operations are so far removed from anything of a similar nature likely to develop in this country, that we shall not outline the work in particular. To illustrate, however, Mr. I. D. O'Donnel, Billings, Montana, owns a section of very fine irrigated land about seven miles from that town. His experiences in sheep feeding are very interesting as well as profitable. He buys about 10,000 head of sheep each

season and feeds very largely the product of his own farm. This farm is a good one but not capable of producing larger crops than many in Western Canada if similar good management is applied. We follow with Mr. O'Donnel's own ngures and balance sheet for the 12 months ending April 1st., 1911.

"In the first place I will explain that the sugar beets are all grown by Germans on shares. They do all the work and furnish nearly all their own stock, machinery, etc., and deliver beets at the dump. I furnish seed and manure. They get three-quarters and I get one-quarter. The alfalfa, the Germans irrigate, cut, stack and feed for $3.00 per ton; the grain and other things on halves. I keep the orchard and trees. I also keep one man the year round at $60.00 per month, without board, who looks after the orchard, fences, bridges and roads, and cares for the sheep while in feed lots. I pay all taxes, water assessments and permanent improvements.

The accounts of the farm are run in three main divisions,— Ranch account, Sugar beet account and Sheep account, and in the figures given below only the totals of debits and credits will be given.

The farm is situated ten miles west of Billings and consists of 640 acres irrigated land, and the beet land averages about one mile haul to beet dump; 32 head of first class work horses are used in the operating of the place. The census man found seventy-seven people living on the farm."

RANCH ACCOUNT.

		Dr.
One man, 8 months at $60.00	$	480.00
Seed, alfalfa and oats		240.00
Telephone		36.00
Hardware		53.00
Lumber and apple boxes		80.00
Insurance		52.00
Taxes and water assessment		750.00
Hay, irrigating, cutting and feeding		3,300.00
Livery and feed		52.00
Extra labor threshing and picking apples		250.00
Total	$	5,293.00

		Cr.
Hogs	$	468.00
Apples		1,070.00
Alfalfa Pasture		350.00
1,100 tons of hay at $5.00		5,500.00
Grain sold		320.00
Total	$	7,738.00
		5,293.00
Net Profits	$	2,445.00

The Germans' profit on ranch work about made them their stock feed and their own living clear. Each family had its own garden and pasture for cow.

SUGAR BEET ACCOUNT.

	Dr.
Seed	$ 489.00
Drill	23.00
Three-quarters to the Germans	18,212.64
Total	$18,724.64

	Cr.
Received for Sugar Beets from 230 acres	$24,283.54
Beet tops from 230 acres, charged to sheep	1,150.00
Total	$25,433.54
	18,724.64
Net Profits	$ 6,708.90

Figuring $45.00 per acre as the total cost of growing and harvesting the beets, the Germans made a net profit of $7,862.00 on the beets.

It required the full force of 32 work horses to put in the beet crop and again at harvest 12 teams and wagons were required for six weeks to do the hauling to the railroad.

SHEEP ACCOUNT.

	Dr.
Cost of 8,000 wethers including the commission	$26,906.75
Expense—bringing to farm, salting and herding	237.10
230 acres beet tops, Beet account credit	1,150.00
Alfalfa pasture, Ranch account	350.00
Yard man 4 months	240.00
1,100 tons of hay at $5.00, Ranch account	5,500.00
Interest on sheep loan	633.00
Total	$35,016.85

	Cr.
Received for sheep	$39,248.40
Received for pelts	29.90
Total	$39,278.30
	35,016.85
Net Profits	$ 4,261.45

The Beet tops at $5.00 per acre were cheaper feed than alfalfa at $5.00 per ton.

TOTAL.

Ranch account profit for year	$ 2,445.00
Sugar beet account profit for year	6,708.90
Sheep account profit for year	4,261.45
Net profit for the farm for one year	$13,415.35

Farm land in the vicinity of Hesper Farm is valued at about $100 per acre. The above figures show 21 per cent on $100 per acre or 7 per cent on a $300 per acre valuation.

I am trying to run the farm on what I think is the typical plan for this valley, this is alfalfa, sugar beets and stock feeding. In doing this I plow up alfalfa for sugar beets, grow two crops of beets, then fertilize for the third crop. The fourth year it is put into oats and seeded back to alfalfa.

The feeding of all the alfalfa on the farm gives us the fertilizer to go back on the place. We put out about 2,400 tons of manure each year and in that way keep the farm in a high state of fertility. The oats last year averaged over 100 bushels to the acre, beets over 18 tons and alfalfa a little less than five tons.

Enough timber is grown on the place for the fuel supply."

In many instances pure bred flocks are maintained throughout the range country. These represent most of the breeds popular there for both mutton and wool. Some very high class flocks of Merino, Rambouillets, Cotswold, Lincolns, Hampshires and Oxfords were visited. The other breeds are present also, the Shropshire having many champions. For getting lambs off early to market, Hampshires, Oxfords and Shropshires are very popular for crossing purposes. The Cotswold and Lincolns improve the mutton qualities of the Merino and produce a heavier fleece than the cross from the Down rams. Early lambing breeds are usually found on the main line railway with the best facilities for quick transportation to market. This is an important point, for these young lambs shrink very badly if subjected to very long hard railroad trips. Thus in more remote districts the fleece receives more attention and sometimes the long wooled breeds are more common for crossing on Merino ewes. In one case we visited a flock where the owner has been using Rambouillets and Cotswold rams alternately for 25 years, the result being that he gets fairly good mutton and some good quality fine wool, as well as splendid cross bred wool. His system each year is to divide his ewe flock into two types, those with decided Rambouillet tendencies to be crossed with a Cotswold ram, and ewes with large frames and open fleeces to be bred to the fine wooled ram. This has been followed for many years and the owner sees no reason to alter his course.

The Pacific Coast.

Some of the valleys of the Coast States present entirely different conditions. The Willamette Valley in Oregon is one noteworthy district. Containing 7,000,000 acres, with about 5,000,000 acres in the valley proper, and a climate very similar to England, this valley is in a position to adopt Old Country methods to a large degree. A few really outstanding flocks are found there and are kept out summer and winter. The winter feed consists of roots, kale, rape and other such feeds. Cotswolds, Lincolns, and Leicesters are found to do very well, and with the strong range demand for such breeds these flocks are increasing. Many of the Down breeds are also kept on some of the smaller farms.

While in Helena, we made careful enquiries about the grazing of Forest Reserves and Range regulations, in the hope that we might gain some useful information regarding the grievances advanced by our sheep men in Alberta. Every detail was carefully explained to us and we also received a full account of the results since the new regulations came in force. The Range Regulations are still somewhat unsatisfactory, as far as the sheep are concerned, but the

general opinion was favorable to the regulations connected with Forest Reserves. We spent half a day with the Forest Supervisor and obtained a copy of the regulations governing the grazing of such Reserves, issued by the United States Department of Agriculture. As these regulations form a fair sized booklet in themselves, we regret that it is not convenient to include a copy of them in this report. They have, however, been placed at the disposal of the Department for future reference.

In concluding our general review of the sheep industry across the border, we must admit that, although the neighboring States have similar climatic conditions to our own, we were unable to gain much information that would be considered really new by our best breeders. Not only does frequent intercourse and similarity of methods account for this, but as well the fact that sheep farming in many respects is neither so forward nor so intensive there as it is in England and Australia. We found a good many of the more progressive sheep men in some of the States adopting methods practised in those countries. The chief advantage possessed by sheep breeders in the Middle West consists in having a large sheep population to cater for. In feeding operations particularly, and also in raising early lambs for special markets we can learn a good deal from the methods of our neighbours.

Before closing this chapter we must not omit to mention the kindness and valuable assistance we received during our investigation in the United States. Everyone was most anxious to give us all the information possible, and many put themselves to considerable inconvenience to assist us in obtaining any particular class of information we desired. Owing to this fact, we were able to learn more of the inner workings of their methods in ten weeks, than we could otherwise have done in ten months. Although pressure of work prevented us from accepting much of their hospitality, we will always look back on our visit with gratitude and pleasant recollections.

CHAP. V.

THE WOOL INDUSTRY IN THE UNITED STATES.

Wool Growing in U. S. A.

An investigation of the woolgrowing industry in the United States is more interesting than instructive. It is interesting because it is the only country of importance where the growing of wool (of various kinds) is conducted on a large scale for domestic consumption only, and as well it falls far short of domestic requirements. It fails to be instructive because the system throughout is far behind those of other countries which grow wool for both home and export trade. We may add that it is even disappointing, because it has not developed in proportion to the support it has received. It is still more disappointing to find the majority of those engaged in it struggling hard for a mere living, while a great many are carried from year to year by the banks. According to their own figures many sheep men on the Western ranges have not made any money for several years, and judging from outward appearances we are under the impression that many of them have not done more than hold their own. It should be remembered that our investigation was conducted during a serious tariff agitation, and many sheep men were inclined to represent their figures in their worst light. The fact must not be overlooked also, that many men have made money out of sheep, and not a few made small fortunes in the business. Their success, however, can be traced usually to some special branch of stock-breeding, or to the fact that they cater to some particular demand of the mutton market for which special methods are required. It is only when we study the industry from a wool standpoint that we find it disappointing, notably, because of the frequent absence of a definite object in view in the production of the wool, and because of the unsatisfactory way in which it is handled and marketed.

In other large sheep farming countries you not only find general prosperity in the whole industry, but prosperity in wool growing itself. In spite of the great strides made in mutton production in Australasia, the improvement in wool production is still greater, both in quantity and quality. Even where sheep have been reduced in numbers through the range country being cut up into farms, the amount of wool has not decreased in proportion.

The system of cross-breeding in the Western States is also rather backward. The great majority of sheepmen do not know the proportionate value of one grade of wool from another, therefore they have no fixed object in view when crossing. This means a serious loss in their clip, because it is an easy matter to improve the value of the wool without lowering the quality of the mutton. The want of a proper system of marketing is the chief reason for this, because growers are not paid according to any standard of quality. To a great measure "wool is wool," and we found one price in one State and another price in another, according to the general condition of the wool produced in each locality. This state of affairs must be generally unsatisfactory, and very unprofitable to growers. In Utah, Wyoming, Idaho and Montana long-wool crossbreds are more popular than down crossbreds, and

Cotswolds and Lincolns were the breeds most commonly used. Those using Down rams were most in favour of Shropshires when wool came in for consideration, but Hampshires were growing in favour where mutton was the chief object. We saw no trace of the Romney Marsh crossbred, so popular in New Zealand, and comparatively few Leicester crossbreds, although this wool is now in good demand, particularly half-bloods. We were very favourably impressed with the wool on a flock of "Come backs" belonging to Mr. Johnston of Blackfoot, Idaho, who is somewhat original in many of his methods. The contrast, however, in many places to the scientific methods of crossbreeding in Australasia was very striking. We found several good men using good methods in crossbreeding for wool production, but these were a class of men who would take a pride in anything they did, and continue to do it the right way even without sufficient encouragement. The great majority were unfortunately using somewhat haphazard methods for want of sufficient encouragement on right lines. Excellent stud flocks of Delaines and Rambouillets are found in many states in the West and Middle West, so that owners of crossbred flocks have a good foundation to draw on. Wool is not overlooked in purebred flocks, and we were particularly struck with the splendid fleeces of some Delaines belonging to The Butterfield Live Stock Company of Weiser, Idaho. The wool was simply ideal, both in character and quality. We visited also several owners of Rambouillet flock who not only do a good trade in the West, but occasionally export rams to South Africa. We regret to state that even these gentlemen tied up their beautiful fleece with common jute twine, which had already thrown off much of its vile fibres on the wool. Their excuse was that dealers made no difference in price.

In Montana, we found a better class of sheep as a rule and the crossbred flocks averaged a higher grade of wool. The fleece was also in better condition and worth more than Wyoming wool of the same grade. Shearing is rather late in Montana, because the yolk is slow in rising in the fleece, and there is very often a fortnight of very cold weather after shearing has been completed in Wyoming. In Helena, we had the pleasure of meeting the Secretary of the Montana Wool Growers' Association. Montana possesses about 4,800,000 sheep and the average fleece weighs 7 pounds. The weight of the clip last year was 33,600,000 lbs. Wyoming, with 4,650,000 sheep, had a better average and produced 36,037,500 pounds of wool, while Idaho with 2,600,000 sheep had a total clip of 18,980,000 pounds. In Utah, the average weight of the fleece was rather less, and with 2,100,000 their clip was about 14,175,000 pounds. The average weight of a fleece in Washington is about 9 pounds and with 450,000 sheep they produced 4,050,000 pounds of wool last year. Oregon produced 14,437,500 pounds of wool last year with 1,750,000 sheep.

Crossbred wool in the range country of some of the Western States is frequently inclined to be dry, with an occasional tendency to brittleness towards the outer end of the fibre. This is caused by the general dryness of the climate, insufficiency of moisture in the food, and also by the large amount of sand and dust prevalent in certain places. This is more noticeable in crossbreds with a large proportion of mutton blood. In the same districts the fleeces of Rambouillets and Delaines appeared to be in excellent condition, but Merino wool of any type is generally seen at its best in a dry climate.

In some parts of Oregon and Washington the wool contains much sand and dirt, consequently the shrinkage is abnormally high.

Outside of what is known as the range country of the West, the home of "Territory" wool,—we find excellent wool grown on mutton sheep in certain districts. In the Willamette Valley, Oregon, where the climate is similar to the south of England, the long-wools and down-wools will compare favorably with similar kinds grown anywhere. Long-wools especially seem to grow to perfection, and the samples of Cotswold we obtained in different parts of the valley were equal to any in Gloucestershire. The fleeces of various mutton breeds in Wisconsin, Illinois, Michigan and Ohio were of good average quality, yet we were surprised to find that in spite of the high protective duty the usual prices paid were about two cents less than the prices paid for similar wools at country fairs in England. We can only account for it in this way,—farmers do not get up their wool in the same uniform style, and while some are careful others are very careless and indifferent. Wool of similar breeds of mutton sheep in the New England States is also satisfactory as far as quality goes, but it is not packed in such good condition as we find it at English wool fairs. The absence of a proper system of marketing is no doubt the chief cause for this. The shrinkage of wool in the Eastern States is very low, only 42 to 47 per cent.

This reminds us of the fact that the shrinkage of wool in the Western States is very high compared with similar wools in Australasia. Oregon has the high average of 68 per cent., and this is even worse than at first appears, when the clean, low shrinking wool of the Willamette Valley is taken into consideration. A large quantity of fairly clean wool also comes from Malheur County, so that the actual shrinkage of wool from the mountains must be in the neighbourhood of 73 per cent at least. Washington heads the list with an average shrinkage of 69 per cent, and the greater part of the wool grown in this State contains a large amount of sand and earth. Wyoming comes next with 68 per cent shrinkage, owing to sand and dust. Idaho follows with an average of 65 per cent, chiefly due to dust and particles of sage-bush. Montana is not much better considering the cleaner appearance of the range, and has an average of 64 per cent.

The wool clip of the United States is approximately 300,000,000 pounds, of which, nearly 200,000,000 pounds are grown in the West. The amount of wool imported is about 250,000,000 pounds annually, so that the total consumption, when trade is good, is between five and six hundred million pounds.

Shearing, Packing and Selling in U.S.A.

The shearing sheds in most parts of the United States are very crude when compared with the well equipped stations in Australia. It is surprising to find a great country with such a reputation for big commodious buildings, labour-saving devices and progressive business systems, so backward in this respect. It is still more surprising to find the system of packing so careless, and the buying and selling methods so unsatisfactory to all concerned. We were aware of the indifferent system of handling and marketing before we commenced our investigation, but we were not prepared to find it quite so backward as we actually observed it to be.

About two years ago this unsatisfactory state of affairs was so serious that various schemes of reform were talked of, but no practical steps were taken to effect an improvement, with the exception of the National Wool

Warehouse and Storage Company, which was then founded with this object. Many improvements have since been observed by the wool growers who are members of this co-operative concern, and we feel confident that their example will be extensively followed and lead to vast reforms being made during the next few years.

The shearing sheds of the West require little description, because they are as primitive as possible. There are the usual large corrals and numerous small pens, some inside and some outside the big, low roofed shed or station. Machine clippers of various kinds are supplanting the old hand shears in many places. In Wyoming and parts of Montana, shepherds reluctantly continue to use the hand shears, because the machine clippers shear too closely for the frequent spells of cold weather immediately after the shearing season. The shearers are men of many types and many nations. They start in Mexico and the Southern States and work their way north, taking each State in turn as the season comes round, reaching Utah and Wyoming about the middle of April. Some of the Mormon shearers have the reputation of being quiet and steady, and we were informed that shearers generally had improved in character more than in the quality of their work during the past few years. Certainly the class of work we saw with the hand shears was very inferior.

The "wrangler" drives an allotted number of sheep into a pen. The shearer roughly drags one out, squats it on its haunches upon a dirty floor, clasps it with his knees and left hand and commences to cut away the fleece. It could be better described as "hacking and slashing" because no care is taken of the fleece and very little of the sheep. The fleece is often "broken" to such an extent that it cannot be properly spread out for careful sorting, and it is a lucky sheep that escapes with a whole skin. At one place at Rawlins, Wyo., almost every sheep was badly cut. All cross-bred sheep require far more care than the poor brutes ever get, because small wrinkles will turn up where the shearer does not expect them, and away goes a large patch of skin. When the sheep is shorn, the shearer pushes the fleece aside with his foot, turns the sheep over to a "wrangler" who brands it with paint, and drags out another. The fleece is rolled up into a rough bundle on the floor by the "tier" who ties it with string and throws it to the packers. The packers work on a platform about twelve feet high, constructed of rough boards with sack holes on the top. The sack—made of coarse, cheap, jute hessian—is pushed down the hole and the mouth adjusted with a large iron ring on the platform. The fleeces are then "tramped" into the sack until full, when it is supported by a plank until the opening is sewed up, and then released. When it falls on the floor it is weighed, checked, branded and wheeled outside to be loaded on the waggon. When the railroad depot is reached, the sacks are unloaded and put on a freight train going east, chiefly to Boston or Philadelphia.

The careless shearers we saw using the hand shears, left the sheep covered with "ridges," while the inside of the fleece has a corresponding number of "steps and stairs." A good combing fleece was thus sometimes reduced to 30 per cent carding. A few fleeces injured to this extent soon runs into a serious loss to the grower, but the shearers are so independent that flockmasters have to put up with many losses of a similar nature. We observed many cases of wastefulness going on, which, if avoided, would have paid a dividend on one season's clip. Some shearing sheds had a narrow ledge, about fifteen inches wide and six inches high, running along the front of the

shearing pens, and this was the nearest approach we saw to a table for rolling the fleeces on. Several shearers used this ledge for placing the sheep on, to avoid stooping so much over their work. Rolling up the fleece on the floor is a dirty and wasteful habit in every way. The fleece should be picked up by the "tier," and rolled on a table constructed for the purpose. This table may be any convenient size and the usual height, but the top should not be solid but consist of narrow laths under two inches wide and fixed half an inch apart. The laths should be smooth hardwood and slightly rounded at the top. This kind of table not only allows the loose bits, second cuts, and sand to fall through and drop on the floor, but also enables the "tier" to roll up a tidy fleece and securely tie it, without having to endure all the weariness and backache he does at present. He can also do his work so much more quickly, that he can keep several extra shearers going, and find his work a pleasure compared with what it is at present. Fewer "tiers" would be necessary in this way, and another saving effected. A "tier" is paid at least two dollars a day, so that the cost of the tables would be wiped out during the first two days of the shearing season. The wages of most laborers in a shearing shed are about two dollars a day, and shearers are paid seven cents per sheep. In Montana they are often paid nine cents per sheep. In Australia shearers are paid six cents, but they have every modern convenience and get ahead more quickly. They are also a difficult class of men to handle, being quite as independent, but far superior workmen.

The only attempt at simple classification so, far, consisted in packing "bucks" separate, and also in providing special bags for blacks, tags and sweepings. Tying is now an occupation in itself, and no longer combined with shearing or packing. Paper twine is now used by all wool growers connected with the National Wool Warehouse, and we were pleased to learn that this is already recognized and highly appreciated by manufacturers. Branding sheep with tar, paint or lamp black is now discontinued by the same flockmasters, and an Australian marking Ink is used instead. This ink is manufactured by an English firm which has branches in every large wool growing country in the world. It can be had in black, red, green and blue. One gallon will brand five hundred sheep at least, while the cost is really less than common paint. It is not used with a brush, but applied with a stamp and pad, and can be put on at the rate of fifty sheep to the minute. Once on the fleece it is quite permanent and no atmospheric condition will obliterate the mark, yet it is soluble in naphtha and can be easily scoured out at the mill. The adoption of the paper twine and the branding ink are two very important reforms, for which Mr. Cosgriff of the National Wool Warehouse is chiefly responsible.

The shearing shed described is about the average kind found all over Wyoming and Idaho. Some are better, more are worse. Although primitive for a progressive country, there is nothing serious beyond that. The real seriousness exists in packing and selling methods, which space will not permit us to describe fully.

The false packing of wool has been a burning question in the United States for years, and textile journals have been urging reforms all along. There is only one remedy,—education backed by rigorous legislation. Many of the things done in some States seem incredible, and the worried ranchman of the inter-mountain country is by no means the worst. For premeditated shrewdness, Ohio and Pennsylvania hold the record. Not only have they persistently used the objectionable sisal twine so often referred to, but excessive quantities of very stout loose-spun jute twine, even worse than binder

Fig. 42.—Dorset-Horn Lamb.

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Fig. 43.—Dorset-Horn Ram.

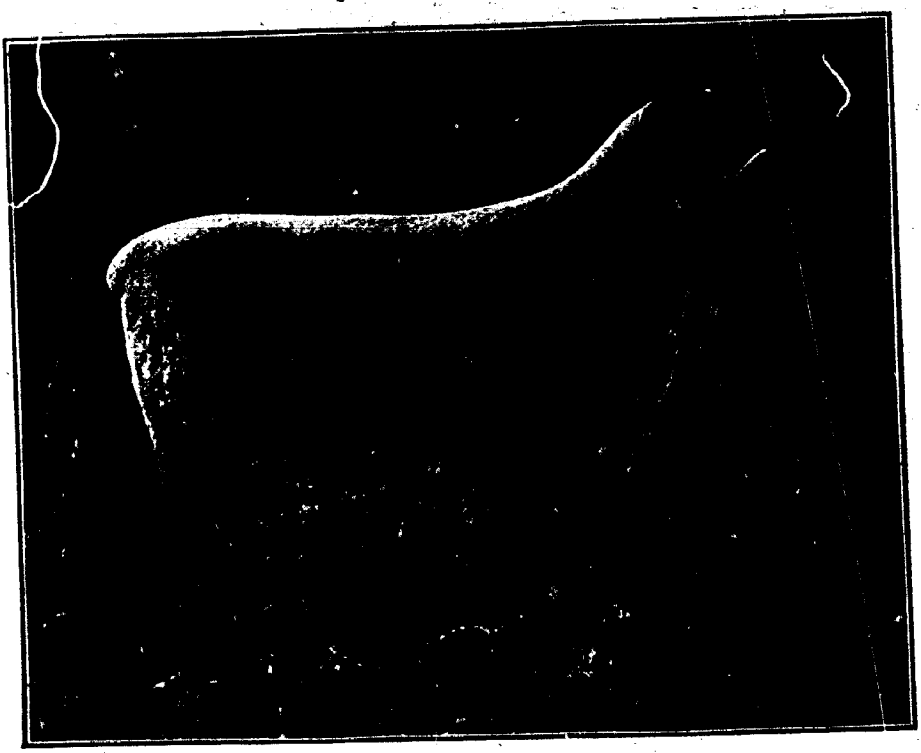

Fig. 44.—Suffolk Ram.

Fig. 45.—Six Suffolk Shearling Ewes.

Fig. 46.—Gritstone Ram.

wine. Mr. Dale of the "Textile World Record" reminded us of some disclosures in that journal two years ago, which we had almost forgotten. One was a case of 121 feet of the stout, rough twine mentioned, being taken from one fleece of Ohio wool. Another was a case of twenty-two lamb's tails being found in one fleece of Pennsylvania wool. These may be considered extreme cases, but stones, dirt, and all sorts of rubbish are still found in American wool. Mr. Isador Koshland, of Portland, Oregon, to whom we are indebted for much information, related many similar cases, and he stated that he repeatedly found sweepings of shearing pens enclosed in the fleece, and tied hard with stout twine. It is such cases as these that make dealers hard and selfish, and spoil the prices for hardworking, honest men, who are doing their work well. The jute sack with the opening at the end, is nearly as bad as the coarse twine, for casting loose fibres into the wool. The opening at the end of such a long sack causes the bottom fleeces to brush along the sides as they drop in, gathering many loose fibres in their descent. Then the action of the packer treading down the wool, loosens still more fibres. When these sacks eventually reach the grading or classing room, they are ripped open along the sides, and more detached fibres of jute get into the wool. If the sacks had the opening at the side, this difficulty would be overcome. Jute hessian should never touch good wool anyway, and nothing but the best quality of clean hemp should be used. Mr. Cosgriff, of the National Wool Warehouse, intends to introduce both hemp bags and paper lined canvas sheets next year, and this will revolutionize the bad system and produce gratifying results.

There is very little to be said about the system of selling, because well organized wool sales do not exist. Anyone accustomed to the sales in Australia or England would not readily understand them. We got some insight into the "sealed offer" sales in Oregon and were sadly disappointed. After the wool has been examined by intending buyers, they decide what they are prepared to give, and place their offer in a sealed envelope. These offers are then received by the grower, who is always in attendance, and often accompanied by his bank manager, and he then decides which offer or terms will suit him best. There is no real competition, no excitement, no eager bidding and no enthusiasm whatever. Compared with an auction wool sale, it was as tame and flat as a nickle-in-the slot machine.

A wool agent's commission in other countries is a straight commission of 1%, or whatever rate may be quoted, and it is then as much to his interest as the grower's to get as high a price as possible. In the Western States, it is 1¼ cents per lb. of wool, so that it does not matter to the agent whether the wool is sold for 10 cents or 20 cents, because he is certain of getting a cent and a quarter for every pound weight in any case. The more dirt the wool contains means a bigger "rake-off" for the agent and a smaller price for the grower, because the value of his wool is figured on a shrinkage basis.

Wool merchants and manufacturers' representatives are found all over the sheep farming districts during the shearing season, and most of the wool is bought up by these men. Some are found contracting for the wool on the sheep's back. This has tended to demoralize the sheep men very much. Dealers say that it costs fully half a cent per pound to buy wool or solicit it in this way, and we believe they are not overestimating the expense.

Although the system of handling wool in the United States is unsatisfactory, our chief reason for saying that we were disappointed is the fact that we could learn so little. In Canada the opposite impression prevails, because we were frequently reminded during our journey from Sydney to Vancouver,

that we would get an eye-opener when we visited the States, as that was the only place where we could learn anything which would be useful to them. This impression can easily be accounted for by the fact that Canadian farmers never come into direct contact with any other young country like their own, and frequent intercourse with their only neighbor is bound to have this effect. The prosperity of the wool industry, however, will depend more on studying the methods of other countries and in adapting them, as far as possible, to Canadian conditions.

Semi-Co-Operative Wool Scouring in U. S. A.

We are using a term we never heard before,—"Semi-Co-operative," because it is not only the most suitable one we can think of, but exactly describes the subject of this section. The Boynton Wool Scouring Mill, in Chicago, is co-operative so far as self-help and mutual interest is concerned. It is only non-co-operative where mutual liability and profit sharing is concerned. This mill belongs to a company of practical men, whose chief aim is to co-operate with sheep farmers in making a steady, comfortable living with small profits and quick returns. Instead of the usual American fashion of rapidly building up a big business by a huge flare and a lavish display of clever advertising matter, they have conceived the idea of creating a more solid and lasting foundation, by making a special feature of accommodating methods with a reasonably unselfish and obliging style. This is a bit of the Old English spirit adapted to modern American requirements, and that is why we consider it rather unique. It may be a slow advertisement, but it is a sure one, and the results are invariably gratifying and satisfactory. Before giving particulars of the system, we will briefly describe the equipment of this plant which is placed at the disposal of wool growers for more than six months out of the twelve, on a commission which is almost a wage-earning basis.

The warehouse is 110 feet by 98 feet, and four stories high. It has ample capacity for storing at least 5,000,000 pounds of wool in the grease. The fixtures are not ostentatious, but they are the acme of utility combined with economy. The mill is a substantial brick building, 198 feet by 63 feet and three stories high. It is equipped with two five-bowl washing machines, capable of scouring 35,000 pounds of wool in ten hours.

There are two types of dryers, and light easy-running pickers as well as the latest type of carbonizing machinery. The burr-pickers are of a type anterior to those used by the Bradford Wool Combers, but they are sufficient for present requirements as the carbonizer has to be frequently resorted to, on account of the numerous fibres cast off by the inferior twine with which the fleeces are tied. We should have commenced with a description of the well lighted classing room for grading the fleeces, and the sorting tables on the opposite side. These sorting tables are not fitted with lath tops, screens, draft channels and fans, but their customers are not yet so exacting about wool impurities, and the existing tables have so far been sufficient for all requirements. They have an airy, well lighted engine room, 50 feet by 50 feet, containing two 150 horse power boilers, and a 215 horse power Corliss engine. They have side tracks both at the mill and the warehouse which enable them to set cars right at their doors, affording every convenience for receiving wool in the grease and shipping the scoured. This company has only been in business for six years, yet it has made very rapid strides in building up a connection with sheepmen and the woollen manufacturers.

Once a customer is made, he is always a customer, and we understand that no wool-grower has, so far, left dissatisfied. Most of the growers who have consigned their wool to this Semi-Co-operative mill during the past four years say that they have been able to net from 2 to 4½ cents a pound more than the dealers offered them at home.

Now for the terms and the system. Sheepmen from the Southern and Western States send their wool to the Boynton Scouring Mill immediately after the shearing season. An acknowledgment for the weight and description is mailed from the mill to the grower as soon as it has been checked. Then the wool is graded, scoured, dried and weighed, and the result sent to the grower. For all this trouble there is only a charge of two cents per pound of scoured weight. Next, this scoured wool is, if necessary, classed or matched with other lots of scoured wool from other growers to make up a bulk lot of one quality, sufficient to satisfy the requirements of a large buyer. Apart from the advantages of economical grading, sorting and scouring, this co-operative style of selling enables individual growers to obtain a better price by selling collectively than would have been possible individually. The scoured wool is sold to manufacturers for the best market prices and on the shortest possible terms. Prompt settlements are made to growers, as the company takes all risks. This piece-work or commission work, goes on all spring and summer until the wool is sold. It means constant work for the mill and a good living profit for at least half the year. Then, when the sheep farmer's season's clip has been scoured and disposed of by the end of September, the company buys wool on speculation, scours it and holds stock for urgent orders and favorable turns in the market. In this way they are semi-co-operative one-half the year, and speculative the other half.

Regarding the quality of the work done, it was quite equal to any we have seen in similar establishments with the same class of machinery. The only fault we could find was the packing of the scoured wool in jute sacks, instead of paper-lined bales or clean hemp sheets.

Here we saw freshly scoured "Merrin Wool" for the first time in our experience. The peculiar old-ivory tint still left after scouring, made us realize why this wool is so difficult to bleach, while the unnatural softness no doubt accounts for its popularity for blending purposes. Hosiery yarns containing some of this wool find a ready market always. "Merrin" wool is gathered from the decomposed remains of sheep in the lonely range country. The death rate on large sheep runs is from two to ten per cent annually, so that it would mean a large quantity of wool if it were all gathered. This is not the case, however, as fully sixty per cent of it is scattered and lost, one way and another. Many sheep are lost in sudden snow storms, while others die from disease. A sick sheep is naturally inclined to separate from its fellows and find some isolated corner to lie down in. In spring the shepherds find "Merrin" wool in the most out-of-the-way places.

Although our visit to this "Semi-Co-operative" scouring plant gave us a few useful ideas for eventually handling Canadian wool on co-operative lines, a campaign of education will first be necessary, and then the initial steps taken in organization before any of these ideas can be adopted on behalf of wool growers. If Canada could produce merino wool profitably, sorting and scouring for the export trade,—on co-operative lines—might be equivalent to the scouring plants attached to large "stations" in the interior of Australia, but the production of fine merino wool will never be a Canadian industry. Sorting and scouring the wool of mutton sheep for the export trade is not practicable, and even crossbred merino wool very doubtful. For

domestic trade, however, a scouring plant attached to a Co-operative Depôt for collecting, classing and shipping home grown wools, might be found both convenient and profitable in the near future.

National Wool Warehouse and Storage Company, Chicago, Boston and Philadelphia.

We have more satisfaction in writing this chapter than any other in which particular reference is made to wool in the United States section of our report. Although a great sheep farming country, the United States happens to be very backward as compared with Australasia in its methods of handling wool. Under the circumstances, it would have been somewhat embarrassing to return from our investigation of the Western States without bringing some useful suggestions with us. Fortunately this difficulty was obviated by the many practical hints we gathered from our inquiry into the formation and organization of the National Wool Warehouse and Storage Company. In addition to the general knowledge we gathered on other phases of sheep-farming across the border, we feel confident that the experience of the founders of this company will alone provide us with sufficient information to repay us for the time we spent there.

Although we were aware of the existence of this co-operative concern before we commenced our investigation, we thought little about it, because several newspaper reports were rather unfavourable. It was only during our visit to the last International Show at Chicago, that we became seriously interested. While in conversation with Professor Plumb, of Ohio State University, who had charge of a wool exhibit in the Show, we accidentally discovered the useful reforms already accomplished by this Co-operative movement, and the great possibilities still in front of it.

Before leaving Chicago, we spent two or three hours looking over the huge fire proof building of the National Wool Warehouse and Storage Company, while the Manager explained the system and pointed out some of the improvements already effected. We were disappointed with the way the wool was tied and the way the sacks were opened, and we thought the method of grading left much to be desired, but we could not help seeing that considerable progress had been made since the warehouse was opened. At this time, it must be understood that we had recently returned from attending the Wool Sales in London, and had scarcely commenced our investigation of Canada, so that we were not aware that the Western States were so far behind in their methods of packing wool. We left the warehouse not only interested but so struck with this co-operative idea that we decided to devote special attention to it when we commenced our investigation of the United States in the Spring.

On our arrival in Oregon in April, we soon found traces of the favourable influence of the National Wool Warehouse. In Idaho, we began to understand why certain things we had noticed a few months previous, in the Chicago warehouse, fell short of our expectations. It is easy to find fault with certain details of a reform movement in its transition stage, but such faults become small when the original condition is properly understood. At Boise, Idaho, we had reason to be still more favorably impressed with the benefits to be derived from a co-operative system of marketing wool. From there we went to Utah and saw further indications of improved methods of packing and branding. At Salt Lake City, we had the good fortune to meet Mr. J. E. Cosgriff, the President of the Company and several members of the Executive

Committee. They not only gave us all information we desired, but even explained much that an ordinary firm would have considered private. It is impossible for us to express our appreciation of their kindness and valuable assistance in this matter. Mr. Cosgriff spent a whole afternoon explaining the history of the National Wool Warehouse from the very beginning to the present time. Nothing was kept back. He referred to the necessity for such a scheme of reform, the objections, doubts, fears, prejudices, misrepresentations, difficulties, and even mistakes.

As the history of this movement affords us many useful and practical lessons, we cannot do better than give a synopsis of the president's description, during our first interview:

The idea of a general co-operative organization for marketing wool has existed in the minds of many sheep men in a kind of vague way for many years. The matter took definite shape at a meeting called by the Association of Commerce of the City of Chicago and attended by some of the leading bankers and business men of that city and four Western sheep men in the City of Chicago during the time of the Republican National Convention three years ago. At this meeting the subject was discussed at considerable length and the idea took definite form. A few months later F. W. Gooding, President of the National Wool Growers' Association, called a meeting at Cheyenne, Wyoming, for the purpose of considering a national enterprise. Fourteen Western sheep men were present and at their request another meeting was called in Salt Lake City on August 25, 1908. This meeting was attended by about seventy-five leading sheep men. A committee was appointed of about fifteen members with instructions to visit the different Eastern cities and devise a plan for marketing wool. Only five members of this committee met and took up the work. After several weeks of arduous labor they devised the plan which was afterwards accepted. The first meeting to present the plan to the Western sheep men was held at Salt Lake City, November 8, 1908, and was addressed by Mr. J. E. Cosgriff. Some $8,000 was subscribed in stock. This meeting was followed a few days later by one at Boise, Idaho. This meeting was addressed by Mr. Gooding and Mr. Cosgriff. It was a much larger meeting than the one at Salt Lake City and something like $20,000 was subscribed. Some representatives of Eastern wool houses, while not at the meeting, were in the city of Boise and within two weeks from the date of the Boise meeting there appeared throughout the wool growing sections of the West a large number of Eastern wool representatives and the coming clip was contracted for in every section. The price of wool rose from 14 cents per pound to a price of 25 cents at shearing time. During the month of November Mr. Cosgriff held a meeting of the sheep men at Rawlins, Wyoming, and $25,000 was subscribed. This was followed by a meeting at Rock Springs which was also addressed by Mr. Cosgriff and $15,000 was subscribed. Notwithstanding the continued buying of Eastern wool houses with little regard to price, the sheep men persevered and elected directors who met in the city of Chicago, in February, 1910, to establish the Company.

The undertaking proved of such vast proportions that several weeks of arduous labor were spent in perfecting the organization plans. When all plans except the selection of some one to supervise the affairs of the company were complete, the Chicago stockholders refused to proceed unless Mr. Cosgriff consented to accept the presidency. The acceptance of the position necessarily entailed a neglect of his personal affairs, but

this consideration was outweighed as much by his desire to avoid the humiliation of abandoning the proposition, as by his desire to uplift the wool industry in the Western States. At that time they were close to the shearing season. They had no warehouse, no salesmen, no organization, and worst of all the manufacturers through the mis-representation of the dealers were deeply prejudiced against them. So far as the actual results in selling the wool were concerned the Company has been highly successful. It will be understood, however, that the hardest man to satisfy is the man who knows the least about his product. He has no means of knowing what full market value means.

While continuing the work of marketing the wool, Mr. Cosgriff personally began the education of the sheep men in order that a man might know when his wool had been sold at its true value. About a year after the Company was organized it became evident that they must establish warehouses and offices in the cities of Boston and Philadelphia in order to be in close touch with the Eastern markets and in close proximity to the leading mills. This step was taken in February, 1910, and has been greatly to the Company's advantage. These are the outlines of the organization of the National Wool Warehouse, and the work it has accomplished.

"You perhaps know as well as myself," said Mr. Cosgriff, "that the discouraging feature in a company like this is, that ninety-five per cent. of the stockholders who are well satisfied remain silent, while the five dissatisfied ones are working overtime. In addition to men knowing little about their own wool, the Company naturally attracted to itself, men dissatisfied with the existing conditions of things in every line. These men, of course, could not be pleased. They are men, too, who are heard from. After this season they will undoubtedly drop out and the Company will be much better without them."

After leaving Salt Lake City we visited several places in Wyoming and Montana where many of the leading sheep men are stockholders in the Company. They were all satisfied with the results so far, and many of them were enthusiastic over future prospects. It was in the shearing sheds however, where we noticed most improvement. The instruction, issued by circular, were being observed, and the lectures given by the President of the Company were beginning to produce better results. The floors were cleaner, the men better satisfied, the work better done, and the wool better packed.

When we evenutally reached Chicago, we paid a surprise visit to the Wool Warehouse and found that great improvements had taken place since our previous visit. Having the headquarters moved to Boston was a decided advantage, and it will in future, not be necessary to store so much wool in Chicago. Some weeks later we visited the warehouses in Boston and Philadelphia, and were highly pleased with what we saw. The wool was coming in, in better condition and better packed. The sacks were branded with more care, the fleeces were cleaner, better rolled and all tied with paper twine. Black wool was no longer packed with white, and all tags and sweepings were packed separately. Grading was now accurately done according to the American method, and the selling end was also in capable hands. The office system was a wonderful creation, especially the return-sheets or statements to the wool growers, showing the net results of grading and the price each class realized when sold. Opening its first warehouse in Chicago was probably the chief mistake this company made. The first warehouse should have been opened in Boston and the headquarters of the company established there at

the outset. Branch warehouses should then have been opened in Philadelphia and New York, for facilitating distribution in the selling system, and the last warehouse should have been opened in Chicago for relief storage, and Western distribution, which is less important. Although they unfortunately commenced at the opposite end, they quickly detected their error and lost no time in correcting it. It must be remembered that they were all Western men, with their interest centred in Western sheep ranches, and without any experience in marketing wool. They got no friendly advice and no assistance from the East because the manufacturers there misunderstood their object and gave them the cold shoulder. When all things are taken into consideration, it is really surprising what wonderful results have been achieved in such a short time and it reflects great credit on the work of the President.

It may be briefly explained here, that the original idea in forming this Company was a plan for collecting, grading, packing and selling the wool of Western sheep men, by handling it more economically, turning it out in better condition and marketing it more profitably through a co-operative system. When the organization was completed and a fair start made, it was found that sheepmen put up their wool in such bad condition that a campaign of education was absolutely necessary, both to enable the Company to conduct its work satisfactorily, and also to secure better prices. Education of the sheepmen was therefore pushed forward by lectures and demonstrations, with beneficial results.

When a member (or stockholder) ships his wool to the warehouse, its arrival is immediately acknowledged. Then the wool is graded into the various qualities it contains, placed in stock and credited to the owner, who is duly advised of the net result of grading. The Company then proceeds to sell the wool to the best advantage, and a full detailed statement of sale is sent to the owner, along with his cheque. If a wool grower is in need of money before his wool is disposed of, the Company advances him about two-thirds of its estimated value after grading, and remits the balance when sold. In spite of great difficulties, strong opposition, and the unfortunate turn of prices in the States, this undertaking has been a success. Now that the chief difficulties have been surmounted, there are undoubtedly bright prospects in store for sheepmen who are stockholders.

We should like to give an example of the system this Company has adopted for keeping the stockholders in touch with affairs at head quarters, by including a few copies of their circulars, such as are frequently issued. Unfortunately they are too long to be reproduced in this chapter, and extracts would not do them full justice. Copies of all the circulars already issued, together with various details, have however been retained for future reference.

Like all reform movements, this movement for the better packing and marketing of wool, has met many enemies. It was an eyeopener to the sheepmen and there are certain interests which might be somewhat disarranged by their enlightenment. Wool dealers and agents who scour the country just before shearing time, buying wool and even contracting for it before it is shorn, were opposed to this co-operative movement and did their utmost to thwart its progress. Agents who buy and sell wool for 1¼ cents per lb., "commission" did not like the advent of any reform and openly showed their displeasure. The American newspapers as a rule were somewhat unfriendly to this movement, because the wool dealers support these papers by advertising, while the National Wool Warehouse really has no need of advertising space, and naturally, the growth of any co-operative

movement would make the advertising business less necessary. Some journals which are supposed to look after the interests of the wool growers were either cold or unfriendly in their criticism, although they had made no real investigation of this new movement. A reform movement of any kind should first be carefully investigated by the press in a broad-minded spirit, before any attempt at criticism is made. Every reform movement contains some faults and many shortcomings, therefore it should be looked into with a spirit of sympathy rather than distrust, and all its good points brought to the front while the faults should be marshalled in the rear and corrected. The most unpleasant feature of all was the adverse criticism of the President, because he not only made financial sacrifices elsewhere, in order to devote more time to this work, but conducted the educational campaign at his own expense. The fact that he never held any stock in the National Wool Warehouse, is sufficient proof that he was quite disinterested in the matter of profit sharing. As he carried out most of the organization work alone, those opposed to any co-operative movement naturally concentrated their criticism on him personally. Adverse criticism may retard progress for a time, but a genuine reform, backed by perseverance is bound to overcome this, and other difficulties, and eventually achieve success. This has fortunately been the experience of the National Wool Warehouse.

Having commenced this chapter with a statement of the reason for our own doubts about the merits of this reform movement, owing to the unfriendly criticism of those who never investigated it at all, we now conclude with an explanation of those criticisms after making a thorough investigation ourselves.

Practical Insurrection of Wool Growers in U. S. A.

It was our intention to include this subject in the chapter describing the National Wool Warehouse, as we had gathered this information at the same time. On second consideration we concluded that this subject was of sufficient importance for a separate section, as we had previously referred to the backward condition of the Western States in packing wool. If instruction of this nature is necessary there, it is even more necessary in Canada where the methods of handling wool are still more backward. As want of practical instruction and of marketing organization are the chief causes for the failure of wool growing in Canada, some information about the primary instruction given elsewhere ought to be interesting. To the sheepmen of Alberta, this effort to improve the packing of wool in the Western States possesses some useful lessons. The Australian system described in another chapter represents something altogether beyond Canada at present, so that more elementary and immediately applicable information is first needed.

Any man possessing sufficient technical training and practical experience, is capable of describing and even demonstrating the great advantages of improved methods in packing and marketing wool properly, but to impart that knowledge successfully is a gift which few men possess. This well known fact never appealed to us so forcibly as when we examined the chart system for instructing the sheepmen of Wyoming and neighboring states. This system is more than an invention, it is really a creation, and speaks volumes for the genius and enthusiasm of Mr. Cosgriff, President of the National Wool Warehouse. The truth of this statement is only realised when the actual circumstances are considered. Mr. Cosgriff is a banker and successful financier, and beyond having large shares in some Western sheep ranches, his whole life has

been devoted to banking, so that he knew absolutely nothing about wool three years ago. When he was appointed President of the new co-operative organization for marketing wool, he soon discovered the urgent necessity of educating the wool growers in better packing methods. After several months of hard study and extensive travelling, he acquired sufficient knowledge to enable him to give a few primary lessons. Then, in the most unselfish way imaginable, he threw his heart and soul into the work and gave his services free. Necessity is the mother of invention. After a few lectures he found that he could make himself better understood by diagrams and samples. Then he invented charts for instructing the sheepmen which are almost "kindergarten" in their object lesson simplicity. Today, he is one of the most interesting and convincing lecturers we have heard. His enthusiasm and sincerity, and the absence of a technical style of expression, make him more effective than many other lecturers with more practical experience and technical training.

As an example of the need for such instruction, and also of the carelessness still existing in the Western States, we will give a copy of a circular issued last April by the National Wool Warehouse to their stockholders. In addition to a similar circular sent out last year, and certain lectures given in the more important centres, a few simple reminders were still necessary.

CHICAGO, April 6, 1911.

TO OUR STOCKHOLDERS

Directions for Packing Wool.

Tying of fleeces.

Paper twine will be generally used for tying territory fleeces the present season. Your Company has called the attention of the Eastern wool growers to this twine and it is now being introduced there. The twine should be tied with a straight knot which will not slip. Heretofore, it has not been the custom of shearers to knot any kind of twine. Fleeces wrapped in this way separate from the twine when handled and often become broken locks. Many Western clips were received last year containing two fleeces tied together. Such fleeces must be separated and re-tied when the wool is graded. This is expensive and occasions a delay in delivering wool to the manufacturers.

Separate Packing of Tags.

Too much emphasis cannot be placed upon the necessity of packing tags separately. Fleeces containing heavy tags are rejected by manufacturers. It is to be regretted that Western sheepmen do not realize the loss that is occasioned by allowing tags and corral filth to become mixed through the fleeces.

Separate Packing of Blacks and Bucks.

All black wool should be packed by itself. It is not necessary to separate the sheep before shearing but as soon as a black sheep is shorn the fleece should be gathered up before any particles of the black wool become mixed with the white. All buck fleeces should be packed separate.

Keeping the Wool Dry.

Care should be exercised that the sheep are dry when shorn and that the wool is protected from the rain or damp ground until shipped. Wool which becomes wet presents a frowzy and discolored appearance rendering it less saleable than if it had been kept dry.

Marking of the Sacks.

Mark numbers, weights and shipping initials or brands distinctly near the middle of each sack away from the seams and never on the ends. Sew the mouths of the sacks with strong sewing twine, never with sisal or other twine. Sacks containing bucks, blacks or tags should be marked accordingly.

Excessive Use of Insoluble Paint.

The excessive amount of insoluble paint used in branding is the greatest fault with our territory fleeces. This evil is the hardest to remedy. Smaller brands and the avoidance of the drip in branding is urged. Our stockholders are requested to experiment with different kinds of branding material. If a paint which is soluble in the scouring fluid and which will stand the inclemency of the weather can be found, its general use would mean many thousands of dollars annually to our stockholders.

The marked improvement in the manner of packing wool, particularly in Southern Wyoming and some sections of the State of Idaho, has been noted by the leading manufacturers who have shown their appreciation. There is no action on the part of our stockholders which will so increase the confidence of the manufacturers and give our stockholders' wool a preference over others as our continued efforts in the better preparation of our wool for market. Shearers should not be allowed to tie the fleeces. The tying and packing should be placed under the direction of a competent overseer. Only a little additional expense need be incurred. In fact, we urge only the correction of the faults which are apparent to all. In localities where our stockholders have local organizations, much improvement in the method of packing can be effected by appointing committees to devise practical plans which all could adopt.

J. E. COSGRIFF.

The charts used at the meetings of sheepmen in the Western States are about five feet square, so that they can be clearly seen from any part of a large room. There are about eight charts altogether, in addition to numerous samples of every description. Each of these charts is sufficient for one long lecture, and all the necessary information can be readily explained on one chart or another. Copies of these charts were specially prepared for us and we hope to make some use of them in the Western Provinces when an educational campaign is undertaken. Owing to the large size of these charts, and also to the fact that many have samples attached, it is impossible to give an illustration in this report, even on a reduced scale. Their chief value is their simplicity, and only a man who had spent many years among Western sheepmen and fully realized how far their methods were behind Australia, could have invented such primary lessons.

As a specimen of the earnestness and enthusiasm of the organizer of the movement, we cannot do better than refer to the notes made during our first interview with him at Salt Lake City, when he described the educational work and its results.

"Many of the manufacturers," said Mr. Cosgriff, "who at first were very much prejudiced against us, are now thoroughly appreciating the improved preparation of the wool for marketing, and notwithstanding the opposition of the wool dealers, are very friendly in their attitude towards the Company.

"After our company was established, and I took up its work, I found that the true cause of the dissatisfaction with marketing conditions, as well as the true reason why the antiquated system had endured so long, lay in the fact that the sheepmen knew practically nothing of the true value of their own product. After visiting the mills and studying the matter for months I naturally reached the conclusion, how densely ignorant I had been myself and I consequently assumed that others must be like myself. This conclusion was strengthened and confirmed through the many letters I received from leading wool growers giving me the most absurd suggestions and directions in regard to handling their wool. I could reach no other conclusion than that the first work necessary was to enlighten the sheepmen and urge their working in harmony in adopting improved methods. The sheepmen have adopted and followed my suggestions far better than I expected, but they have not yet reached the point where they see full practical results. It seems like a child first learning the letters of the alphabet. He never sees the value of this primary work until he can read understandingly. After a few years possibly, the sheepmen will realize the value of these first lessons."

Next season's lectures will include standardizing, so that the improved Australian methods and quality terms will be understood. Samples of yarns will be added to some of the charts, while other charts will represent the different qualities in each fleece. Although the work is hard and trying, it is very interesting and has already produced some excellent results. We hope that the sheepmen of Alberta and Saskatchewan will be equally responsive if similar lectures are undertaken on their behalf. One lecture carefully followed, will put several dollars in every man's pocket next shearing season.

The value of practical education is clearly set forth in the information given in this and the preceding chapter. Much of this information is verbatim. It has proved conclusively that the sheepmen of the Western States, even with the aid of a well equipped co-operative concern for marketing, and a high protective duty, in a country only producing sixty per cent of the wool it required, were still unable to obtain satisfactory prices without a thorough course of instruction in growing and handling their product.

The instructions mentioned in this chapter, chiefly apply to districts where crossbred Merino wool is grown. For growing and handling the wool of mutton sheep, particularly those of British breeds, an entirely different class of instruction is necessary. Each locality should be carefully studied in this regard. The marketing organization however, should be the same for all kinds of wool.

Number and Value of Sheep in U. S. A.

(Before Shearing, January 31st, 1911).

States.	Number.	Value Per Head.	Total Value.
New England	644,000	$4.25	$ 2,737.00
New York	1,195.000	5.00	5,975.00
New Jersey	41,000	5.50	226.00
Pennsylvania	1,097,000	4.90	5,375.00
Texas	1,563,000	3.30	5,158.00
Arkansas	275,000	2.85	784.00
Tennessee	327,000	3.75	1,226.00
West Virginia	645,000	4.50	2,903.00
Kentucky	854,000	4.25	3,630.00
Ohio	3,022,000	4.35	13,146.00
Michigan	1,980,000	5.10	10,098.00
Indiana	1,071,000	4.83	5,173.00
Illinois	673,000	5.15	3,466.00
Wisconsin	966,000	4.05	3,669.00
Minnesota	383,000	4.00	1,528.00
Iowa	628,000	5.14	3,228.00
Missouri	876,000	4.58	4,012.00
Kansas	262,000	2.55	1,192.00
Nebraska	467,000	4.07	1,901.00
No. Dakota	436,000	4.13	1,801.00
So. Dakota	763,000	4.44	3,388.00
California	5,753,000	3.90	22,437.00
Oregon	6,693,000	4.20	28,111.00
Washington	1,813,000	3.60	22,844.00
Oklahoma	5,144,000	3.00	15,432.00
	37,571,000		$169,440.00

The sheep population of a good many countries is very often more of conjecture than a careful estimate. Even carefully compiled statistics are often based on unreliable information at the beginning. Exports and imports, and the number slaughtered are invariably correct, but the number of lambs each season is often over estimated, while the number of deaths from diseases are generally underestimated. There are various estimates given of the number of sheep in the United States. Two years ago, the estimate was 57,216,000. The National Association of Wool Manufacturers, Boston, estimated the number fit for shearing last year to be 41,999,500. The Statistical Bureau of Portland, Oregon, supplied us with this list, and their estimate is only 37,571,000. Considering the large decrease in Western flocks during the past eight months, we are confident that the total (including lambs) is now far short of fifty millions.

The returns for Idaho, Wyoming and Montana were not complete when this list was prepared, and mention of them has in consequence been omitted.

List of Sheep in U. S. A.

British Breeds:—
Cheviot.
Highland Blackface*.
Lonk*.
Shetland*.
Kent*.
Lincoln.
Cotswold.
English Leicester.
Border-Leicester.
Roscommon.
Dartmoor*.
Exmoor*.
Shropshire.
Ryeland.
Oxford.
Hampshire.
Suffolk.
Southdown.
Dorset-Horn.

Fine Wools:—
Rambouillet.
Delaine.
Spanish Merino.
American Merino.
Franko-American.

Asiatic and African:—
Tunis.
Persian.
Karakule.

Those marked * are only kept in experimental flocks.

U. S. A. Wool Production.

States and Territories.	No. of Sheep of Shearing Age, April, 1910.	Average Weight of Fleece, 1910.	Wool Washed and Unwashed, 1910.	Per Cent of Shrinkage, 1910.	Total Value, 1910.
		pounds.	pounds.		
Maine	210,000	6.	1,260,000	40	$ 340,200
New Hampshire	70,000	6.	420,000	50	102,900
Vermont	180,000	6.5	1,170,000	51	280,917
Massachusetts	35,000	6.2	217,000	42	56,637
Rhode Island	7,500	5.3	39,750	42	10,375
Connecticut	35,000	5.25	183,750	42	47,959
New York	825,000	6.	4,950,000	43	1,237,000
New Jersey	50,000	5.5	275,000	47	67,045
Pennsylvania	1,050,000	6.	6,300,000	43	1,801,800
Delaware	7,000	5.5	38,500	45	9,741
Maryland	130,000	5.2	676,000	43	173,394
West Virginia	600,000	5.75	3,450,000	49	1,002,915
Kentucky	800,000	4.75	3,800,000	38	1,083,760
Ohio	2,600,000	6.5	16,900,000	51	4,554,550
Michigan	1,700,000	6.75	11,475,000	50	2,811,375
Indiana	900,000	6.5	5,850,000	45	1,480,050
Illinois	700,000	7.	4,900,000	50	1,127,000
Wisconsin	900,000	6.75	6,075,000	47	1,352,295
Minnesota	375,000	6.8	2,550,000	48	556,920
Iowa	800,000	6.75	5,400,000	48	1,291,680
Missouri	860,000	7.	6,020,000	47	1,435,770
	12,834,500	6.38	81,950,000	48.1	20,874,283
Virginia	365,000	4.5	1,642,500	37	486,344
North Carolina	204,000	3.75	765,000	42	186,354
South Carolina	50,000	3.75	187,500	42	44,588
Georgia	225,000	3.	675,000	40	166,050
Florida	115,000	3.25	373,750	40	91,943
Alabama	160,000	3.5	560,000	40	137,760
Mississippi	150,000	4.	600,000	42	142,680
Louisiana	155,000	3.7	573,500	41	138,730
Arkansas	200,000	4.	800,000	40	192,000
Tennessee	291,000	4.25	1,236,750	40	319,082
	1,915,000	3.87	7,414,000	39.9	1,905,531

U. S. A. Wool Production. (*Continued.*)

States and Territories.	No. of Sheep of Shearing Age, April, 1910.	Average Weight of Fleece, 1910.	Wool Washed and Unwashed, 1910.	Per Cent. of Shrinkage, 1910.	Total Value, 1910.
		pounds.	pounds.		
Kansas	175,000	7.5	1,312,500	64	245,700
Nebraska	250,000	6.5	1,625,000	60	338,000
South Dakota	625,000	6.5	4,062,500	60	877,500
North Dakota	270,000	6.5	1,755,000	60	379,080
Montana	4,800,000	7.	33,600,000	64	6,773,760
Wyoming	4,650,000	7.75	36,037,500	68	6,342,600
Idaho	2,600,000	7.3	18,980,000	65	3,454,360
Washington	450,000	9.	4,050,000	69	677,970
Oregon	1,750,000	8.25	14,437,000	68	2,448,600
California	1,900,000	7.	13,300,000	66	2,080,120
Nevada	850,000	7.	5,950,000	68	1,028,160
Utah	2,100,000	6.75	14,175,000	66	2,506,140
Colorado	1,400,000	6.5	9,100,000	65	1,496,950
Arizona	825,000	6.	4,950,000	65	918,225
New Mexico	3,200,000	6.	19,200,000	65	3,427,200
Texas	1,325,000	6.75	8,943,750	67	1,623,291
Oklahoma & Indian Ter.	80,000	6.5	520,000	67	82,368
	27,250,000	7.05	191,998,750	65.8	34,700,024
Totals	41,999,500	6.7	281,362,750	60	57,479,838
Pulled wool			40,000,000	27	15,010,000
Total product, 1910			321,362,750		$72,489,838

We are indebted to the National Association of Wool Manufacturers, Boston, for the above figures.

Value of Wool Sold by Great Britain in U. S. A.

Year.	Foreign and Colonial.	British Home Grown.	Total.	From Bradford.
1898	$ 6,674,115	$ 624,515	$ 7,316,630	$ 570,625
1899	5,927,240	1,855,605	7,782,845	946,165
1900	7,550,090	2,565,015	10,115,105	1,397,980
1901	7,892,785	1,851,640	8,794,425	933,800
1902	7,526,275	3,223,260	12,749,535	1,805,130
1903	7,803,365	3,338,235	11,191,600	1,643,970
1904	11,198,540	5,222,725	16,421,265	41,141,475
1905	16,610,365	5,682,895	22,299,260	5,509,730
1906	14,383,400	4,375,510	18,758,910	4,504,570
1907	15,485,330	4,463,800	19,949,130	4,541,150
1908	11,060,540	3,989,420	15,049,960	4,161,045
1909	25,032,390	9,007,505	34,039,895	9,797,295
1910	13,243,385	3,977,905	17,401,290	4,247,770

Imports Into United States of Argentine Wools for Years 1904-1910 Inclusive.

Fiscal Year.	Class I.	Class II.	Class III.	Total.
	Pounds.	Pounds.	Pounds.	Pounds.
1904	18,018,443	100,548	10,049,069	28,168,060
1905	41,094,617	362,562	6,238,388	47,695,567
1906	36,352,480	.....	5,815,447	42,167,927
1907	19,247,683	94,866	3,852,659	23,195,208
1908	14,311,498	.....	1,909,787	16,221,285
1909	51,601,420	106,239	6,672,175	58,369,834
1910	27,331,068	37,799	3,713,317	31,082,184

Imports of Uruguayan Wools into the United States for the Years 1904-1910 Inclusive

Fiscal Year.	Class I.	Class II.	Class III.	Total.
	Pounds.	Pounds.	Pounds.	Pounds.
1904	112,208	.....	.....	112,208
1905	7,044,752	619,377	76,180	7,740,309
1906	5,083,195	.....	3,995	5,807,190
1907	5,856,437	.....	174	5,856,611
1908	1,604,221	.....	.....	1,604,221
1909	5,759,852	.....	108,380	5,868,232
1910	8,768,627	.....	21,153	8,789,775

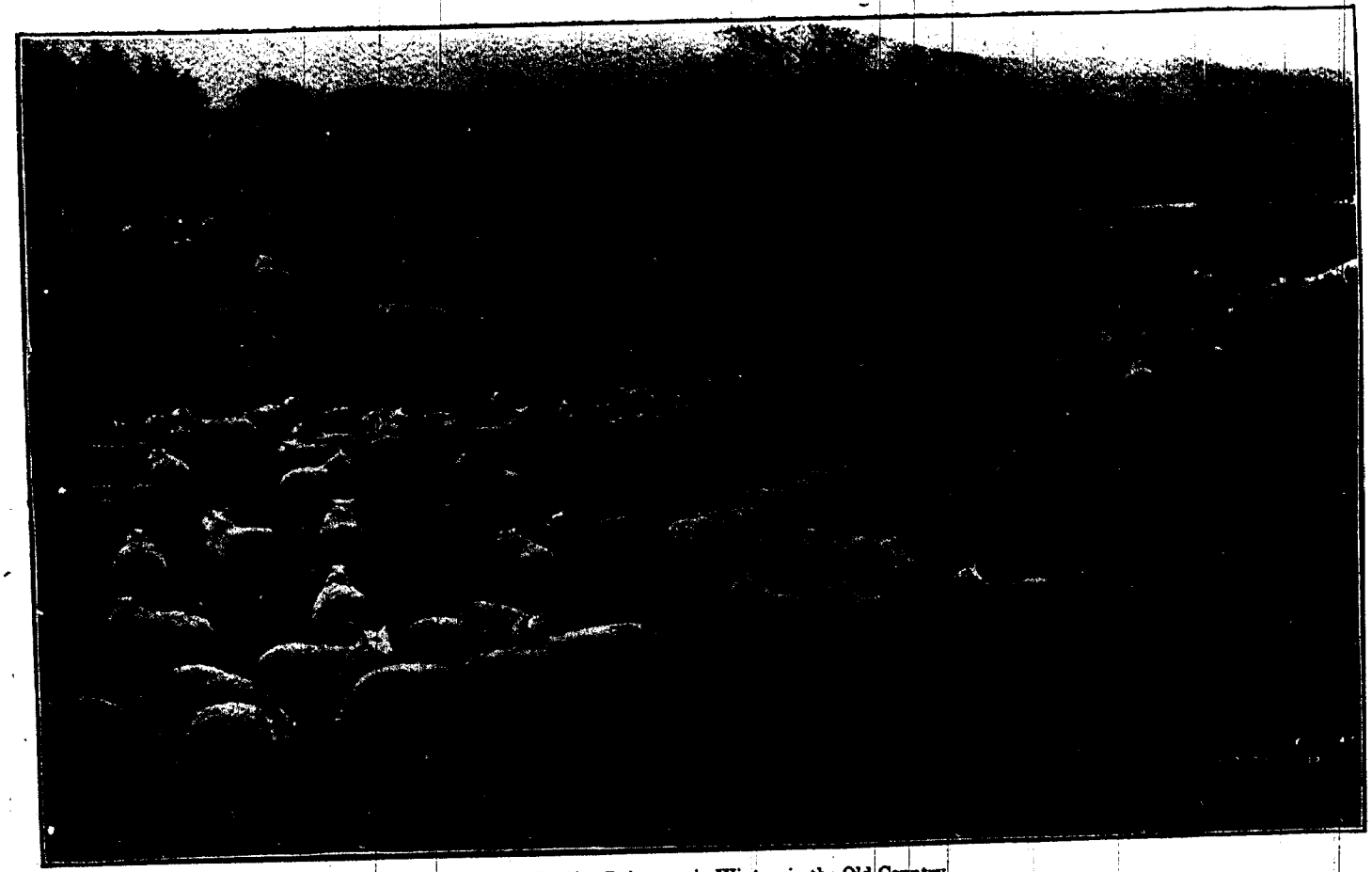

Fig. 47.—Feeding Leicesters in Winter, in the Old Country.

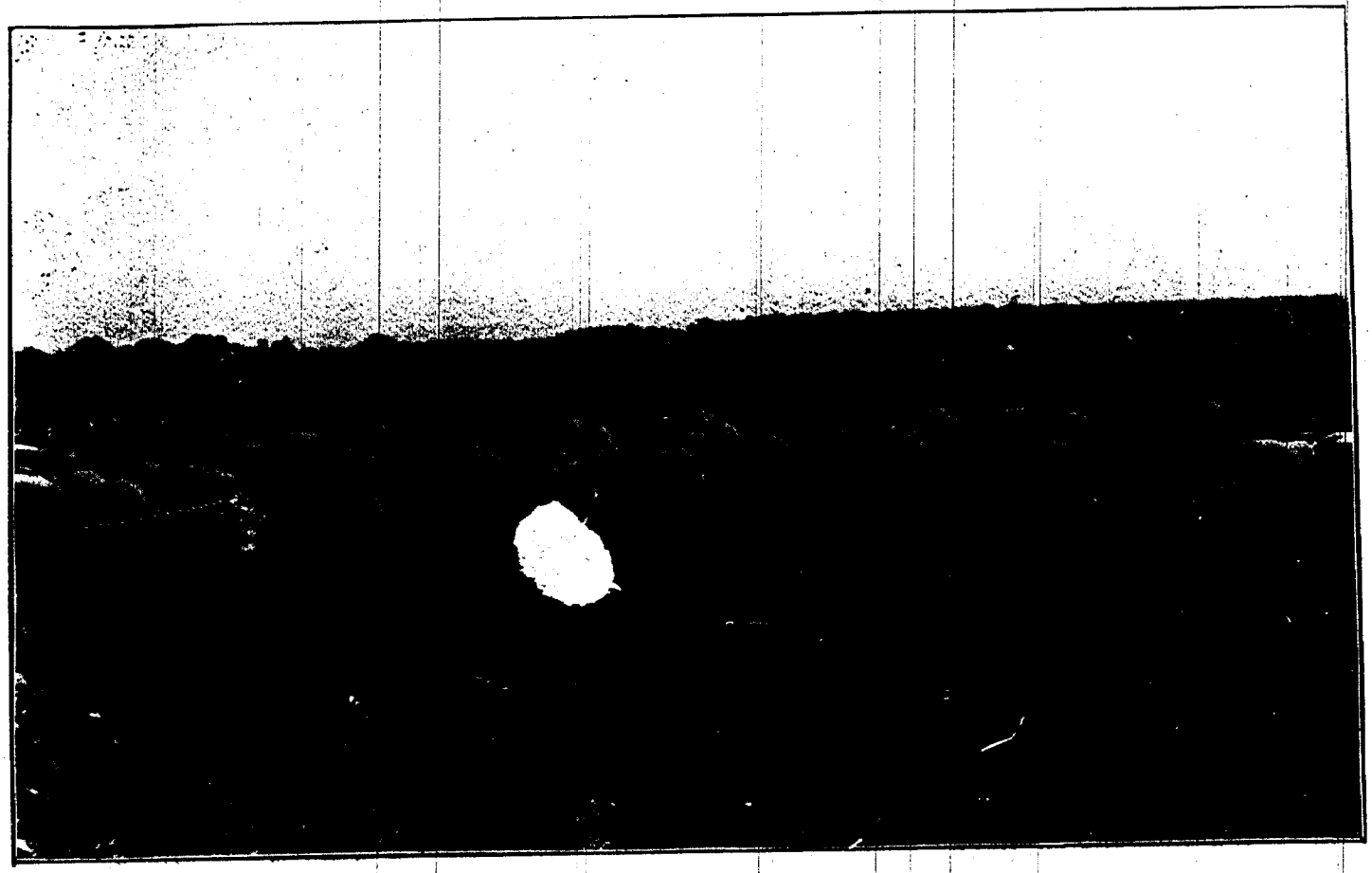

Fig. 48.—Shropshires. Folded on roots.

Fig. 49.—Wm. Vivers, Esq., Dornocktown, Dumfries.
(A well known authority on mutton carcasses in Britain.)

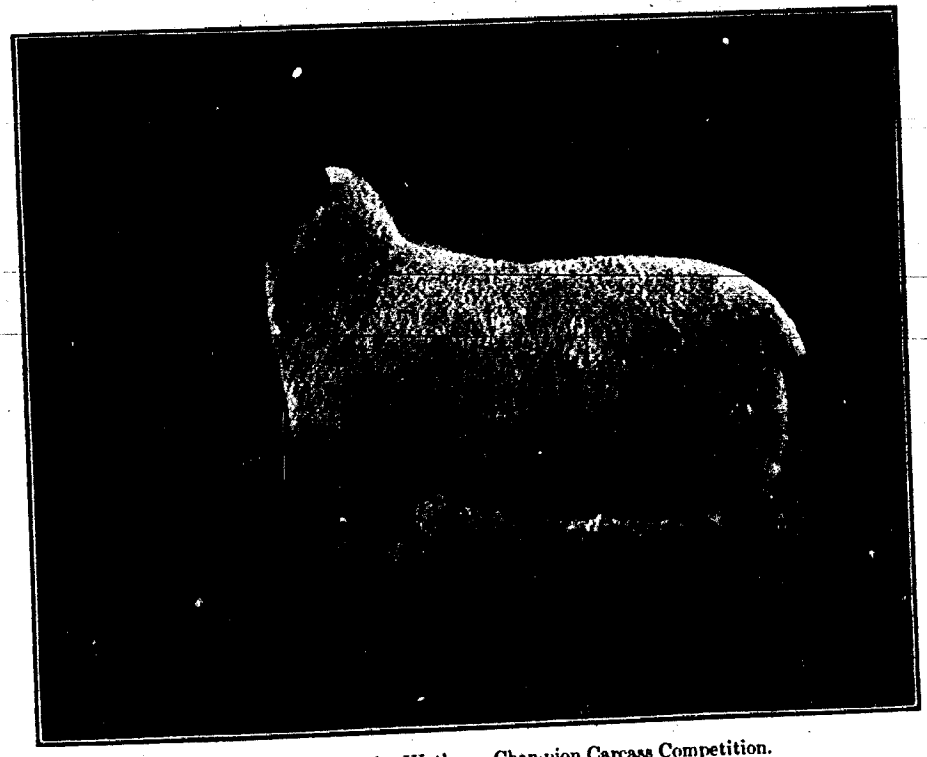

Fig. 50.—Suffolk Cheviot Wether. Champion Carcass Competition.
(Photo, courtesy Wm. Vivers & Sons, Dornocktown, Dumfries.)

Fig. 51.—Carcass Suffolk Cheviot Cross. First Prize, Smithfield, London.

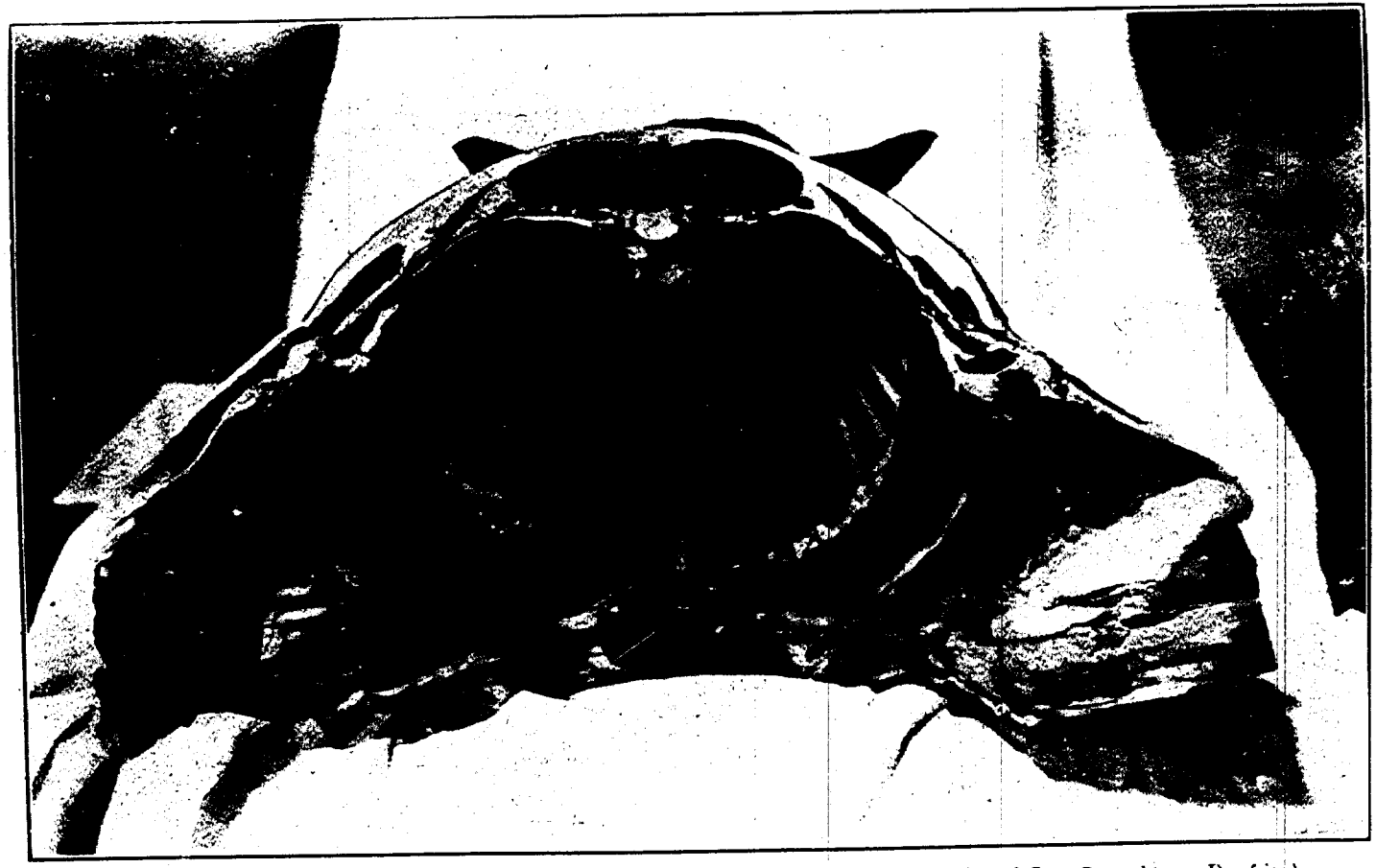

Fig. 52.—Carcass Suffolk Cheviot Cross. First Prize, Smithfield, London. (Photo, courtesy Wm. Vivers & Sons, Dornocktown, Dumfries.)

Fig. 53. Hampshire Ram Lamb, Six Months. (Photo, courtesy Jos. Flower, Chilmark, Salisbury, Eng.

Fig. 54.—Yearling Hampshire Ewes. (Photo, courtesy Jas. Flower, Chilmark, Salisbury, Eng.)

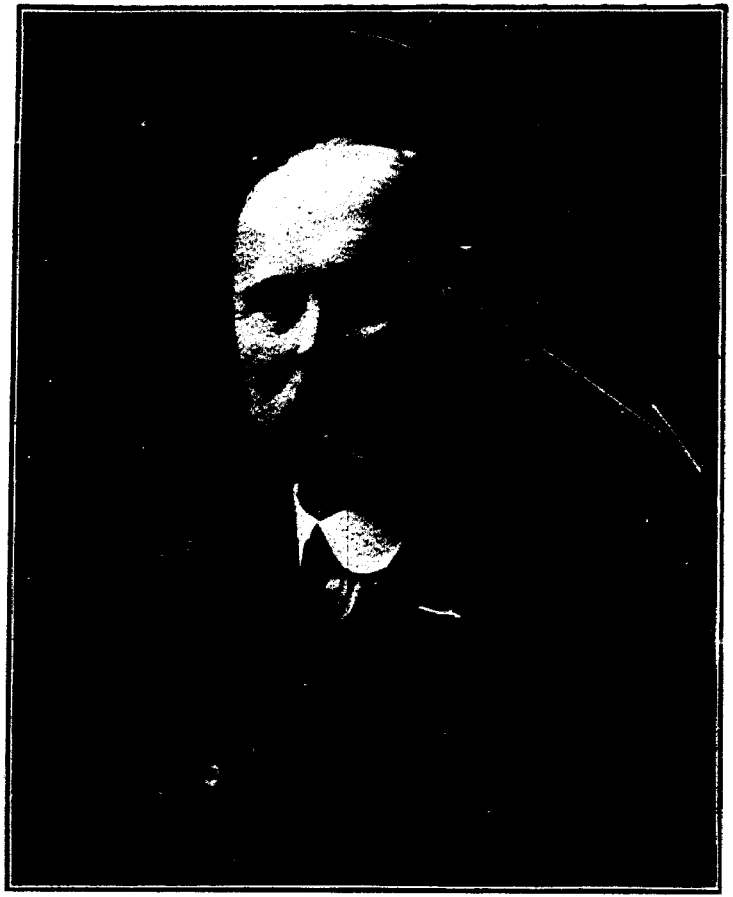

Fig. 55.—John Borland, Esq., Auchencairn, Dumfries.
(A large sheep farmer in Scotland and a well known authority on hill sheep.)

Fig. 56.—John W. Wallace, Esq., Thornhill, Dumfries.
(A well known breeder of "Grey Faced" ewes.)

Wool Imported Into Boston, New York and Philadelphia.

SHOWING PRINCIPAL COUNTRIES OF PRODUCTION

Year Ending June 30.	Russia.	Turkey.	United Kingdom.	Argentina.	Uruguay.	Chinese Empire.	British E. Indies.	British Oceania.	All Other Countries.	Total.
	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.
1896.....	13,150,509	17,987,753	14,229,068	32,281,341	9,048,350	26,084,232	9,897,531	72,995,090	30,264,448	225,938,322
1897.....	19,706,449	20,239,717	27,759,419	64,969,556	15,004,257	21,461,478	10,989,980	109,912,851	42,451,335	332,495,042
1898.....	16,999,224	9,282,762	12,434,332	16,734,279	1,309,974	20,369,294	6,445,063	31,877,252	14,630,832	130,083,012
1899.....	13,373,350	5,697,377	9,156,624	7,957,657	149,573	14,276,124	6,949,491	7,249,740	10,688,700	75,498,636
1900.....	18,869,252	9,577,147	20,393,063	20,064,279	1,072,307	30,998,289	9,397,020	23,121,394	19,171,121	152,663,872
1901.....	13,720,814	8,355,941	16,919,793	14,358,218	783,075	9,181,105	4,146,698	22,570,030	11,482,847	101,518,521
1902.....	16,322,231	12,215,316	21,737,509	45,287,370	533,634	18,843,396	6,813,401	26,559,531	13,930,722	162,243,110
1903.....	19,455,392	15,440,933	31,778,842	23,265,309	541,384	26,032,976	11,850,446	25,238,498	18,390,678	171,994,458
1904.....	23,403,797	17,742,473	26,807,042	28,168,060	112,208	24,912,491	10,088,556	25,792,098	13,374,315	170,401,040
1905.....	23,790,451	23,454,937	25,213,450	47,695,567	7,740,309	30,023,157	12,202,135	56,212,733	16,460,214	242,792,953
1906.....	21,180,755	16,032,199	21,615,963	42,167,927	5,807,190	30,233,762	6,011,319	39,548,551	11,242,388	193,840,054
1907.....	21,231,378	15,710,735	14,863,620	23,195,208	5,856,611	39,762,115	8,697,581	52,538,582	12,338,352	194,194,182
1908.....	12,913,964	10,686,993	15,747,766	16,221,285	1,604,221	21,717,431	4,936,421	27,032,576	7,438,644	118,298,301
1909.....	7,966,392	10,050,199	31,125,711	58,379,834	5,868,232	35,634,909	12,952,758	79,420,778	12,189,107	253,587,920
1910.....	13,263,175	13,521,623	37,097,134	31,082,184	8,789,785	46,599,637	16,603,135	68,199,625	15,128,955	250,285,253

(These figures represent about 95 per cent. of the total quantity of wool imported into all ports of the United States).

We are indebted to the National Association of Wool Manufacturers for the above figures.

CHAP. VI.

SHEEP HUSBANDRY IN GREAT BRITAIN

Great Britain

On a first visit to Great Britain and Ireland, one must be very much impressed by the prominence given to agriculture and especially to live stock by people of every class. All citizens are apparently interested and in close touch with the work of the British farmer and many of those in a financial position acquire land, either by purchase or by rental, and at once engage in the production of some class or several classes of farm animals. It is not unpleasant, then, to find that Great Britain's leading agriculturists are amongst the cleverest men of the nation and we may add as a matter of no mean importance, that His Majesty, the late lamented King Edward VII, as well as our present Sovereign King George V, have been leading prize takers at Britain's important Live Stock Shows, with entries from their famous Herds, Studs and Flocks.

In England, especially, because of the high value of land and the high rentals to be met, farming becomes a most intensive proposition and only those men who possess sufficient ability can attain success. There must be no haphazard methods or slip shod ways of doing the work, and every effort is put forth to increase the production of the land under cultivation. To increase or even maintain this productiveness, in Great Britain, we find that sheep play a most important part. In many districts the soil is of such conformation that, we were told, except by the keeping of sheep, farming would at once become an unprofitable business. Such land as we now think of is of a light soft nature and seems to be much improved by the mere treading of the sheep, as they are folded on winter feed. This treading or packing of the soil is not, of course, beneficial to all kinds of land. That sheep are to be found in very large numbers on practically every British farm is very evident, even from the car window, as we journey over the country by train. By closer investigation, we find that these sheep are not only kept as being profitable in themselves but also as a necessary factor in the maintenance of soil fertility, therefore the cultivation of sheep and other live stock is interdependent with the productions of the soil. While sheep have a place in this system, we also found that on some lands unsuited for cultivation they are the only animals capable of existence, while providing a source of rental as well. Hilly, mountainous districts, where other live stock is not found, are profitably utilized in sheep raising. Thus it seems that the British farmer divides the land into two distinct divisions, first, land which requires sheep as a source of maintenance of soil fertility, and second that which is so rough and poor that no animal but sheep will thrive thereon.

On a total area of 120,678 square miles and with a population of 46,000,000 people, the United Kingdom maintains approximately 33,000,000 sheep. This means one sheep on every two acres of land and one to each 1¼ persons of the population. Even with such a large home production, 40% of which is estimated to be slaughtered annually, it is necessary to import large quan-

tities of foreign and colonial meats. Statistics for 1909 show the importations of mutton and lamb as follows:—8,131 live sheep and lambs; 193,479 cwts. fresh killed; 318 cwts. chilled, and 11,067,152 carcases, frozen. When considering these figures the fact must not be overlooked that the cwts. mentioned represent the English standard of 112 lbs., a fact which will reveal a marked difference when large amounts are estimated.

Labour in Great Britain

One prominent feature in connection with animal husbandry in Great Britain which impressed us very much was the quality and intelligence of farm "help." Where such large numbers of farm animals are bred and maintained they require much care and attention, and steady men with sound judgment and initiative are needed for that work. Young lads, born on the farm, brought up amongst the live stock, and carefully trained by their parents in every detail of handling and management, make good shepherds and good herdsmen. Such men are developed in the British Isles and it is not at all uncommon to find farms where servants after long years of faithfulness are succeeded in the same work by their sons, and so on through many generations. These men take great pride in the animals entrusted to their care and, being generally honest and industrious, form a link in the system of British Agriculture which would weaken greatly were they to be dropped out. To one who does not know the demands, the ordinary feeding and attention of an average sized flock may not appear to require much skill. He can readily understand though that the shepherd must have a correct knowledge in case of an emergency. In going his daily rounds to make observations in regard to the health and comfort of his flock, if sickness is found he must know at once what should be done and how to do it. It is not his duty to delay attention, by returning to his employer with a message of trouble unless it is a serious case demanding the attention of a qualified Veterinarian. At some times he might find the trouble so far from home or help, that to return would mean loss of the subject, when a knowledge of the symptoms presented, and how to overcome them would mean the reverse.

But the fact must be recorded that farm help is becoming scarcer year by year and especially is this true in Scotland. This is attributed to the insistent demand for such men from abroad which has resulted in much higher wages being offered to retain them in their home land. The wages paid for highly skilled farm labor in Britain at present, are much higher than most Canadian farmers imagine. Experienced live stock help is very scarce already and the situation is causing grave concern in view of its effect upon all branches of the live stock industry.

List of British Sheep

(Classified)

There are 39 Distinct Breeds of Sheep in Great Britain, Twenty-eight having flockbook records.

MOUNTAIN SHEEP:—	Highland Blackface, Herdwick, Rough Brownfaced, Welsh Mountain, Ronaldshay, (Orkney), St. Kilda, (Polycerate)
HILL SHEEP:—	Cheviot, Shetland, Kerry Hill, (Welsh) Radnor, (Welsh) Limestone,
DALE SHEEP:—	Wensleydale, Bluefaced Wensleydale, Longwool Swaledale, ("Masham") Cotswold, Gritstone, (Derbyshire)
HEATH SHEEP:—	Clun Forest, Penistone, (Yorkshire) Mayo Horny, Norfolk Horn,
MOORLAND SHEEP:—	Lonk, (Lancashire) Dartmoor, Exmoor Horn, South Devon, Devon Longwool,
LOWLAND SHEEP:—	Romney Marsh, (Kent) Leicester, (English) Lincoln, Border-Leicester, Roscommon, (Irish)
DOWN SHEEP:—	Shropshire, Ryeland, (Herefordshire) Oxford, Hampshire, Suffolk, Southdown, ("Sussex") Dorset Down, Dorset-Horn, Wiltshire, (or "Western")

This list ought to contain 40 distinct breeds by including the Galawater Leicester, but two or three old breeds are likely to disappear before this new breed is fully recognised. The Bershire, has recently been graded out of existence while the Wiltshire, Clun Forest and Mayo Horny will be extinct very soon. About four other old breeds in this list will probably disappear within the next ten years or so, through improved crossing, and the growing popularity of similar breeds.

British Sheep

Arranged according to the character of their Fleece.

LONG WOOLED:—	Lincoln (extra long)
	Cotswold (very long and wavy)
	Roscommon (very long)
	Wensleydale, L. W. (extra lustre)
	Romney Marsh (very fine)
	English Leicester (fairly fine)
	Border-Leicester (fairly fine)
	Devon, L. W. (long and coarse)
	South Devon (coarse)
	Wensleydale B. F. (extra lustre)
	Dartmoor (fairly coarse)
	Scotch Blackface (coarse and long)
	Herdwick (coarse)
MEDIUM WOOLED:—	Cheviot (soft, dense and fine)
	Shetland (extra fine and silky)
	Lonk (soft and straight)
	Swaledale (rather coarse)
	Penistone (fairly fine, good lustre)
	Limestone (fine but rather harsh)
	Exmoor Horn (fairly fine and crisp)
MOUNTAIN WOOLS:—	Clun Forest (fine and soft)
	St. Kilda (irregular)
	Welsh Mountain (fine and crimpy)
	Rough Brownface (coarse)
	Mayo Horny (irregular)
	Ronaldshay (fine and crisp)
DOWN WOOLS:—	Shropshire (fine, good staple)
	Kerry Hill (fine and crimpy)
	Ryeland (extra fine)
	Oxford (long and soft)
	Hampshire (soft and dense)
	Suffolk (fine and dense)
	Southdown (very fine)
	Dorset Down (very dense)
	Dorset-Horn (fine and bright)
	Norfolk Horn (very fine)
	Wiltshire (irregular, rather harsh)
	Radnor (fine and crimpy)
	Gritstone (very fine, long and dense)

It will be seen from this list that, in some cases sheep of one breed carry a fleece which may be classified with the wool of another breed differing widely in character and type. For instance, it will be noticed that mountain breeds like the Scotch Blackface and Cumberland Herdwicks are included among the longwooled lowland breeds, their wool being similar in character although coarser and more of a hairy nature. Most mountain breeds however, carry the true mountain fleece,—that is a curly wool with a hair effect. Some hill sheep, such as the Kerry, Radnor and Gritstone are included among the Downs because their wool is similar in character, although the sheep themselves are of a different type altogether. This classification has nothing to do with the rules of grading wool, yet it shows that the descriptive terms of Wool dealers often differ from those used by breeders.

The variations of descriptive terms used in connection with sheep and their by-products are more complicated and confusing than with any other branch of live stock.

Breeding and General Management of Sheep on Mixed Farms

The breeding and general flock management as practised in the South and Central counties of England, where the land is good, and intensive farming followed, are the same in general principle with one breeder as another.

It is a very prominent fact that there exists on the British Isles a great diversity of soil and climate, just as different, often, one county from the next as we might expect to find in one country remote from another. This fact, is, no doubt, one very important reason for the development of such a large number of distinct breeds of farm animals in England, Scotland and Ireland. We find that each district, although sometimes very small, and perhaps only a part of one county, possesses a distinct breed of sheep which has been bred for many years in that locality and is thus claimed to be most suited to that particular soil and climate. We believe there is a good measure of truth in this statement but such an idea may be over estimated and carried to the extreme. As between breeds accustomed to low, rich arable lands, and those whose nature longs for the hills and the heather, there is, of course, no doubt as to their adaptability. But when we are asked to believe that, for example, one Down breed cannot succeed away from its own particular home and in the locality of another Down breed, we wish to say, although this may be claimed by some ardent adherents of one breed or another, that we found such a claim disproved in several instances. But we would also add that in the breeding of pedigree sheep for stud purposes it has been found that by the removal of a black-faced Down breed into a locality, the home of a white faced breed of sheep, the tendency is to develop, in succeeding generations, markings similar to the native breed. Again, it is known that breeds in certain districts are famous for the lustre and quality of their wool and when grown under different conditions these native qualities deteriorate.

Apart from the peculiar fitness of distinct types for their local conditions, the breeders and farmers are most loyal in their support of the breed existing in their own locality. Their fidelity and enthusiasm, in some instances almost amounting to prejudice, have an unlimited influence on the quality and purity of their favorite sheep. Then, if a farmer attempts to cultivate a breed of sheep, not popular in his district, he finds that local markets discriminate, and thus he is under a disadvantage as regards the income he receives from

his surplus stock. These characteristics, in connection with the breeding of stud sheep are very important, as a buyer or exporter is thus enabled to make selections and purchases of one breed, with the least possible expenditure of time and money.

When all the above conditions are considered it must not surprise us to find thirty-nine recognized, distinct breeds of sheep in the British Isles. Twenty-seven of these have record associations, and all are used more or less according to their popularity, for crossing purposes.

Evidences of a definite object in breeding operations are to be found on every hand, a certain demand being kept in view and every effort made to build up a reputation and afterwards to hold it. A farmer may keep a flock of sheep of the breed popular in his district and although it may not be eligible for record in the Association flock book, it is very highly bred and young ewes are sold at very remunerative prices to neighboring farmers for crossing purposes. Where such crossing is successfully done, it is found unprofitable to cross the second time and thus the line bred flock is necessary from which to draw new breeding ewes.

If the object is the production of early fat lambs the ewes are served so as to lamb as soon after the New Year as possible. At this season the weather is often very damp and cold and the ewes are carefully watched and taken from the field to a shed or other place affording shelter, for the birth of the lambs. In a few days when the youngsters are well on their feet, they are returned to the field and run at large. If the weather is very severe with heavy and continued rains, the young lambs of open fleeced breeds very often become thoroughly chilled with a high death rate resulting. As soon as the lambs are old enough, they are taught to eat some grain and "cake" the quantity being gradually increased from time to time according to age. No attention is spared in pushing these little fellows along because those first ready for slaughter bring the highest price.

Male lambs not intended for the early trade are always castrated and we found this rule everywhere strictly adhered to. This is imperative on account of the discrimination of the best buyers against buck lambs, and there is never any hesitation to alter the ram lambs except of course, those held for breeding purposes.

In England and Ireland a considerable acreage is down in permanent grass and is used mainly for cattle and the ewe flock, the use of old pastures for the lambs and young sheep being, if possible, avoided altogether. This is due to the belief that permanent pasture becomes a breeding ground and lodging place for parasites and sheep diseases. It is necessary then to sow other forage crops and those most largely used are kale, vetches, rape, cabbages or common turnips. These are often sown at succeeding periods in the season so that as one is consumed another is ready, thus providing fresh feed on new land during a great part of the summer. It is not considered profitable to allow the sheep to forage at will over such a crop as much would be wasted and trampled under foot. Hurdles or portable fences are moved each day, or at most every few days, cutting off a fresh lot sufficient to feed the flock during the time allowed. The lambs are permitted to creep through small openings in the hurdles, run ahead and so secure the choicest picking while their dams follow behind clearing up whatever remains. At weaning time the lambs are moved away by themselves and the ewes taken to short pasture, where there is little to eat, in order to discourage the milk flow. This

is a critical time in a young sheep's existence and that no set back in growth shall take place, many farmers supply a small quantity of grain or cake to tide them over this tender age.

Accommodation is provided for the lambs during the remainder of summer and fall on new grass or stubble fields with perhaps one feed a day of cabbage or common turnips as well.

Winter feeding commences any time from the end of October to the middle of December. This consists very largely in folding on roots. Folding is conducted in various ways. Hurdles are sometimes moved each day close to the crop allowing the sheep to feed very much the same as they would from an ordinary hay rack. They may also be moved to surround sufficient feed for one day's pasture, and thus cover in time the entire field. Another system not generally practised by the ordinary farmer is termed "close folding." This consists of entirely enclosing a portion of the flock by hurdles, in allowing them to eat off the crop and in providing them feed in troughs as well.

The treatment of sheep on winter feed differs much according to the end in view. Some require simple treatment, as growth, not fattening, is the object, while others, to be fed off during the root-feeding season, require different handling according to the time it is desired they should be sold. Those wanted away early require much extra feed to finish them off, while those to be sold later should merely grow well and increase in size. In cold weather, roots are not considered sufficient to maintain proper growth and development, and it is wise to allow a proportion of chaff, straw, or hay as well. In addition to this, if it is desired to push the lambs forward they receive a liberal allowance of small grains and linseed or cotton seed cake. Indian corn is also much used in conjunction with other grains. At the start, concentrated foods are fed rather sparingly and later increased in quantity until the sheep are taking all that they will eat and properly digest according to the judgment of the shepherd.

The system of farming thus adopted permits large numbers of sheep as well as good sized herds of cattle and horses, being maintained on comparatively small farms. It is not uncommon to find mixed farmers on 400 to 500 acres, with flocks running from 300 to 600 ewes and if these each have one lamb, the entire flock would be increased to just double this size, besides young ewes and rams held over for breeding purposes. The climate, although much varied, permits of keeping the sheep out during the entire year, which is, of course, very favorable to sheep farming as well as to the cultivation of other live stock.

Sheep Conditions in the Hill Country

In the districts of England and Scotland which are too rough and hilly for cultivation, the conditions and methods of cultivating sheep are vastly different to those practised on arable, mixed farms. These areas comprise lands growing considerable rough, coarse grass and many acres of mountain heather, with general conditions suitable for grazing throughout the entire year.

These areas may be divided into three divisions,—first, high, exposed land too cold for carrying the ewe flock through the winter in proper condition for lambing; second, land on a lower elevation and suitable for raising lambs; and third, land of much better quality, suitable for the growing of higher class feed where cross bred lambs are reared.

In good hill pastures many varieties of grasses are found, a number of them being evergreen, and so providing fresh feed the year round. Other grasses appear at certain seasons only, and good grazings should have a succession of these varieties to carry sheep well at all times. Where these are not found it becomes necessary in some instances to provide supplementary feed, especially during the months of March and April when such shortage is usually felt.

Lambs bred in high, exposed districts are removed to a lower elevation, affording more protection, during the first winter, and afterwards returned to their original home. Ewes sold from pure Blackface flocks are bought for breeding cross-breds by breeders who operate on land where less severe conditions prevail. The cross-breds are sold to farmers on arable land who again cross, very often, with a Down ram, the entire crop of lambs being then sold for slaughter, as well as the ewes after one or two seasons. Many mixed farmers also buy Cheviot ewes and cross with the Leicester ram for the production of Half-breds, and this cross is now very popular.

In the Highlands of Scotland Blackface sheep are kept almost entirely and being light in weight, very active and hardy, are quite independent in obtaining their own living. They seem naturally adapted to their conditions and surroundings and often form some very odd habits. One of these is also a very useful habit. Although much country is not fenced or enclosed in any way, these sheep do not wander away to neighboring farms or get mixed with strange flocks. They divide into small bands and each band pastures by itself, remaining by instinct on definite areas, apparently considered entirely for their own use. This habit is termed "hefting," its many advantages being quite obvious. Small bands are not so subject to damage or injury due to bunching in time of storm. They are more readily moved to fresh pastures and during the breeding season mating with the ram is much more easily accomplished.

This instinct is encouraged by shepherds and becomes so definite that one band often feeds within a few yards of the next without manifesting any desire to interfere with its neighbor. Even rams may be interchanged from one division to another and, after acquaintance is established, have no desire to return.

The work of caring for sheep under these conditions must be left in a large measure to the shepherd, and profit or loss depends very much upon his judgment and ability. These men are faithful servants, ever watchful in guarding the flock, and are as a rule highly paid.

The timid, fearful nature of the mountain sheep requires much skill and patience and these animals could not well be handled without the assistance of a highly trained sheep dog. Although sheep dogs are more or less unnecessary on mixed farms they are absolutely indispensable under such conditions.

The following account of sales and expenses was given by a sheep farmer in one of the Southern Counties of Scotland. It is an extract from his general farm account showing merely his transactions in connection with the flock. The farm includes four thousand acres of rough undesirable land totally unfit for mixed farming. He buys Blackface ewes and crosses them with good Leicester rams producing the "Cross-bred" or "Greyface." He has only two sources of outlet, the butcher and the mixed farmer. All the wether lambs, and some of the ewes as well, go for feeding or direct to the butcher, the balance of the ewes being sold to mixed farmers to be again crossed with a Down ram.

No allowance is made for depreciation which however is provided for through the purchase of young stock to replace the draft ewes and rams sold off the farm. This man's stock consists of 1,900 ewes and "Cross-bred" lambs, 420 yearling ewes and 40 rams.

This account has been based on average prices, and in Canadian money is approximately as follows:—

Sales		Outlays	
Lambs	$ 9,025.00	Rams	$ 580.62
Draft ewes	1,751.25	Manure	155.62
Draft rams	113.62	Dip	86.38
Wool and Skins	1,351.25	Clover and Forage	250.00
		Taxes	83.00
		Cleaning drains	275.75
		Keep of 40 rams	250.00
		Wages	1,042.50
		Incidental and Sundry Expenses	258.50
		Purchases of yearling ewes	3,150.00
		Rent	4,000.00
		Interest on $26,250 at 5%	1,312.50
		Balance being profit	796.25
	$12,241.12		$12,241.12

Crossing of Various Breeds, and Results

Of the thirty popular breeds of sheep known in the British Isles, very few are not used for crossing purposes. It may be less confusing and easier to follow if we describe the various modes of crossing by beginning at the North of Scotland and covering each successive district to the South of England.

We may first mention the Shetland Sheep which are confined exclusively to the Shetland Islands where they are bred pure. Any attempt at crossing deteriorates the value of their wool without satisfactory improvement from a mutton standpoint. Very small flocks of Iceland sheep are also found there and they too have proved disappointing for cross-breeding.

In the Orkney Islands another diminutive breed of Scandinavian, horned sheep is known by the name of Ronaldshay, and they have also been found unprofitable for crossing with other existing breeds. Outside of the native mountain sheep in the Orkney and Shetland Islands, the mixed farmers breed a cross between the Cheviot ram and the Leicester ewe.

In Scotland proper, only three popular breeds are found to any large extent, the Blackface, Cheviot and Border-Leicester. In the rough mountainous districts the Blackface is kept entirely pure and a representative of any other breed is very rare.

Mixed farmers in the Highlands seldom keep large flocks of either pure Blackface or Cheviots but prefer keeping useful commercial flocks, such as cross-breds and half-breds (Border Leicester X Cheviot).

In the Lowlands of Scotland which is the principal sheep breeding district, we find immense flocks of pure bred Cheviots and Blackface as well as large flocks of cross-breds and half-breds.

Some years ago in the counties of Dumfries and Kirkcudbright, Blackface ewes were extensively crossed with Wensleydale rams which produced very hardy sheep and excellent mutton. This practice has been almost discontinued because it was found that the young ewes experienced much difficulty in lambing and the lambs were hard feeders and matured slowly. At the present time the most popular cross for both Blackface and Cheviot ewes is an improved type of the Border-Leicester ram. The Blackface, being a sheep with a large proportion of firm, lean flesh, is considerably improved in the quality of the meat by crossing with a ram of a more fatty nature and the Border Leicester, besides fulfiling this requirement, is a very hardy sheep as well. A chief reason for the popularity of this cross was stated to be in the fact that lambs from the Border-Leicester ram and the small mountain ewe were easy lambers, this, on account of the small clean legs and head. The offspring of this cross cannot be described as beautiful in any respect, neither is the quality of wool much improved, but the mutton always commands a high price on the London market. The progeny resulting from mating of these breeds is popularly termed the "cross-bred," or "Greyfaced."

With the Cheviot ewe this cross gives still better results and is always called by the name of "Half-bred." Half-bred mutton is quite equal in quality to the cross-bred and the wool is very valuable, being much sought after by American buyers. The bold, attractive style evident in both breeds is very marked in the produce, while at the same time the offspring retain the low, thick type of the Cheviot. They have considerable promise as a distinct breed and are even now, with satisfactory results, being perpetuated as such, in the Galawater district.

It is not generally considered profitable to mate the Leicester ram with either the cross-bred or half-bred ewe, but a rapidly growing custom is the use of Down rams, and for the production of fat lambs the Oxford is quite extensively used. These lambs should be sent to market at an early age, because they have a decided tendency, when growing away from the baby stage, to shoot up on the leg or become paunchy and fat, presenting an undesirable appearance. In some sections the Suffolk ram is becoming quite popular for use on the half-bred ewe. This was at first considered a doubtful cross by many, as it was feared the progeny would be hard doers. They have proved the reverse, and in the hands of expert feeders have won highest honors in the carcase competition at the Great Smithfield Show. If the present demand for early fat lambs continues there is no doubt that both Hampshire and Shropshire rams will be more extensively used in mating with the cross-bred and half-bred ewes.

The Blackface, Cheviot and all their crosses are quite common also in the border counties of England.

Amongst the native breeds in the North of England are Herdwicks, Lonks, Wensleydales, etc. The Herdwicks and Lonks are confined to a comparatively small area and though excellent mutton sheep in every way, are very little used for crossing purposes.

Wensleydales, both the Bluefaced and Long-wooled types are increasing in numbers and popularity in their own locality. Although their mutton is still in high favor and their wool in stronger demand than ever, we were led to believe that they are not used for crossing purposes to the same extent that they were a few years ago.

In some parts of Yorkshire both Lincolns and Leicesters are crossed with Shropshires, and although wool merchants spoke favorably of this cross we did not find the breeders so enthusiastic.

Gristones are peculiar to the limestone districts in the county of Derbyshire but are seldom used for crossing purposes outside their own locality, where they are very popular.

In Lincolnshire, the native breed is bred pure and largely exported for crossing purposes, chiefly with Merinos.

Lincolns and Leicesters are the prevailing breeds in Nottinghamshire and are sometimes crossed with Down rams.

Cotswolds are still much favored in their own district and exported in considerable numbers to foreign countries, but we did not find that they are increasing in popularity for direct crossing with other breeds in England.

Norfolk Downs are maintained in the county of Norfolk; the rams being crossed considerably on ewes of the long wooled breeds, and vice versa. The number of pure bred Norfolks is decreasing.

In Kent, almost the only breed known is the "Romney Marsh," now growing in popularity faster than any other long wooled sheep. In the Marsh districts they are kept pure and exported in large numbers to New Zealand and Argentina where they have given much satisfaction and are becoming exceedingly popular for crossing on Merino ewes. In the borders of Kent and neighboring districts they are frequently crossed with the Southdown ram.

Welsh Horned, Exmoor, Dartmoor, Devon Long-wool and South Devon are admirably adapted for the conditions of the districts in which they are bred, but at present are not extensively used for crossing purposes, which is perhaps owing more to the lack of local influence than through any deficiency in the breeds.

Shropshire sheep are cultivated in the most northern county of the Down district proper, and the popularity of the pure bred Shropshire has steadily increased. Many farmers, catering for the early lamb trade, cross the Shropshire ram on the Kerry Hill ewes, while others have great faith in crossing the Shropshire ewe with a compact type of Hampshire ram. These crosses have both proved very satisfactory and the lambs that we saw were of splendid conformation and possessed good fleeces of fine wool. The Shropshire-Kerry cross produces lambs of very fine quality and rapid feeders, while the Hampshire-Shropshire produces a little more size and a carcass of firm, lean flesh.

The Ryeland is a native of the county of Hereford, and is only found in small flocks outside that locality. It is often called the "Whitefaced Shrop" because it resembles that breed closely, both in size and type. Owing to the very fine quality of its wool it is frequently exported for crossing with Merinos, but is not extensively crossed at home.

The Oxford is mostly kept pure in its own district but the rams are sold in considerable numbers to large breeders of hill sheep for the production of early fat lambs, while the demand for crossing with other breeds is still maintained.

The Hampshire shows every indication of becoming very popular for crossing with various breeds, as well as with other Down sheep, and is fast coming to the front.

During the past few years, Suffolks have improved very much and come rapidly to the front for mutton purposes. They are now champions at most carcass competitions and have given great satisfaction when crossed with Leicester ewes, or similar breeds of a fatty nature.

The splendid quality of the wool and mutton of the Southdown has made this breed deservedly popular, and, although not so extensively used for crossing as some of the Down breeds, is still very much appreciated in the South of England.

The Dorset-Horn is being bred in increasing numbers in the Southern counties and used quite extensively in crossing with other Down breeds for the production of early lambs.

The Dorset Down, although still bred in large numbers in the South, is less generally bred in the Midland counties and not so extensively used in crossing as formerly.

Most of the breeders of all Down sheep have experienced an increased demand from foreign and Colonial countries where Down rams are popular for crossing on small native sheep for a better production of carcass and a good grade of wool, the breeds most largely exported at present being Shropshire, Hampshire, Oxford, Southdown and Dorset-Horn.

In Ireland, the only native breed now maintaining a recognized flock book is the Roscommon, which is extensively bred and crossed with other breeds. They are not found in either England or Scotland, owing largely to the demand for sheep of smaller size and also to the improvement of competing long wooled breeds. Other native breeds in Ireland have disappeared from flock books in recent years, because they have been crossed and graded to such an extent that the original type is almost extinct. The crossing of Long wools and fine wooled hill sheep with Downs is practised more extensively here than in England, the wool of this cross being such as to create quite a distinct demand for the Irish product.

In regard to all the various crosses it is impossible to state definitely which are the most desirable. In every case we found intelligent men, strong supporters of their own methods. We may also state that unusual fancies or demands of the market do not cause British breeders to desert their favorites for the adoption of other breeds. They stick to their choice through thick and thin, and by careful study and selection make every effort to achieve improvement along desired lines.

Ram Sales

For the distribution of sires throughout the United Kingdom, many important ram sales are held. These are conducted under the auspices of various organizations, such as Breeders' Associations, Agricultural Societies, Farmers' Clubs, or Individual owners. At some of the Sales, prizes and challenge cups are offered for competition with special rules governing these contests.

The Breed Societies sell only representatives of their respective breeds and from members of the Association. All details of management are disposed of by a special committee and definite rules and conditions, for the protection of both exposer and purchaser, are strictly adhered to. Stipulated fees are levied on each contributor to cover the cost of advertising and sale. Sellers have the privilege of employing their own auctioneer, but such nomination must always be forwarded to the committee in charge when entry is made.

In sales where large numbers are entered, more than may be sold through one ring during the day, arrangements are made for several rings, all of which are in operation at the same time.

Sales usually commence in the morning at a fixed hour and continue without stop for lunch, until all entries are sold. Lunch may be procured at a fixed price in a tent or stand close by, arranged specially for the sale.

Under the auspices of Agricultural Societies, rams of various breeds are sold, but rules of entry and sale are similar to those adopted by Breed Associations. The sale at Kelso, in Scotland is conducted by the Border Union Agricultural Society. Being the largest ram sale in the United Kingdom, it naturally attracts some of the very best individuals of the different breeds, and it was a great sight to view the many fine lots as they were penned, awaiting sale. The offerings here in 1910 comprised one thousand and eighty three Border Leicesters, one thousand and thirty-six of the Down Breeds and three hundred and eighty-three half-bred Rams. Seven separate auction rings were required to handle this number in one day. The Leicesters and half-breds were confined in one block while the Down rams were in another. Close to the rings were penned those rams to be sold in each, and it was the duty of the exposer to see that his entries were in line, ready to follow in order as indicated by the catalogue. In case any lot is not ready when its turn comes round, the position is forfeited, and these are sold after all others have been offered.

Bidding is fast and often very spirited as it may readily be seen that time must not be lost if the entire number are to be disposed of in one day. Many are sold at the rate of one to the minute, the average being about fifty an hour. Large and small farmers attend this sale as well as breeders of note in quest of rams for stud purposes. Prices vary considerably and it is possible for all to make selections according to their object in view.

The following is a copy of the by-laws in regard to this sale.

BORDER UNION AGRICULTURAL SOCIETY

Ram Sale By-Laws.

1. The Sales shall be held at Kelso on the 2nd Friday of September annually.
2. Notice of all Lots of Sheep intended to be brought forward for sale, with the names of the Auctioneers to be employed, shall be lodged with the Secretary on or before the day fixed by the Committee.
3. The Committee shall determine the number of Sale Rings it may be necessary to have, and the order in which the several Lots of Sheep shall be brought forward.
4. Each Lot of Sheep shall be sold in the Ring fixed by the Committee and in the order of the Ballot, and in that Ring only, and the Auctioneer exposing such Lot and the owner thereof shall be bound to see that this Rule is strictly carried out.
5. In the event of any infringement of Rule 4 the party so infringing it shall be liable to a penalty of £10 per Sheep and for all loss and damage which may be sustained.
6. Entry Money—Members 1s per Ram, and for Lots of 6 and under a uniform fee of 6s for each lot; Non-Members, 2s per Ram, and for Lots of 6 or under a uniform fee of 12s.
7. The whole Sheep shall be penned, and the Sales shall commence at all the Rings and at such times as shall be arranged by the Committee.
8. Each Lot must be in the Sale Pen of the division to which it belongs as soon as the last Sheep of the preceding Lot shall have been disposed of.

9. Any Lots that may not be ready in the Sale Pens when their turn for selling arrived will not be allowed to come forward till all the others in that division have been disposed of.

Local Live Stock Markets

The population of Great Britain is so dense, the large manufacturing towns and cities so closely situated, that local markets are necessarily numerous. Each town or centre of importance possesses a live stock market where animals are brought by the farmers and exposed for sale. Market days occur at least once or twice a week, and in some of the large cities daily. At many places we find various classes of live animals confined in small pens awaiting sale, while at others sheep only are penned, the cattle being tied in long rows to a sort of iron fence or tying rail.

A few years ago everything was sold by private treaty, the farmer often spending much time in bantering with the buyer. At present many of the offerings are sold by an auctioneer, this custom rapidly becoming very general. In some old fashioned districts where conservative ideas still prevail the new system has not become popular. There are many auctioneers. They very often sell every day in the week, moving from one market town to another, the market days of which are consecutive. The commission charged by an auctioneer varies considerably according to the volume of business he expects to transact. A general charge is 1 to 1½% but sometimes it runs as low as ½% and as high as 2½%. A definite section of the market is reserved by any one auctioneer for the accomodation of consignments to his name. Sometimes his commission includes the market fees, or perhaps he may charge the farmer separately for his services. He keeps a record of all sales, turning over to the seller the receipts less the total expenses. In case a farmer wishes to offer his stock for sale privately, they are confined in pens not reserved by auctioneers. The farmer is then expected to pay personally the regular market fees according to the space used.

When selling is about to commence, the auctioneer attracts the attention of buyers by calling and ringing a bell. As bids are being solicited buyers are busy handling and examining the sheep. Sheep are never sold by weight but at so much per head according to the judgment of the buyer. He must therefore be a keen judge of condition and quality. The buyer's work is made much easier by the fact that sheep sold at one market are of similar breeding and type, derived from one source of blood and method of crossing. Once accustomed to the local breed he is not continually worried by new shapes and sizes being offered for sale.

As the system of selling live animals by auction is rapidly becoming more popular, so, also, is this the case in regard to wool. It was even stated by some, as their opinion, that all live stock and their products exposed on public markets would, very shortly, be sold by the auctioneer. This organization has developed to such perfection that merely the conservatism of certain sections keeps these methods from becoming generally adopted.

The buyers at local markets usually consist of two classes, one composed of butchers who kill their own meat for sale through their retail shops, the other of those who slaughter and consign direct to the wholesale meat market at London, or to wholesale butchers in other large centres.

As well as being used for the sale of fat stock for slaughter, local markets handle large numbers of store sheep and cattle. These consignments often reach large proportions and are usually advertised in advance and sold in

special sales. Many draft ewes are also included, these having been replaced in breeders' flocks by younger ewes or more promising producers. Such are used for crossing, the progeny all being sold for slaughter. After one or two crops of lambs the ewes are also fattened and sent back to market. Many farmers make a regular practice of such operations and find it very profitable.

In this trade a very large business is transacted on various markets in the North of England and South of Scotland. Besides the sale of many hill sheep by private treaty, vast numbers are consigned to the markets and there sold by auction. A very active movement takes place during the fall months in these districts. Sheep are contributed by numerous breeders, special sales announced, and, according to the numbers included, are sold in one or two days. Such sales often include from two thousand to sixteen thousand head and are conducted by auctioneers, who do the advertising, prepare the catalogue and make all other arrangements. Foreign and Colonial live stock is landed principally at two ports, Birkenhead on the West Coast and Deptford adjacent to London Markets. British law requires that these animals be not moved inland but slaughtered within ten days after arrival at such port. In addition to the many country markets there are well equipped stock yards and slaughtering houses at these places. These establishments are equipped for handling sheep but since the embargo has been enforced they have been arriving in greatly decreased numbers which however may be only partially due to this enactment of parliament. In the case of Canadian sheep we were led to believe that this was largely the cause of the decrease, owing to the fact that our sheep were not generally in prime condition for slaughter. This fact is the cause of considerable complaint in regard to the quality of our sheep and shows emphatically that if the Canadian farmer would share in the British markets, under present regulations, he must be prepared to supply his sheep in acceptable condition. It was also pointed out that our sheep were far from uniform in condition and quality, consignments consisting of all classes, and including too many rams. These objections are great hindrances to stability of trade, and when buyers are not sure of receiving a satisfactory article they look elsewhere for their supply.

At Deptford we had the pleasure of seeing between three and four hundred Canadian cattle, a number of which were prime finished steers, the balance although good types being entirely too thin for slaughter.

Meat Markets

The wholesale meat markets of the large cities represent another step between the producer and the consumer, and were most interesting to inspect, since they are conducted on such a large scale in comparison to meat markets as we are accustomed to know them in Canada. As an illustration, we will take the London Smithfield market, which is the largest of its class in the world, and supplies meat of all kinds to the people of the City of London. It is hardly possible to obtain a correct impression of the immensity of the daily operations of such an organization without a personal visit, and even then it would require several such visits for one to become at all familiar with its workings in detail.

Everything here is handled by commission men, and is sold privately, in part, or by the carcass as may be desired by the buyer. Each firm has an allotted space indicated by its respective business sign, the carcases consigned to it being hung on hooks in long rows which are just far enough apart to allow prospective buyers room for inspection. Many wide passages intersect and

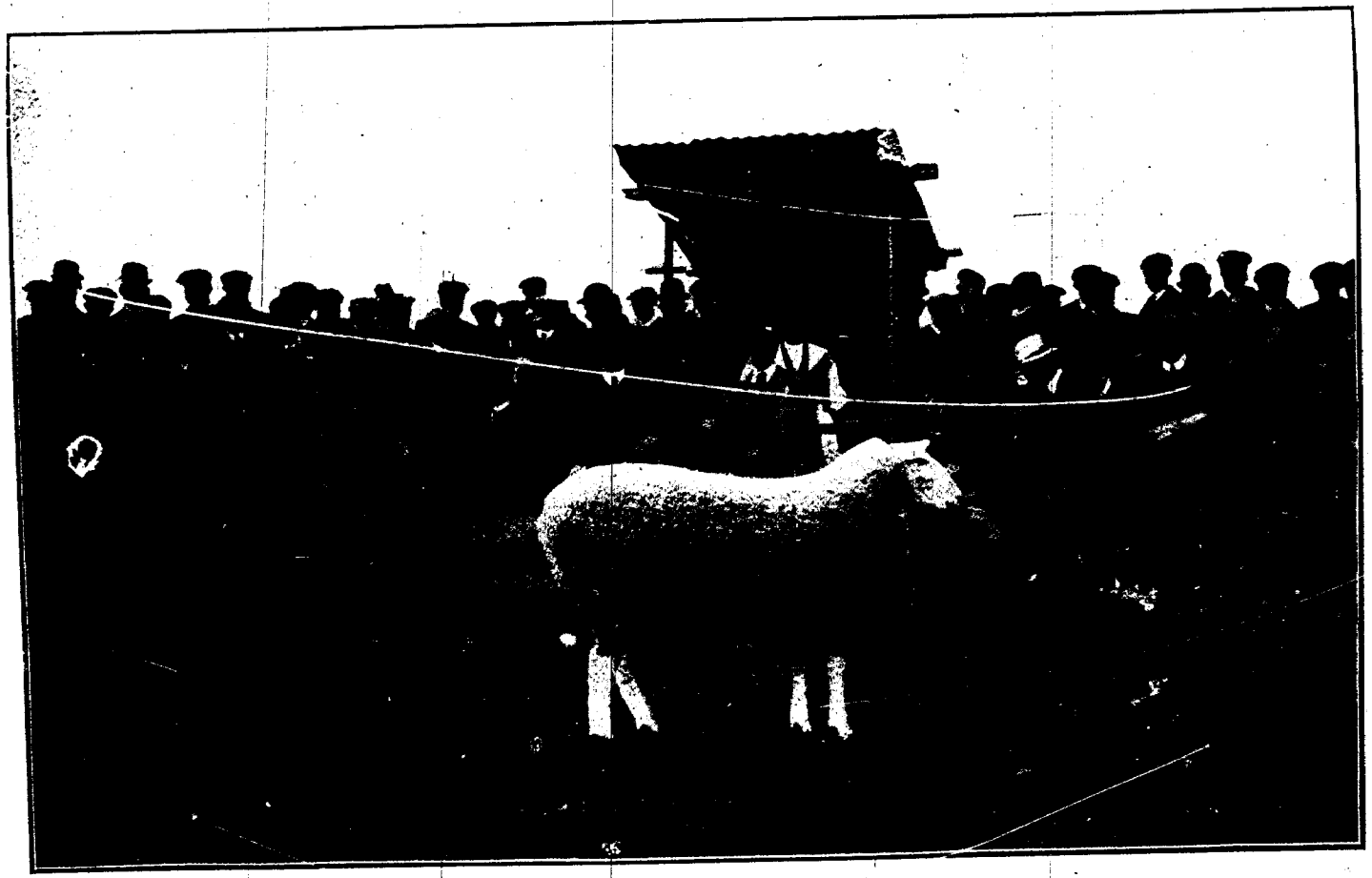

Fig. 57.—Kelso Ram Sales. (One of the seven rings.)

Fig. 58.—Kelso Ram Sale. (A corner of the field.)

Fig. 59.—Orkney Dwarf Sheep. (Ronaldshay.)

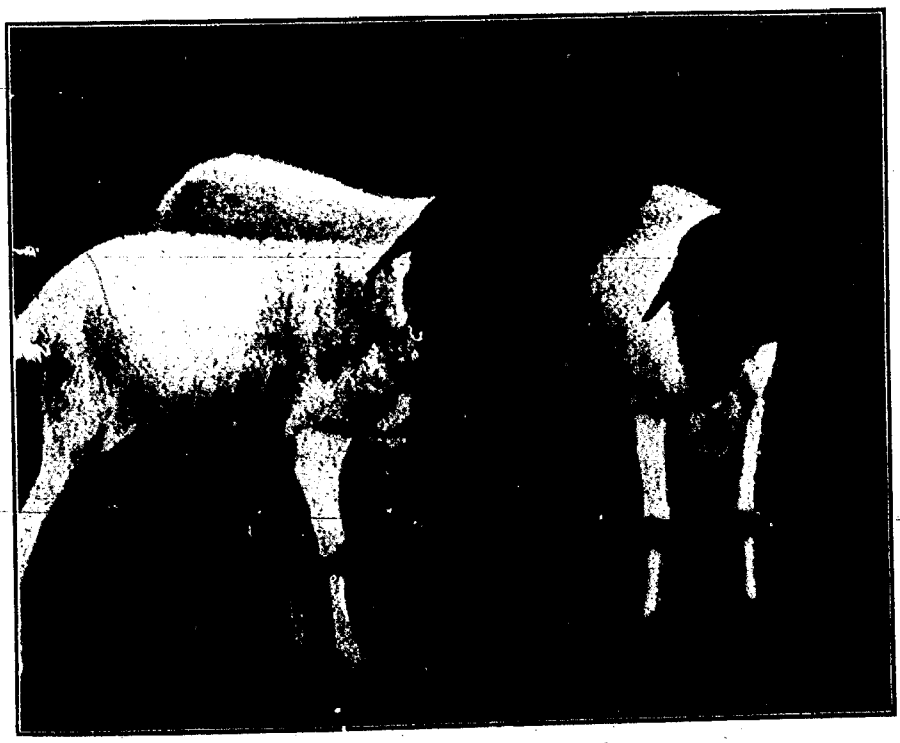

Fig. 60.—Three Somali Sheep. Exported to Bahia, Brazil.

Fig. 61.—Ronaldshay Ewe, Eating Kelp.

Fig. 62.—Shetland Ewe and Lamb. (Fair Island Type.)

lead to either side of the building where goods are handed over to the carrying companies for delivery about the city. When trade commences early in the morning a busy scene is presented, and indeed one must step lively to keep out of the way of loaded trucks or busy workmen as they hurry to and fro. The city retail butcher buys his supplies here, sometimes making visits daily or buying a quantity for the needs of several days according to his judgment of the trade.

Commission firms often make a specialty of handling certain classes of meats and so we find that one may develop trade in frozen and chilled carcasses, while another may handle mostly hill lambs, or yet another deal in heavier, fatter carcases. They have, however, a common object, which is to create a reputation for quality in the particular line that they may handle.

Trading on the meat market is calculated by weight, and prices are quoted at so much per pound or per stone, which is eight pounds in carcasses as compared to a stone of fourteen pounds live weight. This practice is quite common in reference to beef and mutton and is based on the proportionate weight before and after dressing. In the instance of pork, however, the shrinkage is considerably less, therefore this term is never used. Further, the eight pound stone is not recognized by the Government and so cannot be legally quoted outside the wholesale market.

The supplies for this market are derived by consignments from various parts of the Kingdom, as well as by shipments of frozen and chilled meats from abroad. The commission firm that may transact the business, returns the proceeds, less expenses and percentage, to the shipper, this portion of the business always being done on a cash basis, while on the other hand the market salesmen often carry monthly or even quarterly accounts with the retail butcher.

Although the wholesale meat trade in all the other large centres is conducted on similar lines to London, the system is slightly different and is generally admitted to be an improvement. In place of many slaughter houses under different managements, these have one large killing plant and two large meat markets, all being under municipal control. One market is generally an annex of the killing plant and only handles carcases slaughtered there. The other is a general meat market handling both fresh killed and frozen in large or small quantities. Civic employees inspect the general system of slaughtering and cleanliness throughout. All the city retail butchers buy at these municipal meat markets, but many of the suburban butchers, doing a high class family trade, still kill most of their own meat in their private slaughter houses. All these private slaughter houses are also visited by municipal as well as by Government inspectors. Only fresh meat killed under municipal supervision is offered at the large meat markets, other than chilled or frozen shipped in from outside points.

The retail frozen meat business is handled chiefly by numerous big companies who have several branches in every town. Competition is keen and prices are cut very low. Good local butchers handle nothing but fresh killed owing to the unpopularity of frozen meat in the better class family trade.

The chief patrons of frozen meat are the poorer classes, who cannot afford to use fresh meat twice a day, and large hotels and restaurants having facilities for profitably using up cold meats in various ways.

The standard for British meat markets is found in the live stock bred and fed in the United Kingdom, and offered for sale as fresh meat. Not many years ago the market asked for size and weight, with the result that sheep were fully matured and sold in a very ripe condition at from two to four years

of age. This demand has, in recent years, been entirely altered so that at present, a carcase of moderate weight and full of lean meat commands the highest price, in contrast to one carrying a large proportion of soft tallow or fat so much in evidence in the old type.

Early spring lambs are of course marketed at various ages and no definite weight is specified, but in order to bring the highest price, the weight of carcase must not exceed fifty-six to sixty pounds. Lambs too big and coarse or so fat as to exceed this limit are sold as mutton and the sacrifice in price is proportionate.

Considering that large exporting meat countries are great distances from this open market, we realize that all importations must be made either before slaughter, by long tedious trips, or by the carcase in a frozen or chilled state. In the case of animals shipped alive the cost in transportation and shrinkage is necessarily very heavy, and too many are landed that are not in prime condition for slaughter.

Frozen meats have a number of serious objections. They must very soon be consumed after removal from the ice as deterioration rapidly sets in. After cooking they have a tendency to darken in color and when cold they become dry, flavorless and unattractive in appearance. The taste of the public being for fresh meat, it has been very difficult to develop trade in the frozen article, but thorough organization and due regard for market requirements have done much to put this trade on a firm foundation. New Zealand, especially, has been so successful in supplying frozen lamb that now the consuming public very quickly buy this article when fresh meat goes high in price. Properly chilled lamb or mutton does not have such marked objections, being regarded as next in choice to fresh killed, and has very often been sold as such. It has, however, never been supplied in large enough quantities to be a factor on the market.

Statistics for the year 1909, show the total available supply of meat for consumption in Great Britain, including home grown and imported live animals, to be 1,777, 253 tons. Of this immense total, chilled products represent only 135,136 tons; 16 tons of this amount is mutton, the balance beef, there being no lamb imported chilled.

We are therefore convinced that the Canadian sheep farmer might find a large and profitable outlet here for chilled mutton and lamb, providing he adapted his methods to produce the required standard of type and finish for the British market. It is necessary to add that the system of shipping would have to be well organized and the supply regular, in order to make this product a special factor on the market and thereby in a great measure supersede the frozen.