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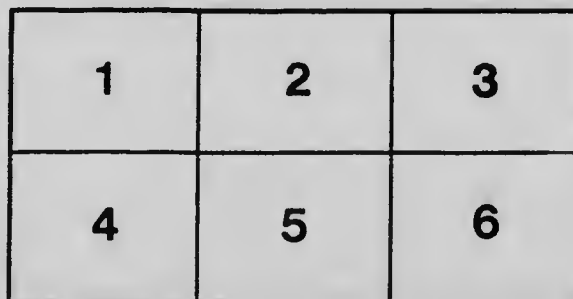
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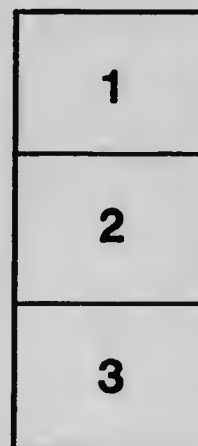
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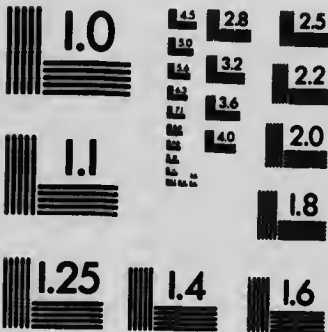
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BULLETIN No. 50

SHEEP RAISING FOR PROFIT IN QUEBEC

— BY —

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IN CHARGE OF SHEEP HUSBANDRY
MACDONALD COLLEGE, QUE.



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INTRODUCTION

Sheep raising has always been an important feature of agriculture in this province. At present, fully one-quarter of the sheep in the Dominion are to be found in Quebec, and the sheep industry was never in a more vigorous condition. Extremely high prices for wool and mutton have placed the sheep in the first line and the growing tendency on the part of farmers to enlarge and establish new flocks has now become a settled policy.

In the better farming sections, including arable areas along the St. Lawrence and Ottawa rivers, the St. Lawrence plain and the more fertile parts of the Eastern Townships, where diversified agriculture has been permanently established, the small flock of ten to twenty-five ewes fits in to best advantage with farm practice. Where good farming sections abut rough country, and in rough country where sufficient winter feed can be grown, even larger flocks are kept to advantage, although greater skill is necessary in handling them.

The Laurentian Highlands, north of the St. Lawrence, the Gaspé Peninsula, and newer sections to the south, include immense areas of cheap land that is well watered, affording plenty of shade and producing short, fresh herbage that is much relished by sheep. Much of this country is still wooded and lumbering is the principal industry. In time, however, most of this land will be agricultural country. While it is not best adapted for the more intensive methods of agriculture, on account of its rough broken nature, it is however, well adapted for sheep raising, and the sheep is likely to become the most profitable farm animal in these districts.

Why sheep are profitable.

Until recent years the sheep has been handicapped owing to the fact that its products sold at relatively lower prices than were offered for other farm products. This condition of affairs is now practically reversed. Both wool and lambs have almost doubled in value and owing to increased consumption the supply of both is not equal to the demand. This, in itself, is sufficient to place the sheep on an equal, if not superior footing to other farm animals, but in addition, its natural attributes give it an even greater advantage. The sheep is usually the last animal to be housed in the fall and the first to go to pasture in the spring. Owing to the protection which its fleece affords, it does

not require warm or expensive buildings. The initial outlay for a flock is not large and quick returns are received. Two sources of revenue are provided annually, one in the spring and the other in the fall. The lambs may be sold off the fall pastures and the breeding ewes can be carried through the winter on a cheap ration; hence, cost of production does not affect the sheep to the same extent as many other animals. The labor problem is not a serious one to the sheep owner; a fairly large flock of sheep can be kept without additional labor except at lambing time.

CHAPTER I

BREEDS

Characteristics of the Most Popular Breeds in Quebec.

Fortunately, the number of breeds of sheep in Quebec is comparatively few as those breeds which were not suitable to conditions were eliminated in the early stages of their introduction. There is still some room for restriction and it would be in the best interests of the sheep industry if none but the most hardy and those which combine wool and mutton production in the highest degree were kept.

Roughly speaking, all breeds of sheep may be divided into three classes: fine woolled, medium woolled, and long woolled breeds.

Fine Woolled Breeds.

The fine woolled breeds include the Merinos and Rambouillets. There are very few fine woolled sheep in the province. The Merinos and Rambouillets have been developed largely for the production of wool and for ranging purposes. They are not among the best mutton producers, which accounts for their lack of popularity in this province.

Medium Woolled Breeds.

The medium woolled breeds include the Shropshire, Oxford, Hampshire, Cheviot, Southdown, Dorset Horn and Suffolk, most of which are popular, each for its particular purpose. They are all characterized as having a good combination of wool and mutton producing qualities.

Shropshire.

The Shropshire is the most popular of the medium woolled breeds. The lambs make rapid growth and mature early. The breed has been used extensively for crossing purposes and is valuable in improving grade flocks. It is of medium size and kills out a high percentage of carcass, the flesh being of fine quality with a good mixture of lean and fat.

In conformation the body is lowset, deep, thick and blocky. The head is of medium length with good width between the eyes and poll. The face is covered with wool to the point of the nose, which is of a dark brown color. The



A Winning Shropshire Ram in 1916.

ears are small and of fine texture. A short full neck, smooth, compact shoulders, good heart girth, straight top and under lines, wellsprung ribs, a broad loin, level rump and a good leg of mutton are other essential points. The legs are short and the bone is of good quality. The fleece is dense, covering the body well and extending from the heels to the point of the nose. The wool ranks in first place among the Down breeds. It grades as medium combing

and possesses a special felting quality. Shropshire wool can be used for a great variety of purposes and is always a ready seller at top prices. The fleeces average from seven to nine pounds in weight. The breed is hardy and adapted to a variety of conditions. Well bred grade flocks have a tendency to become small and fine, but this defect is easily corrected by selecting for size, or crossing with one of the larger breeds. Well covered Shropshires usually require to have the wool trimmed from the eyes once or twice during the winter, otherwise they are unable to see and are liable to injure themselves.

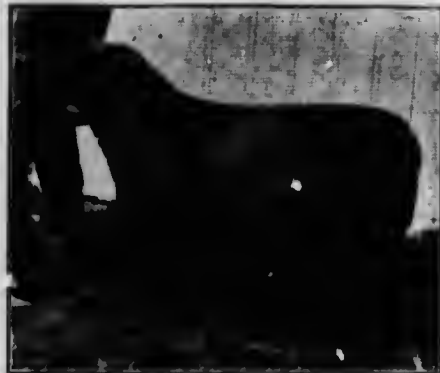
Families that carry an excess of black wool on the head and legs and individuals that are upstanding and open in conformation should be avoided in purchasing.

Oxford.

The Oxford is the largest of the Down breeds. It produces a large carcass but does not mature so quickly as some of the others. The Oxford is inclined to be rangy but should possess smoothness and symmetry of form throughout.



OXFORD RAM.—Champion at
Ottawa Winter Fair in 1916.



HAMPSHIRE RAM.—Champion at
Ottawa Winter Fair in 1916.

The head is rather long but well proportioned. It is covered with wool to a point below the eyes, and the face, ears and legs are of a dark brown color. Plenty of wool covering, the absence of dark wool on the head and legs and absence of white markings on the face are points to note when making selections. The bone is strong and the mutton inclined to be coarse in the grain. The fleece is longer and coarser than the Shropshire, but weighs considerably more. Seven to ten pounds is a good average weight for Oxford fleeces. The wool

grades medium and low medium combing. It is a splendid wearing wool but has hardly the quality of the Shropshire fleece. The Oxford is used extensively for crossing where size and weight of wool are desired. They do best on rather heavy farms where there is plenty of pasture and winter feed.

Hampshire.

The Hampshire is the second largest of the Down breeds, being surpassed only by the Oxford. The lambs grow rapidly, mature early, and fatten easily, surpassing the other breeds in this respect. They are a thick, muscular breed, inclined to be strong in bone and lacking somewhat in quality of flesh. The head is large and often coarse. The nose in the ram is strong and bold, while in the ewe it is finer and more feminine. The face coloring is dark brown to black; mottling or lightness of color is a serious objection. The ears are long and fine. They fall outwards, giving good width at the poll. The head is well covered with wool which often extends well down on the cheeks. The neck is of fair length and is carried erect, the shoulders are broad and level. The breed possesses the other characteristics essential in the mutton breeds. Avoid families that carry a dark to bluish colored skin and in buying young animals look for plenty of size and constitution.

The Hampshire is not a heavy shearer. The fleece has more length than the Southdown but resembles it in other respects. In quality Hampshire wool ranks among the finest of that produced by the medium woolled breeds and is slightly lower in shrinkage than the Shropshire and Oxford wools.

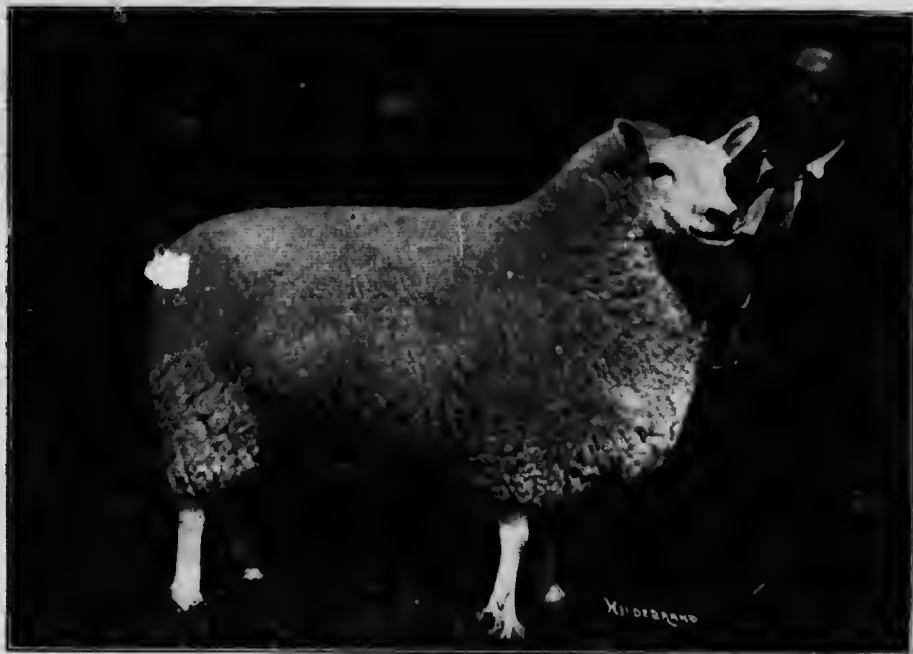
Hampshires are not adapted for broken country or light soil. They give excellent results, however, on heavier land where there is an abundance of feed. They are popular where size and early maturing qualities are desired.

Cheviot.

The Cheviot occupies a premier place for general utility. It combines mutton and wool producing qualities with beauty and symmetry of form. The breed is hardy, active, prolific and adapted to a variety of conditions. In size it ranks almost with the Shropshire. The head is small, rather short and clean cut, the nose is slightly Roman, the lips are black and the eyes clear and full. The ears are of medium length, fine in quality and carried erect. Both the head and legs are covered with fine white hair; small black spots often occur on the ears and face. Too much black is objectionable, as are reddish or sandy colored markings on the face and legs. Rams with horns should also be avoided. The body is lowset and well proportioned. The neck is of

medium length. The shoulders should be smooth and compact, the ribs well sprung, the back strong, the loin wide and the rump broad and level. The leg of mutton is exceptionally well developed. The Cheviot is noted for its development in the hind quarters. The carcass carries a high proportion of lean to fat. The fleece is rather light in weight, but is dense and of good quality being slightly longer of fibre than the other Down breeds.

The Cheviot is used extensively for crossing purposes, where hardiness and closeness of fleece is desired. It is a breed that is particularly adapted for the rougher and more broken parts of the province.



CHEVIOT EWE.—A prize winner in the United States in 1916.

Southdown.

The Southdown is one of the oldest breeds of sheep in existence, combining quality and beauty of form in a greater degree than any other. Although the smallest of the Down breeds, the Southdown is unsurpassed in smoothness, substance and mutton producing qualities. The head is small, finely cut and woolled to a point below the eyes. The face is a light grayish brown or mouse

color. The ears are small, fine and well carried. The neck is short and muscular; the shoulders are smooth, compact and level with the back. The ribs are well sprung and the heart girth good. The loin is broad and deeply fleshed and the rump level and wide. The twist is full and the leg of mutton large. The body is evenly fleshed throughout. The mutton is unsurpassed for quality and the fat is well interspersed with the lean. The fleece is dense and even, being easily the finest of the Down breeds. The wool grades as medium clothing and is used largely in the woolen trade. Owing to their lack of size this breed is not generally popular throughout the province. They are most popular with moneyed farmers and have a place near large cities where the raising of early spring lambs is practised.



SOUTHDOWN EWE.—1st prize at Ottawa Winter Fair in 1916.



A prize winning Dorset Ewe in the United States in 1916.

Dorset Horn

The Dorset Horn is one of the oldest and purest of the British breeds. It is inclined to be upstanding and rangy with hardly the desirable spring of rib. Both sexes have horns which curve spirally outward and forward from the top of the head, coming close to the jaw on either side. They are larger, longer and more curved and angular in the male, and shorter and thinner in the female. The face, nose, legs and hoofs are white in color. The Dorset Horn is almost the equal of the Shropshire in size. The fleece is of medium weight and fineness, very white in color with hardly the length of most of the other medium woolled breeds. It covers the poll and extends to the hocks and knees but has a tendency to run bare below. The flesh ranks only as fair.

The outstanding characteristic of the Dorset Horn is prolificacy. The ewes breed twice a year, producing lambs both in the spring and fall. Two lambings year after year deteriorate the flock and it is better practice to raise two crops of lambs every second year only. Where it is possible to raise the lambs under hothouse conditions and place them on a special Christmas or Easter market at ten to fourteen weeks of age, the Dorset is very profitable. They cannot be recommended for general use in the province as they do not cross well with the hornless breeds and the raising of hothouse lambs requires special skill, with more expensive buildings.

Suffolk.

There are very few Suffolks in Quebec. The breed is smaller than the Hampshire. The head has no wool covering and it, as well as the legs, are of a



SUFFOLK EWE.—Champion at
Ottawa Winter Fair in 1916.



Champion LEICESTER EWE at
Ottawa Winter Fair in 1916.

distinct black color. The mutton is of high quality, ranking close to the South-down. The fleece, although fine, is not heavy and is often lacking in density on the under side of the body.

LONG WOOLED BREEDS

The long woolled breeds include the Leicester, Lincoln, Cotswold and Romney Marsh. These, with the exception of the Romney Marsh, are all found in the province.

Leicester.

The Leicester was one of the first breeds to be imported into the province and it is still very popular in some sections, although many districts are replacing Leicester blood with that of Down breeding. The Leicester has a wonderful spring of rib and carries remarkable width and strength along the upper part of the body. The bone is of excellent quality and the body is uniform throughout. Viewed from the side the Leicester appears slightly long of leg and shallow of rib. They have, however, an excellent constitution. The head is clean cut with a sharp angular appearance and rather small for the size of the body. The ears are long and pointed, being carried partially erect. The poll is long in appearance with no tendency to coarseness and this, with a clear eye, a fine nose that is slightly Roman, and black lips and nostrils gives the Leicester head its characteristic appearance. The fleece is heavy, evenly crimped and



COTSWOLD EWE.—Winner of many prizes in Quebec, in 1916



A prize winning LINCOLN RAM LAMB in 1916.

possesses a special lustre which gives Leicester wool its distinctive value for the manufacture of rather heavy, smooth, highly colored garments. Leicester wool grades as lustre combing. The fleeces average from seven to twelve pounds in weight. It is important that the Leicester fleece extend well down to the knees and hocks. Bareness at the neck, flanks and tail should also be guarded against.

The Leicester is inclined to carry excessive fat and on this account the mutton does not rank as first class. Owing to the open character of the fleece, Leicesters are not among the hardiest of breeds. However, their early maturing qualities and good constitution along with size and fineness of bone make the Leicester ram an ideal for crossing on grade flocks for the production of commercial lambs. The Leicester-Cheviot cross is perhaps one of the most popular.

Lincolns and Cotswolds.

The Lincolns and Cotswolds are both larger than the Leicester. The lambs attain a heavy weight but carry a high percentage of fat to lean. The bone is inclined to be heavy and coarse. The fleece is heavy and is of a coarse character, grading as coarse combing. The fibres are long, but the fleece is open in character and does not afford the best of protection against inclement weather. Both breeds have been prominent in the show ring, but owing to the openness of their fleece and the coarse character of their wool they are not growing in popularity nor are they to be recommended for general utility purposes.

Romney Marsh.

The Romney Marsh is a breed that has not as yet been introduced into Quebec. This breed is large, hardy and although resembling the Lincoln in appearance possesses a denser and finer fleece that weighs well. While the



ANGORA GOAT.—Mohair of this length is a ready seller at high prices.



A well protected sheep yard.

introduction of a new breed is not to be recommended, there are certain sections of Quebec in which the Romney Marsh might prove profitable and be well adapted to conditions.

Angora Goat.

A few Angora goats are to be found in this province. They may be utilized for clearing up bush land and for protecting sheep flocks against dogs. Up to the present they have not been kept in sufficient numbers to be of any real

economic value, although there are many parts of the province where the Angora goat could be of value in assisting to clear land for cultivation.

Our climate is rather severe for the Angora goat and the young kids are difficult to raise although a few men have been quite successful in their management. The mohair which they produce has a high market value, particularly if it is of fine quality and allowed to grow until over twelve inches in length. The flesh of the kids and older goats is also salcable.

CHAPTER II

BUILDINGS AND EQUIPMENT

Sheep yard.

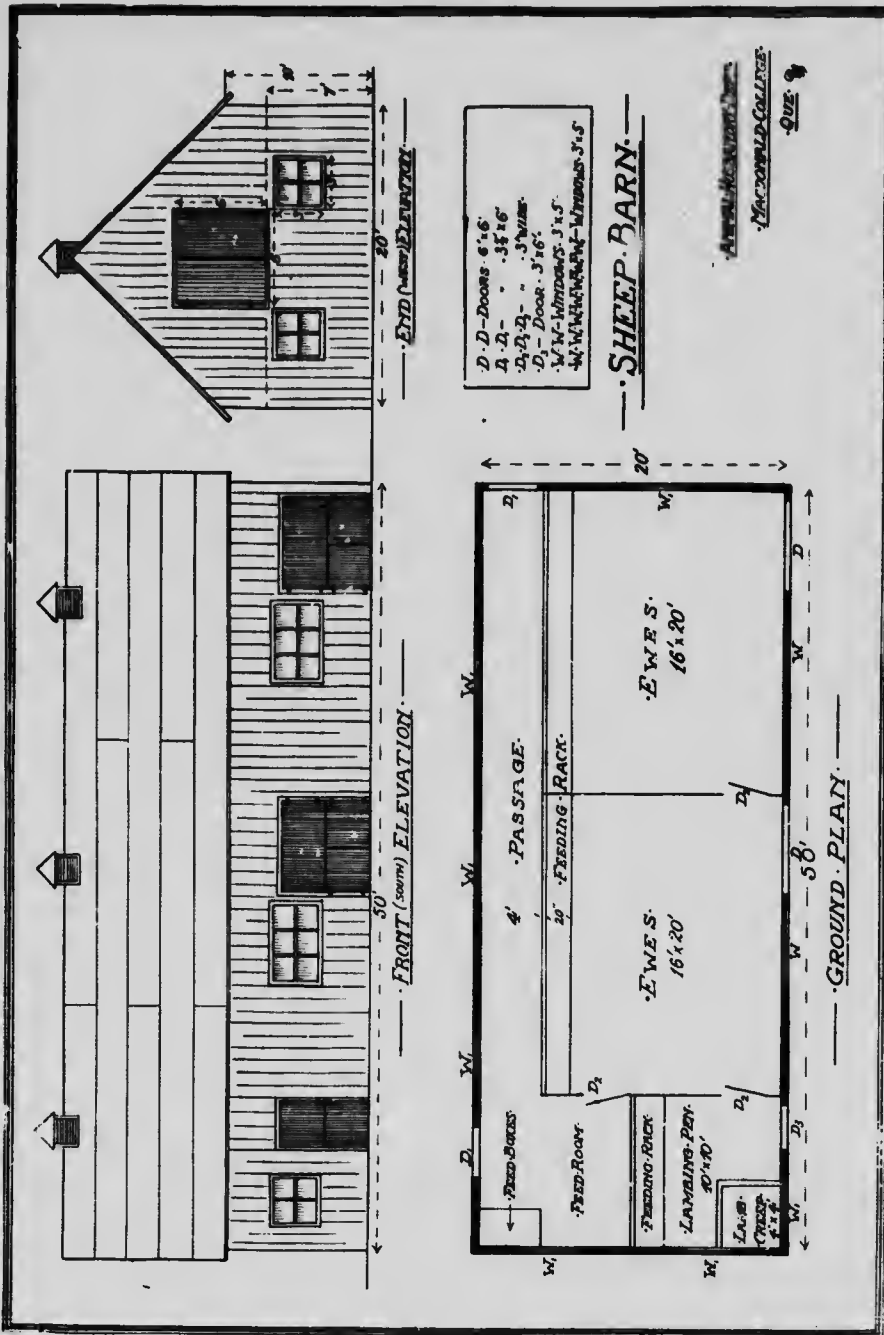
The sheep yard should face the south and a windbreak to the north and west in the form of trees, arrangement of other buildings, or a board fence should be provided. The yard should be located on high ground, well drained and large enough to afford plenty of exercise for the sheep. It is not advisable to allow other stock in the same yard with sheep.

HOUSING

Buildings.

Buildings for sheep need not be expensive so long as they are waterproof, well lighted, well ventilated, dry and roomy. The size of the barn will depend on the size of the flock. Each sheep requires at least one foot of feeding space at racks and twelve to fifteen square feet of floor space. On many farms it will not be necessary to build a new barn as there is usually a shed or other outbuilding that is not serving any real purpose and which, with a little remodeling in the way of providing sufficient light, suitable feeding racks, a dry floor and freedom from draughts, will make it a suitable sheep barn with little expense. Where such a building is not available, a new sheep barn must be constructed.

In addition to providing the necessary floor space, a loft high enough to hold sufficient hay will be of great convenience. If a large flock is being kept, separate storage for roots will also be necessary. Aside from the foundation the remainder of the building is best if built of wood. Stone or concrete may be used in the foundation but it need not be raised more than several



Plan of Sheep Barn Suitable for a farm flock.

inches above the ground level. A few inches of broken stone or gravel overlaid with clay makes a dry, comfortable and inexpensive floor for sheep. Seven to eight feet is a good height for the basement. The sides and back of the basement walls should be tightly built to prevent draughts. Rough lumber and battons or matched lumber will provide ample protection.

When it is desired to make any part of the building warmer the studding or timbers may be overlaid with shiplap or cheap lumber, and then a single ply of tar paper with matched lumber or rough lumber and battons on the outside. Doors and windows are placed for the most part in the front of the building.

Doors.

Doors for sheep are best if built so that the bottom half may be left open at all times. They should also be of good width, allowing of easy access to and from the pens. A door 6' x 6' built in top and bottom parts with the top half in one piece, hinged at one side and the bottom half divided in two pieces, each half being hinged, swinging to right and left, serves all purposes.

Windows.

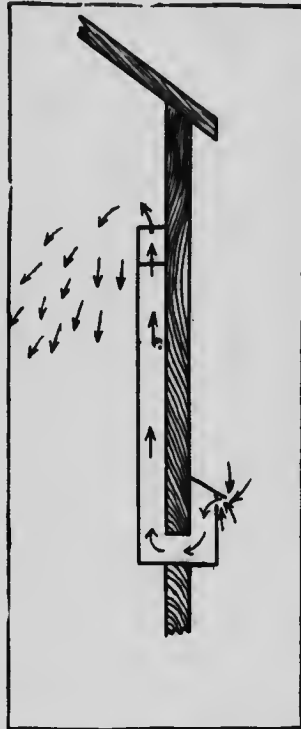
There should be at least one large window in each pen. Nothing smaller than 3' x 5' is recommended. A part or all of each window should open to permit a greater supply of fresh air when necessary. The windows should be raised three to four feet from the ground to allow for the admission of the greatest volume of sunlight.

Ventilation.

A system of ventilation is just as essential in the sheep barn as in other farm buildings. The windows, doors, chutes, cracks, walls, etc., provide a certain amount of fresh air but not sufficient at times when ventilation is most important. There are a great many types of ventilating systems, but one of the most common and most satisfactory is the Rutherford. With this system the foul air is drawn off in large chutes from the ceiling and the fresh air is admitted through a number of smaller openings in the wall near the floor. In many buildings only outlet chutes are found and when fresh air is admitted through the windows, doors, etc., fairly good results are obtained. However, inlet chutes are not expensive and in certain weather they add much to the efficiency of the system.

The inlets should provide two to three square inches of inlet space per sheep. Two inlets 5" x 5" are found sufficient for twenty sheep. Inlets should

always be distributed, the draft should be directed upwards and they should be provided with controls.

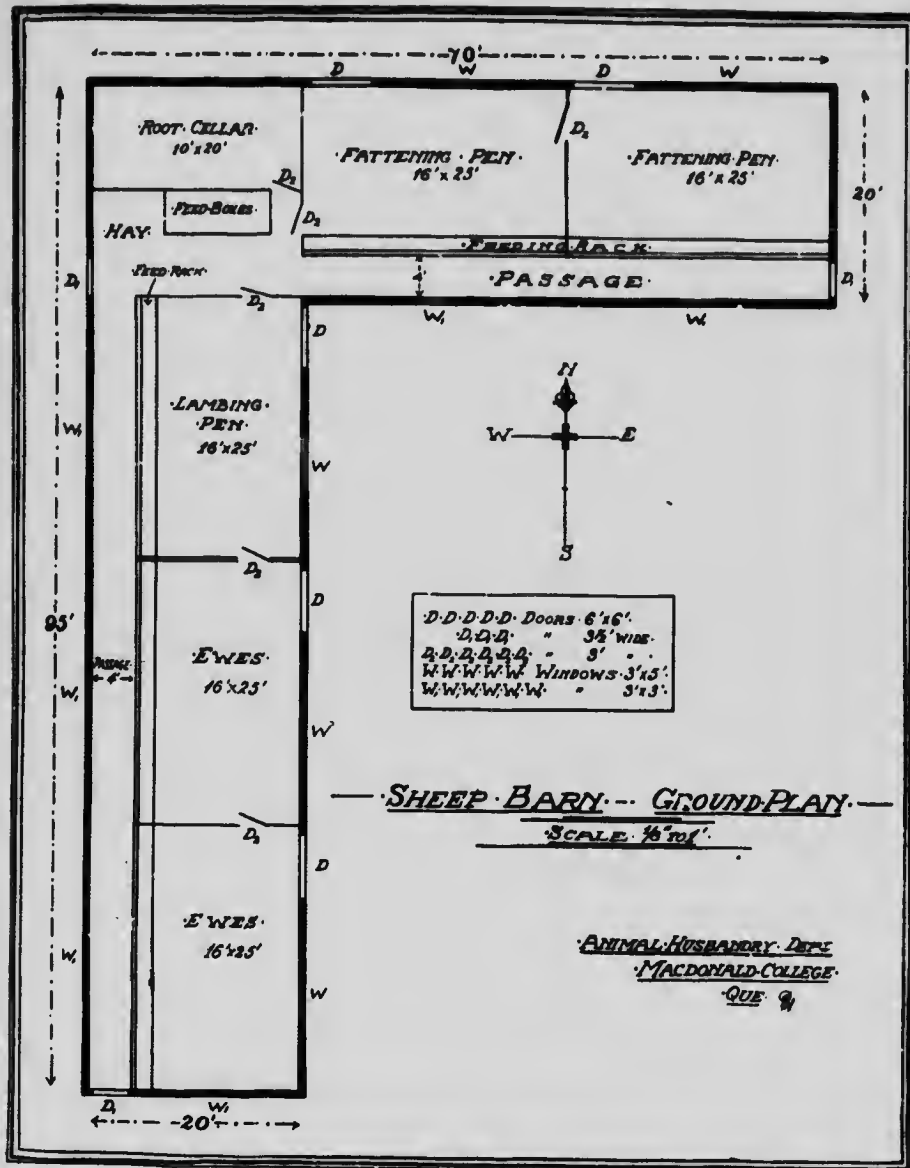


Showing construction of inlet chutes, for ventilating system.

The outlets are fewer in number and much larger than the inlets. It is seldom advisable to construct an outlet smaller than 20" x 20". Allow 4 to 5 square inches of outlet space per sheep. Good insulation is highly important to prevent condensation and assist the air currents. The outlets should be fitted with a control. They are best if placed in a central position and should extend direct through the loft to the peak, being covered with a eupola which extends not less than four feet above the highest part of the building and is built to keep out snow and rain but not to check the outward draft. For construction of inlets and eupola see illustration of sheep barn.

Pens.

The size of the pens in a sheep barn will vary depending on the purpose for which they are to be used. Fifteen to twenty-five ewes do best together and in no case is it advisable to house more than fifty ewes in a pen. Pens for fattening lambs may be made larger although here again it is not wise to house in too large numbers. Smaller pens allow for sorting according to age and size and better results are thus obtained. The lambing pen should be smaller and must be more warmly built. It should occupy the warmest and sunniest part of the barn and should be fitted with a number of movable partitions so that each ewe may be enclosed in a separate pen at lambing time. The lambing pen should also be provided with a lamb creep where the lambs may feed separately from the ewes. The pens should be arranged with a feed alley in front and a door should open from one to the other to facilitate sorting and to allow the attendant to pass through the pens.



Showing arrangement of pens suitable for housing a large flock of ewes.

Feeding Racks.

Feeding racks may be built stationary or movable, being placed on sills or posts eight to twelve inches from the ground. The movable rack may be used for either inside or outside feeding while the stationary rack is used for inside feeding. The stationary rack is usually single except when used to replace a partition between pens, in which case it is usually double. Movable racks are always double and provide the most feeding space with least cost. The feeding rack should always be tight boarded at the top for at least eighteen inches in depth to prevent chaff and other dirt falling over the sheep. Slats two inches wide and sixteen to eighteen inches long placed three and one quarter to four inches apart at the bottom allow sufficient feeding space and prevent waste. The movable rack is usually built in two parts, top and bottom, to facilitate moving and cleaning. The top, in which the hay and other roughages



Movable feeding rack suitable for inside or outside feeding.



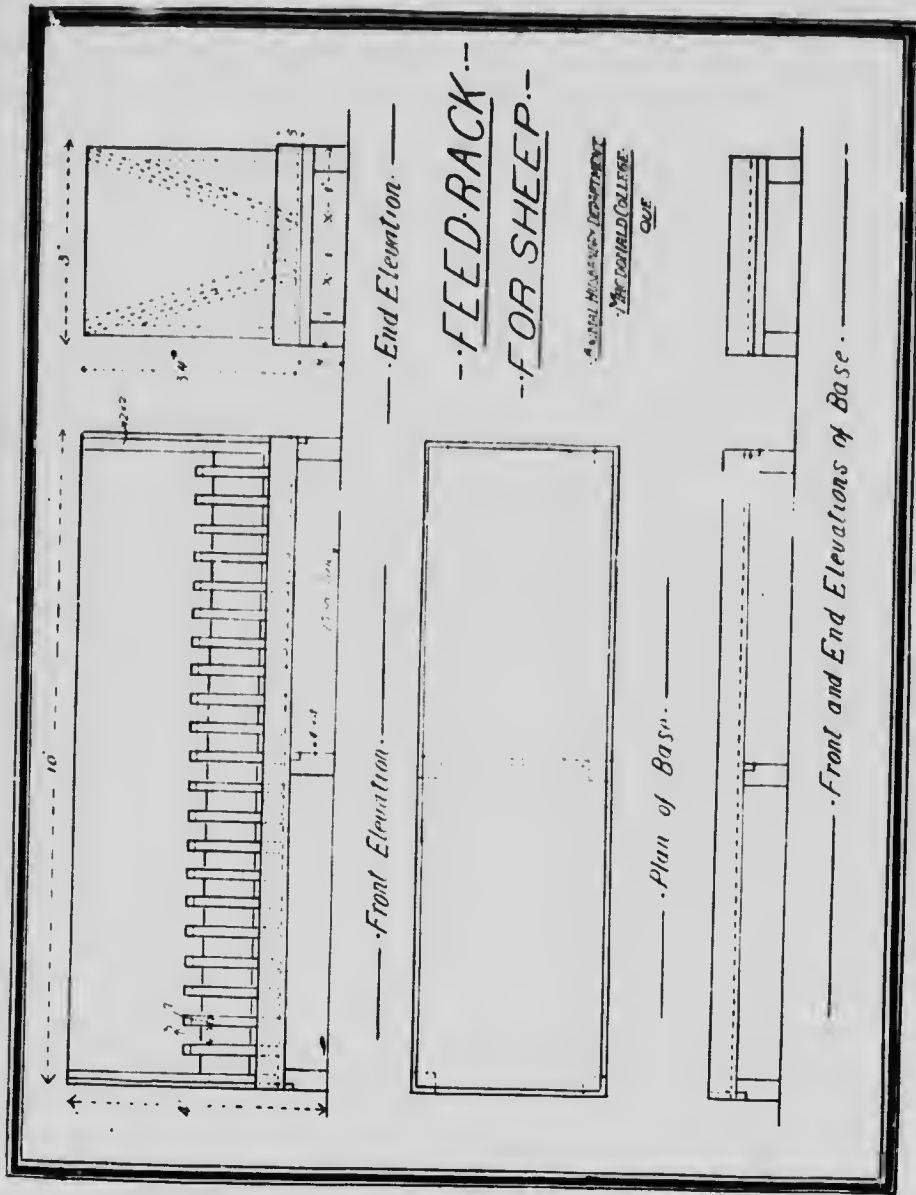
A good type of feeding trough.

are fed, fits into the bottom which serves as a trough for feeding grain or roots. The feeding trough is built at the bottom of the stationary rack. The front of the rack may be built perpendicular with the back sloping towards the front, or the front may slope inwards towards the bottom. Both types have advantages, but the sloping front occupies less room and gives general satisfaction.

Below is a diagram of a feeding rack with the front sloping inwards and troughs for grain and roots at the bottom.

Feeding Troughs.

Feeding troughs are very convenient for feeding grain and roots in the fields, paddocks and yards, being light, easy to move and readily cleaned. They are convenient for summer and fall feeding.



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Watering Utensils.

In our climate, where the temperature of the sheep bar: often falls below zero, a watering system is impossible, and troughs or tubs are used as watering vessels. A forty gallon barrel sawed into two parts makes two cheap, serviceable and convenient vessels for watering sheep. Tubs, either wooden or galvanized iron, may also be used and the regular watering troughs, though more expensive, are also in general use. All watering vessels should be emptied as soon as the ewes finish drinking, to prevent freezing, and they should be so placed that they remain clean.

Fences.

Rail fences when well built and kept in good repair, are suitable for sheep. These are now being rapidly replaced by fences of wire construction. Of these the woven wire types are most suitable for sheep. Cheapness and durability should be kept in mind when selecting a sheep fence. A fence of five to seven strands, thirty to thirty six inches high with uprights placed sixteen to twenty two inches apart, top and bottom wires size No. 9, middle wires size No. 12, is cheap, durable and convenient for either temporary or permanent purposes. The addition of one or two strands of barb wire at the top will convert the above fence into a general purpose fence for holding larger stock. Posts may be placed one and a half to two and a half rods apart, additional supports being added if necessary. Barb wire alone does not make a suitable fence for sheep. Besides being ineffective for sheep, the barbs pull the wool, causing loss in weight of fleece.

CHAPTER III

FLOCK ESTABLISHMENT AND IMPROVEMENT

The prospective sheep owner must, of necessity, give consideration to a number of factors before purchasing a flock of ewes. The breed and number purchased will depend on the size, fertility and topography of the farm on which they are to be kept, the numbers of other stock that are carried, the markets that are available and on the personal appreciation of the owner for one or more breeds.

The beginner will be well advised in selecting a breed that has proved itself adapted to and profitable in his particular district. The advantages

of community breeding should not be lost sight of and the exploitation of new breeds had better be left in the hands of experts. Owing to the rigour of our Quebec winters, hardiness, wool covering and density of fleece are important characteristics of the breeding ewe. Level, fertile farms are better suited to the larger breeds, while hilly and broken country is more adapted to the smaller and more active sheep.

It is much safer to start in a small way and gradually increase the size of the flock as experience and knowledge are gained. Grade ewes cost less than purebreds and with average care are likely to be more profitable than purebreds. If successful with a grade flock a start may be made with purebreds in the course of a few years.

The most profitable ewe for Quebec conditions is the ewe that will produce a heavy fleece of highly marketable wool and rear one or preferably two good market lambs annually. In addition to possessing sufficient size, such a ewe should possess the desirable mutton conformation combined with a good constitution, uniformity and compactness of body and quality in bone, flesh and fleece. Good milking qualities are also highly important in order that the lambs may be well reared. Yearling or two year old ewes are preferable to older ones. Where difficulty is experienced in securing mature sheep, choice ewe lambs can often be purchased in the fall at prices slightly above market quotations. These should not be bred until the following fall as early breeding will stunt their growth, and, if prepared to wait a year for the first lamb crop, a saving may be made as the first fleece will usually pay for the cost of wintering.

In making selections, aim to secure uniformity in breeding, size, conformation and fleeces. A small uniform flock of wellbred ewes will afford greater pleasure and give proportionately greater returns than a larger flock of rather inferior ewes. It is good policy to purchase breeding ewes within your own district if possible, but avoid purchasing ewes from a flock that are unthrifty, that have been worried by dogs or for any other cause are not profitable to their owner. The udder, teeth, age and size are other points to be noted for each individual ewe.

The Flock Ram.

The ram is the cheapest and most efficient means of flock improvement, and nothing but a pure bred ram should be used to head the grade flock. The owner of a grade flock cannot afford to pay high prices, but he should be prepared to pay for a combination of good breeding type, quality and size in accordance with his flock and purse. With small flocks two or three farmers can sometimes club together and purchase a superior ram for general use, at less expense to each individual than if they each purchased a more inferior individual.

A ram is at his best for breeding purposes when two to five years of age; in fact a good breeding ram may be used as long as he remains vigorous and his teeth are good. It is always preferable to use a ram that has proved himself a good breeder rather than a young ram whose breeding qualities are not known. The lambs from a young ram are not apt to be as vigorous as those from an older ram.

The ram should be masculine, representative of the breed to which he belongs and massive, possessing a deep, low set, blocky body that is uniform throughout and covered with a dense, even fleece of good quality. The bone should be strong but not coarse and the legs well placed under the body, enabling the animal to walk straight and true. The ram should be particularly strong in any points where the ewes show weakness or deviate from the desired type. Do not buy a ram with only one testicle down and select a twin if possible.

Good rams should not be changed oftener than once every two years, and if some provision can be made whereby their first crop of ewe lambs can be bred by another ram it would not be wise to dispose of a good breeding sire under three years. The selection and purchase of new rams should be made well in advance of the breeding season. This allows of greater opportunity for selection and at the same time permits of getting the ram into proper condition for breeding.

Having once established a sheep flock, it should be the aim of the owner to effect improvement from year to year. Breeding and feeding are both important, but unless weeding or culling is practised the good effect of the other two are largely lost. The ewe flock should be gone over carefully each year and undesirable breeders, aged ewes, those with poor udders and unhealthy ewes should be discarded and their places filled by younger ewes selected from the best of the ewe lamb crop each year. The average breeding age of a ewe ranges from five to seven years; consequently ewe lambs totalling one fifth of the ewe flock should be retained annually for replacing vacancies in the older flock. These should be well grown and may be bred when a year and a half old.

Grade Breeding, Cross Breeding and Pure Bred Breeding.

Grade breeding is the improvement of a flock by the use of purebred rams of one breed for a number of years. The ewes are not eligible for registration but have a large percentage of purebred blood in their veins and usually show pronounced characteristics of the breed to which they are related. For general utility purposes the grade ewe is often as profitable as the purebred ewe, but she cannot be depended upon to transmit her characteristics with the same degree of certainty. Grade breeding is the most effective means of flock improvement.

Cross breeding is the practice of mating males of one breed to females of another breed, the object being to secure offspring that will combine the good qualities of both breeds and at the same time be more profitable from a commercial standpoint. Cross bred lambs should never be kept for breeding purposes, as, while they may be superior to either of their parents, they have not the power to transmit their characteristics, and subsequent generations lack uniformity, often displaying weaknesses of both breeds used in the cross. The Leicester-Cheviot, Oxford-Shropshire and Southdown-Hampshire are three popular crosses.

There is always a good field for a limited number of purebred breeders. Such men must have a special aptitude for sheep and must be in a position to put liberal amounts of money into the business from time to time. They must know their breed both from the standpoint of pedigree and individuality, and in buying must use the best of judgment in order that the flock may be managed with profit.

The following hints may also prove useful :—

- (a) Study the weaknesses of your breed and endeavor to overcome them.
- (b) Do not put more money into your breeding stock than the local market will warrant.
- (c) Know something about other breeds besides your own. This will help you correct weaknesses of your own breed.
- (d) New breeds are difficult to introduce. Even with keen competition you stand a better chance of success with an old established breed.
- (e) Remember that the success of your breed depends largely on yourself. Do not put all the blame on the breed if you fail to make it a success.

CHAPTER IV

FALL MANAGEMENT

In Quebec, weaning, sorting, and breeding are all crowded into the fall months. In addition, the lambs and discarded ewes are sold, rams are changed and additions are made to the flock, so that the fall is a very important season for the sheep owner.

Weaning the Lambs.

Weaning takes place for the most part during September. The months of July and August are both dry, hot months and pastures are bare so that unless special provision is made early weaning is not likely to be successful. In

September the nights are cooler, fall rains have started the pastures and the fly pest is almost past. The bulk of the lambs are old enough so that when weaned and placed on good pasture they suffer no setback and continue to develop and gain in weight. September weaning also allows the ewes a period in which to gain in condition before breeding.

After weaning the ewes should be placed on a dry pasture and gone over several times during the first week or ten days, all ewes that require it being milked out. When dried up the ewes should be culled over and discards either sold or placed with the lambs to fatten. Yearling ewes selected for breeding purposes should now fill up the vacancies and all may be removed to a better pasture in order that they may come forward to the breeding season in good condition.

The sale of the lambs will depend on prices and weights. Early lambs averaging seventy pounds and upwards in weight may be sold during August and early September if good prices prevail. However, as most of the lambs are dropped just previous to turning the ewes to pasture, they are more profitable if held until October or early November. On good pastures lambs should gain from ten to fifteen pounds per month, so that if prices remain steady a gain of one to two dollars per head is effected.

Winter feeding is little practised in Quebec and as a result prices for winter fed lambs are much higher than those prevailing throughout the fall months. Young lambs and those from slower maturing breeds of seventy to eighty pound weights can often be more profitably marketed after a month to six weeks feeding period.

Breeding the Ewes.

From the middle of November to early December is the most general period for breeding the ewes. Purebred flock owners and those who raise early lambs for a special market breed earlier, but for general farm conditions where it is desired to have all the lambs dropped before turning the ewes to pasture, the above period is most satisfactory. Great care should be taken to see that the ewes are gaining in flesh when bred and it is good policy to flush or grain feed the ewes for ten days to two weeks before breeding, giving them one half to one pound of oats daily. This brings the ewes in stronger in heat, ensures a larger percentage of twin lambs and shortens the lambing period.

The dates on which the ram is turned with the ewes and taken out should be marked down. When field breeding is practised the breast of the ram should be marked with water color paint daily so that each ewe is marked on the butt of the tail as bred. At the end of fourteen to sixteen days the color of the paint should be changed. Returned ewes may be detected in this way. If many of

the ewes are not settled in lamb, at the second breeding a change of rams had better be made, as this would indicate that the ram is not a sure breeder.

With purebred flocks it is better practice to keep records of individual breeding dates of each ewe. To save catching and disturbing the ewes a number sufficiently large to be read at a distance may be stamped on the fleece with marking fluids which dissolve in the scouring process. The corresponding ear tag should be recorded along with the number stamped in the fleece.

Mature rams will breed fifty ewes under field condition and seventy-five to one hundred ewes where one service only is allowed. A ram lamb will serve twenty ewes under field conditions and twenty-five to thirty ewes, allowing one service only. The ram should be kept in good, vigorous condition throughout the breeding season.

Dipping.

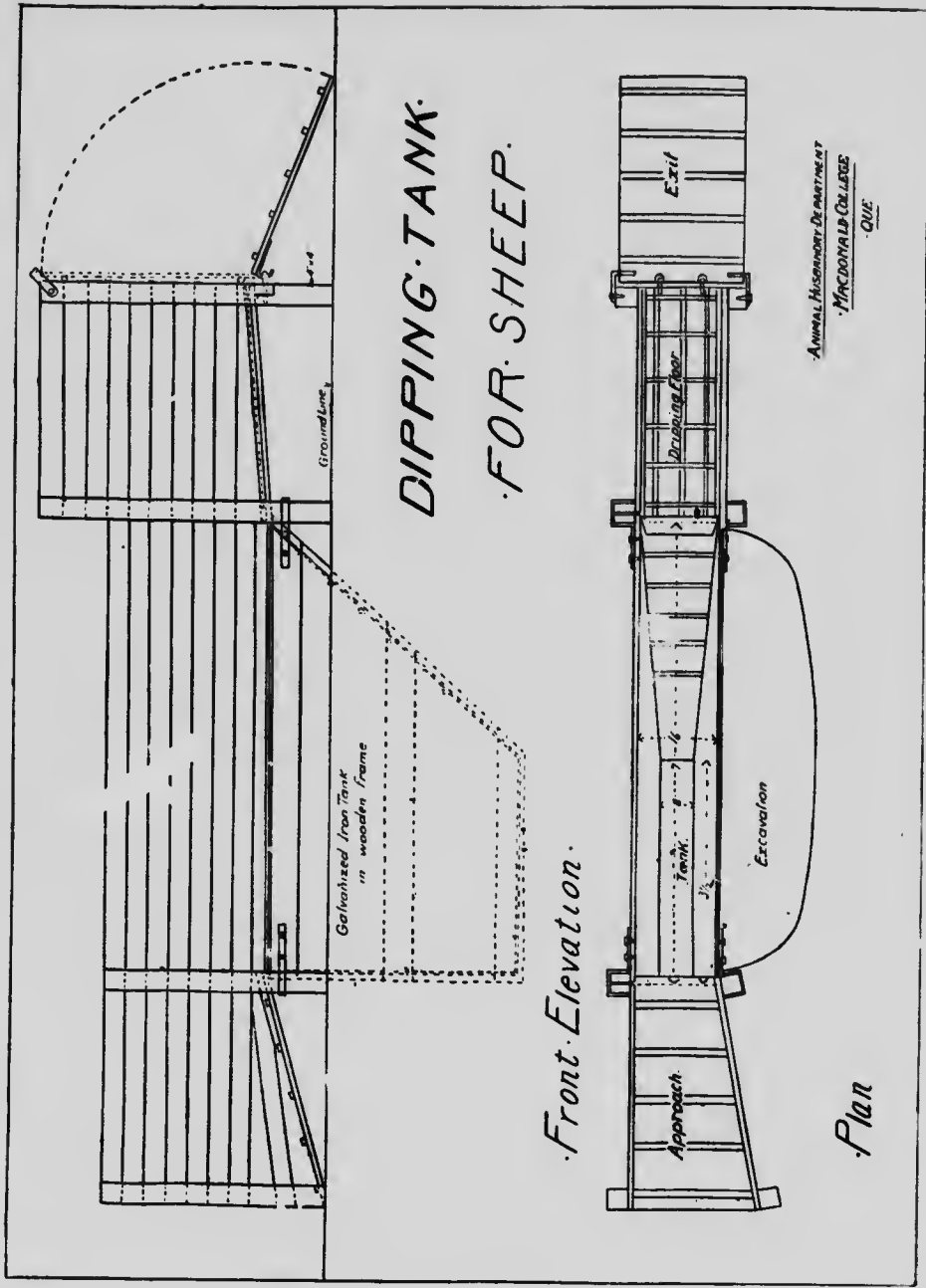
Dipping is always advisable in the fall. The cost is not large and besides destroying ticks and lice, it tends to promote the growth of wool and ensures greater comfort to the ewe flock during winter. Small flocks may be dipped in vats or other suitable utensils about the farm. For larger flocks the galvanized iron or cement tank will be more satisfactory. The tank should be provided with an approach and draining platform and may be placed in a yard or lane to facilitate catching. Either liquid or powder dips may be used, both giving satisfactory results. If the flock is badly infected with ticks or lice a second dipping is advisable in three to four weeks. Newly purchased animals should always be dipped before being placed with a clean flock. Spring dipping is to be recommended after shearings particularly if the sheep and lambs are not free from ticks and lice.

CHAPTER V

WINTER MANAGEMENT

Care of the Breeding Flock.

In late fall and early winter when the nights are cold and often damp the ewe flock should be allowed the protection of their winter quarters. A little grain or a small allowance of roughage will help to keep the ewes from losing flesh besides tending to make the change from summer to winter feeding more gradual. The ewes may be allowed the run of the fields until severe weather and heavy snow falls necessitate winter housing.



*DIPPING TANK
FOR SHEEP.*

Front Elevation.

Plan

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QUEBEC

If the ewes go into winter quarters in good condition they may be carried through the early part of the winter with little or no grain. Aged and thin ewes may be separated from the rest of the flock and given extra feed. When clover or alfalfa hay and roots have been provided, the winter ration for the breeding ewes is practically complete. Pea, bean and oat straws may be used as a supplement to the more expensive leguminous hays. Silage may be substituted for roots but care must be taken that it is fresh and free from mould. Oat and pea hay when cut at the milk stage and properly cured is palatable and nutritious, being much preferable to timothy hay which contains too much fibre and little protein. Roots may be fed in liberal quantities during the early part of the winter but as lambing time approaches the amount should be reduced to one or two pounds daily per ewe. With the reduction of the roots, grain feeding may be commenced, the amount being increased up to one half and one pound per ewe per day. Oats and bran in the proportion of two parts of oats and one part of bran is a healthy, nutritious grain ration for the ewes.

Ewe lambs kept for breeding purposes should be fed more liberally than the older ewes. When possible they should be separated from the rest of the flock and should receive a ration that will promote growth and development, but not excessive fat. Clover or alfalfa hay, roots and a small allowance of oats and bran daily will keep them in a healthy, vigorous condition.

The ram should be kept in average flesh throughout the winter. In most cases a little grain daily is advisable. Swedes may be fed with caution but mangels should be avoided as they have a tendency to cause bladder troubles. The roughage should consist of clover and alfalfa hay.

Exercise.

The importance of exercise during the winter months for all classes of sheep and particularly the breeding ewes cannot be over estimated. The ewes should be encouraged to take exercise at all times by leaving the doors open except in stormy or very extreme weather. and by feeding outside when the weather is fine.

CHAPTER VI

SPRING MANAGEMENT

As spring approaches and the ewes are getting heavy in lamb they will require more pen and feeding space. If the flock is large it should be divided, and ewes which are expected to lamb first removed to the warmest and most comfortable pen in the building. Care should also be taken that the floors of the pens are level, as ewes that are heavy in lamb are more apt to get on their backs. The lambing pen should also be provided with equipment, so that a number of individual lambing pens can easily be constructed when required. These are usually movable and are built along the warmest side of the pen. The ewe is much quieter in the individual lambing pen. In case of twins being born, both are kept together and there is no danger of either of the lambs getting strayed from the mother. The failure of a ewe to mother one of her lambs invariably results from one lamb getting strayed from its mother shortly after birth. In case the ewe requires special attention at lambing, this can be given in the separate pen without disturbing the rest of the flock. Good ventilation should be provided in the lambing pen as the ewes must, of necessity, be more closely confined.

It is important that the attendant be on hand at lambing time to see that everything is going well. Ewes should not be disturbed unless assistance is necessary. The most common causes of trouble at lambing are large lambs and malpresentations. In the first case the ewe may be assisted in giving birth to her lambs, and in the second case the attendant should make himself familiar with the various forms of malpresentation and the method of correcting same. Failure on the part of the attendant to lamb the ewe will necessitate the services of a veterinary.

Strong, vigorous lambs soon gain their feet and are able to suckle without assistance. Such lambs require little or no attention. Weak lambs should be assisted to their feet and require help until they are strong enough to feed themselves. If a lamb becomes chilled it may be quickly revived by giving it a teaspoonful of brandy in a little of the ewe's milk. It is often advisable to remove weak lambs to a warm place beside the stove for a day or two until they are feeding well. In such cases the lambs will be returned regularly at short intervals to their mothers and allowed to feed.

With proper feeding a ewe usually has sufficient milk for two lambs. When three lambs are born, the third will do better if transferred to a ewe that has only one lamb or one that may have lost her lamb. If a ewe dies after giving birth to a lamb, or if a ewe for some reason cannot raise her lamb, it should, if

possible, be placed with another ewe rather than trying to raise it on the bottle. The change is most readily made shortly after the lambs are born. In some cases the change may be made without difficulty while in other cases the ewe obstinately refuses to mother a strange lamb. In such instances various methods are used to induce the ewe to adopt the lamb. When a lamb dies, its skin may be removed and placed on the lamb that you wish the ewe to adopt and usually no trouble is experienced. The ewe may also be closely penned or tied, the lambs being brought in only at regular intervals until the preference disappears. This may be assisted by milking some of her own milk on the head of the strange lamb and by the application of strong smelling drugs to the nose of the ewe, such as alcohol, brandy, etc.

A few days after lambing the ewe may be gradually brought back to her full grain allowance besides giving her all the hay and roots she will eat. A little oil cake may be added to the oat and bran ration particularly if clover or alfalfa hays are not available. Mangels may be substituted for swedes as they are better milk producers. The ewes should be kept on a liberal and highly nitrogenous ration until they are turned to pasture. At ten days to two weeks of age the lambs will usually begin to nibble at grain and they should be given all they will eat. A lamb creep provided with a trough will allow them to feed at their leisure. Crushed oats, bran and oilcake together with clover or alfalfa leaves provide a suitable ration for growing lambs.

The change from inside feeding to pasture should be made gradually. By allowing the ewes into a small field each day where they can get a taste of grass but not sufficient to put them off inside feeding, the change may be made without injury to ewes or lambs.

Ear Notching the Lambs.

A mark of identification is important whether the lambs be purebreds or grades. A system of ear notching provides the farmer and breeder with a means of identification besides giving him a reliable record of the breeding of the lamb crop for each year. At weaning it is often difficult to tell to which ewe a lamb belongs unless the lamb carries a mark of identification. Ear tags have a tendency to cause the ears of young lambs to droop. The tattoo mark is difficult to insert in a lamb's ear and does not remain so distinct as when put in when the lamb is nearly mature. Ear notching is most satisfactory and allows of the addition of the ear tag and tattoo mark at a later date. Ear notching should be performed when the lambs are a few days old. Care should be taken that the nicks are distinctly made and in the right place.

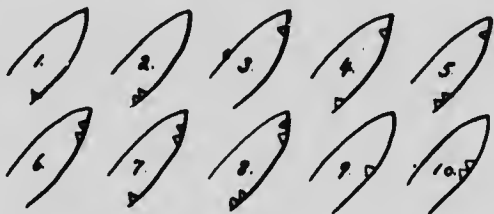
Ear Tagging and Tattooing.

The ear tag or tattoo mark may be inserted when the lambs are weaned or any time later. Ear tags should be inserted between the cartilage folds and should be placed so that the outer edge of the tag fits neatly against the lower edge of the ear.

Systems of Ear Marking



Ear punch.



1 to 10. - right ear.



Tattoo punch.



11 to 20. - left ear.



Ear notching - No. 23.



Ear tag.



Tattoo marking.

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EM

QUE.

Before inserting the tatoo mark, the inside of the ear should be well washed with soap and water and dried. Then smear the inside of the ear and points of the tatoo blocks that are being used with the tatooing oil. The number or initials may then be punched into the ear. After removing the punch rub the tatooing oil well into the incisions made by the points of the tatooing blocks. The points of the tatooing blocks should be thoroughly cleaned after being used.

Docking and Castrating.

Undocked and uncastrated grade lambs are always an indication of primitive methods in the handling of sheep, and no farmer who takes an interest in his flock will neglect the performance of these operations. Both are very simple and if properly performed at the right age there is little or no danger of loss. Moreover, docking adds to the neatness, comfort and appearance of the flock, while castrating enables the farmer to hold his wether lambs for late fall sales when a heavier weight usually brings a higher average price per pound. Ram lambs become troublesome about the middle of September, their gains are slower, they have to be separated from the rest of the flock or sold, and their value per pound is below that of ewe or wether lambs.

Docking and castrating should both be performed when the lambs are ten days or two weeks of age. Lambs under ten days of age are likely to be weak while those over two weeks have greater development of the organs and their removal is more of a shock to the system. It would be easier on the lambs to allow a few days to elapse between each operation. However, the farmer is usually rushed with work and a saving of time is effected if both are performed at once, and moreover, if the lambs are of the proper age, no serious results are likely to follow. When a few days are allowed to elapse between each operation, castrating is best performed first, as the wound heals more quickly, bleeds less and is better protected, not being so liable to injury when catching for docking. An assistant is necessary for castrating and although he may be dispensed with for docking, his services are useful and result in a neater and more uniform dock. A good sharp knife and a basin of water to which some disinfectant has been added is all the equipment that is required for the work. The operation is best performed in the morning of a bright clear day.

Castrating.

The lamb is held by the attendant at the proper height with the underside of the body outward, rump downward and the front and hind legs held together. The scrotum is grasped with the left hand of the operator and pulled outward

to its full length when it is severed straight across about one inch from the body, removing one-third to one-half. The testicles will now protrude and may be removed by the teeth of the operator or with small pinchers specially made for the purpose or by slitting the peritoneal covering with the knife and pulling the testicle with the finger until the cord breaks. The first method is most commonly practised in all large sheep raising countries. It is quicker and is seldom followed by complications of any kind. Removal with pinchers having claws that fit around the testicle is very similar to the first method except that the pinchers are substituted for the teeth. There is more danger of crushing the testicle and it is slower. Lambs which show any tendency towards rupture should not be castrated by either of the above methods as the removal of the peritoneal lining allows the intestines to protrude. The last method, namely, slitting the peritoneal lining with the knife and pulling the testicle free is



Proper position for castrating.—Operator removing bottom third of Scrotum.



Proper position for docking.—Operator feeling for second joint from body.

commonly practised with small flocks. Care must be taken that the testicle is not crushed, otherwise the lamb will display male characteristics and will be troublesome in the fall. The peritoneal covering should be stitched in lambs that show any signs of rupture. In all three methods it is highly important that the lower part of the scrotum be removed. This permits of proper drainage for the wound and it does not heal too quickly. In no case should the testicle be removed through a small slit in the side of the scrotum leaving a pocket at the bottom in which the blood can accumulate, causing the wound to fester. If festering does occur the wound should be opened at once and all pus squeezed out. Lambs having abnormal testicles should not be operated upon until they become normal, otherwise there is much greater risk and danger of loss.

Docking.

The lamb is held in the same manner for docking as for castrating. A stub of one and a half to two inches in length should be left. If severed at the second joint from the body the desired length is usually obtained. The joints may be felt with the thumb of the left hand, the knife being placed directly over the second joint when with one downward stroke the tail is severed from the body. When the man is docking alone the lamb is allowed to stand on its feet with its head between the legs of the operator when the tail is severed with one stroke from below upwards. The practice of severing the tail with a chisel is not to be recommended as the bone is very often splintered leaving a painful wound that takes a long while to heal.

It is very seldom that lambs bleed excessively if docked at the right age. However, occasionally a lamb will bleed to death if not looked after. The application of pressure just over the artery for a few moments will sometimes coagulate the blood. Tincture of iron is also used, but failing this a small cord may be tied around the stub and left for twelve to twenty-four hours when it should be removed, otherwise circulation is stopped and the part sloughs off. Cobwebs, puff balls, flour, etc., have been used with success, but many of these primitive methods, while effective in so far as stopping the bleeding is concerned, subject the lamb to danger from infection. The docking of older sheep is a much more serious matter than with lambs. A large sharp knife is the best instrument to use, the tail being severed at the second joint the same as with lambs. The most effective method of stopping the bleeding is to sear the artery with a red hot iron. Searing is recommended by some authorities for lambs, but its use is seldom necessary and the lamb is saved much pain. The docking shears are more costly, less practicable and have no special advantage over the use of the knife.

After operating, the flock should be turned into a dry pasture field where they can be watched during the day and any necessary attention given. There is seldom any danger after the first day, although it is advisable to watch the flock closely until the wounds are healed. Neither of the above operations should be performed in warm weather when the fly season is on, as maggots are almost certain to get into the wounds.

The importance of docking and castrating cannot be over emphasized. Both tend toward the production of greater profits and they go hand in hand with good practice in the management of the farm flock.

Shearing and preparing Wool for Market.

Shearing may commence as soon as the weather is warm enough and the ewes have finished lambing. Shearing should always be completed before the warm weather sets in as late shearing causes loss of wool through pulling, the ewes lose flesh and there is danger of the lambs eating some of the wool, resulting in the formation of wool balls in the stomach which often cause death. Dry weather should be selected for shearing. A good clean barn floor, a couple of barn doors laid side by side or a few boards tacked together will serve for



MACHINE SHEARING.—Note that the ewe is sitting on her rump and may be tilted to any position allowing for comfort to both ewe and operator. The bottom left hand corner shows the fleece box lying flat and threaded with paper fleece twine.

a suitable shearing platform. The ewes should be penned in a clean place handy to the shearing platform. It is good practice to tag the ewes before shearing. The tag locks should be kept separate and washed, when they may be sold with the rest of the wool. Trimming the hind quarters before turning the ewes to pasture prevents the excessive accumulation of tags or dung locks.

The old time method of shearing with the hand shears is rapidly giving place to the shearing machine. Less skill is needed to operate the machine with the same efficiency as the hand shears. There is little danger of cutting unless carelessly handled. The position in which the sheep is held while the various parts of the body are being shorn can be best learned by watching a skilled workman at work.

The proper position for shearing is to place the sheep on its rump between the knees of the shearer. It should be allowed free use of its legs and the head



The fleece properly folded and ready for pressing.

should always be held off the floor. In this position it may be tilted either to the right or left and backwards or forwards as the shearer may desire.

Experienced shearers differ in methods of shearing. Some prefer to shear lengthwise of the body while others prefer to shear around the body. In either case shearing commences just below the jaw, the fleece being opened down to the brisket. The wool on the head, neck, shoulders and front legs is then removed. The belly wool is shorn next and the inside of the thighs is then stripped from in front. The right side is then shorn well clear of the back bone whether shearing lengthwise or roundwise of the body. The ewe is

then given a half turn and the remainder of the fleece removed. The wool should be allowed to fall ahead of the shears or machine head. The weight of wool is sufficient to keep the skin taut ahead of the machine. Extra pressure raises the skin and increases danger of cutting. Long strokes permit of greater speed. The shearing platform should be swept clean after each sheep is shorn.

When shorn the fleece lies on the shearing platform with the flesh side up. It should be turned over and spread out to its natural size. If chaffy and seedy a few shakes will remove part of this material. Straws should also be picked off.



The fleece pressed and ready to tie.

The fleece may then be rolled or boxed for market. If rolled the edges should be turned in and the body of the fleece double lapped when it will be about sixteen inches wide and the full length of the fleece. It is then rolled tightly from the breech to the neck and tied with paper fleece twine, or in the absence of this, a small band of wool may be twisted out of the neck and wrapped once around, the end being shoved under the band.

Boxing is preferable to rolling. The fleece is more tightly wrapped, it packs better in shipment, there is less waste in handling and little danger of

shrinkage before shipment. The fleece box is made out of a board 9' long, 1' wide and 1" thick. It is sawn into three lengths 3' long. The third length is again sawn into three pieces 1' square. Four pairs of hinges and two hardwood locking pieces or two hooks and eyes and four springs are necessary to complete the box. The locking pieces are hardly as handy as the hooks and eyes but are cheaper. Three nicks are made with a saw on each side of the box for threading. Four or six lengths of paper fleece twine eleven feet long are necessary for each fleece. The fleece when boxed is approximately one foot square.



Showing the fleece after tying when the box was released.

Fleeces that are boxed or rolled for market should be placed in a proper wool sack and kept in a cool, dry place until forwarded for grading. Wool should never be placed in cheap bran sacks, and binder twine, hay wire, etc., should never be used for tying wool.

CHAPTER VII**SUMMER MANAGEMENT**

Sheep should be turned to pasture gradually. If given the run of a small field that is intended for spring ploughing, it is possible to turn them out earlier for a part of the day and they become accustomed to the grass without getting sufficient to put them off their winter feed. The exercise is beneficial, the grass that they obtain helps to stimulate the milk flow and there is not the same tendency for excessive scouring when they are eventually turned into their summer pasture. A few acres of fall rye provide the earliest pasture for sheep and if removed before it is cropped too close the rye suffers but little damage.

Dry rolling or hilly land that is well watered and well shaded provides the best pasture for sheep during the summer. In addition to a supply of good water and plenty of shade the ewes should be salted regularly and looked over from time to time to see that they are all in good health. During the fly season provision should be made for the application of tar to the noses of the sheep as a protection against the gad fly, the eggs of which when lodged in the nostril of the sheep cause the disease known as "grub in the head". The simplest method of applying the tar is to salt the sheep in round or square holes in timbers or old logs about four inches across and three to four inches deep. The upper inside edges of these holes may be smeared with pine tar from time to time and the ewes in getting the salt will smear their nostrils with the tar. This method saves catching and smearing the ewes by hand every ten days to two weeks and is perhaps more effective.

When sheep are run exclusively on a pasture they require a change from time to time, otherwise the best results are not obtained. When a small flock of sheep are run in conjunction with other stock, they usually have sufficient run to meet their requirements, and a change of pasture is not so essential until the season is well advanced and pastures are getting short. At such times it is to the advantage of the sheep as well as the other stock to make a change, because the sheep being close and more active croppers get the advantage. Summer and fall forage crops work in to advantage at such times. A mixture of peas and oats, sowed in the proportion of one bushel of each, is one of the earliest and best summer crops. Second growth clover follows a little later, vetches come in about the same time as the clover, rape is suitable for late summer and fall feeding, while timothy aftermath is usually relied on for late summer and fall pasture. All sheep owners should provide one or more forage crops to tide them over the possible dry spell when the natural pastures fail to provide the necessary feed.

CHAPTER VIII

FEEDS AND RATIONS FOR SHEEP

No animal will respond more quickly and give more economical returns for feed consumed than the sheep.

Although sheep consume a large variety of plants when feeding outside, they are particularly fastidious when being fed inside and relish only the most palatable feeds. On this account the category of sheep feeds is, comparatively speaking, small.

In balancing rations for sheep it should always be kept in mind that they require a relatively higher proportion of protein than other farm animals. This is due largely to the growth of wool which is going on at all times.

Where protein can be supplied in the roughages or bulky part of the ration, the cost of sheep feeding is kept down to a minimum and breeding classes can be carried in good condition by using but very little of the expensive concentrates. Among the dry roughages, red clover and alfalfa hays, mixed hay, pea and oat hay, and pea, bean, and oat straws are the most important. Red clover and alfalfa hays are both about equal for sheep feeding. When properly cured, alfalfa has a slight preference. Both of these hays contain a high percentage of protein and are necessary for the best results whether feeding for fattening or breeding purposes. Mixed hay is preferable to timothy, giving much better results. Timothy hay is not a good feed for sheep as it contains too much fibre and little protein. Pea and oat hay, if cut at the milk stage and properly cured, makes an excellent substitute for the leguminous hays, particularly during the early part of the winter. Pea, bean and oat straws may be used to supplement the more expensive hays. Pea and bean straws are both relished by sheep and contain a higher percent of protein than oat straw. Oat straw, although the poorest, has a considerable value for sheep feeding when fed in conjunction with other roughages.

Roots constitute the main succulent roughage for sheep. Swedes are preferable to mangels for all practical purposes although mangels are recommended for ewes after lambing as they are better milk producers. Mangels should never be fed to breeding rams as they are apt to cause bladder troubles. Roots act as a stimulant for the appetite and regulate the bowels. On this account they have a feeding value above what their chemical constituents would indicate.

Silage is coming more to the front as a succulent feed for sheep. When well made, fresh and free from mould it may be used as a substitute for roots. It is quite palatable and nutritious and although not as safe as roots, yet, if fed judiciously, excellent results are obtained. Ewes that are heavy in lamb should not be fed over a pound to a pound and a half of silage.

Concentrates (Nitrogenous and Carbonaceous).

Heavy concentrates should always be avoided with breeding stock, the heavier grains being used for fattening purposes only. All grains may be fed whole as no animal is better able to do its own grinding than the sheep. Brewers' grains, bran and oilcake are the three best and most widely used protein or nitrogenous concentrates, while oats, corn, barley, wheat and peas are the five most common carbonaceous concentrates.

Nitrogenous Concentrates.

Bran is usually the cheapest nitrogenous concentrate and should be included in practically all grain rations for sheep. For breeding ewes and growing stock it is indispensable and its loosening effect helps to correct digestive troubles when heavy grains are being fed in the fattening pens. When protein is lacking in the bulky part of the ration, bran should be included in the grain ration for the best results.

Oilcake is a palatable, highly nutritious feed and very wholesome when fed in moderate quantities. For young lambs, ewes in milk and the fitting of sheep for show, oilcake has a special value. For general use its cost often makes it prohibitive.

Brewers' Grains are nutritious, palatable and a safe feed for all classes of sheep. They are light and easily digested, containing a fairly high percent of protein. Brewers' grains may be included in the grain ration for ewes before and after lambing, for growing stock and for stock rams.

Cottonseed meal while having a high feeding value is not relished by sheep nor is it as safe a feed as the other three. Cottonseed meal should not be fed to breeding ewes.

Carbonaceous Concentrates.

Oats are grown on practically every farm and there is no grain that is more relished by sheep than oats. For fattening purposes they are hardly the equal of corn, wheat, peas or barley, but for breeding and growing stock they are unsurpassed. Oats are usually included in grain mixtures as they have a tendency to lighten up the heavier grains.

Corn.—For fattening purposes no grain excels corn. It is very starchy in nature and better results are obtained when it is fed in a mixture rather than alone. Corn should be fed with caution to all breeding stock as it is too fattening.

Wheat has practically the same feeding value for fattening purposes as corn. Frozen wheat when it can be obtained cheaply makes an excellent feed for fattening lambs. Like corn, wheat is too fattening for breeding stock.

Barley has hardly the feeding value of either corn or wheat for fattening purposes and it is inclined to be a little more heating on the blood. The best results are obtained from feeding barley when it is included in a mixture. Barley should also be fed with caution to breeding ewes.

Peas are an excellent feed for fattening sheep. When fitting for show, peas have a special value as they give a firmness to the finish which is not obtained by any other grain. The extensive feeding of peas to breeding stock should be avoided.

Weed seed screenings may be utilized for fattening lambs. Experimental results show that they have a high feeding value and that they may be fed with safety. They should always be finely pulverized before feeding and if fed in conjunction with liberal quantities of roots there is little or no danger in their use and their feeding value is increased.

Prepared Feeds.—Many of the prepared feeds now offered for sale may be fed to sheep but these are usually too expensive for the feeding value which they contain, and as a suitable ration can usually be made up from home grown and nitrogenous feeds, it is seldom that the sheep raiser is under the necessity of purchasing such feed.

The following rations are recommended for sheep feeding:—

1. Early winter rations for breeding ewes.

I 3 to 6 lbs. of clover or
alfalfa hay,
4 to 6 lbs. of swedes.

II 2 to 4 lbs. of mixed hay,
1 to 2 lbs. of pea, bean or
oat straw.
 $\frac{1}{4}$ to $\frac{1}{2}$ lb. of oats and bran,
in proportion
of 2 of oats and 1 of bran.

Note. 1 to 2 lbs of silage may be
substituted for swedes.

2. Late winter rations for breeding ewes.

I 3 to 6 lbs. of clover or
alfalfa hay,
1 to 2 lbs. of swedes,
 $\frac{1}{4}$ to $\frac{1}{2}$ lb. of oats and bran
(2 pts. oats to 1 pt. bran).

II 2 to 4 lbs. of mixed hay,
1 to 2 lbs. of pea bean or
oat straw.
 $\frac{1}{2}$ to 1 lb. of oats and bran.
(2 pts. oats to 1 pt. bran).

I 3. Rations for ewes after lambing.

3 to 6 lbs. of clover or
alfalfa hay,
4 to 6 lbs. of mangels
or swedes,
 $\frac{3}{4}$ to $1\frac{1}{2}$ lbs. oats and bran,
(2 pts. oats, 1 pt. bran).
 $\frac{1}{4}$ to $\frac{1}{2}$ lb. oil cake.

II 3 to 6 lbs. of mixed hay,
 $\frac{3}{4}$ to 2 lbs. of oats, brewers'
grains and bran,
(1 pt. each).
 $\frac{1}{4}$ to $\frac{1}{2}$ lb. oil cake.

4.—Rations for young lambs.

Clover and alfalfa leaves,
Rolled oats 2 pts.
Bran 2 pts. (all they will eat).
Oil cake 1 pt.

5.—Rations for fattening lambs, 70 to 110 lbs. weights.

1 to 2 lbs. clover or alfalfa hay,
2 to 4 lbs. swedes,
 $\frac{3}{4}$ to $1\frac{1}{2}$ lbs. grain ration.

Grain ration made up as follows

1 pt. corn	1 pt. corn
2 pts. oats	or 1 pt. barley
1 pt. bran	2 pts. oats
	1 pt. bran

CHAPTER IX

DISEASES OF SHEEP

The sheep is recognized as one of the healthiest of farm animals, yet one of the hardest to treat for diseases. Exercise, frequent change of pasture, and good management in feeding, breeding and housing are the big factors in maintaining a healthy flock. The following paragraphs deal with diseases that are common among sheep, and those that can be successfully treated in most cases without the aid of a veterinary surgeon.

Colds.

Colds usually result from exposure to wet cold weather or to housing in damp, draughty buildings. Unless colds are checked they may develop into chronic catarrh or pneumonia. Treatment consists in removing the cause whatever it may be. Add a few grains of potassium permanganate to the drinking water and give one tablespoonful of the following tonic twice daily until the cough disappears.

Tonic. Ginger, 8 ozs.; gentian, 8 ozs.; soda bicarbonate, 8 ozs.; nuxvomica, 2 ozs.; pulv. potassium nitrate (fatlapetre) 2 ozs.

The above tonic may be given in all cases of unthrift or failing health and is particularly advisable in the fall and early winter when sheep in Quebec are particularly subject to colds.

Sore Eyes.

Sore eyes may be of two forms, those resulting from mechanical injury as barley awns, chaff, nails, thorns, etc., or those resulting from an infectious bacterial germ. The latter may infect the whole flock unless checked.

Treatment.—For mechanical injuries remove all particles of foreign material from the eye and wash the eye once or twice daily with a weak solution of boracic acid.

Infectious forms should be isolated immediately and treated once or twice daily with a five percent solution of boracic acid.

Note All cases of eye trouble should be kept in a dark place as this prevents the growth of cataracts.

Maggots.

Flesh wounds occurring during the fly season require immediate attention, otherwise they become infected with maggots.

Treatment—Clip off the wool immediately surrounding the wound. Thoroughly cleanse the wound with a mild disinfectant and water, then paint with tincture of iodine and apply tar. If maggots have made their appearance the wound should be cleansed by spraying it with a strong disinfectant; a creolin solution is very effective. Care should be taken that every part of the wound is free of maggots. It may then be painted with iodine and given an application of tar.

Scours.

Scours are very common in spring lambs and often affect older sheep. With lambs the cause is usually due to giving the ewes a sudden change of feed, while with older sheep the cause is usually due to the overeating of succulent or frozen feeds. If sheep are out on pasture a late spring frost or an early fall frost will often cause the trouble.

Treatment.—Remove the cause and in the case of lambs give a tablespoonful of boiled cow's milk and lime water every two hours. In bad cases a teaspoonful of laudanum may be given in a little brandy and boiled milk.

With older sheep cut off the feed at once or remove from the frozen pasture and give as a purgative 4 ozs. of castor oil and feed lightly on dry feeds for a few days. Persistent cases may be given a teaspoonful of laudanum in blackberry brandy twice daily and fed on a gruel made from burnt flour.

Constipation.

Young lambs whose mothers are not getting sufficient succulent feed and older sheep that are being fed exclusively on dry feed are often subject to constipation. Lambs become dumpish, refuse to suckle and often show symptoms of pain, while others take fits or act strangely. Older sheep refuse to eat, the bowels have little or no movement and the temperature rises. Exclusive feeding on dry timothy hay is one of the most common causes of constipation in sheep.

Treatment.—Young lambs should be given an enema of soapy water. Repeat the enema until a movement of the bowels is effected. In stubborn

cases a tablespoonful of castor oil may be given as well. The diet of the ewe should be made more laxative and often a purgative of raw linseed oil will have a beneficial effect on the milk, thus correcting the tendency for constipation in the lamb.

With older sheep a purgative of one half to one pint of raw linseed oil should be administered at once. Smaller doses may be given every four to six hours until the bowels move freely. The patient should be fed lightly on a laxative ration for a few days when it may be brought back gradually to its full feed.

Internal Parasites — Worms.

The sheep is very subject to the ravages of internal parasites. Species of these infect the brain, lungs, liver, stomach and intestines.

Two parasites infect the brain, namely, grub in the head and gid or sturdy.

Grub in the Head is caused by the gad fly. Eggs deposited on the nostrils of the sheep are drawn up into the sinuses of the head where they hatch into grubs. Infected ewes have a discharge from the nose which is often bloody. They sneeze violently, often rear up on their hind legs and appear in great distress. The disease may prove fatal but often the grubs mature and pass out through the nostrils leaving the sheep in a normal condition. The application of tar during the fly season will prevent attacks from the gad fly and is the most effective means of preventing the trouble. Little can be done for infected ewes except to let the disease take its course. Pouring kerosene oil, turpentine and snuff into the nostrils is often more irritable than the disease and seldom has any beneficial effect.

Gid or Sturdy is much more serious than grub in the head. Gid is the result of the ewes or lambs picking up segments of tapeworms which have been deposited on the sheep pastures in the faeces of dogs. Eggs from these segments hatch into small grubs which bore through the intestinal tract and are carried by the blood to various parts of the body, some finding their way to the cranium where they form cysts. As these cysts enlarge and press on the brain the disease develops. The head is often thrown back and the animal is subject to nervous twitchings. They gradually lose the use of their sight and walk in a circle either to the right or left. They become stupid and get weaker and thinner in condition until they finally die. This is one of the most common sheep diseases in Quebec and is the cause of many deaths annually among Quebec flocks.

Treatment.—There is no cure for the disease. Dogs should be kept off the sheep pastures as much as possible and any dogs known to be affected with tape worms should be treated with male shield fern oil. While the life history of the disease would not indicate that tar would be effective in preventing its appearance, yet flock owners who are persistent in the application of tar during the summer months are seldom if ever known to have cases of the disease in their flocks.

Tape Worms.

Tape worms of sheep are of two kinds, the large (*Taenia expansa*) and the small (*Taenia fimbriata*). Sheep suffering from the large tape worm have an abnormal appetite, are unthrifty and in advanced cases have diarrhea. Segments of the worm may occasionally be found in the excrement.

Treatment consists in starving for twenty-four hours then giving two drams of male shield fern oil in milk. Follow this in a couple of hours with a purgative of 3 to 4 ozs. of Epsom Salts. Lambs should receive a smaller dose.

The small tape worm is not so common as the large one, but when present is much more injurious as it blocks the biliary duct. Little can be done in the way of treatment.

Round Worms, Nodular Disease or Knotty Gut.

There are several species of round worms but the most common of these causes the diseases known as knotty gut or nodular disease. The disease is most common in young sheep although it is found in sheep of all ages. In advanced stages the walls of the intestines are covered with small knots or nodules of various sizes. These are filled with a yellowish pasty material. Affected animals are not thrifty and in time owing to improper absorption of the intestinal juices the animal dies.

Prevention is the only remedy for this disease. Frequent change of pasture, the growing of summer forage crops and liberal feeding at all times are the most effective means of keeping the disease in check. This disease is quite common in Quebec and large flock owners should always be on watch for its appearance.

Stomach worms.

This is one of the most serious of the internal parasites. The worms, which are $\frac{3}{4}$ " to $1\frac{1}{2}$ " in length, are found floating about in the contents of the fourth stomach. Lambs are very subject to the disease. It is supposed that the

young lambs pick up the eggs from the mature worms when nibbling at the small blades of grass.

Affected lambs lack development and have a papery colored skin. Older sheep owing to greater vitality are less affected. The disease is little known in Quebec although quite common in the United States and some parts of Ontario, and may make its appearance any time.

Prevention is preferable to treatment. The ewes should be kept off infected pastures and flocks known to have the disease should have a change of pasture every week or ten days. When this is not possible the lambs may be kept in the sheep barn and the ewes brought in at regular intervals.

Treatment.—Affected lambs should be starved for twelve hours then given one to two tablespoonfuls of turpentine or gasoline in cow's milk. Coppe-
ras, formalin and tobacco leaves are also used.

Lung Worms and Liver Fluke are little known in Quebec. They may be prevented by keeping the sheep off low pastures and housing in sanitary buildings.

Bloat.

Bloat may result from sudden changes of pasture and feeds, from overeating on clover or alfalfa pastures and from eating frozen rape, clover, alfalfa and other green feeds.

The first stomach or rumen fills with gas and unless relieved the animal dies from suffocation. If noticed in time the formation of gas may be checked and relieved. Raise the animal's head, tie a small stick between its jaws and give the following : 3 drams hypo sulphate of soda, 1 dram ginger and one teaspoonful of turpentine, in milk or raw linseed oil. Should this fail to give relief it will be necessary to use the trocar or in cases of emergency a jack knife. The insertion is made on the left side half way between the last rib and the point of the hip bone and two and a half to four inches from the middle of the back bone. Direct the point of the trocar or knife downwards, forwards and inwards.

Garget.

Garget may result from the lamb not taking sufficient milk, from over-feeding, injury or a chill. The udder becomes red and inflamed. The ewe is stiff on one or both hind legs and as the disease develops swelling takes place on the under side of the body near the udder. The udder turns a dark bluish red color, circulation stops and it becomes cold.

As soon as the disease is noticed the ewe should be milked frequently and given a purgative of 4 to 6 oss. of Epsom Salts or one half to one pint of raw linseed oil. Every effort should be made to keep up circulation in the udder by rubbing it with turpentine and camphorated oil. The udder should then be wrapped in warm cloths and external heat should be applied from time to time. In bad cases it is advisable to apply a mustard plaster. The ewe should be fed lightly on loosening foods such as bran mash, roots and good alfalfa or clover hay. The lambs should be transferred to another ewe or raised on cow's milk. Garget is more prevalent among flocks that are carried in fairly high fit throughout the winter months.

Foot rot.

When once the disease makes its appearance, it is likely to pass through the entire flock unless stamped out. Low lying yards and continued wet weather provide suitable conditions for an outbreak of the disease. As a preventative the hoofs of all sheep should be trimmed before leaving their winter quarters. The feet of affected sheep should have every particle of diseased or loose hoof removed and the foot should be thoroughly cleaned. Then apply butter of antimony or pure tincture of iodine several times a week. As soon as the foot is dry and hard annoint it with tar until the hoof becomes pliable and healthy. If a number of ewes have developed the disease it is advisable to pass the entire flock through a long narrow trough or box, the bottom of which has been covered with equal parts of lime and blue stone. This will prevent the development of new cases.

Skin Diseases.

Aside from ticks and lice sheep are affected with a number of skin diseases, as scab, mange, etc. Skin diseases are very infectious and on this account are under government control. Outbreaks seldom occur, but as soon as the wool begins to fall from two or more ewes in a flock and gives evidence of spreading to others the proper authorities should be notified at once.

Treatment consists in thoroughly dipping every sheep in the flock, following this by disinfecting the buildings, fences and everything that infected sheep have come in contact with, either in the buildings, yards, or fields.

Sanitation.

The annual clean up must not be overlooked in the sheep barn. Cleanliness is one of the greatest enemies of disease. Have the sheep pens thoroughly

cleaned during the summer months. Sweep down all dust and cobwebs and give the pens, walls and ceiling a coat of whitewash before housing the ewes for the winter. Lime should also be sprinkled over the floors before bedding. This adds to the appearance and safeguards against disease.

CHAPTER X

MARKETING SHEEP PRODUCTS

Grading and co-operative selling according to quality is now being recognized as the fairest and most profitable method of selling sheep products. It is equally applicable and beneficial in its results for both wool and lambs. The old method of selling at a flat rate, regardless of quality, offered no extra remuneration to the progressive sheep raiser and placed a premium on products of inferior quality.

Co-operative marketing ensures a greater net return to the sheep raiser. He receives full market value minus cost of marketing. By selling collectively better business principles are evolved, expense of operation is lower and the quality of the products and volume of business ensures a higher price. He comes more directly in touch with prices and conditions on the central markets and is in a position to breed, finish and prepare his products to best advantage. Sales are often made direct to the consumer, hence the producer gets the middleman's profit. Co-operative selling leads to the adoption of a policy of district breedings hence the production of more uniform and highly profitable products.

Grading and co-operative selling necessitate the organization of local associations. These must be organized on a purely co-operative basis, each member paying in proportion to the benefits which he receives. The size of such associations will depend largely on local conditions, but it is seldom that the formation of an association would be warranted unless at least three thousand pounds of wool or a carload of lambs could be offered for grading and co-operative sale annually. Expense of operation will run between one half and one cent a pound for wool, and five to ten cents each for lambs, depending on the size of the association, market facilities and distance to market.

Wool Grading.

Fleeces of wool vary as to fineness, length of staple, strength of fibre, colour, cleanness and shrinkage. Any of these factors may determine the value and use to which a particular fleece may be put. Wools under two inches in

length are used in the manufacture of woolens while those over two inches long are used in the worsted process. The finer wools are used in the manufacture of the more expensive goods and the lower grades in the manufacture of cheaper and coarser goods. White wools may be manufactured into white or coloured goods while black or gray wools must be kept separate and used in colored goods only. Wools of a high percentage of shrinkage are worth less per pound than those of a low shrinkage, because when scoured the high shrinkage wools yield less wool for a given weight than the low shrinkage wools.

Wool grading is the separating of fleeces into classes according to the various qualities which they possess. In the past grading has been performed mostly in the wool houses and mills, except in some of the large sheep raising counties where it is performed at the shearing sheds.

Grading enables the manufacturer to buy more wool of the desired grade or grades with less money than he could otherwise, because he buys only those wools than he can use. When buying ungraded wools the manufacturer may buy large quantities of wool that is not suitable for his line of trade ; in consequence he has considerable money tied up in wool that he cannot use, and which, for the time being at least, restricts his buying capacity from a manufacturing standpoint.

Although graded wool is always more suitable for the manufacturers and will bring more money to the farmer, yet on account of the small flocks kept, especially in Eastern Canada, grading was impossible until organization took place and through co-operative associations farmers were willing to grade and sell together. In this way grading became possible and the expense to each farmer is small while the benefits to be derived therefrom amount to several cents per pound.

Grades produced in Quebec.

The wools of the province may be roughly divided into two classes, namely clothing and combing. Of the clothing grades the quantities are small, only wool from Southdowns and the shortest and finest of the Down fleeces going into this class. The bulk of the wool in the province is of the combing class and may be graded into four classes, namely, medium combing, low medium combing lustre combing and coarse combing. Medium combing wool is the finest and may be produced by purebred Shropshires, Oxfords, Hampshires, Dorsethorns, Suffolks and Cheviots. The staple ranges from two to four inches in length, is soft and silky to the touch, and should be fine enough to spin fifty-four to fifty-six shanks to the pound. When scoured medium combing wool shrinks from 30 to 40 per cent. It is perhaps the most widely used wool on the market.

being used by woollen, worsted, felt and hosiery mills. Dress fabrics, serges, shawls, flannels, blankets, hosiery, paper felts and all kinds of wooleus may be manufactured from this wool. The diversity of its uses creates a steady market demand for large quantities of this wool, consequently it is usually an easy seller at high prices.

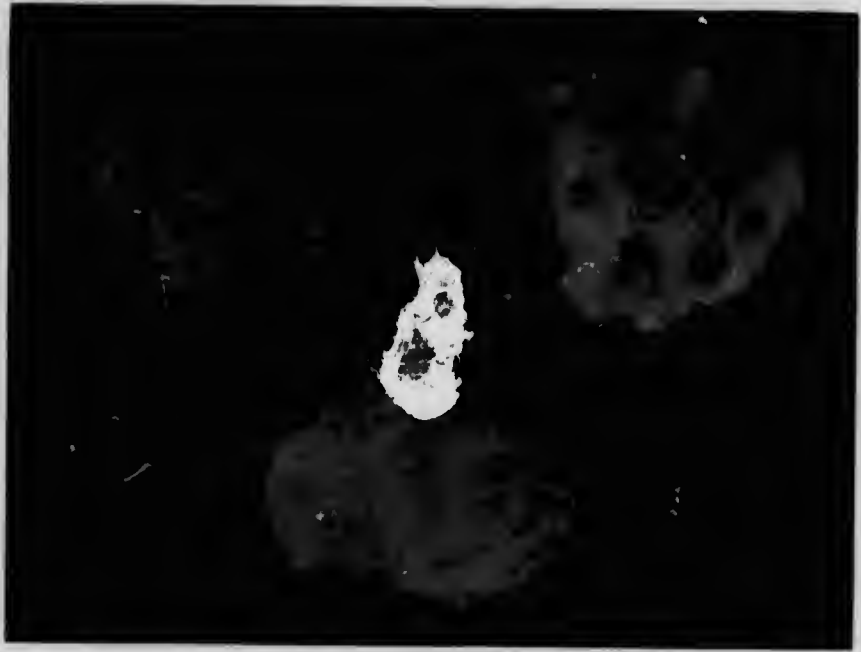
Low medium combing wool is usually produced by the commoner and poorer bred sheep of the medium woolled class. It is coarser and is used in the manufacture of inferior and poorer materials.



Five Marketable Grades of Wool.—No 1. Medium Clothing.—No 2. Medium Combing.—No. 3. Low Medium Combing.—No. 4. Lustre Combing.—No. 5. Coarse Combing.

Lustre combing wool is produced by purebred and well bred Leicesters, Cotswolds and Lincolns. It is noted for its lustre or sheen. On account of its power to reflect light it is used in the manufacture of articles where delicate colour shades are desired, such as lady's dress goods, coat linings, curtains, braids, serges, damasks, bintings, furniture cloth and goods of a heavy smooth nature.

Coarse combing wool is produced from poorly bred sheep of the long woolled type. It is used in the manufacture of carpets, rugs, and for knitting yarns. There is very little of this class of wool produced in the province.



Three Common defects of Quebec Wools which reduce the selling value.—On the left, Seedy and Chaffy.—On the right, Burry Wool.—Below, Cotted Fleeced.

Black and Grey Wools.

Black and grey wools are not of a uniform color and quality and can only be used in the manufacture of colored goods. On this account they are not as valuable as the white wools,

Rejections.

The rejection class includes all fleeces which on account of their condition are not suitable for any of the above grades and includes seedy and chaffy fleeces, burry fleeces, cotted fleeces, and fleeces with a break in the fibre. The percentage of rejections can be greatly reduced by the use of proper feeding racks and good management of the flock.

Lamb and Sheep Grading.

Quality, finish and weight are three factors that affect the market value of all sheep. Aside from a small percentage of sheep raisers who cater to a special trade, the majority of lambs and old sheep are marketed during the fall months, and grades have been based on the market requirements of all offerings.

The following grades are now more or less established, although slight changes may be necessary from time to time to meet new market demands :

Fall lambs.

No. 1's, 70-100 lbs. weights

No. 2's, 100 lbs. and over

No. 3's, 70 lbs. and under

*Ram lambs, All weights

Aged ewes and rams.

No. 1's, 100-140 lbs. weights

No. 2's, 140 lbs. and over

No. 3's, 100 lbs and under

Aged rams, All weights

*After September 20th, a class is established for ram lambs of all weights. Previous to this date they are graded as No. 1's, 2's or 3's.

Ewes of the smaller breeds that are in good condition should be placed in the number one class, although weighing less than one hundred pounds.

Lambs weighing seventy to one hundred pounds are suitable for the general retail trade. When dressed the carcasses range from thirty-five to fifty pounds in weight, forty to forty-five pounds being the most desirable weight. Lambs of this grade ususally dress out a high per cent of carcass and in addition to being fine of bone they have a good mixture of lean and fat, being juicy and tasty when prepared for the table.

Lambs weighing over one hundred pounds and dressing fifty pounds and over are too heavy for the retail trade. They are sold to hotels, restaurants,

cafés and boarding houses. The flesh is hardly as fine in the grain and the bone is coarse. They are also apt to carry an excess of fat.

Lambs of the number three grade lack development and finish. The meat is of a poorer class and suitable for a cheap retail trade.

Ram lambs after September 20th develop a bucky flavor and on this account should not be included with ewe and wether lambs of No. 1 and 2 grades.



A No 1 Lamb. Note the depth and compactness. U. S. D.

Aged ewes of one hundred to one hundred and forty pound weights produce prime mutton. Heavier ewes carry excessive fat while those under one hundred pounds lack finish and sell as third grade mutton.

Aged rams are usually purebred and on this account are likely to be more uniform with regard to size and weight. When sufficient numbers are offered and differences in finish and breeding occur they may be classed as light and heavy weight rams.



Two No. 1 Carcasses.--A little more finish would have improved the one on the left. The fat should not be excessive but should be present in sufficient quantities to hide the lean meat

**EXTRACTS FROM THE REVISED STATUTES OF QUEBEC
1909**

SECTION XXIIb

**THE ESTABLISHMENT OF A COMPENSATION FUND FOR THE BENEFIT
OF OWNERS OR POSSESSORS FOR DAMAGE DONE TO THEIR SHEEP**

By law to be
passed

5956c. 1. The council of a local municipality must pass a by-law to the effect hereinafter mentioned, if called upon to do so by a petition signed by at least twenty-five of the rate-payers residing in the municipality.

When to be
passed.

The by-law shall be passed forthwith at the ordinary meeting next following the receipt of the petition or at any other ordinary or special meeting, after the giving of the usual notice required by the law governing the municipality.

2. The by-law shall provide :

Provisions
thereof.
Compensation
fund

a. For the establishment of an annual compensation fund consisting of the proceeds of an annual tax of one dollar imposed for each dog, and of four dollars for each bitch kept within the municipality. Upon the production of a certificate from a veterinary surgeon to the effect that a bitch has been spayed, an annual tax of one dollar only shall be exigible from its owner ;

Dog tax.

b. For the imposition of the above tax payable by the owner or possessor of any dog or bitch kept in the municipality ;

Declaration of
owner of dogs.

c. To compel the owner or possessor of any dog or bitch to declare to the secretary-treasurer of the municipality the number of dogs or bitches under his care, under penalty of a fine of ten dollars recoverable by the municipality for the benefit of the compensation fund ;

Assessors.

d. For the appointment of one or more competent assessors, whose duty it shall be to examine, without delay, any sheep which may have been injured by dogs or bitches, and to fix the amount of the damage ;

Payment out
of compensa-
tion fund.

e. For the payment, out of the special fund so created, of compensation equal to two-thirds of the damage done to sheep by dogs or bitches, according to the report of the assessors, provided that the claim of the owner or possessor be made within three months

to be reckoned from the date when the damage was caused; nevertheless the council shall not allow compensation of more than fifteen dollars for any one sheep. 6 Geo. V, c. 30.

5956d. If a sheep is killed or injured while wandering on a public road, its owner shall not be entitled to any indemnity. 6 Geo. V, c. 30. Sheep killed on public roads.

5956e. The municipality may claim in its own name the penalty mentioned in sub-paragraph *c* of paragraph 2 of article 5956c. It may also claim, before any civil court of competent jurisdiction, the amount of damages paid to the complainant, and it is subrogated by operation of law in the rights of any person who has so received an indemnity, as regards his recourse against the owner or possessor of the dog or bitch which has caused the damage suffered by such person. Rights of municipalities or penalties. Subrogation.

The proceeds of the penalty and of the damages shall be paid into the compensation fund, out of which the costs, in case the municipality fails in its action, shall be paid, subject to the obligation to pay such costs and compensation out of the general funds of the municipality not otherwise appropriated, if the compensation fund is insufficient to meet all the requirements of this section. 6 Geo. V, c. 30. Disposal of proceeds of penalties, &c.

5956f. At the end of the tax year, the precise date whereof must be mentioned in the by-law, the balance of the compensation fund of the preceding year remaining unused, as well as the sums composed of penalties and damages collected by the municipality under article 5956e, shall continue to form part of the compensation fund for the following year, in case the by-law remains in force, or, if the fund is not continued, they shall form part of the general funds of the municipality. 6 Geo. V, c. 30. How balance of subrogation fund is disposed of.

5956g. The by-law mentioned in this section may be passed every year by the council of a local municipality, or may contain a clause to the effect that it shall remain in force from year to year until repealed. 6 Geo. V, c. 30. Duration of by-law.

5956h. Any municipality or person contravening the provisions of this section is liable, on summary conviction before a magistrate Penalties for contravention.

or a justice of the peace having jurisdiction at the place where the offence was committed or on penal action before the Circuit Court having jurisdiction, in addition to all other recourse, for each offence to a fine of not more than ten dollars.

**Destruction
of dogs may
be ordered.**

In the application of this section, the judge may also order the owner or possessor of a dog or bitch which has killed or injured a sheep, to destroy such dog or bitch within a delay of three days, and may further in his judgment condemn the delinquent, on his failure to comply with the order of the court in the above delay, to the payment of a fine of not more than twenty-five dollars and costs, or, in default of payment of the fine and costs, to imprisonment for not more than forty days. 6 Geo. V, c. 30.

Penalty.

