

(1.) *SHEEP, *n. f.* plural likewise *sheep*. [*ſceap*, Saxon; of which the plural was *ſcep*; *ſchapp*, Dutch.] 1. The animal that bears wool: remarkable for its uſefulneſs and innocence.—

Fire the brambles, ſnare the birds, and ſleep
In wholeſome water-falls the fleecy *ſheep*. *Dryd.*
—There are two ſorts of ideas; one of ſingle ſub-
ſtances, as they exiſt ſeparately, as a man or a *ſheep*.
Locke. 2. [In contempt.] A fooliſh filly fellow.
Ainſworth. 3. [In theology.] The people, con-
ſidered as under the direction of God, or of their
paſtour.—We are his people, and the *ſheep* of his
paſture. *Pſalms.*

(2.) SHEEP, in zoology. See OVIS and WOOL.

(3.) SHEEP, ADVANTAGES ARISING FROM, TO
MANKIND. Among the various animals with
which Divine Providence has ſtored the world for
the uſe of man, none is to be found more innocent,
more uſeful, or more valuable, than the ſheep.
The ſheep ſupplies us with food and clothing, and
finds ample employment for our poor at all times
and ſeaſons of the year, whereby a variety of ma-
nufactures of woollen cloth is carried on without
interruption to domeſtic comfort and loſs to friend-
ly ſociety or injury to health, as is the caſe with
many other occupations. Every lock of wool
that grows on its back contributes to the ſupport
of ſtaplers, dyers, pickers, ſcourers, ſcriblers,
carders, combers, ſpinners, ſpoolers, warpers,
queelers, weavers, fullers, tuckers, buriers, ſhear-
men, preſſers, clothiers, and packers, who, one
after another, tumble and toſs, and twiſt, and
bake, and boil, this raw material, till they have
each extracted a livelihood out of it; and then
comes the merchant, who, in his turn, ſhips it
(in its higheſt ſtate of improvement) to all quar-
ters of the globe, from whence he brings back e-
very kind of riches to his country, in return for
this valuable commodity which the ſheep affords.
Beſides this, the uſeful animal, after being de-
prived of his coat, produces another againſt the
next year; and when we are hungry, and kill him
for food, he gives us his ſkin to employ the ſell-
mongers and parchment makers, who ſupply us
with a durable material for ſecuring our eſtates,
rights and poſſeſſions; and if our enemies take the
field againſt us, ſupplies us with a powerful in-
ſtrument for rouſing our courage to repel their at-
tacks. When the parchment-maker has taken as
much of the ſkin as he can uſe, the glue-maker
comes after and picks up every morſel that is left,
and therewith ſupplies a material for the carpen-
ter and cabinet-maker, which they cannot do
without, and which is eſſentially neceſſary before
we can have elegant furniture in our houſes; tables,
chairs, looking-glaſſes, and a hundred other ar-
ticles of convenience. And in abſence of the ſun,
the

the sheep supplies us with an artificial mode of sight, whereby we preserve every pleasure of domestic society, and with whose assistance we can continue our work, or write or read, and improve our minds, or enjoy the social mirth of our friends. Another part of the slaughtered animal supplies us with an ingredient necessary for making good common soap, a useful store for producing cleanliness in every family, rich or poor. Even the horns are converted by the button-makers and turners into a cheap kind of buttons, tips for bows, and many useful ornaments. From the very trotters an oil is extracted useful for many purposes, and they afford good food when baked in an oven. Even the bones are useful also; for by a late invention of Dr Higgins, they are found, when reduced to ashes, to be an useful and essential ingredient in the composition of the finest artificial stone in ornamental work for chimney-pieces, cornices of rooms, houses, &c. which renders the composition more durable by effectually preventing its cracking. This meek inoffensive creature can feed where every other animal has been before him and grazed all they could find; and if he takes a little grass on our downs or in our fields, he amply repays us in the richness of the manure which he leaves behind him. He protects the hands from the cold wintry blast, by providing them with the softest leather gloves. Every gentleman's library is also indebted to him for the neat binding of his books, for the sheath of his sword, and for cases for his instruments; in short, there is hardly any furniture or utensil of life but the sheep contributes to render either more useful, convenient, or ornamental.

(4.) SHEEP, FAMED FOR FINE WOOL, AND OTHER QUALITIES. See RURAL ECONOMY, Part IV. Sect. V. Wales breeds a small hardy kind of sheep, which has the best tasted flesh, but the worst wool of all. Nevertheless it is of more extensive use than the finest Segovian fleeces; for the benefit of the flannel manufacture is universally known. The sheep of Ireland vary like those of Great Britain: those of the south and east being large and their flesh rank: those of the north and the mountainous parts small and their flesh sweet. The fleeces in the same manner differ in degrees of value. Scotland breeds a small kind in Shetland, and their fleeces are remarkably fine. But the new Leicestershire breed is the most fashionable, and the most profitable breed in the island. (See RURAL ECONOMY, Part IV. Sect. V.) Joseph Altom of Clifton, who raised himself from a plough-boy, was the first who distinguished himself in the midland counties of England for a superior breed of sheep. How he improved his breed is not known; but it was customary for eminent farmers in his time to go to Clifton in summer to choose and purchase ram-lambs, for which they paid two or three guineas. This man was succeeded by Mr Bakewell; and it may reasonably be supposed that the breed, by means of Altom's stock, had passed the first stage of improvement before Mr Bakewell's time. Still, however, it must be acknowledged, that the Leicestershire breed of sheep owes its present high state of improvement to the ability and care of Mr Bakewell.

(5.) SHEEP, FEEDING OF. This subject is pretty fully treated of, under RURAL ECONOMY, Part IV. Sect. V. and X. The feeding sheep with turnips is a great advantage to the farmers. When they are made to eat turnips they soon fatten, but there is some difficulty in bringing this about. The old ones always refuse them at first, and will sometimes fast till almost famished; but the young lambs fall to at once. The common way of turning a flock of sheep at large into a field of turnips, is very disadvantageous, for they will thus destroy as many in a fortnight as would keep them a whole winter. There are three other ways of feeding them on this food. The first is to divide the land by hurdles, and allow the sheep to come upon such a portion only at a time as they can eat in one day, and so advance the hurdles farther into the ground daily till all be eaten. This is infinitely better than the former random method; but they never eat them clean even this way, but leave the bottoms and outides scooped in the ground: the people pull up these indeed with iron crooks, and lay them before the sheep again, but they are commonly so fouled, that they do not care for them. The 2d way is by inclosing the sheep in hurdles, as in the former; but in this they pull up all the turnips which they suppose the sheep can eat in one day, and daily remove the hurdles over the ground whence they have pulled up the turnips: thus there is no waste, and less expence, for a person may in two hours pull up all those turnips; the remaining shells of which would have employed 3 or 4 labourers a-day to get up with their crooks out of the ground trodden hard by the feet of the sheep; and the worst is, that as in the method of pulling up first, the turnips are eaten up clean; in this way, by the hook, they are wasted, the sheep do not eat any great part of them, and when the ground comes to be tilled afterwards for a crop of corn, the fragments of the turnips are seen in such quantities on the surface, that half the crop at least seems to have been wasted. The 3d method is to pull up the turnips, and remove them in a cart to some other place, spreading them on a fresh place every day; thus the sheep will eat them up clean, both root and leaves. The great advantage of this method is, when there is a piece of land not far off which wants dung more than that where the turnips grew, which perhaps is also too wet for the sheep in winter, and then the turnip will, by the too great moisture and dirt of the soil, sometimes spoil the sheep, and give them the rot. Yet such ground will often bring forth more and larger turnips than dry land, and when they are carried off, and eaten by the sheep on ploughed land, in dry weather, and on green sward in wet weather, the sheep will succeed much better; and the moist soil where the turnips grew not being trodden by the sheep, will be much fitter for a crop of corn than if they had been fed with turnips on it. The expence of hurdles, and the trouble of moving them, are saved in this case, which will counterbalance at least the expence of pulling the turnips and carrying them to the places where they are to be eaten. They must always be carried off for oxen.

(6.) SHEEP,

(6.) SHEEP, FOLDING OF. See RURAL ECONOMY, Part IV. Sect. X. § II.

(7.) SHEEP, MR BAKEWELL'S IMPROVED BREED OF. "The manner in which Mr Bakewell raised his sheep to the degree of celebrity in which they deservedly stand, is, notwithstanding the recentness of the improvement, and its being done in the day in the sight of thousands now living, a thing in dispute; even among men high in the profession, and living in the very district in which the improvement has been carried on! Mr Bakewell alone is in possession of the minutæ of his own improvement; and the public can only hope that at a proper time the facts may be communicated for the direction of future improvers. Whenever this shall take place, it will most probably come out that no crosses with any alien breed whatever has been used; but that the improvement has been effected by selecting individuals from kindred breeds; from the several breeds or varieties of long-woolled sheep, with which Mr Bakewell was surrounded on almost every side, and by breeding, *in-and-in* (i. e. from the *same family*;) with this selection: solicitously seizing the superior accidental varieties produced; associating these varieties; and still continuing to select, with judgment, the superior individuals. It now remains to give a description of the superior class of individuals of this breed, especially ewes and wethers, in full condition, but not immoderately fat. The rams will require to be distinguished afterwards. The head is long, small, and hornless, with ears somewhat long, and standing backward, and with the nose slooting forward. The neck thin, and clean toward the head; but taking a conical form; standing low, and enlarging every way at the base; the fore end altogether short. The bosom broad, with the shoulders, ribs, and chine extraordinary full. The loin broad, and the back level. The haunches comparatively full toward the hips, but light downward; being altogether small in proportion to the fore parts. The legs of a moderate length; with the bone extremely fine. The bone throughout remarkably light. The carcase, when fully fat, takes a remarkable form; much wider than it is deep, and almost as broad as it is long. Full on the shoulder, widest on the ribs, narrowing with a regular curve towards the tail; approaching the form of the turtle nearer perhaps than any other animal. The pelt is thin, and the tail small. The wool is shorter than long wools in general, but much longer than the middle wools; the ordinary length of staple 5 to 7 inches, varying much in fineness and weight." This breed surpasses every other in beauty of form; they are full and weighty in the fore quarters; and are remarkable for smallness of bone. Mr Marshall, who has been of so much benefit to agriculture and his country by his publications, informs us, in his *Rural Economy of the Midland Counties*, that he has seen a rib of a sheep of this breed contrasted with one of a Norfolk sheep: the disparity was striking; the latter nearly twice the size; while the meat which covered the former was three times the thickness: consequently the proportion of meat to bone was in the one incomparably greater than in the other.

Therefore, in this point of view, the improved breed has a decided preference: for surely while mankind continue to eat *flesh* and throw away *bone*, the former must be, to the consumer at least, the more valuable.

(8.) SHEEP, METHOD OF MANAGING, IN SPAIN: The manner of managing sheep in Spain, a country famous for producing the best wool in the world, is as follows: In Spain there are two kinds of sheep: the coarse-woolled sheep, which always remain in their native country, and are housed every night in winter; and the fine-woolled sheep, which are always in the open air, and travel every summer from the cool mountains of the northern parts of Spain, to feed in winter on the southern warm plains of Andalusia, Mancha, and Estramadura. Of these latter, it appears from accurate computations, that there are about five millions; and that the wool and flesh of a flock of 10,000 sheep produce yearly about 24 reals a head, or about the value of 12 English pence, one of which belongs to the owner, three to the king, and the other eight are allowed for the expenses of pasture, tythes, shepherds, dogs, salt, shearing, &c. In the 16th century the travelling sheep were estimated at 7 millions: 10,000 sheep form a flock, which is divided into ten tribes, under the management of one person, who has absolute dominion over 50 shepherds and 50 dogs. M. Bourgoanne, a French gentleman, who resided many years in Spain, and directed his inquiries chiefly to the civil government, trade, and manufactures, of that country, gives the following account of the wandering sheep of SEGOVIA. "It is (says he) in the neighbouring mountains that a part of the wandering sheep feed during the fine season. They leave them in October, pass over those which separate the two Castiles, cross New Castile, and disperse themselves in the plains of Estramadura and Andalusia. For some years past those of the two Castiles, which are within reach of the Sierra Morena, go thither to pass the winter; which, in that part of Spain, is more mild: the length of their day's journey is in proportion to the pasture they meet with. They travel in flocks from 1000 to 1200 in number, under the conduct of two shepherds; one of whom is called the *Mayoral*, the other the *Zagal*. When arrived at the place of their destination, they are distributed in the pastures previously assigned them. They return in April; and whether it be habit or natural instinct that draws them towards the climate, which at this season becomes most proper for them, the inquietude which they manifest might, in case of need, serve as an almanac to their conductors." Mr Arthur Young, in that patriotic work which he conducted with great industry and judgment, the *Annals of Agriculture*, gives us a very accurate and interesting account of the Pyrenean or Catalonian sheep. "On the northern ridge, bearing to the west, are the pastures of the Spanish flocks. This ridge is not, however, the whole; there are two other mountains, quite in a different situation, and the sheep travel from one to another as the pasturage is short or plentiful. I examined the soil of these mountain pastures, and found it in general stony; what

what in the west of England would be called a *Bone-brash*, with some mixture of loam, and in a few places a little peaty. The plants are many of them untouched by the sheep; many ferns, narcissus, violets, &c. but burnet (*poterium sanguiferum*) and the narrow-leaved plantain (*plantago lanceolata*) were eaten close. I looked for trefoils, but found scarcely any: it was very apparent that soil and peculiarity of herbage had little to do in rendering these heights proper for sheep. In the northern parts of Europe, the tops of mountains half the height of these (for we were above snow in July) are bogs, all are so which I have seen in our islands, or at least the proportion of dry land is very trifling to that which is extremely wet: Here they are in general very dry. Now a great range of dry land, let the plants be what they may, will in every country suit sheep. The flock is brought every night to one spot, which is situated at the end of the valley on the river I have mentioned, and near the point or passage of Picada: it is a level spot sheltered from all winds. The soil is 8 or 9 inches deep of old dung, not at all inclosed: from the freedom from wood all around, it seems to be chosen partly for safety against wolves and bears. Near it is a very large stone, or rather rock, fallen from the mountain. This the shepherds have taken for a shelter, and have built a hut against it; their beds are sheep skins, and their door so small that they crawl in. I saw no place for fire; but they have it, since they dress here the flesh of their sheep, and in the night sometimes keep off the bears, by whirling fire-brands: four of them belonging to the flock mentioned above lie here. I viewed their flock very carefully, and by means of our guide and interpreter, made some inquiries of the shepherds, which they answered readily, and very civilly. A Spaniard at Venasque, a city in the Pyrenees, gives 600 livres French a-year for the pasturage of this flock of 2000 sheep. In winter he sends them into the lower parts of Catalonia, a journey of 12 or 13 days, and when the snow is melted in the spring, they are conducted back again. They are the whole year kept in motion, and moving from spot to spot, which is owing to the great range they everywhere have of pasture. They are always in the open air, never housed or under cover, and never taste of any food but what they can find on the hills. Four shepherds, and from four to six large Spanish dogs, have the care of this flock; the latter are in France called the *Pyrenees breed*; they are black and white, of the size of a large wolf, a large head and neck, armed with collars stuck with iron spikes. No wolf can stand against them; but bears are more potent adversaries." But as we have neither *wolves* nor *bears* in Britain, we need not quote Mr Young's remarks on this subject. He adds, respecting the sheep: "They are in general polled, but some have horns; which in the rams turn backwards behind the ears and project half a circle forward; the ewes horns turn also behind the ears, but do not project: the legs white or reddish; speckled faces, some white, some reddish; they would weigh fat, I reckon, on an average, from 15 lb. to 18 lb. a quarter. Some tails short, some left long. A few black sheep among them: some

with a very little tuft of wool on their foreheads. On the whole they resemble those on the South Downs; their legs are as short as those of that breed; a point which merits observation, as they travel so much and so well. Their shape is very good; round ribs and flat straight backs; and would with us be reckoned handsome sheep; all in good order and flesh. To be still better acquainted with them, I desired one of the shepherds to catch a ram for me to feel, and examine the wool, which I found very thick and good of the carding sort. I took a specimen of it, and also of a hoggit, or lamb of last year. In regard to the mellow softness under the skin, which, in Mr Bakewell's opinion, is a strong indication of a good breed, with a disposition to fatten, he had it in a much superior degree to many of our English breeds, to the full as much so as the South Downs, which are for that point the best short-woolled sheep which I know in England. The fleece was on his back, and weighed, as I guessed, about 8 lb. English; but the average, they say, of the flock is from 4 to 5, as I calculated by reducing the Catalonian pound of 12 oz. to ours of 16, and is all sold to the French at 30 s. the lb. French. This ram had the wool of the back part of his neck tied close, and the upper tuft tied a second knot by way of ornament; nor do they ever shear this part of the fleece for that reason: we saw several in the flock with this species of decoration. They said that this ram would sell in Catalonia for 20 livres. A circumstance which cannot be too much commended, and deserves universal imitation, is the extreme docility they accustom them to. When I desired the shepherd to catch one of his rams, I supposed he would do it with his crook, or probably not be able to do it all; but he walked into the flock, and singling out a ram and a goat, bid them follow him, which they did immediately; and he talked to them while they were obeying him, holding out his hand as if to give them something. By this method he brought me the ram, which I caught, and held without difficulty."

(9.) SHEEP, PROPER COMPOSITION FOR MARKING. To find a proper composition for marking sheep is a matter of great importance, as great quantities of wool are every year rendered useless by the pitch and tar with which they are usually marked. The requisite qualities for such a composition are, that it be cheap, that the colour be strong and lasting, so as to bear the changes of weather, and not to injure the wool. Dr Lewis recommends for this purpose melted tallow, with so much charcoal in fine powder stirred into it as is sufficient to make it of a full black colour, and of a thick consistence. This mixture, being applied warm with a marking iron, on pieces of flannel, quickly fixed or hardened, bore moderate rubbing, resisted the sun and rain, and yet could be washed out freely with soap, or ley, or stale urine. In order to render it still more durable, and prevent its being rubbed off, with the tallow may be melted an eighth, sixth, or fourth, of its weight of tar, which will readily wash out along with it from the wool. *Lewis's Com. Phil. Techn.* p. 361.

(10.) SHEEP, PROPERTIES OF THE FLESH OF. The

The criterions of good and bad flesh, while the animal is alive, differ in different species, and are not properly settled in the same species. One superior breeder is of opinion, that if the flesh is not loose, it is of course good; holding, that the flesh of sheep is never found in a state of hardness, like that of ill-fleshed cattle: while others make a four-fold distinction of the flesh of sheep; as looseness, meelowness, firmness, hardness: considering the first and the last equally exceptionable, and the second and third equally desirable; a happy mixture of the two being deemed the point of perfection. The flesh of sheep, when slaughtered, is well known to be of various qualities. Some is composed of large coarse grains, interspersed with wide empty pores like a sponge: others, of large grains, with wide pores filled with fat; others, of fine close grains, with smaller pores filled with fat: and a fourth, of close grains, without any intermixture of fatness. The flesh of sheep, when dressed, is equally well known to possess a variety of qualities: some mutton is coarse, dry, and insipid; a dry sponge, affording little or no gravy of any colour. Another sort is somewhat firmer, imparting a light coloured gravy only. A third plump, short, and palatable; affording a mixture of white and red gravy. A fourth likewise plump and well flavoured, but discharging red gravy, and this in various quantities. Some mutton, when dressed, appears covered with a thick, tough, parchment-like integument; others with a membrane comparatively fine and flexible. But these, and some of the other qualities of mutton, may not be wholly owing to breed, but in part to the age and the state of fatness at the time of slaughter. Examined in this light, whether we consider the degree of fatness, or their natural propensity to a state of fatness, even at an early age, the improved breed of Leicestershire sheep appear with many superior advantages. The degree of fatness to which the individuals of this breed are capable of being raised, will perhaps appear incredible to those who have not had an opportunity of being convinced by their own observation. "I have seen widders (says Mr Marshall) of only two shear (two to three years old) so loaded with fat as to be scarcely able to make a run; and whose fat lay so much without the bone, it seemed ready to be shaken from the ribs on the smallest agitation. It is common for the sheep of this breed to have such a projection of fat upon the ribs, immediately behind the shoulder, that it may be easily gathered up in the hand, as the flank of a fat bullock. Hence it has gained, in technical language, the name of the *fore flank*; a point which a modern breeder never fails to touch in judging of the quality of this breed of sheep. What is, perhaps, still more extraordinary, it is not rare for the rams, at least of this breed, to be 'cracked on the back;' that is, to be cloven along the top of the chine, in the manner fat sheep generally are upon the rump. This mark is considered as an evidence of the best blood. Extraordinary, however, as are these appearances while the animals are living, the facts are still more striking after they are slaughtered. At Litchfield, in Feb. 1785, I saw a fore quarter of mutton, fatted by Mr Princep of Croxall,

which measured upon the ribs four inches of fat. It must be acknowledged, however, that the Leicestershire breed do not produce so much wool as most other long-woolled sheep."

(II.) SHEEP, REARING, AND LETTING OF RAMS FOR. As the practice of letting rams by the season is now become profitable, it may be useful to mention the method of rearing them. "The principal ram-breeders (says Mr Marshall,) save annually 20, 30, or perhaps 40 ram lambs; castration being seldom applied, in the first instance, to the produce of a valuable ram; for in the choice of these lambs they are led more by blood, or parentage, than by form; on which, at an early age, little dependence can be placed. Their treatment from the time they are weaned, in July or August, until the time of shearing, the first week in June, consists in giving them every indulgence of keep, in order to push them forward for the show; it being the common practice to let such as are fit to be let the first season, while they are yet yearlings—provincially 'SHARHOGS.' Their first pasture, after weaning, is pretty generally, I believe, clover that has been mown early, and has got a second time into head; the heads of clover being considered as a most forcing food of sheep. After this goes off, turnips, cabbages, colewort, with hay, and (report says) with corn. Something considerable depends on the *art of making up*, not lambs only, but rams of all ages. Fat, like charity, covers a multitude of faults; and besides, is the best evidence of their fattening quality which their owners can produce, (*i. e.* their natural propensity to a state of fatness,) while in the fatness of the sharhogs is seen their degree of inclination to fat at an early age. Fattening quality being the one thing useful in grazing stock, and being found, in some considerable degree at least, to be hereditary, the fattest rams are of course the best; though other attachments, well or ill placed, as to form or fashionable points, will perhaps have equal or greater weight in the minds of some men, even in this enlightened age. Such SHEARLINGS as will not make up sufficiently as to form and fatness, are either kept on to another year to give them a fair chance, or are castrated, or butchered while sharhogs." From the first letting, about 40 years ago, to the year 1780, the prices kept gradually rising from 15s. to a guinea, and from one to ten. In 1780, Mr Bakewell let several at ten guineas each; and, what is rather inexplicable, Mr Parkinson of Quarndon let one the same year for 25 guineas; a price which then astonished the whole country. From that time to 1786, Mr Bakewell's stock rose rapidly from 10 to 100 guineas; and that year he let two thirds of one ram (reserving one third of the usual number of ewes to himself) to two principal breeders, for 100 guineas each, the entire services of the ram being rated at 300 guineas! Mr Bakewell making that year, by letting 20 rams only, more than L. 1000! Since that time the prices have been still rising: 400 guineas have been repeatedly given. Mr Bakewell, this year (1789) makes, says Mr Marshall, 1200 guineas by three rams (brothers, we believe); 2000 of seven; and of his whole letting, full 3000 guineas! Beside this extraordinary sum made by Mr Bakewell, there

here are 6 or 7 other breeders who make from 500 to 1000 guineas each. The whole amount of moneys produced that year in the Midland Counties, by letting rams of the modern breed for one season only, is estimated, by those who are adequate to the subject, at the almost incredible sum of L. 10,000!

(12.) SHEEP, REMEDIES FOR THE DISEASES OF. The diseases to which sheep are subject are these, rot, red-water, foot-rot and hoving, scab, dunt, rickets, fly-struck, flux, and burking. The rot, which is a very pernicious disease, has of late engaged the attention of scientific farmers. But neither its nature nor its cause has yet been fully ascertained. Some valuable and judicious observations have, however, been made upon it, which may furnish an antidote for this malignant distemper, or be the means of leading others to some more efficacious remedy. Some have supposed the rot owing to the quick growth of grass or herbs that grow in wet places. But the constant practice of most farmers in the kingdom, who with the greatest security feed their meadows in the spring, when the grass shoots quick, and is full of juices, militates directly against this opinion. Mr Arthur Young ascribes this disease to moisture. In confirmation of this opinion, which has been generally adopted, we are informed, in the *Bath Society* papers, (vol. I. art. xlvi.) by a correspondent, that there was a paddock adjoining to his park which had for several years caused the rot in most of the sheep which were put into it. In 1769 he drained it, and from that time his sheep were free from this malady. But there are facts which render it doubtful that moisture is the sole cause. We are told, the dry limed land in Derbyshire will produce the rot as well as water meadows and stagnant marshes; and that in some wet grounds sheep sustain no injury for many weeks. On dissecting sheep that die of this disorder, a great number of insects, called *Flukes*, (see *FASCIOLA*) are found in the liver. That these flukes are the cause of the rot, therefore, is evident; but to explain how they come into the liver is not so easy. It is probable that they are swallowed by the sheep along with their food or drink, while in the egg state. The eggs deposited in the tender germ are conveyed with the food into the stomach and intestines of the animals, whence they are received into the lacteal vessels, carried off in the chyle, and pass into the blood; nor do they meet with any obstruction until they arrive at the capillary vessels of the liver. Here, as the blood filtrates through the extreme branches, answering to those of the *vena porta* in the human body, the fecerning vessels are too minute to admit the impregnated ova, which, adhering to the membrane, produce those animalcules that feed upon the liver and destroy the sheep. They much resemble the flat fish called plaice, are sometimes as large as a silver two-pence, and are found both in the liver and in the pipe (answering to that of the *vena cava*) which conveys the blood from the liver to the heart. It is therefore easy to conceive that sheep may, on wet ground especially, take multitudes of these ova or eggs in with their food; and that the stomach and viscera of the sheep being a proper nidus for them, they

of course hatch, and appearing in their fluke or last state, feed on the liver of the animal, and occasion this disorder. It is a singular fact, "that no ewe ever has the rot while she has a lamb by her side." The reason of this may be, that the impregnated ovum passes into the milk, and never arrives at the liver. The rot is fatal to sheep, hares, and rabbits, and sometimes to calves; but never infects animals of a larger size. Miller says that parsley is a good remedy for the rot in sheep. Perhaps a strong decoction of this plant, or the oil extracted from its seeds, might be of service. Salt is also a useful remedy. It seems to be an acknowledged fact that salt marshes never produce the rot. Salt indeed is pernicious to most insects. Common salt and water expel worms from the human body; and sea-weed, if laid in a garden, will drive away insects; but if the salt is separated by steeping it in the purest spring-water for a few days, it abounds with animalcules of various species. Lisle, in his book of husbandry, informs us of a farmer who cured his whole flock of the rot by giving each sheep a handful of Spanish salt for five or six mornings successively. In wet and warm seasons the prudent farmer will remove his sheep from the lands liable to rot. Those who have it not in their power to do this, may give each sheep a spoonful of common salt, with the same quantity of flour, in a quarter of a pint of water, once or twice a-week. When the rot is recently taken, the same remedy given four or five mornings successively, will in all probability effect a cure. The addition of the flour and water (in the opinion of Mr Price of Sandbury,) will not only abate the pungency of the salt, but dispose it to mix with the chyle in a more gentle and efficacious manner. A farmer of a considerable lordship in Bohemia visiting the hot-wells of Carlsbad, related how he preserved his flocks of sheep from the mortal distemper which raged in the wet year 1769, of which so many perished. His preservative was very simple and very cheap: "He fed them every night, when turned under a shed, cover, or stables, with hashed fodder straw; and, by eating it greedily, they all escaped." "Red-water is a disorder most prevalent on wet grounds. I have heard (says Mr Arthur Young) that it has sometimes been cured by tapping, as for a dropy. This operation is done on one side of the body towards the flank, just below the wool." "The foot rot and hoving, which is very common on low fenny grounds, is cured by keeping the part clean, and lying at rest in a dry pasture." The scab is a cutaneous disease owing to an impurity of the blood, and is most prevalent in wet lands or in rainy seasons. It is cured by tobacco-water, brimstone, and alum, boiled together, and then rubbed over the sheep. If only partial, tar and grease may be sufficient. But the simplest and most efficacious remedy for this disease was communicated to the Society for the Encouragement of Arts, &c. by Sir Joseph Banks. "Take 1 lb. of quicksilver, half a pound of Venice Turpentine, half a pint of oil of turpentine, and 4 lb. of hogs lard. Let them be rubbed in a mortar till the quicksilver is thoroughly incorporated with the other ingredients; for the proper mode of doing which, take the assistance of some apothecary."

apothecary. In using the ointment, begin at the head of the sheep, and proceeding from between the ears along the back to the end of the tail, the wool is to be divided in a furrow till the skin can be touched; and as the furrow is made, the finger slightly dipped in the ointment is to be drawn along the bottom of it, where it will leave a blue stain on the skin and adjoining wool: from this furrow similar ones must be drawn down the shoulders and thighs to the legs, as far as they are woolly; and if the animal is much infected, two more should be drawn along each side parallel to that on the back, and one down each side between the fore and hind legs. Immediately after being dressed, it is usual to turn the sheep among other stock, without any fear of the infection being communicated; and there is scarcely an instance of a sheep suffering any injury from the application. In a few days the blotches dry up, the itching ceases, and the animal is completely cured: it is generally, however, proper not to delay the operation beyond Michaelmas. The *bippobosca ovina*, called in Lincolnshire *sheep fagg*, an animal well known to all shepherds, which lives among the wool, and is hurtful to the thriving of sheep both by the pain its bite occasions, and the blood it sucks, is destroyed by this application, and the wool is not at all injured. Our wool buyers purchase the fleeces on which the stain of the ointment is visible, rather in preference to others, from an opinion that the use of it having preserved the animal from being vexed either with the scab or faggs, the wool is less liable to the defects of joints or knots; a fault observed to proceed from every sudden stop in the thriving of the animal, either from want of food or from disease. This mode of curing is now so generally received, that the scab, which used to be the terror of the farmers, and which frequently deterred the more careful of them from taking the advantage of pasturing their sheep in the fertile and extensive commons with which that district abounds, is no longer regarded with any apprehension; the most of them have their stock anointed in autumn, when they return from the common, whether they show any symptoms of scab or not; and having done so, conclude them safe from infection. There are people who employ themselves in the business, and contract to anoint our large sheep at 5 s. a score, insuring for that price the success of the operation; that is agreeing, in case many of the sheep break out afresh, to repeat the operation gratis even some months afterwards." The *dunt* is a distemper caused by a bladder of water gathering in the head. No cure for this has yet been discovered. The *rickets* is a hereditary disease for which no antidote is known. The first symptom is a kind of light headedness, which makes the affected sheep appear wilder than usual when the shepherd or any person approaches him. He bounces up suddenly from his laze, and runs to a distance, as though he were pursued by dogs. In the second stage the principal symptom is the sheep's rubbing himself against trees, &c. with such fury as to pull off his wool and tear away his flesh. "The distressed animal has now a violent itching in his skin, the effect of an highly inflamed blood; but it does

not appear that there is ever any cutaneous eruption or salutary critical discharge. In short, from all circumstances, the fever appears now to be at its height." The last stage of this disease "seems only to be the progress of dissolution, after an unfavourable crisis. The poor animal, as condemned by Nature, appears stupid, walks irregularly (whence probably the name *rickets*), generally lies, and eats little: these symptoms increase in degree till death, which follows a general consumption, as appears upon dissection of the carcase; the juices and even solids having suffered a general dissolution." To discover the seat and nature of this disease, sheep that die of it ought to be dissected. This is said to have been done by one gentleman, Mr Beal; and he found in the brain or membranes adjoining a maggot about a quarter of an inch long, and of a brownish colour. A few experiments might easily determine this fact. The *fly-struck* is cured by clipping the wool off as far as infected, and rubbing the dry parts with lime or wood-ashes; curriers oil will heal the wounds, and prevent their being struck any more; or they may be cured with care, without clipping, with oil of turpentine, which will kill all the vermin where it goes; but the former is the surest way. The *flux* is another disease to which sheep are subject. The best remedy is said to be, to house the sheep immediately when this distemper appears; to keep them very warm, and feed them on dry hay, giving them frequent glisters of warm milk and water. The cause of that distemper is either their feeding on wet lands, or on grafs that is become mossy by the lands having been fed many years without being ploughed. When the farmer perceives his sheep-walks to become mossy, or to produce bad grafs, he should either plough or manure with hot lime, making kilns either very near or in the sheep walks, because the hotter the lime is put on, the sweeter the grafs comes up, and that early in the year. *Burking*, or as it is called in some places the *blash*, attacks sheep when driven into fresh grafs or young clover. They overeat themselves, foam at the mouth, swell exceedingly, breathe very quick and short, then jump up and instantly fall down dead. In this case, the only chance of saving their life is by stabbing them in the maw with an instrument made for the purpose. The instrument is a hollow tube, with a pointed weapon passing through it. A hole is made with the pointed weapon; which is immediately withdrawn, and the hole is kept open by inserting the tube till the wind is discharged. Sheep are infested with worms in their nose called *ostrus ovis*, and produced from the egg of a large two-winged fly. (See OESTRUS, N^o 4.) The frontal sinuses above the nose in sheep and other animals are the places where these worms live and attain their full growth. These sinuses are always full of a soft white matter, which furnishes these worms with a proper nourishment, and are sufficiently large for their habitation; and when they have here acquired their destined growth, in which they are fit to undergo their changes for the fly state, they leave their old habitation, and, falling to the earth, bury themselves there; and when these are hatched into flies, the female, when she has been impregnated by the male, knows that the nose of a

sheep or other animal is the only place for her to deposit her eggs, in order to their coming to maturity. Mr Vallinieri, to whom the world owes so many discoveries in the insect class, is the first who has given any true account of the origin of these worms, though the creatures themselves were very early discovered. The fly produced from this worm has all the time of its life a very lazy disposition, and does not like to make any use either of its legs or wings. Its head and thorax together are about as long as its body, which is composed of five rings, streaked on the back; a pale yellow and brown are there disposed in irregular spots; the belly is of the same colours; but they are there more regularly disposed, for the brown here makes three lines, one in the middle, and one on each side, and all the intermediate spaces are yellow. The wings are nearly of the same length with the body, and are a little inclined in their position, so as to lie upon the body: they do not, however, cover it; but a naked space is left between them. The alerons or petty wings which are found under each of the wings are of a whitish colour, and perfectly cover the balancers, so that they are not to be seen without lifting up these. The fly will live two months after it is first produced, but will take no nourishment of any kind; and possibly it may be of the same nature with butterflies, which never take any food during the whole time of their living in that state. Reaumur, Hist. Inf. vol. iv. p. 552, &c.

(13.) SHEEP, RULES FOR PURCHASING. The following instructions for purchasing sheep, may be useful to our country readers.—The farmer should always buy his sheep from a worse land than his own, and they should be big-boned, and have a long greasy wool curling close and well. These sheep always breed the finest wool, and are also the most approved of by the butcher for sale in the market. For the choice of sheep to breed, the ram must be young, and his skin of the same colour with his wool, for the lambs will be of the same colour with his skin. He should have a large long body; a broad forehead, round, and well rising; large eyes; and straight and short nostrils. The polled sheep, that is, those which have no horns, are found to be the best breeders. The ewe should have a broad back; a large bending neck; small, but short, clear, and nimble legs; and a thick, deep wool covering her all over. To know whether they be sound or not, the farmer should examine the wool that none of it be wanting, and see that the gums be red, the teeth white and even, and the brisket-skin red, the wool firm, the breath sweet, and the feet not hot. Two years old is the best time for beginning to breed; and their first lambs should not be kept too long, to weaken them by suckling, but be sold as soon as convenient. They will breed advantageously till they are 7 years old. Farmers have a method of knowing a sheep's age, as a horse's is known by the mouth. When a sheep is *one-shear*, as they express it, it has two broad teeth before; when it is two-shear, it will have 4, when three 6, and when four, 8. After this their mouths begin to break. The difference of land makes a very great difference in the value of sheep. The fat pastures breed straight tall sheep, and the barren hills and downs breed square short ones; woods and mountains

breed tall and slender sheep; but the best of all are those bred upon new-ploughed land and dry grounds. On the contrary, all wet and moist lands are bad for sheep, especially such as are subject to be overflowed, and to have sand and dirt left on them. The salt marshes are, however, an exception to this general rule, for their saltness makes amends for their moisture; salt, by reason of its drying quality, being of great advantage to sheep.

(14.) SHEEP, TREATMENT OF RAMS FOR, AND CHOICE OF EWES, &c. Rams previous to the season are reduced from the cumbrous fat state in which they are shown. The usual time of sending them out is the middle of September. They are conveyed in carriages of two wheels with springs, or hung in slings, 20 or 30 miles a-day, sometimes to the distance of 200 or 300 miles. They are not turned loose among the ewes, but kept apart in a small inclosure, where a couple of ewes only are admitted at once. When the season is over, every care is taken to make the rams look as fat and handsome as possible. In the choice of ewes the breeder is led by the same criterions as in the choice of rams. Breed is the first object of consideration. Excellency, in any species or variety of live stock cannot be attained with any degree of certainty, let the male be ever so excellent, unless the females employed likewise inherit a large proportion of the genuine blood, be the species or variety what it may. Hence no prudent man ventures to give the higher prices for the Dishley rams, unless his ewes are deeply tinged with the Dishley blood. Next to breed is flesh, fat, form, and wool. After the lambs are weaned, the ewes are kept in common feeding places, without any alteration of pasture, previous to their taking the ram. In winter they are kept on grass, hay, turnips, and cabbages. As the heads of the modern breed are much finer than most others, the ewes lamb with less difficulty. The female lambs, on being weaned, are put to good keep, but have not such high indulgence shown them as the males, the prevailing practice being to keep them from the ram the first autumn. At weaning time, or previously to the admission of the ram, the ewes are culled, to make room for the *thaves* or shearlings, whose superior blood and fashion entitle them to a place in the breeding flock. In the work of culling, the ram-breeder and the mere grazier go by somewhat different guides. The grazier's guide is principally age, seldom giving his ewes the ram after they are four-shear. The ram-breeder, on the contrary, goes chiefly by merit; an ewe that has brought him a good ram or two is continued in the flock so long as she will breed. There are instances of ewes having been prolific to the 10th or 12th year; but in general the ewes of this breed go off at 6 or 7-shear. In the practice of some of the principal ram-breeders, the culling ewes are never suffered to go out of their hands until after they are slaughtered, the breeders not only fattening them, but having them butchered, on their premises. There are others, however, who sell them; and sometimes at extraordinary prices. Three, four, and even so high as ten, guineas each have been given for these outcasts. There are in the flocks of several breeders ewes that would fetch at auction

20 guineas each. Mr Bakewell is in possession of ewes which, if they were put up to be sold to the best bidder, would, it is estimated, fetch no less than 50 each, and perhaps, through the present spirit of contention, much higher prices. As to the time of putting the rams to the ewes, the farmer must consider at what time of the spring his grass will be fit to maintain them and their lambs, and whether he has turpits to do it till the grass comes; for very often both the ewes and lambs are destroyed by the want of food; or if this does not happen, if the lambs are only stinted in their growth by it, it is an accident that they never can recover. The ewe goes 20 weeks with lamb, and according to this it is easy to calculate the proper time. Where there are not inclosures to keep them in, they should yearn in January, that the lambs may be strong by May-day, and be able to follow the dam over the fallows and water-furrows; but the lambs that come so early must have a great deal of care taken of them, and so indeed should all other lambs at their first failing, else while they are weak the crows and magpies will pick their eyes out.