Geological Survey of Maine

THE

NORTHERN SHEPHERD,

BEING

A REPORT OF A COMMITTEE

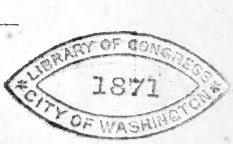
OF THE

KENNEBEC COUNTY AGRICULTURAL SOCIETY,

UPON THE

DISEASES AND MANAGEMENT OF SHEEP.

——— To rear the tender flock,
A labor this. ———————
Virgil.



WINTHROP,
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1835.

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At a meeting of the Kennebec County Agricultural Society, held at Union Hall, Winthrop, on the 4th day of June, 1832, it was

Voted, To choose a Committee to collect information upon the diseases to which Sheep are subject in this climate, with the prevention and cure; the best breeds of Sheep and the mode of improving them; with such matter as would be useful in a Treatise upon Sheep generally, should the Kennebec County Agricultural Society deem it expedient to publish a work upon this subject.

In compliance with the requisitions of the above vote, the following pages are respectfully submitted by THE COMMITTEE.

INTRODUCTION.

Perhaps no country in the world, not even Spain itself, is better adapted to the successful breeding of sheep than the State of Maine. The innumerable hills which diversify her landscape, are peculiarly fitted by their wholesome herbage, their airy walks and pure and refreshing rills to the purposes of pasturage for this kind of stock, while the lowlands afford abundance of fodder for them during the winter months. We are indebted to an individual of the committee for an economical, and, as it has hitherto proved, a judicious mode of keeping sheep a part of the winter months on hay cut from our lowlands commonly known by the name of "*meadow hay.*" This, combined with other kinds of food as occasion may require has been found a successful mode of management, as it thus brings our hills and lowlands into profitable connexion, one for summer the other for winter use. Thus, Maine is undoubtedly destined to become a great wool growing country, and the time is probably not far distant, when

the accumulation of capital, will put in use her now neglected waterfalls; and her wool, instead of being shipped to other places, will be manufactured at the Shepherd's door.

These considerations have prompted the attention of many of our sagacious farmers to the subject, and altho' various circumstances have opposed the success and increase of flocks among us. Yet the subject is exciting increased interest and awakening a just consideration in regard to the rearing and improvement of this invaluable animal.

Among the causes which have had a tendency to check the progress of Sheep Husbandry; none have been so discouraging as the diseases which destroyed our flocks in the winter of 1828, 1829, 1831 and 2. During the latter period many farmers lost their whole flocks, and there were very few who did not suffer severely.

To prevent as much as possible a recurrence of these calamities, and to throw more light upon the business of rearing and managing sheep, of preventing and curing their disorders, the Kennebec County Agricultural Society, deemed it advisable to collect and embody what information could be obtained.

The facts and observations thus collected, with such other information from various sources and authors that was thought would be useful to the Shepherds of Maine, are here presented.

Part X.

MANAGEMENT OF SHEEP.

CHAPTER I.

DIFFERENT BREEDS OF SHEEP WITH REMARKS UPON THEIR PROPERTIES, &c.

As far as we can ascertain, there are or have been eight different breeds of sheep introduced into the United States, viz: *Native breed* so called, the *Otter breed*, the *Merino*, the *Texel*, the *Dishley*, the *Caramanian*, the *South down* and the *Frederick sheep*. A brief description of these varieties or breeds as they are called, will be given.

1. NATIVE BREED.—The ancestors of this breed were brought from some part of England, at what period we do not precisely know, but probably sometime between the years 1624 and 1629. History informs us that Mr. Edward Winslow brought the first neat cattle into New-England in 1624, and in 1629, 140 head of cattle, some horses,

sheep and goats were brought into Massachusetts bay. They were, generally speaking a well formed sheep, bearing wool of a medium fineness. As there were no particular pains taken with them, and not much real spirit of improvement in this kind of stock showed until 1812, they were suffered to take their chance pretty much as Nature would dictate, without regard to the improvement of any particular points. They have now become, except in few instances, so mixed in with other breeds, that a genuine native is rarely to be found at the present day.

2. Otter breed.—Some years ago a singular variety of sheep were somewhat numerous in some parts of Massachusetts, and some few of them were introduced into Maine. They were called the *Otter breed* or *Short legged* sheep. The origin of them is thus given by Dr. Dwight:

In the town of Mendon (Mass.) if I have been correctly informed, an ewe belonging to one of the farmers had twins which he observed to differ in their structure from any other sheep in this part of the country, particularly the fore legs which were much shorter and were bent inwards so as to distantly resemble what are called *club feet*. Their bodies were at the same time thicker and more clumsy. During their growth they were observed to be more gentle, less active, less inclined to wander than other sheep, and unable to climb the stone walls with which this region abounds. They were of different sexes. The

proprietor therefore determined an attempt to produce a breed of the same kind. The attempt was successful. The progeny had all the characteristics of the parents ; and although they have since multiplied to many thousands, have exhibited no material variation.

I am further informed that this breed of sheep have been crossed with the breed of sheep common in this country, and in all instances, to the dates of my last information, the lambs have entirely resembled either the sire or the dam, and have never exhibited the least discernible mixture. These sheep are called the otter breed, from a resemblance to the animal of that name. Their flesh is said to be good mutton, and their wool not inferior to that of common sheep either in quantity, length or fineness. But their peculiar value consists in their quietness, with which they continue in any enclosure. In a country where stone walls are so general as in New-England, it would seem that sheep of that description would be almost invaluable.—*Dwight's Travels, vol. 3.*

This breed, however, did not answer the high expectations which Dr. Dwight formed of them. They have now become very scarce if not entirely extinct.

3. Merinoes.—The Merinoes were brought from Spain into the United States by the Livingstons of New-York in 1802, and Col. Hunphreys of Connecticut.

Hon. Charles Jarvis, Consul at Spain, also imported some very fine flocks from that country, from which have sprung some of the finest flocks in New-England. [*a*] The merinoes are considered by some to have been originally carried from England and propagated in Spain until they had acquired fixed and characteristic properties, not possessed by any other breed.

They are in general a smaller sized sheep than common breeds,—bone and offal light—bodies shorter, in proportion to weight, sides somewhat flat. The males have generally large horns, and both sexes are often covered with wool over the eyes and down to the hoofs. Their fleece is very compact or close, of a medium length, full of yolk and the finest of any race of sheep.

The introduction of this breed among us forms an important and interesting era in the history of our Sheep Husbandry. Although Livingston and Humphreys had introduced them into this country, and their merits were beginning to be appreciated, yet general attention was not turned to them until after the war broke out between Great Britain and the United States in 1812. From this time a total stop was put to all commerce between the two nations, and the want of broadcloths, cassimeres &c., which had formerly been obtained from England, was beginning to be felt. Our manufacturers of these articles were indeed few, and these few had not the ma-

terial to work up. A call, both for the manufactured article and the raw material was thus created, and our enterprising merchants commenced the shipping or importation of merinoes from Spain, for the purpose of growing the wool among us. As the demand for the wool was much greater than the supply, a spirit of competition among farmers arose.—Speculation ran high ; a single buck was often bought and sold for five hundred dollars or more, and as in all speculations of a similar nature, fortunes were made and lost. While merino wool brought from one dollar to two dollars per pound, the merino was held in the highest estimation, and the farmers spared no pains in nursing and tending them. But at the conclusion of peace, and when commerce was restored between the two countries, the value of wool and consequently the carcase which produced it depreciated rapidly. Our farmers turned their attention to other pursuits, their flocks became generally neglected, of course ran down, and to this day we hear many condemning tho poor merino, as being a worthless, tender animal, when the whole sin lies at the door of the careless shepherd.

That they are not so hardy as some other breeds none will deny. Nor is it possible in the nature of things that they should be. Nature, or art, or both have produced an animal, the principal part of whose sustenance is converted into a thick close fleece, of the most delicate and finest fibre. Is it strange that

the body and constitutional strength of such an animal should be deficient, when there is not that amount of food expended in producing and keeping up strong animal powers? Is it strange that of two sheep, both eating, we will say the same amount of food, but one converting two thirds of this amount into flesh and fat, and the other converting two thirds of what he eats into the finest of wool; the latter should be the most tender and less calculated to abide the rigors of winter? Does not such an one virtually say to you?—I will return your food in the form of the finest of fleeces—I will sacrifice the pleasures of a robust and hardy body to gratify your desire of dress, but you must take the more care of the carcase that I have thus debilitated for your gratification.—Certainly a most reasonable request.

The Dishley holds a different language. I will eat and drink, and be filled with fatness. The coarse fibre which I yield, you may make the most of, but while I live, my food shall be expended in larding mine own ribs.

It is true that near a large city where there is a constant market for mutton, the Dishley may be, on the whole, the most profitable; but in this State, where the facilities of growing and fattening beef are almost unlimited, mutton is a secondary object. The merino must therefore be the most profitable variety which our farmers can raise. The flesh of this sheep, though not so much in amount per car-

case as the Dishley, is good while young. But it must be borne in mind that the object of Bakewell in forming the famous Dishley breed of sheep, and of the Spanish shepherd in bringing his merino to perfection, were far different. Bakewell's whole aim was a great amount of mutton from a single carcase without any regard to the wool. The Spaniards' object was to obtain the greatest amount of the finest wool on the single body, without any regard whatever to the quantity or quality of the flesh. In bringing their favorite breeds to perfection each in its kind, they pursued an opposite course.

The disadvantages attending a perfectly fine wooled merino are

1. Closeness of fleece. This prevents air from circulating around the body, and thereby subjecting them to diseases of the skin, especially when first taken off, owing to the too great transition of circumstances, viz: from a close hot state to a perfect exposure to the sun, air, damps, dews and rains of the atmosphere upon so delicate a skin.

2. Bad form, or shape. The general health of most animals must depend upon their shape and construction. The health depends upon the digestive together with the circulating and respiratory organs. In the first place then the stomach should be large and placed in sufficient space, in order that it may contain a greater quantity of food to digest. The lungs should be capacious in order to allow a perfect-

ly free circulation of the blood through them, and to admit a larger quantity of air to come in contact with or to act upon it. Now a large chest or barrel formed body is necessary to contain these large organs. Hence a broad chest—flat back and hoop-shaped or circular ribs, indicate a more healthy animal than one whose breast is thin, back and ribs narrow, constituting a flat or slab-sided animal. Counteract these two disadvantages, viz: closeness of fleece and badness of form, and you render your merino more healthy and hardy, we think without diminishing his value. It is no matter how fine the fibre is; but if you would pursue wool growing profitably, pay particular attention to these two things:—*The shape of the sheep and the closeness of the fleece.*

A *Merino fleece upon a Bakewell body* is the grand point to be aimed at by the shepherds of Maine.—Remember, no matter how fine the fibre, but let it not be too close, better make up the deficiency of weight in the length of the staple and have your fleece more open, than shorten the staple, thicken your fleece and bring on a liability to diseases.

We are aware that many will combat this opinion, but the experience of our oldest and most careful wool growers dictate it. And we therefore repeat; that *you must pay the strictest attention to the form of the carcase or have a weak, sickly and unprofitable flock.*

Saxony.—The Saxony sheep are nothing more

than a variety of the merino. Some years ago, the Duke of Saxony in Germany, introduced from Spain some of her finest woolled sheep. They have improved the length of the staple. Not many years since quite a speculation was realized by importing this variety into the United States, but it is thought that on the whole they have been a disadvantage to our flocks of merinoes. It is true they have lengthened the staple, but they are longer legged, and are bad nurses; being smaller in the parts of generation and yield but little milk.

It may be expected that we shall speak of the different varieties of the merino. Nearly all the varieties of this breed have been introduced among us, but they have become now so blended together that their distinctive characters are in a great measure lost; and this breed now presents a general uniformity.

4. South Downs.—This breed of sheep take their name from the extensive *downs* [*b*] or as we call them commons in the counties of Sussex, Kent, &c., in England. A few of them have been introduced into New-England by Messrs A. & A. Lawrence of Boston in the autumn of 1825. Subsequently to this Col. Jacques imported a number from the flocks of Mr. Coke of Holkam in the county of Devon, and now has a fine flock of them on the ten Hills farm near Boston.

We believe they were first introduced into the United States by that enterprising and energetic Ag-

riculturist, John Hare Powel, of Powelton near Philadelphia, who thinks very highly of them, and of whom, as also of Col. Jacques they could be obtained of great purity. Their specific characters are—faces and legs uniformly grey; bones fine or small; neck long and slim; somewhat low before; shoulder high; somewhat light in the fore quarter; sides broad; loin tolerably good; thigh full, and breast good; wool very fine and short, (the staple being from two to three inches in length,) weighing on an average, two pounds and a half to a fleece when killed at two years old. This wool, when compared with the merino, is not so fine or as much in demand. Flesh fine grained and of very excellent flavor.—Quick feeders. Constitution hardy and vigorous. Capable of great improvements. Lawrence, an English agriculturist, says they are second to none of the breeds in Britain, and recommends them very highly for hill or pasture sheep.

Powel, in the memoirs of the Pennsylvania Agricultural Society, says the South Down sheep have fine fleeces, of shorter staple and much less weight, smaller carcases, less loaded with fat showing more proof within, affording mutton of finer texture and better flavor than any breed known. Their forms are not so accurate, their fore quarters being lighter and their necks larger than those of the Dishleys, but their chests are sufficiently wide to afford ample space for the position of their lungs; upon the health-

ful action of which, able, scientific and practical men agree, the vigor and useful animal secretions depend. They are much more hardy; have more offal; they consume rather more food in proportion to their size, than the Dishley, but by their vigor and activity, are enabled to support, and to thrive upon bleak and barren hills where Dishleys would die from exposure or starve.

5. Dishleys.—This breed of sheep were introduced into Massachusetts, by S. Williams, Esq. of Northboro' Worcester county; and a few importations have been made by others. The characteristics of this breed, are—heads clean, straight, broad and without horns; eyes bright and lively; pelts thin; wool long, of medium fineness and admirably adapted for combing, weighing on an average four pounds.

The Dishley are a valuable breed for mutton, but in point of pecuniary gain, in our section of the Union, they cannot compare with the Merino. This we think may be made abundantly evident by calculation.—[*See appendix c.*]

6. Caramanian or Camlet woolled Sheep.—In 1825, Capt. Gerry brought into New-York a buck of this breed. The history of which is as follows: He was taken from on board a Turkish vessel bound to Constantinople, which vessel was captured by the Greek Admiral, Tombazo, and by him presented to Capt. Gerry. A female was also presented but it died on the passage. The admiral assured Capt.

G. that it was a native of Caramania, a province in Asia Minor. This buck was kept on the farm of William Shotwell Esq., of Woodbridge, N. Jersey, where they have been propagated. They are a large long legged sheep ; necks long ; heads horned ; backs straight ; chest moderately wide ; wool very long, coarse, dry and wiry, and very strong—somewhat similar to goats hair. This wool is said to be particularly adapted to the manufacture of Camlets.

Their flesh is good. A few of them have been reared in Maine, but it is believed that the wool has not been manufactured into any thing but coarse fabrics.

7. Frederick Sheep.—This is a large and valuable breed of sheep, bred by the late R. K. Meade, Esq. of Frederick county, Virginia. They are a cross of the Merino upon the long woolled Arlington breed, formerly bred by General Washington. Mr. Meade cultivated this breed with great success for a number of years.

8. The Texel Breed, so called, have been reared in Maine by Mr. Fillebrown of Readfield, who, if we mistake not, procured them of Col. Jacques of Charleston, Mass. They are somewhat similar to the Bakewell or Dishley in appearance, and in quantity and quality of their wool.

These are the principal breeds that have been introduced and reared among us. They are not all the kinds, however, that have been occasionally seen

among the flocks of our farmers. We are informed that Commodore Preble introduced a variety from some parts of Europe, which were kept near Portland. A variety of sheep with smutty faces and legs were formerly kept by a Mr. Evans of Turner; but we have not been able to ascertain what particular breeds either of them were, or whether any of them exist now or not.

Before the introduction of Merinoes, and general attention was turned to them, our sheep, especially on the seaboard, presented a motley variety. Our seamen would often bring a ram or an ewe, or a pair from the countries that they visited, and thus in time the flocks in that section of the State bordering upon the sea, became extremely various in appearance and quality.

CHAPTER II.

MANAGEMENT OF SHEEP.

High and low keeping—Pasturage and summer management. Fall keeping—Winter keeping—Spring keeping. Time of Yeaning.

Upon the proper management of Sheep, it must be evident all the profit depends. Care is a very essential requisite in this part of Husbandry ; and he who does not possess or practice it, ought never to have the charge of a single sheep, much less of a numerous flock. If the owner takes the charge of his own flock, interest will spur him to his duty, unless indolence become the stronger. If he intrusts his flock to another it becomes his solemn duty to discharge his trust with the utmost fidelity. Every consideration ought to prompt him to this. His obligation to his

employer—his own reputation, and the moral obligation which every human being is under to treat the brute creation which the Almighty has made dependent upon him, with kindness and mercy. Sheep should not be kept too high, unless intended for the butcher, for it is believed to be a true maxim in regard to sheep "once fat never fat again." If they once become fat and are suffered to fall away, it is difficult getting them so fat as they were before they began to grow poor.

In regard to the summer keeping of sheep, experience proves that high rocky pastures are much the best. Nature, it seems, designed the Sheep originally for a mountain animal; and although man has by art changed its nature in a surprising degree, yet he has not been able wholly to thwart her views; and the Sheep still loves to feed on the hill top and the cliff, where there is a pure and exhilerating breeze, and where it can shelter itself under the shade of trees or a projecting rock during the heat of our sultry dog-days. A high pasture therefore should, if possible, be devoted to your sheep; and if there is a considerable quantity of wood, or detached clumps and groves of trees in different situations, it will be still better, for they will serve for shelter during storms, which occasionally occur. They should be occasionally salted; and if some tar be added to the salt it will be a benefit to them, as tar is a very good stimulant when taken into the stomach, and it prevents

annoyance from the different species of flies. The solid rock or mineral salt has been found a very convenient article. A piece may be laid in a trough and the sheep will lick it as they please. A saving of labor will thus be effected. During the heat of Summer, it will be found a very good practice to plough a furrow or two in the lower parts of the pasture.—The sheep delight at times to lie upon the sand thus thrown up, and have been observed to plunge their noses into the dust when pursued by the Oestris or fly which lays its eggs in their nostrils. The fly is thus defeated, and the trouble of maggots in the head the ensuing winter oftentimes prevented.

Wild animals are now so scarce that sheep are not often molested by them, but Dogs oftentimes make immense havoc with them. A careful watch should be kept of the flock on this account; and on the first appearance of any mischief of this sort, the robber should be ferreted out and killed immediately.

As the frosty weather comes on in Autumn, it is necessary to pay more attention to your sheep.—Ewes will begin to require the ram, and if permitted, the rams will begin to rove abroad. If particular attention is not paid to them, and if they are not confined, you will find your lambs coming early in winter, and much trouble and loss will be the unavoidable consequence.

As the Autumn advances you should remove your sheep to a more warm and sheltered situation, in

order that they may be screened from the cold rains and chilly nights. If much rain falls you should oil them, or apply some oily ointment, to defend their skins from the wet and dampness. So delicate and tender is the skin of the fine woolled sheep, and so close are their fleeces, that there is great danger of pelt rot being occasioned by too great exposure to the chilling influence of long and cold storms.

As the grass and herbage decays it will be necessary to supply its place by such fodder as they will eat, and to increase the quantity in proportion as what they get by grazing diminishes. It should be the endeavor of every farmer to bring his sheep and indeed all his stock, to the barn in the best possible order. They are thus fitted to withstand the rigors of winter much better, and they will be carried through this inclement season with much less care, and more economically, than they can be if they are poor and emaciated when winter sets in. During the winter, their dependence for food is almost wholly upon man. It is therefore not only absolutely necessary to his interest, but it becomes a sacred duty, to attend upon their wants, and to see that they are judiciously supplied with suitable food and at proper times. It is no slight task ; and every one who has the charge of sheep should study well their wants and appetites and govern his proceedings accordingly. It should be a rule with him to *fill them with something* that they will eat. Some green or heavy food, such as roots

or pine, or hemlock browse, should be given them. Sheep will feed upon as many kinds of food as any ruminating animals, but their appetite is variable.

As Spring approaches and the ground becomes bare, sheep are very apt to stray out, if not confined in enclosures, and to crop the withered grass. This should never be allowed, for it takes their appetite from their fodder, and as they cannot graze enough to fill them, they will lose flesh fast. This should not be allowed ; for as the yeaning season approaches, they should be so fed as to gain, rather than lose strength. The Spring is undoubtedly the proper time for sheep to yean ; but whether they should yean early in the season or late, is not well settled among our best shepherds ; some advocating that it is best to permit them to yean in April, others not till May. The arguments for and against, may be reduced to the following :

If the shepherd is supplied with warm folds and yards, and has sufficient succulent food ; it might be best to let the ram run with the flock, and have the lambs come when they pleased ; or, could the habits of sheep be so completely changed as to have the lambs come in October, say the last of October or the first of November, it might be. There are, however, obstacles to this which are not easily surmounted. It has been said, and probably with reason, that disappointing the ewe when in heat has a tendency to injure the offspring, and render it small.

The arguments in favor of delaying the yeaning as late as May, may be enumerated as follows:

1, That the sheep will need little or nothing but hay during the previous winter, consequently kept with less expense to the owner.

2, That more lambs may be generally reared from the same number of sheep.

3, That the lambs will require less care on account of the more mildness of the weather, &c.

The arguments in favor of their yeaning at a suitable time in April, are

1. That they will take the ram in November when both are in better order, and consequently the young will be larger and stronger. If delayed until December in order that the lambs may be dropped in May, both the ram and ewe will need grain in order to keep up their condition, otherwise they will be in an unthrifty state. This will have a tendency to injure the lamb and prevent its coming so healthy and strong as it would if the parents were in a better state of flesh.

2, That there is usually a time in April, after the sun has crossed the line, suitable for lambs to come, and equally as good as the usual weather in May; when, if well supplied with good succulent food, the loss of lambs will be not greater than when they drop in May; and even if they were not with lamb, it would be good economy to feed, between hay and grass in the same manner as if you expected lambs

to come soon. They would not then be liable to fail in flesh, and of course less liable to become diseased. By feeding in this manner there would be less danger of loss in the weight and quality of the fleece.—By yeaning at this time there would also be less danger of the dam having more milk than the lamb can suck, and thereby endanger the udder by inflamation, &c. The shepherd will also have less trouble in seeing to his flock, as they will be about the yard; and the lambs will not be so much exposed to the depredations of dogs and foxes.

3. The lambs which come in April will winter better during the ensuing winter, as many of them will have learned to eat hay, roots, &c. before they leave the barn in the Spring.

From a consideration of the arguments for and against the yeaning of lambs in April or May, we are inclined to the opinion that April is the best time; if the Shepherd is provided with good succulent food for them, otherwise they ought to come later. In the latter case every pains must be taken to learn the lambs to eat oats, oil cake, or some other provender in the fall.

We have not gone far into a consideration of the subjects of this chapter, because they are more fully discussed in the following letters. They are the results of many years experience and observation in the business of rearing and managing sheep, and are presented in this familiar way with the hope of making them more plain and interesting.

TWELVE LETTERS TO A SHEPHERD.

BEING DIRECTIONS FOR MANAGING SHEEP IN EVERY MONTH OF THE YEAR.

LETTER I.

May 1, 1833.

Mr. A. B. *Shepherd at* ——

Dear Sir—I propose to write to you on the first day of each month, through the year, giving you such directions as may appear to me to be useful to you, and help you in taking that diligent care of my flock which I have entrusted to you.

Your occupation has been highly honored. I need not remind you of the repute of the Patriarchs of old, whose business was about flocks; nor that the glad tidings of a Saviour were first made known to Shepherds.

This month, if most of your sheep have been out of the yard, and the transition has not been too sudden; and your pasture fence is well repaired, and

the sheep are as they ought to be, not unruly, less care may be needed than in some other months in the year ; yet they ought to be looked to as often as every other day, or they will be exposed to that most fatal of all diseases—Dogs. The lambs will also be exposed to Foxes, unless they have been anointed with sulphur and grease. New ones may also come, and will need attention. What I may write, will not exempt you from using your best judgement and referring to authors when it is necessary.

I have no doubt that your flock is now in good health, and in good order ; and I shall give my directions accordingly. When the weather is stormy, the sheep and lambs must be taken to a shelter, and if it continues long, they should be fed with something that they will eat. I would mention Oats or oil cake, ground, to be placed in their trough.—When the weather again becomes fine, return them to the pasture. If the feed is abundant, a relaxed state of the bowels will often take place. Salt given freely will often remove it*: should it continue, other means must be resorted to, and it would be well to consult approved authors on the subject ; but with me, removing them to a more scanty pasture and giving them dry food, scarcely fails of effecting a cure. The "Hove" or "Hoven" sometimes occurs to sheep during this month. For the treatment of

*Salt, however, given during feeding on dry food, if troubled with a relax, will increase it.

that disease, you will also consult the best authors.

The castration or cording of such male lambs as are intended to be altered, is most safely performed this month, before they get fat, and the weather hot. The cording also of all the old rams that are not needed.

Directions about sick sheep, will involve the whole that can be said on diseases.

Respectfully yours, C. D.

LETTER II.

June 1, 1833.

Mr. A. B.

Dear Sir—In this month, washing, shearing, marking, killing ticks on lambs, docking, &c. become necessary; also the marking the initials, as well as packing the wool if not otherwise sold, each of which will require a separate consideration. And first of

Washing. This is done that the purchaser may ascertain the value of the wool he purchases. In many cases it may be so well done, that the maufacturer is not obliged to give it the second. This operation must be delayed, if possible, until the weather is so warm that it is grateful to the operator, aud also to the sheep. A sufficient nnmber of hands must be obtained and the labor commenced immediately after breakfast, and finished by noon. If the sheep are of the fine and close wooled breeds, they ought to remain for sometime in the water, that the wool may be well soaked.

Clear running water is best; but when that cannot be obtained a clear pond may be substituted.—

When the outside of the fleece has much dirt, a little soap may be added. The work ought to be done with faithfulness, otherwise the purchaser will give a less price, or deduct in weight, more than the actual amount of dirt in it. When the sheep are returned home they must be kept in a clean pasture with good feed, and salt occasionally, for eight or ten days, and then they should be sheared. It has been thought by some that sheep are washed easier and it is better to wash them at the close of a storm, because the wool is already soaked and part of the work is done. But you ought to be sure that the storm is over.

2. Shearing. The best shearers should be employed, and they must not be hurried. Having about an hundred to shear, not more than twenty five ought to be admitted into the barn at a time. When they are sheared, they may be passed out at the door on the other side, and be put into the field again; but if the sheep are not in high order, they ought first to be greased or oiled with oil, and the cheapest that can be obtained for this purpose may be used. Rub it on the back and it will melt and go all around the body. Hogs lard is preferable on many accounts.

The fleece is rolled up inside out and tied with a strong twine*, and then put in a clean place. The

*Linen or hemp twine should by all means be used: it will sell for more than you give.

cleaning of the floor and indeed all the labor should be done with neatness : let nothing go into the fleece but wool. If the single fleeces are weighed the value of the sheep may be better ascertained, and such as are not worth wintering marked to be fatted and killed. When night comes on all the sheep may be turned out for a short time, and then brought up and placed under cover for the night unless the weather is exceedingly warm.

For want of care in properly housing, for a number of nights after shearing, the foundation of many incurable diseases is laid, and especially the rot.— This may very properly be called one of the critical periods with sheep ; and for the want of care at this period thousands die annually in Maine. If the sheep are not finished the first day, the same method may be pursued the second, or third, and so on until they are all finshed.

3. Packing the Wool. For this purpose (if not otherwise sold) good bags made of strong tow and linen cloth may be made ; about five yards makes a convenient one. Sow it with a strong thread, and nail the mouth of it to some place, or what is better put a hoop in it, and put the fleeces in, one by one, and tread them down as tightly as possible ; then sew the mouth up. The wool ought not to be packed until two or three days after shearing.

4. Killing Ticks. Three or four days after shearing, the Ticks will have crept from the old

sheep that have been shorn, to the lambs, at which time they must be washed in a decoction of tobacco and soap. Indian Poke or Swamp Hellebore* is also as good as tobacco. Little more care will be needed this month.

Yours, &c., C. D.

*Veratrum viride.

LETTER III.

JULY 1, 1833.

MR. A. B.

Dear Sir—In this month, as well as in all other hot months, it is all important that you should have a hill that is much higher than the neighboring land, in order that the sheep may go there in the middle of a hot day; and to such a field you must remove them, and also suffer them to go to a depressed place, which will be a shelter in wet and cool nights and days; for it must be remembered that depriving them of so thick and warm a covering as is taken from our fine woolled sheep when sheared, exposes them to every disease. The Shepherd should take into consideration this fact, and do all in his power to counteract the dangers of this critical period.—The sheep must be often seen and examined thoroughly for diseases. Pelt rot and Scab may be expected, and perhaps some other diseases of the skin; and sometimes the foot rot. See that they do not lie huddled together in one spot too long, as that, I am confident, has produced disease in my flock. In

one instance, I have no doubt that the pelt rot was thus produced, and nothing saved the whole flock from the scab, but a timely application of oil to the sheep. If the sheep were properly tarred, when they began to go from the barn, the latter part of this month will be the proper time to renew it, as the fly which is the cause of worms in the head, will soon appear. While doing this, there will be an opportunity to examine the horns and hoofs and cut such as require it. See that there is plenty of good water for the sheep at this season of the year as well as at other times. If foot rot appear, cut the bottom of the foot until it bleeds pretty freely, and especially at the end of the hoof.—(See Diseases of Sheep.) This I presume, in the very first stages, will cure; but in the more advanced stages, when the disease is seated below the horn of the hoof, you must consult the best treatises or authors who have written on that disease. Whatever operation you perform, do not do it in a savage cruel manner, and bleed the animal too much. No time is to be lost, for being contagious, it will ruin the flock if not immediately cured.

Yours, &c., C. D.

LETTER IV.

August 1, 1833.

Mr. A. B:

Dear Sir—In pursuance of my original design, I again address you, on the proper management of my flock of sheep. If due care has been taken of them since they have been at pasture, a good general care is all that is needed the fore part of this month, but during the last part they will require more attention. The lambs must be taken from their dams, together with such old ewes as are not to be wintered, and placed in a separate field, and if possible, at so great a distance that they cannot hear each other. The old sheep will lead the lambs, and they will be contented. This will afford an opportunity to search for diseases—to take the exact number in each field, and to see that *Dogs*, the worst of all diseases, have not been among them. The lambs and such ewes or other sheep which are intended to be killed the ensuing fall, you will put in the *best* feed. Such ewes as have lambs may be left with the flock for a few days, until the lambs are weaned. The flock must

be returned to the same field, there to remain until their milk is dried off. Then they must have a change of pasture. The pasture where horned cattle have been kept during the fore part of the season, will be suitable if it can be spared ; that they may get in good store order,—an object always desirable, but a very fat sheep does not winter well. This change of pasture must not be neglected, as the sheep may be put in good store order easier at this time, than at any other. Their noses may be tarred when taken up to separate the lambs, and I advise to do it as the worm in the head may be expected, if they are not. The lambs may be fed in the troughs together with the sheep that are intended for slaughter, which will fatten the old sheep and learn the lambs to eat. Ground oil cake is the best food, and next to that, oats.

Yours, &c. C. D.

LETTER V.

September 1, 1833.

Mr. A. B.

Dear Sir,—I again make good my promise of writing to you on the first day of each month. If you have done your duty up to this time, and your sheep are in health, you will have little to do this month. Yet there must be no relaxation of care. The sheep must be often seen and counted. Search must be made to see if any ewes are strayed, and that there are no rams among the sheep, and as well this, as every other month—that the feet do not grow out of shape, and that horns do not want cutting—that there are no places where the flies deposite their eggs or maggots on the sheep. Should there be any sore and maggots have got in it, the wool must be carefully cut away for some distance around it, and tar from the tar-bucket spread all over and around it; first carefully removing every maggot. Spirits of turpentine and tar, if easily obtained, is an excellent thing for wounds and killing the maggots.

As to unction in the latter part of this month, I have never used it when the sheep are in health, but

I have no doubt that a sheep salved or anointed, just before the fall rains come on will do better than one that is not, and especially one that is low in flesh. I should advise the trying of it. Books say, that melted fresh butter and a small quantity of soap is is the proper ingredient for it to be made of.

Yours, &c. C. D.

LETTER VI.

October 1, 1833.

Mr. A. B.

Dear Sir,—I take the liberty again to give you directions on the subject of my flock of sheep under your care. The sheep must in some way be sheltered from cold rains, as the wind is generally east and north east. A low or depressed piece of woodland on the south and east side of the pasture, may be sufficient. If nothing else can be done, they must be brought to the winter folds, in bad storms.

You will be very careful that no sheep stray, and that the fences are kept up at all times, and that the sheep do not contract unruly habits. All the sheep that are breachy, learn it in this month and November, and such a habit must destroy the value of the flock, for keeping on a farm. What man can keep an unruly flock of sheep upon his premises? These habits may however be prevented, and you must do it. The fine woolled breeds are less subject to being unruly than many other. If ever salt does good it is at this season of the year, and I would

salt mine if it were for no other purpose than to tame them.

Be careful to put our good and wholesome law in force, respecting rams going at large. The whole profit of the flock as it regards lambs, may be destroyed by neglect in this one thing. Let no fear of disturbing the neighborhood induce you to neglect this, for rely upon it, March will make all your buildings a hospital if you do, in spite of ordinary care. Much care must be taken at this time, and indeed all the fall, to learn your lambs to eat. They may be put into a yard, and the troughs put there also. Keep them there for one day and a night at a time, and the troughs well supplied with oats, oil cake ground, &c. I had almost forgotten to say to you, take the best possible care of your own rams, lest all the mischief be done by them. It is necessary that they should be in the best possible order when they are wanted. Always look carefully for diseases in the flock.

Yours, &c. C. D.

LETTER VII.

November 1, 1833.

Mr. A. B.

Dear Sir,—On the commencement of another month, I again address you on the subject of my sheep. This is one of the critical months of the year with sheep, and they must not be neglected. As to pasturage, they may follow the horned cattle and Horses into every pasture in which they have been kept in the fore part of the season, (if the fences will allow.) The frost however will soon kill the feed, and your attention must be directed to supplying the deficiency. This may be done by scattering half a gill of corn daily, to each sheep on a clean place, or by feeding oats in the trough, as convenience may direct. Your attention must also be directed to the sheltering of the sheep, during cold rains or snows, should there be any. If you mean to have your lambs come in any time in April, you must turn your rams with them at the corresponding time in November.

The practice of feeding your sheep with corn or oats must be kept up every day, until snow comes, be it sooner or later. Snow does not often come to lie long in this month; but should any come, the sheep must be fed with green and dry food, a due proportion of each. Every care must be taken that sheep do not melt their fat, as some call it; that is, lose it, through want of proper nourishment at this season of the year, for obvious reasons. Never let your rams be exhausted before you put them with the sheep. They should be so tame that they may be fed out of your hands with a piece of bread, or any other thing that you may please to give them.

As sheep may or may not come to the fold this month, I think I had better explain the reasons why sheep ought to have green food in part, when they first come into the fold, in the fall or winter.

It has been said that a sheep of twenty-two inches height eats, when fed with green succulent grass, eight pounds in twenty-four hours. The same quantity when dried will make two pounds of hay; and when fed with dry hay she eats two pounds only. The loss therefore is six pounds in weight each day, unless it be made up in drink. To supply this deficiency in part, green food must be given them each day, when they come to the fold, that the change may not be too sudden for them. Sheep will feed on as many kinds of food as any domestic animal. We may therefore make use of potatoes, turnips,

cabbages, or hemlock browse, as green food; but heavy food they must have or they will grow lean by losing their fat, which will be absorbed to make up the deficiency in food, and this will prove almost fatal at this time of the year. It must certainly fit them very poorly for encountering the rigors of our long winters.

Lambs must be made to eat well in this month, or you will lose them.

Yours, &c. C. D.

LETTER VIII.

DECEMBER 1, 1833.

MR. A. B.

Dear Sir,—So important is a good attentive Shepherd, that it is well said, tell me what your Shepherd is worth, and I will tell you what your flock is worth. There is no neglect of a shepherd to be allowed. HIS SHEEP MUST BE TAKEN CARE OF.—Many have had to give up their flocks in Maine, because they could not get a faithful Shepherd, and whether I give up mine at ——, depends upon you. If the sheep are neglected any part of the year, they may be touched with that fatal disease, the rot, and the flock be ruined. But I hope better things of you.

You are provided with open sheds which is the most common method of sheltering sheep in this State. Much has been said in favor of feeding under cover, from racks, but I have pursued the cheaper mode, on clean snow, with an open shed fronting south and east, much to my satisfaction. [*d*] When there is more rain in the winter, feeding under cover

may be more needed. Your sheep will, in all probability, come to the fold this month, if they have not already come. If well tended and faithfully fed with hay, grain may be safely dispensed with during this month ; but remember, they must be well supplied with something that they will eat. They must be filled every day.

Clover hay is best, if well cured ; but if the weather is cold they will eat almost any thing. You may feed them with oat or wheat straw, fresh meadow hay, or almost any thing, in the fore part of a cold day, but be careful to give better at the latter part, in order that they may be well filled at night. If the weather is warm, better hay must be given, and possibly grain will be needed. Green and heavy food must not be neglected, but given every day, both to the old sheep and the lambs. I have for nearly thirty years made use of hemlock boughs, as the cheapest green food. I cannot believe that there can be a cheaper hay, than fresh meadow or bog hay, as it is called. The great point being to keep sheep well and cheap. Fowlmeadow hay is as good as any I am acquainted with for black cattle, and even sheep, (excepting early cut clover.) Bluejoint is good, but not equal to Fowlmeadow. Other kinds of fresh meadow hay that I now know are not as good, but much good English hay may be saved in a flock of sheep by the above kind of hay, (fresh meadow,) and what is not eaten, will serve for litter

in the shed, which ought at all times to be well littered. It will be well also to have more yards than you have flocks of sheep, so that you may shift them from one to another, and let the colts and young cattle come in and pick up what the sheep will not eat.

I will mention two diseases which occur in this month, and their symptoms.

The symptoms of the first are, a frequent stretching, with evident signs of pain in the intestines.—Soon after, a fever may be expected, which will be manifested by a dry nose, heat in the mouth, and quick pulsation. I have always given physic at this stage of the disorder, and generally the most powerful I could obtain. If not relieved, and a discharge of the bowels takes place, a settled dysentery generally follows, and the sheep either dies of this, or sinks into the rot and dies. I have checked this discharge by a decoction of raspberry twigs, but violent diseases in the fore part of winter generally kill before the winter is over. My opinion is, that it is caused by eating the chaff of wheat, &c. at the barn door ; although undoubtedly it may sometimes be brought on by other causes. Many light cases of it are often cured by nature only. Should this disease appear the sheep must be separated from the flock, and placed in a warm and dry apartment.

The other disorder is a soreness in the mouth, especially in the corner of it. The lips and head swell, and perhaps a breaking out on other parts of

the body. I have cured in all cases by an immediate application of tar and sulphur. This disease may be light attacks of the sheep pox, spoken of by authors. Put the preparation on to the noses, around the mouth and into the corners thereof. Should any death happen by any internal disease, you will dissect and examine the cause thereof. Never neglect this where there is the least uncertainty. You may expect that I shall keep you employed, if you take the care of my sheep. The life of a shepherd is not an idle life.

Yours, &c. C. D.

LETTER IX.

JANUARY 1, 1834.

MR. A. B.

Dear Sir,—Although this in fact begins the new year, yet I have chosen to begin my directions to you as a Shepherd, on the first day of May, for obvious reasons.

The management of the flock will not differ materially this month from the month before or after it; as all three are winter months, and there must be a sameness in the care of the sheep. I am in hopes that what did not occur to me in writing for one month, may the next, so that you may gather from these letters, and applying good judgement, the true method of managing the flock with honor to yourself and profit to me. I have spoken of many kinds of fresh meadow hay, with oat or wheat straw, and a plenty of heavy and green food, as being the fodder on which sheep will do well in the winter; yet when the straw is gone and they have been kept long on fresh hay they will need other fodder, or something in addition. This may be sup-

plied by corn stalks, if well cured, or a foddering of good English hay at night, or a little grain. Remember this; they must be filled at the night of each day. When thaws take place, the sheep must have better hay, &c. given them, in a clean place, and if it continues without rain for a considerable time, grain of some kind must be given.

If it can be done, it will be best to remove the sheep, rake the yard, and cover where they have laid with litter. When the weather becomes cold, they may be returned into the same yard where they were before kept. It has been said that black cattle and sheep do better, and are in better flesh in the spring for having a proportion of fresh meadow hay in the winter, and many reasons have been offered to account for it. In cold weather sheep must be filled, and if they will not eat one thing give them another; they are the best judges of what best suits them.

Water is necessary for sheep, although they can pass more days without it than other domestic animals. You will therefore see that they have water at all times convenient for them.

It has been said that there are two ways of keeping sheep. One is, to give them as much hay as they can eat the heads and leaves off. The other, hay in less quantities, and make them eat it all up, and supply the deficiency with grain.

In the winter of 1816—17 I, from necessity, kept

67 sheep and a colt three years old, on what was supposed to be only four tons and a half of hay.—The sheep were principally ewes, and they did not lamb until after there was a plenty of grass. I lost but one lamb. The hay grown in that cold year, was much better than hay grown in a warm year. Hay grown in a warm year will always require more grain to accompany it for sheep, than the like quantity grown in a cold year. The same is applicable to cold and hot countries. But to return. Should any of the sheep melt fat, or grow lean, they must be removed to a separate yard, and kept better.—You are supplied with three yards, and you will find that they are necessary. Your wether or wedder sheep, must also be separated from the ewes this month, or the early part of February, as they will do with much poorer keeping than the ewes with lamb. You will also remove diseased sheep into some suitable place, unless the disease has become general in the flock; and in that case, some may be worse than others, and make it necessary to remove them.

Yours, &c C. D.

LETTER X.

FEBRUARY 1, 1834.

MR. A. B.

Dear Sir,—In this month, if not done before, as I said in my last, and the earlier the better, the ewes with young must be separated from the wethers and rams, and placed with the last year lambs, fed with good English hay, green food, and a small quantity of grain.

Grain when given to sheep should be given at or near the same time each day, otherwise they will neglect to eat hay and bleat after the grain; but if you are careful to feed at the same hour, this will in a great measure be prevented. I have no doubt but that you have fed the lambs all the season on the best of English hay, with heavy or green food, and a small quantity of grain each day. The ewes with lamb will now want the same keeping. If there are any that certainly have the rot, kill them and take off their pelts, for I know of no cure that will not cost more than the sheep is worth. If you have plenty of feed, and should give the rams and wethers the

the same keeping that you do the ewes, though it is not absolutely necessary, it will not be lost. They will pay for it in wool and flesh. But you must separate them at any rate, as the strongest will get the feed and rob the weakest. All weak and feeble ewes ought before this to have been separated from the others. Indian corn at this season of the year is good, given even in small quantities, but if given late in the season it prevents that flow of milk necessary to nourish their lambs, especially if given in large quantities. Small fodderings at a time, and given often, is always to be preferred. Many of the directions given in the other months are applicable in this. It is now time to search your sheep for ticks, and to kill them by smoking them by the aid of the smoke pipe and bellows. In order to be effectual it must be done twice, and at short intervals.

Yours, &c. C. D.

LETTER XI.

March 1, 1834.

Mr. A. B.

Dear Sir,—This being a month that has usually a great variety of weather, it will call for no little care with the flock. As lambing or yeaning season approaches, you must increase your feed and attention. If the noses of the sheep were not tarred the last month, they must be this. I have found it a certain remedy for common running at the nose, and also for sore eyes. Long continued high winds, severe cold, rains, &c. &c. are all bad if the sheep are exposed to them ; and to keep them from being exposed to either will require not a little attention.

Never huddle a great number of sheep into a small space, if it can be avoided, and if at any time you do it, let there be a free current of air in the space above them.

It has been said that each sheep needs one yard square of space. You ought to know what object to aim at, and be left to your own judgement in some degree to obtain it. Browse should not be given

this month, and it is not of much use in February, as it grows tough on the trees on account of its age. Potatoes and the yellow turnip (Rutabaga,) must be substituted, with which I hope you are well stored. English hay must be substituted for fresh, as that becomes dry and poor after a few days of March winds. Small quantities of Indian corn may be safely given, to supply any deficiency ; but large quantities must be avoided, as it will certainly prevent that flow of milk necessary for the lamb when it comes. Oats may be given one day and potatoes the next, in reasonable quantities. Oil cake, ground, is the best food that I have used. Shorts are recommended by some, but I cannot speak of them, as I have never made trial of them myself. You will increase your quantity of food as the time of lambing approaches. No creature pays better for being kept in good store order than sheep ; but if they get very fat, they ought to be sold to the butcher, for they will never fat with the same ease again, and ten chances to one if they do not go into the rot.

Take good care of your sheep this month, that they may be able to bring forth their young the better during the next. Should any diseases take place I must refer you to books on the diseases of sheep. I must renew my former directions to give provender at the same time each day. Tagging or clipping the tag-locks ought to be done during the latter part of this month. I wish you joy with your sheep in

fine order on the last day of this month, otherwise, disappointment to you and loss to me will be the consequence.

Yours, &c. C. D.

LETTER XII.

April 1, 1834.

Mr. A. B.

Dear Sir,—This month will finish the year with my directions. April may be called a critical period in many respects. It is the yeaning month with most good farmer's flocks in this State. In this month sheep go from hay to grass, or from dry to green food. It is also a period that calls forth the greatest care and attention of the shepherd.

You will need all the information that you can obtain and all your experience ; and should the weather be bad, unceasing care day and night. I hope your lambs do not come until after the middle of the month ; in that case, every care and attention may be paid to the sheep during the first part of the month to prepare them for lambing in the latter part, which may be done as directed the last month.

Make the sheep eat as much green food as possible each day. Grass is best if you have it ; next to that, potatoes. Oil cake, ground, is the best provender ; if you have not that, small quantities of oats

may be given. This month tests all the rest, as it regards ewe sheep, for he who raises the greatest number of lambs from a given number of ewes is supposed to be the best shepherd, all other things being equal. I shall make a few observations on the change from dry food to green, and afterwards on the lambing season.

1. When sheep go out into a considerable field in April, the ground being bare, they get sufficient green food to take off their appetites from dry food, unless it be of the very best kind. What is to be done? I answer that a field of clover that has been shut up from an early part of the last autumn will be best for them; but if you have not that, the very best hay, potatoes, cabbages, ground oil cake, oats, wheat bran, or some other thing that they will eat must be given. The sheep must be filled each day to a reasonable degree. Try turnips—try any thing that they will eat. Wood ashes and salt are spoken of as giving an appetite at this season of the year. I cannot speak of this from my own experience, but am inclined to think that when they have been kept long from the ground it may be useful.

2. The lambing season. During this period the shepherd must live with his sheep. The ewes most likely to lamb must be put up at night if it be cold or stormy. Feeding the sheep well and having them in good order is the best direction I can give you. They may not all do well in lambing, and perhaps

some may need help. A little practice, and the aid of what has been written on the subject will be sufficient. The lamb may not have milk enough ; in this case a sheep that has lost her lamb, or the milk of a cow that has recently calved may be used ; but to clear the bowels of a new born lamb with any thing but the milk of its mother, in such a manner as to save its life has been a difficult thing with me. It has been mentioned to me by an Irishman that an egg beaten up would be good. It would be worth while to try it. If sheep are in good store order and lamb during the last of April, and the weather is mild, a field where they can get grass may be all that is necessary, yet the shepherd ought to watch them.

Yours, &c. C. D.

P. S.—Having communicated to you my opinion, (so far as my knowledge will permit,) of the mode in which sheep ought to be kept, it may be well to impress your mind with the absurdity of the usual manner in which they are kept in this State, in order that you may avoid their practices, which experience has proved so destructive to many flocks. To do this, I will begin on the first day of April. In this month when the sheep go out of the yard they

get a very small quantity of green food ; certainly not enough to support them in the fore part of the month. If the horse or ox or cow was to do it, they would have something else that they would eat ; but the Farmer says of the sheep, I guess she will do, and she is of course neglected. Although she will eat nothing of the usual food yet she receives no better. In the month of May she is turned to pasture and left, if she has good feed to make up the loss of April. In June she is summoned to be washed—of course in the afternoon, and when it is dull weather,—probably a storm coming on, and as it is cold, wet work, the greatest drunkards are employed, who readily engage under the expectation of having rum to drink. When being washed they are handled in the roughest manner, and brought home in the storm at night and turned into a low, wet pasture, there to remain until they are dry for shearing.

In a few days shearing is commenced, by huddling perhaps one hundred sheep or more, with their lambs, into the cow stable, where they are forced to remain until they are robbed of their wool, even if they should be sweltered and starved to death.—When it comes night, and their fleeces are taken off, they are turned out. What must be the situation of a thick fleeced, fine woolled, lean sheep, suckling a lamb, that has given her owner four pounds of good, cleaned, well washed, fine wool, turned out sudden-

ly in a cold and perhaps wet night to fill her belly after fasting a whole day! I should think it would be the last time she would require food, and indeed it often proves so. After they have been out in the storm a day or two, and have either died or lived, or at any rate laid the foundation of incurable diseases, the enquiry is made, *where are the sheep to be pastured?*

The cows must make more butter and cheese this year than they did last, says the good wife; and as for the mare she must have good feed, for I am going a journey to see my mother in the fall. Tom says the oxen shall be kept well, for he is going to Cattle Show in the fall with them. The good husband, willing to indulge his family, concludes to turn them into the pasture over to the back end of the lot, down next to the swamp, and the sheep are accordingly put into that pasture, there to remain for the summer and fall, without further trouble or care, and there they are doomed to remain until three days after snow falls the ensuing autumn or winter. The first day after snow comes is spent in getting wood for the house,—the second in repairing the cow-house,—the third in repairing the horse-stable, and the sheep and lambs are then thought of and brought home on the fourth, unless some bad luck takes place. In that case they are doomed, die or live, until they can be conveniently brought, for it is only the *sheep* and they 'll *stand* it. When they

are brought home, they are shut up in a tight, small yard, to prevent their peeling the fruit trees, &c. Through December, January and February a little hay is given them twice or three times a day, and perhaps in March a few roots are given them, but most probably half of them are dead, and the residue nearly so.

Thus the most profitable creature on the farm, one that gives both clothes and meat, is the most abused and neglected. C. D.

Part XX.

DISEASES OF SHEEP.

DISEASES OF SHEEP.

THE artificial mode of life which man has imposed upon the sheep, the restraints which he has put upon its movements in search of its natural food, and the changes which he has effected in its modes of life compared with the free state in which it probably existed when formed by nature, render it liable to a multiplicity of diseases which often destroy at once the pride of the flock and the hopes of the Shepherd.

Many of the diseases may be reckoned either incurable, or cured only at an expense that it is more economical to lose the sheep than incur a greater loss in the cost and trouble of effecting it. Others, however, yield to the application of proper medicines, judiciously applied, and nearly all may be prevented by watchfulness and suitable care.

It may not be necessary to enter particularly into all the diseases which are, or have been known to infest this valuable animal. Some of them are as yet only known on the other side of the Atlantic, and have never, to our knowledge manifested them-

selves among the flocks of America, and we most fervently hope never will.

Although all diseases may arise from exposure to contagion, or derangement of the digestive organs, occasioned by improper exposure or improper food, yet for the sake of method we will divide them into two divisions.

I. External diseases on those which exhibit themselves upon the external organs and parts of the animal.

II. Internal, or those which are seated upon the internal organs of the animal.

DIVISION I.

DISORDERS OF THE EXTERNAL ORGANS.

1. Scab. 2. Pelt rot. 3. Claveau, or Sheep Pox. 4. Foot Rot. 5. Erysipelas, or red water. 6. Sore Eyes. 7. Wounds, ulcers and fractures.

I. SCAB. *Appearances and symptoms.* The first indications of the scab manifests itself by the starting of fibres and locks of wool from the rest of the fleece. It generally begins on the rump of the animal, and extends up the back and over the sides and neck. The animal is seen rubbing and biting its sides, and exhibits signs of great itching and uneasiness. On examination the wool is found to separate easily from the skin, and there is a red appearance of the skin, small watery pimples or tetters at

first show themselves, and finally dry scabs or a scurf covers the infected place. The skin has a dry, stiff, meagre feel, and it appears to be hardened in lumps or ridges. In severe cases there is a yellowish water below the crust or scab. In time, the wool falls off from the whole diseased surface, and the flock presents a miserable and disgusting appearance.

Causes. The causes of the scab are various; exposure to cold rains, and remaining in low, damp, foggy situations too long, carelessness of the Shepherd in attending to cleanliness and comfort of the flock. Unwholesome food may also bring it on. It is contagious, and easily communicated from one sheep to another in the same manner as the itch is communicated among the human species. Hence some have considered the disease itself to consist in small animalculae which burrow in the skin. This may very probably be the case.

Treatment. On the first appearance of the scab, or itch, separate carefully those that are infected from those that are not. Having done this, you may then shear the wool, if it be not already off, from the diseased parts of the sheep disordered. Wash the parts affected with warm soap suds, and rub it briskly with a brush. Then apply some one or more of the following ointments, either of which will probably effect a cure. An ointment made of equal parts of Lard and Sulphur, in which is put a small portion of spirits of turpentine. A strong decoction of

tobacco has proved a valuable remedy in this disorder, especially in the first stages of it.

A decoction of the green Hellebore, or as some call it, Swamp Poke, or Indian Poke, (the Veratrum viride of Botanists,) united with tobacco has been found very effectual. The mercurial ointment has also been applied with success.

From the success which attends a solution of the chloride of lime in the cure of the itch in the human system we should be inclined to think that its use in this disorder among sheep would be in the highest degree beneficial. It is at any rate worth a trial.

Whatever is applied, however, should be applied promptly and thoroughly. It will not answer to do this business by the halves, unless you wish to be always anointing and washing your flock. A small patch left untouched will continue the disease and prolong your labor and trouble. Examine your flock often and closely. Do not trust to general appearances, for a sheep may have this disorder for years, and yet if she be naturally of a hardy and strong constitution, eat and drink, and appear as well as any other.

II. Pelt Rot. *Symptoms.* In this disease the wool falls off and leaves the skin bare. Or if it does not fall off, it first becomes reddish on the back part of the neck, and also on the back and sides of the sheep. The skin is hot, and as it becomes ex-

posed to the air becomes dead. If let alone it will sometimes heal over or run into the scab. Sometimes the wool almost entirely falls off and there is no appearance of soreness, though a white crust covers the skin where it is divested of the wool.

Causes. It is generally caused by exposure to cold rains, particularly in merinoes, soon after shearing. This kind of sheep from the delicacy of their skin are more liable to it, when stript of their close and warm covering and turned out into cold storms without being defended by oil or some unctious matter. In the autumn it is sometimes produced by being suffered to remain without shelter or cover from the inclemency of cold and long storms.

Treatment. When this disorder appears in the flock they should be sheltered from the wet and carefully oiled, or the skin covered with lard well rubbed in. A more full and generous diet should be given them, and care taken that they are rendered comfortable and dry. It readily yields to such treatment, but if neglected oftentimes becomes fatal or ruinous to the health and profit of the flock.

III. Sheep Pox, or Claveau. This troublesome complaint sometimes breaks out in our flocks, and frequently does much mischief before the real nature of the disease is suspected. The following description and mode of treatment, from Bard, has been found by experience to be correct in most particulars, and successful in practice.

Symptoms, &c. "The sheep pox commences by a heavy, watery, and slightly inflamed eye, some swelling of the lips, and a discharge from the nose, very soon succeeded by an eruption round the mouth on the edges of the lips, and particularly at the corners of the mouth. In some cases of the mildest species of the disease, these have been all the symptoms which have appeared. The eruption has dried into small black scabs, which have fallen off in eight or ten days, and left the sheep quite well. In the next degree of the disease, on examining the sheep, an eruption of various size and shape is found on the inside and naked parts of the thighs and belly; some of the pustules are small and round, others broad and flat; and some are likewise discovered under the wool on different parts of the body.—These pustules grow yellow on the tops, and discharge a small quantity of matter, which dries into a blackish scab. Still this is to be considered as the mild and distinct species of the disease, and is attended with no great danger. The confluent and malignant species of the disease commences with a more violent inflammation of the eyes, a more manifest and considerable swelling of the lips, and a greater and more purulent discharge from the nose. The eruptions on the naked parts of the body are very numerous, broad and flat, of a reddish brown, or purple color; and are likewise discovered under the wool, on every part of the body. The animal

appears very sick, dull, and stupid ; and refuses food, partly from loss of appetite, but more evidently from the soreness of its mouth ; on every part of which, tongue, gums, and on the inside of the lips, the eruption is discovered. Of these malignant cases some have died in twenty-four and thirty-six hours ; others have struggled through eight or ten days, and a few, but very few, have recovered. Between these grades of mild and malignant claveau, the variety has been almost as great as the number of animals seized. But neither in the confluent, or mild species, was any high degree of fever manifested by hot feet, ears, or mouth ; which, in general, were rather below their natural degree of heat ; and in some of the worst cases, were actually cold.—Nor did the breathing often become quick and laborious until very near the fatal termination of the disease.

Of the lambs, some were seized within three days after birth, so that I believe they must have brought the infection with them : others were not seized until they were eight, ten, or fourteen days old ; and I thought evidently took the disease from the older and more early infected lambs.

The little animals, in general, appeared to droop for a day or two ; and then the first symptom, as in the older sheep, was an inflammation of the eyelids and lips. This was soon followed by the erup-

tion, which appeared very thick and florid on the inside of the thighs, and other naked parts, and could be felt on every part of the body. From day to day the number of the eruptions appeared to increase, and to collect in large clusters, particularly about the neck, throat and jaws; by which, although the lambs retained an appetite for the teat, they were at length prevented from sucking. In a few of the old sheep, although the eruption was very numerous, the maturation of the pock was perfect, and in general, such recovered. But more frequently it was very imperfect in the old sheep; and in the young lambs, I saw none that matured at all, where the eruption was general over the body; and all such died. But where the eruption was chiefly confined to the mouth and pudenda, a kindly maturation took place and they recovered. Upon the whole, this disease proved fatal to more than one third, nearly half of the old sheep; and to three fourths of the lambs which were attacked.

The relics of this disease, like those of the small pox, are various and terrible. I have already mentioned the putrid and corroding ulcers about the mouth. Some had imposthumations, especially about the head, which on being opened, discharged a greenish and offensive matter; but the eyes most frequently suffered; the ball of the eye itself posthumating and bursting, and this symptom attended and followed some of the milder cases; in one, a

fine full-blooded ram, no other symptom was discovered."

Cause. This disease often arises from contagion, but also occurs among flocks which have in all probability never been exposed directly to infection of this nature. It is therefore highly probable, that the state of the flock or constitution of the sheep may at different times be such as to allow different causes—such as atmospherical influence, or peculiar kinds of food to bring it on. More observation upon this subject is desirable.

Treatment. "It will readily be conceived that in a disease of this nature, no more than in the small pox in the human species, nothing like cure can be attempted with success; if by cure is meant to put a stop to the progress of the disease. Like all diseases of this kind, it must, and will run through its stages; and all that can be done is by a well regulated diet, and by attention to the state of the bowels, and attempting to mitigate any violent and untoward symptom, to conduct the animal safely through it. At first, as I have said in the hope of stopping the spread of the disease, every sheep that was attacked was immediately and carefully separated from the flock; but soon finding this a vain attempt, it was abandoned; and those only which were more seriously attacked were taken to my hospital, that they might be more particularly attended to. The milder cases were left in the flock to com-

mon treatment and common food; except, that instead of corn, the whole flock had bran and water with hay. Those that were taken to the hospital had chiefly roots and bran; and those whose mouths were so sore that they could not eat hay, or even roots, was supported on gruel, given three or four times in a day by means of a bottle. The only medicine given, was brimstone and molasses, yeast and molasses, and in some cases, a little nitre. Sore mouths were constantly cleansed with vinegar and water; and when they began to ulcerate, with one of the caustic solutions mentioned above. In a few of the worst cases, mercurial ointment was rubbed freely under the axillæ and on the thighs. To two or three I gave calomel freely, to try how far mercurials might mitigate the symptoms. Under such treatment, most of the mild, and a very few of the more severe cases recovered; and one very malignant and confluent case in my neighbor Mr. Broom's flock, recovered under the free use of mercury.

Inoculation for this disease is recommended in many parts of Europe; and Mr. Laysterie assures us, with efficacy and success. As soon, therefore, as I was assured of the disease, I made the attempt; but I cannot say with any considerable success. In the first place, I found it difficult to procure matter, and when I had succeeded so far, I again found it very difficult to communicate the disease with any certainty, athough I performed the operation with

great care, and in every mode I could think of; with a thread, with the scab, and with fresh fluid matter; and where the sheep or lamb took the disease, many died. But I confess, I was by no means certain they had not taken the disease before inoculation, in the natural way. A very few evidently took the disease from the inoculation, and went through it with safety. I vaccinated seven, but I was not sure that one took the cow-pock. Yet the analogy between the claveau in sheep, and the small pox in man is so great, that if the disease should again appear, I would recommend, and would myself again attempt inoculation."

Notwithstanding Bard, as quoted so largely above, states that the disease will go through its course, yet there seems to be a species of it that sometimes attacks lambs which may be readily subdued. It generally attacks lambs during their first winter. It also attacks older sheep, but is most usually confined to the young. It makes its appearance in the form of a SORE MOUTH. The lips swell and become crusted over with a rough scab, particularly at the corners, insomuch that it becomes difficult for the animal to eat, and it is evidently attended with pain.

The treatment that has been found most effectual is the following:—Take tar, spirits of turpentine, and a little sulphur, remove the scabs from the diseased part, and apply the mixture with an instru-

ment or spatula of wood twice or three times, or more if necessary.

IV. Foot Rot. *Appearances and symptoms.* The first approach of this disease is generally discovered by the limping or lameness of the sheep. On examination, at first, says Pictet, a faint redness appears in the cleft, or at most a slight oozing around the hoof; the lame foot is hot; some time after an ulceration takes place at the junction of the two claws, either on the inside or outside of the hoof, from which runs a fetid matter. At this period of the disorder the animals suffer more; they are feverish; they not only limp more, but they cannot support themselves; they lie down, and when they eat they commonly kneel. When the disease has made considerable progress, collections of purulent matter take place under the hoof, which run out at its juncture at the skin. Sometimes the hoof rots and comes off, and the whole foot becomes one ulcer, the tendons and foot mortify, and even the bones rot. The fever increases. At other times the matter is collected under the sole, which it consumes.

Cause. Considerable variety of opinion exists in regard to the cause of this disorder, and also in regard to its contagiousness. Mr. Dick, a veterinary Surgeon, of Edinburgh, in Scotland, has published a long paper on this subject, in the *Edinburgh Quarterly Journal of Agriculture.*

Mr. Dick first describes the structure and func-

tions of the foot, and their adaptation to the habits of the animal, in a state of nature. The sheep is naturally an alpine animal, dwelling, by preference, among the steepest and most inaccessable summits of lofty mountains. Amid these ranges, the hoofs are worn away, as they grow, and are consequently always fresh and sound.

"But what," he asks, "is the effect of domesticating? What do we gain by enticing the sheep from his native and natural haunts, to the richer pastures of our meadows or our lawns? There the animal enjoys a more luxuriant repast, it fattens to a larger size, and will, in this respect, repay the increased allowance which has been made to it. But instead of moving about in small troops, with the alacrity of the wild kinds, the sheep are seen in flocks of thousands moving slowly over their pastures, and gorging themselves, to an extent which cuts short the thread of life by the advancement of various diseases. Instead of wandering from the summit of one peak to another, in quest of a scanty subsistence; or, instead of being compelled to descend from the summits of the mountains in the morning, and ascend again in the evening, they are compelled, in many cases, to remain within a few yards of a particular spot for weeks together, and there engorge themselves to satiety."

For want of the friction upon hard surfaces the hoof becomes overgrown. "The crest, the part

naturally intended to support the weight of the animal, is allowed to grow out of all due bounds, because the softness of the pasturage, upon which it now moves, presents little, if any, of that rough friction to which the feet of the animal is naturally intended to be exposed. The crust therefore grows unrestrained, until it either lays over the sole, like the loose sole of an old shoe, and seems to retain and accumulate earth and filth, or is broken off in detached parts, in some cases exposing the quick, or opening new pores, into which particles of earth or sand force their way, until reaching the quick, an inflammation is set up, which, in its progress, alters or destroys the whole foot," the system becomes diseased, and the animal dies.

Mr. Dick explodes the idea that the disease is contagious. He thinks it promoted by soft old pastures, luxuriant herbage, and particularly by wet seasons, and wet grounds. To *cure* the disease, Mr. Dick recommends that the detached hoof be pared away, and some caustic applied to the surface, of which muriate of antimony is the best. To *prevent* the disease, he recommends that the hoofs be rasped or pared at regular intervals; that the sheep be made to travel upon hard surfaces, or folded in a place purposely prepared, upon which they would move about every day, and wear their hoofs.

The whole of this paper is worthy of the careful perusal of the sheep farmer, and will be found from

page 852 to 865 in the work I have quoted. Mr. Dick's paper sufficiently indicates, what other considerations concur in establishing,

1. That sheep are far more healthy when suffered to range upon the sides of precipitous hills and mountains, where they obtain short feed, pure and dry air, stony bottom and plenty of exercise. And,

2. That consequently our hilly districts must ultimately be resorted to for the profitable and successful rearing of this valuable animal.—[*Gen. Farmer.*]

Treatment. This disorder requires energetic and prompt action, and what is done must be done thoroughly, or the labor is lost. The first thing to be done is to pare the hoof away until the part affected is exposed and fully laid open. Don't fear to cut as far as is necessary, even to the bone, for it will soon heal over after the ulcer is destroyed. When the hoof has been sufficiently cut away, cleanse the part perfectly with warm soap and water, or what is undoubtedly much better, a solution of chloride of lime, take oil of vitriol *one part*, water *two parts*, and plunge the whole foot into the mixture. Indeed in order to prevent retaining the disease in the flock, let every foot be plunged into the liquid. Be sure that every defective part is washed by the vitriol water. This should be done two or three days in succession, or until it is evident that the disease is subdued and a healthy action has taken place in the feet.

The sheep may in the mean time be kept in a dry pasture, in the summer, or if it be winter, in a place littered with dry litter. The litter should be afterwards thrown into the hog-yard, or into a place where the sheep cannot trample upon it again, as it is thought that the disease may be communicated in this way. You should be sure that the vitriol be of the full strength, if not a larger proportion should be used. [e]

In many cases, when the sheep begins to limp, paring, thereby bleeding the foot freely, has prevented the disorder.

V. Erysipelas, or Red Water. *Appearances and Symptoms.* The appearance of this disorder is that of a red inflammatory thickening of the skin breaking out into a fine eruption frequently watery, attended with fever and heat. It attacks most generally those sheep which are in the best condition and has sometimes proved very fatal, it being a disease which does not run long before it kills the animal.

Causes. Examination after death generally shows an inflammation of the stomach, kidneys, intestines, or the neck of the bladder which may be brought on by feeding on too succulent or improper food.

Treatment. A change of diet should be prescribed and cooling purgative medicines administered freely. Clater mentions the following remedy as having been successful in his hands, Epsom salts, six ounces ;

Nitre, four ounces ; boiling water, three pints—pour the water upon the salts, and when about blood warm add four ounces of spirits of turpentine—give from three to four table spoonfulls at a dose, once or twice per day according to the severity of the disease.

The following preparation is also recommended. Flowers of brimstone, two ounces ; four large spoonfulls of molasses, and if the disease is violent, add half an ounce of salt petre. Divide this into eight doses ; give them in half pint of warm water per dose, night and morning, so long as the disease continues.

VI. Sore Eyes. Sheep are frequently affected with soreness of the eyes.

A liquor of a watery appearance is discharged from them which causes the wool to come off from below them where it trickles down.

Tar applied to the nose frequently is a good remedy, and if sulphur and spirits of turpentine were added it would probably be more beneficial.

VII. Wounds, Fractures, &c. "Of the most simple complaints, such as wounds, bruises, and fractures, a healthy sheep so soon recovers, that farmers are too apt to neglect them altogether ; but by so doing, a simple wound may degenerate into an ulcer, a bruise may imposthumate ; and although a broken bone will knit, the animal suffers great

pain, and will probably have a crooked limb ever after.

With regard to fresh wounds, so much care only is necessary after cutting the wool from the edges, as to clear them from dirt, and any other foreign substance; to bring the edges together and keep them so by a bandage where that can be applied, or by a strong sticking plaster, which may be made of shoemaker's wax; or when the wound is very large, by a stitch or two taken deep into the flesh, which can be made only with a surgeon's crooked needle. It should then be covered by a plaster made of equal parts of black pitch and bees-wax, with double the quantity of mutton suet, merely to defend it from injury; and in the summer season, from the access of flies.

A bruise should be washed with hot vinegar, with the addition of a little spirit of turpentine; which should be repeated two or three times a day, until the swelling and pain subside.

A fracture should be bound up neatly, with one or two splints, covered with tow; in such a manner as to fill up the hollows of the limb, and to prevent the hard wood pressing on the tender part. In doing this, no other care is necessary than to keep the broken ends of the bone opposite to each other, and not to apply the bandage too tight, which it always is, if the limb swells in a considerable degree.

Imposthumations should be opened, as soon as

they grow soft; and as well as ulcers, should be kept clean by washing with warm soap suds, and covered with a pledget of tow, spread with an ointment made of equal parts of tar, mutton suet and hog's lard; with the addition of a little wax, in the summer season. When the bottom of an imposthumation looks pale, or of an ash color; when it discharges a glary matter, and particularly if the matter is offensive, it has become in some measure an ulcer, and should be treated as such. After washing it with soap suds, and drying it well, cover the bottom and edges with lint, which has been soaked in a solution of Roman vitriol, (blue stone,) or the surface of the ulcer may be rubbed with the vitriol itself, and then covered with dry lint, and a pledget of tow, spread with the above tar ointment. This mode of dressing must be continued daily, until the ulcer assumes a florid red color, and discharges a white, or yellowish matter, which is no longer offensive. After which it is only necessary to keep it clean, and to dress it simply with the tar ointment.

DIVISION II.

DISORDERS OF THE INTERNAL ORGANS.

1. The Rot. 2. Diarrhæa. 3. Dysentery. 4. Stretches, or colic. 5. Braxy. 6. Sturdy. 7. Staggers. 8. Worms in the Head. 9. Worms in the Liver, or Flukes. 10. Convulsions. 11. Hoving. 12. Poison.

I. The Rot. *Symptoms.* The first appearance of this disease is manifested by a languor of the animal's appearance; all its movements are weak; it eats less than the others, and does not ruminate or chew the cud as well. At this period of the disease it should be attended to; if neglected, these first symptoms grow more violent. Still surer evidences of the disorder may be seen by examining the eyes and mouth, which are discolored and pale, by laying one's hands upon the rump, which sinks; or by taking hold of the animal by its hind foot which it suffers to be held without making any resistance; if its wool be pulled it comes out easily; for the most part, and especially when the disorder is very far advanced, the animal has in the evening a watery swelling beneath its under jaw, which disappears in the morning, because in the night its head is not, as in the day, hanging down towards the earth. This is one of the most striking symptoms, and it almost always announces approaching death. Little by little the animal falls into a decline, and perishes.

Appearance after death. If the body be opened, the flesh generally is found to be livid, the intestines pale, membranes infiltrated, water collected in the lower belly, in the chest, and in the head, hydatids, or little bladders of fluid in these cavities and on the surface of the lungs, and the liver, in the caul midriff (?) or mesentery. In the gall tubes or bil-

iary ducts are found liver flukes. The liver is pale and in a state of decomposition. [*f*]

Causes. Tessier thinks this disease may be attributed to the physical constitution of the sheep, as well as to circumstances in which it is placed. It is not an animal of firm constitution. Its fibres are lax and not compact. The slowness of the disorder, the symptoms which appear in the course of it, and what is discovered upon opening the bodies after death, all announce that the malady proceeds from a superabundance of aqueous fluids. If these animals are therefore made to pasture at all times in pastures naturally wet, or made so by dew, if they are turned out during fogs, if they are folded on a clayey soil, and if their houses are not situated upon a dry soil, the rot may be expected. Bad feeding is another cause of the rot, for nothing is more conducive to ill health or bad state of the system than lack of nourishment, or bad unsubstantial food. It was formerly believed by some English writers that sheep found and eat some noxious herbs that grew in low and dewy situations, but this is no doubt a mistake,—the disease arises from the damp situation and unhealthy atmosphere, and not from any vegetable.

Preventive. The best means for preventing the rot, according to Mr. Davey, of Bath, England, who has written a valuable treatise upon some of the diseases of sheep, are attention to the three fol-

lowing things, viz : *food*, *local situation*, and changes in *atmospheric temperature* and *weather*.

Of the first it is observed, that experience has shewn that sudden transitions from one kind of food to another in animals, and even in the being called man, are productive of injurious effects. If, therefore, sheep have been depastured on dry and scanty herbage, and from them suddenly removed into a fresh, luxuriant meadow, especially during autumn, and after the autumnal rains have set in, it is ten to one but that the constitutional health of such sheep will be jeopardized. Or, if moved from a comparatively dry to a lower situation, where the air is less pure and loaded with vapour, the same bad effects are likely to follow. Throughout the whole autumn and winter, sheep require a dry lair or lodging place, and to counteract the effects of the humidity and cold of the season should have a due allowance of good hay, and occasionally subjected to oiling or unction.

A still more certain and effectual mode as it regards our subject may be added to this ; it is to allow the sheep plenty of salt to eat. We consider this simple article of very great value and efficacy. The action of the salt given the sheep will be to stimulate the digestive organs, and perhaps restore the balance of chemical actions in the stomach, as far as this organ is capable of control by chemical laws ; and will be materially assisted if it contain a

more alkaline ingredient with it, such as common soda, and which may be mixed in the proportion of one ounce or more to the pound of salt—or wood ashes may be mingled with the salt in small quantities when soda cannot be obtained.

If, however, the sheep reject the alkali, leave it out, and confine them to the salt; many sheep dislike the salt at first, but they may soon be habituated to it, and made partial to its taste.

With regard to the transitions from rich to poor feed, or *vice versa*, it should be managed gradually and cautiously, and then these changes, so far from being injurious, will be highly salutary and improving. We will suppose a farmer purchases a lot of sheep, he ought to be acquainted with the kind of soil and herbage to which they have been accustomed. We have now noticed the bad supply of food, bad qualities of it, and great transitions from one kind to another; all these circumstances are in the power of the farmer, and he can adopt such measures as his own judgement will suggest, to avoid the ill effects consequent on them.

The second particular is the local situation of the farm. A high, airy situation is by far the best for sheep; and on the other hand, a low, damp situation is wholly unfit, as is also stiff clays. It will be needless to enlarge more on this part of our topic, as it has been more fully treated upon in other parts of this report. We shall only add that the deleteri-

ous effects arising from stagnant pools and ditches caused by the noxious vapors and *malaria*, are peculiarly hurtful to animals requiring a pure and healthy air.

The third cause mentioned, was changes in atmospheric temperature and weather. The author from whom we have so liberally quoted, earnestly advocated the defending sheep from sudden and severe changes of weather, and strongly recommended having a shelter of some kind as an excellent preventive of the rot. His ideas are corroborated by the experience of our best flock owners. A great many things, says he, may be done, to make the condition of the sheep at all times tolerable, if not comfortable; but when a negligent, inattentive shepherd pays little or no regard to these particulars, but allows things to take their chance, when he neither studies the causes of evil nor seeks a remedy, which is so generally within reach, it is no wonder that such distressing losses sometimes occur, and that such lamentable experience, so often repeated, should still have taught no useful lesson. (See remarks on shearing, p. 38.)

Treatment. If after all our care and attention, our sheep fall sick with the rot, what is to be done? If the disease has far advanced, the most economical mode of treatment is to kill the animal and shorten the period of its suffering. Our reasons for so doing are, that the organs have become disorganized,

and it is not in the power of man by any process hitherto discovered, to restore them. In the earlier stages, however, remedies are often successful.

"Upon the first symptoms of a rot, iron rust should be infused into the drink given to the sheep, or they should be made to drink aromatic decoctions, such as decoctions of sage-leaves, of lavender, of hyssop, of thyme, of juniper-berries, or of an infusion of the ashes of broom, &c. or what is still better, white wine, and if that cannot be procured, red wine, three or four spoonfuls of which should be given at a time. These remedies, continued some time, strengthen the fibres, cause the water to run off, and restore the animals. It is thought that common salt, given in any way, would answer. I cannot vouch for it; but I think it probable, from the instance of some sheep which feeding habitually near the sea, in the midst of the dashing of salt water, do not get the rot. I think advantage might be derived from the employment of bitters, such as ellecampane, gentian, the lesser centaury and wild succory root in decoction."—*Bard.*

The tonic, or bitter herbs have been highly recommended. The Buck Bean, (*Menyanthes Trifolia*) which grows plentifully in our bogs has been thought valuable in this disorder; but as before observed, it is not advisable to go to much expense to effect a cure. If the disease has not been prevented, it will cost more to cure than the sheep is probably worth.

II. Diarrhæa, or Scouring. This disorder generally prevails in the spring of the year, when sheep go from dry food to grass, and sometimes it becomes necessary to check it in order to prevent its running into the dysentery, or reducing the strength and health of the sheep so low as to endanger life.

The best preventive of this complaint is to put them from dry food, upon a piece of rowen, which has been shut up from the first months of the preceding fall; where they will find a mixture of dry and new grass, which will prevent the consequence of too sudden a change. Where this has not been provided, they should be brought up once a day, and given a little hay or grain. Where, notwithstanding the disease comes on, it is generally of little consequence; or when obstinate, may be relieved by the chalk mixture, increasing the dose to a table spoonful of chalk and of spirits, and five or six drops of laudanum; and if this should prove ineffectual, boil four ounces of chipped logwood, in three pints of water, for ten or fifteen minutes, and give the chalk mixture, each time in a gill of this decoction."

Almost any astringent is good to check the looseness. Raspberry twigs boiled down to considerable strength, or Hemlock Bark. Rennet is also sometimes used with good success prepared in the manner generally adopted for making cheese, and given in repeated doses.

III. Dysentery. Sheep are said to he sometimes attacked by a true Dysentery.

Symptoms. The discharges are mucous and bloody and mixed with lumps of hardened excrement, and by this it is distinguished from simple diarrhœa, or scouring. There is a frequent urging and straining to stool, with small evacuations, and apparently accompanied with pain—sickness and fever which is manifested by a hot skin, ears and mouth. It occurs most frequently in summer and towards the fall of the year, and is supposed to be infectious in a degree.

Causes. The cause of this disease is supposed to be an inflammation of the lower intestines occasioned by improper food or by sudden transitions from heat to cold.

Treatment. Bard recommends the following treatment. "In this case, begin by purging the sheep with an ounce of glauber salts, dissolved in warm water; or rather in violent cases, by bleeding (which is best performed after shaving off the wool, in the jugular vein, as is done in horses and neat cattle.)—After swelling the vein by a bandage, open it with a common lancet; and after drawing a sufficient quantity of blood, which from a full grown sheep should be towards a pint; the blood is stopped, and the vein secured by a pin and hair, or thread, (as is done in the larger animals) then give the salts; and having procured a free and open state of the bowels,

give the chalk mixture; interposing occasionally as long as the pain, fever, and bloody evacuations continue a dose of salts, or what I have frequently found a mild and gentle evacuant for sheep, give a large table spoonful of molasses, mixed with one or two of yeast or emptyings. This remedy is particularly adapted to dysentery, which is frequently a putrid disease, and may be freely used, as long as the pain, fever and bloody evacuations continue; after which, the chalk mixture, and decoction of laudanum, will do all that can be done towards a cure under a complaint of this nature. Sheep, ill of this disease, should not be allowed to drink too freely of very cold water; instead of which, a pint of thin gruel, made of buckwheat, oat or Indian meal, and sweetened with molasses, given two or three times a day, will at once supply the place of necessary drink and proper food."

IV. Stretches, or Colic. *Symptoms.* The sheep is seen stretching and throwing its head back as if in violent pain, frequently lieing down and rising up—a fever takes place after some time, and death generally occurs on the third or fourth day. Previous to death, the discharges become black and very fetid.

Causes. The true cause of this disease is not fully known. It has been conjectured by experienced shepherds that it arises from a diseased action of the stomach and bowels brought on by the want of

heavy succulent food; as it most generally takes place soon after the sheep comes from grass to dry food, or during the winter. Some have supposed it to be caused by eating chaff, &c. around the barn or threshing floor, but it has taken place when sheep have not fed upon any such materials.

Treatment. Keeping them well supplied with heavy succulent food is a preventive, but when it does take place, strong purgative physic has been found very effectual. A strong decoction of Thoroughwort, and afterwards a decoction of Raspberry twigs to check the dysenteric discharge. Castor oil is a good remedy, or if nothing better can be obtained, common grease melted and poured down, or pieces of fat pork may be given. The disease generally proves fatal, if the thoroughwort does not check it soon.

V. Braxy. "Sir George M'Kinsey describes dysentery and braxy as the same disease. But Dr. Duncan describes another disease under the name of braxy, which appears to be a violent inflammation of the bowels, unaccompanied with dysenteric symptoms. In both, the remedies, especially in the first stage, are much the same; bleeding, purging and a cooling diet: with this difference; that in the dysentery, bleeding is seldom necessary more than once in the very beginning of the disease; in the inflammation of the bowels, it is the only remedy to be depended on, and must be repeated at short

intervals, as long as the violence of the symptoms continues."

VI. Sturdy. *Symptoms.* "It is supposed we have this disease, occasionally among us, though I believe it never has been proved by actual dissection. A sheep attacked with it ceases to improve, becomes dull, and separates from the flock, its sight seems to be impaired and indistinct; the eyes glare, the animal sometimes becomes blind, starts at any noise, runs furious without aim, loses the power of standing, and is perfectly emaciated."

Cause. "The cause, discovered by dissection, is found to be a collection of water; in the milder species of the disease, in a bladder on the top of the brain, near the skull; over which the skull is found to be remarkably soft, so as to yield to the pressure of the finger. In the more fatal species, the water is collected in the natural cavities, or in the substance of the brain itself."

Treatment. "The only cure is to let out the water, either by puncturing the sack, through the soft part of the skull with an awl; by opening the skull, as in the operation of trepanning, and taking out the sack; or by what is averred to be the safest and most certain, though unquestionably a very singular remedy, by passing a stiff pointed wire up each nostril, through the base of the skull and the whole substance of the brain, until it can be felt by the finger, over the soft part, on the top of the skull.—

After which, although the sheep should lie as dead for many hours, it is said frequently to recover. It cannot be, but that an operation of this nature, in which the whole substance of the brain is perforated, must frequently prove fatal. But as the disease for which it is recommended is of itself necessarily fatal, unless relieved in some such way, it is only necessary to ascertain the disease to justify the attempt. Where, however, the soft part of the skull can be discovered, the operation of trepanning is more safe, but requires more skill; and where no such part on the skull can be discovered, it can be of use only by chance."

VII. STAGGERS. *Symptoms.* The principal symptom is that of the animal turning round, generally many times, in endeavoring to move forward.—From this the disease is called giddiness, gid, turnsick, blind staggers, &c. Sometimes the animal instead of turning round when hurried, or in endeavoring to move forward, appears lame in the hind quarters, generally on one side only, and most commonly the *left*. In moving forward quickly he goes nearly straight; but the left hind quarter is so inclined as to make him appear somewhat crooked. In the early stages of the disorder, the turning round is not remarkable, unless the animal is hurried, but at a later period, he constantly does it in attempting to move forward, and at length becomes so com-

pletely palsied, that he falls down, and is unable to get up again, and in that situation generally dies.

Causes. Dissection shows that the seat of this disorder is in the brain, and is somewhat similar to the dropsy of the brain in the human system. Bard thinks that the difference between this disease and sturdy consists principally in its violence—the staggers attacking suddenly, and the sturdy being more gradual in its operation. Sometimes the lobes of the brain alone are affected, and sometimes bladders of water, or *hydatids*, as they are called, occur.—The skull immediately covering the diseased part of the brain becomes thin and weak, is easily pierced with a sharp instrument. Sometimes small holes have been found in it. Constitutional debility may be one of the remote causes.

Treatment. A disease in such a situation is not easily cured. Indeed such is the nature of it that puncturing or trepanning is the only probable mode that can be adopted. When the particular spot of the disorder is discovered, and the hydatid is to be prevented, almost any sharp instrument will be sufficient. A shoemaker's awl, or a common brad awl is a good thing to use for this purpose. One puncture is thought to be sufficient. The fluid will not readily flow out, nor will the good effect, if any, be seen at first. The animal is generally beyond recovery when discovered to be reeling, and a prompt operation is the only hope for saving it.

VIII. Worms in the Head. *Symptoms.* Frequent sneezing, running at the nose, an appearance of stupidity. The sheep will sometimes after sneezing two or three times, turn the nose on one side and then on the other, a little inclined and downward.

Causes. The worm found in the head of sheep is the maggot or larva of the sheep fly (œstrus ovis) which is a fly belonging to the same Genus, and having an appearance similar to the Bot fly. This fly deposites its egg in the nostril of the sheep in the month of August, and the maggot lodges itself in the cavity or sinus at the top of the nose, between the eyes. These worms are round, white, with a brown spot on the head. They generally remain there until the warm weather of spring, when they disengage themselves, by their irrtation of the nose, cause a sneezing by which they are thrown out, when they creep into the straw or manure, where they happen to fall, and pass their crysalis state until they change to a fly, and come out and propagate a new progeny. In the winter of 1831–2, great numbers of sheep died as it was supposed by worms in the head. The summer previous was very sultry, which was favorable to the fly, and an unusual number of them were probably propagated.

Many sheep which died were opened, and numerous worms were found in the nasal sinus. It was thought by some that the worms were not themselves the cause of the animals death, but merely

the exciting cause of other diseases. Some Shepherds have an idea that a worm or two does no hurt in the head of the sheep, provided the warm weather comes on early in spring, and they are dislodged in season.

Treatment. The only effectual mode of getting rid of them is by boring into or trepanning the sinus; but this is not very often practised. Some fumigate the animal with the burning fumes of brimstone. Some apply spirits of turpentine to the nose and some pour spirits of turpentine in the nostril.

The latter remedy sometimes proves fatal of itself. Prevention in this case is far better than any prescription hitherto devised. One method of doing this is to tar the noses of your sheep while at pasture. This has been found pretty effectual. Another method is to plough a furrow or two in the pasture. The sheep when attacked by the fly will plunge their noses into the sand, and thus protect their nostrils from the invasion. According to a writer in the Maine Farmer, vol. 1, p. 91, the worm does not die when the animal does, but will remain alive in the situation it has chosen after the death of the sheep. Further observation on this point is desirable. And if it is found that in all cases the worm outlives the sheep, and finally goes through its changes, it will be important to destroy them by some effectual method, either by taking them out or

by boiling or burning the head, and thereby prevent their increase.

IX. Worms, Flukes, &c. Several species of worms infest sheep. One kind found often in the liver and other parts of the body are called Flukes. (*Fasciola Hepatica.*) They are probably connected with the disorders of the animal, such as the rot, and are probably an effect rather than a cause of them. As it is found that by preventing the disorder the production of the worms is hindered.

Another species of worm is found oftentimes in the brain, enveloped in a little sack or hydatid. The same animal together with another variety is found in the intestines. They are a species of the *Toenia*, or tape worm. Those found in the head cannot be attacked by any other method than by trepanning, and this is not a very sure method. Those in the intestines may be expelled oftentimes by medicine. Spirits of turpentine, or balls of turpentine given often to the sheep are good. Wood ashes with salt are valuable for this purpose. Dr. Barstow, formerly of Anson, in answering some queries put by the Kennebec County Agricultural Society, says,— "In the summer of 1830 my flock had access to a piece of burnt land. In hot weather they laid among the black logs and ashes, and were very healthy and fat when they came in to winter feed. The ensuing summer they had not this privilege, and they did not do so well. After they went to pasture, I found

one of them dead, and in the excrement near by were many white jointed worms from one half to an inch in length. Since then I have given the flock ashes and salt, mixed two to one, and have met with no further loss."

X. Convulsions. This is a disorder not very common to sheep, but is generally fatal when it does attack them.

Symptoms. The animal staggers, totters, falls down, and is convulsed more or less; its limbs twitching and springing by irregular starts.

Causes. The cause of this disorder is not well understood. It is probably, however, similar in the sheep to the Epilepsy and Apoplexy of the human system, and is a nervous disorder brought on by constitutional debility, improper food, exposure, &c.

Treatment. If the animal be fat and of a full habit, bleed freely from the jugular vein of the neck, and give copious doses of the thoroughwort.

XI. Hoven, or Hoving. *Symptoms.* An attack of this disorder causes the animal to swell prodigiously. He is in great pain—lieing down and getting up frequently—grunting and throwing the head round to the sides.

Causes. It is brought on by eating too freely of heavy succulent food, or of too large quantities of grain, and drinking freely afterwards. Sheep or other animals when turned into very luxuriant pastures are often attacked by it, especially if the pas-

ture contain much clover. The grass, or whatever is eaten fills the first stomach too full; fermentation takes place, and a large quantity of gas is formed which being pent up by some of the grass closing the orifice or openings of the stomach, causes the distension of that organ. The left side is generally more puffed up than the other, as the paunch is placed on that side.

Treatment. The air must either be absorbed or have vent, and when the swelling has arrived to a great extent and the animal is in imminent danger, an opening must be made through the skin, and integuments into the paunch forthwith. To do this, take a pointed knife and plunge it into the space between the hip bone and last rib of the left side, just in the centre of the space. Be sure that your knife is long enough to go through into the paunch. A quill or small tube is sometimes necessary to keep the orifice open, and suffer the air to escape. If, however, the swelling is not too great, it may be relieved by thrusting a flexible rod down the throat of the animal, or a piece of tarred rope with a ball or bulb at the end, which will push away the cake of grass and make a passage for the air to escape up the gullet. Something which will check the fermentation or absorb the gas may be given. Pearl-ash, or a weak solution of potash has been used with a weak mixture of aqua amonia and gin, in repeated doses of a gill to a full grown sheep; but the knife

or rod affords the most instantaneous relief. The stomach pump would undoubtedly be of service in this disorder.

XII. Poison. Sheep and calves will often in the winter or spring of the year eat greedily of the low Laurel, *lamb kill* or *goat poison*, as it is called, (*Kalmia Angustifolia*,) which is poisonous to them.

Symtoms. The animal appears to be dull and stupid ; swells a little, and is constantly gulping up a greenish fluid which it swallows down ; a part of it will trickle out of its mouth and discolor its lips.

Causes. The plant probably brings on a fermentation in the stomach. Nature endeavors to throw it off by retching, or vomiting, which if prevented by swallowing kills the animals.

Treatment. In the early stages if the greenish fluid be suffered to escape from the stomach, the animal most generally recovers. To effect this, gag the animal, which may be done in this manner. Take a stick about the size of your wrist and six or eight inches long,—place it in the animal's mouth ; tie a string to one end of it, pass it up over the head and down to the other end, and there make it fast. The animal cannot then throw it out of its mouth, and the poisonous fluid will run out as it is thrown out.

In addition to this you may give roasted onions and sweetened milk freely. Roasted onions may also be placed under the arm pits of the animal, which will promote circulation. Ammonia has also

been given with good effect. Whole flocks have been attacked by this complaint when suffered to eat of the plant. In all cases, whatever you may give, do not neglect the gag. There is no doubt but that the stomach pump, by which the fluids of the stomach may be drawn out and warm water thrown in, would be of great service in this, as well as in the last disease. [g]

Part VIII.

MISCELLANEOUS REMARKS, NOTES, &C.

MISCELLANEOUS REMARKS.

[*From various sources.*]

First Lamb. It was the opinion of the Romans that the first lamb from an ewe was generally weak and pot-bellied; they separated such from their flocks, and fatted them off. I believe the opinion well founded, but I think it arises from the young ewes seldom having so much milk, or being so careful of their lambs as the older ones. If the lambs come early, it will be necessary to wean the forward males before the first of August, particularly if the ewes are in high order, or if some among them have lost their lambs early, as they may otherwise impregnate the ewes sooner than is proper. It is a very common practice in Europe to shear the lambs, though it is seldom done here; and yet I think it more adapted to our climate than to that of northern Europe. The heat of our summer renders the wool very burdensome to the lambs; and as our autumns are generally fine and dry, there is sufficient time for the wool to grow so much as to protect them during the winter. Lambs wool also sells much higher here for hatter's use than in Europe, so as to render the shearing more a point of profit.

Concise Description of British Sheep.

Name.	*Horns.*	*Color.*	*Quality of wool.*	*Wt. of Fleece.*	*Price of wool pr.lb.*	*wether per.qr.*	*age when killed.*
No. 1. Tees-Water.	No horns,	White legs and face,	Long wool,	9 lbs.	1*s.* 0*d.*	30 lbs.	2 years.
2. Lincolnshire,	do.	do.	do.	11	1 0	25	2
3. New Leicestershire,	do.	do.	do. fine,	8	1 0	22	2
4. Cartwold,	do.	do.	do. do.	9	1 0	24	2.
5. Romney Marsh,	do.	do.	do. do.	8	1 0	22	2
6. Dartmoor or Bampton	do.	do.	do.	9	1 0	25	2
7. Exmore,	Horned,	do.	do. coarse,	6	0 10	16	2 ½
8. Heath,	do.	Black face and legs,	do.	3	0 8	15	3 ½
9. Hereford, Ryeland,	No horns,	White face and legs,	Short fine wool,	2 ½	2 9	14	3 ½
10. Morf, Shropshire,	Horned,	Black and speckled,	do.	1 ¾	3 0	12	3 ½
11. Dorsetshire,	do.	White do.	do.	3 ½	1 6	18	3 ½
12. Wiltshire,	do.	do.	Short middling,	3	1 6	20	3
13. Berkshire.	No horns,	Black and White,	Long wool,	7	0 10	18	2 ½
14. South Down,	do.	Speckled do.	Short wool,	2 ½	2 3	18	2
15. Norfolk,	Horned,	Black do.	do.	2	1 8	18	3 ½
16. Hardwick,	No horns,	Speckled do.	do.	2	0 8	10	4 ½
17. Cheviot,	do.	White face and legs,	do.	3	1 1	16	4 ½
18. Dunfaced,	do.	Dun do.	do.	1 ½	3 2	7	4 ½
19. Shetland,	do.	Various colors,	do. fine cottony	1 ¾	3 2	8	4 ½
20. Spanish,	Rams horned	White,	do. superfine,	3 ½	6 6	14	2 ½
21. Spanish cross.			do. fine,	2 ¾	3 2	16	

TECHNICAL TERMS. A male lamb, after he is weaned, is called, during the first year, a HOG, or HOGGIT, a TAG. An ewe lamb during the same period, is called an EWE TAG, a GIMMER. In the second year the male is a SHEAR HOG, or a TWO TOOTHED HOG, or TAG; the female a THAIVE, a GIMMER, or TWO TOOTHED EWE TAG. Third and fourth year they are distinguished by the same names, with the addition of the number of teeth they have changed. The fifth year, having eight broad teeth, they are called *full-mouthed Sheep*. The age of the ram is generally denoted by the number of times they have been shorn; the first shearing being in their second year—*a shearing—one shear—two shear, &c.* In the north of England and in Scotland an ewe lamb, after weaning, is called a *Dimmont;* and in the west of England ram lambs are called *pur-lambs*. Tup and ram are synonymous terms for a covering ram. *Crone* signifies an old ewe.

LAMBS AT BIRTH. In most breeds of sheep single lambs are more common than a greater number; but in some, as in the Dorsetshire, double lambs are nearly as usual as single. The Friesland and Tees-Water sheep, which are of the large, long woolled species, if well kept, bring from two to five lambs at a birth, and that sometimes twice in a year, if we may believe an old English writer, Barnaby Gage, who says, "It hath been seen in Guilderland, that five ewes have had in one year five and twenty

lambs. It may seem, peradventure, to many incredible, and yet no great marvel, since they have twice a year most times two, and sometimes five at a time." Cully gives the following instance of fecundity in a Tees-Water ewe: When two years old she brought four lambs, then five, then two, then five, then two; the first nine within eleven months. The highest keeping is however necessary to cause this fertility.

Choice of Rams. I have already given directions for the choice of a ram, but as this is an object of much moment in forming a flock, it will be well to know the opinions of different agriculturists. Columella recommends that the ram be tall,* with a pendant woolly belly, a long tail, thick fleece, a broad forehead, twisted horns, (though if without horns still better,) and large testicles; not to be put to ewes till three years old, and not after eight.—Markham.—"The ram large in every general part, with a long body and large belly; forehead broad, round, and well rising; a cheerful large eye, straight short nostrils, a very small muzzle, by no means any horns (for the hornless are the best breeders, and do not endanger the ewe as the horned do;) a large upright neck, somewhat bending, like the neck of a horse; a very broad back, round buttocks; a thick tail, and short jointed legs, small, clean and nimble; his wool should be comparatively thick and deep, cov-

* This is not right; never choose a tall ram.

ering his belly all over, also his face, even to his nostrils, and so downward to his knees and thighs." One would conclude from this description, that Markham, who wrote in the reign of Elizabeth, had copied from one of the Spanish rams imported by Edward IV. for no sheep in England answer to his model.

Signs of Health. Signs of health in sheep are first a skittish briskness, clear azure eye, florid ruddy eye-strings and gums, teeth fast, breath sweet, nose and eyes dry, respiration free and regular, feet cool, dung substantial, wool fast and unbroken, skin of a fine florid red, particularly on the brisket.—Much depends on the shape of sheep. (See p. 20.)

Salt. I have mentioned that salt was considered by the Spanish shepherds as essential to the health of sheep, and this sentiment is very general in every part of Europe except in England, whose situation renders the air sufficiently salt. The same consequence, from similar causes, takes place here. Upon Long-Island, and elsewhere near the sea, the cattle require no salt, nor manifest any desire for it; whereas on the north of the Highlands they eat it ravenously, and it is thought essential to their health. The ancients also entertained similar sentiments on this subject. Aristotle prescribed one peck every five days, during the summer, to one hundred sheep. We should consider this a large allowance, but it would be readily eaten. They also observe, that

however good your pastures may be, the sheep will tire of them if not changed, unless their appetites are kept up by salt.

YOLK, SALVING, &c. Vauquelin, a French chemist, who analysed it, says that it consists of oil and potash, and of course, like other soap, must be soluble in water. Wool that is dry, and without this substance, is seldom fine or good. In the northern parts of Britain, where the sheep are exposed to very severe weather, they are anointed on the approach of winter with a salve, composed of butter with about one twelfth of tar, this is rubbed upon the skin from the head to the tail, and so over the whole body, the wool being open in lines two inches apart; this acts as a repellant to the water, and Luccock (who appears to have an intimate knowledge of the subject) says, that the wool that grows after this operation is much softer, finer, and fuller of yoke, than that which grew earlier in the season before the mixture was applied: this, however, is not conclusive evidence of its advantage, since the wool that grows in summer is always coarser than that which is produced after the frost sets in; and for that reason the extremities of all wool is harsher than those parts that are not exposed to the air.—From thence probably arose the custom among the Romans of clothing, even in their temperate climate, the fine-woolled sheep, which had the double tendency to preserve the yoke from being washed out

and to shield the fleece from the influence of the air and sun. Bakewell, another scientific writer on wool and sheep, recommends greasing sheep after they are shorn, as well as salving them in the autumn, and asserts positively that this renders the wool finer and softer. He insists much upon the softness of wool as a very important quality, and alledges, that though two samples of wool may be equally fine, that which is softest will make much the best cloth. John Rutherford, Esq. of New-Jersey, has lately made the experiment of greasing a sheep after shearing. The sample he showed me of its wool appeared to me to have more yoke than I had ever seen in one of our common sheep, and to be both soft and fine.

This experiment is worthy of notice and repetition. It is also alleged that lime-stone pastures have a tendency to render wool harsh, and that the purchasers of wool in England make a difference in the price of wool bought from two adjoining farms, if one is sand or clay and the other lime-stone or chalk, particularly the latter. This it does by decomposing the yoke, where it comes in contact with it.

Method of Bleeding Sheep. In inflammatory disorders bleeding may be necessary. This is performed by cutting the ear, or the tail, or in the temple. The first and last do not yield much blood, and cutting the tail leaves a considerable wound.—Daubenton recommends bleeding in the lower part

of the cheek, at the spot where the root of the fourth tooth is placed, which is the thickest part of the cheek, and is marked on the external surface of the bone of the upper jaw by a tubercle sufficiently prominent to be very sensible to the finger when the skin of the cheek is touched. This tubercle is a certain index to the regular vein which is placed below; and this vein extends from the under border of the jaw beneath near its angle, to below the tubercle, which is seated at the root of the fourth cheek tooth; farther the vein bends and extends to the cavity of the eye-brow. The shepherd takes the sheep between his legs; his left hand, more advanced than his right, which he places under the head, and grasps the under jaw near to the hinder extremity, in order to press the angular vein, which passes in that place, to make it swell; he touches the right cheek at the spot nearly equidistant from the eye and the mouth, and there finds the tubercle which is to guide him, and also feels the angular vein swelled below this tubercle; he then makes the incision from below upward, half an inch in length below the middle of the projection which serves to guide him.

Transitions from high to low Feed. With all stock, it is allowed to be very dangerous to pass suddenly from high feeding to that which is scant and poor; or from plenty of green food, to that which is altogether dry. Hence arises a very im-

portant maxim respecting sheep; which is, as soon as the pastures fail, towards the end of autum, to put them to turnips or cabbages, if we have them; and this will perhaps be found our best system respecting turnips: to sow a sufficient quantity for our sheep, to be eaten after the grass fails, and before the snow falls, so as permanently to cover the ground. If they are fed with any regularity, hurdling them off in such portions as the sheep will eat clean, they will go far; and the land will be so well manured as to produce an abundant crop of wheat, oats, or any other grain the next season.

Number of Ewes to a Ram.—A great difference exists as to the number of ewes to which a ram may be put. Buffon limits the number to 25 or 30. In Denmark, they admit 40 or 50 ewes to each ram. In England, Thompson mentions as an instance of great vigour 120: and Dr. Parry 146. In this country, some rams have certainly covered two or three hundred; and there is no doubt but that if proper means are employed, a ram, perhaps without injury, will go to a greater number. On the contrary, indiscriminately to turn a ram with two or three hundred ewes in a season will greatly exhaust him; many of the ewes will probably prove barren; and of the lambs, many will be small and feeble.

When it is wished that a ram should cover a great number of ewes, he should previously be put into high health, and kept up during the season with the

best of pasture, and plenty of grain. And instead of being turned into the flock, the ewes which are in heat should be regularly brought to him. To discern such ewes, let a vigorous common ram be put into the flock, previously secured by an apron under his belly ; which being colored with lamb-black or Spanish brown mixed with train-oil, or kitchen grease, which will not dry ; he will mark every ewe which comes in heat. These being taken to the ram and again taken away as soon as covered, he will not exhaust himself by needless repetition.

This is unquestionably the best mode, but is likewise the most troublesome. My method has been, to keep up my ram with a few full-blood ewes during the day, upon a small, but very good pasture, that he may feed without disturbance ; and to put the flock of ewes to him every night, in a confined fold, his belly having been previously colored, and every morning to separate and put into a pasture by themselves the ewes which have been marked.

By all these attentions, selecting the best rams and ewes, such as are in the vigour of their age, and never suffering the rams to be weakened and exhausted by numbers, we shall arrive at our object, to acquire a numerous flock of the most perfect sheep, with sufficient rapidity ; whilst at the same time, we shall preserve the vigour of both ewes and rams to the latest period of their lives. We have known rams to be successfully employed after eight and ten years of

age: and Mr. Laysterie mentions one at Rambouillet, which, at the age of eighteen, produced good lambs.

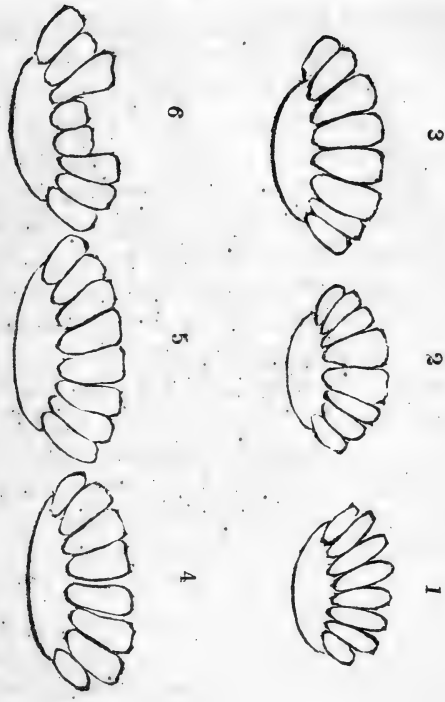
It is an old opinion, that by frequently changing the ram, and by procuring another of the same breed from a distant flock, we shall improve our own. But this opinion has been so fully exploded by Mr. Bakewell in England, and all who have followed his example, that I should not have thought it worth mentioning, but to remove a prejudice, which, perhaps, some may still entertain. The better rule now is, to breed from the most perfect animals, although they should be descended from the same family, to the tenth generation. If I was to hazard a theoretical opinion on this subject, I would say, that beauty of form, and other corporal qualities are preserved by breeding in and in; that vigour of intellect in man, courage and spirit in other animals are improved by crossing.

A ewe goes five months: the season of putting her to the ram, therefore, must be so calculated, as to have the lambs fall early or late, according to the wishes of the owner, and the provision he has made for their support. Early lambs are to be preferred on many accounts; they are stronger, and more able to bear the rigours of the succeeding winter; they are sooner fit for market; and hence, whether for store sheep or for the butcher, are most profitable. It is likewise observed, that when the first heat of the ewe is suffered to go by, the second or third re-

turn of impulse is by no means so sure; that such ewes are apt to prove barren, and perhaps, from the same cause, the lambs are less vigorous.

On the other hand, early lambs require great care and attention; and unless comfortable shelter is provided for them, and an ample supply of roots, bran, oil cake, &c. is laid up for the ewes, only loss and mortification will be the consequence.

Age of Sheep.—We judge of the age of a sheep, as well as of all ruminant animals by the teeth. A lamb has eight pointed teeth, Fig. 1. About one year old they shed the two front teeth, and obtain in their places two broad and larger teeth, Fig. 2. One of two years old has four broad teeth, Fig. 3. One of three years old has six, Fig. 4. After four years, they have shed all their lambs' teeth, have eight broad teeth, Fig. 5, and are said to be full mouthed. After this the teeth begin to break, shorten and fall out, Fig. 6, pretty much in the same succession in which they appeared: and by the time they arrive at eight or ten years of age, their teeth are generally destroyed.



Grades of Wool.—The wool proper for woollen cloth of every description is that of the short-woolled sheep, and of course the finest wool of those sheep whose fleeces are unequal. The farmer's share in this business, next to getting an improved stock, is to take care that his wool is free from burrs, (which the shepherd should be careful to extricate before the seed

ripens,) that hay should not be given from the stack, or from over-hanging racks, which fill the fleece with grass seeds that it is very troublesome to free it from. He should also be attentive that his sheep are well littered in the fold at all times, not only on account of the health of the sheep, but to preserve the wool clean. When the sheep are shorn the wool is to be sorted: this is done in Spain by spreading and dividing the wool of four different qualities, according to the part of the body on which the wool grew. This will be best explained by referring to the annexed plate, which marks the different qualities by the figures 1, 2, 3, 4—the first of these is called rafina, the second fina, and the third tercira; the fourth together with the tags and scattered wool is called cahida, and is destined for purchasing, from the church, *masses for the souls in purgatory.* It will easily be perceived that this division cannot be very accurate, because there are some fleeces much coarser than others, and some sheep who are fine in the parts that rank in the second and third class: but it is much more accurate with Merino sheep than with any other, because their fleeces are more equally good, and the proportion of bad wool is much less in them than that of any other race; each sort is washed by itself and put in bags, which are lettered and numbered, but when it comes in the manufactories it undergoes another washing and scouring, by which it loses about twelve per cent. and is then again carefully sorted before it is worked up.

1
2
3
4
3
4
3
4
4
4

NOTES.

(*a*) p. 16. Mr. Jarvis settled on the Connecticut river, in Weathersfield, State of Vermont, where he has cultivated his flocks with great skill and success, and has probably at this time the best flock in New England. Many of the best flocks in this State originate dfrom his. By care and judgment in breeding he has rendered his sheep superior to what they were when imported, affording a useful lesson of perseverance, and a standing reproof to those farmers who have let their flocks degenerate and die, and excuse themselves by laying the blame to the sheep and the climate.

(*b*) p.21. Downs or Dunes. These are tracts of sandy barren land, yielding a dry and scanty herbage for the animals which roam over them. In England there are at least two large tracts of this description, one bordering on the English Channel called the South Downs, and another tract farther North called the North Downs.

The original term of *downs* or *dunes* was applied to sand hills which are blown about by the wind, generally from the sea to the interior, such as are now seen on Cape Cod and other parts of that section of the country.

The downs spoken of in England were formed in the same manner, though they are probably now fixed and more covered with herbage than the above.

(*c*) p. 23. *Comparative estimated value of Dishleys and Merinoes.* We will say 50 Dishleys kept as sheep are usually kept in Maine, average 4 lbs. of

wool per head, which will make 200 lbs.—this at 2 shillings will be $66,66

Suppose they will rear 50 lambs worth 50,00

and they will require as much keep as 75 Merinoes 116,66

75 Merinoes, the number required to eat as much as 50 Dishleys, will average 3 1-2 lbs of wool per head, amounting to 262 1-2 lbs.—this will bring 3 shillings per lb. $131,25

From this number suppose we obtain 50 lambs worth 50,00

181,25

Deduct income of Dishleys 116,66

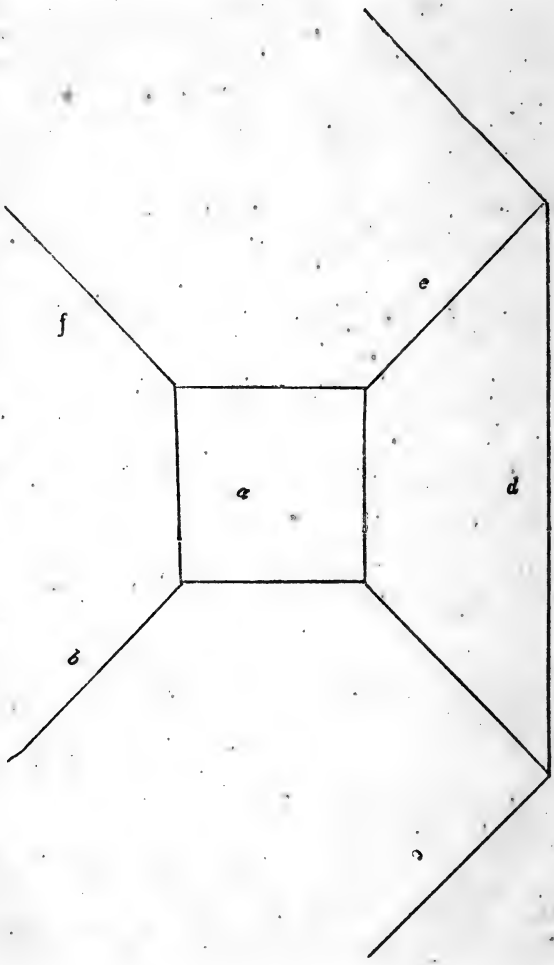
$64,59

Leaving $64,59 in favor of Merinoes, or if the disparity in the price of wool is too much, set the Dishley at 40 cents per lb.—200 lbs. will then bring $80, and 50 lambs at 1 dollar will swell the amount to 130 dollars—this deducted will leave $51,25 in favor of the Merinoes.

We are led to make this comparative estimate of the value of the two breeds because public attention is directed at this time more particularly to them.

(*d*) p. 51. SHEEP HOUSES. Various modes of sheltering sheep have been adopted. Some have built costly barns and sheds for the purpose of keeping their flocks warm in the winter. But experience proves that if sheep can be kept dry, it is best that they be not kept very warm—indeed they are animals that need a free circulation of air.

The following plan has been recommended as cheap, simple, and sufficiently warm and convenient.


f
e
a
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b
c

Let *a* be the hay barn. It may be a common barn or a Dutch barn—that is, a temporary structure with a top that can be moved up and down. *b c d e f* high tight board fence, making several yards, and if you please a top may be put upon it like a shed. It is believed that this kind of structure will be better than tight and crowded barns—and indeed all that is necessary to keep sheep comfortable and healthy.

(*e*) p. 86. Foot Rot. It was by treatment similar to this, faithfully and energetically pursued, that Mr. J. Pilsbury, agent for I. Thorndike, Esq. on his large farm in Jackson, (Me.) eradicated the foot rot from his numerous flock in that place. The following mode, recommended by Mr. Jarvis, has been before published.

Pare the hoof till all the ulceration is laid bare—then wash it thoroughly and apply a wash made of blue vitriol dissolved in a mixture of spirits of turpentine and rum.

(*f*) p. 91. Appearance of Liver in Rot. It has been stated by Clater that if the liver of a sheep that has died affected by the rot be boiled, it loses its firmness and separates into small pieces in the water, or remains soft and flaccid.

(*g*) p. 109. The following is a recipe for the cure of sheep poisoned by eating the Low Laurel or Lamb Kill. It is doubtful if the dittany grows in Maine—but the common pennyroyal (called by Botanists Cunila Pulegioides) which is similar in its nature, is abundant in all New England.

"It is a fact well known to farmers, that sheep are frequently poisoned by eating common laurel, (Kalmia latifolia.) When you suspect this to be the case, give the sick animal a strong tea made of moun-

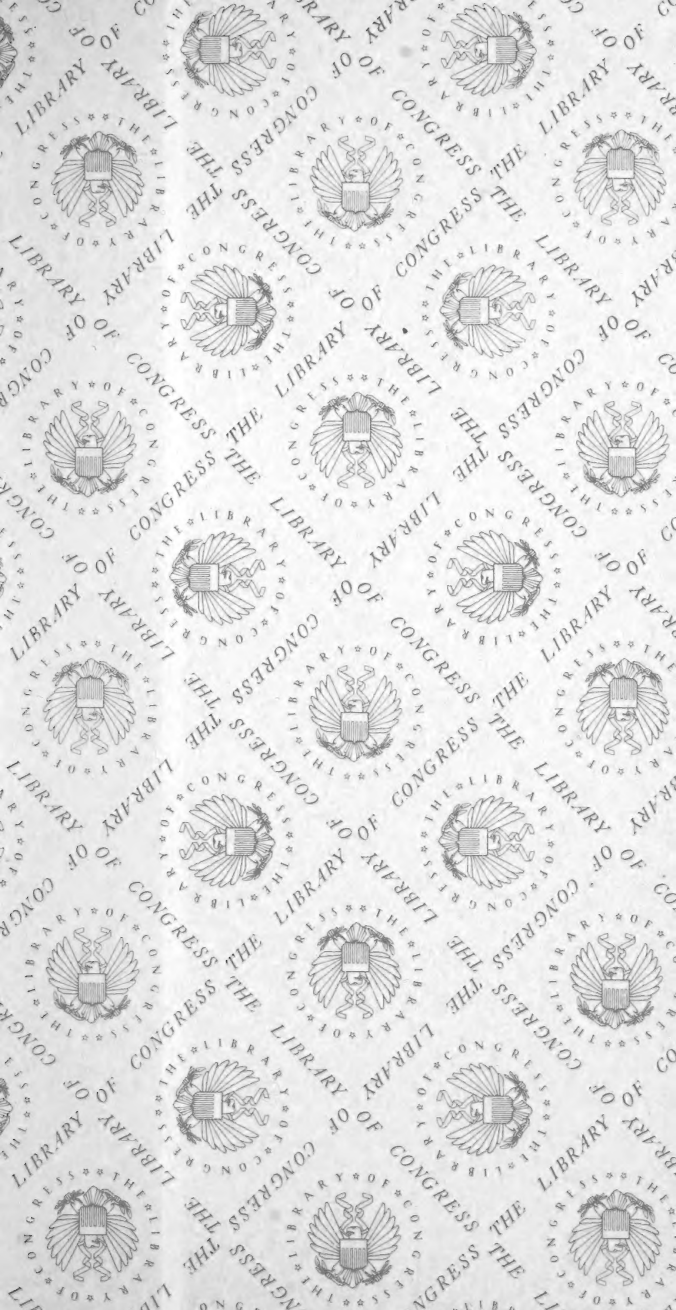
tain dittany, (Cunila mariana,) moderately warm. This simple remedy has been known to recover sheep in the last stages of the disorder.

It would be well for farmers, whose cattle are in danger of being poisoned, to procure and dry a quantity of dittany in the summer, and keep it by them through the winter, as it is in the latter season they are most likely to be affected. It may also be useful in other disorders incident to cattle. So much for the cure: as a prevention, destroy all the laurel on your farms."

There are probably many other diseases which occasionally trouble sheep, but we have stated those which are most prevalent and common. Lambs sometimes need some little attention when first dropped; either by being chilled or from some other cause—when chilled the *warm bath* has been found to revive them and restore vigor.

Some years ago there was an opinion prevalent in some sections of the State that every sheep had a worm in the foot or rather above the foot, which injured its health, and some individuals drove quite a business by dislodging the worms as they are called, at a certain sum per sheep.

The facts in the case are these. There is in every sheep just above the claw, and on the front of the leg, a little tube or oilet hole, undoubtedly designed by Nature for an emunctory or a passage for certain humors. This sometimes gets clogged by the hardening of the matter discharged. This when taken out has the appearance of a round or cylindrical worm. Sometimes when the operator could not find any thing of the kind he would extract the tube itself.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