

and give it to another ewe, or feed it with milk, by means of a sucking-bottle; or it may be put to a goat: I had a goat which reared four lambs for me.

The cares of a good shepherd, during the time of yeaning and suckling, are not confined to those which I have already mentioned. He must milk the ewes whose bags, in consequence of being choaked, are so painful that they do not permit their lambs to suck; or he must mitigate the tumours by means of emollient applications; he must give the lambs milk to drink, and not restore them to their dams until they are relieved; he must bring the abscesses to suppuration, if any are formed in the bag; and open them when ripe. (See the article *Spider*); he must take off the hair around the teats, and clear them of whatever matters obstruct them; he should keep the flock near the house, when a number of ewes are about to lamb, and should give to those which drop their young in the fields time to recover a little, and not remove the rest from them, as this might render them uneasy.

Some ewes not only do not seek their lambs, but even drive them away when they approach to suck: this is either because they are devoid of natural instinct, or because their bag is ticklish. The shepherd, when he perceives this, must put their lambs to them every time they return from the fields, and, if necessary, raise one of their hind-legs, that the young ones may be better able to get at the teats; he may in this way commonly succeed. The same end is answered if the mother and her lamb be left a day or two together in some separate inclosure.

When an ewe does not lick her new-dropped lamb, the shepherd must induce her to do it, by sprinkling salt upon the lamb; if she still refuses, he must whipe it with a little hay.

One of the chief merits of a shepherd is to know how to rear the greatest possible number of lambs from a certain number of ewes. Mine has reared, from one hundred ewes, ninety-six lambs, and none of them twins. Another, from the same number of ewes, has had as many as one hundred and twenty lambs; but many of the ewes yeaned two at a time.

It is proper that the fodder of dried grass be prepared before the sheep go into the house; they are thus prevented from inhaling and swallowing dust, and their fleeces from being dirtied by the stuff which flies about in the air. The shepherd should

leave his flock in the farm-yard while he is filling the racks, if he does it himself; but it would be better to have every thing done before the return of the flock.

The proprietor must direct the quantity of food which is proper to be given. Shepherds are often lavish of it, with the view of rendering the animals finer, not considering whether the advantage be in proportion to the expense, nor whether this superabundance of food may not be fatal.

We have already given directions with respect to weaning, docking, cutting off the horns, castrating, marking, folding, tending the sheep, leading them to pasture, folding them, and travelling with them.

A shepherd should know how to shear well, that he may do it when no professed shearers are to be had, or when it is required to take off the wool of sheep that die between one shearing and another, or of such as are sick and begin to drop their wool. He should also be able to skin those which die. In places where it is customary to wash the wool while upon the animal, this operation is performed by the shepherds. If the weather is wet, immediately after shearing, the shepherd must keep his flock for several days in the sheep-house.

When it is inconvenient to keep the rams separate, the shepherd must hinder them from covering the ewes, except at the proper season, by tying a piece of cloth under their bellies, large enough to reach the ground.

In many places, it is usual to fold sheep. This operation demands care on the part of the shepherd: besides being on his guard at night against thieves and wolves, he ought to know how much manure the ground requires. A skilful shepherd knows of what size to make his fold, and how to make the animals dung wherever he pleases.

Although nature has given to sheep, as well as to other animals, an aversion for substances which are injurious to them, yet they may sometimes happen to eat them, either through hunger, or because the noxious substances may be mixed with others which conceal them; it may also happen that plants, otherwise wholesome, may be injurious when eaten in too great quantity. A shepherd should be careful to know the places where plants of the above descriptions grow, and should regulate his conduct accordingly.

Shepherds generally make their sheep move too fast ; what is but slightly felt by wethers and ewes that are not with lamb, may be a serious distress to such as are, and to the lambs. It is better for the shepherd to go before than to follow his flock.

The implements of a shepherd are a crook, a whip and a stick. The crook is composed of a wooden handle, 5 or 6 feet long, at one end of which is a small iron spade a little hollowed like a spoon, at the other, an iron hook. With the spade the shepherd throws lumps of earth at his dogs or sheep, and may use it to cut sod, with which to make shelters for himself. With the hook he can stop a sheep, by catching one of its hind-legs in it. The whip is necessary, especially in summer and at the time of folding ; in the middle of the night, it awakens the sheep more effectually than the voice of the shepherd or the barking of the dogs. The stick serves as a support and defence ; it should be thick and of hard wood. In the south, the shepherds make use of neither crook nor whip, because they have less to attend to and do not fold their sheep. To the above accoutrements must be added a scrip ; which is a leathern pocket divided into several parts, in which are kept, bread, a lancet and a scalpel for bleeding and opening gatherings, a scraper to take off the scab-pimples, thread and linen for wounds. The above are nearly all the things which a shepherd needs in the fields.

In Normandy, on the sea coast, where showers are frequent and sudden, the shepherds carry upon their backs, by means of a strap, a sort of covering, made of light wood and rye-straw, placed in a sloping position, and descending below the loins : when rain falls, they turn their backs to the wind, and are protected from the wet, which runs off along the straw. The Shepherd can even sit down and rest upon a small board attached to the frame, and which he props up with a stick.

Shepherds who migrate, always sleep in the open air ; they wrap themselves up at night in a cloak or other covering, and stretch themselves upon the ground. Those which are stationary and watch their flocks during the night, rest in huts fixed upon wheels, by means of which they may be moved when the place of the fold is changed ; they must be so near the inclosure that every thing which passes within may be distinguished.

A hut is commonly made 6 feet long, and 3 or 4 feet wide ; it must be as large as this to hold two men. It is roofed so as to keep out the rain ; and it has two doors, one on each side.—

If the shepherd has more than one dog, one sleeps under the hut, the others around the fold.

It is desirable in a shepherd that he understand all the diseases to which sheep are liable, and still more so that he know how to prevent them.

From what has been said, it appears that the business of a shepherd requires intelligence, zeal, some knowledge and great attention. He should also have bodily strength, that he may be able to fodder his sheep, to carry them at times, to remain a long while and even whole nights upon his feet.* It is for the advantage of proprietors that their shepherds be exempt from the usual prejudices which oppose every kind of improvement, and particularly of flocks. Such men are rare, and they must be formed.

Two years ago, agreeably to a report which I addressed to the minister of the interior, he determined that there should be a school for this purpose in each of the establishments belonging to government. As the men engaged in this business perfectly understand every thing relative to the management of sheep, persons sent to these schools will not only imbibe no errors, but will lose their improper prejudices. This is proved by those which have been instructed at Rambouillet; they are the best shepherds in the world. Such is the influence, in this respect, of that justly renowned establishment, that even those shepherds which accompany their employers there, at the time of public sales, return with a disposition to do better, after having seen the manner in which the flocks are there kept.

Dogs are often injurious; they wound and even kill the sheep. The Spaniards make use of tame wethers which, at the sound of the shepherd's voice, lead the whole flock, or divisions of it, in any direction that is required. What hinders the greater part of our shepherds, at least in some seasons, from imitating this practice? The utility of dogs cannot be denied, in countries where the cultivated fields are various and separated, and wherever much activity during the day and great vigilance at night are requisite.

Two kinds of dogs are made use of by shepherds; one kind is large, strong and active, intended to keep off the bears and

* In many parts, the care of flocks is entrusted to children of either sex; and if a person past the age of childhood be chosen, it is commonly one that is fit for nothing. The introduction of merinos should change this practice every where.

wolves; the other, small, but quick, sharp and intelligent; the dogs of this latter species, when ordered, make the sheep move, as a colonel manoeuvres a regiment. The former are the guards of the flock against enemies; the latter are the guards of property against the flocks. Instinct alone instructs the large dogs; it is sufficient if they possess courage; the others require a particular education. To get good ones, the first thing is to choose those of a proper race; that, called *shepherd's dog* is the best. At the age of six months their education is begun, and continues till they are a year or fourteen months old.— While they are in training, they should not be permitted to run after the sheep with the other dogs; they would be entirely spoiled. The shepherd must keep them lashed, and send them out by themselves, that they may not be distracted. He must punish them whenever they are disobedient and bite the sheep: oftentimes he finds it necessary to break their fangs. When he practises a dog, he must place himself near the flock, and retire from it by degrees as the dog improves: at length, it learns to run without fail to any distance to which it is ordered.

Dogs, as well as other animals, have different tempers, which must be studied: some require to be caressed; with others nothing can be done without beating. Among the latter, some are sullen; these are good for nothing. The best are those which, after being beaten, fawn upon their masters.

I have seen some which would go only on the right or the left side of the shepherd; this rendered it necessary for the shepherd to place himself in such a situation, with respect to the flock, that the dog might always be on the side to which he was accustomed; this was a fault in the training.

A dog, in countries where are many cultivated fields to be preserved, does not last ten years, because he wears himself out. If the land is smooth, and the pastures extensive and level, he lives longer.

A good dog obeys punctually, is tender of the sheep, vigilant and even cross, when about the fold.

CONCLUSION.

If my object in this work had been to give a complete treatise on sheep, I should have made it much more extensive; I should not have been at a loss for materials; but I have confined myself to what I thought useful: and although some things may have escaped me, I think I have not omitted any thing essential.

I have been prompted to this work by the consideration that I have peculiar advantages to enable me to perform it: I have passed a great part of my life in the country, in the midst of farmers, shepherds and flocks, constantly engaged in inquiries and experiments relating to every branch of agriculture. I have been so circumstanced as to be acquainted with the Rambouillet merinos from the beginning, in the first introduction of which I was engaged; the place which I hold occasions me to have constant communications with the persons who superintend the establishments belonging to government; and, for ten years past, I have paid great attention to a flock of my own, which is not far from the capital, and which has thriven under my care. I therefore have it in my power to establish, upon experience and observation, the precepts which I offer.

With these advantages, I flatter myself that I have contributed something to the information of agriculturalists and proprietors of sheep. If my hope is not fallacious, and if this work proves to be of any use, I shall enjoy the satisfaction of having contributed to the improvement of our rural economy; among the objects of which our flocks are not the least important.

THE END

APPENDIX.

FEVER.

This disorder, whether putrid or inflammatory, is very dangerous in a flock. Its symptoms are a dryness of the mouth, inflamed eyes and hot feet. If the flock feeds in a dry, open country, strewed with strong scented herbs, and scorched by the heats of summer, it is subject to inflammatory fevers. It is proper, as soon as the disease manifests itself, to bleed the animal plentifully in the vein under the eye, and to repeat the operation the same day, in the same place; or it may be done by cutting the ears across. No food should be given the first day; and the two succeeding days, moderate quantities of warm water mixed with a little meal, small doses of a decoction of liquorice root, and copious injections of a decoction of mallow-leaves. The sick animal should be kept in some place of shelter, until it is entirely cured. Mild, cooling and emollient herbs are very beneficial; such as the leaves and flowers of mallows, beets, St. John's root, sorrel, groundsel, sow-thistle, chick-weed, succory, lettuce, turnip and beet-leaves.

If the flock, instead of pasturing upon high ground, lives in a rich, shaded and moist country; in this case, bleeding might increase the fever, which, in such situations, is often of a putrid or malignant nature. Bitter and purgative plants, fresh cabbage-leaves, peach-leaves, and those of the plum tree, betony, fumatory, patience, wild succory, are very properly prescribed. In case these remedies cannot be procured, a grain of treacle (thériaque) in half a glass of white wine and as much water, may be substituted. The proper drink is water mixed with honey and a little vinegar or verjuice or sorrel juice, or juice of barberry. The proportions are, the sixteenth part of a pint of vinegar, and one ounce of honey, to ten pints of water.

If a sheep is very thirsty, drinks a great deal, and does not recover from its fever in three or four days, the owner may expect to lose it.

It is said that half a pound of common ashes and two pounds of water make a salutary drink for a sheep. The ashes are left in the water for twenty four hours; the water is then poured off, and given to the sheep.

Lime-water, cautiously given, is also proposed. This is a new idea; and appears to me to be a very happy one. I believe lime-water may be very serviceable in rich soils, and during very wet seasons, in every country.

Measles (Rougeole)

This is an epidemic disease, which soon manifests itself by boils of a purple colour, whence issues an infecting matter, when they are ripe. The wool is stained by it, and at the time of shearing, flocks which have had the measles may be distinguished. If it breaks out in a flock, it is rare for any of the sheep to escape. The less vigorous sheep, if unattended to, commonly die.

The external remedy is, to wash the pustules with strong vinegar in which rosemary is boiled; wine may be substituted for vinegar.

The internal remedy should be employed only when the disease is quite confirmed; as its effect is to drive the humour to the skin, and to hasten suppuration; which to me appears useless, at least during the first stages of the disease; but which I think must be very useful when it is seen that the sheep have not internal strength enough to expel to the surface the principle of the disease: this often happens in rainy winters; especially in wet places. The remedy is as follows. For one hundred sheep, take four ounces of treacle (thériaque) and two large handfuls of betony; heat them together on hot ashes, for twenty four hours, in two bottles of white wine strengthened with two glasses of brandy making together a quarter of a bottle.— Strain this infusion through a cloth; and let it be given in doses of three spoonfuls for each ewe or wether, and of two for each lamb. The flock must swallow this strengthener in the morning, fasting, and must eat nothing for twenty four hours after it. During the operation of this medicine, the sheep-house should be kept a little warmer than usual; the day following, the flock should not be conducted into the fields unless the weather is very fine; in which case, it should be left two hours in good pasture, and before its return the whole floor of the sheep-house should be spread with abundance of fresh litter; if the weather is cloudy, rainy or foggy, good hay must be put into the racks for the sheep.

This disease bears a great resemblance to the small-pox among men. Inoculation would be the only way to prevent its ravages.

Apoplexy.

This disorder is of all the most destructive to sheep in Berry ; it prevails at all seasons, but commonly begins its ravages about the middle of summer, when the great heats are about to be succeeded by the damps of autumn. The blood of the sheep becomes thick, in consequence of too much green food, of the dryness of the summer season, of the heat of the sun in a very open country, of violent sweating in close sheep-houses, of want of attention in the inhabitants, who do not send out their shepherds early enough in the morning, nor make them return before the heat of the day, and who are not careful to prevent their flocks from returning to pasture until an hour and a half or two hours before sun set ; in consequence of the pernicious practice of turning the flocks in fields of grain, as soon as the sheaves are taken away ; lastly, in consequence of the want of abundant and pure drink. All these causes contribute to hinder insensible perspiration ; the humours thicken ; the blood becomes adulterated by heterogeneous particles ; its course is impeded ; the apoplectic stroke soon comes, and kills the animal in ten minutes, after violent convulsions and an universal tremor.

This destructive disease does not attack a flock without giving notice by symptoms which an intelligent shepherd may perceive. The sheep appear less and less lively ; they do not play about ; their eyes are not so bright as usual ; their wool looks dull ; and they eat with a kind of indifference. A careful shepherd, when he perceives these symptoms, immediately bleeds the whole flock. He repeats the operation the succeeding day. Once he draws the blood from the tail or foot ; once from the vein under the eye. He bathes the sheep well, in the river or in a tub, every day during a week. He gives them a large quantity of water to drink, which he induces them to swallow by infusing into each pail an ounce of salt, and which he renders more salutary by the mixture of honey and vinegar mentioned under the article *fever*. He thoroughly cleanses the sheep-house, he causes as great a draught of air as possible to pass through it, or he makes his flock lie out in the open air ; he gives the animals but little food, and puts it into the racks, that he may be certain of the quantity and quality. He even makes them fast one day out of three. He employs all means that tend to dilute, to correct and to cool the blood ; and gives to them such herbs as are mild, emollient, watery and affording little nourishment ; they are mentioned in the article which treats of inflammatory fever. It will answer to feed the sheep upon nothing but rye-straw.

These precautions may be insufficient to save the whole flock; but they may in some measure check the ravages of the disorder: and when used betimes, and seconded by great vigilance, they may even succeed in entirely keeping off the mischief.

It is easy to imagine why the same remedies may act differently upon different flocks. Apoplexy may in one case be sanguine, in another serous. The serous apoplexy is the most deadly; it almost always leads to putridness, even if the animal escapes from immediate danger. In this case, bleeding affords no relief; it would be desirable to excite vomiting, but it seems impossible to accomplish this in ruminating animals; purging is but a poor substitute; it should however be tried, and the dose should be composed of a drachm of cream of tartar in a glass of whey sweetened with a little honey; this dose should be repeated several times a day, as long as it appears to produce a favourable change. Though sheep cannot be made to vomit, they may be made to throw up a great deal of phlegm and slime, by a mixture of equal quantities of vinegar and water, which they swallow without giving much trouble, by means of a little bottle with a long neck.

The quantity of vinegar for each sheep is the two and thirtieth part of a pint, that is, a quarter of what is called a glass throughout this work.

The kind of apoplexy may be conjectured by examining the fibres around the white of the eye. If they are of a bright red, the apoplexy may be considered as sanguine. If they are pale, the apoplexy is almost certainly serous, and bleeding injurious. Purging is proper for both kinds, and the same regimen answers for both.

It is easy to determine why diseases are so often epidemical among sheep. The less animals differ from each other, the more general are the effects produced among them by the same causes. Now what difference ever exists in the habits of the sheep of the same flock? None; there is scarcely any in their features. They seem destined to absolute uniformity in their pleasures and their pains.

Another species of mortal apoplexy, but less epidemical than the preceding, is what is generally called in French *le coup de sang du toit*. The heat of the sheep houses increases the fermentation of the animal's humours, and disposes the blood to rush violently and copiously towards the breast.

When a sheep is attacked by this disorder, its eye is very dim, and its sides very hollow ; it hangs its head, breathes hard, complains much, and dies in a short time, if not speedily relieved. Copious bleeding is the remedy. Every other, unattended by this, is useless ; but this, if immediately employed, is sufficient. I have however observed that the animal is sooner out of danger if, after bleeding it, it is plunged three or four times into very cold water. This accident, which cannot be entirely guarded against, shews that a proprietor ought not to neglect to visit often his sheep-houses, to have all his flock washed several times a day, and to observe it attentively when it first quits the houses. The sick sheep should be bled out of the sheep-room, and not suffered to go in, until a perfect cure is accomplished. If the animal remains heavy and disinclined to eat, it should be separated from the flock, and kept two days without food.

Attention to the quantity and quality of the food given to animals should be the principal remedy for their complaints ; and a perfect cure is often effected merely by abstinence. But very powerful must be the influence of a person who can persuade country people to believe this.

Another kind of apoplexy, combined with the effects of indigestion, is called *le coup de sang des champs*. This rapid disease makes the sheep swell and totter. It is very fatal, as well as the kind just described. Bleeding is proper ; but it is not so effectual as in the other apoplexy. I am confirmed in the belief that it is accompanied with an indigestion ; first, because it attacks the animal in the fields, and scarcely ever until it has been there some time ; secondly, because quick motion is beneficial ; thirdly, because the cold bath often succeeds, when bleeding has been found of no service.

In these last two species of apoplexy, it is always a bad symptom when the animal does not bleed freely ; and it is almost a sure sign of recovery if, on coming out of the cold bath, it shakes itself carefully, and voids its excrements.

A too great abundance of blood occasions this disease ; but it is not to be supposed that vigorous sheep are not able a long time to endure this superabundance. A single fact will serve to shew their strength in this respect.

A well informed man went to a farm to purchase rams. He chose one that had very fine wool, that was very tall, with a thin body, and the vein around whose eye indicated an abun-

dance of blood. The farmer acknowledged that it had been lean and dejected for four months. The purchaser said to the farmer, who seemed surprised at his choice; "I shall send a cart to-morrow; put into it all the rams which I have chosen; if this one ceases to eat freely, slit both his ears across without delay; he seems to be oppressed by blood." The purchaser received the animal safe. He immediately had it bled freely. The ram recovered his spirits; yet a fortnight afterwards it had an apoplectic stroke, and was bled more copiously than at first. This ram has since become a very noble one, and has been in perfect health.

Sheep are less liable to a superabundance of blood, if they are made to move a great deal while they eat. This continual exercise facilitates digestion; and the blood is purified at the same time it is renewed. Sheep would generally be attacked by much fewer diseases, if country-people could be taught how greatly cold and cleanliness contribute to strengthen them; how necessary it is for them to have a variety of pasture; and how beneficial exercise is to every thing that breathes.

Indigestion caused by rich Pasture.

It sometimes happens that in the spring of the year sheep eat too greedily of young grass, which sets their blood in such a ferment, that, while in full health, they suddenly stand still, swell prodigiously, fall down, and die in the space of fifteen minutes. One month of May, I had a whole flock attacked by this disorder. I had five or six of them bled under the eye; which only served to hasten their death. I tried oil and several other remedies. All were of no effect. The danger was urgent, and I expected to lose the whole flock. Fortunately, a workman was present to whom the disease was familiar. He told me that he had known good effects to be produced by bathing all the sick sheep three or four times successively in very cold water, and by making them afterwards move about without intermission until they were tired. My flock was immediately plunged, again and again, into cold spring-water, and forced to run. The disease immediately went off.

We should at all seasons beware of the young grass of pastures where sheep remain a long time stationary through choice, and eat with avidity. We should above all beware of the succulent grass of the month of May. After a long privation, the sheep find themselves invited to enjoyment, and they indulge to excess,

Dysentery.

This disorder seldom attacks sheep except in rich pastures which contain no acid herbs. Their bowels are very loose; which commonly makes them sick, except at the time of the new grass. They sometimes void a little blood; they become weak, feverish, and suffer a great deal. Treacle rendered purgative by a small quantity of flowers of sulphur; water mixed with a little vinegar in the mangers, together with some honey and barberry-leaves as food; and afterwards the use of the preservative juniper powder, which I have promised to describe in the following pages; these things are proper for this disease, which is sometimes epidemical, often mortal, always infectious, produced in autumn, and renewed by moisture.

The Scab or Red Tetter.

Every part of a sheep's body is liable to be attacked by this disease, which may be radically cured, if attended to. It is more obstinate on the lips and nose than any where else, because the animal rubs those parts while eating.

It is occasioned by want of cleanliness, by bad food, by want of care of every kind, and it may be communicated to a whole flock in a very short time*.

Mr. de Chanvalon, author of the *Manuel des champs*, prescribes an ointment composed of oil of hemp-seed, roche-alum and native sulphur; or wine in which antimony has been washed. He moreover proposes, if the disease attacks the whole body of the animal, to wash it with lie, and to wash it afterwards with camphor boiled in olive-oil. The "Gentleman farmer" advises to dip a brush into soap-lees, and to rub the animal with it, and to complete the cure by an ointment composed of equal parts of tar and lard.

* It is possible to cure even the violent lizard-itch (*lézard démangeaison*), which is without exterior pimples, furrows the bodies of sheep, makes their wool fall out, and is catching. But I should think the cure of this kind of itch the most certain in the month of May, and I should advise the following precautions. Shear the sick animals completely, lest any pimples should remain concealed under the wool; let them be then conducted to a dry pasture, or fed with good fodder in the sheep-houses. Every morning two hours before going to the fields, they should be made to eat, for one or two weeks, oats sprinkled with a little saffron and steel filings; and their drink should be water mixed with wheat-flour. As the animals recover, they should be separated from the rest, until the whole are well.

Virgil proposes a composition of olives from which the oil is extracted, silver-dross, pitch, native sulphur and wax, together with the juice of sea-onions, hellebore and black bitumen. He prefers to this ointment, incisions and scarifications in the ulcered parts.

The "Farmer's guide" also advises prepared tar or oil of broom. It also says that another remedy equally effectual is, to take equal parts of tar and vinegar, to heat them together, to stir them until they are completely mixed, and to anoint the sores with this composition.

I neither deny nor affirm the virtue of these remedies, as I have not made use of them; but I should prefer the following remedy, used for horses, and which has never failed to effect a cure. It is composed of two ounces of quick-silver, two ounces of turpentine and two pounds of hog's fat. For horses, four times the quantity of quicksilver is to be used. Once rubbing produces a perfect cure. This ointment is thus prepared for sheep. Mix the quicksilver and turpentine well together.—When the turpentine and quicksilver are completely mixed, and appear of an uniform slate-colour, gradually stir into them the hog's fat, which should previously be melted and suffered nearly to cool. This quantity of ointment may serve for a greater or less number of sheep, according to the extent of the disease; as it is to be rubbed only upon the sore parts. When it is expended, the composition must be again made in the same way.

Powder of the juniper-tree, used as a preservative, is very useful after the red tetter is subdued, or after the scab has disappeared.

A proprietor ought not to offer a flock for sale while it has this disorder; for it may be communicated in the sheep-houses by the slightest rubbing, or even by mere contact.*

In well regulated flocks, the scab ought to be unknown.—Within ten years I have not seen one of my sheep attacked by it.

* It is said in "l'Instruction pour les Bergers" that sheep which live upon low land are much more subject to scab than those which are in elevated situations; while the latter are more frequently attacked by the apoplexy. A remedy for the scab is proposed in the same book. It is, to melt a pound of suet or fat, and to mix with it, near the fire, a quarter of a pound of turpentine.

Phthisic or Consumption.

A pasture that is very poor infallibly gives this disorder to a flock. They gradually lose their strength and liveliness. Their wool falls, and their weakness brings them every day nearer to death ; which commonly happens in the middle of winter, if the rack affords no better nourishment than the pasture. The remedy is easy to be imagined. Gradually feed your sheep better, both with green and with dry food ; and give them, if you can, some grain with its straw, or some nourishing vegetables.

Lambs dropped in the winter season by ewes that are lean and ill-fed, as they bring this disease into the world with them, languish, and soon die.

The Rot.

A rich and wet pasture produces a disease the reverse of consumption. This disease is the *yellow-fat* (*graisse jaune*) and ends in the rot ; it is supposed to be incurable when once confirmed. It seems as though nothing remained, to prevent the loss of the whole flock, but to sell the sound sheep at once to the butcher*.

Shepherds who have none but wet and rich pastures for their flocks which are destined for the market, must by no means neglect to mingle salt or some acid in their drink, and to employ the preservative juniper-powder. Pasture that is wet and poor, also produces rot among sheep, but does not fatten them. The same precautions are in this case indicated by the same danger.

Sheep which live upon rich but dry pastures do not rot, but they grow too fat, of which the ill consequences are well known. It is not adviseable to let them grow old upon grounds of this nature. It may perhaps be proper to bleed them, from time to

* Mr. l'abbé des Pierres has however assured me that, by means of branches of broom, with which he fills the racks of his sheep-houses, morning and evening, in wet weather during the winter, he has stopped a confirmed rot ; that the mortality ceased, and that the sheep grew fat as soon as it was put upon this regimen. This remedy merits the ut most attention. Broom possesses great qualities ; it is aperitive ; its oil is good for tetter ; the infusion of it kills caterpillars ; the lie made from its ashes is powerful in cases of Ironsy ; the ointment made of its compound extract is a sovereign remedy for wounds ; and the testimony of Domignot, abbot of the abbés *des Pierres*, leaves no doubt of its efficacy.

time, in the vein under the eye, and to give them the preservative juniper powder.

Sheep that have the rot languish some time, cease to eat with an appetite, grow out of spirits, stand with difficulty upon their legs, totter, often fall, and at length die without much pain.

After having advised the sale of such flocks as are threatened by this disease, it is but just, for the sake of purchasers, to point out the marks by which it is known in sheep, living as well as dead.

The rot is indicated in a live sheep, by its eye being hollow and of the colour of common suet; by the blood-vessels of the eye, which are of a dull colour, approaching to black; by the paleness of its flesh, the moisture of its skin; by the tarnished colour of its teeth; by its shrunk gums; and by its wool, which comes out if opened, rubbed between the fingers and slightly pulled.

The marks of rot, after death, are the belly filled with water; the fat yellow; small worms, or white pustules, or knots in the liver, or liver which may be broken to pieces in the hand.

Bite of a Snake.

This danger threatens only ewes when they have yeaned.—Snakes attracted by the smell of the milk, and by the warmth, sometimes get into sheep-houses, conceal themselves in the litter or in the holes in the walls, and suck the ewes, giving them deep bites in their bags. These bites are succeeded by inflammation; and the bags often rot away, the ewes being consequently unable to nurse their young. At other times they occasion a general swelling, and the animals die in great pain, and sometimes suddenly.

The first remedy is bleeding followed by scarification of the bag; the second is a poultice of bread and milk or boiled sorrel; the third is the ointment of la mère, melted, and tempered with a little olive oil. The ewe must be thrown on her back, in order to grease with this mixture her bag and the parts bitten.—It is applied by means of a linen cloth, through which the two thighs of the ewe pass, and which is fastened upon her back. The poultice is to be applied in the same manner. The internal remedy is an infusion of elder-flowers and honey.—Instead of scarifying the bag, it may be struck with twigs of a gooseberry bush, or with a branch of barberry.

After all, the preventives are better than the remedies. Examine frequently the lower part of the interior of the walls of the sheep-houses; kill the snakes whenever they are discovered; and keep the sheep, while in the fields, away from grassy thickets.

Heaviness (Lourderie).

This is a cruel and singular disorder which, in Berry, destroys at least a twentieth part of the flocks. It is almost confined to young sheep. A lamb, apparently in full health, when attacked by this disorder, gradually loses its appetite and sleep; it grows lean and out of spirits; its head hangs heavily; it stops short, leaves the flock, turns round several times, sometimes to the right, sometimes to the left, sometimes towards both sides alternately; at length it walks only in a circle, and falls into some ditch or other place, where it dies.

I suspected the cause of this disorder to be white worms, an inch long and of the thickness of the little finger. Curious to ascertain the seat of the mischief, I caused a lamb which had this disorder to be killed and its head to be opened longitudinally. After a long and minute search, I discovered, at the origin of the nose, the worms which I have just described.— This lamb had one on one side and two on the other. I thought the symptoms of the disease might be explained by this discovery. I reasoned thus; if there is but one worm, the lamb suffers less, and turns only towards one side; if there are several worms in the two nostrils, the animal is tormented without any respite, and turns to the right or the left, according to the side on which the worms are most distressing.

In searching for a remedy, I was guided by the following reflection: if the seat of the disorder was invariably the nasal canal, the remedy should be some powder or liquor deadly to the insect and harmless to the lamb.

But since that first examination, other heads of lambs that had this disorder have been opened under my inspection, and no worms found in them. So that the discovery of which I was proud is rendered doubtful; and I am reduced to the conclusion that worms may sometimes be the occasion of the disease, but that in some cases they lodge themselves in parts which are interior and inaccessible to our imperfect search, or which cannot be affected by our uncertain remedies. An injection of oil of turpentine into the nostrils of a lamb that had this disorder, caused it to fall down dead in an instant. A

strong decoction of tobacco or of gunpowder would have been unattended by danger, though it might not have effected a cure.*

This disorder, in some respects, bears a great resemblance to the epilepsy. I suppose this is the reason why they have been confounded, and why no agricultural writer has described the disease in question. I have remarked that it commonly prevails in winter; and, in general, whenever sheep are confined to dry food. Are the eggs of those worms contained in this kind of food? Do the sheep inhale them while at pasture? At what time of the year? My experience does not enable me to answer these questions. A pound of salt each day for fifty lambs, given from time to time, might perhaps be a good preservative against internal worms.

Worms in the foot.

Thick worms, two or three inches long, sometimes get between the claws of a sheep's foot, and occasion it to limp.— This is indicated by the foot being swelled, and by a small hole from which proceed black hairs about an inch long.

The skin of the foot must have an incision made in it; the worm must be dexterously drawn out by its hair; the wound anointed with broom-cintment, or prepared tar, or ointment of la mère; and the foot covered with a bit of skin made like a thumb-stall.

Colds.

Colds are fatal, particularly to lambs. They require to be prevented rather than nursed. A lamb that has a cold in the

* A farmer has assured me that he has cured lambs of this disorder by putting salt and pepper in their ears, which he tied with packthread for some days. I doubt their having had this disorder. A remedy sent from Paris is said to be composed of tobacco and hellebore. Its worth is not very well attested. It is called *empyreumatic oil*. Many agriculturalists think that this disease is occasioned by the violent blows which lambs give their heads; that gatherings are formed in the head, and that when this gathering breaks the animal dies. I do not think it improbable that this disease may sometimes be caused by worms, and sometimes by gatherings. While writing these notes, I have had the abovementioned oil injected into the nostrils of a lamb attacked by this disorder. It became violently convulsed, and rendered pus through the nose. I repeated the injection, and made it swallow a portion of the liquid. It died while swallowing it. The animal was immediately opened. The right side of the lungs was decayed, and in the head a collection of matter appeared on the same side; this was also the side towards which the animal turned. It is doubtful whether this disorder proceeds from a contusion, whether it is merely a diseased chest, or whether it is caused by a worm.

winter season languishes a long time, and seldom recovers, if its constitution is weak.

The chief thing to be attended to is, to keep the sheep-houses of a moderate and equable temperature. To effect this, they should not be kept too warm while the ewes are there; and when they are away, the doors and windows should be less open, but never quite closed. Without this precaution, the lambs, when their mothers leave them, pass suddenly from summer to winter; and when they return, from winter to summer. It may easily be imagined how much warmth the ewes communicate to these young creatures. When left by their mothers, they gather themselves together in heaps, in order to keep themselves warm: they lie in the sunshine, fall asleep and get suffocated or wake up with violent colds. This danger is avoided by leaving no opening in the building through which the direct rays to the sun can enter while the lambs are asleep, taking care however not to exclude the air and light.

Water and honey kept warm in shallow mangers or flat tubs, and bread made of wheat and fine bran, cannot but be salutary food. A little oil of sweet almonds mixed with a little white wine, is very proper for sheep, in all complaints of the chest. Bleeding cannot hurt lambs that are strong, at the beginning of a cold.

The same causes which produce colds often give colicks to lambs. Oil of sweet almonds, given as a drink and injected, relieves them.

It cannot be too often repeated, that the changes of heat, frost, moisture and cold winds, which the bad management of the country people does not guard against, carry off a third of the lambs in some places.

The Rickets.

This disease of children is common to lambs also. It is caused by bad nourishment as well as a radical defect of conformation. If a lamb remains long ricketty, it is not worth rearing. Ewes and ewe-lambs covered by lambs, are very apt to produce young ones that have this deformity. Warm water increases the disease. Cold salt-water may be serviceable as a tonic and dissolvant.

I never saw ricketty lambs dropped by good ewes in the months of March, April or May. It may hence be inferred that winter is not the proper season for yearling.

Madness.

If a sheep is bitten by a mad dog, burn the wound immediately, or make the sheep swallow, in the course of two days, the eighth of a pint of vinegar, or cut out the bite instantly; these remedies are almost certain. Sheep, however, hardly ever go mad, their wool protects them from the saliva of the dog. The dogs belonging to a flock are much more exposed than the sheep to this dreadful malady. The remedies for them are the same as for sheep and all other animals. The following remedy may however be tried upon dogs. Mix seven grains of turbith-mineral with crumbs of bread sufficient to form a bolus; throw it to the dog before the madness appears; at the same time rub the wound well with mercurial ointment. If one dared to shave the dog entirely, it would be better to rub his whole body. The most prudent way, if the dog cannot be securely confined, is to shoot him.

Poison.

If a sheep swells and is in danger of perishing, in consequence of having eaten some poisonous substances, let it be bled in the lips and ears, or in the vein under the eye, and let this operation be followed by a spoonful of olive-oil, or by an equal dose of white vinegar. This treatment, begun early, never fails of success.

Divers diseases.

Besides the diseases already mentioned, sheep are subject to *diarrhoea*, *obstructions*, *sore eyes*, *dropsy* and *tumours*.

Decoction of oak is a remedy for the *diarrhoea*, which it is dangerous to check too suddenly.

Obstructions are removed by garlic, parsley, tetter-wort, dog's grass, leaves of the hederæ arborea.

Sore eyes are relieved by plantain water, and frequently by the juice of tetter-wort or by one part of white vinegar in four parts of water. Some kinds of dry fodder in the racks are dangerous to the eyes of sheep.

Dropsy requires tapping; and should serve as a warning to the proprietor to fatten the animal, if it recovers from the first attack of this disease, which is allied to the rot. Wormwood and rue are proper to be used after tapping, and salt is then indispensable.

Tumours require ointment of broom, or some other softening application that promotes suppuration. If the tumours are red and inflammatory, bleeding should precede any application.— Blood is drawn according to circumstances, from the vein under the eye, from the ears, the lips, the foot, or the tail; but provided the blood be drawn freely, it appears to be of little consequence from what part of the animal it is taken. It is however well to choose a spot so as not to disfigure the animal.

PRESERVATIVES AGAINST DISEASES OF SHEEP, AND
EMOLLIENTS FOR THEIR WOUNDS.

The earth of an Ant-Hillock.

The *Manuel des Champs*, advises to take an entire ant-hillock, to dry it in an oven, to reduce it to dust, to sift it, and to distribute it in the mangers of the sheep, with oats and salt. A quarter of a pint of this dust is to be mixed with double that quantity of oats. This preservative is to be given once a week to each sheep. But it may be questioned whether the animals ought to be habituated to any one medicine ; and it is not to be expected that country people will give themselves the necessary trouble.

I prefer, in every respect, the following more simple preservative, the virtues of which I have myself witnessed.

Juniper-powder.

Gather berries and buds of the juniper-tree ; mash them well ; dry them gradually in a oven where bread has been baked ; reduce them to a fine powder, and sift it through a silk sieve. Put two drachms of this powder in half a bushel of oats, with four ounces of salt dried over the fire in a shovel and pounded very fine ; stir the whole together, that the oats may be well impregnated with the above mentioned substances. Give this quantity of oats to twenty five sheep, in wet weather, or when contagion is to be feared ; give it to such as live upon a wet soil ; and to such as are threatened with the rot, with obstructions, with jaundice, with any disease, in short, which proceeds from repletion or relaxation. It answers in all countries, in all seasons, and in all circumstances, except in fevers and inflammatory disorders. Almost all the diseases of sheep, whose causes are unknown, appear to me to result from some poison which their organs are not strong enough to get rid of ; and that, consequently, what tends to strengthen them greatly must be serviceable.

This remedy is to be used, as a preservative, two or three times a year. Sheep which are well have some repugnance to eat this mixture ; they must be induced to it by making them fast previously: those which are not quite well eat it readily.

This preservative is to be given to sheep before they have eaten any thing else, two days successively at most. These two days, they must have dry fodder; they must not have any drink; and their houses should be fumigated with juniper. Lambs may safely eat these oats ; the effect of which is to render them lively, and, in the course of a few days, to moderate their eagerness to drink.

This preservative, known to be very salutary in England and France, agrees exactly with the observations of farmers, who have remarked that sheep which feed upon grounds where clumps of juniper-trees are scattered, escape all putrid diseases. The salt and oats of the above mixture contribute, as well as the bitterness of the juniper powder, to keep off these diseases. This medicine is not very expensive, being employed only three or four times a year.

Elm leaves.

Next to the above preservative, leaves of the elm deserve to be mentioned. They should be given rather green than dry, and never when yellow. When they are green, I sprinkle them with brine ; and when they are dry, I scatter salt over them. No rule is necessary for the quantity to be given, they may be eaten without danger. I give some to all my sheep, once a year, when the weather is wet. Those which I give to the lambs are without salt, unless the lambs are feeble.

I think it needless to use many preservatives ; one good one is sufficient ; the same may be said of salves for wounds.

Preparation of Tar.

Melt half a pound of goose-grease, or the grease of any other fowl, or lard that is not salted, or butter. Add a pound of tar, and stir the whole well together.

Broom-ointment.

Into two pints of clear water put two pounds and a half of green ends of twigs of broom, together with leaves, buds and flowers of the same. all cut very fine. Boil the whole gently.

until it acquires the consistence of jelly. Pour upon this jelly half a pint of good brine and a quarter of a pound of melted mutton suet well purified. Stir the whole together, for a minute, with a stick. Pour this mixture into glazed earthen vessels, and cover them with parchment. It may thus be kept the whole year.

The *Farmer's Guide*, whence these remedies have been taken, says that the spring is the only season proper for making this ointment; that it is commonly more salutary than the preparation of tar; that it does not spoil the wool; and that a careful shepherd ought never to let his store of it be expended.

Pommade of Sulphur.

Take a pound of pounded sulphur, two pounds of fresh butter and hog's grease, and two handfuls of powdered slate: melt the hog's grease and butter together; then add the sulphur. Let the mixture boil a good while, and stir it frequently.

The manner of using this ointment, as well as all the preceding, is every day to anoint the wound (which should be previously washed with alum-water, salt-water or vinegar and water) until a perfect cure is effected. The wool about the wound must be cut off, and the ointment warmed before it is applied.



District of New-York, ss :

BE it remembered that on the 30th day of November, in the thirty-fifth year of the Independence of the United States of America.—**FRANCIS DURAND** of the said District, hath deposited in this Office, the title of a Book the right whereof he claims as Proprietor and Translator, in the words following to wit :

A
COMPLETE TREATISE
ON
MERINOS
AND OTHER SHEEP,
WITH PLATES.

Recently published at Paris, by Order of the Government,
COMPILED BY **Mr. TESSIER,**
Inspector of the Rambouillet Establishment and others,
in France.

—
CONTAINING

The method of forming *Good-Flocks*, of increasing them, and of treating them properly both when healthy and when diseased.—Followed by documents, extracts, and short explanatory notes, not contained in the original, which were deemed necessary to make this important work complete, and to render it more instructive to the Agriculturalists of the United-States.

Translated from the French,

AND DEDICATED TO THE AGRICULTURAL SOCIETIES OF THE UNITED STATES.

IN conformity to the Act of the Congress of the United States, entitled "An Act for the encouragement of Learning, by securing the Copies of Maps, Charts, and Book to the Authors and Proprietors of such copies during the times therein mentioned, and also to an Act entitled an Act Supplementary to an Act entitled an Act for the encouragement of Learning by securing the copies of Maps, Charts and Books to the Authors and Proprietors of such copies during the times therein mentioned, and extending the benefits thereof to the Arts of Designing, Engraving, and Etching, Historical and other Prints."

CHARLES CLINTON,
Clerk of the District of New-York.



CONTENTS.



<i>Preliminary notice</i>	page 3
<i>Of the different breeds of sheep, and particularly of</i>	
<i>Merinos</i>	7
<i>Flocks of a single cross</i>	10
<i>Progressive flocks (troupeaux de progression)</i>	13
<i>Full blooded flocks</i>	16
<i>Management of flocks</i>	28
<i>Conditions on which a flock is put out on shares, and</i>	
<i>what is to be expected from this contract</i>	25
<i>First scheme of a cheptel</i>	28
<i>Second scheme</i>	34
<i>Third scheme</i>	37
<i>Of copulation</i>	38
<i>Of gestation and yeaning</i>	43
<i>Of weaning</i>	47
<i>Of docking</i>	ibid
<i>Of castration</i>	48
<i>Of utting off the horns</i>	50
<i>Of marking sheep</i>	51
<i>Of sheep-houses</i>	52
<i>Of foddering</i>	57
<i>Description of the machine for cutting roots</i>	63
<i>Of folds and folding</i>	64

CONTENTS.

<i>Of pasturing Merinos</i>	67
<i>Of the precautions necessary when sheep travel</i>	70
<i>Of shearing</i>	74
<i>Of the fleeces and wool</i>	78
<i>Of washing the wool</i>	81
<i>Gilbert method</i>	83
<i>Method recommended by Mr. Giron de Buzaringues</i>	85
<i>Spanish method</i>	<i>ibid</i>
<i>Method communicated by a manufacturer of Montjoie</i>	87
<i>Washing at the manufactory</i>	88
<i>Of selling sheep</i>	90
<i>Means of knowing the age of a sheep</i>	91
<i>Teeth of sheep at different ages</i>	93
<i>General remarks upon the diseases of sheep</i>	94
<i>Of the sheep-pox ; in french called Claveau</i>	96
<i>Of the scab or itch</i>	101
<i>Of tetters</i>	107
<i>Black muzzle</i>	108
<i>Thrush (chancre)</i>	<i>ibid</i>
<i>Lameness or disorders of the foot</i>	109
<i>The spider or diseased udder</i>	112
<i>The anthrax or Carbuncle</i>	113
<i>The Rot</i>	114
<i>Diarrhœa or looseness</i>	117
<i>The gencstade or broom-disorder</i>	118
<i>The wood-disease (maladie de bois)</i>	119

CONTENTS.

<i>The blood, blood-disease (maladie du sang)</i>	120
<i>Falerra</i>	122
<i>Sologne disease or red disease</i>	126
<i>Of colds</i>	129
<i>Of the Tetanus</i>	<i>ibid</i>
<i>Of convulsions (Maladie convulsive) or madness</i> <i>(Maladie folle)</i>	130
<i>Of vertigo, dizziness or staggers</i>	131
<i>Hoving or sudden swelling of the paunch</i>	150
<i>Worms and Insect which infest Sheep</i>	143
<i>Of Tumours, fractures and wounds</i>	146
<i>Of purifying Sheep houses</i>	147
<i>Ægagropila</i>	<i>ibid</i>
<i>Of Sepherds and Dogs</i>	149
<i>Conclusion.</i>	157

APPENDIX.

<i>Fever</i>	1
<i>Measles, (Rougeole)</i>	2
<i>Apoplexy</i>	5
<i>Indigestion caused by rich pasture</i>	6
<i>Dysentery</i>	7
<i>The scab or red tetter</i>	<i>ibid</i>
<i>Phthisic or consumption</i>	9
<i>The Rot</i>	<i>ibid</i>
<i>Bite of a Snake</i>	10

CONTENTS.

<i>Heaviness (lourderie)</i>	. . . . .	11
<i>Worms in the foot</i>	. . . . .	13
<i>Colds</i>	. . . . .	<i>ibid</i>
<i>The Rickets</i>	. . . . .	<i>ibid</i>
<i>Madness</i>	. . . . .	14
<i>Poison</i>	. . . . .	<i>ibid</i>
<i>Divers diseases</i>	. . . . .	<i>ibid</i>
<i>Preservatives against diseases of sheep, and Emollient, for their Wounds, &c.</i>	. . . . .	15

