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SHEEP

- by P. Y. Hamilton -

GENERAL: Sheep are roughage eaters of the cud chewing group. Grass and grass crops form the largest part of their feed requirement. They produce two important commodities - meat (lamb and mutton), and wool. In Nova Scotia the sale of market lamb brings about 75% of the gross returns of the farm flocks. The total gross return from sheep flocks in Nova Scotia is about one million dollars. The results of a detailed economic survey of sheep flocks in Nova Scotia in 1952 revealed that the average net return per ewe was \$7.87 and the average net return per hour of labor, \$1.37. Flocks which raised more than an average of one lamb per ewe had a net return for labor of \$14.41 per ewe and a labor return of \$2.00 an hour.

POPULATION AND DISTRIBUTION: The population of sheep and lambs in Nova Scotia on June 1, 1958 was 83,000. Nova Scotia ranks sixth among the provinces of Canada in sheep numbers, having more sheep than each of the other Atlantic Provinces and Manitoba. Sheep number have declined over the last 100 years in Nova Scotia as self sufficient farming gave way to farming based on a cash return. In more recent years the decline has been much less pronounced as more and larger flocks are established on the basis of contributing an important part of the farm income. Such flocks are tending to offset the larger number of small neglected flocks that continue to decline.

The Eastern part of the province has the largest proportion of the sheep. In recent years, however, the decline in sheep numbers has been somewhat greater in the eastern part of the province whereas in some counties in central and western Nova Scotia there has been an increase in sheep numbers. The following ten counties have 80% of the sheep population and are listed in order of sheep population:

- | | |
|---------------|----------------|
| 1. Inverness | 6. Guysborough |
| 2. Antigonish | 7. Shelburne |
| 3. Pictou | 8. Colchester |
| 4. Kings | 9. Hants |
| 5. Annapolis | 10. Cumberland |

BREEDS AND BREEDING: The development of the very many breeds of sheep resulted from efforts to have sheep with the important economic characteristics suited to a particular area or situation. Some breeds were established mainly for hardiness, others for high lamb production. Some were developed for high milk production, some for their meat qualities, and others mainly for wool production. Thus we find that sheep are suited to a wider variety of conditions than are any other types of livestock. Breeds common to Nova Scotia are: Oxford, Shropshire, Suffolk, Border Cheviot, Leicester, North Country Cheviot, Southdown, and Hampshire. Other breeds in the province but not common are: Dorset Horn and Corriedale.

The breeds should be discussed under the headings of:

- (a) Origin
- (b) Distinguishing characteristics
- (c) Economic characteristics
- (d) Popularity and distribution

Some characteristics of the ewe flock that are important to the market lamb and wool producers are: (1) Twinning ability; (2) milking ability; (3) hardiness; (4) fleece weight and quality; (5) productive life and (6) temperament.

(3) Culling and selecting is an important part of flock improvement and can be discussed under these headings:

- (a) Identifying the ewes
- (b) Keeping simple records of performance
- (c) When and what to cull
- (d) When and what to select for flock replacements.

The use of good purebred rams is the basis of any system of breeding and must be stressed.

Systems of breeding sheep for commercial production are: (a) grading up; (b) single cross; (c) crossbred ewe. The advantages and disadvantages of these schemes can be stressed.

(2) FEEDING: The feeding of sheep centres around good quality grass crops - pasture, hay and silage. The sheep flocks of this province suffer more from improper and insufficient feed than from any other single factor. The following are suggested as guides in covering this topic:

- (a) Feeds for Sheep
- (b) Pasture management of the flock on pasture
- (c) Winter feeding - with stress on the high-level feeding period before and after lambing.
- (d) Flushing the ewes - why and how to do it
- (e) Weaning and finishing the lambs
- (f) Sheep nutrition such as level of protein required and the importance of mineral mixture.

(1) CARE AND MANAGEMENT: Proper care and management of the flock is important at all times. If properly equipped, the management is relatively simple and not time consuming. At particular times of the year and for certain parts of a sheep program the care and management is very critical to the success of the enterprise. The following are of particular importance in this respect:

- (a) Lambing time
- (b) Breeding time
- (c) Growing and finishing the lamb - including castrating, docking, weaning and finishing.

(4) HOUSING, FENCING AND EQUIPMENT: Simple low cost housing is all that is required for sheep. Open-type buildings that are dry and free from draughts are quite satisfactory. Fence is usually considered the costly item in connection with establishing a sheep enterprise. Sheep must be well fenced. Essential equipment includes proper type hay and feed racks, lambing pens, creep areas, shears, piling and/or drenching equipment, dipping and/or spraying equipment, and mineral boxes.

WOOL: The important things to know about wool can be grouped under these headings:

- (a) Characteristics of wool
- (b) Fleece quality, cleanness and weight
- (c) Shearing
- (d) Preparation of the fleece for market
- (e) Classification and grades of wool.

PARASITES AND DISEASES: The Maritime Provinces have a greater internal parasite problem than other areas of Canada. It is responsible for a large economic loss to the industry each year. This worm problem should be stressed and can be covered under these headings:

- (a) Life cycle of stomach and intestinal worm
- (b) Aid in control through management and feeding
- (c) The phenothiazine preparations, and when and how they are administered.

The external parasite known as the sheep tick also must be controlled by annual treatment. The methods of treating sheep to get rid of external parasites should be discussed.

Sheep diseases also common to Nova Scotia are: lung worm, pregnancy disease, pulpy kidney disease, pneumonia, and others.

MARKETING: Under this topic the following can be covered:

- (a) The lamb carcass and lamb grading
- (b) The marketing of lambs
- (c) The marketing of wool, including mention of the Nova Scotia Wool Marketing Board, the Canadian Co-operative Wool Growers, and the wool grading station operated by the latter organization.

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SHEEP RAISING IN NOVA SCOTIA

During the past year the Economics Division of the Federal Department of Agriculture has been conducting a study of sheep production. The project, was initially requested by the Nova Scotia Department of Agriculture and Marketing and has been largely confined to that province.

Sheep flocks studied in Nova Scotia were located throughout the province with the heaviest concentration in the eastern counties. The business year of the Study covered the 12 month period ending October 31, 1952.

Consideration of any farm enterprise automatically brings to mind a number of special problems associated with its operation. In the case of sheep, costs of fencing, losses to predatory animals and control of parasites are some of the items which are frequently discussed. Of the various considerations associated with the sheep enterprise in the Maritime Provinces, probably one of the most significant is the rapid decline in sheep numbers.

During the past 80 years there has been a marked decline in sheep production in the Maritime Provinces. Most discussions of the industry include some reference to the reduction in numbers of sheep on farms and to factors which have contributed to it. Relatively little emphasis is given to the actual rate of decline which is probably more rapid than is generally recognized.

Table 1.- Numbers of Sheep on Farms in Nova Scotia, Prince Edward Island and New Brunswick 1871-1951

Year	: Nova Scotia	: Prince Edward Island	: New Brunswick
	: No. of Sheep	: No. of Sheep	: No. of Sheep
<i>1867</i>	<i>400,000</i>		
1871	398,377	-----	234,418
1881	377,801	166,496	221,163
1891	331,492	147,372	182,941
1901	285,244	125,546	182,524
1911	221,074	91,232	158,316
1921	272,024	39,675	187,536
1931	196,344	41,322	143,677
1941	138,209	48,882	92,556
1951	95,396	34,386	55,223
<i>1962</i>	<i>111,000</i>		

Source: Canada, Census of Agriculture, 1871-1951

The number of sheep on farms in Nova Scotia in 1951 was less than a quarter of that in 1871. If the average annual rate of decline from 1881 to 1951 continues sheep will disappear from Nova Scotia farms in about 24 years. If the more rapid rate of decline from 1921 to 1951 is maintained the period will be reduced to about 15 years. Data on sheep numbers for 1871 in Prince Edward Island are not available but the trend is very similar to that in Nova Scotia and New Brunswick.

The projected downward trend in sheep numbers as indicated above is, of course, unrealistic. As the trend curve approaches zero it tends to flatten out. However, unless some change develops to check the decline in sheep numbers it appears that the enterprise may soon reach a position of negligible importance in the Maritime Provinces.

In contrast to the rather discouraging long time picture of sheep production in the Maritimes, fieldmen encountered a considerable amount of optimism on the part of sheep producers. This was probably due in part to the relatively high prices received for lamb and wool in recent years. However, the business year of the study was one of falling prices. Farmers in the study received an average price of \$16.41 per lamb and 38 cents per pound for wool.

One of the first questions which the farmer asks of any enterprise is: "Is there any money in it?" To secure an answer to this question an analysis was made of receipts and expenses and a calculation of net returns from the sheep flock.

Table 2.- Financial Summary Sheep Enterprise Business
99 Farms in Nova Scotia, 1952

	<u>Per Farm</u>	<u>Per Ewe</u>
	\$	\$
Sheep Receipts	472.42	15.91
Sheep Expenses	<u>238.86</u>	<u>8.04</u>
Sheep Labour Returns	233.56	7.87
Hours of Labour on Sheep	170.4	5.7
Labour Returns per Hour	1.37	

Receipts from the sheep flock consisted of sale of sheep, lambs, and wool, and a credit for inventory increase and home used wool or meat. Sale of lambs was the most important item accounting for 69 per cent of total receipts.

On the expense side a charge was made for purchased and home grown feed consumed by the flock and the cost of fencing and pasture maintenance. The cost of dip, dust, pills and other cash costs associated with the production and marketing of the flock were included as were non-cash items such as use buildings and equipment and inventory decrease. The balance of receipts less expenses averaged \$7.87 per ewe. As no charge was made for labour this amount represented the return per ewe for time spent in caring for the flock. Since labour on the flock averaged 5.7 hours per ewe, the average man in the study received a return of \$1.37 per hour for time spent on the sheep enterprise.

Labour returns varied widely from farm to farm reflecting differences in production practises and the operators' over-all ability in the management of the enterprise. An analysis of this variation provides a basis for evaluating various factors of management and their influence on returns.

Lambs per Ewe.- The major source of receipts from the Sheep Enterprise in Nova Scotia is sale of lambs. As the number of lambs raised to market age per ewe has a direct bearing on returns, this is often used as a measure of flock management. As lambs per ewe increased there was a marked increase in returns of flocks in the study.

Table 3.- Relation of Number of Lambs Raised per Ewe to Market Age to Returns, 99 Sheep Flocks in Nova Scotia, 1952

(survey of 99 sheep flocks in Nova Scotia)

Lambs Raised per Ewe		Flocks	Ewes per Flock	Labour Returns per Ewe	Labour Returns per Hour
Range	Average	No.	No.	\$	\$
Less than 0.8	0.6	27	34.7	2.58	0.53
0.8 - 1.0	0.9	45	31.2	8.60	1.51
More than 1.0	1.3	27	22.2	14.41	2.00
Total or <i>Average</i>	0.9	99	29.7	7.87	1.37

Thin table

One criticism frequently made of sheep management is the tendency to minimize the amount of care and time spent on the flock. Sheep will get by with a relatively small amount of attention, and there is a tendency to let them fend for themselves. How much time and expense can be profitably devoted to the sheep flock? While the study did not provide a specific answer to this question the data did indicate that increased attention to the flock was associated with a larger lamb crop and higher returns.

Table 4.- Relation of Lambs Raised per Ewe to Various Factors, 99 Sheep Flocks in Nova Scotia, 1952

Lambs Raised per Ewe	Pasture Cost per Ewe	Concentrates per Ewe	Salt and Mineral per Ewe	Parasite Treatment per Ewe	Annual Labour Hours
No.	\$	Lbs.	¢	¢	Hrs.
Less than 0.8	1.15	24	7	16	4.9
0.8 - 1.0	1.24	42	8	19	5.7
More than 1.0	1.61	53	10	20	7.2
Total or Average	1.29	39	8	18	5.7

Farms raising most lambs per ewe fed most concentrates, had higher charges for pasture, purchased more salt and mineral, and spent more for treatment of parasites. There was also a marked increase in the amount of time spent on the flock. Since returns per hour advanced from \$0.53 to \$2.00 (Table 3) sheep men were well repaid for the additional expense and time spent on their flocks. It should be noted however, that not all of the increase in items indicated in Table 4 can be attributed to better management. Hours of labour and pasture costs were no doubt influenced to some extent by variations in size of flock.

Management of the sheep flock includes a number of practises associated with such items as breeding, feeding and parasite control. Many of these tend to be inter-related and their combined influence is reflected in a number of factors which in turn affect returns.

Table 5.- Relation of Level of Management as Measured by Lambs Raised per Ewe to Various Factors, 99 Flocks in Nova Scotia 1952

Lambs Raised per Ewe	Ewe Losses %	Barren Ewes %	Multiple Births %	Price Received per Lamb \$
Less than 0.8	13.9	33.3	7.4	14.65
0.8 to 1.0	5.8	15.8	21.0	16.51
More than 1.0	3.5	4.7	45.7	17.24
Total or Average 0.9	7.9	19.1	21.7	16.41

A further expansion of data in table 3 indicates that the increased attention to the flock which was reflected in more lambs per ewe was also associated with lower mortality, fewer barren ewes and a higher price received per lamb.

Multiple Births.- Flocks raising most lambs per ewe had the highest percentage of multiple births. The relationship of multiple births to returns is perhaps not so generally accepted as is sometimes assumed. A comment frequently heard is that a good single lamb is preferable to twins. Data from the study did not support this view.

Fencing.- One factor frequently cited as contributing to the decline of sheep numbers is the cost of fencing. As indicated in Table 4, farms with most lambs per ewe had highest charges for pasture of which fencing was a major item. Despite this additional expense they secured highest returns. The cost of fencing is apparently not a limiting factor for well managed flocks, however, it is unquestionably a major consideration in sheep production and has probably been a factor in the decline in sheep numbers.

In addition to increases in the costs of wire and labour there are a number of other factors which have contributed indirectly to higher fencing costs. Some of the farmers in the study recalled that common pasturing of sheep was practised to a larger extent in former years, with a consequent saving in costs of fencing. In some cases areas between adjoining farms which either by accident or design

were burnt over every few years provided a common sheep pasture. Possibly as a result of increased emphasis on fire control and higher returns from lumber and pulp such areas are currently overgrown with trees.

The decline in sheep numbers has in itself contributed to higher fencing costs. Fencing is usually a two farm proposition. When one man goes out of sheep his neighbour is often faced with increased sheep fencing costs.

Farms in the study were asked to indicate any steps they had taken to reduce fencing costs. A number indicated that they had replaced the conventional seven strand woven wire fence with hog fence and two strands of barbed wire. A few suggested the combined pasturing of cattle and sheep as a way of reducing fencing costs. It was also noted that it was more difficult and costly to fence certain breeds of sheep. A number felt that regular annual maintenance was a factor in fencing costs. Where fences had been allowed to deteriorate to the extent that a heavy investment was required to replace them the sheep flock often disappeared from the farm.

Losses.- Another reason given for the decline in sheep numbers is losses to predatory animals . In Nova Scotia the main animals concerned are dogs, bears, and foxes. Losses to these animals have always been a problem to sheep producers. With the possible exception of foxes it seems doubtful that losses from predatory animals are currently more serious than those suffered in former years.

Table 6.- Losses of Sheep and Lambs According to Cause
99 Flocks in Nova Scotia, 1952

Cause	Sheep		Lambs	
	No.	%	No.	%
Lost or Stolen	7	3	16	3
Bears and Foxes	5	2	25	5
Dogs	35	15	28	6
Disease	38	17	30	7
Accidents	76	33	37	8
Lost at Birth	--	--	306	65
Old Age	38	16	--	--
Other	<u>33</u>	<u>14</u>	<u>28</u>	<u>6</u>
Total	232	100	470	100

Farmers in the study lost a total of 40 sheep and 53 lambs or an average of approximately one sheep or lamb per flock to predatory animals. This represents 17 per cent of total sheep losses and 11 per cent of all lambs lost. Sixty-five per cent of lamb losses occurred at or shortly after birth. On individual farms losses to predatory animals can be a major factor in the reduction or elimination of the flock. On the 99 farms in the study such losses were relatively minor when compared to losses more directly attributable to management.

Of the average flock of 29.7 ewes in the study 3.7 lost their lambs. An additional 5.7 ewes were barren. This included ewe lambs which in almost all cases were allowed to run with the breeding flock. A total of 9.4 ewes or nearly one-third of the flock were thus kept for a crop of wool only.

Size of Flock.- A comment frequently made on the Sheep Enterprise in the Maritimes is that it is often too small for efficient production. The small flock contributes only a few dollars to farm revenue and may receive scant attention. Because of difficulties in fencing it may eventually be classed as a nuisance and done away with altogether.

Table 7.- Relation of Number of Ewes to Various Factors
99 Sheep Flocks in Nova Scotia, 1953

Number of Ewes		Flocks	Lambs Raised per Ewe	Labour Hours per Ewe	Pasture Cost per Ewe	Labour Returns per Hour
Range	Average	No.	No.	Hrs.	\$	\$
Less than 21	16.3	33	1.0	8.5	1.66	.95
21 - 29	24.5	33	0.9	6.9	1.52	1.32
More than 29	48.1	33	0.8	4.2	1.04	1.70
Total or Average	29.7	99	0.9	5.7	1.29	1.37

Flocks in the study ranged from a low of 9 to a high of 150 ewes per farm. Within this range there was some indication (as measured by lambs raised per ewe) that management of smaller flocks was better than that of larger flocks. The larger flocks, however, were much more efficient in use of capital and labour and provided a higher return for time spent on the enterprise.

One of the main advantages of the larger flock is lower unit production costs. As indicated by the data in Table 7 there was a marked reduction in labour and pasture costs per ewe as size of flock increased. Larger flocks would probably also encourage more definite breeding programs, lack of which have handicapped sheep in their competition with other enterprises.

Breed.- One pure-bred flock was included in the study. The balance were grade flocks with Oxford the predominant breed. In the case of 22 flocks it was not possible to designate specifically the breed of the ewes.

Table 8.- Breed of Ewes and Rams on 99 Sheep Farms in Nova Scotia, 1952

Breed	Farms Reporting Ewes - This Breed	Farms Reporting Rams - This Breed
Oxford	47	56
Shropshire	12	12
Cheviot	10	19
Suffolk	4	4
Dorset	2	2
Southdown	1	3
Hampshire	1	1
Other	22	1

During recent years there has been increased interest in the Cheviot, particularly for cross breeding. This is indicated by the high proportion of cheviot rams to ewe flocks of this breed. An analysis was made of relation of breed of ram to the lamb crop. Because of the size and nature of the sample the data shown in Table 9 are probably not too significant.

Table 9.- Relation of Breed of Ram to the Lamb Crop
99 Sheep Flocks in Nova Scotia, 1952

Breed of Ram	No. of Flocks	No. of Lambs Born per Ewe	No. of Lambs Raised per Ewe
Oxford	56	1.1	0.9
Cheviot	19	1.1	1.0
Shropshire	13	0.9	0.7
Other	11	1.0	0.8
Total or Average	99	1.0	0.9

The foregoing is a review of some of the preliminary findings of the sheep study. Data from the study provide a partial answer to some questions. They also raise a number of others. What are the basic factors responsible for the decline in sheep production in the Maritimes?---Are these factors likely to operate in the future as in the past?---What can be done to check the decline?

Current sheep returns if maintained should check the decline in sheep numbers. Forty-two per cent of farms in the study planned some increase in sheep while only 5 per cent expected to reduce flock size. The 99 flocks carried over a total of 362 ewe lambs for breeding purposes in 1952. This represented an increase of 32 per cent over the number carried over the previous year. The total increase in ewe flock amounted to 7 per cent.

Can current sheep returns be maintained? This will depend largely on future prices and production costs. In view of the trend toward falling farm prices it appears that maintenance of individual farm returns will depend largely on the operators ability to cut production costs.

Can production costs be reduced? Differences in prices received for lambs and wool were responsible for some of the variation in returns of flocks in the study. The wide variation in returns, however, was mainly a reflection of differences in production costs. As indicated by data in the study, increased size of flock combined with a higher level of management should provide a basis for reducing costs and maintaining or possibly increasing sheep returns on many farms.

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*Please return
to Peter Hamilton*

CANADA NEEDS TEN MILLION SHEEP

"Sheep raising in this country is at its lowest ebb; plans are in progress to increase our flocks."

"The general adoption of improved methods in breeding sheep is of primary importance. The haphazard system now in vogue has done incalculable harm in retarding progress in the industry. The undertaking of a business-like policy, presupposing close attention to the requirements of the trade will alone save the situation. Scientific breeding and management must be more generally understood and its principles practised."

These words might well have been uttered yesterday as they so aptly prescribe a general remedy for the present condition of the sheep industry. As a matter of fact they are part of a recommendation made by Commissioners Dryden and Ritch in their "Report on the Sheep Industry" following an exhaustive investigation made in 1911, at the request of the Federal Department of Agriculture.

In a letter to the then Minister of Agriculture, the Honorable Martin Burrell, accompanying the report, the Livestock Commissioner, Mr J. G. Robertson stated, "This report has been prepared for your information with a view to the inauguration of a definite policy having for its objective the development and extension of sheep husbandry in the Dominion."

The optimism indicated by these words was based on the belief that Canada could and would develop a very substantial sheep industry, as there existed large areas of land well suited for such a development and markets were readily available to absorb all meat and wool products. The same conditions pertain at present, yet the sheep industry is at a lower ebb in actual numbers than it has been for decades.

The Report of 1911 dwelt in some detail on the current situation province by province. In the introduction, comparisons of sheep populations of Great Britain "with its comparatively insignificant area" 31,852,777 head, New Zealand 23,792,947 head, Australia 92,241,226 head, Argentina 67,211,754 head, U. S. A. 51,216,000 head and Canada 2,106,000 head, with today's populations show that the only major changes are that of New Zealand which has increased by 10 million head, Australia about the same, the U. S. A. is down about 20 million and Canada is down by half the former meagre figure to a scant 1,080,000 as of June, 1950.

The 1911 report drew attention to the particular economic use of sheep in weed destruction, always a menace to the land, as well as their great ability to improve and fertilize the soil. The existence of great marginal land areas in Canada was noted as being more suited to sheep than any other use and comparisons are made with Great Britain in this respect where otherwise vacant moors and rugged highlands would be entirely void of animals were it not for sheep now grazing on them in hundreds of thousands.

A detailed survey, province by province, pointed out the particular suitability of many areas in each to sheep raising and the introduction ends thus, "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 thought. 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."

The goal--10 million sheep!! How near did we get to it? In 1921 we reached the figure of 3,200,500 head, 10 years later we made 3,627,100 head, our all time peak. We lost ground each year for the next 10 years, than a gain to 3,458,00 head, followed by a decline to our present all time low, with only a slight gain in the war period.

In the face of such favorable conditions as have existed for decades, why then are there not more sheep in Canada?

How Britain Does It Let's look at the sheep industry in Great Britain as regards breed use, environment and management. It should be kept in mind that the British pattern has been over 150 years in the making and while some dislocation occurred in the war periods and may again, due to land use for urgent cereal production, generally speaking, the British system is a model for any livestock country to follow, as the use of a particular type or breed of sheep for a particular purpose is about perfect and their methods of pasture and flock management, including parasite and disease control are features of outstanding merit. Many of these things are a must in Britain as their heavy stockings of livestock on limited areas complicate the disease and parasite questions and rigid controls must exist or their livestock industry would be wiped out.

For its area, Great Britain has a greater topographical variation than any other country its size or larger, so we find infinite variety in grazings from fen, swale, moor, chalky plain, lowland and upland in the south and central counties, to grassy hill and rugged fell in the highland, in the central and western counties of Scotland. This great variation in soil and altitude has been a major factor in the development of the several types and the numerous breeds of sheep as are found today.

Again and most important is the definite distinction made between grass and arable types, a distinction not made in Canada and likely one reason why our sheep industry has not expanded as it should.

The numerous Down breeds, Oxfords, Shropshire, Suffolk, Hampshire and Southdown are examples of arable breeds and while they are good grazers they excel when folded on root crops which they eat to the ground before being moved to fresh patches. Roots and grain they relish and make excellent use of and in the process fertilize and pack the lighter types of soil generally found in Southern Britain.

North of the midland country--mainly in Yorkshire, Cumberland and Northumberland are found the longer wool breeds, Leicester, Herdwick, Lonk and Wensleydale, these mainly of grass types but hardy and indigenous to the high rough fell or mountain grazings. In Wales, which is mainly mountainous, grass types are found in the Welsh Mountain and Kerry Hill breeds.

In multitudes all through the grazing country, North and East, in the Borders and even in the Midlands the commercial farm ewe, the "half bred" is found, this being the type best adapted to lamb production when crossed with Down rams and as the name implies has as parents two breeds, the North Country Cheviot ewe and the Border Leicester Ram. Nothing can equal this ewe in prolificacy, hardiness and grazing ability. Lambing percentages average over 150% and run as high as 175% in many cases. Early maturity and the ability to put on flesh rapidly are factors inherited from the Leicester while milkiness and mothering qualities predominate in the Cheviot. The combination is a happy blending of those qualities most desired in a ewe. Being open faced, with small heads, lambing troubles are unknown as the ewes can see to feed and fend for themselves. Wool quality is excellent--the staple long and about 48 to 50's in fineness, an extremely useful type of wool.

The ewes are purchased at the annual auctions in whole flocks by commercial breeders who top them with Suffolk, Oxford rams and for early lamb production. In the south of Britain a similar type ewe is produced by crossing Welsh Mountain and Kerry Hill ewes with Border Leicester rams and on these ewes Shropshire and Hampshire and Southdown rams are used. About five crops of lambs are taken, then the ewes are sold as mutton and the flock replaced. This cross breeding system ensures a definite use for several major breeds, contributes to a thriving domestic trade in providing replacements for commercial flocks and in itself is a well developed plan of breeding accepted by all commercial breeders as a fundamental basis of operation.

Crossing Doubles Revenue The most striking feature of British sheep is the fact that breeds are purposely crossed for specific results -- and that types, that is-- grass or arable, are utilized in this crossing for maximum results in hybrid vigor. The yield per ewe is a most important consideration to the British farmer, as it should be to all farmers, it being the dollars and cents aspect of the business. If this yield can be doubled by using the tools that science has put at our disposal then the enterprise is doubly profitable and the industry thrives. That yields can

be doubled has been well demonstrated over the decades and is the main reason why cross breeding remains the bulwark of commercial lamb production in Britain. Lambing averages from 150 to 175% in Britain compared to 70 to 80% in Canada, where we "grade up" rather than "cross breed," should convince any doubter which system pays off.

About the only point of similarity in British and Canadian sheep husbandry is that we use many of the British breeds and even here the likeness in some breeds is slight as the breed type has been changed to be almost unrecognizable as the original breed. We endeavor to achieve a certain objective in form by changing breed type whereas the British breeder does it through breed use.

How did the British breeds get here and what has been their specific use?

Imported by Cattle Dealers Most of our sheep breeds were imported by cattle breeders who, when purchasing foundation stock in Britain, also purchased the type or breed of sheep predominating in the area where the cattle were selected. Thus the Shropshires, Oxfords, Southdowns, Suffolks and Hampshires came early to Ontario, later to the West through cattle importers, most of them well known to all livestock men. The Gibsons, Whitelaws, Arkells, McEwens, Bowman, Millars and later the Rocks and Grenvilles are synonymous with these breeds and are still among today's foremost breeders.

Environment played but a small part in the final destination of sheep breeds in Canada as they found their way into practically all provinces via the showyard and only within fairly recent years have the breeds become more or less domiciled within regions and that rather by chance than by purpose. Even yet, however, we find arable breeds in predominantly grass districts such as the Oxford in Cape Breton, when by environment and best use one would expect to find Cheviots almost exclusively on the grassy highlands of that region. Border Leicesters in the St. Lawrence plains is another good example of a misplaced breed.

It is very evident that this important matter of breed use has not been a factor in breed distribution in Canada nor has it been given the study it deserves. The inevitable result is that breeds are not performing as they should or would if placed for best use.

One other major handicap our sheep industry suffers is that the breeding policy adopted for the commercial industry has been definitely prejudicial to best performances. When our early importers brought in the various British breeds they either did not study the British plan of breed use or they decided it was not applicable to Canadian conditions and when, following the implementing of the Dryden-Ritch report of 1911, specific improvement policies were adopted by Governmental agencies, the policy of "grading up" or improvement through the Sire was adopted and the British plan of "cross breeding" not attempted, though recommended for trial by the commissioners.

In fact, cross breeding of livestock has largely been a "hush hush" subject in Canada in many classrooms and elsewhere and most of our farmers look on it as taboo. In Britain it is a generally accepted practice in the production of commercial cattle and lambs but there is no haphazard crossing of breeds but purposeful use of sires for a specific purpose. The purpose may be earlier maturity, extra weight or size, deep fleshing or one of a dozen factors as long experience in breed use has given the British farmer the exact "know how" to produce the particular product the market calls for.

The main purpose of cross breeding, however, is to step up yield or productivity per animal unit, cow or ewe, and to take full advantage of the resulting hybrid vigor. In corn and poultry the results have been astounding and have revolutionized these industries. In sheep it means lambing percentages of 150 to 175 per cent instead of 70 to 80 percent and that is where the extra profit is found. In the Canadian system of "grading up" the benefits of hybrid vigor are lost and revenues are greatly lessened. In addition to this loss, which in itself is great, grading up, while it tends to breed uniformity within the individual flock actually lessens uniformity in the industry because farmers have varying ideas as to the breed of ram to use.

An example of flock uniformity may be seen in Britain where "half Bred" ewes form the basis of most commercial flocks north of the Midlands. These supreme performing ewes are alide as peas and outnumber by a wide margin any other type and it appears to matter little what breed of ram is used on them as long as it is of Down breeding, the result will be good. Experience indicates that Suffolks and Oxfords get the best results, with Hampshires, Shropshires and Southdowns following in that order.

To revert again to Canadian practise it is safe to say, in spite of the usual excuses offered for the present plight of our sheep industry--predators, fences, parasites, etc.--that the main reason for lack of sheep interest is that they have not paid their way as have hogs and cattle. In other words, under prevailing systems of breeding and management, they are not competing successfully for land use and labor costs. Is it any wonder, considering the meagre attention they get on the average farm. Far too often the farm flock consists of a half to a dozen ewes, ragged in appearance, of no particular breeding and very plainly showing evidence of lack of attention. On other farms, the flock is the pride of the owner and reflects his care and attention to details. On the whole, our farm flocks are too small to be considered as revenue producers and when losses occur it is so easy to let the flock go.

Again in hogs and cattle, both dairy and beef, we have over the past two decades concentrated on quality and production due to our need for export products until at present both these classes of livestock are on a relatively high plane of performance. Sheep, however, despite their universal usefulness have not yet found a place in our agriculture deserving of their merits, nor has the industry received concentrated attention in development policies as have the companion livestock industries.

If by adopting new breeding policies, revenues from sheep flocks doubled, would they make a comeback? We believe so and are attempting to prove it by developing cross breeding projects based on the British system of "half-bred" production. As these projects progress in Quebec where they are operating in areas most suited to its adoption, they will be expanded into other districts and eventually should cover Quebec and the Maritimes. They would be equally suited to Ontario and the parkland farms of the West and with some slight adaptation could well prove an excellent source of white faced ewe material when used on range or semi-range types. Such ewes are in keen demand in U. S. A. for cross breed purposes in the major lamb producing states.

A mental survey of eastern Canada reveals many districts admirably suited to sheep raising which at present are largely devoid of livestock but which could be made the source of added farm income if restocked with sheep. Many such areas are well adapted to community grazing, another factor worthy of consideration in future sheep development plans.

Need Larger Flocks Larger farm flocks--50 head on the average farm, to 300 and up on special projects should be considered. Crossbreeding should be adopted as a permanent policy but based on a definite production plan such as is universally practiced in Britain. Selection for twinning should be part of the management program.

One further matter of importance is the belief that cattle and sheep cannot graze together and do well -- this is a fallacy, as in Britain they share the same pastures and as one farmer said, "the cattle get the long bite and the sheep the short one." If pastures are properly managed cattle and sheep are not competitive.

There are no unsurmountable obstacles in the way of using the British crossbreeding plan for commercial production. Trur, we will have to forget many of our pioneer methods of handling sheep but these have no place in any well managed enterprise anyway. With more attention paid to pasture management, the adoption of regular treatments for disease and parasites, larger farm flocks, community grazing where possible, modern husbandry practises and our sheep industry would more than compete with cattle and hogs, in fact, considering investment in stock and buildings and the labor involved, with suitable land (and what land isn't) sheep can be made to outstrip any other class of livestock in investment returns.

The dog question can be greatly simplified by the introduction and regular use of working collies. Sheep respond to these intelligent workers and can be driven or held at the shepherd's will with the utmost ease. They are not killers or wanderers as so many farm dogs are and there is a very lucrative opening here for someone who will breed and train them.

Canada should have at least ten million sheep and this goal is definitely possible if we will give the matter the intelligent study it merits. With farmers looking for additional sources of revenue without the great outlay in labor and up-keep required by other classes of livestock, sheep raising based on proper principles offers the desired opportunity.

Written by: J. W. Graham
Chief, Production Services
Department of Agriculture, Ottawa

Taken from: The February 15, issue of
The Family Herald and Weekly Star

22/2/51
/M

SHEEP PRODUCTION AND CONSUMPTION

	<u>1962</u>	<u>1963</u>	<u>1964</u>
No. of Sheep (breeding animals)	700,000	668,000	637,000
Lambs and ewes marketed	567,000	532,000	512,000
Total carcass wt. marketed	24,140,000	23,147,000	22,374,000
Domestic disappearance (lbs)	64,472,000	68,632,000	59,974,000
Domestic disappearance (head)	1,516,000	1,578,000	1,372,000
Per capita consumption	3.4	3.6	3.2

In 1964, the value of slaughter lambs marketed in Canada was 8.5 million dollars. 14.5 million dollars worth was imported. It would take almost a million additional head of breeding stock to provide the deficit of lamb now filled by imports. The present 637,000 head would have to be upped to 1,550,000 to supply our present lamb needs.

Consumption is extremely low, and there has been little or no lamb promotion work done in Canada. The potential for necessary consumption is good.

Providing we can meet the competition from imports, there should be no problem of markets for lamb.

WOOL PRODUCTION AND CONSUMPTION

	<u>1962</u>	<u>1963</u>	<u>1964</u>
Wool marketed			
Shorn	5,808,000	5,259,000	5,065,000
Pulled	1,361,000	1,553,000	1,281,000
Total	7,169,000	6,812,000	6,346,000
Domestic disappearance	57,505,000	61,956,000	66,167,000
Value of Imports	\$ 27,697,000.	31,787,000.	33,413,000.

It would take about 7,880 head of sheep in addition to the present population to meet requirements of the Canadian Wool Trade.

NUMBER OF SHEEP ON FARMS

	Canada	Quebec	Ontario	<u>Maritime Provinces</u>			<u>Prairie Provinces</u>			
				N.B.	N.S.	P.E.I.	Man.	Sask.	Alberta	B.C.
75 1972	541,300 427,000	41,000	117,000	6,500	15,500	4,000	22,000	74,000	120,000	27,000
1971	425,800	45,000	110,000	7,000	17,000	3,800	22,000	72,000	122,000	30,000
1970	391,500	43,000	105,000	8,000	17,600	3,900	20,000	64,000	105,000	25,000
1969	379,200	48,000	115,000	9,000	18,000	5,200	18,000	60,000	80,000	26,000
1968	385,600	50,000	122,000	10,000	18,300	5,300	18,000	55,000	80,000	27,000
1967	421,000	51,000	126,000	11,000	18,200	5,800	20,000	54,000	108,000	27,000
1966	463,700	54,000	128,000	12,000	18,500	6,200	23,000	55,000	137,000	30,000
1965	574,000									
1964	640,000									
1963	676,000									
1962	728,000									
1961	782,000									
* 1951	803,000	173,000	198,000		101,000			293,000		37,400
1941	1,562,000	179,000	364,000		151,000			688,000		69,300
1931	1,995,000	404,000	575,000		230,000			706,000		80,850
1921	1,856,000	496,000	568,000		328,000			426,000		35,380
1911	1,261,000	370,000	430,000		273,000			165,000		22,600
1901	1,506,000	382,000	626,000		355,000			110,000		19,800
1891	1,538,000	428,000	613,000		397,000			21,000		29,400
1881	1,824,000	534,000	815,000		459,000			3,600		16,800
1871	1,894,000	605,000								

* 1871 to 1951. Sheep numbers calculated as 50 to 60 percent of total sheep and lamb numbers on June 1st.



CANADA DEPARTMENT OF AGRICULTURE

RESEARCH BRANCH

CENTRAL EXPERIMENTAL FARM

YOUR FILE No:

OUR FILE No:

OTTAWA, CANADA

October 18, 1965

Hamilton
Mr. P. Macdonald
Animal Science Department
Macdonald College
P. Q.

Sheep Work Planning Meeting

Enclosed is the final agenda for the above meeting. The object is to develop a picture or a "viewpoint" of the general need and justification for sheep research and to take a closer look at one particular phase. I would not attempt to predict what will come out of this meeting; that will be up to the participants.

The previous proposal regarding flight arrival at Montreal still holds. We shall expect everyone from the West, or elsewhere, who wishes a ride from Dorval to be on Flight 870 or to be at the airport at that time (6:35 p.m., Oct. 27). Please let me know soon if you are not coming.

Dr. Bernard will reserve a block of rooms at La Paysan Motel in Lennoxville for the nights of October 27, 28 and 29. In order to ensure that each has the required accommodation I suggest you write to him at once regarding the number of nights you are staying and whether you wish a single room or want to share a room.

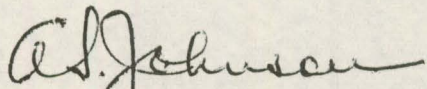
I hope that we shall have ample time for our discussions. I expect we could decide to hold one evening discussion (Oct. 28) if it seems warranted.

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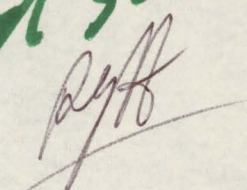
Dr. Bernard has arranged a tour of several farms in the area on Saturday, October 30, for those who are interested. These include sheep and beef cattle enterprises and should give you an impression of the local industry.

For those who are attending the Animal Geneticists' Workshop on November 1 and 2, the plan is to bring you to Montreal on Saturday evening. You will therefore need to make your hotel reservations there accordingly.

I trust this deals with all of the essential points. We shall look forward to seeing you and to having a useful meeting.


A. S. Johnson
Research Coordinator
(Animal Breeding)

J. j
Attach.

*I attended this
from Macdonald
good session*


SHEEP WORK PLANNING MEETING
- October 28 and 29, 1965 -

Expected attendance

W. Combs, University of Alberta
S. B. Slen) Lethbridge Research Station
J. Vesely)
W. E. Howell, University of Saskatchewan
W. J. Boylan, University of Manitoba
A. J. Church, Manitoba Department of Agriculture
J. C. Rennie, University of Guelph
I. F. Furniss, Economics Branch, Ottawa
R. K. Bennett,) Livestock Division, Production &
W. L. Allen,) Marketing Branch, Ottawa
F. Whiting) Research Branch, Ottawa
A. S. Johnson)
R. S. Gowe, Animal Research Institute, Ottawa
B. Baker) Macdonald College
P. Macdonald)
Hamilton
J. P. Lemay, Laval University
C. Bernard, Lennoxville Experimental Farm

SHEEP WORK PLANNING MEETING
Experimental Farm, Lennoxville, Quebec
- October 28 and 29, 1965 -

AGENDA

Commencing at 9:00 a.m., October 28

(A discussant is indicated in each case but general participation in discussion of each subject is expected to the extent needed to fully develop the topic).

1. An objective look at the sheep industry in Canada. What are the economic and other factors which affect the industry? What are the limiting factors in industry development? What should be the responsibilities of research organizations?
- S. B. Slen
2. A review of different economic traits and their limitations in intensified sheep production in different geographic areas (East and West). Information on different breeds and their value in intensive sheep production.
- W. Combs and W. J. Boylan
3. Physiological traits affecting breeding performance; modification of production through physiological techniques.
- R. D. Baker
4. Management problems in intensified sheep production.
- W. E. Howell
5. Nutritional problems in intensified sheep production.
- F. Whiting
6. Review of a proposed breeding project.
- C. Bernard
7. Review of related work underway or completed.
- W. E. Howell; W. Combs
8. Review of current selection program.
- J. Vesely
9. Other research needs in sheep production.
- J. C. Rennie
10. Research - industry liaison. How much sheep research is warranted? What industry developments are needed to make research information applicable?
- F. Whiting; R. K. Bennett
11. Report on trip to Australia and New Zealand.
- C. Bernard
12. Other items.

CAPE BRETON
DEVELOPMENT CORPORATION
P.O. BOX 1330
SYDNEY, NOVA SCOTIA



SOCIÉTÉ DE DÉVELOPPEMENT
DU CAP-BRETON
C.P. 1330
SYDNEY, NOUVELLE-ÉCOSSE

February 2, 1972

File Sheep - General

Professor Peter Y. Hamilton
MacDonald College of McGill University
Ste. Anne de Bellevue, P. Q.

Dear Professor Hamilton:

A rascally relative of yours - Denne Burchell - is responsible for our bothering you. In fact he said that if we were to write you, all our problems were solved.

This Corporation is committed to encouraging a much larger sheep population in Cape Breton and we are currently investigating the best way of going about this. Naturally, we not only do not wish to duplicate existing Government programmes, rather, we want to draw in what aid is currently available, identify gaps, and see what we can do about them. The Federal Department is now putting together some material for us and we have received a certain amount from the Provincial people.

Land or land assembly may be something of a problem - though the A.R.D.A. programme could assist. Other difficulties seem to be costs of fencing, compensation for loss from predators, and a shortage of competent sheep men and shearers.

I do not know whether sufficient breeding stock is available - or, available in the Maritimes. It would also seem that there are too many breeds and crosses.

Our thought is that we should start encouraging existing sheep breeders, then, secondarily, farmers with suitable land (on which sheep may have been run in former years).

We think in terms of a headquarters in the Hunters Mountain - Middle River area where animals from abroad could be quarantined, some pure-bred stock could be run, and a large quantity of breeding stock could be temporarily grazed. These might come from one breeder as surplus (i.e. for disposal by slaughter or, to another producer).

....2

To: Professor Peter Y. Hamilton

February 2, 1971

- 2 -

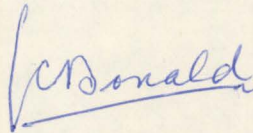
This would be headquarters for field service and for training. It would also carry administration and purchasing - stocks of fencing, feed additives, drugs, vaccines, and possibly, hay (if not delivered directly). There would also be a slaughter house and marketing organization.

In short - administration plus sales and servicing and technical, with responsibilities for production. If we can draw Federal interest they might operate (and finance) the technical facilities and all else be run by the producers. In the initial years this Corporation might have to carry the non-technical side until the producers had sufficient revenues to take over.

We ask your advice, then tell you our ideas, but do so only to see whether our thinking is properly channeled. We understand from Denne that you have been through the exercise many years ahead of us. We are hopeful though, that this time we shall have some money to put behind a carefully worked out scheme.

We shall be very interested in hearing from you in due course.

Yours very truly



J. C. Donald
Director of Industrial Services

*answered - I was pretty
cool to the idea
pyft*

ON HER MAJESTY'S SERVICE

SERVICE DE SA MAJESTÉ

PROFESSOR PETER Y. HAMILTON
MACDONALD COLLEGE OF MCGILL UNIVERSITY
STE. ANNE DE BELLEVUE, P. Q.

SHEEP COURSE

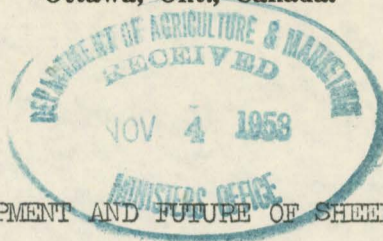
- A. Value and Place in Agriculture.
- B. History of Sheep.
- C. Distribution of Sheep.
- D. Classification of Breeds.
- E. Sheep in Canada.
- F. Sheep as a Farm Enterprise.
- G. Selection of Flock, ewes, rams, replacements.
- H. The Breeding Season
- I. Housing
- J. Winter Management
- K. Lambing Season
- L. Handling Lambs
- M. Orphaned Lambs and Disowned Lambs
- N. Early Management of Lambs.
- O. Spring Management
- P. Summer Management
- Q. Marketing Sheep and Wool.

*sheep short course NSAC
- mid fifties*

SERVICE D'INFORMATION FRANCAIS

42, rue SUSSEX,
Ottawa, Ont., Canada.

BULLETIN NO. 607



October 27, 1953

DEVELOPMENT AND FUTURE OF SHEEP BREEDING *Production*
IN FRANCE

By Professor A. Brion

If one consider only the number of head, it would seem that sheep breeding has become of secondary importance in France, whereas a century ago it took first place. It started to fall round about 1870 when steam navigation made it possible to import huge quantities of wool at low prices from other continents. Statistics dating back to 1852 show that at that time there were 33 million sheep in France. From about 1870 the figure dropped from year to year. Then there was a new fall with the wet years round about 1910 when sheep were decimated by a parasitic disease for which there was no remedy at the time - rot or fluke disease. Sheep breeders who had suffered losses did not reform their flocks. The number fell to 16 million in 1918, then dropped still further with the first World War and again with the Second. In 1945 there were no more than 7 million sheep in the French flock. That was the lowest figure reached.

But this development should not only be regarded from the point of view of the number of animals reared. Great changes were modifying the breeds. For centuries, the function of the sheep in France was to provide wool. Meat production was not aimed at; it was only of secondary importance. Only unwanted young animals and old animals at the end of their life went to the butchers. The whole effort of the experts was concentrated on wool production, and breeds with thick fine quality coats prospered. The Merino was king.

From the middle of the 19th century competition from Argentinian and Australian wools caused a fall in prices such that sheep breeding for wool was no longer a paying proposition. So attention then turned to meat, which had been disdained till then and which was to become the main interest in sheep breeding. The Merino declined. Merinos actually disappeared completely in the Paris basin. Big farmers created new breeds and these included the Ile-de-France and La Charmoise, which was constantly to increase. Others were modified because sires were selected with an eye to meat production. This is the case of the Berrichon du Cher. Shortly before the Second World War wool had become a sort of byproduct, almost negligible in itself for many sheep breeding areas. It was no longer industrialized, but dealt with on the spot in farms and small local factories for home needs.

However, within the so-called meat breeds it is evident that the quantity and quality of meat on the one hand and the thickness of the coat and quality of the wool on the other do run parallel. Good animals yield to a lot of good wool and much high quality meat. An experiment carried out last year at Blois on Ile-de-France sheep has clearly shown that selection cannot be directed solely from the point of view of meat, but should henceforth be based on meat and wool.

Since 1948 a ten-year plan for encouraging sheep breeding has been running. It is based on the principle that the sheep is no

longer an animal to be reared on poor soil that is unsuitable for farming, as was generally believed until recently, but that it has its place on rich soil, with intensive farming; that it should be provided with rational feeding; that fodder should be produced specially for it; and that, on the other hand, sheep should supply fertilizers difficult to replace.

A complete transformation is being effected in sheep breeding. There were formerly very small family flocks and very large flocks. The former did not require shepherds and only the latter could engage regular shepherds. Out of 300,000 sheep breeders there were barely 500 in the second category. The ten-year plan sets out to create sheep breeding on average-size farms, either through continuous pasture or by forming groups with a joint shepherd; for the problem of shepherding is essential. Good shepherds are supplied by the National School at Rambouillet and by training centres. They need situations which can be provided by average farmers if these be grouped together.

When fed intensively the sheep's natural resistance to microbic and parasitic disease diminishes. The Fédération Nationale Ovine, an association of breeders, has at its disposal funds for fighting against epizootic diseases. It should really make greater use of the veterinary surgeons than it has done up to the present, because in this field it does no more than run a laboratory for diagnosis and provide medicines.

The organization of combined preventive measures against sheep diseases is one of the main concerns of veterinary people at the present time. On its success depends the revival of breeding, the first signs of which are evident because, since the Liberation, French flocks have not only made up ground lost since the last war, but have reached the figure of 10 million head for 1952. That is a fact one cannot deny.

When your secretary, Mr. Clark, called me a fortnight ago and invited me to substitute on your program for Dr. Grant McEwen in a discussion of the Sheep Industry, I promptly accepted but was rather hazy on what aspect of the industry to elaborate on. The matter was solved for me by your secretary, as on receiving a copy of the program I noted that the subject allotted to me was "The Sheep Problem in Canada".

Realizing the importance and magnitude of this topic it would be a wise man indeed, who could give a clear cut answer to it. The best I can offer is a bird's eye view of what masquerades as our sheep industry and by comparison with the industries in other countries draw a few conclusions.

Comparisons, unless under similar circumstances and conditions are usually misleading. If we attempt to compare our sheep industry with those of other countries of similar area we get no where. Area gives us no clue to the problem.

Basically two factors are fundamental to sheep distribution.

- (1) Climate (2) Type of Land

These two are related in a degree but between them they decide the type (fine wool or crossbred), breed of sheep and the size of the industry.

Climate

As examples of the influence of Climate and using the major sheep countries -

Australia, New Zealand, South Africa, Argentina, Great Britain, U.S.A. where numbers range from 110 million to 30 million head. In Australia, Argentina, S. Africa in particular fine wool types (Merino) predominate (80%), as under conditions of limited rainfall and herbage they thrive best; in New Zealand where climatic extremes are not so sharp, fine wool and mutton types are found in a 30 - 70 ratio respectively. In Britain no fine wools are found as the climate is temperate though there is a distinct division between pasture and arable breeds (land utilization) while in the U.S.A. where climate again is a factor, fine wools and mutton breeds are also found in definite areas.

In Canada with the exception of a few special areas, (Southern Alberta and Sask. and limited areas in B.C.) where climate again is a factor and where fine woolled breeds are found, mutton types are found exclusively.

Any basis of comparison therefore must lie with those countries where fine wool breeds are not found and the major example in this field is Great Britain.

Type of Land

Britain recognizes some 32 breeds - sub breeds, these being divided into two main divisions.

1. Hill and Mountain breeds - Pasture breeds
2. Arable Breeds - Arable

As the names suggest these breeds are divided according to Type of Land

The Hill & Mountain breeds are found on the heather and grass hills and highlands of Scotland and Wales and to some extent in Northern England, the breeds represented are Highland Blackface, Cheviot and Welsh Mountain - Herdwick, Kerry Hill.

Arable Breeds (Heavy root and corn feeders)

Lowland - Romney Marsh - Lincoln
Leicester (B.L. & E)

Down - Shrop - Oxford - Suffolk - S'down - Dorset Horn
Dorset Down - Hampshire Ryeland.

Dale - Wensleydale, Swaledale, Cotswold Gritstone.

Heath & Moorland - Clun, Lonk, Devon (South & Longwool).

While there is mixing where border lines meet, the breeds are bred pure to type and breed character and have been so for generations.

More than 100 years ago British farmers developed and perfected a system of crossbreeding which since then and now forms the basis of a planned production program. *The key to the plan is the production of a type of ewe or female stock, on which is used rams of various breeds (mostly Downs) depending on the part of the country.

Experience showed the best cross for ewe stock to be Border Leicester rams on Cheviot ewes, the cross being known in Britain as the "half-bred" ewe. This ewe is prolific, hardy, a grand milker, an

excellent mother, really a choice farmers sheep. Twins are the rule rather than the exception.

Being a white open faced pasture type sheep, when bred to dark faced Down rams, the lambs are early maturing, growthy and in great demand.

Crossbreeding imparts hybrid vigor, which ensures early maturity, thriftiness and hardiness procurable in no other way. Incidentally the crossing of pasture and arable types or white face and black face gives better results than Down on Down or White on White.

Half bred ewes are kept for 4 to 5 lamb crops then sold to market as fat mutton and the flock replenished.

This plan ensures a definite place for some dozen major breeds - gives the sheepman a tremendous domestic market for breeding stock and fat lambs and is the basis of British sheep industry.

(It serves largely to hold the industry together).

It is interesting to note that where commercial lamb production is practised on a major scale (U.S.A. in Florida, Kentucky, Texas and California) crossbreeding is extensively used and a plan of producing ewe stock has been developed (This pertains to a few areas in Canada - B.C.)

Canada:

Canada generally speaking is a country of grain growing and mixed farming. (Exception in South Sask. and Alberta & limited areas in B.C. As such it is primarily suited to the production of cattle (dairy & beef), hogs and poultry. Sheep, except in a few special areas come a poor last.

Pioneer Industry

Sheep have always been associated with pioneer farming and when farms were fully developed they were largely abandoned for cattle and hogs or else a small flock was kept which in too many cases developed into a nuisance proposition.

Sheep in proper use, require to be kept in sizeable flocks and have access to reasonable areas of grazing. The small farm flock in Canada (Av. size 8 - 12, some 1 and 2 ewes) is not conducive to the building of a sheep industry. It can be compared with the small poultry flock.

Further sheep cannot compete for land use when the prices of labor and other livestock products are high. It can compete best under

difficult physical and economic circumstances.

Again No plan of systematic lamb production has ever been attempted in the farm areas of Canada so the industry has been very loosely held together.

Our industry (or what we call our industry) developed on a breed basis and our farm flocks were "graded up" through the use of rams - pure bred and otherwise - invariably in small units. This method - it cannot be called a system - is open to abuse. The use of poor sires, a low type of sheep husbandry with subsequent great variety in product, breed competition, all factors tending to weaken rather than strengthen an industry.

Utility

Until quite recently (1939) little attention was paid to the production of an ideal carcass of lamb as until carcass grading was introduced lambs were sold live grade and weight which at best is a haphazard, method, not based on recognition of true quality.

X The chief point of comparison between the British method, which is the only one operating under similar conditions is that the Britisher has a plan of production based on a uniform type of Ewe Stock with subsequent use of rams of various Down breeds - whereas - Our method is to grade up through the use of Rams only - or "Cross Breeding" versus "Grading Up".

One is planned production based on Crossbreeding with full use of hybrid vigor to ensure early maturity and quality.

The other: No plan of production with indifferent results according to the interest of the owner. X

No Competition with Other Livestock

British farmers are all round livestock men - sheep and cattle are complementary no competitive - cattlemen are the best sheepmen and vice versa. Cattle and sheep graze together on most lowland farms and in mixed farming districts. Farmers say that the cattle take the long grasses, sheep the shorter ones.

Cross Breeding Suggested for Canada

In 1911 Messrs. W.A. Dryden and W.T. Ritch were appointed commissioners by Mr. J.G. Rutherford, Live Stock Commissioner, to investigate and report on the wool and sheep industries of Canada as compared with those

of the U.K. and U.S.A. The idea behind the inquiry was to develop a policy for sheep production in Canada.

The report is exhaustive in detail and relates in full the various breeding practises in use in the countries under review.

In the review of the Ontario industry the apparent weaknesses of the industry are stressed.

1. Little attention given to proper methods of sheep husbandry.
2. No regard paid to use of sheep for fertilization of pasture and for maintaining land in good condition.
3. Suggests British crossbreeding plan be introduced to give impetus to industry.
4. Suggests larger farm units and emphasizes that with attention to breeding and management sheep will return greater profit than any other animal.

Dr. A.M. Shaw, former Dean of Agriculture, University of Saskatchewan, and one who over a long period carried out numerous experiments with breeds to determine their usefulness in Western Canada was always and is yet a strong advocate of "Cross breeding for Market Lamb Production". His numerous experiments proved conclusively that crossbreeding can be successfully adapted to Canadian conditions. He stresses the usefulness of a uniform type of female stock as a foundation for the farm flock, such as the "half-bred".

Other experiments of a similar nature have been conducted at various points in Canada all pointing the same way.

It is a safe prediction that unless some such plan of production is adopted our industry will not increase much beyond its present level.

That there is scope for increase is beyond doubt when surveys indicate large areas of grass land, particularly in Western Canada, not supporting other livestock and which could be readily improved by sheep.

It likely would require larger flocks under control of a shepherd and such projects are under consideration.

One project is now under way in Quebec based on the British plan with adaptations and others will likely follow.

Had pleasure of observing U.K. industry at first hand this summer and found it an inspiration. No good reason why we cannot use it.

How Can Exhibitions Help Industry

The status of any pure bred livestock industry is largely dependant on its commercial counterpart and is largely the reason for its existence.

What future would we have for stallions, bulls, boars or rams if they existed solely for exhibition purposes. Their prime reason for existence is as stock improvers.

This being a fact, utility or performance is, within reasonable limits - of greater value than mere appearance and should be one of the essentials in livestock judging.

Who Sets Breed Standards?

In Sheep, Breed Associations of Britain long ago set down standards for various breeds - U.S.A. and Canadian breeders imported these breeds but over the years some breeds were changed to conform to fashion dictates or show ring fancies.

Compare British Oxford - Shropshires vs Canadian

Type, cover, utility.

Tendency to smaller size detrimental to Utility.

How Corrected.

Market Classes of Lambs - minimum weights at all Exhibitions.

Nothing under 70 lbs. live weight.

Encourage carcass classes at Winter Fair for Singles and Pens of three and when space permits Pens of Ten.

Buyer not always realizes position of Producer, who farms to utilize crops to best advantage.

Animals must reproduce as well as fatten.

Utility is the Farmers Watchword.

Jim Graham was the sheep specialist with the Livestock service of the Canada Dept. of Agriculture at Moncton in the late thirties and through the forties. -- Outstanding sheep expert. moved to Ottawa in late forties

(4)

NEW DEAL FOR SHEEP ACROSS CANADA

Annual Meeting
CSBA Toronto Feb 2/50
(ARCHIVAL)

By James W. Graham, Chief, Production Service, Ottawa

1949

B-36

The year 1949 has seen a steady decline in sheep numbers in Canada, a situation also evident in U.S.A. June 1st figures indicate the lowest point in the industry for the past 30 years. All provinces shared in the drop, the West registering heavier losses than the East, with the result that the balance of population is again in the East. In seeking for reasons for the decline of interest in sheep the matter of price no longer is valid, as prices for mutton and lamb have held at a high level for some years. Other reasons usually offered, such as costs of fencing and ravages by predatory animals, cannot in themselves be considered major reasons so we must go deeper than that for the real reason.

If we study the history of our sheep industry and subject it to an analysis on the basis of objectives and systems of management we begin to see the real reason for the comparatively minor position held by sheep in relation to other livestock. Under our system of farming, with grain growing and mixed farming our major farm enterprises, sheep must compete with cattle and hogs for land-use and costs of labor. Under conditions of relatively high prices for labor, sheep as presently managed cannot successfully compete. It follows, therefore, that if the sheep industry is to attain a major position in our farm economy it must be on some other basis than the present one.

In North America as in most countries sheep and pioneer agriculture have been closely associated. They fulfilled a dual-purpose use of supplying meat and clothing but, with the exception of special areas where conditions differed, sheep were later displaced by other livestock enterprises and were as they are at present a poor last in the farmers' affections. We must keep in mind, however, that the agricultural pattern of Canada is still in the making and that in the formative years farmers usually develop those lines which are most remunerative, but over the longer period stock raising develops along lines giving promise of best adaption and upkeep of land -- and best return on investment.

see bottom page 6.

Again, the past decade has been an abnormal one in that war demands dictated the farm pattern, with emphasis on certain products, such as wheat, bacon, cheese, etc. With a return to more normal conditions it should be possible to develop a longer-term pattern and in this the sheep industry should have an expanding place. What then should our pattern of production be? What has it been to date?

Grading up or Cross-breeding

So far no pattern has developed as we have used our breeds of sheep as we have used our cattle. We have developed commercial production by breeding within a breed or "grading up". While this tends to develop uniformity within flocks, it also leads to a great lack of uniformity within the industry. We have not studied breed capabilities with a view to commercial requirements or performance and we have so far neglected to make use of that invaluable instrument of commercial production - Cross Breeding and its resultant Hybrid Vigor. We use the same breeds as are used in other countries but we use them differently and so do not get the same results. We have a two cylinder machine with one cylinder continually missing. The missing cylinder is hybrid vigor.

If the industry is to be developed to full capacity we must take advantage of the tools science has put at our service. Cross-breeding for commercial production enables the breeder to get the greatest possible return from the ewe - in terms of pounds of lamb and demands a high degree of skill in husbandry and management of the flock. It enables a production plan to be developed in which each of the major breeds play an important role and it also ensures a regular turnover in breeding stock.. This plan of production ensures an active market for breeding and for commercial stock and therefore predicates a healthy industry.

British Production System

To make the situation clear I will use the British production system as an example though others could be used equally as well. This system has been used for at least 150 years and is based primarily on recognition of a distinction between types of sheep for grass land and arable areas, with the use of these types in a recognized

plan of Crossbreeding. It predicates, too, a thorough knowledge of breed use for a specific result. The general pattern is this: Border Leicester rams are used on Cheviot ewes to produce an intermediate type of ewe, the "half-bred", on which Down rams are used to produce market lambs. Other minor patterns are also used but on the same principle. Here we have the Border Leicester, early maturing, vigorous, thick-fleshed, which when crossed on the thinner-fleshed, slower-feeding ewes, produce a quick maturing lamb of better quality than either parent. This half-bred, known as "the rent-payer of the Borders", is the commercial breeding ewe of Britain and is found in hundreds of thousands from the Border Country North to Caithness and well down into England. She is prolific, a great milker, a good mother and an excellent rustler. Lambing percentages of 165% are on record from flocks of 600 head over a fifty year period.

The female parent flocks - Cheviots - are kept pure and replenished by taking two or three crops of lambs before using them for half-bred production. On this basis, flock and pasture management calls for considerable knowledge and skill in management.

The Down rams used on half-breds are mainly Suffolks, Oxfords and Hampshires while Shropshires and Southdowns are used on "cast" ewes of flying flocks and on Welsh Mountain and Kerry Hill ewes. Lambs from these crosses are early maturing, vigorous and deep-fleshed and are marketed either early, medium or later and at various weights depending on the breed of ram used. This plan of production has a five fold purpose -

- (a) It provides an improved and uniform type of farm ewe.
- (b) It ensures a place for all the major breeds.
- (c) It results in a high degree of uniformity in the final product.
- (d) It stimulates and places the industry on a business basis.
- (e) It ensures permanence in the industry through a long term production plan.

It is the considered opinion of many that either a similar plan or an adaptation of it should now be introduced to Canada. In 1914 the late W.A. Dryden and W.T. Ritch advocated its introduction following their survey of the industry in Britain, U.S.A. and Canada.

Dr. A.M. Shaw, after long experiments in crossbreeding at the University of Saskatchewan, suggested its adoption. Dr. E.S. Archibald has repeatedly stated that our sheep industry needs a thorough reorganization, and others have been equally vocal on the subject. Surely this is the time for action.

Introduced in Quebec

An opportunity to introduce the British plan was afforded recently when a survey of Quebec's sheep industry indicated an all-time low in market quality in present sheep stocks. Quebec still is predominantly Leicester which, as a straight breed, is not the best producer of choice market lambs. This situation seemed to offer an opportunity, so a program was developed which resulted in the importation of a considerable number of North Country Cheviot ewes and a few rams, also through the Experimental Farm Service a small flock of high quality Border Leicesters were brought in as improvers of their present stock.

Improvement Centres are being organized in Quebec in which North Cheviot rams will be used over a definite period to secure replacement females which will be used with Border Leicester rams to produce half-breds and, on these, Down rams will be used for market lamb production. This work will enable fieldmen to put across much valuable instructional and demonstration work in sheep husbandry. It will also afford an opportunity of introducing carcass grading of lambs as an improved method of grading and sale. A similar plan could be extended to the Maritimes and it could also be effectively used on all farm flocks in Canada. An adaption of the plan could be used with range and semi-range ewes for commercial lamb production in the West.

If this plan appeals to your Organization as offering an incentive to increased interest in sheep we would be pleased to have your active support in adopting it as a permanent policy. Certain it is, that if the industry is left to its own direction it will remain a minor and tag-end industry but with prospects of a new deal in production methods there is every reason to believe that a very satisfactory sheep industry can be developed in Canada.

Canadian Sheep Situation

A backward glance at '62 and a forward look at '63

Even though 1962 has been a relatively good year, our sheep population has registered another slight decline. According to the Dominion Bureau of Statistics the number of sheep and lambs on Canadian farms and ranches, as of June 1, 1962, was estimated at 1,433,000 head compared with 1,548,290 on June 1, 1961—a decrease of about 8%. It will be noted from the table reproduced herewith that the sharpest decline took place in the Maritimes, and in one or two of the Western provinces. Ontario is the only area where the status quo has been fairly maintained, due in large measure to the influx of Western Range Ewes.

Wool: The annual clip was somewhat lower, in keeping with the smaller number of shearable sheep. In quality it compared favourably with other recent seasons, but mill-users continue to complain about the prevalence of black fibre, more particularly in the Domestic grades. This is a defect that growers can do much to minimize by being more careful in the selection of their breeding stock and by more rigid culling in those breeds that are subject to such defective fleeces. Also, once again, emphasis is placed upon shearing methods, taking care to eliminate the short, hairy leg and face clippings when preparing fleeces for market.

Price levels of the past 4 or 5 years have been well maintained and, if final settlement is not already in hand, it should be received very shortly from your Branch or local Association. The Wool Deficiency Payment, direct from Treasury Board, Ottawa, has been authorized, and for the fifth consecutive year an additional million dollars will be distributed across Canada to growers who marketed their wool on a graded basis. These payments will likely be mailed towards the end of March, or sometime during April. Our own warehouses are comfortably clear of graded wools, looking toward the appearance of the new clip.

Generally speaking, market sentiment is steady but unexcited, world prices having inched up somewhat during December. Competition has been strong at the recent Australian auction centres, and observers express fair confidence in the current wool price structure.

Lamb: The Federal government's offer-to-purchase program, which supported the price of lambs at \$20.45 per cwt., live-weight basis, Toronto, was terminated on June 30, 1962. It was immediately replaced by a Deficiency Payment plan under the supervision of the Agricultural Stabilization Board. This plan, effective at least to March 31, 1963, provides a National Average price to producers of \$18.80 per cwt., live-weight, on lambs of Good quality or better. Also, the Federal Government extended its quality Premium Payment to include Choice and Good grade lambs in the 52/56-pound, carcass-weight range.

At year-end it seems abundantly clear that the New Government Plan is having some of the desired effect. Instead of lamb going into cold stor-

age under a purchase program, it appears to have gone regularly into consumption in competition with frozen imports. Western Feeder Lambs moved into feed-lots last Fall at 17 cents per pound, f.o.b. shipping point, as against an average of 14½ cents a year earlier. Several thousand of these lambs moved East from Alberta and Saskatchewan ranches, and since early December they have moved through the Toronto market as fat lambs, 90 to 110 pounds live-weight, at prices ranging from 24 to 25 cents, sometimes better. Thus the rancher received considerably more for his lambs than a year ago, the feeder stands to make a reasonable margin of profit, and it could be that a better market pattern is being established for Canadian lamb. Time alone will tell.

Commercial Flocks: Due to im-

Some New Flock Owners

Some new stars are appearing on the breeding horizon, and with good effect on their chosen breeds. Undoubtedly, we will see and hear more about them in the years immediately ahead.

It is with pleasure that we report on two of them in this issue.

Dr. Robert J. Hiscox, 2099 Avenue Road, Toronto, decided upon Suffolks only a few short years ago for his farm in Muskoka. That he is making a success of his pure-bred venture is attested to by the more frequent appearance of his animals near the top in our leading shows and the sales being transacted. As an example, a ram lamb, Hiscox 5T, weighing 205 pounds at 9 months, stood first in his class and took the Suffolk Reserve Championship at the 1962 Royal Winter Fair. Later, at the Chicago International, this ram stood 4th in its class under strong competition, and it was sold to the Kansas State University. Incidentally, the lamb's sire was Hays DP-65N, undefeated across Canada in 1959 as a shearling and Grand Champion at Calgary, Saskatoon, Edmonton, Regina and the Canadian National Exhibition. Good blood lines pay off, and Dr. Hiscox is to be congratulated on his success with Suffolks.

Still more recently, Mrs. A. M. Hutchison, 142 Forest Hill Road, Toronto, established an excellent flock of 53 Corriedales on her "Caledon Hills Farm" near Caledon. Fifteen of these sheep were bought from Arthur King and Son in Wyoming, who were the first to import Corriedales into the U.S.A. Others came from the well-known flocks of John Wilson Jr. of Alberta and George McLaughlin, Beaverton. The Wilson ewes were top animals at the All-Canada Sheep Show and at all Western Class A Fairs in 1962. Among the McLaughlin ewes is the 1962 C.N.E. Champion, and last Fall at the Central Corriedale Show held at Columbia, Missouri, Mrs. Hutchison purchased the Champion Ewe, bred by Max Gabriel, an Iowa breeder.

Most certainly this new Corriedale flock is a galaxy of good breeding lines, and its progress will be watched with much interest. It should be good, as Mrs. Hutchison is a real livestock enthusiast, and rightly so, since she is a daughter of the late D. O. Bull, who for many years was a prominent breeder of Jersey cattle. She has a good shepherd, Mike Harmon, who came to Canada from the Falkland Islands four years ago, and careful production records are being kept.

proved feed conditions in the West there has been a tendency to replenish flocks in certain areas where the drought conditions of 1961 caused some enforced liquidation. Fewer range ewes moved East under the joint Government Freight Assistance policy, and there was comparatively little demand for ewes over four years of age. The farm areas of the West are beginning to take a closer look at the sheep business, and it is interesting to record that certain South American countries are looking towards Canada for some of their breeding stock.

Pure Breds: Private sales were somewhat slower, and prices, on the average, were slightly lower in 1962, though some outstanding individuals did bring reasonably high prices, following the successful All-Canada Show

in Brandon and at the Royal Winter Fair Sale of Stars. Regional Sales were not quite as well patronized, but it is encouraging to note that they are being continued, and that commercial sheepmen are looking to these sales for their flock rams.

Strength is apparent in all local and Provincial Associations, and it is hoped that more of the latter will eventually see fit to admit commercial sheep owners to their membership. The Canadian Sheep Breeders' Association has enjoyed another satisfactory year, the number of registrations has been maintained, and membership is fairly constant. Noteworthy is the importation of new North Country Cheviot blood lines from Scotland by Stan Bagg, Oshawa, Ontario, and J. Leslie Robertson of Franklin Center,

Quebec. Both these men have the courage of their convictions and extreme faith in their chosen breed, since they must keep their small imported flocks and resultant progeny under quarantine for 42 months in accordance with the Federal Health of Animals Branch regulations as pertaining to scrapie. All power to them, and may others interested in other breeds catch something of the same vision and foresight. True, 3½ years seems a long time, but it is surprising how quickly it slips away, and who knows, by that time Canada's sheep industry may really be on the up-and-up once again.

Though neither a prophet nor the son of a prophet, there is a slogan that still holds good—"Keep the Good Ewe Lambs and They Will Keep You".

4-H Clubs and Sheep Promotion

Perhaps not enough credit has been given to the Canadian Council on 4-H Clubs for what they have done in recent years to promote Canada's sheep industry. While the records show that remarkable results have been achieved in certain areas of some of our Canadian provinces, it is doubtful if any sizable percentage of the farmers actually interested in sheep-raising have taken time to size up the possibilities for establishing more flocks and bigger flocks right in their own areas. They don't take time to show enthusiasm such as is required in helping local Agricultural Representatives or others who work with Junior farmers, to make arrangements to have local boys and girls undertake Sheep Projects which are made available primarily to give the Juniors an opportunity to get acquainted with this class of livestock and to know what sheep and wool production can do for Canada's farming industry. Heavy importations of lamb for our tables and of wool for our factories show that there is a ready home market. Surely home producers, with a minimum cost for transportation, can fill that demand successfully. In any case, it is worth a try, and everything possible should be done to co-operate with the 4-H Club Council in their sincere attempts at sheep promotion. The least present flock-owners should do is to see that, wherever possible, these Sheep Projects are given worthwhile support.

Latest figures covering Club Projects are for 1961. Some will be sur-

prised to learn that in that year 408 boys and 183 girls undertook Sheep Projects in Canada. In that year 5,454 Clubs had a membership of 70,823. In British Columbia those interested included 107 boys and 75 girls; in Alberta the numbers were 58 and 20; in Saskatchewan, 62 and 16; in Manitoba, 29 and 16; in Ontario, 101 and 24; in Quebec, 34 and 21; in New Brunswick, 14 and 9; in Nova Scotia, 6 and 2. With true co-operation from sheepmen and those definitely interested in sheep promotion, the number undertaking these Sheep Projects from year to year could easily be doubled or trebled in short order.

Space has been given to details on the importance of 4-H Club Sheep Promotion in several issues of this

publication, starting with the October issue in 1958, when emphasis was placed on "How to Organize a Sheep Club". The Canadian Council on 4-H Clubs had been busy on such promotion long before then. Throughout the years, too, reference has been made to outstanding results from sound leadership and support by Agricultural Representatives and the Juniors in charge, as well as by enthusiastic co-operation from experienced sheepmen, Government officials and Company staff members all across Canada.

On this and succeeding pages you will find some interesting details covering what was undertaken and accomplished in some of our provinces in 1962.

Sheep Projects in Saskatchewan

Junior Farm Boys and Girls in Saskatchewan who undertook Sheep Projects in 1962 had plenty of incentives to do their best. Close to 200 4-H Club members gathered in Saskatoon last July for Selection Week. They were competing for 35 Award Trips and Scholarships, including: 14 members to National 4-H Club Week in Toronto; two members to the Chicago 4-H Congress; one member to the Washington 4-H Conference; two members to Alberta 4-H Club Week; nine members to take part in an Inter-Provincial Exchange Trip in 1963; two members to the Minnesota

4-H Leadership Camp; one member to be recipient of the C.N.E. Scholarship; and two members to have a free trip to Great Britain as sponsored by Dalgliesh Shipping Company.

When supplying these details, G. M. Farrell, Extension Specialist, University of Saskatchewan, noted that the trip to Great Britain was one of the most coveted, and that one of the lucky boys had undertaken a Sheep Project. The winners were Gordon Wells, member of the Senlac Sheep Club, and Richard Elenko of the Cando Beef Club. Gordon, son of Emerson Wells, is 18 and has com-