

It is evident that sheep are animals of the utmost importance to mankind, whether considered in the light of affording food and clothing, or in that of the vast improvement and profit which they produce in the various systems of management to which they are subjected by the farmer; in some instances constituting a very large proportion, and in others nearly the whole of his dependence and support. There is also another point of view in which they appear equally advantageous and interesting, which is that of their becoming thus beneficial in situations and upon lands that must otherwise be nearly if not wholly useless. Also in the view of affording the raw material for one of the most extensive staple manufactures of the kingdom, the advantages which they afford are almost incalculable.

But besides the wool, the skins and other parts of these animals afford a variety of other equally useful and important articles and products, such as those of parchment, leather, glue, suet, and many others, which are of great value for different intentions and purposes in the arts and other ways, and which employ a great number of labourers in forming and preparing them. In short, there is hardly a part of the sheep that does not afford an useful and valuable product of some sort or other. In usefulness they may, of course, be placed at least next to, if not before, the cow. In disposition, almost all the improved breeds are extremely mild, tame, and gentle, which is a proof of their value as grazing stock: but those which have been less attended to, or which continue more in their native or original state, are much less tractable, as those which inhabit the downs, heaths, and mountains in different parts of the island.

The character of stupidity, want of sagacity, and of some other valuable properties, which the naturalist Buffon has given these animals, seems by no means well-founded. It is probably the offspring of prejudice, and the improper examination of the subject.

The increase or growth of the sheep continues to advance till at least three years old, when it is in general considered as in the most proper state for the purposes of the grazier, though it is employed in this way till a much later period, sometimes even till five or six, and also with the view of breeding; but an early maturity is a property of much consequence, especially for the grazier. Of sheep, the breeds or varieties that are dispersed over the globe are almost endless; even in this country they are so extremely numerous as scarcely to be described with any correctness. The characteristic circumstances by which they have been chiefly distinguished, are those of their possessing horns, or being wholly without them, and from the length or shortness and fineness of the wool or coat, as well as the situation in which they are chiefly found. It has been stated by lord Somerville, in his "System of the Board of Agriculture," that all the breeds of sheep in this kingdom may be arranged into two classes; those which shear the short or clothing, and those which shear the long or combing wool. And that the quality of the flesh in each class follows the character of the wool; the short-woolled sheep being close in the grain as to flesh, consequently heavy in the scale, and high-flavoured as to the taste; the polled long-woolled sheep more open and loose in the grain, and larger in size. And by the author of "The present State of Husbandry in Great Britain," they have been distributed under three general divisions, as below:

1. The mountain breed;
2. The short-woolled breed; and
3. The long-woolled breed.

And among the first are comprised several varieties, as the black-faced, which range on the mountains of Wales, Westmore-

SHEEP, in *Zoology*. See **OVIS**.

SHEEP, in *Agriculture and Rural Economy*, a well-known species or kind of live-stock kept by the farmer. The sheep belongs to the class of ruminant animals, or such as chew the cud, and of which there are different species, and varieties or breeds. And in its generic character it is distinguished by being with or without horns, which are hollow, wrinkled, turning backward, or intorted in a spiral manner. Eight front teeth in the lower jaw, in the upper none.

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Westmoreland, Cumberland, Yorkshire, and those in the fouth, west, and north of Scotland, and in the Shetland islands; the Cheviot hills, in the fouth of Scotland and north of England; and the forest and common sheep of the last-mentioned country. In the second division are included those of Hereford, Dorset, Suffex, Norfolk, and some parts of Cumberland. And the third division comprehends all those varieties that are dispersed over the more rich and fertile parts of England, and which are distin-

guished under the titles of the Durham or Teefwaters, the Lincolnshires, the old and new Leicefershires, &c.

But others divide them into *long*, *short*, and *middle-woolled* kinds.

And a still more clear and concise view of the various breeds of British sheep, is afforded in the tabular form given by Mr. Culley, as enlarged and corrected by the author of the "General Treatise on Cattle," and others.

TABLE of the Breeds or Varieties of Sheep in England.

Names of Breeds.				Weight of Fleecce.	Wethers per Quar.	Age killed.
1. Teefwater.	No horns.	White face and legs.	Long wool.	9lb.	30lb.	2 years
2. Lincoln.	No horns.	White face and legs.	Long wool.	11	25	2
3. New Leicefer.	No horns.	White face and legs.	Long wool (fine).	8	22	2
4. Cotfwold.	No horns.	White face and legs.	Long wool (fine).	9	24	2
5. Romney-Marsh.	No horns.	White face and legs.	Long wool (fine).	8	22	2
6. Dartmoor or Bampton.	No horns.	White face and legs.	Long wool (fine).	9	25	2
7. Exmoor.	Horned.	White face and legs.	Long wool (coarse).	6	16	2 $\frac{1}{2}$
8. Heath.	Horned.	Black face and legs.	Long wool (coarse).	3	15	3 $\frac{1}{2}$
9. Hereford, Ryeland.	No horns.	White face and legs.	Short wool (fine).	2 $\frac{1}{2}$	14	3 $\frac{1}{2}$
10. Morf, Shropshire.	Horned.	Black and speckled.	Short wool (fine).	1 $\frac{1}{2}$	12	3 $\frac{1}{2}$
11. Dorset.	Horned.	White and speckled.	Short wool (fine).	3 $\frac{1}{2}$	18	2
12. Wilts.	Horned.	White and speckled.	Short (mid.)	3	20	3
13. Berks.	No horns.	Black and white.	Long wool.	7	18	2 $\frac{1}{2}$
14. South Down.	No horns.	Speckled and white.	Short wool.	2 $\frac{1}{2}$	18	2
15. Norfolk.	Horned.	Black and white.	Short wool.	2	18	3 $\frac{1}{2}$
16. Herdwick.	Horned.	Speckled and white.	Short wool.	2	10	4 $\frac{1}{2}$
17. Cheviot.	No horns.	White face and legs.	Short wool.	3	16	4 $\frac{1}{2}$
18. Dun-faced.	No horns.	Dun face and legs.	Short wool.	1 $\frac{1}{2}$	7	4 $\frac{1}{2}$
19. Shetland.	No horns.	Various coloured ditto.	Fine cottony.	1 $\frac{1}{2}$	8	4 $\frac{1}{2}$
20. Spanish.	Rams-horned.	White.	Short wool (super.)	3 $\frac{1}{2}$	14	2 $\frac{1}{2}$
21. Ditto crosf.			Ditto fine.	2 $\frac{3}{4}$	16	2

There are a few other breeds met with in different districts, as noticed below.

Since it is found by the grazier that the more an animal approaches towards perfection in its form, the better, in general, it is adapted to the purpose of fattening; it is obviously a matter of much importance to be well acquainted with the peculiar disposition and connection of parts which constitute such excellence or perfection of form: these have been already fully explained in speaking of the nature and principles of breeding animals, as well as in considering the nature and management of cattle. And the same thing is to be aimed at in sheep-stock; as the more any breed may approximate to such an excellence of shape, the more perfect it must be. A sort of model to be aimed at, in so far as shape is concerned, in the improvement of these animals, due attention being always had to other properties, has been given by Mr. Culley, in his description of a ram, and which may be seen under that head. (See RAM.) The nature and combination of the various points and parts should, of course, be well understood and impressed on the mind of the breeding and grazing farmer, in order that he may always rear or procure these animals to the greatest advantage.

The varieties of this most useful animal are endowed with different particular qualities, properties, powers, and propensities, which it is necessary to ascertain, in order for the farmer to draw and produce the utmost advantage possible from the combining, crossing, and rearing of them. All

the breeds of sheep are the most distinct while they are kept or left in the state of nature.

The common and usual descriptions of the several breeds are the following:

Teefwater Breed or Variety.—This is a breed of sheep said to be the largest in the island; it is at present the most prevalent in the rich, fine, fertile, inclosed lands on the banks of the Tees in Yorkshire. In this breed, which is supposed to be from the same stock as those of the Lincolns, greater attention seems to have been paid to size than wool. It is, however, a breed only calculated for warm rich pastures, where they are kept in small lots, in small inclosures, and well supported with food in severe winter seasons. The produce in weight of mutton is large, but then, from their requiring so much longer time and richer keep, and being admitted in so much smaller proportions on the acre, they are probably not, upon the whole, so profitable, even in situations where they can be kept with the greatest chance of success, as the smaller more quick-feeding breeds. In the ewes there is, however, a property which is of much consequence, which is, that in general they are very prolific, bringing two and frequently three lambs, and in some cases a greater number each, according to Mr. Culley. He gives the following description of the breed. The legs are longer, finer boned, and support a thicker and more firm and heavy carcase than the Lincolnshires; the sheep are much wider on the backs and sides, and afford a fatter and finer grained mutton. The weight per quarter in two-years old

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old wethers is from 25lbs. to 35lbs., and in particular instances to 55lbs. or more. The wool is shorter and less heavy than in that breed. However, the writer of the "Treatise on Cattle," thinks that the breed is nearly worn out; but suggests that there is a similar breed in Ireland.

This is a sort of sheep that has been little attended to, but which, when improved by proper crossing, it is supposed, would answer and pay well in districts where it could be well supported. In the Corrected Report of the State of Agriculture in the West Riding of Yorkshire, Mr. Parkinson supposes that an useful kind is capable of being bred by crossing the ewes of this sort with Dishley rams, in a careful manner. And it is added, that by the use of these, and those of the Northumberland kind, the quality of the wool and the mutton has not only been greatly improved, but the quantity of bone and offal much lessened; and, at the same time, the fattening property considerably increased; they becoming fatter at two years old than the others are at three. The wethers of this improved sort generally sell unhorn, at two years old, from 45s. to 55s. a-piece, and weigh from twenty-four to thirty pounds the quarter. They sell a great deal higher at the present time.

Lincolnshire Breed or Variety.—This is a breed of sheep which is characterized by their having no horns; white faces; long, thin, weak carcases; thick, rough, white legs; bones large; pelts thick; slow-feeding; mutton coarse-grained; the weight *per* quarter in ewes from 14lbs. to 20lbs.; in three-year old wethers from 20lbs. to 30lbs; the wool from 10 to 18 inches in length. And it is chiefly prevalent in the district which gives the name, and other rich grazing ones. But the writer of the work on Live-stock supposes that this breed is now so generally improved by new Leicester tups, that they are probably, in a great measure, free from those defects of the old breed, of which Mr. Culley, with much reason, complained, namely, slow feeding, from a looseness of form, and too much bone, and coarse-grained flesh. It must not, however, be denied, that a good old Lincoln has ever been, and the name, at least, still continues a great favourite at Smithfield, and the flavour of the Lincoln mutton has been generally held superior, as more savory than the Dishley. The *new* or improved Lincolns have now finer bone, with broader loins and trussed carcases, and are among the best, if not actually the best, long-woolled stock we have. Many will recollect the ridiculous and indecorous squabble, some years ago, between two eminent breeders concerning these two breeds of sheep. About this time, they attempted to feed Lincoln sheep on the Essex marshes, and pretended the stock degenerated, which might happen from insufficiency of winter keep, or, if they were breeding flocks, from crossing with other breeds, an everlasting and unregarded practice in those not professedly breeding counties. This has been suggested as a breed only capable of being made fat on the richest grazing lands: but that in such cases it may probably be kept till three years old, with greater profit than the new Leicester kind. The proportion of bone to mutton is considerable, and the latter not very fine in quality. But the principal excellence of the breed is in the large quantity which it affords, which pays for their being kept longer before they are fatted. Such breeds as feed quicker should however be preferred by the farmer on most sorts of land.

New Leicester, or Dishley Breed or Variety.—This is an improved breed of sheep, which is readily distinguished from the other long-woolled sorts, according to Culley, by having fine lively eyes; clean heads, without horns; straight, broad, flat backs; round or barrel-shaped bodies; fine small bones; thin pelts; and a disposition to make fat at an early age; to which may be added a superiority in the

fineness of the grain and the flavour of the mutton to that of other sheep of the large long-woolled kinds. The weight *per* quarter in ewes three or four years old from 18lbs. to 26lbs.; in two-year old wethers, from 20lbs. to 30lbs.; the length of wool from six to fourteen inches. But the author of the "Treatise on Live-Stock," characterizes them as having a fulness of form and substantial width of carcase, with a peculiar plainness and meekness of countenance; the head long, thin, and leaning backward; the nose projecting forward; the ears somewhat long, and standing backward; great fulness of the fore-quarters; legs of moderate length, and the finest bone; tail small; fleece well covering the body, of the shortest and finest of the combing wools, the length of staple six or seven inches. The fore-flank, a term of the old school, current in the time of Lisle, or that flap of skin and fat appended to the ribs, and the inferior part of the shoulder, is remarkably capacious in this breed. New Leicester mutton, it is believed, is the most finely grained of all the large long-woolled species, but of a flavour bordering on the infipid. And it is added, that it is reported, and with the strongest probability, from the appearance of the flock, the fineness of the wool, and the grain of the mutton, that a Ryeland cross was a prime instrument in the Dishley improvement of sheep. Probably the root or foundation was Lincoln. In the ordinary and gradual course of improvement or alteration of form, it must have taken, it is thought, a long time and vast pains, to mould the animals into that artificial and peculiar shape which distinguishes this remarkable variety, unless indeed something nearly similar was suddenly and fortuitously chopped upon, as will occasionally happen when the fickle deity is good-humouredly disposed to spare our labours.

It must be observed, that the great advantages of this sort of sheep have been stated to consist in producing a better profit to the farmer, in proportion to the quantity of food consumed, than most others; in being more perfectly formed, and consequently more disposed to fatten quickly; in containing a much larger proportion of meat on an equal weight of bone; in thriving well on such pastures as would not support other sorts of the same size; in being capable of being kept or fattened in larger proportions to the acre, than other breeds of the same size of carcase; in the wool being more valuable, though less in quantity; in their being ready for the butcher in the early part of the spring instead of the autumn, by which there is a considerable saving in the summer's grass; and in the mutton, from the closeness of its texture, keeping longer than that of other equal-sized breeds. And that the principal defects are the fattening too much, and the mutton, in consequence, becoming less delicate in its flavour, than in that of other breeds that require a greater length of time in the process; the deficiency in the quantity of wool which they produce; and the not being calculated for the fold. It has also been supposed that their peculiar rounded form, from throwing much of the fat on the external parts, prevents their tallowing well internally; and that from their great propensity to fatten, they are liable to early decay, becoming old sooner than other breeds. There can however be no doubt, but that it is a valuable breed on pastures that are adapted to it, as is evinced from its rapidly making its way into different districts of the kingdom; but some suppose that the sheep are too small, and that, from the thinness of their skins, or pelts, they may not be so capable of bearing cold, which, however, experience does not appear to support.

The author of the "Treatise on Cattle," who seems chiefly to object to the Leicester breed, from its too great propensity to fatten, which, it is supposed, also abates the procre-

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procreative and lactiferous powers, says, "Pure Dishley sheep are by no means the most prolific, nor the best nurses." And adds, that the heads of the improvers having had time to cool, it is no longer boasted, that new Leicester sheep are able to subsist, and even thrive, on the shortest commons. In fine, it is contended, the merits of this stock as an improving cross, (their grand point of utility,) being so undeniably great, their disadvantages have been overlooked, and comparisons have been usually made with such only as had a strong need of improvement, in which the new Leicesters in course were sure to triumph. And further, that though the Dishley cross has made its way into every part of this island, to the Land's End, to the bottoms of the Welsh mountains, and of the Scottish Highlands, to Ireland, and even to Russia, its general success has been attended with various particular instances of failure, a remarkable one of which is given by lord Somerville, in his Facts, in respect to the Bampton or Western long-woolled sheep. The cross is sometimes very injudiciously used with short or carding wool stock, excepting where the intention is only forward lamb. On stock naturally good and improveable, this peculiar effect of the new Leicester cross has resulted, the improved have considerably surpassed, in the most valuable properties, their improvers. Of this many examples may be seen, it is supposed, in the improved Lincoln, Northumberland, and Midland county sheep.

The following is a table of the value of new Leicester sheep, at various ages, as given on the authority of different eminent breeders in the Lincolnshire Agricultural Survey.

Wether lambs, at 6 months, worth	17s.
————, at 12 months	30s.
————, at 18 months	35s.
————, at 24 months	45s.
————, at 30 months	45s.
————, at 36 months	55s.

But others, in different parts of the district, state it thus :

Leicesters, at six months old, worth	14s.
————, at twelve ditto	22s.
————, at eighteen ditto	28s.
————, at twenty-four ditto	35s.
————, at thirty ditto	45s.
————, and, if kept to thirty-six, would be	50s.

If a three-shear fells for 3*l.* it will be worth,

At 6 months, 28s.	
At 12 months, 35s.	Wool 9½ <i>lbs.</i>
At 18 months, 40s.	
At 24 months, 48s.	Wool 9 <i>lbs.</i>
At 30 months, 56s.	
At 36 months, 60s.	Wool 9 <i>lbs.</i>

According to the first of these tables, the scale of receipt is ;

	£	s.	d.
For the first summer	0	17	0
For the first winter	0	13	0
For the second summer, including 8 <i>lbs.</i> wool at 9 <i>d.</i>	0	11	0
For the second winter	0	10	0
For the third summer, including wool	0	6	0
For the third winter, including wool	0	16	0
	3	13	0
Three fleeces	0	18	0
As above	2	15	0

At 73*s.* they pay, *per annum*, 24*s.* 4*d.*

And it is remarked, that, at these prices, the last half year pays better than any ; if this is just, there is a great loss, by felling at 2½ years old ; for it is just at the conclusion of the worst half year there is.

Mr. Dawson of Berthorp, who has an excellent stock bred from Mr. Dalby's tups, last year fold 200 two-shear wethers at 3*l.* round. The following is his table of sales for seven years, of wethers of that age.

1790 Average	35 <i>s.</i>
1791	35 <i>s.</i>
1792	43 <i>s.</i>
1793	38 <i>s.</i>
1794	44 <i>s.</i>
1795	50 <i>s.</i>
1796	60 <i>s.</i>

He tuds threes. Average 2*l.* 3*s.* 6*d.*

And, at this average, he would thus divide it, by supposing the proportion to be,

	£	s.	d.
At 6 months	0	17	0
At 12 months	1	7	0
At 18 months	1	12	0
At 24 months	2	0	0
At 30 months	2	3	6

The advantages and disadvantages of the Lincoln and new Leicester breeds of sheep have been very fully considered in the Agricultural Survey of the former county ; and the results stated as below in the different districts of it.

Circumstances of comparison between the Lincoln and Leicester breeds of sheep.

Boston.	Lincoln better than Leicester, on general experience and particular experiment.
Brothertoft.	In experiment, very little difference.
Ewerby.	Leicester tenderer than Lincoln. Lincoln pay best for keeping to three-shear.
Hackington.	Last year of Lincolns pay best.
Ewerby.	Old sheep stand the winter better, and pay better than young.
Owerby.	Shearling Leicesters have, at Wakefield, sold as high as two-shear Lincolns. Difference of wool has been as 8 to 16. Leicesters tenderer in winter.
Normanby.	Lincoln fleece 2 <i>lbs.</i> heavier than Leicester. Leicester off-shearlings ; Lincolns two or three-shear, but the latter pay well, if kept to three-shear. Leicesters finer grained mutton. Leicesters rather thicker on the land, but Lincolns considerably larger. As much wool <i>per acre</i> from Leicesters as Lincolns.
Walcot.	Leicester fleeces, though not so heavy as Lincoln, fold, in one instance, for as much money.
Barton.	Leicester not tenderer in winter than Lincoln. Old breed of Lincoln used to go lean at two years old. Now, Leicesters fat at the same age. No difference in number on the same land. Wool the same.
Bonby.	Leicesters come to sale sooner, but will not bear cold, wet land in winter so well, nor heat or cold after shearing, as the Lincoln.
Barrow.	Five Leicesters where four Lincolns ; and Leicesters have resisted hardships on the worst land better.

Brocklesby.

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| Brocklesby. | Lincoln more profitable than Leicester. | Claypool. | Leicesters as fat at one year as Lincolns at two, and with less trouble, and one-tenth thicker. Do as well as Lincolns in winter on wet land. |
| Lumber. | Where a man can keep, by means of marsh, to three-shear, Lincoln most profitable, but not otherwise. Not more Leicesters kept on the same land. Leicester wool is a tod more than Lincoln. Leicester more liable to the fly. | Marston. | Leicesters best, and run one-sixth thicker. |
| Cadney. | Leicester will feed a little faster, and run a little thicker. | Woolthorpe. | Leicesters by far the best; but more apt to be barren than Lincoln. Drape ewes far more valuable. |
| Belesby. | Leicester one in six more on the same land, but both go at the same age. Leicesters hardier, and have less offal. Tallow equal; wool higher priced. Gives corn to Leicesters, but did not to Lincolns. | Grimthorpe. | Leicesters travel best, and are the best; and much less loss in lambing; run one-third thicker. |
| Alesby. | Leicesters feed quicker, and have less offal; wethers and hogs less wool, but ewes equal, and on the whole more <i>per</i> acre; hardier, and bear driving better. Go off at the same age, but Leicesters fatter. Five kept instead of four. Lamb easier; necessary to give corn. | | |
| Humberston. | More pride than profit in the new fort. Leicesters 2lbs. less wool than Lincolns, and not better; but run one in ten thicker. | | |
| Louth. | Leicesters feed quicker, and have lighter offals. No difference in hardiness. Lincoln best. | | |
| Tathwell. | Lincolns and Leicesters being put together into the marsh, and sent thence at same time to Smithfield; the former yielded 4s. a-head more, and 5s. a-head more wool. | | |
| Cookswold. | Marsh graziers all prefer Lincoln. No difference in number kept. | | |
| Tathwell. | Lincoln wool 4lbs. heavier than Leicester. At two-shear, Lincoln heavier by 2lbs. a quarter; at three-shear, 5lbs. In tallow, 6lbs. at three-shear, in favour of Lincoln. In number <i>per</i> acre no difference. In hardiness, Lincoln best. Leicesters less wool, and less mutton <i>per</i> acre. | | |
| Driby. | No difference in number kept. | | |
| Spilsby. | Leicesters as fat at Lady-day, coming two-shear, as Lincolns at Lammas. Same number <i>per</i> acre. No difference in hardiness; Leicesters have corn. | | |
| Horncastle. | Three-shear better than two, as sure to find more tallow. | | |
| Asgarby. | Leicesters bred too fine; fine-headed ones do not yield wool enough. | | |
| Frampton. | As many of one as the other <i>per</i> acre. Lincolns travel best, and pay best. | | |
| Ranby. | Leicesters thicker on land, as five to four. | | |
| Alderkirk. | In an experiment of the two breeds on the same land, of the same weight and age, the Lincolns considerably superior. | | |
| Thorelway. | True Lincolns most saleable, and most profitable to breed. | | |
| Sudbrook. | One-third more Leicesters on the same land. | | |
| Rifeholm. | Boston graziers not judges, for they can get good Lincolns, but not Leicesters, as the breeders of these can fat them themselves. Leicesters run one-fourth thicker on the land. From six to twelve months old, rather tenderer than Lincolns; Leicesters travel best. | | |

A clear distinction is to be drawn, as the writer remarks, between the rich south-eastern district and inferior soils; for, upon the former, the information is strong in favour of Lincoln. However, in general, he should observe, that the new Leicesters are spreading very rapidly over the country, probably faster than they have done in any other, one or two only excepted, which may be attributed to the general goodness of the soil; for this breed makes a much more respectable figure here than it has done in various trials made in counties inferior to it in soil; and the breed driving out the Lincolns so much as it has done in the poorer parts of this county, is a fact that unites with this circumstance. The true Lincoln is a large sheep, and with a longer wool, and therefore demands better pasturage; where it finds such, there the old breed remains; subject, perhaps, to little more change than fashion may cause. Upon inferior land the Leicester establishes itself; and upon land still inferior in other counties, experiments prove unsuccessful for the same reason; that of the necessity of having a smaller size and shorter wool.

But some of the original pure long-woolled polled breed of sheep, are still to be met with in the midland districts, which are a larger boned, longer formed, deeper coated, and more coarse stock than the improved sort. And that, from the coarseness and larger size of the head and neck in the old sort, the ewes lamb with more difficulty than in the true Dishley breed.

The new Leicester sort of sheep is found a very advantageous breed on some kinds of land in the county of Oxford, as on the stone-brash; there are some farmers indeed, who think that no other sort comes nearly up to them, when all their valuable properties are taken into the account.

Cotswold or Gloucester Breed or Variety.—This is a breed of sheep which, according to a late writer on them, is of the fine combing wool sort, deriving the fineness of their fleece from the same source as the new Leicesters. This part of that county formerly, and within memory, bred, it is said, small fine-woolled sheep of the Ryeland kind, which in past times had been cotted, but the practice was discontinued. These sheep, being judged too small for the improving state of the county, have been, by gradual crossings with Midland long-woolled rams, chiefly Warwicks, completely changed from short to large long-woolled stock. The writer saw a picked lot of Cotswolds last year, he says, which answered the following description: long coarse head, with a particular blunt, wide nose; a top-knot of wool on the forehead, running under the ears; rather long neck; great length and breadth of back and loin; full thigh, with more substance in the hinder than fore-quarters; bone somewhat fine; legs not long; fleece soft, like that of the Dishley, but in closeness and darkness of colour, bearing more resemblance to short or carding wool. Although very fat, they had all the appearance of sheep that were full of solid flesh, which would come heavy to the scale. It is added, that it is said, some of those sheep have reached 40, and even 50lbs.

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a quarter, at two years and a half old, giving 11 lbs. to 14 lbs. of wool each sheep, and being fat, they are indubitably among the largest breeds in England. A single dip, continues he, of new Leicester gives the Cotswolds a fulness in the fore-quarter; but any farther cross of that kind, it appears, diminishes their size. The strange cross of Wilts horned sheep has been recurred to in some parts, for no possible good purpose, he should apprehend, either to the carcase or wool; and it is probable, supposing such large stock profitable, that the chief alteration required by the Cotswolds, is to encourage length of staple in their fleece or wool.

In this breed the ewes are usually put to the tup, so as to have lambs at two years old, mostly producing two lambs each, in the proportion of nearly one-third of the whole, where kept well, which must always be done. They may be kept for breeding till three or four years old, if they are of the proper improved sort. But it is said that the wethers afford most profit when killed so early as at two years old, as they are apt to become too fat when kept longer.

The Cotswolds or Gloucesters, and the half Leicesters and half Gloucesters, and other mixtures of these breeds, are considered as very excellent sorts of sheep stock in many parts of Oxfordshire; they are of a good size, bear plenty of wool, and stand penning well. But penning or folding is not thought beneficial by some farmers, as more and better sheep may be kept without it.

The native Cotswolds, if they are any where to be found, would be, it is said, at two-shear from twenty-eight to thirty-two pounds the quarter: they are a long sort of sheep, not full in the sides, sharp in the chine, not full in the fore-flank, coarse in the bone, not straight but good in the hind-quarters; will not fatten so early as when crossed; and of wool, the two-shear wether affords three and a half fleeces to the tod. The new Leicester, it is contended, is calculated to correct every one of the deficiencies which have been noticed, and to bring a greater disposition to fatten. Between all Cotswold and all Leicester, the average difference of wool, it is said, is three pounds.

In Devonshire, some, it is said, have succeeded in the cross of new Leicester upon the Cotswold, the equal breed of which is attempted to be preserved as much as possible. Wethers of this kind, at eighteen months old, will average nineteen pounds the quarter, and seven pounds of unwashed wool the fleece. When kept on for another twelvemonth, the age at which they are mostly killed in this county, this cross will attain the size of twenty-five pounds the quarter, and yield nine pounds of wool to the fleece. This wool is allowed by the staplers to be one penny the pound superior to that of the Exmoor, Bampton, South Devon, and Dartmoor sheep, yet still the common price of 10d. the pound is only allowed for it. In the young wethers of this breed, the loose fat is stated to be nine pounds, with nearly three pounds of kidney fat on each side. The larger wethers are said to produce thirteen pounds of rough fat, and four pounds of kidney fat on the side.

Romney-Marsh Breed or Variety.—This is a kind which is described by Mr. Young, as being a breed of sheep without horns; white faces and legs; rather long in the legs; good size; body rather long, but well barrel-shaped; bones rather large; and it is said that the weight per quarter, in fat wethers at two years old, is usually from 22 lbs. to 28 lbs. In respect to the wool, it is fine, long, and of a delicate white colour, when in its perfect state. On this Marsh 20 lbs. of wool are supposed to be produced per acre. In this breed there is a property of arriving at the state of fatness at an early age, as well as that of producing a large fleece of fine

long combing wool, of course it is a valuable sort; however, from the size, and great weight of the coat, it is only capable of being supported and fattened on the rich kinds of marsh pasture: and on those which extend from Hastings to Rye, in Kent, according to the Suffex Agricultural Report, the graziers find it much more beneficial than the South Down; the marsh wethers fattening more quickly. The wool afforded by such fat wethers averaging six pounds, and in breeding ewes five pounds, but not equal in quality to the wool clipped from shearlings. And the author of the "Synopsis of Husbandry" remarks, that a convincing proof of the great value of this breed of sheep, as well as of the land on which they are fed, is seen in the manner of stocking, which in tegs is from four to seven per acre, in fattening wethers from six to eight, in barrens from two to three, and in couples three; which is certainly a great stock. And this is a breed that might probably undergo much improvement without crossing, by proper care and attention, and being less exposed in the winter season.

In the old Romney-Marsh breed, the sheep were remarkable for having large heads; for being large, long, and tubbellied; also for being large in their bone, long in their legs, and coarse in their wool; which form is still held in estimation by some, in consequence of improper prejudices, to the great injury of the grazier and community in general; but the pure breed of this sort, Mr. Price says, is distinguished by a thickness and length of head, a broad forehead, with a tuft of wool upon it, a long thick neck, a great length and thickness of carcase; being flat-sided, and having a sharp chine, tolerably wide on the loin, but the breast narrow, not deep, the fore-quarter not heavy or full, a good cleft; the thigh full and broad, the belly large and tubby; the tail thick, long, and coarse, the legs thick with large feet, the muscle coarse and the bone large; the wool long and not fine; coarsest on the breech: the sheep prove good, and are great favourites with the butchers. But this description is not now, it is said, so applicable as it was some time ago, when most of them had horns.

The same writer, in his account of the sheep management in this marsh district, has remarked, that the introduction of the Leicester breed has very perceptibly altered the form and properties of the original breed or stock of this tract, so that in a few years it will scarcely be discernible. And that it is probably the general opinion that it has been injurious to it, in reducing the size and value of the animal, as well as the quality and quantity of its wool, though it has still many advocates, and has certainly contributed much to its improvement. The principal objections which the graziers of this Marsh seem to have to the mixing of the Leicesters with their own breed, are, that they have seldom or ever twin lambs, which are very desirable and beneficial in this situation; that the lambs are more tender, and, of course, a greater loss liable to be sustained, especially in an open exposed tract of this sort; that their lambs do not winter so well as those of the native breed upon the uplands: they are much less hardy, consequently cannot stand cold and hardships so well, which is very disadvantageous; that their wool is not in such abundance, or so valuable, which is a great defect; that there is a want of proof in them, which renders them a great deal less saleable to the butcher; this may, however, be no disadvantage to the breeder or grazier, as it shews other more valuable properties and dispositions; and that they are too short in their bodies and legs, so as to stand too low in their pens at the market. These are, however, probably improved valuable properties, which must be rather beneficial than hurtful. Some improvement has, however, been given to the Marsh breed by the Leicester cross, as those

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those of smaller and less coarse heads, a greater depth of carcass, and shorter and less coarse legs, better symmetry or form of several different parts, as well as of the whole animal.

There can, therefore, be no doubt but that this breed has been greatly benefited by the introduction of the new Leicester sort, and it is probable that it has not depended so much upon selection as the use of this new variety, as though the cry in the market is for the marsh kind, that form is carefully improved, and by no means preserved, although something of it may still exist. Something of the South Down sort is likewise discernible in this breed, it is said.

This breed of sheep is thought to be highly valuable for cold exposed situations, as being easily bred, and standing in need of no artificial food in the most severe winters, except a little hay; they are very hardy for their size, have now many improved qualities, and may probably be made the most profitable of any for rich pastures, as affording the largest proportion of meat at the least expence. In wethers, the general average is now from ten to twelve stone weight each; and in ewes, when fat, from nine to eleven.

Dartmoor, Devonshire, Bampton and Nott Breed or Variety.—This is a breed or sort of sheep, which is chiefly distinguished by having no horns; white faces and legs, thick necks, backs narrow, and back-bones high; sides good; legs short, and bones large: and probably without any material objection, being a variety of the common hornless sort. According to Mr. Culley, the weight of ewes on the average about 20lbs. a quarter: in wethers, at two years and a half old, 30lbs. Length of wool much the same as in the Romney-Marsh breed. It is a breed found to be prevalent in the districts from which it has derived its name. And it is supposed to have received considerable improvement by being crossed with the new Leicester or Dishley improved sort within these few late years.

Besides the forest from which it takes its name, this breed is met with in some other parts of the county. The Dartmoor wethers at five years old will average about 16lbs. per quarter, and produce from four pounds and a half to six pounds and a half of unwashed wool to the fleece. This breed of sheep, though they do not feed so quickly, when put to good keep, as the new Leicester sort, yet, when fat, they constantly prove the very best mutton, and never fail to command a superior price. They also stand the climate in a favourable manner, and the ewes are good nurses.

The old Devonshire dun-faced nott sheep were formerly held in high estimation, as a native breed of some parts of this county. It is, however, a crooked-backed, flat-sided,

coarsely boned and woolled animal, but which has been much improved by crossing with the new Leicester sort; its principal defects are by these means removed, and a greater disposition to fatten at an earlier period given; while at the same time, however, the fleece, as well as the weight of the carcass, has been lessened, the former from ten to eight pounds of unwashed wool the fleece, and the latter from twenty-two to nineteen pounds the quarter. In order to recompense which, the animal comes to market four months earlier; the wethers at two years old, with advantage; that is, after being twice shorn as sheep, and once as lambs, equals the average already stated. This issue once more crossed with the new Leicesters, will arrive, it is said, still earlier to the same perfection.

In the Bampton nott breed, the wethers will, at twenty months old, weigh twenty-two pounds the quarter, and shear six pounds and a half of wool to the fleece; also the same sheep, well wintered, and kept on for another twelvemonth, will average twenty-three pounds the quarter, and yield eight pounds of unwashed wool to the fleece. The price of the wool at present is about 1s. the pound.

The first cross of this breed with the new Leicester is fast growing into great esteem in this district, in consequence of its improving the form, and bringing the animal three months sooner to market; but though so far useful and desirable, any more of that blood is thought disadvantageous, as rendering them too tender while young, and to require too much care and nursing.

The Bampton nott crossed with the new Leicester is also a sort much approved of in several parts of the county, especially when carried to the fourth degree, or four parts of the Leicester to one of the native nott. This cross, it is said, comes earlier to market, and at two years old will generally average twenty pounds the quarter, and eight pounds of yolk wool to the fleece, which is worth about 10d. the pound. And the old Leicester cross upon the Bampton makes a large and handsome animal, which feeds kindly and tallows well within. The wethers of two years old will average, with advantage, thirty pounds the quarter, and shear ten pounds of yolk wool to the fleece. It is much valued in some places. But the new Leicester cross upon the same sheep, will in some situations bring forward wethers at twenty months old, weighing twenty-two pounds the quarter, with a shear of eight pounds of yolk wool to the fleece, both of which are at this time worth 10d. the pound, weighing, according to the custom of unwashed wool, twenty-one pounds for every score. This sort is highly valued by some in different parts of this county. The half Bampton cross is more hardy than the new Leicester sort, and suits some places better.

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TABLE of the different Breeds, Crosses, and Produce of the Sheep of this and neighbouring Districts.

Character of Breeds.	Age of Wethers when killed in Months.	Average Weight per Quarter, in Pounds.	Average Weight per Fleece, in Pounds.	Condition of Fleece.	Price of Fleece per Pound.	Value of Fleece.	Rough Fat in Pounds.	Kidney Fat in Pounds.	Total inside Fat.	
Native.										
Exmoor, horned, white legs and face, moderately long staple of wool, pure -	30	15	7	Yoak.	s. d. 0 10	s. d. 5 10	7	5	12	The washed wool of all the long-coated sheep is sold from 14d. to 15d. per lb.
Dartmoor, the same, the same -	30	16	8	do.	0 10	6 8	8½	6	14½	
South Devon Nott, brown face and legs, long wool, pure -	30	22	10	do.	0 10	8 4				
Bampton Nott, white face and legs, short wool, pure -	20 32	22 28	6½ 8	do. do.	0 10 0 10	5 5 6 8	10	7	17	
Neighbours.										
Dorset, horned, white face and legs, short wool, pure -	24	18	5	washed	1 6	7 6				These sheep are not sent to the forests.
Same, crossed with Exmoor	18	18	5½	do.	1 4	7 3	9	6	15	
Distant.										
South Down, pure	24	18	3	do.	2 4	7 0				In most cases of a cross with the new Leicester upon long full fleeced sheep, a deficiency of wool is observable under the belly and breast of the animal.
Same, crossed with new Leicester.										
Leicester, old, crossed with Bampton -	24	30	10	Yk.	0 10	8 4				
Same, old, crossed with Exmoor -	36	24	6½	do.	0 10	5 5				
Same, new, pure -	18	22	6½	do.	0 10	5 5				
Same, new, crossed with Dartmoor.										
Same, new, crossed with Exmoor -	24	18	6	do.	0 10	5 0				
Same, new, fourth cross with South Devon	20	20	8½	do.	0 10	7 1				
Same, new, fourth cross with same -	18	18	6½	do.	0 10	5 5				
Same, new, crossed with Bampton -	20	24	8	do.	0 10	6 8	13	8	21	
Same, new, crossed with Cotswold -	18	19	7	do.	0 10	5 10	9	7	16	
Same, new, crossed with same -	30	25	9	do.	0 10	7 6	13	8	21	
Foreign.										
Merino, crossed with Ryeland -	24	15	6½	do.	2 9	18 6¼				
Same, crossed with same	24	15	5	do.	3 0	15 0				
Same, first cross with Exmoor -			5	washed	2 2	10 10				
Same, second ditto -			5	do.	2 9	13 9				
Same, third ditto -			5	do.	3 5	17 1				

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Exmoor Breed or Variety.—This is a sort of sheep which is characterized by having horns, white faces and legs; by being very delicate in the bone, neck and head, or what is sometimes denominated deer-necked; by the form of the carcase being indifferent, narrow, and flat-sided. According to Mr. Culley, the weight *per* quarter in wethers at two years and a half old, is from 15lbs. to 18lbs.; and the weight of wool much less than in the Devonshire breed. It is a small breed of long-woolled sheep, principally produced on or in the neighbourhood of the moor from which it takes its name, which is in the northern extremity of the above county. Mr. Lawrence supposes that in their present state they are by no means to be considered as a profitable sort of sheep-stock, either in what relates to flesh or wool; on which account it would be for the interest of the county to change them for the best fine-woolled breed. It is remarked by Mr. Billingsley, that this breed of sheep is frequently kept two or three years, merely for the annual profit of their fleeces, which often do not exceed more than four pounds in weight; and that from their being kept upon very bare and indifferent pastures while young, they are supposed by many sheep-farmers to be a very profitable sort of stock.

This horned breed has a moderately long staple of wool, which formerly, before the cloth manufacture of the county of Devon fled into Yorkshire, was much in demand by the clothiers of several different places. The fattened wethers of this breed, at three years old, will usually weigh about 15lbs. the quarter, and average 4½lbs. of washed wool to the fleece; which is worth at present about 13*d.* the pound. Attempts have been lately made in different places to improve the wool of this breed or sort of sheep, by a cross with the Merino or Spanish ram, and the results of the trials thus made are as below:

Quantity and value of native fleece	}	4½lbs. at	1 <i>s.</i>	1 <i>d.</i>	<i>per</i> lb.	4 <i>s.</i>	10½ <i>d.</i>
First cross with the Merino	}	5	—	2	2	—	10 10
Second cross on this produce	}	5	—	2	9	—	13 9
Third cross on same	}	5	—	3	5	—	17 1

In which improvement of the fleece the carcase is said to be rather advanced than the contrary.

In the cross of the old Leicester upon the Exmoor breed, the wethers, which are the produce at three years old, average about 24lbs. the quarter, and carry 6½lbs. of yolk wool to the fleece. The Exmoor sheep have also been crossed with the new Leicester; the wether produce of which, at two years old, will weigh 18lbs. the quarter, and yield 6lbs. of unwashed wool to the fleece: the price of the two latter 9*d.* the pound. Much loss is often, it is said, sustained in this last cross at the time of yeaning, in consequence of the great size of the shoulders of the lambs retarding or preventing their exclusion. This will, however, be remedied in the produce of this cross.

The Exmoor breed is a hardy sort of sheep on wet exposed land while young. The ewes under such circumstances, in lambing, are also superior to the Bampton nodd kind.

Cornish Breed or Variety.—The true breed of this sort is said to have grey faces and legs, coarse short thick necks, standing lower before than behind, narrow backs, flattish sides, a fleece of coarse wool, weighing about two or three pounds, of eighteen ounces each; their mutton, which is seldom fat, from eight to ten pounds the quarter.

However, from the various crosses which have been introduced into the county at different times, in consequence of

the use of rams of the Exmoor, Dartmoor, North and South Devon, Dorset, Gloucester, and Leicester kinds, the pure breed of this description is, it is said, now become rare, but that, from the inferior nature and value of its properties the total extinction of it need not be lamented. The district is now capable of supporting a much better and more improved breed of this sort of animal.

Black-faced Heath Breed or Variety.—This is a kind or breed of sheep which, according to Mr. Culley, have large spiral horns, black faces and legs, a fierce wild-looking eye, short firm carcases, from 12lbs. to 16lbs. *per* quarter, covered with long, open, coarse shagged wool, fleeces 3lbs. or 4lbs. each, wool worth at present about 8*d.* *per* pound. They are an active hardy sort, running with amazing agility, and best adapted, of all other breeds, to exposed, heathy, and mountainous districts; seldom fed until three, four, or five years old, when they feed well, and make the finest mutton, having a high-flavoured gravy. The sheep of this wild-looking breed are natives of the north-west of Yorkshire, and of that mountainous tract of country adjoining the Irish sea, from Lancashire to Fort William: they have been of late years introduced into the Western highlands of Scotland.

And the writer of the "Treatise on Live Stock," supposes the black-faced Linton, or short sheep of Scotland, to be a variety of the Heath sheep. They have been crossed with the Cheviot breed, and Mr. Culley, it is noticed, recommends a Dishley cross, meaning, doubtless, for the use of the low lands. If he may be allowed to give an opinion, he would, for upland situations, recommend a Spanish cross, with good winter management, in preference to all others. It is disgraceful, he contends, to the rural economy of Britain, that so excellent a breed of sheep should be needlessly compelled to brave the rigour of the seasons, in such loose, ragged, and beggarly clothing, when they might, with a few years' pains, and without any deterioration of the carcases, produce a fleece of high value and consequence to the manufactures of the country. And he adds, that Mr. Henry King, salesman of Newgate market, and an eminent grazier, informs him, that he once fed a lot of these northern heath sheep, and made excellent mutton of them, about 16lbs. a quarter; but that their wool hanging down their quarters like goat's hair, was so execrably bad, that it could be sold only for mop yarn.

But what are termed *black-faced*, or *short sheep*, are said to have been originally short-woolled, the present length of it having proceeded from crossing; and it is not well ascertained whether they are a native Scotch breed, or have been introduced from the moor-lands of Yorkshire. Besides the objection to these *black-faced* sheep, on the ground of the coarse loose nature of their wool, they are said to be subject to the *braxy*, a disease that was unknown in the Highlands before their introduction. And it is remarked, in the able Agricultural Survey of East Lothian, that the kind of sheep bred and most generally kept in Lammermuir, is the black-faced, or more properly, what is called the *brooked* faced, a sort of dirty-looking mixture of black and white; they are for the most part horned; when they are fed, the wethers weigh from 10lbs. to 12lbs. *per* quarter, and the ewes from 8lbs. to 10lbs. on an average. It will take eight or nine fleeces of the ewes and hogs, and six or seven of the wethers, to make a stone of seventeen pounds (twenty-one ounces to the pound); the quality, and consequently the price, vary much. The difference of quality may result from various circumstances; it is owing partly to the quantity of tar put upon the sheep in salving; partly, it is supposed, to the situation in which they pasture, as those fed on high grounds, and coarse mofsy herbage, are thought to have inferior wool; and partly to the

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general attention and care which farmers bestow upon their flocks, in which some are greatly superior to others. But the black-faced sheep seem, the writer thinks, to be capable of very considerable improvement; it does not, indeed, appear, that much has been done for improving that breed, which certainly places them in an unfavourable situation, when their merits come to be discussed in opposition to others which have received great attention. There can hardly be a doubt that the weight of the carcase and the quantity and quality of the wool might all be increased, by sufficient care to select the strongest, healthiest, and best feeding among them for the purpose of breeding. It has been observed, that those which feed best have the greatest quantity of wool, and generally of the best quality; and it is natural to suppose that it should be the case, as they must be the healthiest and strongest.

Herefordshire, Rofs, or Ryeland Breed or Variety.—This is a sort of sheep which is distinguished by the author of the "Treatise on Live Stock," by the want of horns, and having white legs and faces; by being small in size; and the wool growing close to the eyes; by the carcase being pretty well formed; and by the excellence of the mutton. Weight per quarter from 10 lbs. to 18 lbs. Wool fine and short, the lean poor-fed sheep producing the finest. It is the true breed of this sort of sheep which is properly denominated Ryelands. In the Agricultural Report of that district, they are said, in symmetry of shape, and the flavour of the meat, to be superior to most flocks in the country. They lamb in February and March. It is a breed which, Mr. Knight says, is found to be remarkably easy in respect to food, but which, in its management, requires crotting in the winter season, and being fed with hay or peas-haulm. In some cases they are housed all the year round in the nighttime. The cots are low covered buildings, proportioned to the extent of the flocks. In the Herefordshire Agricultural Report, it is observed that the crotting materially contributes to the health of the animal and the fineness of its fleece. The quantity shorn from each of the small original breed does not average more than two pounds; but the quality is such as almost to rival that imported from Spain. The price has often been as high as thirty-three shillings the stone of twelve pounds and a half untrinded, when the coarse wool has brought but ten or twelve shillings. They are said, by Culley, to fatten the best at four years old. The Archenfield, or true Herefordshire breed, is said to afford the finest wool, except the Spanish. It is suggested by Mr. Knight, that the disposition of sheep to fatten in the north-west part of that district is in the proportion to the fineness of the wool; but he is not certain of its being so in this breed; however, it seems to him that where the wool is close and fine, there are many advantages; less nourishment is drawn from the body in its support than in the contrary case. The long coarse-woolled fleece admits the rain more freely, and by dividing on the back lets it down to the skin. It also takes in a larger weight of water, which must more inconvenience the animal already heavily loaded. The fine close fleece of this breed admits the water with difficulty, even when immersed in it in washing, and is never wet through by rain. On account of the closeness of the texture, it only lodges on the outside, and is easily removed by the animal shaking itself. Besides, a fleece of this kind is much more warm and light. For these reasons it is supposed that no breed of sheep in the island is capable of subsisting on so small a proportion of food as this.

This animal, in Mr. Knight's opinion, appears to be much more patient of hunger, and to keep itself in better condition on a less quantity of food than any other which he has had

an opportunity of observing. To the great scantiness of the pasture on which it is usually condemned to feed, is to be attributed the fineness of its fleece; for the quality of this becomes immediately impaired by a copious supply of food; and this circumstance should be attended to, in every county where these sheep are introduced.

Some attention has lately been paid to its improvement, and although the wool is somewhat less fine in its quality than it formerly was, it is still the finest in the island, with the exception of the Spanish sort recently imported; and the animal must be allowed, on the whole, to have been considerably benefited. The quantity of wool afforded by the improved sort of Ryelands, although increased, is still far from large; a three-years old wether rarely yielding more than three pounds and a half. But as a large number of sheep will subsist on a small portion of ground, and the wool is still worth two shillings and sixpence the pound, its value, compared with the quantity of food consumed by the animals, is probably much greater than that afforded by any other breed.

And the Ryeland sheep readily acquires, on a very moderate pasture, that degree of fatness which renders its flesh more acceptable, but it is wholly incapable of being loaded with fat in the manner of Mr. Bakewell's. It appears to him to fatten somewhat more quickly than those he has seen of the South Down breed.

In the Agricultural Survey of Herefordshire it is suggested, that a cross between the Ryeland and real Spanish seems the most probable mode of adding to the fineness and value of the wool; and amongst many spirited breeders who are now making the experiment, colonel Scudamore of Kentchurch, sold the fleeces of a flock so crossed at forty shillings per stone, in the fair at Rofs, in the course of last year. The first stage of the cross materially detracts from the beauty of the Ryeland's form, but by continued attention, this objection will probably be removed, and the flavour of the mutton is uninjured. Lord Somerville has found that they feed quickly, and weigh heavily, although their form be not attractive; but perhaps form in this animal is of little comparative consequence. An ox rarely fattens well, or has flesh of good quality, unless it be in one particular shape; but sheep fatten well, and the meat is of prime quality in those of very different forms. Two Leicesters which were fed by Mr. Hower, of Abergavenny, and slaughtered before the Agricultural Society of this county in March last, weighed no less than fifty-one pounds in each fore-quarter, and forty-five in each hind-quarter. But notwithstanding this great weight, the Leicesters are often found less heavy than they appear to be, whilst the half Spanish weighs more than is generally expected from its size.

A cross of the Merino on the Ryeland breed has been tried in some parts of Devonshire with an appearance of success. The three-years old wethers of this cross, when fattened to their frame, being, it is said, estimated to run from fourteen to sixteen pounds the quarter, and to throw off from three pounds and a quarter to four pounds of washed wool to the fleece. In experiments made by some on this cross in other parts, it appears that two-years old wethers of the first cross will weigh about fifteen pounds the quarter, and shear from six pounds and a half to seven pounds of wool in the year to the fleece, which is worth 2s. 9d. the pound. The sheep are, however, greatly exposed to the foot rot.

The cross between the Ryeland and the Spanish has been made in some other parts, which has completely succeeded as to fleece, as the produce of the third cross of this breed readily sells for 3s. 6d. the pound; it is, however, objected to by many on account of its not affording an equal acreable proportion of mutton with the native sheep.

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In crossing this breed with the Dishley, an useful kind of sheep has, however, been produced, both the wool and carcase being increased in weight, but much injured in respect to fineness; and it is contended by some, that the breed is rendered much less hardy by it.

Warton Cragg Breed or Variety.—This is a sort or variety of sheep which is principally met with in the district of the above name, and that of Silverdale, in the northern part of the county of Lancaſter. Theſe cragg ſheep are greatly eſteemed for the fine flavour of their mutton, their ready diſpoſition to fatten, and the fineneſs of their wool. They are a cloſe compact well-made breed of ſheep, commonly with white or mottled black and white faces and legs. Their fleeces are ſhort and cloſe in the wool, which uſually falls high. Their paſture is chiefly that of the poor ſhort rocky lime-ſtone kind. They are deſerving of more attention than has hitherto been beſtowed upon them by the farmers of the neighbourhoods where they prevail.

The Shropſhire or Morf Breed or Variety.—This is a ſort which, according to the writer on live ſtock, has ſmall horns, with ſpeckled dark or black faces and legs; they have the full character of real fine-woolled ſheep, and have been, for centuries, bred in Shropſhire, Staffordſhire, Worceſterſhire, and the vicinity. Their fleece is nearly all fine, and, it is ſaid, ſuperior to Ryeland wool, ſince the croſſing which has taken place in that ſtock. Mr. Pitt, of Pendeford, in a letter to lord Somerville, dated 1799, eſtimates the extent of Morf common, or waſte, at 3600 acres, and the number of ſheep ſummed thereon, at 15,800, to the annual profit of fifteen ſhillings per acre in wool only, on a moderate calculation, eight fleeces and a half to the ſtone of 14 lbs. Nothing is reckoned on account of carcaſe, as the ſheep have ſome extra keep during winter. It is added, that the Shropſhire commons produce good fine wool, but none equal to Morf by fixpence a pound.

The Dorſeſhire Breed or Variety.—This breed is known by having the face, noſe, and legs white, head rather long, but broad, and the forehead woolly, as in the Spaniſh and Ryeland ſorts; the horn round and bold, middle-ſized, and ſtanding from the head; the ſhoulders broad at top, but lower than the hinder quarters; the back tolerably ſtraight; carcaſe deep, and loins broad; legs not long, nor very fine in the bone. Weight per quarter in wethers, at three years and a half old, from 16 lbs. to 20 lbs. Mr. Billingsley ſays, that the wool is fine and ſhort. It is a breed which has the peculiar property of producing lambs at any period in the ſeaſon, even ſo early as September and October, ſo as to ſuit the purpoſes of the lamb-ſuckler. It has been found to answer well in ſome of the midland diſtricts, and, from its cloſe make, to be equally advantageous with almoſt any other. It is, however, ſuppoſed capable of improvement by being croſſed with rams of a larger ſize. There are varieties of it met with in ſeveral diſtricts. And it is ſaid by ſome, that the Dorſet breeders pay great attention to preſerve the colour of their ſtocks from mixture, ſince white lambs are the moſt eſteemed in the London markets, from a preſumed ſuperior delicacy in the meat. It is believed this is one of the beſt breeds in England, if not ſuperior to all others, conſidering its various qualifications. Their property of bringing twins, and making our higheſt priced houſe lamb, muſt be conſidered firſt; they are both good hill ſheep and paſture ſheep, and their fleſh is an excellent medium between the delicate mutton of the hills, and the rich and juicy meat of the beſt lowland ſheep. The later Dorſet lambs, when fattened, make the earlieſt graſs lamb. By the practice of this county, the lambs which the breeders retain are ſhorn at Midſummer, having been taken from the ewes in May; produce of wool, one pound to a pound and a half each, the

price a penny per pound nearly, under the price of ſheep's wool. A three-ſhear ſheep may produce four or five pounds of mid-dling fine wool, which it would be highly advantageous to improve to the utmoſt, on this excellent breed.

This is a breed, or ſort of ſheep, which ſeems to prevail among the generality of farmers in the high lands, and ſome other parts of the county of Devon, which border on the above, in which they are found to answer very well.

And there is a breed or variety nearly connected with theſe in the Mendip hilly diſtrict. They are ſmaller than that breed, having ſmaller horns, more deer-headed, the wool leſs in weight; the mutton excellent in its flavour. It has been obſerved by the author of the “General Treatiſe on Cattle,” that in the Weſt Riding of Yorkſhire, and in the adjoining parts of Weſtmoreland, they have a breed of horned and white-faced ſheep, bearing a ſtrong affinity to the Dorſets; they are called *Craven* and *Wenſleydale* ſheep, but more generally *Peniſton*, from the market town where they are ſold. They are a good down or hill ſheep, in their pure ſtate, and give a fleece of coarſe ſhort wool, weighing between two and three pounds, the carcaſe good mutton, about fifteen pounds per quarter. They are variously croſſed in that riding, with Cheviot, Diſhley, and Northumberland tups; with the two laſt, for the purpoſe of making paſture ſheep, in which caſe the weight of carcaſe is increased to twenty or thirty pounds per quarter. In the north, this breed is commonly croſſed with the Heath ſheep, which gives them black or grey faces and legs, with ſometimes a black ſpot on the top of the neck, the wool coarſe and open, inſtead of being cloſe and thick ſet upon the ſkin, as a defence againſt the ſeverity of the climate of that hilly and expoſed country in which they are fed; defects for which the remedy is obvious. Ryeland tups have been tried with the Peniſton ewes, a croſs which made a conſiderable improvement.

The Wilſhire Breed or Variety.—This is a ſort which has ſometimes the title of *horned-crocks*. The writer on live ſtock diſtinguiſhes the breed, as having a large head and eyes, Roman noſe, wide noſtrils, horns bending down the cheeks, colour all white, wide boſom, deep greyhound breaſt, back rather ſtraight, carcaſe ſubſtantial, legs long, bone coarſe, fine middle wool, very thin on the belly, which is ſometimes bare. He ſuppoſes, with Culley, that the baſis of this breed is doubtleſs the Dorſet, enlarged by ſome long-woolled croſs; but how the horns come to take a direction ſo contrary, is not eaſy, he thinks, to conjecture; he has ſometimes imagined it muſt be the reſult of ſome foreign, probably Tartarian, croſs. The old Hertfords were, he ſays, ſuppoſed a kindred breed with the Wilts, but at preſent, the few of this kind bred in Herts are of ſmaller ſize, longer and coarſer wool. Theſe large and leggy Wilts' ſheep work well in the fold, and have always had the character of good thrivers at corn, oil-cake, and the beſt meat, making very large mutton, and very deep in fleſh, which is high-flavoured, yielding the dark-coloured gravy. The breed is, he adds, every where on the decline, generally ſupplanted by the South Downs, of which the farmers find they can, on the ſame quantity of land, keep more than one and a half, for one of the Wilts, the former, moreover, producing both better mutton and better wool. The diſeaſe called the *goggles*, is ſaid to be peculiar to the Wilts ſheep. It is ſtated, that this breed has been long uſed, more or leſs, in the counties bordering on Wilts, and in Surrey, Kent, Herts, Eſſex, and Middleſex. But that it is a breed not worth preſerving; perhaps the only thing to be done with it to advantage, is to croſs it with the Merino. The Hampſhire variety of this breed is ſaid, for what reaſon he knows not, to be more hardy. It is a breed, however, which is eſteemed in ſome places.

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The Berkshire Breed, or the Variety called Notts.—This is a sort which the same writer describes by having considerable length and bone, straight made like horses, full fore-flank, Roman faced, with distinct black spots, high on the leg, thick fleece, of considerable length. He supposes them to class with the long-woolled breeds, and to probably bear some affinity to the breed of Oxfordshire, which is, he is told, a peculiar variety.

The peculiar qualities of the Berkshire nott breed seem to be its great size, height on the legs, and weight when fattened. It would appear, contrary to the opinion of some, that this breed is well suited for the strong low lands of its native district, though the South Down sort are fast supplanting it in many places, probably without sufficient experience of them in such situations. In contrasting them with the horned Wiltshire sheep, it is found by some that the polled Berkshire or nott sort are as certainly more properly adapted to the low and cold lands, as they are proved to be more hardy for the fold, to fat sooner, and to be less liable to injury from the fly, than the horned sheep. When fat, the sheep vary as much as from fourteen to forty pounds the quarter, in weight. These polled or nott sheep are, however, not of so large a size as the horned sort of the same district. The fleece of this breed of sheep is not fine, and on the average it will take eight of them to a tod of wool. The mutton is rather coarse, as in all large breeds of animals. The utility of crossing this breed is by no means decided. Some advise to breed from the best of this sort, but to cross for fattening. Crosses are, however, very common between many different sorts, as between the notts and the Wiltshires, the Cotswolds, the Leicesters, and different mixed breeds.

The Berkshire nott breed is much valued in some parts of Oxfordshire, especially for regular breeding as well as standing the fold. They are strong, active, and able to travel, and fold unusually well; against which good qualities they are, however, long in fattening, &c. The crosses with the Leicester improves them considerably, still they are fast giving way to the South Down and some other breeds.

And it is observed in the Norfolk Agricultural Report, that the Wiltshire sheep have proved, in various trials, an unprofitable breed, as well as the Norfolks; but it is remarkable that for turnips, no sheep are said, by many practical and experienced husbandmen, to pay better, if so well. In Hertfordshire, many who turnip-feed adhere to that breed, who admit the South Downs to be a superior sort for grass-feeding.

Heath-Croppers or Windsor Forest Breed or Variety.—This is a small ill-shaped breed of little value, found abundantly in the parishes which lie within the precincts of the forest of Windsor in Berkshire. It is a breed which affords a very sweet kind of mutton. A quarter of it will weigh about twelve or fourteen pounds. And in regard to the wool, about thirteen fleeces will make a tod. It is of equal value with that of the South Down breed. The term *heath-croppers* is very commonly, though vulgarly, applied to sheep of this breed.

The South Down Breed or Variety.—This is a very valuable sort of sheep, which Culley has distinguished by having no horns, grey faces and legs, fine bones, long small necks, and by being rather low before, high on the shoulder, and light in the fore-quarter, sides good, loin tolerably broad, back-bone rather high, thigh full, twist good, mutton fine in grain, and well-flavoured. Wool short, very close and fine, in the length of the staple from two to three inches. Weight *per* quarter in wethers at two years old 18 lbs. It is a breed which prevails on the dry chalky downs in Suffex, as well as the hills of Surrey and Kent, and which has lately

been much improved both in carcase and wool, being much enlarged forward, carrying a good fore-flank; and for the short less fertile hilly pastures is an excellent sort, as feeding close. The sheep are hardy, and disposed to fatten quickly; and where the ewes are full kept, they frequently produce twin lambs, nearly in the proportion of one-third of the whole, which are, when dropped, well-woolled. The wethers are capable of being disposed of at an early age, being seldom kept longer than two years old, and often fed at eighteen months; which is a very valuable property. But according to the Suffex Agricultural Survey, the ewes are commonly kept till between four and five, and found to answer well to the graziers in the neighbourhood, as well as the farmers in Norfolk and the adjoining counties, in the place of home-bred sheep, as being more expeditious feeders, and equally adapted for the purpose of the fold. It has been observed, that it is in fact a breed of sheep which, from the compactness of their form, and their legs being shorter, considerably outweigh both the Dorset and Norfolk breeds, in proportion to the size of the carcase, being heavy in a small compass. Their hardiness is estimated according to the darkness of the colour in the face and legs; but as there is inconvenience in the produce on this account, from the wool, especially about the head and neck, becoming spotted with black, and thereby thrown aside by the stapler, as only of half the full value, a middle degree of colour may be best. As an open country breed, they are sufficiently gentle and tractable. They are capable of travelling well, and of resisting the effects of exposure to cold. The wool is scarcely, if at all, inferior in fineness to that of the Herefordshire kind; as the practice of sorting, which is common in that district, is not in use on the Downs. The excellent properties of this breed have been brought fully to the notice of the farmer, by the great patrons of improvement in Bedfordshire and Norfolk, and its superior merits on trial have been such as to have induced the sheep-farmers in various districts to introduce them in preference to other breeds. It is stated, in the Annals of Agriculture, that they have been found to consume less food, in proportion to weight, than the Norfolks, yet keeping in better order. Young sheep produce the best lambs; the crones are of course constantly sold at four or five years old; and if it were done earlier, it is supposed, it would be more profitable. The author of the "General Treatise on Cattle" suggests, that the most noted variety is that of Mr. Ellman, of Glynd, in Suffex, who, he believes, first enlarged the Down breed, by the aid of polled or *nott* Berkshire tups. From this enlarged cross, he understands, originated the stocks of the duke of Bedford and Mr. Coke; the South Downs of Mr. Coke being generally acknowledged the largest and finest in England, a very pregnant proof of which was given at lord Somerville's cattle show, in a two-shear Holkham South Down wether, which weighed more than 40 lbs. *per* quarter. Although quick and early feeders, they tallow within remarkably. And in answer to the complaints of those who knew the old Down sheep, that their wool is become so much coarser than formerly, from the modern habit of feeding the sheep with rape, cabbage, and oil-cake; they seem totally to forget the middle and long-woolled cross, by which the carcase of the South Downs of the present day has been enlarged, and their weight of wool increased, and rendered more coarse. The mutton is still excellent, although probably not so high-flavoured as the old Down mutton. It is also further suggested, that it would be difficult to point out any part of the island for which this breed would be unfit, but extremely easy to name a vast number of districts where it would be a most advantageous substitute for the native stocks. It is supposed, that all the South

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South Downs want is the noble covering of a Spanish fleece, and how little their carcase would suffer by the cross, has, it is said, been demonstrated by Lord Somerville, in the exhibition of a very fine ewe, large enough for any purpose, half Spanish and half South Down. But in order to form a comparison between the Norfolks and South Downs, Mr. Overman of Norfolk, on March 27th, 1799, took from turnips twenty-four two-years old Norfolk wethers, and ten South Down of the same age, having always lived together from the time they were lambed, and two hours afterwards they weighed as follows:

	ft.	lb.		ft.	lb.	oz.
24 Norfolks from the field,	264	7½		11	1	15
Average	-	-		10	10	7
Ditto after fasting 28 hours,	237	13		0	5	8
Average	-	-		10	8	9
Difference	-	-		0	4	7
	ft.	lb.		ft.	lb.	oz.
10 South Downs from the field,	109	4		10	13	0
Average	-	-		10	8	9
Ditto after fasting 28 hours,	106	2		0	4	7
Average	-	-		-	-	-
Difference	-	-		-	-	-
One of each lot slaughtered.	-	-		-	-	-

Norfolk.

	ft.	lb.	£	s.	d.
Mutton	6	10	2	7	0
Tallow	1	2½	0	6	10½
Head and pluck	0	10½	0	0	9
Skin	0	9¾	0	1	0
Wool	0	3¾	0	5	4
<hr/>					
Blood	0	6¼	3	0	11½
Entrails	0	11	-	-	-
Lofs	0	0¾	-	-	-
<hr/>					
Live weight	10	12½	-	-	-

South Down.

	ft.	lb.	£	s.	d.
Mutton	6	8½	2	6	3
Tallow	0	13½	0	5	7½
Head and pluck	0	10	0	0	9
Skin	0	10	0	1	0
Wool	0	7½	0	11	3
<hr/>					
Blood	0	7	3	4	10½
Entrails	0	11	-	-	-
Lofs	0	0½	-	-	-
<hr/>					
Live weight	10	12	-	-	-
<hr/>					
Norfolk	-	-	3	0	11½
Down superior by	-	-	0	3	11

Besides, these Norfolk sheep losing 11 lb. 10 oz. more of their respective weight (taken full and empty) is a strong circumstance against them. The Downs are run much thicker on the land than the Norfolks. And Mr. Hill of the same district estimates the difference of stocking between Norfolks

and South Downs, at one-third in favour of the latter, in number, in better condition, and of greater weight, both in wool and carcase; all fairly attributable to the superiority of the breed, and free from any charge of lessening cattle, &c. When his flock was of Norfolks, scarcely one in a score had a whole fleece; but now they are South Downs, scarcely one in a score is broken. And Mr. Blythe of Burnham had, four years ago, a flock of between five and six hundred Norfolks: he has now one thousand South Downs on the same land, and has likewise double the wool from his land stocked with South Downs, to what he clipped when under Norfolks. Also Mr. Dursgate, who has had South Downs six years, is clear that, free from all change in husbandry, or other circumstance that would unfairly affect the comparison, the number kept, compared with the Norfolks, has been as five to four. The carcase is as heavy as the Norfolks, more wool, and a better price. He does not fold; but the South Downs would bear it better than the Norfolks. At Palsgrave he folds the South Downs, because there is a sheep-walk; a Norfolk flock changing gradually to South Downs.

Some think that the South Down are much superior to the Norfolk, Cambridgeshire, and west country sheep, both in point of form, hardiness, fineness of wool, and disposition to fatten. Crosses of the South Down with other sorts are likewise much approved of in many places; as that of the South Down ram with the Norfolk ewe, the lambs of which crosses are sometimes greatly admired. Some suppose it equally beneficial when done with several other breeds, according to the circumstances of the different districts. But this sort of crossing is very sparingly practised in the native district of this breed of sheep. It has been tried with Spanish rams, and the wool has been considerably improved by the attempt; but two great defects, not to be compensated by any improvement in the wool, are said to be produced, which are tenderness of constitution, and badness of shape. In other places this has not, however, been noticed to take place. In Oxfordshire, and several other counties, the South Down breed is fast supplanting the Berkshire, Norfolk, and many other kinds.

And it is stated, in the Staffordshire Agricultural Survey, that the Cannock Heath are a sort of sheep that has much resemblance to this breed, and is believed to have originated from the same. It is stated to have been much improved in the form, thickness, and weight of the carcase, as well as the fineness of the wool, by crossing with rams of the Herefordshire breed. They are polled with grey faces and legs; low before; wool fine and thickly set, weighing two or three pounds the fleece; the mutton good: they weigh from 15 lbs. to 20 lbs. the quarter. In Sir Edward Littleton's improvement of this breed, by crossing with Herefordshire tups, the carcase and wool were both bettered, the latter being rendered worth nearly 2s. the pound.

The Norfolk Breed or Variety.—In this sort of sheep, the face is black; the horns large and spiral; the carcase long, small, weak, and thin; narrow chine; large bones; very long black or grey legs: mutton fine-grained and high-flavoured, but does not keep well in hot seasons. The weight per quarter from 16 lbs. to 20 lbs. The wool in the best part short and fine, but part coarse. This breed is chiefly prevalent in Norfolk and Suffolk, where folding is much the practice, as they have the property of travelling well. They are found in disposition to be given to be restless, which renders them unfit stock, except in good inclosures. And it is stated, in the nineteenth volume of the Annals of Agriculture, that this sort of sheep, from possessing few valuable properties, in addition to that of stand-

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ing the fold well, and as requiring much expence in winter keep, an acre of turnips being the usual allowance for half a dozen besides hay, has lately given way to the South Downs, which are supposed by some to be hardier, less nice in their food, sooner ready for the fold, and more quiet. This last sort has lately gained much ground. The wool might be improved by a Spanish cross, but little other advantage would be gained. It has been remarked, in respect to the quick *tainting* of this mutton, by Mr. Vyfe, butcher of Eaton college, that the Norfolk mutton certainly will taint sooner than any other, in very hot weather; neither is there any sort (that he knows) of a worse flavour at that time, though inferior to none in cool weather. Many very fine and fat Norfolks do not please on the table. The fat runs away in roasting, if they are laid to a hot fire; and they rarely are so sweet as the South Downs. The latter are in hot weather worth a halfpenny a pound more than the Norfolks. When both are *completely* fatted, it is hard to say, (supposing the season cool,) which upon an average is fattest: the flavour too, in such a season, he thinks, is equal, and as to coarse meat, there is none in either sort. But if they are killed in cool weather, before they are very fat, the preference must be given to the Norfolks, because the meat will in that case eat better, and there is a probability of much more fat within. With respect to profit to the feeder, if they are fed entirely with grass and upon good land, his opinion is decidedly in favour of the South Downs; or if they eat turnips in the winter, and after that are kept two or three months upon grass in the spring, it is the same; but if they are half fat against winter, and are to be completed at turnips, he believes no sheep are more profitable than Norfolks, perhaps none so much so. But both sorts should be kept where there is both turnip and grass land. There are varieties of this breed in Cambridge and Suffolk, with coarse wool, and weighing about 18 lbs. or 20 lbs. the quarter.

Crosses of the Norfolk, with the South Down and many breeds of other kinds, are met with and highly valued in different situations.

A great diversity of opinion prevails, in regard to the superiority of the Norfolk and the South Down, which has led an experienced sheep farmer, at Finchfield in Essex, to make the very accurate trial which is detailed below. In September 1791, he purchased in Suffolk a lot of ewe lambs, at 6*l.* 10*s.* the score: and in Suffolk, in the October following, a lot of South Down ewe lambs, at 13*l.* the score. These lots of sheep were depastured together, and received in every respect the same treatment until the 25th of the same month in 1793; when a single sheep, which was adjudged to be the level of each lot, was taken out, and after both of them had fasted twenty-six hours, they were weighed alive, the South Down weighing 96 lbs. and the Norfolk 95 lbs: they were then killed, and the results of the trial were as follow.

	South Down.	Norfolk.
Carcase - - -	52½ lbs.	53½ lbs.
Skin - - -	8½	7 and horns.
Legs cut off at the knee-joints, } as usual - - -	} 1½	} 1½
Caul - - -	4¾	3
Blood - - -	4	5
Head and pluck - - -	7½	7½
Gut fat - - -	2¾	2¾
Entrails and contents - - -	12½	14
Loss by killing, probably urine	2	1¼
	96	95

In favour of South Down.

2¼ lbs of fat, 4½ <i>d.</i> per pound	s. d.
	0 10
1¼ lb. of skin and wool	0 5
	1 3

In favour of Norfolk.

1 lb. of mutton	s. d.
	0 5
1 stone cost	6 6
	6 11

Total difference in favour of Norfolk sheep 5*s.* 8*d.*

It is noticed, that neither of these ewes had any lambs, but at the time of trial, the Norfolk was more than half-gone with lamb, and the South Down had but just taken the ram.

In short, the leading and characteristic qualities of the high and full-bred Norfolk and South Down sheep, seem upon comparison to be chiefly these, the wool of both is found to be of the first clothing quality, but the larger quantity is produced by the South Down: the mutton of both is equally delicious. But the quiet gentle South Down in the pasture, must be opposed to the wild impatient ramblings of the Norfolk, whose constant exercise not only excites continual appetite, but at the same time occasions considerable waste in the pasture, by treading down and unnecessarily spoiling a great deal of food they do not eat. For this extraordinary exertion on the part of the Norfolk sheep in thus, as it were, wantonly destroying a large portion of food which is prepared for its subsistence, there does not appear, from the trial already noticed, to be the smallest occasion at least, to put it on an equal footing with the South Down in that particular; for it is evidently demonstrated by that trial, that in an equally sized sheep, the heaviest, and most capacious stomach, and consequently requiring the greatest quantity of food, is found to appertain to the Norfolk sheep. The hardiness of the South Down, enduring wet and cold lodging, and a greater degree of abstinence and fatigue than the Norfolk in the fold, is a superiority of much moment; and only to be equalled by another, which they possess in a very superior degree, which is that of doing well upon coarse four pastures. These are fairly to be contrasted with the delicate constitution, and the tender aromatic herbage, required by the Norfolk; to all which it may be added, that the South Down is an equally good turnip sheep; and for every possible purpose, whether for its flesh, for its wool, for breeding, for folding, or for the butcher, they demand a less supply of food, and of an inferior quality to that which, in every situation, would appear indispensable to the well doing of the Norfolk. On the score of the first cost of these sheep, an objection may, it is said, be very justly stated as to their general use; but when the South Down are more generally bred and increased through the country, in that proportion will the present objection be done away; and though they may continue in equal estimation, they will nevertheless, by their being more generally diffused and increased every where, be brought to a more equal level, in point of price, with the Norfolk, Welsh, and all those breeds so justly held in requisition for the fineness of their wool, and the superior excellence in the flavour of their mutton.

The value of the crosses which have been made between the Norfolk and Welsh sheep, by the South Down rams, are far from being decided, some sheep-farmers thinking them

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them highly beneficial, while others strongly reprobate them.

Delamere Forest Breed or Variety.—This is a breed or sort of sheep, which is found about the forest of that name, in the county of Chester. In point of shape, the animals are said not to be unlike those of a diminutive Norfolk sort, having the faces and legs black, grey, brown, and white, generally with small horns. The breed is small, the wethers not weighing more than from 8 lbs. to 12 lbs. the quarter, at four years old. The mutton is in common much esteemed, and the wool is valuable, selling about the year 1808 at 2*l.* 12*s.* 6*d.* the stone of 20 lbs; the fleeces are, however, small, often not weighing more than 2 lbs. The wool is commonly purchased by the manufacturers of cloth in Yorkshire.

The Herdwick Breed or Variety.—This is a breed which is characterized by Mr. Culley by having no horns, and the face and legs being speckled; the larger the portion of white, with fewer black spots, the purer the breed; legs fine, small, clean; the lambs well covered, when dropped; the weight *per* quarter, in the ewes, from 6 lbs. to 8 lbs.; in the wethers of four years and a half old, from 9 lbs. to 12 lbs.; the wool short, thick, and matted in the fleece. It is a breed peculiar to the elevated mountainous tract of country at the head of the river Esk, and Duddon in Cumberland, where they are let in herds, at an annual sum: whence the name. At present they are said to possess the property of being extremely hardy in constitution, and capable of supporting themselves on the rocky bare mountains, with the trifling support of a little hay in the winter season; scratching down to the heath, during the snows, for their subsistence; and by their constantly moving about, not being liable to be drifted over by snow. From the nature of the climate, the ewes produce their lambs late, and are generally kept as long as they produce lambs. But the wether stock is usually disposed of from the mountains, without being put in the pastures, at from four to five years old. It is observed, that the fleece in this breed is finer than that of the Heath sort, but coarser than any of the short-woolled breeds. It is a breed that stands in need of a cross with some of the finer-woolled breeds, and the Spanish has been suggested as proper for the purpose. The property of the flocks, as well as of the mountains, is in lord Muncafter, the lord of the soil; and the farmer of the principal flock is now Mr. Tyfon, whose family, it is said, have inhabited this wild and sequestered spot through four centuries. Mr. Tyfon is a tup breeder, and sells a number of Herdwick tups yearly, some at several guineas each, to the adjoining districts, where their known hardy qualities are desirable.

The Cheviot Breed or Variety.—This breed of sheep is known by the want of horns; by the face and legs being mostly white, and the eyes lively and prominent; the belly long; little depth in the breast; narrow there and on the chine; clean, fine, small-boned legs, and thin pelts; the weight *per* quarter, when fat, from 12 lbs. to 18 lbs.; the wool partly fine, and partly coarse. Mr. Culley considers this as a valuable breed of mountain sheep, where the herbage is chiefly of the natural grass kind, which is the case in the situations where these are found the most prevalent, and from which they have obtained their name. It is a breed which has undergone much improvement within these few years, in respect to its form and other qualities, and has been lately introduced into the most northern districts; and from its hardiness, its affording a portion of fine wool, and being quick in fattening, it is likely to answer well in such situations. The Spanish and South Down have been advised as proper crosses for this sort of sheep.

And it is observed by the writer of the Argyleshire Report, that the Cheviot sheep are in every respect superior to the black-faced kind, and found to be equally fit for a mountainous situation. They are hardy, fine-woolled, and well-shaped. They are long-bodied and long-limbed, which fits them for climbing steep mountains, and for travelling, either for seeking their food, or going to a distant market. Their fleece, too, is finer, closer, and warmer. They have every property that should be sought in a mountain sheep, and accordingly they have been found to thrive in every part of the Highlands in which they have been tried, and are said to be less subject to diseases than the black-faced kind. Some of them have been lately introduced into the county by the duke of Argyle, and by Mr. Campbell of Auch, in the highest parts of Glenurchay, and found to answer exceedingly well. And lord Breadalbane, a few years ago, made a present of some Cheviot wedders to several of his tenants in Glenurchay, in order to try how they would fare on the same pasture with the black-faced kind; and the writer was informed by some of the store-masters, that they perceived no difference in their thriving. Indeed no part of this county is more inclement than that from which they came, where the hills are sometimes covered with snow for three or four months in a year, and where many of the lower walks consist of peat-bogs and deep morasses; so that with us their situation would be mended, a circumstance which will always ensure success.

It is likewise stated in the twelfth volume of the Statistical Account of Scotland, that the following experiment, made in the parish of Barr, in Ayrshire, shews the comparative hardiness and value of the Cheviot breed. In June, 1792, a ram and two score of ewe hogs, of the Cheviot breed, were put upon one of the highest and coldest farms in the parish. The harvest was wet, the winter and spring stormy, and the loss of the native sheep, through poverty and disease, was considerable; yet all these, though strangers, and in such a situation, did well. The wool of the native sheep, taking ten fleeces to the stone (24 lbs.), sold at 7*s.* 6*d.*; the wool of the Cheviot kind, taking only seven and a half to the stone, sold at 15*s.* The profit here was great; but how much more, if the wool had fetched its real value of 20*s.* the stone! And in "The Observations on different Breeds of Sheep," it is stated that in 1792, the Cheviot wool sold from 18*s.* to 20*s.* the smeared, and from 20*s.* to 22*s.* the white; from six to eight fleeces of the first, and from eight to nine of the last, going to the stone. Some went as high as 23*s.*; and it is thought it will soon be improved so as to fetch 30*s.*, if not 40*s.* Draft ewes sold from 12*s.* to 16*s.*, and three-years old wedders from 18*s.* to 22*s.* In Etterick, Eweisdale, and Liddefdale, they are now converting their flocks as quickly as possible into the Cheviot breed. The Roxburgh Agricultural Report also says, that Liddefdale is the worst district, yet the Cheviot breed thrive in it. The writer of the first of these Reports remarks, that it is difficult for those who have already got another kind to change the breed; but new beginners ought undoubtedly to stock with the Cheviot kind. It is said that the Yorkshire graziers have a prejudice against this kind; probably because they would then have more rivals in the trade, which is now in few hands; as the carcase, and not the wool, is the principal object of attention. Whatever there may be in this, the introduction of the Cheviot, which would treble the price of wool, would more than balance it. And he adds, from the same volume of the Statistical Account of Scotland, that even they who have another stock, and cannot conveniently change it, might at least cross it with the Cheviot breed, which might

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be done with little trouble, and to great advantage. In the years 1787, 1788, and 1789, an intelligent farmer, in the parish of Moffat, put Cheviot rams to his black-faced ewes. In 1790 he sold the wool of the sheep produced by that cross at 10s. the six fleeces; and the wool of his other flock of the black-faced kind, which went exactly on the same pasture, only at 6s. 3d. the seven fleeces. The sheep thus produced were as healthy as his other sheep, the carcass not materially altered, and the weight of the wool increased a seventh part, and its price more than a third. The farm on which they were is as high ground as almost any in Scotland.

And the sheep which are at present known by the title of *Long Hill sheep*, by the northern farmers, are a hornless, white-faced, loose-shaped breed, having a coat of ordinary short or fine wool, perhaps raised by crossing, through time, the old country breed with those of the Cheviot kind. They are said to be more tender than the short or black-faced breed, but to answer well with good care and keep. However, from the practice of milking ewes of this breed, for the purpose of making cheese, being found to be prejudicial, it has lately been much left off by the best sheep-farmers in these districts.

The Dun-faced Breed or Variety.—This is a sort which Culley says has no horns; the face in common of a dun-tawny colour; the size small; the tail short; the mutton fine in texture; the weight often only 6 lbs. or 7 lbs. the quarter; the wool variously streaked and blended with different colours, some of which is very fine. He supposes it to partake of the Spanish breed, but it is not so hardy as the Cheviot breed. The mutton of this breed is excellent in flavour. They are supposed by some to have had a Spanish origin; but they have been naturalized, for a great length of time, on the Grampian and other hilly districts in Scotland.

The Shetland Breed or Variety.—This is a small breed, and mostly without horns; but what more particularly distinguishes it from other breeds, is the uncommon smallness and shortness of the tail; the weight *per* quarter from 7 lbs. to 10 lbs.; the wool very fine, and of various colours. The breed is very hardy, but much too wild in its disposition to be confined in inclosed pastures, and of course less proper for the purposes of the grazier. There is a sort of this breed of sheep, which, according to Mr. Johnson, carries coarse wool above, and fine soft wool underneath; and the sheep have three different successions of wool annually, two of which resemble long hairs rather than wool, and are by the common people termed *fors* and *scudda*. As soon as the wool begins to loosen at the roots, which is mostly about February, the hairs or *scudda* spring up; and when the wool is cautiously pulled off, the tough hairs continue fast, until the new wool grows up about a quarter of an inch in length, then they gradually wear off; and when the new fleece has acquired two months' growth, or thereabouts, the rough hairs, termed *fors*, spring up and keep root, until the proper season for pulling it arrives, when it is plucked off along with the wool, and is separated from it, at the time of dressing the fleece, by an operation called *forfing*. The *scudda* remains upon the skin, as if it were a thick coat, a protection against the inclemency of the season. But the native or kindly breed, that bear the soft cottony fleeces, according to Mr. Culley, are rather delicate; though the fact of their eating the sea-weed greedily, when the ground is covered with snow, and often during long and severe snows, when they have little else to live on, seems to prove the contrary. Nature, he says, seems to have imparted to them a perfect knowledge of the times at

which this food may be procured; for immediately upon the tide beginning to fall, they in one body run directly down to the sea-shores, although feeding on hills several miles distant from the sea, where they remain until the tide returns, and obliges them to seek their usual haunts. They are very hardy, and the wildest of all the breeds of these animals.

But in respect to the wool of these *beaver* sheep, as they are sometimes termed, it is short and open, and destitute of a covering of long hairs. These fine soft fleeces are liable to be rubbed off during winter, or early spring, which, it is supposed, might be prevented, by clipping the sheep in the usual way, instead of the absurd mode of pulling them off, which tends to weaken the sheep, and decrease the length of the staple of the wool. In regard to colour this wool is various, as *silver grey*, which is the finest and softest; the pure *white*, which is mostly of the greatest value for all the purposes of the finest combing wool; the *black*, and the *mourat* or *brown*, which are very little inferior: the whole of the softest texture, fit for the finest manufactures, and in some instances rivalling even Spanish wool, than which it is somewhat longer in the staple, and not so elastic. And it is stated to have been manufactured into stockings of extraordinary fineness; and that the fleece attached to the skin affords a fur of great value. This breed was formerly a native of the higher parts of Aberdeenshire, and in the districts to the northward of it; but it has been since much crossed, and it is now mostly confined to the Orkney and Shetland isles, the purest breed being to be found in the latter. The number of the *beaver* sheep in these isles amounted to ninety thousand, some years since; and five or six of them are said to be capable of being fed with the food required for one English sheep. In the West Riding of Yorkshire, Mr. Beaumont is said to have made a trial of these sheep; the result of which was, that they did not fat, but grow, which shews that their size would improve with that of the soil: their wool also improved in length. But the original old breed of the Highlands are said to partake of the nature of the goat and deer; their coat consisting of a sort of fur or down, covered by long, straight, rigid hairs, like those of the beaver, rather than wool; tail short, slender, tapering, not larger than that of the deer or goat, and thinly covered with strong, silvery hairs; the face covered with sleek hairs, like the face of the deer, with his prominent eyes. They are tame, delicate of frame, and requiring to be housed in winter: their flesh of high venison flavour. The breed is found in its original purity, in the central Highlands, on the southern banks of Strath Tay, and between those and Strath Brand; and on the banks of Loch Ness, in the northern Highlands, as well as in the Shetland islands.

The Merino or Spanish Breed or Variety.—In this breed of sheep the males have horns, but the females are without them. They have, according to lord Somerville, white faces and legs; the body not very perfect in shape; rather long in the legs; fine in the bone; a degree of throatiness, or production of loose pendulous skin under the neck; and the pelt fine and clear; weight, when tolerably fat, *per* quarter, in the rams about 17 lbs., in the ewes 11 lbs.; the wool very fine. It is a breed that is asserted by some to be tolerably hardy, and to possess a disposition to fatten readily; but others maintain the contrary opinion.

His majesty took the lead in the introduction of the Merino breed into this country, and his first flock was imported in 1792; but other nations seem to have got the start in this respect, as Sweden had them even in 1723, where they have since greatly increased; and in France, Germany, and some other

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other states, they were probably known long before. They have lately spread much in this country, and been greatly improved in different respects, by judicious crossing with other sorts. The horns in the true Merino rams are now of a middle size; the faces and legs darkish-white, the latter rather inclined to be too long. The wool is uncommonly fine, and weighs about $3\frac{1}{2}$ lbs. to the fleece, not being liable to deteriorate in this climate. The fleeces have a dark brown tinge in their surfaces, formed by dust sticking on the greasy yolk property of its pile; the contrast between which and the rich white coloured wethers, and the rosy hue of the skin, is very striking on the first view.

Some cross the Merino rams with Devonshire ewes, but the Ryelands are more commonly preferred. They consider five crosses as necessary for reaching perfection; and on that ground properly conclude, that the wool of the first cross can only reasonably be supposed to be worth about 7d. the pound more than that of the maternal flock, on the idea that it will, in five crosses, be of the value of 3s. above that of the Ryeland ewe; making an improvement of about 7d. in each cross. And that if the wool, when this sort is mixed with the most valued native breeds, does not gain its necessary degree of fineness in less than five crosses, it is unreasonable to expect the full price for it at one cross. It is, however, certain that the animal is improved by a mixture with the Ryelands, and that the wool will not ultimately be found inferior to that of the Spanish stock. The Spanish crosses with the South Down and Ryeland, in several degrees, is diffusing itself in many districts with great benefit. With the latter, in Devonshire, the wether produce, at two years old, weigh 15 lbs. the quarter, and afford a fleece of 5 lbs. each, worth 3s. the pound. In other cases, the weight of mutton is greater in the first cross; and the shear of wool from $6\frac{1}{2}$ lbs. to 7 lbs. in the year to the fleece, at the same age. Crosses with some other fine-woolled breeds are likewise made with great utility.

But according to Dr. Parry, who has had great experience of this breed, they are, as stated in a late work on Live-stock, entirely enveloped in wool, which grows under the jaws, down the forehead to the eyes, under the belly, and down the legs to the very feet. It is astonishing to see how thickly it covers the skin; it will scarcely give way to the pressure of the hand, but yields as it were by starts, like the close short hair of an extremely fine clothes-brush. In washing them, the water penetrates to the skin with great difficulty. The fleece is heavier, in proportion to the carcase, than that of any other known breed in Europe. In the raw state (unwashed on the sheep's back or afterwards), the fleeces of the two-years old ewes average at $4\frac{1}{2}$ lbs. avoirdupois, and the weight of the living ewe being about 60 lbs. the proportion of wool to that of carcase is about 1 lb. to $12\frac{1}{2}$ lbs. The fleece of a fat wether of the same age will be from 5 lbs. to 7 lbs. In eight shearing rams, weighed alive, after having been clipped, the weight of the fleece to that of the living animal, was as one to about twelve and three quarters. The wool from the head and behind the ears, and the rest of the refuse, generally called *daglocks*, had been previously taken away. It is added, that had these sheep been washed before shearing, their fleeces would have lost about a ninth part. And that the length of the staple or filaments varies. In a shearing ram, shorn when a lamb, a sample of the wool cut close to the skin above the shoulder, was three inches and a half in length; and that of the breech, or middle of the back part of the thigh, three inches and three quarters: of an ewe of the same age, about a quarter of an inch shorter: the average according very exactly with

the specimens taken from newly imported Spanish sheep. An instance of the extraordinary length of staple, of four inches and three quarters, is related, which from the scoured fleece produced a sample more than five inches long. The proportion of fine wool in the fleeces of the Spanish sheep is much greater than those of any pure English breed. Thus, while in the Ryeland, which is probably divided into four or five sorts, the finest wool from the neck and shoulders does not make above one-eighth part of the whole fleece: in that of his majesty's flock, the fine wool formed near four-fifths of the whole. It is farther observed, that of Dr. Parry's wool, consisting of whole fleeces taken from sheep which had not more than three or four crosses of the Spaniard, and divided into three sorts (R. F. T.), according to the Spanish method, $155\frac{1}{2}$ lbs. produced of R. or Rafinos, or superfine, 104 lbs. more than two-thirds of the whole. And the uniformity of fineness in the improved wool is such, that in shewing specimens from these different parts of the same animal, (the shoulder and the breech,) which are generally considered as producing the best and the worst wool; the doctor never met with any three persons who could agree which was the finest, and many good judges actually decided in favour of the latter. This wool contains a great deal of yolk, or oil, which is apt to entangle the dust of the fields, so as often to form a kind of mat of nearly an inch in thickness; it is remarkably, or rather wholly free from stichel hairs or kemps. Brownness in the wool of any particular sheep is an indication of superior fineness (and such was the colour of the ancient fine-woolled sheep, and we need not look for the cause in any peculiar quality of soil or composition mixed with the wool); it will nevertheless scour white. But according to lord Somerville, this dark-brown tinge on the surface of the best fleeces amounts almost to a black, which is formed by dust adhering to the greasy yolk properties of its pile; and the contrast between it and the rich white colour within, as well as that rosy hue of the skin, peculiarly denoting high proof, surprize at first sight. The harder the fleece is, and the more it resists any outward pressure of the hand, the more close and fine will be the wool. Here and there a fine pile may be formed with an open fleece, though but rarely. And in Mr. Tollet's Spanish flock, purchased from lord Somerville, the average weight of each Spanish fleece in the greasy was 5 lbs. 13 oz., and the lightest ewe fleece 3 lbs. 4 oz., and the heaviest ram fleece 11 lbs. 12 oz. of very good quality. This ram was not quite thirteen months old at shear-day, and was adjudged to weigh 20 lbs. *per* quarter. Mr. Tollet declined the price of two hundred guineas for him, likewise that of one hundred for the use of him during the tupping season: he does not wash his Merino sheep before shearing, since, from the closeness of the fleece, it is not much liable to the intrusion of dirt: as it does not lose quite half its weight in scouring by the manufacturer, an estimate may be made after that rate of the value of the fleece in the yolk. The fleece of the young ram produced upwards of 3s. and the average produce of the whole unwashed Merino wool 18s. 9d. each fleece. The price of the superfine more than four-fifths of the whole, 6s. 3d. and 6s. *per* pound of the third sort, or *fribs*, which was but about one pound in the whole quantity. Mr. Bartley has somewhere mentioned, that four wethers of this breed produced the quantity of $35\frac{3}{4}$ lbs. of wool; and of several ewes which produced 8 lbs. each, and of a wether which gave $10\frac{1}{2}$ lbs.

In the introduction of this breed his majesty, as has been seen, has taken the lead, and from his flock a great number of the improvers of it have been supplied in the different

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ferent sales that have been made since its first establishment. In the sale of 1803, in Kew Lane, under the direction of Sir Joseph Banks, the numbers sold, according to some, were twenty-four shearling rams, which produced the sum of 40*l.* 9*s.*; seven full-mouthed and four toothed rams, 17*l.* 13*s.* 6*d.*; fourteen ewes, 118*l.* 8*s.*; amounting in all for the forty-five sheep to 692*l.* 10*s.* 6*d.* The highest price of the shearling was 42 guineas, the lowest 6*l.* 7*s.* Of the full-mouthed rams, 28 guineas were the highest, and 7½ the lowest price. Of the ewes, 11 guineas the highest, 6 the lowest. The rams were put up at six guineas, the ewes at two guineas; the former prices at which they were allowed.

The wool has been sold this year unscoured at 4*s.* 6*d.* per pound. The size of the ewes somewhat under our pure Ryelands, but above several of our small breeds; heads sharp and well-shaped, with occasionally a black spot or two; wool externally having a dirty tinge, but without that red-brown hue which has been before mentioned; ears pendulous; perfect ewe-neck, with the sinking or cavity both before and behind the shoulder, the top of which is generally higher than the rump; capacious belly, the animal standing wide and well upon the legs; the rams generally of good size, some of them large enough for any purpose whatever, and of a great bone, but flat and symmetrical; several of them were of as good and useful form as need be seen, having compact loins and shoulders, and straight backs. Two or three individuals resembled very strikingly our Dorset and Hampshire stock; the characteristic velvet or silken gloss on the shorn faces of the rams was remarkable, and their countenance put one in mind of the fair-haired human complexion. Mouths by no means fine

And it has been observed, that the large tuft of wool covering the face of Merino sheep is extremely inconvenient in northern countries, where they have frequent heavy drifts of snow. And that it is Lord Somerville's practice to clip this and the leg-wool two or three times a-year, beginning about six weeks after shearing. But that in winter, and in very rigorous climates, it may not be proper to leave the head too bare and exposed, as it may produce disease. These clippings may be proper for inferior purposes, and the fleece be rendered more pure and valuable without them. The tuft on the head, and even the *throatiness*, or protuberance in the throat, characteristic of the Spanish sort, are, as it is asserted, discoverable, in degrees, in some of the native breeds, particularly the Ryeland, shewing its origin. And a good judge, Mr. Knight, contends, that the produce of a cross with this breed, and the *Archenfield* or true Ryeland sort, is extremely ugly, and, according to his information, subject to the foot-rot. On some rich pastures in Middlesex this has also been found to be the case in both the true and crossed breed.

The Mugged Breed or Variety.—This is a singular breed of sheep, which formerly prevailed throughout all the low lands of Northumberland. They had a short, coarse, curled wool, covering their heads, faces, and legs, and grew down to their feet; in form they resembled hill sheep; their shoulders low and sharp; sides flat; back rather arched; loins thin. It has been suggested, that this mugged appearance may have been the result of a Spanish cross. This sort of sheep has extended to Yorkshire; and traces of them are still visible, although they have long since given place to sheep of the long-woolled kinds. They are now chiefly met with in the northern counties.

The Welsh Sheep or Variety.—These, which are the most general breed in the hill districts, are small-horned, and all

over of a white colour. They are neat compact sheep. There is likewise a polled short-woolled sort of sheep in these parts of the country, which are esteemed by some. And the genuine Welsh mutton, from its smallness and delicate flavour, is commonly well-known, highly esteemed, and sold at a high price. But the fattening of the small Welsh sheep has not in general been found to answer in the southern districts of the kingdom. In short, this is a breed which stands in need of much improvement, and which is capable of admitting of it with much advantage to the sheep-farmers of that district.

The crosses of it should be with the larger finer woolled breeds, that afford good mutton, and be made with great care and attention. It is supposed by some, that the Welsh are the original of all the different breeds of sheep in the island.

The Irish Breed or Variety.—This is a breed of sheep, which is described in this way by Culley. These sheep are supported by very long, thick, crooked, grey legs; their heads long and ugly, with large flapping ears, grey faces, and eyes sunk; necks long, and set on below the shoulders; breasts narrow and short, hollow before and behind the shoulders; flat-sided, with high, narrow, herring-backs; hind-quarters drooping, and tail set low. In short, they are almost in every respect contrary to what he apprehends a well-formed sheep should be. The spirit of improvement in sheep-stock has however extended itself to Ireland, and there can be no doubt, therefore, but that they will soon improve this as well as other sorts of live-stock.

Indeed, since the period in which the above account of Irish sheep was given, many useful and important alterations and improvements have been produced by judicious selection and crossing in this sort of stock, in several different parts of that country.

However, independent of these numerous breeds or varieties of sheep, which are inhabitants of this island, there are in other countries many other kinds, which may be just noticed for the sake of curiosity, as they are occasionally seen in parks and pleasure-grounds in this intention. The more cold districts of Iceland and Russia afford a *many-horned breed* of sheep, mostly from four to seven or eight; having a coat of dark-brown coloured hairy wool, weighing about four pounds, and covering an interior one of short soft fur. Also in Russian Tartary, a large *lop-eared*, *polled* aquiline-nosed breed of sheep, somewhat resembling the Wiltshire and Dorset breeds in their shape, are produced, and which have a long thick wool, of a black and white mixed or roan colour, and in the place of a tail, a large cushion of fat occupying the rump; hence some naturalists have called them *fat-rumped* sheep. This and the broad-tailed breed are sometimes called the Kalmuc and Astrachan breeds. The projection of fat, in this, has an exquisite delicate marrowy taste. Some say the wool is rather short, not coarse, but having hair growing through it. They are said to be so prolific as to bring two or three young at once. And in Walachia, Crete, and through most of the Archipelago islands, there is a breed of sheep which have singular horns, twisted in a spiral or screw-like manner, standing in a perpendicular or diverging extending manner from the fore-part of the head, to some height. In size and shape tolerable, bearing a long shaggy but not coarse coat. Likewise in the extended districts of Persia, Syria, Egypt, and Barbary, the *broad-tailed* sheep are met with, the tail in some of which grows to the breadth of a foot, and to a length to bring them to the weight of from twenty to fifty pounds, on which account the shepherds are sometimes under the necessity of supporting

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ing them on a carriage to prevent them from galling and exhausting the animal. These appendages are mostly also esteemed a great delicacy, being of a nature between fat and marrow. Further, some of this breed of sheep, especially those of the mountainous parts, have a wool of extraordinary length and fineness, from which are made the expensive Indian shawls, and some other fabrics.

And the Guinea breed of sheep, said to be common in tropical climates, is large, strong, and swift, and though domesticated, are often found in a wild state; having coarse, hairy coats, short horns, pendulous ears, and a sort of dewlap under the chin.

What is called the *Madagascar breed of sheep*, is also of a good size, and well covered with a close pile of smooth glossy hair in the place of wool.

The *Buckharian breed of sheep* is also hairy, and kept in large flocks in Great Tartary. The island of Antigua has likewise a breed of the same kind. Sheep of this sort were imported from Spain by Sir Joseph Banks, with coats as sleek and smooth as those of a horse, and which never at any season exhibited the least appearance of wool or down, or any thing of a similar kind.

It may be noticed, that it has been well stated in a late practical work, that in the breeds of sheep there are evident differences in their sizes, forms, flesh, wool, and other properties, that admirably adapt them for different sorts of pastures, situations, and uses of the farmer. And that the large long-woolled breeds, from their being more slow, heavy, and tame in their dispositions than most other kinds, are in general the most proper for the rich inclosed pasture districts: the breeds which possess greater length in the legs, more activity in walking, and a less burthen of wool, are suited to the more elevated lands, such as the downs, moors, and heaths in different parts of the island, where the pasturage is less fertile and luxuriant; and that the small light carcassed hardy breeds are most adapted to the exposed mountainous situations, where the food is more sparing, and obtained with greater difficulty and expence. And in the Rural Economy of the Midland Counties, it has been observed that a very long-woolled breed of sheep, as the old Lincolnshire or Teeswater sort, is necessary also in the view of our finest worsted manufactures; and another, such as that of the *new Leicester*, for the inferior kind of grasslands, and the rich inclosed arable lands, where the folding system is not in use; for the supplying the materials of the coarser sorts of worsteds, stockings, baize, coarse cloths, blankets, carpets, and other articles of the same kind; while a middle-woolled breed, as the Wiltshire, the Norfolk, or the South Down, is wanted for the well-foiled arable lands, where the practice of the fold is in use, in the view of making cloths of the narrow medium kinds; a very fine-woolled breed, as the Herefordshire Ryeland, for the finest cloths; and the Shropshire, or some of the more hardy breeds, for the heathy mountainous situations. The Spanish and Cheviot sorts may also be proper in the last intentions. What is therefore chiefly necessary to be regarded in the introducing of new breeds of sheep, is to consider with attention the nature and situation of the pastures on which they are to be supported, and to carefully avoid making use of larger or finer breeds than can be properly sustained; as upon due management in this respect, much of the success in the improvement of sheep-stock must necessarily depend. Where bettering the form of the animal, and improving the quality of the wool or coat, are the principal objects, they may be effected by judicious crossing with proper breeds for the particular purpose, on the principles that

have been explained in speaking of the nature of breeding, and which is farther shewn below. (See BREED, BREEDING, and LIVE-Stock.) Indeed this last circumstance is one which should particularly engage the notice of the farmer in the business of stocking his lands with sheep, as it seems from numerous statements, that wool of the finest quality may be produced in this country by means of Spanish sheep, and their being properly crossed with our fine-woolled breeds, which is a matter of the greatest national importance, as affording a probable means of rendering us independent of the foreign supply of this expensive but indispensable article. The breeding sheep-farmer should therefore be particularly interested in promoting this sort of improvement, in all situations where the nature of his land will admit of it, which Lord Somerville has shewn may be the case in most instances where the short-woolled breeds of sheep can be properly kept, or probably on more than one-half of the pasture-lands of the island. And he has remarked that there is one inducement to this, which is that of its not interfering with the production of the most valuable sort of mutton, a point to which the sheep-breeders of this country have till lately been particularly attentive, almost without regarding the quality of the wool: as it has been found that the quality of the flesh in the different divisions of sheep inclines to the nature of the wool, the short-woolled sheep being close in the grain of their flesh, of course heavy in the scale, and in the taste high-flavoured; while the polled long-woolled sort are more open and loose in this respect, larger in size, and the mutton more coarse, and in general less saleable in the different markets in the kingdom.

In sheep there are certain good or bad qualities, properties, or dispositions which mark their value and importance in the view of the farmer, grazier, and breeder. That such certain peculiar properties and dispositions prevail, is well known to experienced persons of these descriptions, by sheep in exactly similar circumstances in every respect becoming more or less quickly in the state of fatness, &c.; as an improved disposition in them signifies an aptitude to convert their food or nourishment into flesh and fat. Thus, in a number of sheep of the same kind and age, under the very same management, when handled, a vast difference will be found in their condition and state of fatness, &c. Some will be in a state to go off many months before the others are ready, although put on the same land in equal flesh; and others, though kept far beyond the usual period of time, will never get into sufficient condition. The disposition of the former must, of course, be very beneficial and desirable to such sheep-farmers, as well as advantageous to the community, while that of the latter is quite the reverse. This is likewise the case in the breeding of ewes, as those which have it most are in the best state at the lambing time. But there are, it is supposed, some instances of exception in this and other descriptions of sheep, which possess good qualities, that have bad properties, which such sheep improvers as the above should also be careful in detecting, otherwise they may be liable to sustain considerable injury and loss: and it is frequently seen on killing different kinds of sheep, that there is great difference in individuals of the same breed and variety.

There are several circumstances which are supposed to form or contribute to this goodness of disposition in these animals; they must be well bred, or come from such as have good properties; they must not be permitted ever to be in a state of want of food, or be reduced in flesh; they must have constantly good food in sufficient abundance, the richer, to some extent, the better; they must have their

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frame or bone not too large for the quality of their keep ; they must have a due relative proportion of parts ; they must handle free and mellow in their flesh ; they must have a peculiar appearance of countenance ; and they must be perfectly tame and quiet. There are also other causes which in some measure conduce to this end, but they are of less certainty in their operation, such as the state and action of the blood in their systems, &c. The external forms and qualities of sheep, which shew a good disposition are, a smallness of the head, a thinness and shortness of the neck, a deep wide breast, a wideness over the shoulders, a broad, straight and deep carcase or barrel, a smallness of bone and feet, the joints moderately short, the muscles or flesh plump and full, with a thinness about the insertion : the skin middlingly thin and mellow, of a fine texture, and a clear red and white colour ; the wool of a yellowish-white appearance, a curly nature, and neither too long nor too short, but thickly set, the fat and flesh soft, with some sort of firmness in handling, and the countenance pleasant, and inclined to quietness.

The improved disposition or quality of sheep is promoted by taking them from poorer or inferior keep or soils, to such as are of a better and more rich kind, as in the case of seeds : but the removing of them from rich soils or keep, to such as are of a worse nature, has directly the contrary effect. The quality of the flesh, in one case, becomes soft and mellow, while in the other it gets more close and hard.

The nature and quality of the land or soil, when any breed of sheep are kept upon it for a length of time, will, it is believed, throw out the suitable size for it, and certain accidental qualities will occur according to its sort, which, when properly managed by the breeder, will afford an improved disposition in the animals. In such a case improvements may have a probability of being produced, by having the male smaller in size than the female, and by changing him from too good or rich keep, so that his constitution may be in some measure delicate, by the female having her nourishment regular, and so as at no time to be lowered in flesh ; and when a more full supply of food may be wanted, by the increase being moderate, so as to preserve rich keep for the young, in its advancing growth ; by breeding from such sheep as are the most kindly, shew the best disposition, and allow the fullest profit, on the particular soil or land on which they are bred and pastured ; by choosing and selecting the middle-sized sheep of the flock to breed from, and not the largest, as it is favourable to be rather under than over the quality of the soil or land for forming good disposition ; by refraining to breed from sheep displaying a bad disposition, or which have defects ; and by cautiously using for this purpose ewes which have had lambs, and are not too old, as disposition is supposed more likely to be produced from the second than the first lamb : and lastly, by the mode of breeding that is called *in* and *in*, or in the same line, which greatly contributes to form disposition.

In the degenerated form of sheep, the reverse of all this will, of course, mostly take place ; they will have these qualities or properties in a larger or smaller degree ; their heads will be generally short and thick, though occasionally rather long, and of a coarse nature ; the neck, for the most part, long, thick, and concave in the higher part ; the carcase long and thin, and the ribs flat, usually termed "flat-sided," while in improved sheep they bow out almost at right angles with the spine, in somewhat the barrel manner. Narrow shoulders, the loin not wide, the back not straight, and the belly gutty ; the breast or chest contracted, without being deeply let down ; the legs long, and thigh

not full or fleshy ; the flesh thin, of a close texture, and thick about the insertion of the muscular parts ; the feet large and coarse ; the flesh hard in handling, or what is sometimes denominated "sticky ;" the countenance far from pleasant, and the nature wild ; the wool coarse and hempy ; but capable of improvement by attention ; difficult, or requiring time in fattening ; the mutton often of good quality for eating, of a firm grain, sweet flavour, and abounding in gravy.

Sheep of this kind in general require a much greater quantity of food for their growth and support, and for fattening, than the improved sort, which is a circumstance that must evidently be disadvantageous to the breeder, grazier, and the whole community,

All such persons as are in the habit of breeding and fattening sheep, and have sufficient experience, find that they depend on the qualities or properties of their breeds for growth and improvement : some will not fatten at all, or be as long again in fattening as others, and this most commonly occurs in such as are not of the individual's own particular breed or kind. The degeneracy of sheep is readily seen and easily proved in the management of them. And some consider almost the whole of the breeds or varieties of this country to be more or less in this state, or that there is not probably more than one which can be said to be truly in an improved condition, on the exact principles of improved forms.

This degeneracy is in a great measure the consequence of neglect or error in the breeders and managers of sheep, as when they thrive and fatten well, that is to be attributed to proper selection, suitable keep, and a due regard to the true and exact principles of management : but when, on the contrary, they do not go on to fatten well, but decline into a state of degeneracy, it proceeds from neglect, starvation, and the want of such true principles in their regulation and management. As though a lamb may possess good proportions, yet from neglect and other causes, it may be reduced to a state of poverty ; which, when it takes place, its degeneracy may be dated from that period, as its constitution is injured, and an unfavourable action is given to the system. The longer it is kept in this state, and the more frequent the changes it may undergo, the more conspicuous will its degeneracy be. Nature, then, it is supposed, will throw out indications in conformity to this decline ; the head will increase in size in a greater proportion than the other parts. The body will become thin and long ; the bones will be irregular in their growth ; and there will be a want of symmetry in the whole system. The causes which are the foundation of such degeneracy are believed to be these ; the rams being too large in size, and kept in too high a manner ; these and the ewes not being well adapted to the soil, but too large ; the lambs being kept in an occasional state of want or starvation ; the neglect in not breeding a proper number for the purpose of selection ; the ignorance of breeders in regard to the true principles, in respect to the forms of sheep or their management ; the frequent crossings of varieties of the same breed ; the presence of dry summers and hard winters, which tend to incline the constitution to an unfavourable action, and consequent degeneracy ; and the want of good water, which is very prejudicial to sheep.

It is suggested, that it is to be lamented, that almost all the breeds, in every situation, are found to have one or other of the bad properties or qualities already noticed. However, of all sheep, the shape or form of that of the Indian sort is probably the worst which is produced ; and the Wiltshire, the Welsh, and many other breeds, are not without partaking of too many of the properties and imperfections of the same kind, in addition

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to their other defects. It is to be hoped, however, that a more active exertion, and investigation of the matter, in sheep-farmers, will in a short time be productive of the requisite improvement in this sort of live-stock, and that by having recourse to superior modes of breeding, rearing, and management, an equal pace will be kept in their advancement with that of any other branch of the farmer's art.

It may be noticed, notwithstanding what has been already said, that it is stated to be almost universally and unanimously the practice of the breeders on the South Down hills, to exchange the rams every third, fourth, or fifth year, as it is conceived essentially necessary to the preservation of the health, the size, and the bone of the flocks, though quite contrary to the maxims laid down by some eminent sheep-farmers, who are strenuous promoters of the method of breeding *in and in*, or in the same line, continually, when there is a good breed or sort of sheep. Flocks that are stated to have been nearly ruined in constitution and habit by this means, are said to have had a wonderful improvement by the change of the rams. See BREEDING.

The question concerning the best and most profitable size of sheep for the purpose of the grazing farmer, and for producing the largest acreable quantity of food and other products for the use of the community, is a matter of very great interest and importance. Though it cannot probably be disputed but that different sized animals of this sort must be had recourse to for different situations, sorts, and qualities of land, &c. yet the considerate sheep-farmer will, perhaps, mostly perceive the propriety of having his ground stocked with not too large a sort of sheep. It will most likely be the best way for such farmers to fully consult the nature and properties of the soils of their pasture or other lands, previously to their fixing upon the size of their sheep-stock which will be the most suitable and advantageous for them, as where their pasture or other grounds are inferior in their nature and richness, the size, of the live-stock of this sort, which is admitted, cannot with propriety be so large as in the contrary circumstances, even where light stocking is practiced, for hard and pinching seasons will reduce the stock to the quality of the land. Though many are advocates for very large-sized sheep, probably from want of sufficiently considering the nature of the subject, it is never found that those who stock with such sized animals, ever produce so much mutton on the acre, or gain so great a profit on it, as those who make use of a middling-sized stock. Some indeed think that four small-sized sheep may be kept on the same extent of land which is required for three large ones; and that in some cases, allowing the sheep to be equal in disposition, the same number of small ones, of about nine stone each, may be fattened on the land that will barely be sufficient to feed three of from ten to eleven stones. Small-sized sheep-stock have also many other advantages attending them. Many make complaints against sheep with improved forms, such as the new Leicester, as being too small, from the mistaken idea of their close form, as although they may be short and compact, there is a greater width and depth of carcase in them; by which they do not come much, if any thing, short of the weight of the more apparently large breeds.

It is unquestionably a great error and defect in the sheep-grazing practice to choose sheep of too large a size for the constitution of the soil, and the quality of the keep which it affords. The nature of keep will indeed itself be the cause of different sizes in sheep-stock, if they be steadily maintained on the same sort of land for some length of time, and this in some measure has produced the differences of size in the different breeds of this animal.

The particular advantages of the different sizes of sheep
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may be summed up somewhat in this way. Those of the large sort are supposed capable of being kept in equal proportion, on the same quantity of land, and of bringing more money at the market, than the smaller breeds; they are likewise conceived to fatten in a more kind manner. If the first of these conclusions were true, they would certainly have a decided superiority, but the result of well-made trials, with equal proportions on the same pastures, shew the contrary to be the case. And in regard to the latter, it has probably proceeded from its being noticed that the largest sheep are mostly the strongest and best shaped, without considering that they are always below the quality or constitution of the soil or land on which they are fed or fattened; hence it is by no means in favour of large sheep on all kinds of land. And though it is somewhat generally allowed, that two small sheep of the same breed will equal in weight one large one, yet the latter will have less offal in proportion than they, which is certainly a desirable property in large flock of this kind.

Small sheep-stock are however more active, and feed closer than large, as well as on food which is of an inferior quality: they are capable of being stocked in the proportion of three to two on the land; they will produce more meat on the acre, and be more hardy than large breeds; they injure pastures less than large sorts; they will, where the proportions are the same in relation to the sizes, soonest become fat in the smallest, in any two sheep. This may probably be concluded as always the case, where the regularity of form and proportions are equally good and exact: as small sheep reach the state of maturity sooner than large ones, the smaller breeds are ready for sale five, six, or more months before the large, which is beneficial in every way: the smaller breeds of sheep are almost constantly preferred by the butchers, as the mutton is more suitable, saleable, and desirable at particular seasons, and as having two fifth quarters instead of one, where the weights are equal. It may, therefore, upon the whole, be considered as the interest and advantage of grazing farmers in general to breed, rear, and fatten sheep which are of the middling size, however they may have hitherto been led away by other circumstances, such as great size, extreme fatness, &c. without sufficiently taking into the account the expence at which they are produced.

What regards the *proof* of sheep is more the interest of the butcher than the grazing farmer; but it has much to do with the difference of breed, as all the more thin-fleshed breeds of sheep, as the South Down, the Norfolk, the Welsh, and several others, mostly die well for the advantage of the butcher, while those of the fleshy sort, which have improved dispositions, such as the new Leicester, &c. commonly die to his disadvantage; so that where the great object is proof, such breeds must be chosen as approach the most to the former. It is not, however, probably the breed simply, but the form of the sheep that gives the proof. But as such sheep as afford great proof mostly require a longer time in fattening, the grazing farmer should be careful not to breed or purchase such sheep as are so formed as to convert their food into tallow, in the place of enlarging the size of their muscular parts, and producing meat of a sufficiently fat quality.

The age of sheep has also much to do in the proof which is afforded by them, as the older they are, in general, the better they die in this particular, as their full growth allows the nourishment to go for fat or tallow, according to the nature of the sheep, as where the form is inclined to be bad there will be more tallow, but where the disposition has a tendency to be good, more fat produced on the outside. Keep has likewise some influence on proof as the best pastures, and such

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as are the clofett flopped, are found in common to afford fheep that give the beft proof, but it has probably lefs effect in this way than is generally imagined, as particular breeds give a fuperiority of proof on poor lands, to that of others on very rich. Time has confiderable effect in giving proof to fheep, as by it fat is enabled to be collected and formed internally; but difpofing of the animals at fhort periods conftitutes the great advantage of the grazing farmer, and he has no reafon to breed and fatten his flock for the benefit of the butcher and other dealers in tallow. The management in regard to breeding and croffing, as well as the nature of the wool, are faid to influence the proof in thefe animals, as where the more ordinary forms are adhered to, the proof will be greater than in the contrary circumftances, as they have a greater tendency to form tallow and loofe infide fat. And though fome think long white watery wool favourable to proof, others fuppofe it the contrary, as denoting a difpofition to fatten quickly, and as preventing infide fat by taking away the nourifhment, thereby concluding fine fhort-woolled fheep more difpofed to afford good proof. The good or bad forms and feel of particular parts, as of the head, the neck, the breaft, the back, the barrel, the bone, the fkin or pelt, and the flefh, often afford indications of proof, though not always fuch as are certain; 'as when the firft is large, the fecond long and thin, the third narrow, thin, and high, the back thin and ftraight, the carcafe thin and not well rounded, the bone long and large, the hide or fkin fticky and hard, and the flefh harfh. But thefe different indications of proof cannot, it is evident, always be wholly depended on, as fheep may have one or more of the marks or properties which denote good proof, but which may be counteracted by others that favour difpofition and other fimilar qualities to the contrary; confequently where two fheep are fimilarly formed, that which has the largeft head and firmeft flefh may moftly be concluded to give the beft proof. The opinions on proof ought, in fact, constantly to be formed from the greateft combination of the marks of it met with in the particular animals examined.

Perhaps, fo far as proof is capable of being judged of before the animals are killed, it may be known by the feel of the fat glandular part, which extends from the bottom part of the neck to the foulder, which in lean fheep is fo very fmall as fcarcely to be felt, while in thofe that are properly fattened by fufficient time, or *foaked*, as it is fometimes termed, there is a different fized cushion or projection of the fame fat glandular part extending to the thick portion of the foulder; by the feel on the ribs and tail or dock, which, when it is thick, fat, and mellow, the fheep will commonly, it is thought, die well for proof. A thick loin is fometimes alfo thought a mark of proof in the kidney and weight. The feel of the fore dug of barren ewes and the cod of wethers, likewise fhew, it is thought, proof. Many of thefe marks muft, however, be allowed to be precarious and uncertain.

It cannot on the whole be doubted, from what has been ftated on the fubject of proof, but that the interefts of the butcher and the grazing farmer are at variance as matters ftand at prefent, as what is the gain of one muft be the lofs of the other, where the thing is well understood.

In the Agricultural Survey of the County of Norfolk, lately publifhed, it is noticed, that the South Down breed is getting rapidly into the poffeffion of all the country from Swaffham to Holkham; but that from Brandon to Swaffham many Norfolks remain. However, fome mixture was obferved even in that diftrict. And it is ftated that Mr. Coke is well fatisfied of the advantage of the breed from Leicefter

ewes and Bakewell tups. His flock of 160 new Leicefter ewes produced, in 1802, 100 lambs; his flock of 630 South Downs produced 830 lambs living in June. The fame farm, it is added, yields a moft interefting comparifon between Norfolks and South Downs; his former flock was 800 Norfolks, *SELLING all the produce*: he planted 700 acres, and now has 800 South Downs, *KEEPING all the produce*. Further, that his new Leicefter hogs and theaves produced 8lbs. of wool each in the fame year, yet they had been hard kept on feeds fed very bare. And it is ftated, that though he had a high opinion formerly of the crofs between the new Leicefter tup and Norfolk ewe, now (1803) his opinion is changed from much experience; fo that he prefers the crofs of a South Down ram on a Norfolk ewe to that of a Leicefter ram. And it is added, that Mr. Hoftie has had the fame crofs, and they come to 32lbs. a quarter, at two-fhear. He put a Norfolk tup and a Bakewell tup at the fame time to the fame parcel of Norfolk ewes, and at St. Ives fair fold the lambs fat at fix or feven months old, and the Bakewells brought juft double the price of the Norfolks. In April 1799, Mr. Coke, on fending Norfolk, South Down, and new Leicefter three-fhear wethers to Smithfield, that had been fed together, the return was:

	£	s.	d.
Average per head, Norfolks	-	-	-
Leicefters	3	0	0
South Downs	4	2	2
Ditto, fleeces included, the others being in their coats	3	7	2
	3	15	2

And in May following above 100 going, the South Downs beat the new Leicefters by 2s. a-head. It is alfo obferved, that at Waterden, Mr. Money Hill, with about 500 acres lefs land than at prefent, kept 27 fcore breeding Norfolk ewes, and fold the produce of lambs: now he has 35 fcore South Down ewes, and keeps their produce, felling his wool at 5s. a tod more than the Norfolk. And further, that Mr. Bevan, in 1792, had a South Down flock, of 30 fcore, on one farm, and having a flock of Norfolks on an adjoining farm at Knattifhall, he had an opportunity of comparing the wool exactly: 34 fcore of Norfolks produced 43 tod at 28lbs.; and 34 fcore of South Downs produced 61 tod; which 61, kept till November, became 64, but the fummer very wet.

	lbs.
South Downs	1708
Norfolks	1204
Superiority, juft $\frac{3}{4}$ lb. each	504

Alfo that in 1791, the fhepherd would not let his own Norfolk ewes take the South Down ram; but in 1792 he was ready enough. He faid they would eat harder than the Norfolks; and would eat what the Norfolks would not; that they are more quiet and obedient than the Norfolks; fo that he has done with them what he could not do with the Norfolks; fold them almoft to an inch without hurdles. And that a neighbouring farmer bought three rams of Mr. Bevan, at 5l. 5s. each; but afterwards repenting, becaufe they would *ftain* his flock, Mr. Bevan offered him 6d. a-head, for all their lambs, more than he fold his Norfolks for, in the fame flock, at Ipwich fair. The offer was accepted; the price proved 6s. 3d. for the ewe lambs, and 9s. for the wethers. Mr. Bevan refold the ewes for 9s. and the wethers for 10s. 6d., or 2s. 1 $\frac{1}{2}$ d. a-head in favour of the half-breds. Further, that when his fheep were Norfolks, he kept 500; but in 1794, he had 960 South Downs. That the produce

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duce of 116 ewe lambs, bred by Mr. Bevan at Riddlefworth, 1792, was :

	£	s.	d.
Wool, 12 tod 16lbs. -	26	8	0
48 Lambs, fold for -	32	2	0
5 Ram lambs, ditto -	8	8	0
6 Refuse ditto -	2	10	0
2 Refuse shearlings ditto -	5	10	0
10 Good ditto -	10	10	0
1 Ditto -	1	0	0
87 Ditto -	91	7	0
105	177	15	0
9 Died } -	57	14	0
2 Dunt } -			
116	120	1	0
Actual profit -	120	1	0

Farther, it is also added, that he was early in trying South Down sheep, but finding them tender at lambing, went into a new Leicester cross; these he abandoned, and got back to the South Downs, but still esteems them a tender breed, and that they ought to have yards sheltered and littered for lambing in bad weather; remarking, that all the farmers he knows on the South Downs have these yards for that purpose. It is likewise stated, that Mr. Bircham, at Hackford, declares against having any favourites; he has generally bought Norfolks, and half-bred lambs; some few South Downs, but they did not answer: has had some Leicesters: any sort he can get worth his money. Little farmers, who keep a few sheep, find the polled breeds very convenient from their quietness, and therefore prefer them. Norfolk lambs bred near Cromer, bought by Mr. G. Jones at 14s., were run on stubbles in the autumn, and put to turnips at Christmas, then to layers of the first year, probably as the best food for sheep, and sold shearling wethers at Michaelmas at 55s. each; 20lbs. to 24lbs. a quarter. And colonel Butler, at Haydon, is said to be convinced that Norfolks answer better than South Downs: shearlings sometimes affording 20lbs. and 25lbs. a quarter, and 19½lbs. of tallow; he has a breeding flock of 400, and fold his wether lambs at 26s. and his ewe lambs at 24s. Mr. Johnson, of Thurning, has 40 score of South Downs, which he has been rearing these six years, having bought many ewes, and got good tups. He has, however, a good opinion of Norfolks, and will not be surpris'd to see them come into fashion again. In May 1792, he fold two-shear Norfolks at Smithfield for 3l. each. He admits their rambling disposition, which is much against them; and he is clear that he cannot keep so many on his farm as of South Downs. The South Down wool is not, on good keep, so good as Norfolk wool, but the fleece is heavier. Five years ago he got a lot of Yorkshires from the Wolds, white faces, polled, and the wool very coarse, but they threw wonderfully; never having had any sheep that did better, inasmuch, that he was sorry when he parted with them. Norfolks, he thinks, will bear folding better than South Downs. The latter will, however, come to hand rather sooner, but not on ling: has had three-shear South Downs of 28lbs. a quarter. Also at Snettisham, Mr. Styleman, the writer asserts, keeps 2000 of various breeds, South Downs, new Leicesters, and half and half; in number considerably more than when, on the same land, he kept Norfolks: his farm may, and probably does, produce more sheep-food than it did at that time; but he is perfectly clear in the great superiority of the number, this circumstance deducted, and that the profit is considerably

greater; and he is clear also in the superior hardiness and kindliness of feeding of the new breeds. Of all cross-breeds, he thinks the first cross of the Leicester tup on the Norfolk ewe the best, and that wool now (1802) sells at 46s. a tod; fleeces 4lbs. And at Hillingdon; all are either Norfolks or half-breds, a Leicester tup on a Norfolk ewe. Captain Becher thinks there are no sheep in the island which the Leicester will not improve. He has grazed many Wiltshires, and thinks them the best of all for cole-grazing in the fens. But Mr. Beck, of Castle Rising, has had South Downs thirteen years, beginning with some from Mr. Tyrels, of Lamport, and has imported three or four times since. He has now 800, and is quite convinced of their superiority to Norfolks: when he was in that breed, he had not half the number; but after abating fully for improved husbandry, and every other circumstance, he is clear that there is a superiority of four to three. His fences are and must be bad, and in such a farm quietness is a vast object: his farm 486 acres. He gained the first prize for ewes, both the last and this year at Swaffham, and also at Holkham. The surveyor examined his flock attentively, and it certainly is a very beautiful one. His wool now averages eight to a tod, equally of hogs and ewes: his Norfolks totted twelve: he is clear that, take the country through, they average half as much again as Norfolks. Before he took the farm there were fifty sheep on it, and a dairy of cows. What an improvement! However, in the vicinity of Downham are found all sorts of breeds: towards the river, Lincolns and Leicesters; higher up, Norfolks and South Downs. Mr. Saffory likes the South Downs best, but thinks that if as much care and attention had been exerted to improve the breed of Norfolks as the South Downs have experienced, they would by this time have been a very different sheep. Norfolk three-shear wethers fold in April last at St. Ives, at from 4l. 4s. to 4l. 10s. each. At Bretenham, Mr. Twist keeps 68 score of breeding Norfolk ewes on 1800 acres of poor land. He had a South Down tup some years ago from Mr. Crow, but he could not perceive that the breed did better than Norfolks, though they stood the fold to the full as well.

In the district called Marshland, Mr. Dennis, of Wigenhall, St. Mary, grazes only the best Lincoln wethers; he buys from May-day to Midsummer; keeps them over-year, clipping twice, average price 50s. to 60s. and sells at 65s. to 75s. getting 18lbs. in the two fleeces: his good land will carry six *per* acre, on an average, in summer; in winter, two on three acres; and these will quite preserve their flesh; if the season be favourable, will get something: he thinks that there is no other breed so profitable here; even a strain of the new Leicester is hurtful, as they will not stand the winter so well. Sheep the chief stock, though some Lincoln bullocks. He never gives hay to sheep, nothing but grafs; 32lbs. a quarter his average of fat wethers. But Mr. Swayne, of Walpole, prefers the cross between Lincoln and Leicester: he buys them shearling-wethers, about Lady-day; last year 3l. to 3l. 10s. each, but has had them at 36s. and 38s. He clips the best twice, three to a tod, which he likes better than heavier fleeces of sheep demanding more food. Some give 17lbs. or 18lbs. of wool. At Michaelmas he culls the worst, or buys cole for them, if reasonable; sells all by Midsummer, making 8s. or 10s. a-head, when bought in high, besides the wool. Very few beasts are kept.

Also in Hertfordshire, some prefer the South Downs to Wiltshires, as the latter have the goggles often, but the South Downs never. But the long-legged Wiltshires suffer less in folding on wet land. But in other places the result of the comparison seems to be, that South Downs do better on

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grafs-land than Wiltshires, and will in that case thrive more, and better support the hardships of short food; but on arable land with plenty of turnips, clover, rye, tares, &c. in ample provision, the Wiltshires are more profitable than the South Downs. The Wiltshires are large sheep, and consequently require to be well kept. In the trials of Mr. Hale, of King's Waldon, for five or six years, nothing beats South Downs, where there is much grafs; but on artificial grafs and turnips, without a breadth of natural grafs, they will not do like the Wiltshires; for which reason Mr. Roberts, on his own farm, keeps Wiltshire ewes, and crosses them with South Down rams; so that they lamb in March. When put to grafs they are folded, and some lambs are sold at 3*s.* in the beginning of harvest; some twins at 3*s.* 6*d.*; and the best are kept. He approves so much of them, that he intends to continue them. Mr. Hale's flock is a capital one, and the wool remarkably fine. And between thirty and forty years since, Mr. Calvert of Albury had Lincoln sheep, but sold them, from conviction that they did not answer: he was then, for about twenty years, in the Wiltshire breed; and lastly, he changed these for the South Downs, which he has had for the last seven or eight years, and prefers them to all. He has no other but lord Pelham's breed, both lambs and ewes, and considers the more modern attempts to raise a finer race, as likely to prove mischievous: he will not have any thing to do with them. His six-toothed wethers weigh eleven stone and a half. He finds the breed extremely healthy: they very rarely die; and are subject to much fewer distempers than the Wiltshires. And Mr. Smith has changed Wiltshires for South Downs. He has about 400 in all, some of them Wiltshires; they are *fed and worked together*, and folded on wet lands. The South Downs in exceeding good order, but the Wiltshires very inferior. But about Barkway, South Downs are not yet introduced; Mr. Whittle, however, gave it as his decided opinion, that *feed and work* Wiltshires and South Downs together in the same manner, and the former will prove to be the most profitable; the latter are much injured by the dirt, as they are too short in hair and legs; it was tried at Kimpton Hoo, and such was the result. He has sold Wiltshire wethers thrice shorn, at 7*l.* 1*s.* each. And Mr. Doe, of Bygrave, keeps Wiltshire ewes, which he crosses every year by new Leicester rams; but goes no farther than the first cross. These answer greatly, whether the sale be fat lambs or shearlings. He does not approve of South Downs, on account of their inferior weight.

However, from the high character which South Down sheep have lately attained, it may not be uninteresting to give Mr. Young's account of their first introduction into Norfolk. He remarks, that when once an improvement has spread so much as to become an object of importance, there are generally many claimants for the merit; and if such claimants are only heard of many years after, but little attention is due to them. With regard to the neighbouring county of Suffolk, he can speak with some accuracy, but should not mention it on this occasion, were not the fact connected with the introduction into Norfolk. In May, 1785, he published an account of an observation he had made in 1784, the year he brought them into Suffolk from Suffex; and it being printed at the time, the fact will admit of no doubt. He recommended them strongly to every gentleman and farmer he conversed with on the subject; and at his persuasion, as many well know, the late Mr. Macro, of Barrow, purchased that flock which the earl of Orford, after his death, bought and established at Houghton. Mr. Macro died in 1789. And in a paper printed in the Annals, in 1790, he (Mr. Young) remarks, "I have had six and twenty

years' experience in Norfolk sheep, and once thought so well of them, as to carry them into Hertfordshire; but in the advance of my practice, I began gradually to doubt the superior merit of that breed. I thought that of all the sheep which I had examined particularly, none promised to answer so well for the general purpose of the counties of Norfolk and Suffolk as the South Downs. I began the import in 1784, and in 1790 had 350. I had too much friendship for the late Mr. Macro, to advise him to try any experiment that I was not clear would answer to him. I repeatedly urged him to try the South Downs; he listened to me with attention for some time, but would not determine, till having seen the number I kept proportionably to the quantity of land, and at the same time with some Norfolks, it proved to him that the South Downs were worth attending to; and the journey I persuaded him to take into Suffex, giving him an opportunity to converse with various noted sheep-masters there, he determined to make the experiment: he went over, previous to Lewis fair, and bought a flock of them. The lambs sold well at Ipswich fair. Mr. Le Blanc, at Cavenham, also turned South Down rams to 700 Norfolk ewes: he found no difficulty at Ipswich; and his shepherd, after three years' obstinate preference to Norfolks, gave up his old friends, and actually set South Downs for his shepherd's stock. Whether the breed should or should not, in the long run, establish itself, I have the satisfaction of feeling that I have done no ill office to my brother farmers by introducing it. From the daily accounts I receive, I have good reason to believe that it will be established."

The farmers in Oxfordshire employ many different sorts of sheep, as the Wiltshire, Berkshire, and some others; but the South Down and new Leicester, and their crosses, are fast driving the other sorts out of the county, as being more profitable in the number that can be kept on the same extent of land, in fattening more expeditiously, and at earlier periods of their growth, in folding equally well, and in the value of their wool. Some, however, think, that the long-woolled sheep are very profitable on farms of the stone-brash kind, and have large flocks of that sort. In this district, in general, the quantity of sheep that is kept is large, in proportion to that of the extent of the farms.

In Berkshire, the large Wiltshires and the breed of the county are giving way to the South Down, and other small-sized breeds, as yielding more profit, fattening quicker, and doing better in general. The new Leicester, so far as they have been tried in proper situations, have also answered well. Some crosses of these smaller breeds have likewise been employed with considerable success.

In the county of Essex, several sorts of sheep-stock are made use of by the farmers, as the Norfolks, Wiltshires, Lincolns, new Leicesters, South Downs, and different crossed kinds; but the superiority and advantage of the Downs are now almost every where admitted. The Dishley or new Leicester sort is also held in much estimation in many places, especially where the soil is of a dry light nature; as the wether lambs of this breed, and that of the Downs, on being constantly kept together on the same land, until they became fat, the former were invariably drawn off the first, and were the fattest and heaviest. Besides, rams of this sort are preferred for being put to Norfolk ewes, to those of the other breed; as the produce is larger, and sooner fat. The new Leicesters are by some, however, thought inferior to the South Downs, as being such bad breeders; one hundred of them only producing eighty lambs, while the same number of the Downs will bring one hundred and twenty.

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In the district of Devonshire, many kinds of sheep, besides the native breeds, are had recourse to by the farmers, as the Dorset, new Leicester, Cotswold, and South Down, with crosses of these and several other kinds, as may be seen by the table introduced above. The last of these breeds seems to be fast making its way, in some places where the land is dry, in this county too; but other sorts and crosses are held in great favour for different purposes and uses, as for mutton, wool, feeding, and different others.

In many of the northern and other counties, as in Yorkshire, Lancashire, Cumberland, and several others, the new Leicester, South Down, and different improved breeds, are now beginning to be had recourse to, and supplanting the old native or other kinds.

The trials have hitherto been so few, in regard to the comparative advantages of different breeds of sheep, in what regards the relative proportion of food to mutton, offal, tallow, live and dead weight, and many other points, that the stock-farmer has been kept much in the dark. In order, however, to fully clear up and ascertain these essentially important matters, so absolutely necessary to the perfect knowledge of the subject, the earl of Egremont lately ordered the following experiment to be made. The wether lambs of the preceding spring were ordered to be put up by themselves, into a paddock adjoining the Home-park. There were of

South Down wether lambs	29	—	12 best saved for rams.
New Leicester do.	25	—	6 do. saved for do.
Half-bred new Leicester and South Down wether lambs, from same get as above	12	18	
Romney-Marsh wether lambs, out of Mr. Wall's ewes by his own ram, which, from the custom there, of not having artificial food, were not lambed till May, being therefore nearly two months younger than any of the rest			7
			73
Deduct rams			18
			55

These fifty-five wether lambs, put into the paddock in the month of August, were brought up and examined on the 25th of the June following, when it was found that twelve of the South Down, and all the half-bred South Down and new Leicesters, were in a marketable condition; but that none of the true new Leicester or Romney-Marshes were in any proper state for sale.

	£	s.	d.
Of the South Downs, ten out of the twelve were sent off to Smithfield market, some days afterwards, and fetched <i>per</i> sheep	1	14	0
Of the half-bred new Leicesters and South Downs, ten of the twelve, sent a week before to the same market, brought <i>per</i> sheep	1	13	0

It is remarked, that the half-breds were seemingly the better sheep; but they went to a bad market, when the prices were low.

The two of the half-bred sort that remained, and which were in equal condition for the market, were kept back, as forming part of the trial, detailed next column.

Here, however, it is necessary to pause, it is said, as the experiment is already decisive of one point, namely, that at this age of six months, as noticed above, those two breeds were so much more advanced than the others, that they might be profitably cleared from the land, and a fresh stock sent in. It will remain, it is said, for the future progress of the trial, to ascertain whether such fresh stock would not pay better, than continuing the old; and for this purpose it may be calculated, that the sheep now sold at the above market at 34s., with the addition of 3s. for wool, pay for sixty-four weeks 7d. the pound from the time of their being lambed. This is noticed to be a very considerable profit; and that if it should turn out, that keeping them much longer is not attended with an advantage somewhat proportionate, it will clearly prove the superior benefit of that breed, which may be got rid of at so early an age. And it is thought worthy of remark, that not one of the true new Leicesters being in any condition fit to be drawn off in the first lot for market, is a circumstance most strangely contradictory of assertions without end, that fattening at an early age is almost peculiarly a characteristic of that breed.

But to proceed with the trial.

	Weighed lbs.	Ten Weeks' gain. lbs.	Gain per 100 lbs. lbs.
Sept. 7. South Downs	273	33	13
Leicesters	258	46	21
Half-breds	294	34	13
Romney-Marshes	270	34	14

It is noticed, that this result is not very different from what might have been expected; for as the Romney-Marshes and new Leicesters were very much behind the South Downs and half-breds ten weeks before, it was natural to suppose, that when they did begin to thrive, they would do it in a more rapid manner.

	Weighed lbs.	Loss in 12 Weeks. lbs.	Loss per 100 lbs. lbs. oz.
Dec. 1. South Downs	264	9	3 0
Leicesters	251	7	2 0
Half-breds	282	12	4 0
Romney-Marshes	269	1	0 6

It is considered as very material, in all trials of this nature, to note the losses, as making such attempts double, by not only shewing when the sheep thrive, and which do best, but equally by marking when they go backward, and which breed is most capable of withstanding those circumstances which operate against them all. In the above scale, the difference is not very material. In that lot which did the worst, the loss, it is said, amounts to about 1d. *per* week; but that it is unfavourable to every lot, that in a period including the best part of the autumn, as sheep should thrive, when the weather is suitable, deep into the month of November, none of them should have gained, which they ought to have done considerably. Their pasture, however, though good in quality, was bare.

The result being found, the sheep were ordered to be starved for twenty-four hours; and after which, to be turned out for other twenty-four hours; proposing, by thus weighing them, to ascertain the quantity of food eaten, and the quantity voided: it being rightly conceived, that if, upon the repetition of such trials, there existed any remarkable superiority, or any material difference, between the respective breeds, it might throw some light upon the general inquiry.

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	Loss by Starving.		Loss per 100 lbs.		Weights.		Gain.	Gain per 100 lbs.	
	lbs.	lbs.	lbs.	oz.	Dec. 1st.	June 19th.		lbs.	lbs.
South Downs	-	-	8	3 0	264	299	35	13	
Leicesters	-	-	11	4 0	251	275	24	9	
Half-breds	-	-	17	4 6	282	310	28	9	
Romney-Marshes	-	-	5	0 14	269	317	48	17	

The sheep were then turned out, and twice weighed, after twenty-four hours eating each time.

	Gain in the	Gain in the	Total.	Gain per 100 lbs.
	1st 24 Hours.	2d 24 Hours.		
	lbs.	lbs.	lbs.	lbs. oz.
South Downs	1	6	7	2 10
Leicesters	6	6	12	4 13
Half-breds	10	9	19	6 12
Romney-Marshes	0	5	5	1 13

The result of these weighings shew that the half-breds lost most, and gained most; that the Romney-Marshes lost least, and ate least; that the Leicesters lost more than the South Downs, and ate more. It is suggested, that such trials must be repeated many times, before conclusions can be fairly drawn. How the Romney-Marshes, in the first twenty-four hours, could gain nothing, is not to be accounted for, as the weighing was performed with accuracy.

Weighed again in the succeeding month of March, in the next year, which, as it will mark the loss sustained by the severest part of the winter season, deserves particular attention. They were at grass the whole of the time.

	Weighed	Loss in 4 Months.	Loss per 100 lbs.
	lbs.	lbs.	lbs.
South Downs	253	11	4
Leicesters	214	37	14
Half-breds	253	29	10
Romney-Marshes	254	15	5

The result here shews that the Leicesters, which is remarkable, suffered the most; from which it is thought, that it may fairly be concluded, so far as one trial goes, that the great peculiarity of that breed is not by any means what has been contended for, a capability of supporting itself on little food; but that, on the contrary, it demands a very plentiful nourishment, and will bear the want of it worse than any of the other breeds.

The half-breds are the next in the order of demerit: the South Downs are the best of all.

	Weighed	Gain in 12 Weeks.	Gain per 100 lbs.
	lbs.	lbs.	lbs.
June 19. South Downs	299	46	18
Leicesters	275	61	28
Half-breds	310	57	22
Romney-Marshes	317	63	24

The period from the 30th of March to the 19th of June necessarily forms another interesting portion of the trial, as it takes in the whole flush of the spring growth of grass. Here the result, it is said, is also remarkable, and strongly in confirmation of the preceding observations on the Leicesters; for when in favourable circumstances in regard to food, as in the present case, from season, they exceed all the rest. The Romney-Marshes, however, approach near to them; and as these had lost, in pinching circumstances, much less, their superiority upon these two weighings seems to be clearly ascertained; and which will appear the plainer, by comparing the weight of December 1st with that of June 19th.

The merit of the Romney-Marshes, in this stage of the trial, is, it is said, conspicuous. The South Downs are next, the Leicesters and half-breds being equal.

	Weighed.	Gain per 100 lbs.	
		lbs.	lbs.
Sept. 7. South Downs	316	5	
Leicesters	312	11	
Half-breds	310	8	
Romney-Marshes	337	6	

The Leicesters here, it is observed, continue to take the lead throughout the summer. So long as the food is plentiful, they beat all the others; and this part of the experiment goes to prove a most important point, which has indeed been long suspected, that in good situations no breed is so profitable to the grazier. The half-breds are found the next to these.

The five remaining Romney-Marshes were sent to Smithfield on the 4th of July, and brought 48s. each; and on August the 7th, ten of the remaining Leicesters went at 48s. each, also seven at 40s. each; so that the profit for two years and two months food, added to the value of the wool, is, it is said, 5d. and a fraction per week for the Romney-Marshes, and from 4d. to 4½d. for the Leicesters, from the time of their being lambed.

The former part of the experiment will shew that the South-Downs and half-breds in 64 weeks age gave 7d. per week profit; and that the Romney-Marshes and Leicesters, kept until they were nearly twice the age of the others, namely, 108 weeks the former, and 117 the latter, only gave a profit of from 4d. to 5d. per week. This is, it is said, a most interesting circumstance, and which manifestly tends to ascertain how much better it would be to the grazier to get rid of these sheep at an earlier age, and re-stock his land with those which are most saleable at the earliest period.

November 21st to December 25th. Weighed again.

	Weighed	Gain.	Gain per 100 lbs.
		lbs.	lbs.
South Downs	320	4	1
Leicesters	326	14	4
Half-breds	346	6	1
Romney-Marshes	331	lost 6	lost 1

This, it is supposed, is perhaps the most striking period of the experiment. By the last weighing, if turned to, it will be seen that the Leicesters had outstripped all the rest, and that the superiority is still maintained.

The above details of the practices of different districts, experiments, and remarks, must place the profits and advantages of different breeds of sheep for the purposes of the sheep-farmer, in a clear, satisfactory, and striking point of view. With respect to the wool of different sheep, we refer to the next article, and WOOL.

Different Kinds of Sheep-Management.—In the practice of sheep husbandry, different systems are had recourse to, according to the extent and nature of the farms on which they are kept, and the methods of farming that are adopted on them; but under all circumstances, the best sheep-masters constantly

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constantly endeavour to preserve them in as good condition as possible at all seasons. With the pasture kinds of sheep this is particularly the case; and with the view of accomplishing it in the most complete manner, it is useful to divide them into different parcels or lots, in respect to their ages and sorts, as by that practice they may be kept with greater convenience and benefit than in large flocks together, under a mixture of different kinds; as in this way there is not only less waste of food, but the animals thrive better, and the pastures are fed with much more ease. The advantage of this management has been fully experienced in many of the northern districts, where they usually divide the sheep-stock into lambs, yearlings, wethers, and breeding ewes; and in this method it appears not improbable that a much larger proportion of stock may be kept, and the sheep be preserved in a more healthy condition.

The nature of the management with a breeding stock is that the sheep-master must act according to his circumstances, situation, and the capital which he possesses, either selling the lambs to go to keep, fattening them for grass-lamb, suckling them for house-lamb, or keeping them on to be grazed and sold as store or fat wethers; the ewes being sold lean, as they are called, or fattened, as circumstances, profit, and convenience, may point out. Another practice, but which requires much capital, as well as knowledge, experience, and attention, is that of breeding and fattening off all lambs, both wethers and ewes, especially where markets for their sale, when fat, are conveniently situated. But where this system is too extensive, it may be partially acted upon, varying the plan according to capital, circumstances, and the nature of the times. In which case, whenever store stock becomes extravagantly high, it is mostly a good way to sell. But a method which is attended with the least trouble and hazard, is that of purchasing a store flock, as lambs, wethers, and what are termed crones, or old ewes; some of the last sort often proving with lamb, may be fattened off with them to good account. It is likewise often the case that ewes are disposed of in lamb, or with lambs by their sides, in what are termed couples, in which circumstances it is frequently a good practice to make annual purchases of them, in order to the fattening of both, and selling them in that state within the year. The system of breeding can only be had recourse to with effect and advantage in situations or on farms, where there are extensive tracts of land fit for the pasturing and support of these animals, but not the fattening of them; the more rich deep grass-lands being adapted to their fattening, and thereby affording a better profit, especially when quickly performed with a proper sort of this kind of stock, as that of good wethers.

But in the purchasing of sheep, which is often done from very distant fairs and markets, much care and circumspection are necessary, whatever the sort or intention with which they are bought may be. In these cases much advantage, especially when at a considerable distance, may be derived by employing a salesman upon the spot.

And the appearances which shew the sheep to be in a proper sound state of health, are a rather wild or lively briskness, a brilliant clearness in the eye, a florid ruddy colour on the inside of the eyelids and what are termed the eye strings, as well as in the gums, a firmness in the teeth, a sweet fragrance in the breath, a dryness of the nose and eyes, breathing easy and regular, a coolness in the feet, dung properly formed, coat or fleece firmly attached to the skin, and unbroken, the skin exhibiting a florid red appearance, especially upon the brisket. Where there are discharges from the nose and eyes, it indicates their having taken cold, and should be attended to by putting them in dry sheltered

situations. This is a necessary precaution also in bringing them from one situation to another while on the road.

It may be noticed that, with sheep-farmers, the common practice, except in particular instances, has been to leave the ewes for the purpose of breeding without any selection; but where good sheep-stock is the object, much attention should be paid in choosing such as are the most perfect, and that possess, in the highest degree, those qualities or properties which are wanted, whatever the breed or variety of sheep may be; as it is only in this way that a good stock can be raised and preserved. And it is a business that should always be performed at the time they are turned to the ram, if it has not been done before; and this is equally necessary in regard to the rams, that they may be adapted to the ewes. The author of the Farmer's Calendar has observed, that the late duke of Bedford, in attending to this object, had every ram with the lambs got by him the preceding year put in distinct pens, that he might not only examine them but their progeny, previous to his deciding "what ewes to draw off for him," which is certainly a method highly deserving of imitation by sheep-farmers in general. Such attention, united with a careful selection of cull lambs, must, the writer thinks, keep a stock in a state of progressive improvement, proportioned to the accuracy of judgment, eye, and hand of the farmer who practises it. And it is observed in the Agricultural Report of Norfolk lately published, that Mr. Coke readily assists, not only his tenants, but other neighbouring farmers, in sorting and selecting their South Down ewes, &c. and distributing them in lots to the rams according to the shapes and qualities of each. He puts on his shepherd's smock, and superintends the pens, to the sure improvement of the flock; his judgment is superior and admitted. The writer has seen him, and the late duke of Bedford, thus accoutred, work all the day, and not quit the business till the darkness forced them to dinner. See SORTING Sheep-stock.

Farther, it has been remarked in a late practical work, that the most advantageous and proper age for ewes taking the ram in the different breeds, has not been fully shewn; but from a year to a year and a half old may be sufficient, according to the forwardness of the breed and the goodness of the keep. Some judge of this by the production of broad or sheep's teeth. It should not, perhaps, be done while too young in any case. And in regard to the season of putting the rams to the ewes, it must be directed by the period at which the fall of the lambs may be most desirable, which must depend on the nature of the keep which the particular situation affords; but the most usual time is about the beginning of October, except in the Dorsetshire ewes, where the intention is suckling for house-lamb, in which case it should be much earlier, in order that the lambs may be sufficiently forward. But, by being kept very well, any of the breeds will take the ram at a much earlier period. Where the rams are young, the number of ewes should seldom exceed sixty for each ram; but in older rams a greater number may be admitted without inconvenience, as from one to two hundred; but letting them have too many should be cautiously avoided, as by such means the farmer may sustain great loss in the number of the lambs. It is found that the ewe goes with lamb about the space of five months, consequently the most common lambing-season is March, or the early part of April; but it has been observed, that in many of the more southern districts, where sheep-husbandry is carried on to a considerable extent, some parts of the ewe-stock are put to the rams at much earlier periods, so as to lamb a month or six weeks sooner; a practice which is attended with much profit and advantage in many situations where early grass-lamb is in great demand. It is usual for the

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the rams to remain with the ewes for a month or six weeks, and in some cases longer, in order to complete the business of impregnation, which in some districts is ascertained by smearing the fore-bows of the rams with some colouring substance. The method formerly in practice, and which is too commonly the case at present, of turning a number of rams among the flocks, is highly exceptionable, as tending to prevent the main object, and injure the rams. A better way is to let each ram have a proper number of ewes, and with very choice stock to keep the ram in an inclosed small pasture, turning a few ewes to him, and as they are served replacing them with others. By this means there is more certainty, and more ewes may be impregnated. In such sort of fine stock, it is likewise of great utility to keep the rams during this season in a high manner. In this view a little oats in the straw, or a mixture of barley and pea-meal, are excellent. Where ewes are backward in taking the ram, the best means to be employed are those of good stimulating keep. The rams should always be continued with the ewes a sufficient length of time. It is stated in the General Treatise on Cattle, that the ewe will breed twice and even thrice a year, if it be made a point to produce such an effect by attention and high keep, since she will receive the male indifferently at any season, and, like the rabbit, very soon after bringing forth. And that Lisle gives an instance of three of his ewes, well kept, lambing at Christmas, fattening off their lambs at Lady-day, and producing lambs again the first week in June. It seems they stole the ram immediately after lambing, but brought the second time only single lambs, although of a breed that generally produces twins. The former writer thinks there is no doubt but the sheep would produce young thrice a year, were the bad practice reformed to, which has been so currently recommended with the rabbit, of allowing the male immediately after parturition; the ready way to render both the female and her progeny worthless. Could the lambs be advantageously weaned at two months, sufficient time would, he conceives, remain for the ewe to bring forth twice within the year; for example, suppose the young ewe tupped in August, the lamb would be dropped in the middle of January, and might be weaned in mid March, the ewe again receive the ram on the turn of the milk, like the sow, perhaps in or before April, she would then bring forth within the twelve months, or in August. This plan would, he thinks, at least injure the dam infinitely less than suckling during gestation.

And it is necessary, that during the time the ewes are in lamb they should be kept in pastures, and as free from disturbance as possible, being carefully attended to, in order to prevent accidents, which are liable to take place at this time, such as those of their being cast in the furrows, &c. Where any of the ewes slip their lambs, it is advised by Mr. Bannister that they should be immediately removed from the flock. They also require, under these circumstances, to be kept as well as the nature of the farm will admit, in order that there may be less loss at lambing-time, from the ewes being stronger, and the lambs more healthy, and better capable of contending with the state of the season at which they may be dropped. At lambing-time every possible attention is to be paid. The shepherd should at this period be particularly careful and attentive to afford his assistance where it may be necessary. He should constantly have regard to the suckling of the lambs, and to see that the udders of the ewes are not diseased. His attendance will often be required in the night as well as the day. At this season covered sheep-folds are often of very great advantage, in saving and protecting both ewes and their lambs. And in respect to the number of lambs, it is remarked by the author of the

work on Live-stock, that the ewe brings most commonly one, next in degree of frequency, two, rarely from three to five lambs at a birth. This property of double birth is, he says, in some instances, specific; the Dorset sheep usually yeaning twins; and the large-polled Belgic sheep, with their descendants, our Teefwater, doing the same, and producing occasionally more at a birth. Other breeds bring twins in the proportion of one-third of the flock, which is supposed to depend considerably on good keep. A certain number of ewes *per centum* prove barren annually: the cause very rarely, natural defect; sometimes over-fatness, a morbid state of body, from poverty, or neglect of the ram; in other words, want of system in the shepherd.

Further, it has been recommended, that where rich pastures, or other sorts of good grass-lands cannot be reserved for their support, turnips, or other kinds of green food, should be provided for the purpose, and given them in a suitable manner; but where it can be done, it is always better to leave this sort of food untouched till about the period of lambing, when it should be regularly supplied, in proportion to the necessity there may be for it. The ewes also demand at this time much care, to see that they are put upon a dry sheltered pasture, free from disturbance, and that neither they nor their lambs sustain injury from the too great severity of the season. Whenever this is the case, they should be carefully removed into a proper degree of warmth and shelter, until perfectly restored. It is likewise a necessary, as well as a useful practice, as they lamb down, to take them and their lambs away from the common stock, putting them into a piece of turnips, or fresh dry pasture, where there is shelter when necessary, as by this means much fewer lambs will be lost than would otherwise be the case. It is also found, that by a proper supply of turnips, or other similar green food at this period, the milk of the ewes is much increased, and the growth of the lambs greatly promoted; which is of much future importance, as when they are stunted at this early period of their existence, they never turn out so well afterwards for the farmer. With the green and root crops, and preserved after-grass, hay, straw, corn, and oil-cake, are in some cases made use of in the winter support of sheep-stock. With turnips, where the soil is not sufficiently dry to admit the sheep, it is the practice to draw them and convey them to a sound firm pasture, that the ewes may be baited upon them once or twice in the day, as there may be occasion, care being taken that they are eaten up clean, as the circumstance of their being thus eaten may serve as a guide to the farmer for the supply that may be daily necessary. In this way this sort of food will be consumed with the greatest economy. Where the land is perfectly dry, and the intention is to manure it for a grain crop, eating the turnips on the land, by means of portions hurled off as wanted, is a good practice. And with this sort of food, especially where it produces scouring in the ewes, green rouse hay, cut straw, or pease-haulm, should constantly be given, and also with rape, &c. Mr. Young has stated, that in some parts of the kingdom, the best farmers give their ewes and lambs bran and oats, or oil-cake, in troughs, while they are feeding on turnips; but he suggests, at the same time, that it must be a good breed for such a practice to repay. And it has been advised, when the weather is very wet, stormy, or there is much snow upon the ground, that the ewes and lambs should have hay given them in baits as may be necessary, which is mostly done in covered moveable racks, a portion being given fresh every day. It is, however, much better to have it cut into chaff, and given in troughs, as much less waste is made. There is still a higher practice of feeding made use of by some farmers, with ewe-stock of
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the more improved kinds, and which is said to have been found to answer better than the common keep in particular cases; which is that of employing parsnips or carrots with hay of the green rouen kind, or a portion of pea, bean, or barley-meal, also malt-combs, with potatoes and hay, &c. These sorts of keep are, however, obviously much too expensive, except under particular circumstances, and for the more improved breeds.

It is obvious, that where shelter can be provided, it will always be of much benefit to the sheep. But it has been observed, that the practice of letting them to the hay-stacks, which is common with some farmers, is slovenly and wasteful, and which, though it may afford a degree of shelter, should never be attempted when the other methods can be had recourse to. It has also been suggested by Mr. Young, as an excellent method, though not essentially necessary, to allow the sheep, whether the weather be bad or not, a small proportion of hay daily while at turnips. And it is supposed that by this careful management, and the use of stubble turnips when necessary, the ewe and lamb-stock may be well supported through the severity of the season, and be brought on in the best possible condition until the turnips are finished in March, which should always be the case when the preserved grafs or rouen may be ready to receive them; which is considered by some as the most to be depended upon through this and the following month, which, with the first week in May, is the most difficult period of the year to the stock-farmer. On dry meadows and pastures it is invaluable in this view, though at first sight it may have an unpromising appearance, from the covering of decayed autumnal grafs that is upon it; but which, when removed, presents a new growth of fresh green grafs, five or six inches in height, brought up by the shelter and warmth afforded by the covering of old grafs. This is found to agree remarkably well with the sheep, as they consume both together, having, as it were, both hay and grafs in the same bite. It is, indeed, supposed impossible to keep a full stock of sheep so cheaply in April by any other method as by this. Tolerable rouen will carry ten ewes an acre, with their lambs, through the whole month. Such rouen may be worth in autumn ten or twelve shillings an acre; in April it is worth thirty or forty shillings; and if it be a backward season, a farmer that has it would not be tempted to sell it for much more. But in the support of his sheep and lamb-stock, if the farmer be provided with a sufficient extent of watered meadow, he may fully depend upon that without any other provision for this period.

But in cases, however, where these cannot be fully depended on for the support of the sheep-stock at this difficult season, the most improved practice is, in place of depending on turnips and hay with rye sown for the purpose, young wheats, and the run of the pastures, to let the turnips continue, so as that their shoots may become an object of sheep food, and to have annually a portion of tolerable good land, sufficient to the extent of the flock, under rye-grafs and clover, so as to be ready in the spring to take the sheep from turnips, and support them till the time of turning upon the pastures. The same writer remarks, that this conduct is an improvement on the other, as it gets rid of three great evils: depending on rye, which is soon eaten; feeding on wheat, which is pernicious to the crops; and turning too soon into the general pastures. But at the same time that it effects this advantage, it is open to some objections, which make further improvement necessary. Keeping the turnips long in the spring is very bad husbandry. It damages greatly the barley crop, both in robbing the

land, and preventing it from being sown in proper time: nor is the food of great consequence, for many acres of turnip-tops are requisite, the number of which must be in proportion to the flock of sheep; and as to the roots, they grow so sticky and hard after the tops are at all advanced, that their value is trifling. With respect to ray-grafs, the clover mixed with it is seldom above three inches high at this season; and a great breadth of ground to a given stock must be assigned to keep the sheep through April. The number of acres of that young growth necessary to keep a hundred sheep and lambs, is, it is said, surprising; so that these farmers, although they manage to spring-feed more sheep than the worst of their brethren, yet effect it at a great expence, and at last not in any degree comparable to what might be done. A turnip should never be seen on the ground after March. For the month of April the farmer should have a field of cabbages ready, which, yielding a great produce on a small breadth of ground, reduces the evil of a late spring sowing; and, if he manages as he ought, totally excludes it. The turnip-cabbage, and ruta бага, will last as long as wanted; and though they run to seed, yet the bulbs will not be sticky. The green borecole may be fed off several times: it is impenetrable to frost, and will make shoots in the winter. And another crop, continues Mr. Young, for feeding sheep in spring, which is of particular merit, is burnet. An acre of it managed properly, will at this season yield much more food than an acre of clover and ray-grafs. It should be four or five inches high in November, and left so through the winter. Burnet has the singular quality of maintaining its green leaves through the winter; so that, under deep snows, you find some luxuriance of vegetation. From November to February the crop will gain two or three inches in growth in the young leaves, and then be ready for sheep. It will be better in March, and if kept, ready in April, not only for sheep, but horses, cows, or any other stock. These systems of feeding and management are, however, in practice much varied according to the nature of the farm and the kind of sheep that are kept. In Norfolk, with Mr. Bevan's flock, which consists of forty-five score of the South Down kind, the following is the arrangement. The tups are put to the ewes about the 10th of September, for two months, being fed on the layers and pastures, and are folded on the old layers for wheat: after wheat-sowing they are folded on the pastures and layers till the time of yeaning, during which they lie on the pastures without fold, and have turnips thrown to them, with plenty of good hay. The fattening sheep are on turnips and hay, from Michaelmas to the end of March, followed by the hoggits. In April the couples go to cole-feed in hurdles; from cole to rye; from rye to the new layers, if forward enough, otherwise to the water-meadows, till the beginning of May; and from thence to the new layers, being still in hurdles, with a good deal of room to fall back, and continue so on the layers till about the 10th of June, when the ewes are washed for clipping, and until the lambs are weaned: the ewes then go to fold with the shearlings on the fallows intended for turnips, and the lambs are put to fresh grafs reserved for that purpose: all the sheep on turnips and cole having hay, they consume about twenty-five tons. The general winter provision is 80 acres of turnips, 20 of cole, and 30 of rye, for the spring. Mr. Bevan ploughs in his rye-stubbles before the shocks are carried to turn in the scattered feed, harrowing in half a peck of cole-feed for sheep-feed in the spring, and finds it of very great service. The latter, after feeding, stands for a crop. He values his turnips on the average at 30s. per acre, and cole at 25s. After turnip-sowing, the

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flock is folded on old layers for rye, till the end of August, when the ewes intended for breeding are put to good pasture till the tups are let in. But in 1802, the tups not put to the ewes about a week later, and the lambs not weaned till the latter end of June. Provision this year, 100 acres of turnips, 30 cole, 30 rye, for 25 score breeding ewes, 15 score hoggits, 20 tups, 10 score fattening flock; 51 score in all.

Turnips, as a holding-out winter food for sheep, are unquestionably excellent, particularly when not given in too large quantities, and with some sort of dry food with them, as sainfoin hay in this season, common hay, cut pea, bean, or wheat-straw. There is also said to be an advantage in having them drawn one or two days before they are used, in some districts, and even in having them stacked. But potatoes are thought a much better food than turnips in other parts where sheep are a great object, as being more fully and regularly to be depended on, and as preventing the diseases to which the animals are liable in a more effectual manner. The Swedish turnip come into use the latest, as in the early spring.

It is stated in the Corrected Agricultural Report of the County of Suffex, that general Murray fed 5000 sheep with potatoes and hay, 1651 of his breeding ewes ate 51 bushels every day, giving a quart to each; and which, for 120 days, is 6120 bushels: while the Norfolk stock-farmer provides for 720 sheep, 80 acres of turnips, 16 tons of hay, 20 acres of rye. The following is the comparison of the value, &c. of the provision.

It is said, that if 720 sheep require 80 acres of turnips, 2240, the upland flock at general Murray's, will require 248 acres of turnips; but they have only 50. That if 720 sheep require 16 tons of hay, or 10 acres, 2240 should require 49; instead of which they have 120, which is 71 surplus, or, at one load and an half the acre, 48 acres. And that, if 720 sheep require 20 acres of rye, 2240 should require 62, instead of which they have none at all.

Winter food of 2240 sheep, as provided for in Norfolk.

	Acres.
Turnips - - - -	248
Hay - - - -	10
Rye - - - -	62
Potatoes - - - -	0
	320

Winter food of 2240 sheep, as provided for in Suffex.

	Acres.
Turnips - - - -	50
Hay - - - -	80
Rye - - - -	0
Potatoes - - - -	20
	150

Value of crops, as applicable to each county, without regard to the expences.

	£ s. d.
Turnips - - - -	2 0 0
Hay - - - -	5 0 0
Rye - - - -	0 10 0
Potatoes - - - -	4 0 0

	Expences. Norfolk.
Turnips - - - -	£ 496
Hay - - - -	20
Rye - - - -	31
Potatoes - - - -	0
	547

	Expences. Suffex.
Turnips - - - -	£ 100
Hay - - - -	160
Rye - - - -	0
Potatoes - - - -	80
	340

Which is, it is said, a difference of 63 per cent. This vast difference is to be attributed, it is supposed, in a great measure, to the distinction between the breeds of the flocks, as one being the Norfolk, and the other the South Down, as all the circumstances are in favour of it; but it may be partly owing to potatoes being a cheaper food than turnips. As to the feeding of sheep with potatoes, however, it is, though ascertained on the above farm on a very large scale, a more disputed and doubtful circumstance; and for this reason, they are allowed, stinted, or limited in their consumption, which is not the case with turnips: these, on the Norfolk farm, are fed off on the land, and, of course, in the greatest plenty. The other accidents and objections to which they are constantly liable, are also not to be overlooked: while potatoes are a regular certain crop, and subject to few accidents or inconveniences. When these circumstances are therefore well considered, in the pinch of a severe season, it will be readily agreed that the introduction of this root, and the proof of its advantage by the above extensive trial, as a winter and spring provision for sheep-stock, is really important.

The quantity of a quart every day of this root for each sheep is probably, however, much too small, as in fattening them with it in suitable yards for the purpose, a far greater quantity has been found necessary. But lean sheep certainly do not require the same proportion for keeping them as is requisite in the fattening system, as may be seen below, in speaking of that sort of management.

Cabbages, as a food for sheep, are of great importance and utility in many situations, particularly in those where the land is suitable for raising them, though it may not be of the very rich quality. They are of vast service in carrying on improvements in sheep husbandry, and as the means of keeping a greatly increased stock, where good management is followed.

The artificial grasses, such as ray-grass and red clover, are of much consequence as spring food for sheep; the first is early, and comes in after common turnips, when much wanted. It may be cultivated to advantage when the latter will not succeed. The clover comes into use in this way at a later period, and on stronger descriptions of land. Many other grasses of this sort, as well as some of the natural grass kind, might be very beneficially grown in this intention, as the cock's-foot in some cases, sainfoin, &c. on soils of the calcareous kind, and some of the poas and alopecurus, in other circumstances; by which means earliness, quantity, and quality of keep might be secured.

Tares,

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Tares, rye, and cole, are in great request as spring food for sheep-stock, the first being raised on the stronger sorts of land, the second on such as are of a lighter quality, and the last on many kinds, even the hilly calcareous sort. They are all sufficiently early for being fed in April, or the following month, when turnips are done. Spring tares are likewise often put in to be fed off at the close of the autumn. These practices answer very well; but mixed crops of tares and rye never do well for the purpose of sheep-feed; as they do not by any means come well together, of course there is much loss. These and other mixed crops are, however, frequently had recourse to in this sort of management, with evident benefit.

The stubble turnip system of food is very good in this sort of husbandry, for late spring or other feed; where crops of such kinds take well in succession to those of other sorts.

The plan of preserving after-grass for the purpose of sheep-feed is certainly very useful, especially for the support of ewes and lambs in the early spring. It provides well for the time of scarcity.

The practice of converting young wheat crops to spring sheep-food is seldom good. It is mostly the business of necessity and want of forecast in the sheep manager: On light and dry lands it may occasionally be useful, but it often does much harm.

Winter barley, and some other sorts of crops, have also been tried as sheep-food, but hitherto only by particular individuals on a small scale.

Whatever the nature of the food which is raised with this design may be, it should always be provided in ample abundance to the quantity of sheep-stock which is to be kept, as no sort of pinching ever answers any good purpose in this management. Good water should likewise be constantly attended to in this practice.

By thus cultivating proper quantities of proper sheep-food in connection with the keeping and managing of stocks of this sort, many important benefits and advantages would necessarily result, a far greater quantity of sheep would be kept on the same extent of ground, they would be preserved in a much better state of condition, and they would be in a much more desirable situation for the purposes of breeding or being fattened, and consequently be in every way greatly more profitable to the sheep-farmer; while the growth of such sorts of food would prepare admirably for grain crops, by which little expence would be incurred. Besides these, it would contribute in several other less important ways to the benefit of the stock-farmer, in many cases and situations.

And it is observed that, by the means which have been stated above, the sheep and lambs are capable of being continued in good healthy condition, a matter of great consequence to the stock, until the period of turning on the pastures, when they should be separated, where the lands are inclosed, into proper divisions, in proportion to the quantity each pasture can support, care being taken not to over-stock the fields, though hard stocking in some cases may be beneficial. With some farmers they are put upon the richest pasture of the farm, while with others it is the custom to let them have those of the inferior kinds. This must depend much upon circumstances; but whatever mode is adopted, the point of having the stock preserved in good condition is never to be lost sight of. It is advised, that in keeping sheep on inclosed pastures, particularly where the lands are much occupied with wood, constant care is necessary, in order to guard against the mischief of the fly, as its effects are often irremediable in the course of a very short

time in such situations, if not attended to, in hot seasons. With the view of fully guarding against this insect, a very frequent and particular examination must be made by the shepherd.

Further, on this subject it may be noticed, that the next circumstance in the management of these animals is that of weaning the lambs, which is a business that should be effected when they are three or four months old, as about July, but it is done more early in some districts than in others. And to effect it in the best and most beneficial manner, a proper reserve of some fresh pasture grass, where there may be a good bite for the lambs to feed upon, should be had recourse to, as it is of much consequence that an ample provision of this sort be had, in order that the growth of this young stock may not suffer any check on being taken from the mother. Where they have been continued so long as to graze with the dams, little check will be sustained in their separation, if turned upon such good feed. Some advise clover in blossom as the most forcing sort of food in this intention, and with others sainfoin rouen is highly valued for the same purpose. When good feed is not provided, of some of these kinds, the lambs soon decline in flesh, or in the technical language of the shepherd, the flock are said to *pitch*; and when once this happens, they never afterwards thrive so well, however good the management may be. With regard to the ewes, they should be removed to such distant pastures or other places, as that they may not be heard by the lambs, which would cause them to be disturbed in their feeding. And where the ewes sustain any inconvenience from their milk, as by their udders swelling, it should be drawn once or twice, as by this means bad consequences may be prevented. And as soon as the lambs have been removed, the ewes are returned upon the pastures destined for their summer support. There is, however, one caution to be attended to in first turning the lambs upon rich keep, which is that of letting them be in some degree satisfied with food previously, that they may not be surfeited by too quick and full feeding, and *heave* or *hove*, as it is termed; keeping them gently moving about the field has also been advised in this intention. In some places where the lands are of the more poor kind, it is a custom to send the lambs to the more rich vale or marsh districts, to be brought forward in condition, or fattened. In those cases, where the lambs of the male kind are reared on the home lands, as wethers, they are usually restored to the flock in the latter end of the year, but which is not by any means a good practice, as they often suffer for want of proper keep in the winter, and lose what they had previously gained in growth and condition.

And in the usual management of sheep-flocks, it is the common practice to remove a certain number of the old ewes or crones every year, replacing them by the best lambs, in order that they may be kept up in the greatest perfection; it is, of course, a matter of considerable importance to have this done in a proper manner. And in almost all the sheep districts in the southern part of the island, this selection, or *setting of the lamb-flock*, is performed about August, at which period the fairs for the sale of lambs mostly take place. And as at this time the whole are collected together for drawing into different lots, it is a very suitable period for selecting or choosing those that are to supply such deficiencies in the breeding flocks. In his Calendar of Husbandry, Mr. Young has well remarked, that in making this selection, the farmer or his shepherd usually (whatever the breed may be) rejects all that manifest any departure from certain signs of the true breed: thus, in a Norfolk flock, a white leg, and a face not of a hue sufficiently dark, would be excluded,

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however well-formed; in the same manner a white face on the South Downs; in Wiltshire, a black face would be an exclusion, or a horn that does not fall back; in Dorsetshire, a horn that does not project, &c. &c. And where the produce is annually fold lean, there is, he maintains, reason in all this; for customers who have been used to and prefer certain breeds, as having paid them well, are apt to be fastidious when they purchase. Some farmers in this selection look chiefly at size, always keeping the largest frames; but this is probably erroneous, unless they keep very high. It connects with a question by no means ascertained, whether sheep do or do not eat a quantity of food proportioned to their weight? In general it is a safer rule to choose a well-formed lamb, or that indicates the probability of making a well-formed ewe, rather than to select for size. The attention that is to be paid to wool in the breeds that produce the carding sort, will depend on the price to be received: if the farmer lives in a district where the price of the year is given equally to all flocks, there is little encouragement to lessen quantity for the sake of quality; retaining, however, in idea, the fact that both are attainable, that it is very common to see coarse breeched sheep with light fleeces, and those of a fine quality heavy in weight. The Spanish fleeces, which are finer than any other, are heavier than those of our finest woolled sheep. With combing wool the importance of the fleece depends still more on price; we have seen it at 8s. a tod: and it has lately been 36s. Quality is of very little consequence indeed, compared with quantity; and when wool sells high, no prudent breeder will set his stock without being governed considerably by this object. And it is added by the same writer, that the high prices at which new Leicester and new South Down rams let and sell, has opened a field of speculation in sheep-breeding. It is sufficient to remark, that this spirit of breeding, whether it shall prove durable or not, whether much money shall or shall not be made in it in future, is not what any prudent man beginning business will adventure in, but with great caution: men of such immense fortune are now taking a lead in it, and are in many respects doing it on such liberal principles, that the wisest conduct of such farmers as he may be supposed to address, is to take proper opportunities of converting their experiments to their own (the farmer's) profit. Leave the expence to them; but, when you can, convert the profit to your own advantage. In setting a flock of lambs, therefore, you may mark a score of the best, for a future ram to be picked up when opportunity offers; or, better still, to send to the tup of some ram-letter that takes them in at a reasonable price per head. By every year selecting five or six per cent. and by every year covering that number by a ram better than your own, the flock must be on the improving hand; and this may be done at a very small expence. Also at this period, besides filling up the deficiencies in the ewe-stock, the increasing or diminishing the quantity of stock usually kept, by reserving a larger or smaller number than that of the old sheep which are disposed of, is also a point that demands particular notice. Mr. Young has given the following useful directions on this subject, in his Calendar of Husbandry.

On a farm, says he, with a given stationary sheep-walk, it is probably regulated by circumstances that rarely change; but on inclosed farms, where the sheep are supported by fields alternately in grass and tillage, variations may easily be supposed, and the question of hard or light flocking, that is of close feeding or a head of grass, then comes in to decide the number kept. If the produce or profit per head is looked to, the conduct to be pursued is evidently to stock lightly; but if the return is looked for in corn from fields

laid down for refreshment by rest, then close feeding is a very material point, and the number kept will depend on it. With all grasses, &c. that do not decline from age, the more sheep you keep the more you may keep, and the more corn you will reap when such are ploughed; a circumstance too important to be forgotten. But the young farmer will remember, that upon this system he must not have a show flock, or let the variety of a farm have the least influence with him: if in this way he will have a something to talk of, a score or two of pampered favourites, the fewer the better, for they may cost him more than they are worth.

And as soon as this has been properly executed, the ewe and wether lambs that are left are mostly sent to the neighbouring lamb-fairs to be fold off. But where the fairs for this purpose happen later than the above period, as in the beginning or latter end of September, as is the case in some situations, it has been advised by the writer first mentioned, that great care be taken to keep them in forcing food, as in spring tares, early sown rape, good grass of the right degree of bite, &c. &c. in order to promote their growth and increase their value; but to sell in August is more beneficial.

It cannot but be obvious, that in the management of breeding flocks, the lambs come to be disposed of at different periods; first those that have been suckled or fattened in the house, in which system of fattening, much attention is required to have them early, to their being well, regularly, and very cleanly kept and suckled, as well as to the ewes being of the right sort, and the best milkers that can be provided, and to their being fully supplied with food of the most nourishing and succulent kinds. Their tails and udders should have the wool well clipped away from them in order that they may be preserved in a perfectly clean state. The lambs also require, especially towards the close of their fattening, to have regular supplies of barley, wheat, and peas, meal ground together in combination with fine green rouen hay, &c. See LAMB-Suckling.

And as soon as these have been fold off, the lambs which have been fattened on the best grass-land will be ready to succeed them at the markets, in the spring and summer months, and these will be followed by the sale of the store-lambs at the different autumnal fairs.

Further, there are different local practices also adopted in different counties, to suit the particular methods in which their sheep husbandry is conducted, as well as the particular objects of it. The following is given as a hint from sir Joseph Banks, by the writer of the Lincolnshire Agricultural Survey, on the sheep system of that extensive district: that as tups are there always hired by the breeders, the lambs may be said to be purchased before they are born; a year's credit, however, is given on this occasion, they are not paid for till the actual value can be fairly estimated; if, therefore, any one who has hired a tup at a considerable price, finds the lambs he has got not sufficiently above the ordinary sort to pay him the difference, with interest, he complains to the tup-man, who generally views the lambs with him, and makes a fair abatement, which is generally settled in the price of the hire of the next year's tup; this regulates the price of letting, and makes the tup-men a most useful set of people. The great mass of breeders in Lincolnshire sell their heeder lambs about old Michaelmas time, or a little after: a succession of fairs for that purpose are held in a village called Partney. These lambs are resold in the spring at Lincoln fair, under the name of hogs; at Midsummer their owners clip, and then winter them; the succeeding spring they are carried to Boston, where, in a long succession of markets, they are old to the graziers, with their wool

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wool on, under the name of shearlings, and immediately turned into the marsh to fatten; the graziers take their fleeces, and having wintered them, get the kindest to Smithfield in the course of the succeeding spring; those that do not fat so easily, yield the grazier a fleece at Midsummer, and are got off the ground in the course of the next autumn. Here you see a combined system of sheep agriculture, for as the animals are eternally either changing hands or yielding fleeces, they make a return of some kind or other to their owners, nearly half-yearly from the time of their birth, to that of their final dissolution at Smithfield. See RAM.

In the sheep system of management which is practised on the large rich tracts of the Romney, Walland, and Denge marshes in the county of Kent, there is also a local peculiarity and difference which is worthy of notice. The usual practice with the lambs in these marshes, is that of sending them about the beginning of September to be kept by the neighbouring upland or hill farmers during the winter. They go in separate lots, being received at certain appointed places by the farmers, and driven to the houses, or taken to the farms by their servants. They are then commonly put upon the stubbles or *grattons*, as they are called; but in some cases they have also pastures to run upon, though too little attention is, in general, paid to the changing of them, by which they suffer much, and are often greatly injured, especially such as are weakly and delicate. Much advantage would probably be gained by having them put, in separate lots, in different fields, and by giving them in wet seasons, once a day, some sort of dry food, such as hay, or those of better kinds in particular cases. It is not improbable, indeed, that lambs might be safely kept in these marshes through the winter, by the use of such food and proper care. It is found that there is a prodigious benefit in keeping the lambs in winter, in such situations, in having the grounds dry and warm, instead of being of a cold, wet, clayey nature. Lambs should by no means be stocked along with the ewes, as the old sheep will constantly take the feed, and *stench* the land, by which the lambs may be greatly hurt. They should always be stocked separately, and the pastures be frequently changed, circumstances which are little regarded here. Some think that lambs do not thrive well on being put to graze, after having been fed on luxuriant food, such as turnips, old tares, rye-grass, &c.

The price of the keeping of lambs in these cases is very different; some paying only 4s. 6d. the lamb, while others pay 5s.; and where no neat stock are kept, they charge as high as from 6s. to 6s. 6d. the head, for the space of about six months. This is but a late advance; however, it makes the price of keep a serious object. The loss of lambs in this system of winter management, is occasionally considerable, but depends much on the nature of the season, as to mildness or severity, amounting in some cases to four or more in a hundred.

The tegs, or one-year old lambs, in this system are brought from the uplands, where they have been wintered too often in a low state of condition, for the supply of the marsh graziers, which enables them to keep more ewes and fattening-sheep on the marsh lands. This is done about the beginning of April, when the upland farmers are indulged with a feast or treat at the expence of the graziers, as a recompense for their care and attention to the lambs, in which liberality has a great effect. As the flocks reach the marsh, they are put upon the poorest pastures, at the rate of five to the acre, their old sheep being just fold to make room for them. These are commonly the best conditioned tegs, in which there may sometimes be loss from the

sudden transition from poor to too good keep, though they are not, in general, so subject to some sorts of disease as the old ones, on such changes being made in their food.

The marsh sheep-graziers have lately been much in the practice of prevailing on the farmers to keep such flocks a fortnight, or even double that time, on turnips, which has the advantage of enabling them to double the stock on the same pastures during the summer; while on the other hand, it is evident, that when they are so hard stocked early in the spring, they can neither have so luxuriant a growth, nor be so full of graze. The pastures are likewise eased gradually, as the fat ewes or wethers are taken off, and their places supplied by the wether-tegs, while the ewe-tegs are suffered to remain on their original pastures, until they are selected, or set for going to the rams.

In the ewe management of the marsh system, which is by no means well regulated, the ewe-tegs, one-lamb, two-lamb, and three-lamb ewes, are all mixed together, so that they cannot be distinguished by the grazier, as they are not marked until turned off for fattening. A better and more convenient way would, however, probably be to keep the different kinds separate as much as possible, as many advantages would result from it. In winter the land is stocked in proportion of from two to three ewes on the acre, as it may be of a more or less good quality, and in summer with from three to four and their lambs. In case of twin lambs, with not ever more than three to the acre upon the best pastures. The summer stocking with ewes is here supposed to have too much uniformity in it, though it may perhaps be proper in the winter, yet when that season is mild more might certainly be kept than under the contrary circumstances, for which no sort of allowance is made. It is conceived, that it would be good policy, when there is the probability of plenty of keep, to increase the number of ewes on the breeding pastures, though there should be a necessity, on that account, to provide an additional pasture field or two; however, so prejudiced are many sheep-farmers in favour of the common practice, that they do not even make the necessary additions of stock to keep the graze properly under, by which means it is apt to become benty, the pasture injured, and considerable waste sustained. The old sheep, or those which have had the third lamb, are commonly cast off for fattening, and the others marked for stores, and weaned from their lambs, by putting them into one of the pasture fields for some days; which not only improves the field, but prevents the ewes from receiving injury by the flow of milk. This is a practice which in the marsh management is termed *bleating* the ewes. Some reject this mode, and put the ewes immediately on the fattening ground, from the conviction that more injury is likely to ensue by keeping them in a starved condition, for even a short time, than by throwing them at once into fresh keep. Whichever of these is the most eligible practice is not attempted to be decided, but the most general one is that of bleating: aged sheep are not so liable to be struck with disease as young ones in such cases, or the season of the year so favourable.

The system of the marsh for the management of the wethers, and the time of drawing them for the market, is this: the wether-tegs are in the general practice put upon the fattening land for the winter about Michaelmas, in the proportion of from two to three upon the acre, as may suit the designs of the grazier. Those who intend to keep them for a whole year, commonly put three on each acre of the best pastures for the winter stock; but those whose intention is to make a second or third return, are satisfied with two on the same extent; in which case, however, it is necessary that they be put more early upon the land, in order that they may

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may get properly fat before winter, and go off sufficiently early, which would otherwise not be the case. The latter method is thought unquestionably to be the most profitable; but those who have not a sufficient supply of summer pasture, conceive that it will pay them better to keep three to the acre, in barely a thriving state, and fatten them in the following spring and summer. However, though they may continue to increase in size, it is most likely they will not be of more value at Michaelmas than they were in the spring; so that there is a clear loss of the whole summer keep: as mutton may often sell for 6*s.* or 7*s.* the stone in the spring, and not bring more than from 4*s.* to 5*s.* at that period in the autumn. It has been long a question, whether other sheep or old barren fatten the most quickly, on which it may be noticed, that any increase in the food of full-grown sheep must have a tendency to the formation of fat, whereas in wethers or other young sheep, it must be partly expended in the evolution and development of their frames, and, of course, less fat be produced. Much, however, will depend upon the size and disposition of the sheep.

There is great difference in the practice of different graziers, in regard to the time and manner of drawing the sheep for the market, some beginning much earlier than others, though the sheep were all put into the fattening pastures at the same time. Some draw the worst of the sheep first, conceiving that the prime sheep pay the best for keeping; while others send them to market as they get fat, by which means, time is given for the advancement of the more common ones. Which of these methods is the most to be preferred, it is not at all attempted to determine; but the sending of inferior mutton to market, it may be remarked, is only giving it away, while, on the contrary, the retaining of such sheep as are deficient in disposition to fatten, is a complete loss of the keep of them. Towards the end of the summer, keep, however, is of but little value, and, of course, their remaining a little longer is not of any material consequence. It is therefore thought, perhaps, the best not to part with them until the approach of autumn, when inferior mutton often sells well in the vicinity of the marsh, or to dispose of them to lamb butchers at a somewhat reduced price. This inconvenience would, however, be much removed by a better and more proper selection of the sheep than that which at present is the case.

In sending the sheep to market, care should be taken to have them as nearly as possible of the same size and condition, as a few inferior ones are apt to lower the value with the butchers. In this intention they are by some divided into two or three lots, while others send them in one only; the former, however, in general obtain the highest prices. By more attention to the regulation of size and keep, a greater equality would be met with in the wether sheep on the fattening pastures of the district than that which at present prevails.

In the system of these marshes, the ewes which are designed for breeding ram-lambs from, are selected and drawn before the *riding* time, as directly upon the weaning season, or a few weeks previous to giving them the ram; there being great differences in the forms and sizes which are thought the best calculated for this purpose, in the notions of different graziers; some preferring large, others middling sizes, while many esteem most, such as have long legs and bodies. There is here, however, much too little principle in the management of this business. Such ewe lambs as come from ram-lamb ewes, should be so marked as to distinguish them, and be constantly preferred for breeding ram-lambs from. The ram-lamb ewes are mostly lambed by themselves, and have superior keep. Those which do not suit the intention

of the grazer are castrated; while such as are to be saved have a small part of the tip end of the scrotum cut off, and two marks fixed upon them, one on the shoulder and the other on the hip; being constantly indulged with the best fattening keep, as it is the common opinion that they cannot be too large. They are sent to particular situations on the neighbouring hills during the winter season, where they are tended with the utmost care and circumspection, having hay and turnips occasionally given them. On being brought back to the marshes in the spring, they have the run of the best pastures, being stocked so lightly upon them, as to be in every way disadvantageous to the grazing farmer. Another selection sometimes takes place from them during the summer, in which, those which do not suit are either sent to market, or *netted*, while those which are approved are employed in the ensuing riding time. These young rams should only have a few ewes, as thirty or forty; as more greatly injures their growth, &c. They are usually sold or hired out, by which much money is often made.

It is the practice here to keep too many rams together in the same pasture, as much loss is sometimes sustained by it. The usual time of putting the rams to the ewes here is about the middle of November, though some prefer a month, and others a week or a fortnight sooner, as their notions may be in regard to the conveniences of lambing and other matters. A week or two before the riding time the ewes are prepared by being put into the larger fields; only one ram being admitted in each, unless it be so large as to stand in need of two, when with the old ram a young one is admitted. This management prevents fighting and all inconveniences of that kind. The rams commonly remain with the ewes a month, care being taken that they perform their business properly; some change the rams occasionally, as after the first fortnight, and at other times according to circumstances. Sixty ewes are usually allowed to an old ram, and thirty to a teg ram in this marsh system. See *STOCKING Land*.

It may be observed that there is some difference in the method of managing heath, down, and mountain flocks of sheep, from those which are pursued on the inclosed pasture lands, though in the selecting and providing the rams and breeding stock, the same practices are followed by the best sheep-masters. The principal difference consists in the manner of keeping them, by putting them as early as possible in the spring months, as in the beginning of April, upon the downs, heaths, and commons, and keeping them upon them until the approach of the autumn, as the beginning of October; the fine soft sweet herbage in these cases preserving them in a state of tolerably good condition. And where it begins to grow scanty and decline in goodness, other sorts of feed which have been previously provided are had recourse to, such as turnips, cole, &c. on which they are folded during the autumn and winter till consumed, when hay which has been stacked for the purpose in such situations, is employed until the grass has again advanced to a proper bite. In these cases the system of folding is generally recurred to during the whole year, in the summer and autumn chiefly on the ground in a state of preparation for the wheat crops, but in the winter season often on the stubbles, though more extensively upon the downs and pastures; while in the spring season the lands under preparation for the barley crops receive them. This system is considered as very beneficial by the farmers in those districts where it is in use. And in the more hilly and elevated situations in the northern parts of the kingdom, other methods of management with this sort of stock are employed. In Argyleshire the principal circumstances attended to by the most intelligent sheep-farmers are these: to stock lightly, which will mend the size of the sheep,
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With the quantity and quality of the wool; and also render them less subject to diseases. In all these respects, it is allowed by good judges, that 500 kept well, will return more profit than 600 kept indifferently. To select the best lambs, and such as have the finest, closest, and whitest wool, for tups and breeding ewes, and to cut and spay the worst. To get a change of rams frequently, and of breeding ewes occasionally. To put the best tups to the best ewes, which is considered as necessary for bringing any breed to perfection. Not to tup their year-old ewes; which, in bad seasons especially, would render the lambs produced by them of little value, as the ewes would not have a sufficiency of milk; and would also tend to lessen the size of the flock. To keep no rams above three, or at most four years old, nor any breeding ewes above five or six. To separate the rams from the 10th of October, for a month or six weeks, to prevent the lambs from coming too early in spring. To separate the lambs between the 15th and 25th of June; to have good grafs prepared for them; and, if they can, to keep them separate, and on good grafs, all winter; that they may be better attended to, and have the better chance of avoiding diseases. A few, whose possessions enable them to do it, keep not only their lambs or hogs, but also their wedders, ewes, &c. in separate *hirsels*; by which every shepherd, having his own charge, can attend to it better than if all were in common; and each kind had the pasture that best suits it. But in Linton, the following management, according to the survey of that district, is observed: in summer the flock is divided into three *hirsels*. In the first are all the hogs and yield sheep; in the second, the milk ewes; in the third, the lambs. In winter they are kept only in two *hirsels*. In the one are the hogs, in the other the ewes and yield sheep. The lambs are weaned about the end of June, the ewes milked from the 1st of July to the middle of August, and the milk made into cheese. The sheep are clipped from the end of June to the end of July, according to the weather and condition of the flock. The tups are let to the ewes from the 15th to the end of November, according to the situation of the ground, and the nature of the grafs. From 40 to 50 ewes are allowed to one tup. The breeding stock is changed every five years, by felling off the superannuated ewes. Some ewes, however, are kept longer than five years, and some shorter, according to their condition; for they do not all decline equally soon. In East Lothian, sheep are in much esteem, and kept in considerable numbers every where, especially on the coast lands. Permanent flocks, however, and regular sheep management, may be said to be almost confined still to the higher parts of the country. In the low country they are kept chiefly to eat the turnips, and sometimes fown grafs, which is permitted to lie a year or two for pasture. Flying flocks therefore are generally kept, and as soon as they are fattened for the market, which is usually within the year, they are sold off. A considerable number of lambs likewise are reared, only so far however as to render them fit for the butcher, or to be sold fat. But as the great object, in the lower districts, is feeding, little attention is paid to particular kinds; every farmer keeps those which he thinks are likely to pay best for the food which they consume. The black-faced, or Tweeddale breed, are most generally preferred for feeding on turnips, because they are most esteemed in the market; but many of the Cheviot breed are likewise kept, and even some of the improved Leicesters.

It may be noticed that it is, however, only in the Lammer-muir district that sheep husbandry can be said to be regularly practised, the management of which is this, according to Mr. Hay of Hopes. All store-farmers of any

extent keep two flocks, *viz.* one of ewes, and another of yield sheep; and this flock they sometimes divide, and have a flock of what is called *hogs*, that is, lambs of one year old. The common practice is to fold the ewes upon a break of arable land, during the summer; they cut the lambs about the 26th of May, and they wean them in the first week of July, and then they shear the whole flock. The lambs, after weaning, are sent to a healthy pasture, called the *birn*, which has been kept for them, where they remain till the end of August; when they are moved down to the best low pasture, called the *hog-fence*, which has been saved from the weaning; and here they remain during the winter. The ewes are milked for about eight weeks after the weaning, and sometimes longer, and then are put out with the lambs into the *hog-fence*, for the winter. All the sheep are smeared, that is, salved, immediately after the harvest, at the rate of two pounds, tron weight, of butter, to a Scotch pint of tar, which salves from six to eight sheep, at the expence of about five-pence each. The wool sells at from five shillings to eight shillings *per* stone, tron weight; and usually takes from six to eight fleeces to a stone: so, deducting the expence of salving, the net proportion upon the wool may amount to from eight-pence to ten-pence *per* head, sometimes a little more or less, varying according to the price of wool. Upon dry heathy grounds, the ewes are drafted, and sold to graziers, in the month of March; but upon wet grounds, which are dangerous, and subject to the distemper called the rot, they are drafted and sold in October. Few store-masters (tenants) in Lammer-muir breed as many sheep as keep up their stock; so they have to buy yearly a parcel of hogs, which are mostly wedders. Linton, in Tweeddale, is the great market for these wedder hogs. These wedders they keep for two years, and sell them to the feeders. Some of the most judicious store-masters have totally given up the practice of milking the ewes, after weaning; and others milk for a shorter space than formerly; and they now allow the lambs to suck longer, which considerably increases their bone, and is thought not so pernicious to the ewes as the milking. This practice, however, still prevails in Wales; the cheese made from ewe-milk being highly esteemed, such milk being said to be four times as rich as that of cows. The sheep are stated to give a quart of milk *per* day each, and being milked three months, the return is stated at ten shillings *per* ewe.

It is also further stated by the writer of the above Report, that the method of managing the arable land in that district has been changed much for the better, within these few years. When in grafs, it is folded; and when taken up, it gives three crops; and is then fallowed, and fown out, the first crop with grafs-seeds; and they generally follow the same practice with the new grounds taken in by fallow and lime, which has now become a general practice through Lammer-muir; and lime, when applied to dry ground, is certain of making a lasting improvement upon the grafs, which is, and always ought to be, the great object upon store-farms. However, since this account was given, much improvement has been made in this sort of husbandry, which is now carried on in a very systematic manner, it is said.

It is worthy of notice, that the practice of *smearing* or salving is now, even in these situations, much on the decline; and in the more southern parts of the island, not at all employed. See *SALVING of Sheep*.

In the sheep districts, in the more elevated and exposed northern parts of the island, a still inferior practice is had recourse to; the sheep being mostly left to provide for themselves, even in the most severe and inclement seasons,

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when the bleak tracts on which they live are deeply covered with snow. According to the writer of the Perthshire Agricultural Report, in these cases the sheep have their chief dependence for subsistence on their own habits, which lead them to remove the snow by their feet with great facility, till they reach the heath or withered herbage. But when the snow is falling, or blown by a storm, the shepherds drive their flocks, without intermission, round the top of a hill in a circle, in order to keep them from lowering, and being drifted up or smothered. It has been the practice, in some districts, to erect a sort of circular folds on the tops of low hills, for the same purpose; and when the heath is all covered, they sometimes rake or harrow the snow, in order to bring up the heath, with a sort of long-toothed rake or small harrow. With some sheep-farmers it is the mode to have recourse to feeding with hay, or unthreshed oats, which is deposited in handfuls upon the snow. Mr. Marshall has suggested, that cultivating plots of furze, broom, juniper, &c. by sod-burning, and rippling the surface, or by other more eligible means, could not fail of proving beneficial upon the wintering grounds of a sheep-farm. By means of these, as a resource in the deepest snow, when the herbage of the *braes* was buried too deep and too evenly to be uncovered by the scraping of the sheep, by keeping the most exposed part of the *braes* in full herbage for less general coverings of snow, and by reserve of rape for the season of lambing, even ewe-flocks might be supported through the winter with some degree of certainty, without dry fodder, and without being left to the uncertainty of the seasons, and the mercy of the winds and weather, as they are at present.

The practice of *birfelling*, where no more lambs are kept than what is necessary for drawing the stock, is now much objected to by some, though it may be beneficial in rearing wether hogs; as they are found not only to do much better, when at large with the ewes, but there is much less destruction of grafs by trampling, and the pastures are fed down more properly, and with less injury to, and loss of, the sheep. Besides, the sheep thrive better, and are kept in far better condition, while much less herding is required, by which there is a considerable saving of expence.

There are several different modes of rearing the lamb hogs in these situations; as by laying them, when lambs, upon a certain part of the ground, and keeping them separate from the old sheep, through the whole winter and spring, until they are clipped; and then blending them again with the old sheep, putting more lambs upon the same ground, &c.; by allowing the hog lambs, when gimmers, to remain upon the same land on which they were bred, and breeding the hogs on a different part of it, and continuing them on that also until they are gimmers or dinmots, and then introducing them among the old sheep, the lambs being every year laid on the land where such gimmers or dinmots had been the previous year; by keeping the hogs and dinmots or gimmers together, and putting the gimmers or dinmots only among the old sheep, and the lambs among the hogs, in the same place, &c.; and by breeding the hogs among the old sheep. The three last of these modes of management are supposed the most useful, but the last the most powerful in preventing disease; though the first and second probably afford the most equal stock of this description, in such exposed situations.

Profits of Sheep-Management.—It is evident that there is a variety of circumstances in the practice of sheep husbandry, that must affect any statement that can be made, in respect to the profit that may be derived from it: the nature of the system of management pursued, and that of the breed of

sheep employed, must operate so much in this way, as to leave the profits of no two sheep-farmers scarcely the same. But our limits will not allow us to introduce any particular statements on the subject.

In all sorts of sheep-grazing management, it should be the constant aim of this kind of farmer to have his pasture or other land so stocked and provided, as to derive the greatest possible profit from it; as where this is not the case, he not only injures himself, but the whole community. Where systems and practices of this nature are followed, which are not sufficiently profitable, they should be given up, and changed for such as are more fully beneficial. The same plan cannot, however, be always equally productive of advantage, as the fluctuation in the value of stock in different places, and from the ease or difficulty of providing it, at different times, as well as the nature of the season, must be the causes of much diversity in it, which are invariably to be well attended to by the sheep-grazier, and turned as much as possible to his own account. See *GRAZING, and STOCKING Land.*

The practices and profits of different sheep-grazing farmers are often very different in the same situations, as scarcely any two farms of this kind are conducted exactly in the same manner for the whole of the same year, or probably the same farms for two succeeding years together; as farmers of this sort must be directed and regulated in their management by times, circumstances, and seasons, so as to have their lands stocked according to the growth, or the probability of the growth, of grafs on them; taking care to have them always provided during the early summer months. Peculiar local circumstances, and the difference in the conduct and management of individuals, as well as capital, may also have great influence on the profit. On these grounds, the ordinary profit may amount, in favourable cases, to one pound the acre, and from that to two or three, as they are less or more favourable. The difference of practice which is had recourse to, as it relates to the sorts of sheep-stock, may likewise further increase it.

The employing sheep-stock wholly is probably the most profitable plan of all others, where such stock can be readily and reasonably procured, at all times, in the lean state; but which is not always the case. And where the grazing farmer, as in the Romney-Marsh practice, can either fend them readily to the uplands for the winter, or feed them on turnips, and have their lambs well kept, and send out a sufficient number, as well of them as of the tegs or two-years old sheep, or render these last fat, as is sometimes the case, a greater profit, it is said, will be produced than in other ways. The value of the wool is likewise to be taken into consideration in this sort of stock, as it tends to profit.

The profits of the breeding system, in the above marsh, with sheep, depends much upon the qualities and properties of the lands for the purpose, as some will carry and keep a far greater number of them than others; as two to the acre, two and a half, and three on the same extent of ground. It is unquestionable, that by lightly stocking such lands in the winter season, the growth of the summer grafs would be greatly benefited; but 100 acres of such breeding pasture land, which keep only 200 sheep, producing 220 lambs, will not pay so well, it is thought, as if 300 ewes were kept, producing 340 lambs. Two returns, therefore, are not capable of being made in the breeding system, as many ewes are, of course, under the necessity of being kept in the winter time as such lands will support. It is, however, suggested, that by the use of hay and artificial food, much increase of profit might not only be produced, but
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such pastures be improved; which should be the constant aim of the sheep-grazing farmer, whenever the expences will allow of it. Further, the expences of labour and keeping such pasture-lands in proper order, losses of stock, &c. must take greatly away from the profits of this kind of farming. It is, on the whole, thought, that though the profits of the breeding system may fluctuate considerably, it will not be so great as in some other modes of sheep-grazing. The breeding sheep-farmer may, it is said, "have a large or a small crop of lambs; he may lose a great many, or only a few ewes. There may be an increase or decrease in the value of the lambs, old sheep, or wool; there may be a prolific or scanty crop, an increase or decrease of rent; which circumstances cannot fail to alter the profits of a breeding grazier." But that lately, for many years, the great demand for lean sheep and wool has contributed greatly to the profits of farmers of this kind. The profits and advantages of the fattening system of sheep management, which is more varying, will be afterwards particularly considered, and in some measure compared with the breeding practice.

The original differences in the value of lean sheep, for the purposes of the breeding sheep-farmer, and as they may happen to be in a better or more reduced condition, must have a further effect on the profit of this system of management, as often amounting to not less than from three or four to eight or nine shillings the head.

Fattening-Management of Sheep.—In the business of fattening store sheep, there are many circumstances that should be carefully attended to, as well as that of managing the breeding and other flocks. The kind of sheep that are most advantageous under the different sorts of keep, situations and kinds of land, must be well considered: the differences in the sorts of food, in regard to the improvement of the sheep; and the most beneficial methods of employing it in different cases; and lastly, the markets. And as the sheep under this treatment should never be suffered to have any sort of want of fresh food, they should never be kept too long upon any inclosure or grafs-piece, or any other sort of keep, so as to be compelled to feed upon the sullied or trampled food, as it always greatly retards the fattening of the animals, or what is termed proof, which is constantly the most promoted by the allowance of only the prime fresh food.

There are many different sorts of food made use of in this business, such as the different sorts of turnips, which are very extensively applied in this system, and some use them alone; but it is probably a better practice to give some sort of dry food with them, especially where the common turnip is employed, as it is more watery and less nutrient than that of the Swedish kind. Cut hay, chaff, bran, corn, oil-cake, all answer well in this intention; and of the first two or three sorts they should have a pretty full supply; but the latter, from their expence, should be more sparingly given; several pounds of oats will however be required for each sheep per day, according to the kind and size. It is stated in the Norfolk Agricultural Survey, lately published, that captain Beacher having 700 fattening sheep, and turnips running short, put 200 of them to oats (not ground); he found that the practice would not answer if oats were more than 6s. per coomb, and then not for longer than six weeks: they were fed on a pasture, and the improvement of it very great. He thinks grey peas or beans would have answered much better.

With oil-cake, some give half a cake a day to each sheep, but the quantity must depend in some measure upon the other keep which they have. All food of this sort should be given in moveable troughs, divided in the middle, so that the sheep may feed on each side, with a sloping roof over

them, so as to cover the sheep's heads and necks while feeding, as wet is not only prejudicial to the sheep, but spoils the cake. A rack for hay, fixed over the trough, might probably be made to answer in this intention, while it would be very convenient for holding that material, and preventing waste. The whole should be fixed on wheels, and be made to stand steady, and a sufficient number for the quantity of sheep be always in readiness.

Steamed or baked potatoes, cheap convenient contrivances for the preparation of which have been lately invented, have been supposed by some to be preferable to turnips as a food in this intention. And they have been employed raw in the proportion of eight or ten pounds per sheep in the course of the day or night; but they are certainly a much better food in their prepared state. The quantity of common turnips consumed by each sheep in the same length of time, is usually about eighteen or twenty pounds. Where this last sort of crop is good, an acre is supposed to support about five score sheep in the field, six or seven weeks in the winter season: an acre of good grafs supporting at the rate of one hundred couples from five days to a week.

In the fattening of widders, the use of barley meal, with grafs or some other sort of green food, has likewise been found highly beneficial, and when it can be procured at a reasonable rate, should not be neglected, as it is quick in rendering them fat, and the mutton is excellent.

Different other articles are occasionally made use of as the fattening food of sheep, such as peas and beans, or pea and bean meal in the winter season, and some substances of other kinds. It is not known that any sort of pure saccharine matter has ever yet been tried in this intention in sheep, but it is probable that it could not fail having the effect in a very expeditious manner, if the expence of it would allow of its application in such a way; and it might be conveniently given, in small quantities at a time, in mixture with chaff, cut hay, bran, or any other similar sort of material, in covered troughs or bins for the purpose, suitable other sorts of food being had recourse to at the same time.

On the most usual sort of food for this use, that of turnips, sheep are very apt to go backward, unless fattened out before the winter season sets in. Indeed the loss from keeping fat sheep through the winter is often so considerable, that it is advisable to have them ready to sell at the close of summer, to prevent the winter keep from being thrown away. The most beneficial application of this sort of food in fattening sheep, has, however, probably not yet been fully shewn, as some kinds of sheep are said to pay well in winter fattening.

In fattening sheep in yards with potatoes, some take them in towards the latter end of the year, and keep them until they are ready for sale about the beginning of March. They have the potatoes sliced, and put into covered sheep-troughs, a gallon being sufficient for a sheep in the day. They mostly prove well on this sort of food, so that if a fair trial be made, the potato system will probably be found the most expeditious of any in fattening these animals. When compared with different sorts of grain, oil-cake, &c. by means of accurate trials with sheep in every way the same, it has been proved to be the most ready in effecting the business. A little hay is mostly given with the potatoes, morning and evening. A vast mass of excellent manure is likewise raised by this practice, where due care is bestowed in the preparation of the yard. Many other substances tried in the same way, may possibly be equally beneficial in this intention, though they have not yet been made use of by sheep-farmers.

In regard to the profits of the fattening practice of sheep management

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management on the more rich lands of the marsh kind, they must vary much according to the nature of the methods which are pursued by different sheep-grazing and fattening farmers, as some will make their land carry nearly one-third more stock than others, though the quality of it may be the same, while such stock will do equally well, if not better. Such commonly make the largest profits as have constantly the best supply of additional sheep-stock to succeed such as are taken away, and who regard the number more than the quality of them. The fattening practice may likewise be carried further than is proper and beneficial, by which the profits of the individuals will be lessened, and a loss sustained by the nation at large. The nature of the breeds of this sort of stock will have some influence, as they make a more or less quick return, and as they may come to a more cheap or dear market. The best way in general, is to sell the fat flock of this sort when ready, without waiting, but which is not always the case. Where more returns than one are made in the year, there is commonly the most profit made to the sheep-farmer; and the practical management which is had recourse to in such cases, will have a great effect on the profits, as different rich sheep-fattening districts have many different practices, which are more or less profitable, as that of stocking the land with sheep, at the rate of three to the acre, from the beginning of one autumn to that of another, and having recourse to mixed stock of other sorts during the summer for producing the profits: that of stocking with barren ewes which have had lambs, at the same time, but only at the rate of two to the acre, so that the keep may render them in a great measure fat by the beginning of the new year, and they may be fold off in March or the following month, in their wool, so as that the advance in their price may more than compensate for having it, by keeping them on until May. And after these are gone, by again stocking the same land with sheep brought in from the markets, fairs, hills, or neighbouring high grounds, or the two-years old wethers that have been kept out, or, which is perhaps the best stock in these cases, with such tegs as have been well kept through the winter, and which are equal in weight with starved or stunted two-yearlings. This is a most profitable sheep-fattening system, where it can be carried into practice, that of putting, what are denominated made barrens, or such ewes as have missed going to lamb, upon the fattening land; but as these will not form the necessary supply of stock, other sheep or mixed stock must be provided to produce sufficient profit. It is never a good practice to turn poor lean sheep directly upon the rich fattening lands, but to keep them some time on the inferior pastures, as they are in danger of becoming diseased by the former method. But half-fat sheep may be put immediately upon them without danger, and be fed out, often in the course of two months or less, by which the sheep-grazing farmer is enabled to have another return, which may contribute greatly to his profits.

In the sheep-fattening system, it is often of advantage to have a portion of land, of a superior rich quality, for the purpose of finishing them out upon; as by such means not only more sheep can be fed out and returned, than if the regular quantity of stock was kept upon the different fields, but the less rich pastures be stocked in a more close manner, and as the more quick feeding sheep advance, be taken into the rich finishing portion.

There are several other circumstances which have much effect in this system of sheep management; but the profits will materially depend on the proportion, the richness, and the quality of the farmer's fattening to his other lands, and on the judgment which he possesses in the buying in lean stock,

the nature of the season, the state of the markets, the losses sustained, the expences of the management, &c. as already seen.

Though the size of sheep is by no means a point of much consequence in the breeding practice, it should not on any account be overlooked in that of fattening.

The average profit of middling-sized fat rich pasture sheep may be stated to be from about one pound to one pound four or five, or even ten shillings, or even more in some cases.

Folding-Management of Sheep.—In the management of sheep there is a practice made use of in some districts, which remains to be noticed; and which is that of folding. It was formerly thought to be indispensably necessary to the success of the farmer in different districts; but of late a different opinion has prevailed, except in particular cases, and it is considered as merely enriching one field at the expence of another. The practice may, however, be beneficial where there are downs, heaths, or commons. The ideas of farmers are not, however, uniform on this subject, as will be shewn by the following details from the Norfolk or Hertfordshire Reports on the agriculture of these districts. In the former it is remarked, that near Brandon there is a practice, introduced about ten years ago, said to be from Kent, which is, to fold their flocks for five or six hours in the middle of the day in hot weather. And that, in laying out the inclosures of the farm at Waterden, from fifteen to fifty acres each, much attention was paid in the arrangement to have every field of the farm to open into a lane, that leads through the whole, so that by dividing the flock for stocking, according to varying circumstances, Mr. Hill can keep at least one-fourth more than when all the breeding ewes and lambs were in one flock, and the food dirtied by driving to fold: by this means there is not a bent on the farm, the stocking being equal. He is not, however, entirely without a fold: when the lambs are weaned (usually about old Midsummer) the ewes are folded for about two months, principally to prevent their breaking pasture, when the lambs are taken from them: and while thus folded, he finds that it takes one-half more land to feed them than if they were left allotted, as through the rest of the year. That folding lessens the value of the lambs he has not a doubt, and that considerably; they do not bring so high a price as others not folded. This is not opinion, but fact. The ewes are also in doubly better condition, from lying still and quiet. That the *teath* will, in certain cases, be unequally given, he does not deny; but it is not difficult to remedy this by the dung-cart; to fold a lot in its own lay, is also a remedy, and is the only sort of folding he can approve. In regard to the effect on wool, he is clearly of opinion that folding does not render it finer, it makes the fleece lighter, but never finer. And folding is generally given up by all who have South Downs; not because they will not bear it, for they bear it better than any sheep in the island; but because the flock is so valuable that it is worth the farmer's attention to contrive, by every means, to keep as many as possible. And it is added, that one circumstance, though a small one, deserves mentioning, for the use of those who form separating sheep-pens: which is, that Mr. Hill has sliding-gates from one to the other; the writer remarked that when a pen is full of sheep, the gates cannot be opened with convenience; but by their sliding in the fence, this is avoided in a very easy manner.

Further, Mr. England, of Binham, does not fold. When not folded, he thinks, sheep do with less food; and as to the common objection, of their drawing under hedges for shelter, in storms, &c. so much the better; it is what they ought

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not to be prevented from doing. The *tatbe* is much more than loft in mutton. And Mr. Reeve, of Wighton, never folds: folding from layers, upon fallow, is only robbing one field to enrich another. He is clear in this point; and also in the fact, that if sheep (whatever the breed) are driven by foul weather to a hedge, there is the proper place for them, and not by penning left to abide the beating of the storm. Mr. H. Blythe, of Burnham, sometimes folds, but never from choice, but solely by reason of the opennefs of his farm; nor does he approve the practice. And he explained a point in his manuring for wheat, which, the writer says, comes home to the question: he never sows tempered land with wheat, without either oil-cake, or muck, except on pieces from which the sheep were not folded while feeding the layers. And Mr. Dursgate remarks, that folded sheep certainly demand more food than those which are not folded; a quarter of a ton of rape-cake is equal to the fold; and the flock, without any doubt, suffers more than that value by folding. In short, folding is to gain one shilling in manure, by the loss of two in flesh. Some, however, fold with large flocks. But Mr. Beck, of Riving, does not fold; and he is very certain that if he did fold, he could not keep any thing like the number of his present flock. It is added, that as the writer rode across a layer of forty or fifty acres; on Mr. Overman's farm, he observed a great difference in the verdure, to a line across it, the appearance of one side of that line being so much superior to the other; and on his remarking it, he was informed, that it was an accidental experiment, which was well worth attention: there was no other difference in the management, to make one part of that layer better than another, except the sheep that fed it being from one part of it folded on another arable field during the summer; but from the other part they were not folded at all, but left in the layer night and day. The difference was very considerable, and might have been discerned half a mile off. This experiment made that farmer give up folding, except when his flock was in a salt-marsh; and Mr. Tuttle, a neighbour, asserted, he would never fold at all had he no marshes. Nor does Mr. Etheridge, of Stanhow, fold. These facts should, the writer says, be combined with another, that of heaths and sheep-walks that have been fed with sheep for centuries; but those sheep constantly folded on other lands, are so far from improving them, that they are to all appearance as poor as they could have been at any former period. It is further stated, that Mr. Styleman, at Snettisham, turned his flock loose, and without folding, in twenty acres of *ollond* every night, for the same period that would have folded it in the common manner. The sheep did much better than they would have done had they been folded; the face of the herbage materially improved during the period, and upon ploughing it up for wheat the crop was equal to what it would have been with folding, and shewed by a regular verdure, that they had distributed the manure equally in every part. He conceives that lambs sell 3s. a-head lower on account of folding, than they would do without it; but this is only his opinion. He thinks also that the ewe is much injured.

But Mr. Pitts, of Thorpe Abbots, finds that no mucking, on his burning gravels, will do so much good as the fold, and especially on a white clover and trefoil layer for barley. And in the clay district of the county of Hertford, Mr. Byde remarks that sheep have been too much lessened. Of all the common manures, he considers the fold as the best; and he has observed in many farms the general appearance of the crops decline, as the number of the sheep kept has lessened. That at the Hadhams, every man folds the sheep which he keeps; a little farmer will even fet four

hurdles, if he has not sheep for more. But that good as the manure of the fold is, Mr. Chapman has found by trial in the same field, for turnips, that yard-dung was much better than both fold and malt-duft together. However, Mr. Roberts, of King's Walden, thinks nothing is equal to the fold; he never reckoned it worth less than 40s. *per* acre, corn being cheap; but of late much more; he folds two poles of ground with twenty sheep. And Mr. Sedgwick, of Rickmanfworth, is clearly in favour of folding on all farms. See *FOLDING of Sheep*.

It has been observed by Mr. Ellman, in the Annals of Agriculture, that just twenty South Down sheep (if a large fort, a less number will do) will fold one rood *per* night: three thousand two hundred will fold one English acre *per* night. We value the manure at from 35s. to 50s. *per* acre, the goodness of which depends much on the manner in which the sheep are kept; if kept on artificial food, such as tares, rape, clover, turnips, &c. they will drop more soil than if fed on grafs only. Suppose we estimate the folding at 40s. *per* acre, it will amount *per* year to 4s. 6 $\frac{3}{4}$ d. *per* sheep; 22l. 16s. 3d. *per* hundred; or 223l. 2s. 6d. *per* thousand, supposing the sheep folded throughout the year. If it be a breeding flock, it might be well to omit folding for five or six weeks immediately after lambing, as the young lambs might suffer from being trampled upon, and from driving to and from fold, would often lose their dams, and suffer in that way more than if they remained quiet. There is, however, another method of folding, by which all the advantages may be attained during winter on all soils, without the inconveniences of the former plan. This is stated to be by confining them at night in a sheep-yard, well and regularly littered with straw, stubble, or fern; by which means you keep your flock warm and healthy in bad seasons, and, at the same time, obtain a surprising quantity of dung, so great a quantity, if you have plenty of litter, that the profit will be better than folding on the land. A great improvement in this method would be giving the sheep all their food (except their pasture) in such yard, *viz.* hay and turnips, for which purpose they may be brought up, not only at night but also at noon, to be baited; but if their pasture be at a distance, they should then, instead of baiting at noon, come to the yard earlier in the evening, and go out later in the morning. This is a practice which cannot be too much recommended; for so warm a lodging is a great matter to young lambs, and will tend much to forward their growth; the sheep will also be kept in good health, and, what is a point of consequence to all farms, the quantity of dung raised will be very great. If this method is pursued through the months of December, January, February, March, and April, with plenty of litter, a hundred sheep will make a dunghill of, at least, sixty loads of excellent stuff, which will amply manure two acres of land, whereas one hundred sheep folded (supposing the grafs dry enough) will not in that time equally manure one acre.

And in Norfolk, Mr. Bevan finds a yard well fenced in for standing fold for littering and for folding in bad weather convenient; and is fully convinced of the great advantage of it. He intends in future to have his flock in it for yeaning, whether the season be good or bad. And in Hertfordshire, the earl of Clarendon has a fold which contains good room for three hundred sheep, the number kept in it: an open shed surrounds it, except on one side, where a barn is the fence; the outside of the shed is formed of wattled hurdle-work, without straw or other materials, for coolness, left a greater closeness should make the yard too hot: it is all kept well littered with stubble, and yields, from three hundred sheep, eighty large cart-loads of manure. This system agrees perfectly well with the sheep, and keeps

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them more healthy than when they were left in the fields in the common manner. His lordship has another yard for lambing, which has also a shed. These sorts of yards, from their beneficial tendency in different views, should be more generally made use of by sheep-farmers in all situations. See *SHEEP-Houfe*.

This practice is had recourse to on arable land for raising different sorts of crops of the corn and green kind, as well as on grass-lands. It is supposed by some, that a flock of about five hundred sheep will be sufficient to pen twenty-eight square perches of land each night, which will amount to about fifty acres in the year, where the practice is discontinued two months in the course of that time. The value of this is different in different districts, as from above thirty to more than forty shillings the acre, which for five hundred sheep, would be from 87*l.* to 100*l.* for fifty acres, which, taking the average at 94*l.* for that amount of flock, the annual advantage of the fold may be set at 3*s.* 9*d.* a-head, or rather more; taking it at 100*l.* it would be 4*s.* 2½*d.*, or rather more. This shews the great utility of it in some places. All sorts of sheep, except the fattening ones, and those disposed to that state, are mostly folded. It forms a sort of moving dunghill, which enriches the land at but little expence, and which may probably be rendered further useful by a greater division of the flocks. It is also beneficial in preventing the waste of food on grass-lands, as well as in consuming particular sorts of crops. See *SHEEP-Fold*.

Hurdling-Management of Sheep.—It may be noticed, that the great utility of hurdling off different kinds of green crops, in consuming them by sheep, has been long known and practised; and equal advantage may be derived in many cases, by having recourse to the same method on rich grass-lands in large inclosures, so as to let the animals have a fresh space or bite every day. The sheep are found to thrive better, and the same extent of land to support considerably more in number, while the land is at the same time much improved. And it is not improbable, but that other sorts of stock may be managed in the same way with similar advantage. In these cases the hurdles must be set according to the nature of the grass; where it is bare and thin, larger pieces should be folded, than in the contrary circumstance. See *HURDLES*.

Washing-Management of Sheep.—From the fleeces of sheep becoming much loaded and filled with dust and dirt of various kinds, in the hot summer season, by way of preparation for shearing, it is necessary to have recourse to the operation of *washing*. It was formerly the method of performing this business to have the washers standing up to the breast in the water; but from the inconvenience and danger of it, the men requiring a large supply of spirituous liquors, and being liable to be attacked with colds, rheumatisms, and other diseases, as well as being apt to dispatch the work with too much expedition, so as to leave the wool insufficiently clean; it has been proposed by Mr. Young, in his Calendar, to rail off a portion of the water (in a stream or pond) for the sheep to walk into by a slope mouth at one end, with a depth sufficient at one part for them to swim; and to pave the whole: the breadth need not be more than six or seven feet; at one spot to let in on each side of this passage, where the depth is just sufficient for the water to flow over the sheep's back, a cask either fixed or leaded, for a man to stand in dry; the sheep being in the water between them, they are washed in perfection, and pushing them on, they swim through the deep part, and walk out at the other mouth, where a clean pen, or a very clean dry pasture, is to receive them; of course there is a bridge rail-way to the tubs, and a pen at the first mouth of the water, whence the sheep are turned into it,

where they may be soaking a few minutes before being driven to the washers. But other more cheap contrivances may be provided where there is clean water at hand for the purposes. And sheep should on no account be driven on dry or dusty roads after this operation.

But in all cases before this work commences, the lambs should be separated from the ewes and other sheep, and each be put in separate pens. With these it is seldom necessary to do much more than just swim them through the water, without their being touched by the washers. As soon as they have been washed, the sheep should have a clean hard pasture for a few days, until they are perfectly dry, and in a proper condition to be shorn. The lambs are generally shorn, especially in the northern districts, a few weeks after the old sheep, and the operation is termed *shearling*. The lambs that are sold in Smithfield market are, we believe, seldom or ever shorn. See *SHEEP-Shearing*, and *SHEARLING of Lambs*.

The practice of washing the sheep before they are shorn is a custom that prevails over most part of the kingdom, especially with the long-woolled breeds, and pretty generally with those of the short-woolled kinds also, but which is performed with more difficulty in them from the close-matted nature of the fleece. It is said, however, to have been the custom in Devonshire, for a great length of time, never to wash the short-woolled sheep, but to shear them dry, as is constantly the case in Spain.

The practice of washing the sheep before shearing now, however, begins to prevail in some parts of it, according to the writer of the Agricultural Report of the county. This has at length been enforced, it is supposed, by the difference in the price which the wool-buyers make between wool in the yolk and washed wool, which is no less than 50 per cent. even in the Dorset sort of wool; and though it is not so much, it is greatly more than proportionate in the coarser fleeces, besides the over-weight of 5 per cent. The wool of the Dorset fat wether sheep, which is about five pounds each when washed in the yolk, rarely sells for more than 1*s.* the pound, but when washed, it as commonly commands 1*s.* 6*d.* The weight of a fleece in the yolk, is to the same fleece when washed, it is said, as six and three quarters to five, and the consequent value is as 6*s.* 9*d.* to 7*s.* 0*d.* the fleece. This has, at length, been made evident to the sheep-farmers of this district, who now willingly agree, that it is advantageous to wash short-woolled sheep before shearing, but to sell the long and coarse stapled fleeces in the yolk.

Good clean washing is a matter of great consequence to the wool; and it is of much advantage to it as well as the sheep to have the weather fair and fine at the time it is performed, as they are much less liable to have colds.

Shearing-Time.—In respect to the proper period of clipping or shearing sheep, it must be directed by the state of the weather, and the climate in the particular district; and by this means the danger of injury by cold, from depriving the sheep of their coats at too early a season, and from heat, by permitting them to continue on them too long, may be avoided in the best manner. But another circumstance, that should likewise be attended to in this business, is that of the wool being fully grown, or at the state of maturity; as where the clipping precedes that period, it is said, in the Annals of Agriculture, to be weak, and scarcely capable of being spun; and if protracted later, it is yellow, felted, and of an imperfect nature. It has been stated, that for the more warm sheltered situations in the southern parts of the kingdom, the beginning or middle of June, when the weather is fine, may be in general the most proper; but in the more exposed districts, in the northern

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parts of the island, the middle or latter end of the same month may be more suitable, provided the season be favourable. But with the fattening sheep in the inclosures, it will mostly be necessary to perform the work at an earlier period, in every situation; as the great increase of heat, from the setting in of the summer weather, added to the warmth of the fleece, becomes very oppressive and injurious to them, in their feeding and other properties.

It is an excellent practice with many good sheep-farmers, to clip off all the coarse soiled wool about the thighs and docks, some weeks before the usual time of washing and clipping the sheep; as by this means the sheep are kept clean and cool, when the season is hot, and with ewes the udders are prevented from becoming sore. This practice is common with some South Down sheep-masters, as well as in Yorkshire. In the former situation, Mr. Ellman sells his, as locks, at $3\frac{1}{2}d.$ per pound, having about four ounces from each sheep.

By some it has been proposed to shear sheep two or three times in the course of the year, with the view of having finer, as well as a larger quantity of wool; but it is probable that such a practice can never be of any general advantage, though the trials that have been made in Northumberland in this way seem to shew that advantages may be derived in both these intentions; but the disadvantages in respect to the sheep do not seem to have been sufficiently attended to. And with the same view, the clothing of sheep has been had recourse to. In experiments made in this way in Scotland, the advantage in respect to wool is stated to have been very considerable, and the expence not more than $7d.$ per sheep. By having recourse to this practice with that of the above, it has been suggested that combing wool may be rendered fit for the purpose of clothing, and at the same time the mutton rendered more valuable. The trials in these ways have, however, hitherto been but few, and do not seem to extend.

It may also be noticed, that in the general management of sheep, it is usual, after the shearing has been performed, to mark the sheep with red-dye, ochre, or some similar substance; and some also cut the ear in different ways. The marking with tar has been said to be prejudicial; but where a small quantity is only employed, little injury can be sustained. And in almost all the sheep districts of the kingdom, except in Dorsetshire, the tails of sheep are shortened, which seems to be an useful practice in keeping the animals more clean behind, and of course less liable to be stricken with the fly. It has, however, been suggested in the ninth volume of *Annals of Agriculture*, that by this custom the sheep may be rendered less able to drive away the flies. The general prevalence of the practice would, however, seem to prove its being of advantage. There is much difference in the manner of performing the business in different districts, in respect to the length; but four or five inches being left, are quite sufficient. It is usually done while the animals are young. In all sheep-pastures the hedges should be well cleared from briars, as their coats are often injured by being torn by them; and all sorts of pernicious reptiles should be as much as possible destroyed, and removed from such land.

Further, in respect to the business of castrating or gelding the lambs, it may be performed any time from the age of a fortnight or three weeks to that of a month or six weeks; and in some districts it is deferred to a considerably later period. It is, however, the safest method to have it executed early, as there is less danger of too much inflammation taking place. But in all cases, the lambs should be in a healthy state, when it is done; as under other circumstances, they

are liable to be destroyed by it. The operation is usually performed by the shepherd, by opening the scrotum or cod, and drawing out the testicles, with the spermatic cord. This he often does with his teeth, in the young state of the animal. But where the operation is performed at a later period, it is usual to have recourse to the knife; the arteries being taken up, and secured by means of ligatures or the searing-iron. The business, if possible, should be done in fine weather, when not too warm; and the gelded lambs be kept in a dry, sheltered, quiet situation, for a few days, until the inflammation is gone off. If it should happen to be wet at the time, it may be advisable to have them under some sort of shelter, where they can have room to move freely about.

It is now well known that the mode of ascertaining the age of these animals is chiefly by their teeth; but they are likewise sometimes named from the number of coats or fleeces that have been shorn from them, as one-shear, two-shear, &c. The sheep of one-shear having two broad teeth before; that of two-shear, four; that of three, six; and that of four, eight; which is full-mouthed. See *AGE of Sheep*.

And they have also different names in different districts. After being weaned, the ram or wedder-lamb is sometimes termed *hog*, *hoggit*, *teg* or *tag*, during the whole of the first year; and the female lamb, an *ewe* or *gimmer-lamb*, and *ewe-teg*. The second year, the wedder has the title of *shear-hog*, or a *two-toothed teg* or *tag*; and the ewe is called a *thaiwe*, *thawe*, or *two-toothed ewe*. In the third year, a *shear-hog*, or *four-toothed wedder*; and a *four-toothed ewe*, or *thaiwe*. The fourth year, a *six-toothed wedder*, or *ewe*. And in some places, from the time of lambing till that of salving, the males are called *tup-lambs*; and from that period till the time of shearing, *tup-hogs*; and ever afterwards, *tups*; the females in the same order being termed *ewe-lambs*, *ewe-hogs*, *gimmers*, *young ewes*, *old ewes*. The gelded male lambs, *castrated wedder-lambs*, *wedder-hogs*, *dummonds*, or *dinmonds*, *wedders*. *Crones* also signify old ewes; and there are several other provincial names, which are explained in their proper places, under their different heads. See *SHEEP, Names of*.

In the management of this sort of stock, it must be sufficiently evident that a great deal of the profit and advantage must depend upon having a careful attentive shepherd, who perfectly understands his business, and is at all times willing to perform it. See *SHEPHERD*.

Sheep are subject to a variety of diseases, which should be carefully attended to by those who have the care of such sort of stock, as soon as ever they shew themselves; as a very short time often renders them irremediable. The nature of them, and the means of removal, are described under the proper heads to which they belong.

The above accounts, observations, and details, may serve to afford the inquirer a general knowledge of the nature of sheep husbandry, and of the usual methods of management which are required with that sort of live-stock, as well as the benefits and advantages which may be derived from it in many different ways.

SHEEP, and their Varieties, chiefly in connection with the Woollen Manufacture, History of. Of all the animals that have been domesticated by man, none have rendered him more essential service than the sheep. A large part of the food and clothing of the civilized world is supplied by this useful animal. The culture, improvement, and manufacture of its fleece, have constantly accompanied and marked the progress of civilization, both in ancient and modern times.

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In the early ages of society, sheep appear to have been principally domesticated for the sake of the skin, or the fleece: we shall, therefore, first take a short view of their cultivation and improvement in different countries, as wool-bearing animals; whether as producing fine or coarse wool, or as *long* or *short-woolled* sheep; the produce of the two latter differing from each other in the mode of manufacture, and the uses to which it is applied, more than silk and cotton, considered as articles of manufacture.

It is not a little remarkable, that the domesticated sheep depends for its subsistence almost entirely on the care of man, and is never found at any great distance from his habitation. "Left to itself, it becomes the subject of disease, and the prey of ferocious animals; or if these should spare it, its own fleece becomes the abode of insects, which continually nourish themselves with its blood, and destroy its constitution. Its enemies are indeed so numerous, and constantly at hand, that it has no chance of escaping them."

Naturalists are not fully agreed from what animal the different varieties of domestic sheep originally sprung. The Siberian argali, as described by Pallas, was most probably the parent of all the cultivated flocks in Asia, from whence they have spread to other parts of the world. This animal, the argali, which in the Siberian language means wild sheep, is called by the Russians *kamenoï barann*, or sheep of the rocks, from its ordinary place of abode. According to Pallas, it is the same with the musimon of Pliny, and the ophion of the Greeks. It is found, in all its native wildness, vigour, and activity, inhabiting the vast chain of mountains which run through the centre of Asia to the Eastern sea, and the various branches of this chain, extending through Great Tartary, China, the north of Hindoostan, and Persia. The argali delights to bask in the sun on the bare rocks, but avoids the woods and shade; it feeds on alpine plants and shrubs; it prefers a temperate climate, but is found also amongst the rocks of Asiatic Siberia. This animal loves a state of solitude, and flees the haunts of men. According to professor Pallas, nothing but the surrounding sea can account for the argali being found on an inhabited island, as is sometimes the case.

The ewe of the argali brings forth before the melting of the snow: the lamb resembles a young kid, except that it has a flat protuberance in place of horns, and is covered with dark grey hair, frizzled and woolly.

There are few animals more difficult to overtake than the argali. When pursued, it turns and doubles like a hare, scrambling over the rocks with wonderful agility. Though the adult animal is untameable, the lamb is easily domesticated, when taken young, and fed on milk, and afterwards on fodder, which is proved by numerous experiments made in the Russian settlements.

The argali is about the size of the fallow deer, but its make is more robust, being less elegant than the deer, and its neck and legs are shorter. Its head resembles that of a ram, with long straggling hairs about the mouth, but no beard like the goat. The horns, according to the drawing given by Pallas, bear a similarity to those of the Merino rams; their weight is about sixteen pounds; the tail is short. The summer covering of the argali is a short sleek hair, resembling that of the deer; the winter coat consists of wool, like down, generally of a white colour, and intermixed with longer hair. See ARGALI.

From the facility with which the young of the argali is domesticated, and from the character of this animal, as well as its situation, we may with much probability infer that it was the parent of the Asiatic flocks. According to other travellers, the coat of the argali is of a grey or nut-brown

colour: probably it may be of different colours in the different districts it inhabits. In early ages the fleeces of domestic sheep appear to have been all of a dark colour: such was the flock of Laban, in Mesopotamia; and the narrative of the manner in which the change was effected, may serve to shew that, previously to that time, the common colour of the sheep was black or dark-brown. The improvement in the quality, as well as the colour of the fleece, has always been closely connected with the progress of the arts; for we uniformly find in countries, where these have flourished, a race of sheep which yield wool of a superior quality to those around them. In Persia and Syria, the influence of ancient manufactures is still visible in the superiority of their sheep, as fine-woolled animals. From Asia Minor these animals were transported into Greece, and from thence into Italy and Sicily. They were dispersed by the Romans over various parts of Europe; and the Tarentine sheep, formerly celebrated for their fine soft wool, were introduced into Spain, where they have flourished for sixteen centuries; the present Merino race being their immediate descendants, but rendered more hardy by an intermixture with the original native sheep of Spain.

From the writings of Columella, and the incidental circumstances mentioned by ancient historians, we may infer that the fine flocks of Greece and Italy were of the short-woolled kind, producing clothing wool, which was manufactured into woollen cloth, similar to what is at present worn; but probably more flexible, from not undergoing so completely the milling or felting process. (See WOOL.) Indeed, from the remains of the Tarentine flocks at present in Italy, we can be at no loss to determine the nature of the former Tarentine fleece. Thirteen centuries of neglected cultivation, and intermixture with other breeds, have not been sufficient to obliterate the labours of former times. From what we have seen of the finer Italian wools, we have no hesitation in asserting, that by judicious and careful selection, it would be practicable to restore the Tarentine race once more to its original purity, in the course of a few years; were it found to possess any superior merit, compared with the fine-woolled sheep of Spain. The circumstances respecting the management of the Tarentine flocks, recorded by ancient writers, when compared with the present treatment of the Merino flocks in Spain, leave no doubt respecting the origin of the latter.

The term Merino, in the Spanish language, is an adjective, derived from the corrupt Latin *merinus*, or *majorinus*: when united with *ovejás*, it signifies the royal judge, or superintendent of the sheep-walk. At the period when the *trashumantes*, or travelling flocks in Spain, were established, they became the objects of police, and were placed under the exclusive jurisdiction of mayors, with public walks and large districts allotted for their sustenance, and were termed *Merinos ovejás*, or the sheep under the care of the merino or mayor. The names peculiar to the establishment of these flocks, such as *mesta*, *caravana*, &c. are derived, not from the Morisco, but from the provincial Latin that prevailed in Spain before and after it was subdued by the Goths. (See MESTA.) The management of the flocks is peculiarly Roman; the merino, or mayor, corresponds exactly with the magister pecoris of Varro and Columella, and was superior to the opiliones and pastores. The practice of destroying half the sheep at their birth, and of suckling each of the survivors on two ewes; of sweating the sheep before they were shorn, to increase the softness of the fleece; and of conducting them from their winter to their summer stations, by long journeys through public sheep-walks, has been derived from Roman institutions, with this difference, that in Italy their migrations were

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were confined to the coarse-woolled sheep, while the *molles oves*, or fine-woolled flocks of antiquity, were always housed.

The experiment of Columella's uncle ascertains the early introduction of fine-woolled sheep into Spain. Having procured some wild African rams at Cadiz of a coarse fleece, but of an admirable colour, he gave them to some fine-woolled ewes, and the male progeny being again given to Tarentine ewes, the offspring, with their descendants, united the paternal colour with the peculiar softness of the maternal fleece. Columella's uncle resided in Bœtica, which comprehended the modern Estramadura; and as Columella flourished under the emperor Claudius, the Tarentine breed must have been introduced into that province at the commencement of the Christian era. Whatever was the peculiar colour which the elder Columella introduced by means of African rams into his Tarentine flock, we may conclude that the same successful expedient was employed by other agriculturalists of Bœtica, to convert these coarse into fine-woolled breeds, and to communicate the purest white to the black or parti-coloured native flocks, which, according to Pliny, were common in Spain. The original intermixture of distinct breeds of native Spanish sheep with the Tarentine in different parts of Spain, may be inferred from other circumstances: each cavana, or flock, forms a distinct breed; and the Nigrette no more resembles the Paulac, than the Merino South Down resembles the Merino Cheviot. The genuine unmixed descendants of the Tarentine breed would have preserved one uniform character; but the native flocks crossed with Tarentine rams would retain their distinctive varieties, and transmit them to each cavana.

That the Merino is a mixed race, seems to be further indicated by the more tender constitutions of the fine-woolled flocks of antiquity. Of these, the Tarentine were most celebrated in Italy, and the Milesian in Asia Minor. They were termed *pellitæ* and *tectæ oves*, from the coverings of skin with which they were clothed to defend the fleece. They were denominated also *molles oves*, not only from the softness of the fleece, but from the delicacy of the constitution. They were always fed in the house; and though satisfied with brambles, or the coarsest food, they are described as a most voracious breed: a diminution of their allowance from the fraud of servants, or the parsimony of the owner, was attended with certain destruction to the flock. (Plin. lib. viii. cap. 47.) As there was no sale for the lambs, nor any profit from the milk of a Tarentine flock, half the lambs were destroyed at the birth. The ram-lambs were chiefly reared, and were killed at two years, when their pelts sold to the merchant at an advanced price, on account of the beauty of the pile. This breed demanded constant care, when in the fields, to preserve their coverings from being torn, and the fleeces destroyed. At home they required even greater care than abroad, as they were not daily conducted to their pastures. They were frequently uncovered and cooled for refreshment. The staples of the fleece were opened and disparted, and were frequently moistened with wine and oil. The whole flock was washed three times a-year, when the weather was warm. The stables were frequently swept, cleaned, and fumigated: for these different offices two shepherds were constantly required for every hundred sheep.

The excessive care bestowed on these flocks by the nations of antiquity, shews in what estimation their fleeces were held; and though such attention is remote from modern practice, we are fully convinced that, by selecting the very finest and softest Merino flocks, and covering the wool, and frequently anointing and washing, it would give to the

pile that degree of softness which is so much wanted in the manufacture of shawls, and other costly articles of luxury, but which we seek for in vain in the finest fleeces of modern Europe. However expensive such attention might prove, we have no doubt that, on a limited scale, it would well repay the labour of the judicious experimentalist, as the wool would be worth more than 30s. *per* pound, could it be made to equal that of India in softness. It would appear that the Tarentine breed were selected with much care for breeding, and every expedient adopted, which was proved by experience to attenuate and soften the pile. The transition of these delicate animals into the Merinos of Spain, which are a hardy race, can only be explained by supposing that other agriculturalists had imitated Columella, and obtained a fine-woolled race, by crossing their native breeds with the more delicate animals from Italy. The beginning of this improvement is indeed described by Strabo in the reign of Tiberius: he informs us that the inhabitants of Truditania had formerly imported many garments, but that their wool in his time surpassed that of the Coraxi, and excelled it in beauty so much, that a talent, equal to two hundred guineas, was the stated price of a ram to breed from; and that they excelled also in the fabrics which the *Saltiatæ* manufactured. Truditania, according to Strabo, comprehended the province of Bœtica, from the Guadiana to the confines of Lusitania, and southward to Gibraltar, and eastward to Toledo. The wool of the Coraxi, with which Strabo compares that of this part of Spain, we are informed, in his account of Pontus, was from the soft-woolled Milesian sheep. Such high prices as a talent must have been produced by a very general demand for rams, not for the use of the Tarentine flocks, which could occasion no such competition, but for the purpose of crossing the indigenous breeds of the province, which, from the earliest period, appears to have abounded in sheep.

The travelling flocks were not at that time introduced, as the mountainous regions had been till then infested by native as well as Lusitanian robbers, whom the Romans dislodged from their villages, and dispersed into cantons. (Diodorus Siculus, lib. v. cap. 32.) The Moorish looms of Andalusia and Catalonia, and those of the Christians at Segovia, in the 13th century, must have been supplied by the fine-woolled flocks introduced by the Romans. The vacant mountains, when cleared of banditti, offered a vast range of pasture from Estramadura northward, towards Galicia and the Asturias. A similar opportunity occurred to establish or renew the institution of travelling flocks when the Christians descended, in the middle of the 13th century, to occupy the conquered provinces of Andalusia and Murcia. After that time the travelling flocks became so well established, that the *mentargo*, or tolls, on their passage through the mountains, from province to province, the *servicio*, or tax to the crown, and the laws of the *mesita*, were imposed or ratified by government, in the middle of the 15th century, before the Moorish kingdom of Grenada had been finally reduced.

We are thus enabled from history to trace the introduction and establishment of the Merino race of sheep in Spain, from which, or from their descendants, nearly all the manufactories of fine cloth in Europe are at present supplied with wool. See WOOL.

The native breeds of Bœtica were originally and gradually converted into fine-woolled animals, by repeated crosses with the Tarentine flocks, and thus an immense number of hardy sheep, producing a most valuable pile, were spread over the country, and survived the successive conquests of the Goths and Vandals, and the protracted warfare

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fare of many centuries. The pure Tarentine breed in Greece and Italy being more delicate, is said to have become extinct with the destruction of the Roman empire; but the mixture of this race with the original flocks of Italy may still be distinctly traced, particularly in the middle and southern parts. The Italian wool was finer than that of any other country in Europe, except Spain, prior to the improvements which have recently taken place by the introduction of the Merinos. It is not improbable that the fine-wooled flocks of England, though greatly inferior to the Merinos in the quality of the wool, were also originally descended from crosses with the Tarentine breed introduced by the Romans, when they established a manufacture of woollen cloth at Winchester.

The destruction or deterioration of the improved flocks in the ages of barbarism which succeeded the fall of the Roman empire, was the natural consequence of the decay of the manufactures, and of a total inattention to prevent the intermixture with coarser breeds. In Spain alone, the improved race had taken such complete possession of the mountainous districts, that it remained unmixed and unimpaired till the revival of commerce and the arts, when that country supplied the neighbouring nations with fine wool, and was supposed to possess some peculiar advantages of soil and climate, which it would be vain to seek for elsewhere. The opinion that the superior fineness of the Spanish fleeces was derived entirely from some peculiarity of the soil and climate, had obtained so generally, and was so firmly believed, even twenty-five years since, in this country, that he who asserted the contrary, was regarded by agriculturalists and clothiers as a speculative theorist, only deserving their pity.

It is not a little remarkable, that this prejudice continued undiminished nearly a century after the Merino sheep had been introduced into Sweden and Saxony, and had continued to produce wool in those countries, equally fine with that of their parent flocks in the Spanish peninsula.

It might have been previously supposed that the climate of Sweden, being much colder than that of Great Britain, and more remote from the annual mean temperature of Spain, would render that country peculiarly unfriendly to the Merino race and to the production of fine wool. This prejudice respecting the influence of climate would have been removed by considering that almost all the finest furs are the production of cold climates, and that the growth of fine wool and fur is a provision of nature, to defend animals against the severe cold of the districts nearer the poles. Mr. Alstroemer, who had previously endeavoured to ameliorate the breed of sheep in Sweden, by importations from England and Germany, obtained a flock of Merinos, which he introduced into that country in the year 1723. In the year 1739, the Swedish government, for the promotion of this race, instituted a school of shepherds, under the direction of Mr. Alstroemer, and public funds were appointed for granting premiums to those who sold rams of the Spanish breed; and from the same period, to 1780, a premium of twenty-five *per cent.* was also granted on the sale of fine wools of a good quality. These premiums were afterwards reduced, and finally discontinued in 1792, being no longer necessary. From exact accounts, it appears that the fine wool sold from 1751 to the year 1790, amounted to 3,402,961 francs.

The quantity of fine wool actually produced was much greater than what had been sold to receive the premium, a considerable part having been consumed in domestic manufactures by the growers and others; and the distance of the public magazines, where the wools were sent to receive the premium, prevented the public returns from including

the real quantity of fine wool grown. In the year 1764, there were in Sweden 65,369 sheep of the pure Merino race, and 23,384 of a mixed breed, producing fine wool. The Swedish Merinos preserve their primitive form; their fleeces are very close, and the wool has not deteriorated in fineness, length, or elasticity; and the sheep produce as great a weight of fleece as in Spain, wherever they are supplied with a sufficient quantity of food. This race, now naturalized in Sweden, are larger and stronger than the Spanish sheep. M. Layffere examined the flock of M. Schulzenheim, at Gronsoe, in the province of Upland, which had been introduced from Spain 55 years. On comparing the wool with that of other Spanish sheep recently imported, he did not find it inferior either in beauty or fineness. M. Schulzenheim preserved the descendants of sheep which he imported from Spain to the fifth generation, and the comparison of their fleeces proved that they had not in the least degenerated. These facts prove decidedly that the Spanish sheep do not lose the good qualities of their wool by a removal to cold countries. At the same time it must be observed, that those sheep degenerated which had been neglected, or treated in the same wretched manner as the native flocks, by confining them in damp, infected, and dirty stables during a part of the year, and omitting the requisite quantity of food; or pasturing them in summer in forests and marshes, or in low moist situations, where they could neither find the proper kind nor due quantity of herbage.

The introduction of the Merinos into Saxony took place in 1765, and again in the year 1778. The first flock consisted of one hundred rams and two hundred ewes, chosen for the elector of Saxony from the best flocks in Spain; they were placed under the care of a Spanish majorinus, or mayor, at Stolpen, six leagues from Dresden, on the frontiers of Bohemia.

After ten years' experience, it was found that they had preserved all the original good qualities of the fleece, and the wool from the mixed breed had also acquired a degree of fineness which did not yield to that from Spain. As soon as it was ascertained, by experience, that it was easy to naturalize the Spanish sheep in Saxony, and that the crosses from this race with the native flocks were so greatly ameliorated, the attention of the agriculturalists was directed to the general improvement of the flocks, and such has been the success, that their produce is at present one of the greatest sources of profit to the cultivator. During the last fifteen years, a very considerable quantity of fine wool has been imported from Saxony into England, and the price of the best sort is greater than that of the finest Spanish wool, a sufficient proof of the estimation in which it is held by the manufacturers. It is better suited for the finest kerseymeres, and the more delicate articles of the woollen trade, as it can be spun to a greater length than any other kind of carded wool grown in Europe; it is also superior in fineness, but owing to the scarcity of winter food, it is generally less found than the best Spanish, and not so well suited for stout cloths. See WOOL.

The Merino race has since been introduced into Denmark, the Prussian states, Austria, France, Holland, Italy, the Cape of Good Hope, and the United States of America. Of its introduction into England, we shall afterwards speak.

As Saxony is the only country which has yet cultivated the Merinos so extensively, as to come in competition with Spain in the exportation of fine wool, it may be proper to state the modes of treatment adopted in that country. It is generally believed in Saxony, and in other parts of Germany and Holland, that the practice of breeding from the same race

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race, or what the English graziers technically denominate "breeding in and in," occasions a deterioration of the flock; owing to this prejudice, the Swedish farmers frequently change the rams of the Spanish race for others of the same race from neighbouring flocks, and some proprietors bind their farmers to renew a certain quantity of rams every year. But this practice is useless, where the rams upon an estate are already of a good quality; if the contrary were the case, there could not exist a perfect Merino sheep in Spain, as these sheep have continued to breed from the same flock, without any attention to consanguinity, for many centuries. The good quality of a race of sheep may be preserved, either by selecting the most perfect from the same flock to breed from, or by constantly taking out those which are most defective.

The common food of sheep in Saxony, during winter, is hay, which is distributed three times a day, in a greater or less quantity, according to the stock of the farmer: those who have not sufficient hay, substitute pease-straw, vetches, and lentils. They take care to mow the crops before maturity, that they may be more nutritive, and to prevent the fall of the leaves before mowing. Some farmers supply the deficiency of hay with powdered oil-cakes, crushed feeds, and meal; they put the cake or meal into troughs with water, which they give the sheep to drink, and afterwards they give them the solid residue, which sinks to the bottom of the trough. This treatment serves to keep them in a healthy state, at a season when they cannot have fresh food. Eight pounds of cake or meal diffused in water are given to every hundred sheep. When the snow remains long on the ground, they sometimes give them straw which has not been thrashed, and even corn; but as this is expensive, they generally substitute roots of different kinds, such as beets, turnips, and carrots, but particularly potatoes.

The Saxon farmers collect with great care the horse-chestnuts in autumn, which they give their sheep as a remedy against the rot. The nuts are cut small, to prevent them getting into the throat, and choking the animal.

They send out their sheep in winter, when the weather permits, and the snow is not too deep, to the woods or dry situations sheltered with underwood. Proprietors who have no winter pastures, leave their sheep in the sheep-houses from the beginning of November to April, but they take care to turn them out each day in the fresh air, for three or four hours, and they keep open the doors, to cause a constant ventilation. Some proprietors keep their sheep confined the whole year; and where the sheep-houses are kept clean, and the sheep are supplied with proper food, this practice is not found to injure either the wool or the animal.

During fine weather in summer, they are allowed to range in the pastures. They leave the sheep-house after the dews are entirely dissipated, and they repose in the shade during the heat of the day. This practice of providing shade during the hot weather cannot be too strongly recommended to the cultivators of fine wool in England, both with respect to the health of the animal and the improvement of the wool. Nor is another practice less deserving their attention, which is, to shelter them during heavy rains, hail-storms, and thick fogs. In many sheep-houses, water is conducted in troughs, from which the sheep may drink at pleasure. Saxon farmers consider salt not only as necessary to the health of sheep, but as contributing to the fineness of the fleece; it is sprinkled in their forage, and is dissolved in their drink; it is given principally in summer, when the weather is dry. They cease to give it to the ewes five or six weeks before lambing, because they think that the excess of water which it occasions them

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to drink, is injurious to them at that time, and that it also prevents them from licking their lambs.

The rams and ewes are not put together before the age of two or three years: they allow one ram to twenty-five ewes, and leave them together day and night during the season. The lambs are kept in the sheep-houses, but some proprietors allow them to go out with the ewes after eight days.

Before shearing, the sheep are washed in the English manner, but with greater care. First they make them swim through a river or dam; the following day they are again driven through, and plunged in separately, and the fleece pressed with the hands, beginning from the head, and passing on to the extremities of the body; they are again driven through the water in the afternoon. The fleece is suffered to dry during two days, and shorn on the third. Saxony wool, thus washed, is much cleaner than the English, which generally undergoes but one washing. It loses by a further scouring by the manufacturer, about 12 *per cent.* more than Spanish wool already scoured. English wool loses about 25 *per cent.* in the hands of the manufacturer.

The general treatment of the Saxon Merino sheep we consider as judicious, but we have frequently noticed that the wool had been somewhat injured by want of sufficient nourishment in winter, which renders it tender. The hay being given in racks, feeds and straws fall into the fleece when the animal is eating, which the English manufacturer finds great difficulty in eradicating; this might be prevented, in a considerable degree, by lowering the racks, so that the food might be level with the head, or somewhat below.

As France is perhaps the most formidable rival which our manufacturers of fine cloths will meet in foreign markets, the progress made in the amelioration of her native flocks becomes an object of interest to the English agriculturalist and clothier. The celebrated minister Colbert first formed the design of improving the breeds of French sheep, by importations from England and Spain. But his intentions were at that time opposed. It was not till the year 1776 that the Spanish breed was introduced into France by M. M. Trudaine, intendant of finances, under the direction of the celebrated naturalist d'Aubenton. The experiments which he made on these sheep, and numerous crosses from them, with seven distinct breeds, which he had on his estate in Auxors, demonstrated to the government that it was easy to introduce and preserve a race of sheep in France, producing superfine wool; and in the year 1786, a selection of 376 rams and ewes, from the finest flocks in Spain, was conducted, under the care of a mayor, to the farm of Rambouillet. They consisted of individuals of extraordinary beauty, superior to any previously introduced into France, but having been chosen from a number of distant flocks, they presented great varieties of shape and size, which have since disappeared by intermixture; and a new race has been formed, differing from any of the primitive flock, but which equals the best of them in form and constitution, and in the fineness, length, softness, elasticity, and quantity of wool.

It is to be observed, that the wool-dealers and manufacturers in France were at first disposed to depreciate the value of the wool; but numerous accurate experiments having proved that the cloths manufactured from it were in every respect equal to those made from the best Spanish wool, these prejudices disappeared, and the republican government, as well as that of the emperor Napoleon, interested themselves in the further introduction of Spanish sheep into France. In the year 1802 it was calculated that there were one million sheep in France, either of pure Merinos, or of an ame-

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liorated mixed breed. Since that time many large flocks have been imported from Spain, the temporary command which the French obtained of that country having afforded them facilities for their introduction. In the course of a very few years France will, in all probability, produce a sufficient supply of superfine wool for her extensive woollen manufactories.

The experiments which have been made by the introduction of the Merino sheep into the United States of America; the Cape of Good Hope, and New Holland, prove that fine wool may be grown wherever there are intelligent cultivators, and that it is not the gift of a peculiar soil or climate. We are, however, fully convinced, that very elevated temperatures will require greater care to prevent deterioration. The specimens of wool which we have seen from New Holland, appear to have been affected by an arid sandy soil, and by the great heat of the sun, which has in some degree injured the softness of the fleece. Between the tropics, elevated mountains and shade would be essentially requisite to preserve a race of fine-woolled sheep from degenerating.

The advantages which the Merino sheep possess as wool-bearing animals, over the native breeds of English fine-woolled sheep, consist in three important peculiarities; 1st, the wool is much finer; 2dly, it is more regularly fine over the body; and 3dly, it is grown in a larger quantity from the same surface of skin. That the Merino wool is finer than the best English, is proved from this circumstance; the best sorted Spanish wool, or the R wool, as it is called, from the finest flocks, sells at nearly double the price of the best English sorted wool, or what the wool-staplers call the prime and picked lock. Those English fleeces which yield a portion of the best sort, generally contain a larger portion of inferior sorts: sometimes eight sorts will be found in one fleece, and the finest will not constitute one-eighth of the whole. On the contrary, the fleeces of the Merino sheep are so regularly fine over the whole body, as generally to yield from two-thirds to three-fourths of the superfine or R wool. The second sort, called the F wool, is also fine; and with the T wool, or third sort, bears a higher price than the best English wool. The quantity of wool on a Merino sheep is considerably greater than on an English sheep of the same size: this is not owing to the greater length of the wool, but to the animal being more fully clothed over the body and legs; and the wool is also grown closer than on English sheep; that is, there are more filaments on the same surface. A moderate sized well-clothed Merino sheep will yield a fleece which, when brought to the same state of purity as the English wool, will weigh 3lbs. A Ryeland, Norfolk, or South Down sheep of the same size, will produce a fleece only weighing about 2lbs. The value will be nearly as five to two in favour of the Merino fleece. In this state, however, the Merino fleece is not clean, as the wools imported from Spain, which are scoured after they are shorn, and before they are sorted, by which means it is much cleaner than it can be made by washing on the back of the animal. The Merino rams are horned, which is not generally the case with the ewes. The average weight of a fat ram *per* quarter, is about 17lbs. of a ewe, about 11lbs. *per* quarter.

The shape of these animals by no means corresponds with the symmetry of form which an English grazier considers as the criterion of excellence. The legs are rather long, the neck curved, and from the throat there hangs a pendulous skin, or dewlap, which is very offensive to those who are only accustomed to view the improved breeds of English sheep. This appendage is valued in Spain, as indicating a tendency

to produce wool. The colour of the skin beneath the wool, on the back and sides, is of a rose red colour: this is also considered by the Spaniards as a sign of a robust constitution, and an abundant fleece. The only English sheep which have the same coloured skin with the pendulous dewlap, are the Ryeland, which produce also the finest English wool. These circumstances, with the ancient practice of housing the sheep, continued in Herefordshire, where it is called *cotting*, confirm the opinion before advanced, that the Ryeland sheep were descended from the Tarentine race introduced by the Romans into this country.

It is not to be wondered at, that the Merino sheep, which are cultivated in Spain almost exclusively for their wool, and not for their flesh, should present that deformity of shape which at first was particularly offensive to the eye of the English farmer, accustomed to the new Leicester and South Down sheep. There cannot, however, be a doubt that the Merino breed is as susceptible of improvement as the English. Indeed there is a very great diversity of form in the flocks in different parts of Spain; and were the same attention paid to selecting the most perfect to breed from, as has been given in England to the South Down sheep, there is every reason to believe that a new race would be formed, possessing all the good qualities which both the grazier and the manufacturer might require. The South Down sheep, which have been greatly improved, and rendered almost perfect in form, have preserved all the good qualities of the fleece. This alone is sufficient to prove, that there is no necessary connection between deformity of shape, and the fineness of the wool.

The Spanish breed of sheep were first introduced into Great Britain in the year 1787. Some individuals of the black and spotted sheep had indeed been procured, and kept in the parks of noblemen previously, but without any regard to the wool; nor was much interest excited by the flock introduced in 1787. The sheep, however, lived, though treated in the English manner, and the wool had not deteriorated. These facts having proved that the Merino race might be naturalized in England, his majesty George III. obtained from the marquis of Campo Alanzo five rams and thirty-five ewes of the Nigrette race. They were imported in the year 1792, and were for some time at Oatlands, the seat of his royal highness the duke of York. On their arrival they were extremely low in flesh, but they soon began to improve; and the diseases with which they had been affected, were removed by a plentiful supply of food. They left Oatlands greatly advanced in bulk, and with renovated constitutions; and the quantity and quality of the wool were greatly admired.

The prejudices of the manufacturers were not so speedily to be surmounted, as the difficulties attending the naturalization of the Merino sheep. Though the wool was admitted to be equally fine with the best imported wool from Spain, they would not offer a proportionate price, fearing that it might not prove equally good, when manufactured. It ought, however, to be stated, that the condition in which the English Merino wool was offered for sale, either very imperfectly washed, or entirely in the grease, prevented the manufacturer from forming a just comparison with the wools from Spain, which came to this country clean scoured, and regularly sorted; nor could they appreciate the loss it would sustain in scouring, which is not less than from 60 to 70 *per cent*. We are well persuaded that this uncertainty respecting the loss in scouring has, more than any other circumstance, retarded the sale of the English Merino wool, from the year 1792 to the present time. Nor will

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our manufacturers ever greatly encourage the growth of this wool, until it be brought to market, either sorted and scoured like the wools from Spain, or in the same state of purity in the fleece as the fine English or Saxon wool. Many manufacturers, who have purchased it, have been greatly disappointed, not in the quality, which was excellent, but in the small quantity which remained after scouring. In consequence of the manufacturers declining to purchase his majesty's wool, it became necessary to have it manufactured on his majesty's account, to demonstrate its fitness for superfine cloths. This was done till the year 1796, when it was resolved to sell the wool at the price which was offered, that the manufacturers might have a fair trial. The clip was sold that year for 2s. per pound, and the following year for 2s. 2d. In the years 1797 and 1798 the wool was sorted in the Spanish manner, and scoured, after having been previously washed on the sheep's back. The following is an account of the produce.

Eighty-nine ewe and wether fleeces washed on } the back - - - - - }	lbs. 295
Lofs by subsequent scouring - - - - -	92
Pure wool - - - - -	203

Which yielded, Rafinos, or R wool, 167 lbs. at 5s.
Finos, or F wool, 23 lbs. at 3s. 6d.
Terceros, or T wool, 13 lbs. at 2s. 6d.

In 1798 one hundred and one ewe and wether } fleeces, washed in the same manner, yielded - }	lbs. 346
Lofs by subsequent scouring - - - - -	92
Pure wool - - - - -	254

Of which there was Rafinos, 207 lbs. at 5s. 6d.
Finos, 28 lbs. at 3s. 6d.
Terceros, 19 lbs. at 2s.

The rams' fleeces of both clips - - - - -	lbs. 314
Lofs by subsequent scouring - - - - -	99
Pure wool - - - - -	215

Of which there was Rafinos, 181 lbs. at 4s. 6d.
Finos, 22 lbs. at 3s. 6d.
Terceros, 12 lbs. at 2s.

The prices have, since that time, progressively increased with the price of Spanish wool, and have been nearly equal to that of the best piles from Spain. In the year 1801, the right honourable lord Somerville took a voyage to the peninsula, for the purpose of selecting such sheep as united in the greatest degree the excellence of the fleece with a good carcase. His efforts were in a considerable degree successful, and, as far as related to the fleece, completely so. Since that time, particular political events have increased the facility of procuring Merino sheep from the various Spanish flocks; and the stock of these sheep in England at present is sufficiently great to change, in a few years, the whole race of fine-woolled sheep in Great Britain, were such a change desirable. Many of the native flocks of fine-woolled sheep in England have been considerably diminished in the last forty years, owing to the numerous enclosures of forests and commons, that were formerly only suited to pasture a race of small light sheep; but which, in consequence of improvement, are now capable of maintaining a heavier race of animals; the former requiring a light dry soil, and an ex-

tenfive range; and the latter, a rich and more confined pasture. The Ryeland sheep in Herefordshire afford the finest wool in England, of any of our native breeds; but the pure race is nearly extinct. The fleece weighs less than two pounds; but if generally cleared from the shank-locks and skirts before it is wound, in this state it bears the highest price of any English fleeces. It is not a little remarkable, that the practice of cotting or housing the sheep is peculiar to Herefordshire; and it is not improbable but it may have been originally introduced by the Romans, with the race of sheep from which the Ryelands originally sprung. A mixture of the Ryeland sheep is spread over some of the counties adjoining to Herefordshire, but the number is not very considerable. The light fandy foil of Norfolk is pastured by another breed of fine-woolled sheep, which supply a considerable quantity of fine English wool for the Yorkshire market; and it possesses, in an eminent degree, the property of softness, when manufactured, which is wanting in many of our English wools. The original Norfolk breed have black faces and spiral horns, small, long, thin carcases, with long black or grey legs. The fleece weighs from one pound and a half to two pounds. The form of the animal is not such as to recommend it to the grazier, but it has been greatly improved by an intermixture with the South Down breed. Mr. Coke of Holkham, the celebrated agriculturalist of Norfolk, has disposed of his native flocks of that county, from a conviction, founded on long experience, that they are an unprofitable breed. The principal recommendation of this breed was the excellence of their wool; and they might be well suited to the former uncultivated state of the fandy tracks in that district.

Of all the native fine-woolled breeds of England, the South Downs appear to possess, in the most eminent degree, the combined advantage of excellence of form, with a superior quality of the fleece. The average weight of the two-year old wethers is 18 pounds per quarter; the mutton is fine-grained, and of an excellent flavour. The weight of the fleece of the finest kinds is about two pounds on the average. Some of the coarse fleeces exceed three pounds. The South Down breed takes its name from the district on which these sheep were originally cultivated. It is a long range of rather elevated chalk hills, extending from the south-western side of the counties of Kent and Surrey, through Suffex, into Hampshire, consisting of open downs, well suited for sheep-walks.

The animal has no horns; its face and legs are grey; the bones fine, and the form compact. It has indeed been greatly improved of late years, by the particular care of intelligent growers. The lambs are generally dropped from the middle of March to the end of April. If the ewes have been well kept, one-third will be twins. The wethers are fit for the butcher in two years; many graziers fatten them at 18 months. From the South Downs these sheep have been sent to different parts of the kingdom; and in all dry and rather elevated situations they will preserve the excellent qualities of their wool. Indeed, in all situations where the soil is covered by a good close herbage, and the subsoil is not calcareous, the wool will be of a superior quality to what the same animal would produce on the chalky downs of Suffex. Of this we have had decisive proofs. The South Downs, though in many respects well suited to sheep, yet in those parts where the chalk is exposed, or near the surface, the calcareous particles get intermixed with the yolk or natural greafe of the fleece, and produce a degree of harshness in the wool, which is very perceptible, when it is manufactured into cloth: it also injures the felt-

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ing quality of the wool. This is so well known to the Yorkshire manufacturers, that they always avoid the wools grown on chalk soils, when they want a soft thick pile to the cloth. The fine wool from the South Down fleeces is chiefly used for light goods, such as kerseymeres and pelisse cloths, which require very little milling or felting. When the South Down sheep are removed from chalk lands, the wool may be grown remarkably soft, and possesses all the good qualities of the best native English wool.

The action of the soil on the fleece was long known to manufacturers, *viz.* that wools grown on argillaceous soils were softer, and proved better in the process of manufacture, than those on calcareous soils. The cause of this was involved in much obscurity, and generally supposed to be owing to the quality of the herbage on different soils. Mr. Bakewell, of Wakefield, in Yorkshire, in a little tract "On the Influence of Soil and Climate on Wool," proved that the influence of the soil on the fleece arose from the action of the minute particles on the surface of the fibre or staple. "Not only can this action affect the quality, but impart indelibly the colour of the soil to the wool. In part of Gloucestershire the fleece acquires a deep orange colour from the soil. In Hertfordshire, and part of Warwickshire, and in every country having a red soil, the wool is inclined to brownish-red. Wools on chalky soils are distinguished by their whiteness; and in every district in England the action of the soil is evinced, by communicating its own colour to the fleece. The colour thus acquired is as indelibly fixed in the wool as the colouring matter of an artificial dye, nor can its whiteness be perfectly restored by any artificial process hitherto known.

"That the same cause can change the hardness or softness of wool, is proved from the different effects which argillaceous, siliceous, and calcareous soils are invariably found to have on these qualities. This is perhaps no where more clearly shewn than in the northern part of Derbyshire, where the strata are so abruptly broken, that two adjoining farms, separated by a small brook, will not unfrequently be found, the one upon lime-stone, the other on a siliceous grit or sand-stone. The difference of the wool on these two farms, from the same breed of sheep, was so distinctly marked, that the grower always obtained a higher price when grown upon the latter soil. 'My wool is grit-stone, and I expect a better price than my neighbour,' was the language in common use, and the meaning was well understood by the buyer. In the process of separating wool from the skin by the fell-monger, the pelts are steeped some days in lime and water. The softest wools, when thus exposed to the action of lime, lose their distinguishing excellence, and acquire all the hardness of wools grown on lime-stone soils."

To remedy this injurious effect of calcareous soils, Mr. Bakewell recommends the practice of the farmers in Northumberland, and in North Britain, of anointing the skin of the animal with butter, in which a small quantity of tar is melted to give it consistence. In Northumberland this is practised with the fine-woolled sheep on the Cheviots; and the wool from these sheep bears a higher price in Yorkshire, in proportion to its relative fineness, than any other English wool, on account of the superior softness of the cloth made from it. The ointment is also found to defend the animal against flies and sheep-ticks, and to be a preservative against the severity of the weather. The only inconvenience is, that the whiteness of the wool is in some degree affected by it; and it is not suited for white stoved cloth, or for any delicate colours. Could any good and cheap substitute for tar be devised, there cannot be a doubt that the practice would be of great

benefit to the South Down fleeces on their native chalky soils. It is, in fact, similar to what the Romans adopted with the Tarentine breed, which were frequently washed, and the skins anointed with the dregs of olive-oil, mixed with other ingredients. A similar treatment of all English sheep, after being shorn, would be found a most effective remedy against flies and insects when the skin is exposed: it is also proved by experience to be a preservative against the scab.

The South Down breed, so far as relates to the fleece, will admit of considerable improvement in the following particulars. First; it might attain a degree of fineness more nearly approaching that of the Merino fleece: secondly, the fleece might be grown more uniformly fine over the body: and thirdly, almost all the South Down fleeces have a few grey or black hairs intermixed, which is a great defect where the goods made from it are intended to be stoved white. At present, the finest part of the South Down fleeces, called by the wool-stapler the prime, does not bear half the price of the prime Spanish, or R wool, from the best Merino flocks. In the South Down fleeces very rarely more than one-fourth part is of the best quality; but in the Merino breed full two-thirds of each fleece will be of one uniform quality, and that the prime or R wool. In the South Down fleeces, those parts from the buttocks and flanks will also be as coarse as the coarsest wool from heavy sheep. These defects in the South Down fleeces are common to almost all our native fine-woolled sheep, except the Ryeland; but we conceive they admit of a remedy without any injury to the form of the animal, or the weight of the fleece. If the opinion of an intelligent wool-stapler were first taken on the qualities of the different fleeces of those ewes from which it were proposed to raise a flock, and selecting for them some of the best formed rams bred from South Downs and Merinos, called Anglo-merinos; from this progeny the most perfect forms might be again chosen: and if these were still too strongly marked with the character of the Merino form, another cross with perfect South Down ewes would produce a progeny from which a race might be selected possessing whatever was desirable in the carcase, with a considerable amelioration of the fleece, both in the fineness of the wool and the regularity of the quality, over the greater part of the skin. The weight of the fleece would also be increased, for the wool is grown closer and thicker on the Merinos than on any of the English breeds; and this property continues in the crosses from that breed. The advantage of employing an intelligent wool-stapler to judge of the quality of the fleeces will be admitted, when we consider that a fibre of the finest wool is perhaps little more than the two-thousandth part of an inch in diameter; and that a variation from this, which is too small to be visible by the unpractised eye, may occasion a difference in price not less than 40 per cent. Indeed, it is truly astonishing that the eye can detect this microscopic difference unaided by instruments. Nothing but long and constant practice can secure the facility of determining the fineness of wool; and the most experienced dealer in English fine wool, were he to discontinue entirely the examination of wool for three months, would not be able, at first sight, to ascertain its quality and value to 15 or 20 per cent.; supposing no change to have taken place in the markets. Can it then be supposed that a grazier, who has never acquired this fine sense of vision, and to whom wool is only an object of particular attention at one season of the year, we say, can it be possible for such a person to be an accurate judge of the quality of wool, and the comparative fineness of fibres ranging between the fifteen-hundredth and

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the two-thousandth part of an inch? Yet many of our English wool-growers will decide, with the utmost confidence, whether their wool be finer or coarser than it was in the former year; or rather, they will decide that their wool is always growing finer. To this great confidence of the wool-growers, and to their real ignorance on this subject, more than to any other cause, may be ascribed the little improvement in the culture of English fine wools prior to the introduction of the Merino breed into Britain.

The South Down breed, in its improved state, is likely to supplant most of the English fine-woolled breeds, except perhaps the Cheviots in Northumberland, which are become habituated to the severity of the climate, on the elevated hills in the northern parts of that county bordering on Scotland. This race we think much better suited to supplant the coarse-woolled sheep in the Highlands of Scotland, than another of our English breeds. The Cheviot sheep are described by Mr. Culley, an intelligent farmer in Northumberland, as hornless; the faces and legs are, in general, white: the *best kinds* have a fine open countenance, with lively prominent eyes; the body long, fore-quarter wanting depth in the breast, and breadth both there and on the chine; fine, clean, small-boned legs; thin pelts; weight of carcase, when fat, from 12lbs. to 18lbs. *per* quarter; fleeces from 2lbs. to 3lbs. The qualities of the Cheviot fleeces are various; some of them contain a small portion of fine wool, which, as we have before remarked, is more soft than any of our native English wools. The price at lord Somerville's annual show in 1813, for the best cloth from English wool, was given to Mr. J. F. Smith, for a piece of cloth manufactured from the prime part of the Cheviot fleeces.

In general, the quality of these fleeces might be much improved by a judicious selection. The great defect is, that in the finest fleeces only, a small part is of the best quality. Some of the Cheviot sheep are speckled on the face and legs; but these are probably a mixed breed, from crossing at different times with Heath sheep, to whom they have long been neighbours; for leaving the heights of Anandale to the eastward, we insensibly lose the Heath sheep and mixed breeds; after which all the extensive fine green hills on the Scotch and English borders from the sides of the Cheviots to the barren heaths of Lammer-muir are covered with the Cheviot breed. The *best kind* of these sheep is certainly a valuable mountain-sheep, where the pasture is mostly green sward, or contains a large portion of that kind of herbage, which is the case with all the hills around the Cheviots, where these sheep are bred; and the fine herbage which the border hills every where produce, supports them so well in summer, as to enable them to stand the severities of the winter.

The shape of this breed of sheep has been greatly improved of late years, but will still admit of much improvement. "We cannot (says Mr. Culley) expect the perfection of this breed of sheep can be obtained at once, it must proceed by slow gradation, as every other improvement hath done.

"That breed of sheep which brings the most profit to the farmer will always be preferred, but this object is not to be obtained in this district by fine wool alone. Perfect mountain sheep should be hardy, well-formed, and quick feeders. These qualities will always recommend them to the grazier; but if to these qualities, so essential to the sale of a mountain farmer's flock, can be added a fleece of fine wool, a breed of sheep might then be obtained, the properest for a hilly district of any we have yet seen. There is little doubt but this may be accomplished by proper selection, and probably

the best kind of Cheviot sheep, from their hardiness, and producing a portion of fine wool, are the properest flock for laying the foundation of so desirable a change." With these sentiments of Mr. Culley we entirely agree, and particularly in the propriety of selecting from the best Cheviots to lay the foundation of a valuable stock of mountain sheep, which might supplant the coarse-woolled Heath sheep in North Britain. Every situation may be said to have its peculiar advantages for particular breeds of sheep; and the rage for improvement, and desire of change, have in some instances been carried too far. There can be no doubt, that the rich pastures on the eastern side of England are better suited for heavy long-woolled sheep than for South Downs or Merinos, whilst it would be folly to attempt to stock the mountainous parts of Britain with the Dishley or Lincolnshire breeds. But many of the flocks in the uplands are susceptible of much improvement by selection, without any admixture, and in very exposed situations it might not be desirable to attempt improvement by introducing a less hardy race. In dry and moderately elevated situations there are none of the finest-woolled native or Anglo-merino breeds, that might not be cultivated with advantage; but we are well persuaded, that with the present demand for, and price of animal food, the breed which will send into the market the largest quantity of good meat in the shortest time, will have the preference over any superior quality of the wool alone. On which account the improvement of the South Down breed, which combines both advantages, is perhaps an object the best deserving attention, in all situations suited for fine-woolled sheep, that are not too much exposed to the inclemency of the climate.

A particular race of sheep exist in the Shetland islands, which produce a fleece more like that from the sheep on the mountains of Thibet, than any of the European sheep with which we are acquainted. From the report of Mr. Thomas Johnson, addressed to the British Wool Society, it appears that there are two varieties of Shetland sheep.

One of these varieties carry coarse wool above and soft fine below, and have three different successions of wool yearly, two of which resemble long hairs more than wool, and are termed by the common people *fors* and *scudda*. When the wool begins to loosen at the roots, which generally happens about the month of February, the hairs or *scudda* spring up; and when the wool is carefully pulled off, the tough hairs continue fast until the new wool grows up about a quarter of an inch in length, then they gradually wear off; and when the new fleece has acquired about two months' growth, the rough hairs termed *fors* spring up, and keep root until the proper season for pulling it arrives, when it is plucked off along with the wool, and is separated from it at dressing the fleece, by an operation called *forfing*. The *scudda* remains upon the skin of the animal, as if it were a thick coat or fence against the inclemency of the seasons, which provident nature has furnished for supplying the want of the fleece. See the preceding article SHEEP.

The native or kindly breed, which bear the soft cottony fleeces (as they are called), are rather of a delicate nature; their wool is short and open, and destitute of a covering of long hairs. These soft-woolled fleeces are very often lost or rubbed off, during the winter or early in the spring, which it is supposed might be prevented by clipping or shearing the sheep, in place of pulling off the wool, a barbarous practice, tending to weaken the sheep and hurt the length of the staple.

The Shetland sheep are of various colours; the silver-grey wool is thought to be the finest and softest, but the black, the white, the mourat, or brown, is very little inferior; it

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is all of the softest texture, fit for the finest manufactory, and in some instances has been found to rival Spanish wool itself: but the pure white is generally the most valuable for all the finer purposes for which combing wool can be used. For softness and for lustre, no wool equals it; and the skin, with the fleece on, can be converted into a fur of very great value, some specimens of which have already been sent to the China market.

They are in general very hardy. In the winter season, when the ground is covered with snow, they eat the seaweed very greedily, and often during long and severe snows they have little else to live upon. Nature seems to have imparted to them a perfect knowledge of the time at which this food may be procured; for immediately upon the tide beginning to fall, the sheep in one body run directly down to the sea-shores, although feeding on the hills several miles distant from the sea, where they remain until the tide returns and obliges them to seek their usual haunts.

It is to be regretted, that we know so little of this peculiar race of sheep, or of the time when they were introduced, and the country from whence they came. The wool, though intermixed with coarse hairs, possesses a most extraordinary degree of softness, approaching, if not equaling, that from the sheep of Thibet, and might, if proper attention were paid to it, be applied with advantage to the manufacture of shawls and other articles now imported from the East. None of the European wools which we have seen, possess this quality in any degree to be compared with that from the Shetland sheep. The circumstance of the fine wool growing as down under a pile of coarse wool or hair, is not peculiar to these sheep. We believe that unmixed fine wool is rather a product of cultivation than natural to the animal in a wild state. In the argali, as well as in numerous animals, the inhabitants of cold countries, the skin is covered with a short fine down, and this is protected by a covering of longer coarse hair growing through the former. By regular keeping and warmth, the coarse hairs fall off in many animals, and this has probably been the case originally with all our fine-woolled sheep, many of which, if neglected, shew indications of their original condition, growing coarse hair intermixed with the finer parts of the fleece. Even in the coarsest woolled sheep of cold countries, such as the Heath sheep in the Highlands of Scotland, we have often seen a small portion of fine wool growing under the coarse fleeces with which these animals are covered. It appears to be a beneficent provision of the Author of nature, to accommodate animals to different climates. European sheep removed between the tropics, languish and become sickly from excessive heat, and lose their fleeces in the course of the ensuing year. They are afterwards covered with a thin crop of coarse short hair. We have seen a finely-shaped ram, of the European breed, brought from Louisiana, which was entirely covered with white hair, as coarse and short as that on a dog. We have no doubt, however, that in hot climates, where sheep have the advantage of a mountain pasture, that with care and proper shelter these fleeces might be preserved, but they would certainly be a useless incumbrance. Fine fleeces seem to be more peculiarly the produce of cool or temperate climates; for it is observed, in most of our English sheep, that the part of the wool or staple which is grown during winter, is finer than that part which is grown in summer. Extreme heat and cold appear to have both an effect upon the skins of sheep, to cover them with coarse hair; but in cold climates there is also a tendency in the animal to produce a fine down underneath. It is not improbable that the Shetland sheep may have been originally descended from the Tarentine breed, the "molles oves," which

the Romans had introduced into Britain; their insular situation protecting them, in a considerable degree, from intermixture. For, according to Dr. Anderson, though the coarse-woolled Heath sheep are introduced into these isles, the native active sheep frequenting the more desolate wilds at the greatest distance from man, withdraw themselves from the others, and thus the breed is only partially debased by accidental stragglers. The whole system of management, respecting these sheep, is directly the reverse of what it should be, and it is truly astonishing that they have preserved so long the peculiar softness of the wool. Could these sheep be introduced into more favourable situations, and proper attention paid to them, we have no doubt that their wool might be grown free from the coarse hairs with which it is at present intermixed; it would then be of far greater value than the finest Merino fleeces, as it might be applied to the fabrication of shawls, approaching in softness to those of Cashmere.

We have now to describe the long-woolled breed of sheep, which may be considered as almost peculiar to Great Britain and Ireland; for though sheep of this breed are found in Flanders, and some other parts of Europe, their number is inconsiderable; and they nowhere exist with the same perfection of form, and producing the same quantity or quality of wool as in the united kingdoms. Their fleece is the envy of the other manufacturing countries of Europe, and can only be grown upon rich pastures. Long combing wool, and the varieties, will be described under the article WOOL; but it may be necessary here to state that the longer kind varies from six to about nine or more inches in the length of the staple, or filaments. In the manufacture of this wool by the comb, the fibres are laid parallel; whereas in short-clothing wool, they are broken in all directions by the cards.

Long wool is manufactured into shalloons, camblets, mo-reens, bombazeens, and various other articles; and a large quantity is also manufactured into what is called horse-millinery, consisting of girths, fringes, and other articles of use or ornament in equipages. The coarser kind makes the warps for carpets.

Short combing wool is manufactured into hosiery.

The Lincolnshire sheep may be considered as the original of our heavy sheep in England. These, with the new Leicester or Dishley breed, have nearly supplanted the other varieties of long-woolled sheep. The Lincolnshire breed has also been generally somewhat changed of late, by an intermixture with the Leicester breed. The original Lincolnshire sheep have no horns, and long carcasses; the ewes weighing from 14 lbs. to 20 lbs. *per* quarter; the three-year old wethers from 20 lbs. to 30 lbs. The average weight of the fleece is about $9\frac{3}{4}$ lbs., or three fleeces to the tod of 28 lbs. Some of the heavier fleeces weigh 14 lbs. The richer parts of Lincolnshire will support five of these sheep on the acre; and when we take into account the price of the wool, which in 1814 was *2s. per* pound, it will be seen that the sheep of this description are the most profitable for the lands to which they are suited. The improvement made in their form, by the mixture with the Leicester breed, reduced the weight of the fleece; but the extraordinary demand for heavy combing wool is inducing some of the farmers to return to their heavy breed. It is probable that this kind of wool will not soon fall under *1s. 6d. per* pound; and the production of a fleece, which weighs 10 or 12 lbs., must be an object of attention to the grower, not less than that of the carcase. For though the wool from the Leicester breed is somewhat finer, the weight seldom exceeds 7 lbs., and the difference of price is not more than about *2s.*

per

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per tod of 28 lbs. The advantage of the latter breed consists in being made fit for the butcher in less time: in this it excels all the other breeds before known. At the time when Mr. Robert Bakewell of Dishley, in Leicestershire, directed his attention to the improvement of sheep, the price of long wool was less than 4*d.* *per* pound: the fleece was hence of little value to the grower, and Mr. Bakewell was exclusively employed in improving the carcase of sheep, and all other domestic quadrupeds. Previously to about the middle of the last century, little attention was paid to the improvement of live-stock, except horses. Nothing could be more repugnant to common sense than the general practice of farmers: they selected for slaughter that part of their flock which was most disposed to fatten, as offering them an early profit; the remainder were left to breed from promiscuously. A considerable part of England was then uninclosed, and the flocks of different proprietors being unavoidably intermixed, prevented a due regard to the improvement of the breed. Mr. Bakewell commenced his improvements subsequent to the year 1760, and succeeded in exciting the attention of the public to the amelioration of live-stock, by shewing the most effectual method of accomplishing this important object. The principal object which Mr. Bakewell had in view, in his improvement of different animals, except horses, was to produce the greatest weight and value of flesh, with the smallest expence of food.

Availing himself of the observations which he had made on different animals, that certain peculiarities of form were always attended by a disposition to grow fat, and that animals inherit this disposition from their ancestors; and if they are kept free from intermixtures with other breeds, in the course of a few generations the peculiar properties will be perpetuated, and form a distinct race; the laws of animal life being in this respect regular and permanent. He, therefore, selected from his own flock, and from the flocks of others, those sheep to breed from, which possessed in the greatest degree that perfection of form he was desirous to attain and perpetuate. By judiciously crossing them, and selecting the most perfect of their progeny, he at length succeeded in forming the breed, which has been distinguished by the name of the new Leicester or Dishley breed; and having attained his object, he carefully guarded against any future intermixture with other breeds. This breed exceeds all others in its propensity to fatten; and by crossing with rams from this breed, a very considerable portion of the long-woolled sheep in England have been greatly improved in this respect.

The peculiar characters of these sheep have been well described by Mr. Culley, an eminent grazier in Northumberland, who introduced the breed into that part of England. "The Dishley breed are particularly distinguished from other long-woolled breeds, by their fine lively eyes, clean heads, straight, broad, flat backs, round (barrel-like) bodies, very fine small bones, thin pelts, and inclination to fat at an early age. The last property is probably owing to the before-specified qualities, which, from observation and experience, there is reason to believe extends generally through every species of domestic quadrupeds. The Dishley breed is not only peculiar for its mutton being fat, but also for the fineness of the grain: the flavour is superior to the mutton of most other long-woolled breeds. The weight of the carcase may be stated in general: ewes, three or four years old, from 18 lbs. to 26 lbs. *per* quarter; wethers, two years old, from 20 lbs. to 30 lbs." The fleece is stated by Mr. Culley at 8 lbs.; but in Leicestershire, we believe, the average weight is not more than 6 or 7 lbs., about four

and five to the tod. The wool is finer and shorter than the Lincolnshire, and a portion of it is better suited for the hosiery trade than for thin goods, such as shalloons, &c.; but considering the difference of weight, the fleece is not so profitable to the grower as that from the Lincolnshire sheep.

There are two reasons for killing the wethers of the Dishley breed at two years old: first, they leave the most profit; and, secondly, if kept longer, they grow too fat for genteel tables. It is very common for two-years old wethers to cut four inches thick of fat on the ribs, and from two to three inches all down the back. Even ewes of this kind, which have bred and suckled lambs till July, when killed about the Christmas following, will frequently measure four or five inches thick of fat on the sides, and two or three inches down the back, all the way from the head to the tail; and though sheep of this breed are not eminent for much tallow, yet ewes, under such circumstances, generally produce from 18 lbs. to 24 lbs. of tallow each. This mutton is not so inviting as the leaner kinds, but it finds a ready market among the manufacturing and laborious part of the community.

The graziers in different parts of England, who had been too negligent respecting the improvement of stock, no sooner became sensible of the possibility of forming a race of sheep, that would produce a large weight of meat in a much shorter time than before known, than they became desirous of introducing the breed; and the taste for growing fat meat became generally adopted, and in many instances without proper regard to other considerations. In some instances, fine-woolled flocks were crossed with this breed, and it was vainly expected that they should preserve the quality of the wool, and increase the carcase at the same time. In other instances, the Leicestershire breed were introduced on land only suited for a lighter race of sheep; and even where the pastures were suitable, the propensity to fat was encouraged, until it became a disease, and the animal was scarcely able to move under its own weight. Whatever the advocates of this breed may advance in its support, it cannot be contended that the mutton is equal in flavour to that of the smaller sheep.

The object of Mr. Bakewell was in these instances mistaken: it was not to produce meat for the tables of the rich, but to supply substantial nourishment for the working classes. We have heard him say, "a small quantity of this fat meat, cooked over a large dish of potatoes, is a good dinner for a poor man's family; and this is what I proposed in the selection of this breed."

The increased demand for animal food could not have been supplied had not some improvement taken place, and the working classes will ever prefer the fattest meat. In this respect they resemble the North American Indians and the back settlers, who regard fat as the only nutritious part of meat, and accordingly Volney describes the lean by a name which signifies *meat bread*. The rage for excessively fat meat has in some degree subsided, and the new Leicesters are likely to be confined to those districts which are peculiarly suited for their growth, and the object of the grazier will be directed to producing a large quantity of meat for the consumption of the working classes. Instead of attempting to improve the fine-woolled breeds by crosses with a heavy race, it would be more judicious to pursue the same plan of improvement with those breeds which Mr. Bakewell attempted with such success in the heavy sheep.

The improvement of the carcase may, we are convinced, be effected without injuring the quality or diminishing the quantity of the wool. Of this Mr. Bakewell was well aware,

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aware, but the price of wool in England at the time of the American war (the period of his celebrity) was so low, that he used to say, it would be desirable to grow sheep without wool, and confine the attention to the carcase exclusively.

In selecting the most profitable breed of sheep for a farm, it can never answer to stock hilly districts with a heavy race of sheep, and in such districts the improvement of the wool is an object more particularly deserving attention, because we believe it would be possible to grow an equal weight of wool of a much finer quality than what is produced by many of our coarse-woolled breeds of sheep, and particularly by the Heath sheep, which pasture the mountainous parts of North Britain.

In rich pastures, weight of carcase must in a considerable degree supersede the improvement of the wool, at least so far as relates to its fineness; for the real interest of the grower of long wool is to produce a heavier fleece. At the present price of wool, a Lincolnshire fleece of twelve pounds being more valuable than any other native English fleeces. To combine, therefore, the perfection of form in the Dishley breed with the heavy fleece of Lincoln, is what will best reward the owners of long-woolled flocks.

There are, besides long and short-woolled sheep, numerous flocks which produce wool suited for the comb, but of a finer and shorter kind than the heavy combing wool. The worsted yarn made from this wool is spun soft, and manufactured into hosiery. A very considerable quantity of wool, suited for hosiery, is grown in the county of Kent; but the breed of sheep which produce it, has not any distinct name, and appears to have originated from an intermixture of the short-woolled sheep of the southern counties with heavy long-woolled sheep. We believe there is no country in Europe, which at present produces combing wool of this kind equal in quality to that grown in England. See WOOL and WORSTED.

SHEEP, *Stealing of*, is now made felony without benefit of clergy. See CATTLE.

By an ancient statute, no person shall keep, at one time, above two thousand sheep; but lambs are not to be accounted sheep till they are a year old. (25 Hen. VIII. c. 13.) Persons exporting sheep shall forfeit them, and 20s. for every sheep, &c. (12 Car. II. c. 32.) And persons in the counties of Kent and Sussex, within ten miles of the sea, are to give an account, in writing, after sheep-shearing, of the number of fleeces, to the next officer of the customs, &c. (9 & 10 W. III. c. 40.) See WOOL.

SHEEP, *Clatting of*, in *Agriculture*, a term given to the business of preparing the ewes of them for lambing in some places, which commonly takes place about a week before the lambing season commences. In such cases the ewes are usually driven into a pound, when the clatter, looker, or shepherd, draws them out singly and separately, turning them upon their backs, and removes with the shears the locks of wool from the undersides of their tails, from about their udders, and from the insides of their thighs. This becomes necessary, in consequence of the dirt and filth which often adhere to the wool about these parts, especially in moist growing spring seasons, when the ewes are affected with much purging. The wool being removed in this manner, not only renders the parts more neat, but enables the lamber, or person who has the care and direction of the business of lambing, to distinguish when the ewes have lambed, by the mark or stain which is generally left on the back parts of the udders; as, if such marks were not to occur, he would sometimes be at a loss, as the

young ewes not unfrequently desert their lambs, and endeavour to escape along with the other ewes, pasturing as unconcernedly as if nothing had happened to them.

Some think, that it would also be a good method at this time to have the different ewes marked in a different way about the face, in the order of their lambing, and to have those of different forwardness put together into separate suitable pastures, to be taken care of in the most proper ways.

The barren ewes, or those not with lamb, are likewise now distinguished by the clatter, looker, &c. by their not having any enlargement of their udders or their bellies, as well as by their jumping and skipping about in a nimble manner; such being usually turned off directly upon the fattening grounds.

SHEEP, *Lambing of*, the business of managing the lambing of the ewe flocks, which is very essential and important, though but little known or attended to in many places, even where sheep are almost the whole stock of the farmer. However, in consequence of this, and the employing of unskilled persons, much loss is not unfrequently sustained, to the great injury and inconvenience of the sheep-grazing farmer. In some situations, as those of the inclosed, dry, and warm kind, and the more poor mountainous ones, as well as the upland pastures and downs, such a very minute attention to this business need not, perhaps, be bestowed, as accidents less frequently occur, than on rich pastures or marshes, where the lambs are much exposed to danger and destruction from many causes, unless very carefully attended to at this time. The nature of the principles and practices which are necessary in the business of lambing, are, in short, yet much too confined and too little known to sheep-farmers in general to be of any great advantage. The first thing which is requisite in preparing for this business, is the making choice of proper dry warm fields and pastures for the purpose, and having them made as safe and secure as possible from the danger of all sorts of accidents and inconveniences to the lambs. Where they have large wet open exposed ditches, or any other sort of inconvenient fences on their sides or other parts, they should be well guarded and secured by means of suitable low dead or other hedges being raised on the sides of them, by the use of small light hurdles, about two feet in height, with two racks, fixed down around them or in the most dangerous parts; by placing brush-faggots of a proper size round the sides of their banks, and staking them well down to prevent their being disturbed by the winds and storms: by hanging old sea-nets along their banks or borders; or by some other kind of cheap low defence, which the local nature of the situation may suggest. The nature of the pastures for this use should constantly be such as are fine and short in their grass, and neither of too poor nor too rich a quality, as inconveniences are liable to take place from each of these states.

It was formerly the practice to have the lambing of the ewe flocks performed on a great breadth of pasture-land, as two or three to the acre, or in a very thin manner, which was extremely troublesome; but it is now found that much benefit attends its being done in a closer or thicker way, as ten or twelve more to the acre, in some cases; as it is not only more convenient and successful, but far more profitable. By thus doing it in a narrow compass, according to the state of the grass, the work is more safely gone on with, is more under the direction of the manager, and more convenient in case of difficulties arising in it, while there is much less danger of loss among the ewes in consequence of the nature of the keep, which is very material, as it is often

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often by no means inconsiderable, especially in certain circumstances and situations towards the close of the lambing season.

In some places it is not unusual, before the lambing takes place, to provide a better sort of pasture-field for the reception of such ewes as may chance to have twin-lambs, as more food is required for them. This is best when in or near the middle part of the lambing pastures, as the ewes and lambs, in that case, can be the most readily and conveniently removed, whereas in other circumstances there is often much trouble and difficulty caused with the young lambs, which should always be marked and removed as soon as they are enabled to walk.

The next preparatory business, in some situations, is that of clatting the ewes, which commonly takes place a little time before the lambing begins; but in many places this is wholly neglected and thought quite useless. See *SHEEP, Clatting of.*

The lambing time takes place at different periods in different places, according to the nature of the situation and other circumstances, and often a week or ten days sooner or later in the same situation, as the season may be more or less severe, and the stocking of the land has been more light or more hard. But about the beginning of April is probably the best and most general time. Early lambing is mostly advantageous, where the circumstances of the land will admit of it. The season of lambing mostly continues about a month, and in some places, where lambers are employed without any lookers, two guineas and the lamb-skins are paid for that time.

In the actual business of lambing, much care and attention are necessary in the person who has the direction and management of it. In all natural cases of this sort the less that is done, perhaps, in general, the better, as nature will for the most part effect the business in the safest and most proper manner. The chief difficulty, it has been said, consists in knowing when ewes should be assisted, as young persons employed in this management are much too apt to interfere, from which much mischief and loss not unfrequently proceed. The nature of the particular case, and the workings of the ewes, should constantly be the principal directors in this matter. Some conceive, that when ewes have been at work some length of time, they should be assisted; others, that when the lambs' tongues are protruded from the mouths, they should have assistance; but neither of these rules is always to be depended upon. There are still others who think, that when the ewes rise and walk off on being approached without any thing being the matter, they require no interference; but that when they will not rise, but appear a good deal spent, they should have immediate assistance. Some also suppose, that considerable force may be exerted in such cases without danger. But though there may be some truth in the remark, it is always necessary that much caution should be taken where force is employed on these occasions. Besides these, something may probably depend upon the state of the seasons in this business, as assistance will be less necessary in such as are cold, than when they are warm. The ewes should, in fact, never be meddled with in their lambing, in these cases, until there is an absolute necessity.

In all unnatural cases of this kind, which vary very much in different instances, according to the nature of the unusual part of the lamb which may present itself, and which require the assistance of proper persons; those who have had the fullest experience, and are the most cool and cautious, will be the most proper for performing the business, as where this is not the case, there will often be

great loss of lambs, as well as of ewes. In every case of this nature, where much force, or any other means are necessary to be employed, very great care and circumspection should constantly be used to have it exerted and done in the most gentle, deliberate, and safe manner possible, as otherwise much danger and inconvenience may arise, that might have been avoided.

In some instances, where the lambs are apparently dead when they are lambled, they may be recovered and restored by forcing air into their lungs in an easy manner. This should however always be done almost instantly afterwards, otherwise it seldom succeeds.

As soon as the lambs are brought forth, they have commonly some milk from their mothers given them, or are allowed to suck them for some little time, which are supposed to increase the affection of the ewes for them; the lambs being at last left as close by the noses of the ewes as possible, which should be done quickly, that they may not go away without noticing them. The lambs are always greatly strengthened and improved by the ewes licking them, which they constantly do, where they have a proper affection for them. When lambs droop and hang their heads immediately after they are lambled, they are bad and unfavourable signs, as shewing them to be in a weak and dangerous state. The practice often made use of in some places, of putting the tail of the lamb, which is just lambled, into the ewe's mouth, in order to promote her affection for it, is very silly, and of no avail.

In the catching of all ewes in the lambing state, every sort of exertion, trouble, and fatigue, so as to injure them, should be avoided as much as possible, in order that they may lamb, or be assisted to lamb, in a cool suitable state.

During the time of lambing, the looker, or other person who has the management, should be very careful and attentive early in the mornings, and at other times, in looking over the ewes and lambs, to see that they are not injured or lost by neglect in any way.

In cases where this business is carried on upon a large scale, when every thing has been properly prepared and got in readiness, the lamber, or other person employed in the management, begins his laborious and difficult undertaking, by entering and going over the lambing pastures at the time of day-break, with his lamb-hook in his hand, that he may notice and examine the ewes, raise up such as have lain down, and determine whether such lambs as are dropped be capable of sucking, which is commonly readily decided by the distension of the belly. In cases where this last is not able to be done, the ewes are either caught, and the lambs suckled, or the lamber is provided with some ewe's milk in a bottle for the purpose, a precaution which is essentially proper on many occasions, as when the weather is severe, wet, and stormy, in which circumstances the lambs quickly perish, if not supplied with such food. This attention often strengthens the lambs in a wonderful manner, and prevents much trouble in removing them and the ewes to the pounds. The continuance of the affection of the ewes is proved by the callings and noise they make. The twin lambs are now usually marked, to prevent confusion, as the ewes frequently leave one of them, after which they are not meddled or interfered with for some little time, as a few hours, or a day, as their strength may be; but as soon as they can walk, they are mostly removed with the mothers into better keep. The ewes which have single lambs commonly remain in the pasture-fields where they have lambled, unless the number be great, in which case, the lambs with the ewes are occasionally removed into the pasture-fields, where they are intended to be kept during

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the summer. It is supposed, that by the above practice the lambing pastures are sometimes less discommoded, than is the case where too great a number of ewes and lambs are crowded together. Sometimes, when an ewe has lost her lamb by any accident, and yet is deemed capable of bringing one up, a twin lamb is given her. When a weakly lamb, however, is put to an old ewe, the milk is often too strong for it, and will speedily cause its destruction, by scouring or in other ways; such lambs are likewise incapable of keeping the udders of the ewes properly drawn, by which means much injury is frequently done to them. These ewes are therefore often better turned off for fattening, than being employed in this way. Various methods are practised with the ewes which have dead lambs, by using such lambs so as that their affections may be increased, and the ewes be drawn into the pounds, and have other lambs put to them. All such measures, however, often fail. The custom of running the ewes down to get them into the pounds is always very bad, as frequently causing their destruction. The ears of ewes being flapped down, and the ewes not looking back, are in every case bad signs of affection, but the contrary good ones. Lambing pounds are mostly supplied with suitable pens or coops for the convenience of suckling the strange lambs in. And the coats of the natural lambs are sometimes employed on the others. Whatever is done in this way, must, however, be done by deception, and not force, as the ewes are very refractory. Many other modes are had recourse to in different cases for taming the refractory ewes, and causing them to suckle the lambs in a proper manner.

It will now be necessary for the lamber to be particu-

larly careful of the twin and other lambs, to see that they are regularly kept, and properly suckled in all cases, especially those which are in a weakly state. For this purpose some milk of the cow or other kinds is often carried and made use of by him, which prevents trouble afterwards. In these intentions, it is proper to go over the fields twice or oftener during the day; and to be particularly attentive in cold stormy weather. All sorts of accidents and dangers are at these times to be looked to, and guarded against in the most cautious manner.

About the end of the first week of the lambing season, one-half of the ewes will mostly have lambed, and more than two-thirds of them probably at the termination of the second, when the ewes may be brought into a less compass, and the lambing-field or pasture be cleared of all the twins and most of the single lambs, and they which are necessary may be had ready to cut, which in suitable circumstances is often done at this early period, by which the manager will be freed from much of his future labour and trouble.

By this sort of cautious attention and management in the lambing of the ewe flocks, and the use of proper sorts of shelter, a vast saving of lambs and ewes may in all cases be made, and the interests and profits of the sheep-breeding farmer be very greatly aided and promoted. See SHEEP.

SHEEP, *Names of*, the several names which are given, applied, or appropriated to them, at different ages, in different parts and places where they are much kept. There are very numerous, and of a very local nature; but the following are the greatest part of them.

Times.	Males.			Different Sexes.		Females.		
	Borders of Scotland.	Lincoln.	Dorset.	Norfolk and Suffolk.	Borders.	Lincoln.	Dorset.	
From that of being lambed until that of weaning	} Lambs.	Lambs.	Purs.	} Hogs and Hoggits.	Lambs.	Lambs.	Chilvers.	
From that of weaning until that of the first clip		Hogs.	Hogs.		Gridlings.	Hogs.	Thraves.	Thraves.
From that of the first to that of the second clip	} Dinmouts.	Heeders.		Shearlings.	} Gimmers and Sheeders.			
From that of the second until that of the third clip		} Young Wedders.		Two-shear.		Counters.		
From that of the third clip forward	} Old wedders.			Three-shear.	Fronters.			
From that of the fourth clip ever afterwards		} Full-grown sheep.				Ewes.		
Such ewes as are broken mouthed and refuse are denominated	} Crones in Norfolk and Suffolk.			} Drapes and Drape ewes in Lincolnshire and some other counties.				
Such ewes as are neither with lamb nor give milk, are said to be	} Eild, or Yield in Scotland.							

These arbitrary names, which are given to sheep at different periods of their existence, in different parts of the country, serve to guide the breeding and grazing sheep-farmers of such places in their management with these animals.

SHEEP, *Smearing of*, the practice of salving or laying them over with some sort of substance of the unctuous kind, for the purpose of improving the wool, and preserving the animals from disease. It is only had recourse to in some districts, and those mostly in the northern parts of the kingdom. See SALVING of Sheep.

Raw unboiled tar, not mixed with butter, is sometimes

very dangerous and hurtful to sheep, especially rams, when laid on in large, or even moderate quantities. There are, indeed, some sorts of tar which are very acrid, and blister sheep, causing the wool to fall off, and the death of the animals. When it is thin, and appears black on stirring, with an offensive smell, and caustic acrid taste, it should never be used for sheep, especially without boiling, to destroy such properties. The persons engaged in the work of smearing often find proofs of the danger of this sort of tar, in the burning effects which it has on their fingers. Good smearing tar, it is said, on being stirred, has a thick, brown, ropy

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ropy appearance, and a more pleasant smell, with a less acrid taste than the other kind. Tar should probably always be well mixed with butter in performing this sort of work.

SHEEP, Teeth of, the parts of the mouth of these animals by which their ages are often, in some measure, ascertained. When full-mouthed, they have usually eight teeth of the incisor kind in the lower jaw. They throw up two such each year until this takes place, by which means their sucking teeth are displaced or lost. See *AGE of Sheep*, and **TEETH**.

SHEEP-Shearing, in *Rural Economy*, the business of clipping or cutting off the coats or fleeces of sheep, by means of shears constructed for the purpose, which are termed *wool-shears*. It also sometimes signifies the season in which this sort of work is usually performed, which was formerly, and is even in some cases at present, a sort of festival. The operation is performed in different ways by different persons, but the best mode is that of the circular, or round the sheep, instead of the longitudinal, which is at present most in use. It is usually performed about June or July, according to situation and season, but should not be done either too early or be too long protracted, as injury and inconvenience may attend either extreme. A good clipper is capable of clipping from seven to fourteen or fifteen, and up to twenty or twenty-five in the day; and more are frequently done by very expert persons. Great care should be taken not to cut or prick the animals; but where this accident happens in the northern parts of the kingdom, they touch the part with a little tar, or sheep-salve; and in Sweden it is often done with train-oil and resin melted together. And in addition to what has been already observed on this subject, it may be stated, that much improvement has taken place in this art, especially in the more southern districts of the kingdom, in making use of the mode of clipping round the sheep, which has gradually extended itself from the northern districts of the island; by which less wool is lost by being left upon the sheep, and the business performed in a more expeditious, neat, and convenient manner. It was much the practice formerly to clip lengthways of the sheep, and in some cases in many different directions, according to the convenience of the person who executed the work, by which means it was often ill done. And in Ireland it has been stated, that they clip in short strokes, catching a bit of wool first in one place and then in another; and that if they are not looked narrowly after, they will leave many parts, such as the heads, tails, and insides of the thighs, untouched.

We have, in speaking of sheep, noticed the most proper periods of performing this very important operation; and the following remarks, by Mr. Price, an excellent sheep-farmer in the county of Kent, with the comments of Mr. Culley, as stated in the *Annals of Agriculture*, will shew the proper mode of managing the sheep in the time of shearing, as well as the manner of executing the business with these sheep-masters. It is stated by the former, that the sheep-shearing in Romney-Marsh commences about Midsummer, and finishes about the middle of July. Those who shear first, think they escape the effects of the fly, and those that shear late, apprehend they gain half a pound weight in every fleece, by the increased perspiration of the sheep. In early shearing the wool has not the condition which it afterwards acquires, but the hot weather occasions a good deal of trouble in detecting the fly. In order to begin, a large pen is filled with sheep ready for the coming of the shearers, in number from four to twelve, in proportion to the extent of the flock. The time employed is from two to four days. The sheep are let into a small pen, thirty or forty at a time, and when taken out to be sheared, all except three, more are

put in, because one or two only left would be apt to jump out. A boy keeps the gate, and the account of the number sheared, with small leaden tellers. These shearers by profession differ much as to quantity and method of performance; never begin early, but are satisfied with eight or ten hours shearing: a good shearer will shear ten an hour, a bad one seven. Their emulation tends only to dispatch and profit, not excellence of performance, and the sheep are too often pulled about in a rude and barbarous manner, and even wounded by the shears with cuts of the length of three or four inches, and the wool left unevenly shorn: tar, or some ointment, is then applied carelessly by the boy, in order to keep off the flies. The master's office is usually to give the pitch-mark, and when one field is finished, the sheep are returned, and others are in readiness to take their place.

The common mode of *catching* the sheep is by the hinder leg, drawing the animal backward to the adjacent shearing-place, the hand holding the leg to be kept low; when at the place it is turned on its hack. Or they are moved bodily, or one hand placed on the neck, and another behind, and in that manner walked along; the first, or common mode, he thinks the most safe. The parts of sheep fed on rich pastures, and fleshy, if handled hard, and bruised, are liable to fatal mortifications; an accident which often happens, on which account the pens upon some lands are obliged to be lined with woollens, or many would die from bruises. The price of shearing is 18*d.* or 2*s.* a score, with a dinner, and 2*s.* 6*d.* or 1*d.* a sheep without victuals, but with drink. They vary much in different places. A good winder will wind 400 fleeces a day, at the same price *per* hundred as the shearer has *per* score. The method of shearing—the left side of the sheep to the shearer's left leg, his left foot at the root of the sheep's tail, and his left knee at the sheep's left shoulder. The process commences with the shears at the crown of the sheep's head, with a straight cut along to the loins, returning to the shoulder, and making a circular shear round the off-side to the middle of the belly; the off hinder leg next: then, the left hand holding the tail, a circular shear of the rump to the near *huck* of the sheep's hind leg; the two fore-feet are next taken in the left hand, the sheep raised, and the shears set in at the breast, when the remaining part of the belly is sheared round to the near fluke; lastly, the operator kneeling down on his right knee, and the sheep's neck being laid over his left thigh, he shears along the remaining side.

However, on these statements Mr. Culley has made the following practical comments; namely, that Mr. Price's observation is just, with regard to the benefit arising to wool from being late clipped, and that it is consonant with the opinion of the Lincolnshire graziers and breeders, who have paid more attention to the subject, and understand it better than any other of the profession in this island: but very great attention is required from the shepherd to keep the sheep, under the circumstances of late clipping, free from the fly and maggots, also from the danger of being *beaten* by small flies, which fasten on those parts where the points of the shears have made the smallest scratch. But that, in regard to shearing seven or ten sheep in an hour, nothing can be more absurd and improper than such attempts, since it is impossible for the best shearer to clip the lowest number within the time, and perform it well, as it ought to be done. Forty years ago, the same absurd practice prevailed in Durham, and particular men would clip sixty or seventy of that large breed in a day; but the consequence of such improvident haste was, that besides imperfect shearing, large pieces of skin were cut, particularly from the bellies of the sheep,

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which, being constantly pestered and tortured in those parts by the flies throughout the summer, suffered much injury in their health and condition, some of them never recovering. Several sheep have died immediately after shearing, owing, perhaps, to having their legs tied, which, with hurrying and tossing them about, brought on a colic or cramp, putting a period to their existence in a moment. At that time, in a flock of two hundred sheep, we seldom escaped without the loss of one or two in a season; since, in the clipping of three thousand and upwards annually, we have not lost one these seven years. But, says he, instead of *tying* their legs, and *trying* who could clip the *most per hour*, or *day*, we have wisely begun to *try* who could clip the *best*, and from that change of system, instead of clipping fifty sheep *per day*, we think it a fair day's work to clip twenty-five upon an average. Where sheep are clipped by the great, and the men paid for number done, thirty or upwards may be sheared in the day; but our's are done by the day, without hurry, and scarcely wounding a sheep in the day. Each shearer makes his peculiar mark on the sheep, red or blue, that bad shearing may be detected; an useful stimulus to exertion. And he thinks that the sheep may be caught by the hinder leg, above the hough, but *not* by *any means* drawn backwards; on the contrary, as soon as the catcher has caught the sheep by the hough, he should draw it backwards, until he can, with his left hand, reach the throat, then, with the right hand behind its tail, he conveys it along with ease and safety. He thus continues: thirty years ago, it was the general practice in this county (Northumberland), and some old-fashioned bigotted people adhere to it still, to shear the sheep thus; the clipper first opened the belly, and then, after tying all the four legs, sat down upon a sack filled with straw, the sheep lying between his legs; when, in the most awkward manner, he flashed and tore the fleece off, beginning at the neck, and going down the left side first, finishing at the right. Instead of clipping around the sheep, as at present, they then clipped them mostly lengthways. The present method is to begin at the back part of the head, in order to give room for the shears to make their way down the right side of the neck, to the open of the breast. The man then sits down upon his right knee, laying the head of the sheep over his left knee bent, and beginning at the breast, clips the under side of the throat upwards to the left cheek; then takes off the back of the neck, and all the way down below the left shoulder. He then changes to the contrary side, and makes his way down to the open of the right flank. This done, he returns to the breast, and takes off the belly, after which it matters not which side he clips, because being able to clip with either hand, he meets his shear-points exactly at the middle of the back, all the way, until he arrive at the thighs or legs. He then places the sheep on its left side, and putting his right foot over the neck, and the other forward to the undermost hind leg, clears the right side; then turning the sheep over, finishes the whole.

Our price for clipping used to be one shilling *per dozen*, and a gill of ale about ten o'clock, and another at four in the afternoon. He supposes a man will have one shilling and sixpence *per dozen* now; but *we* clip all with our own men, mostly the shepherds, many of whom now do it most admirably: and we have in general prevailed upon them to clip with either hand; which is not only the easiest for the clipper, but enables him to do his work in the neatest and most complete manner.

These remarks deserve the regard of the sheep-farmers in other districts, as well as the following hint by Mr. Price. It is, says he, astonishing to see a good shearer handle a

sheep; he studies its ease, and the sheep seems delighted in its situation. This should always be the case with these animals, which are often much injured by coarse management, and the most sober steady men be constantly employed.

The fat sheep should always be shorn earlier than those which are lean. In the South Down sheep district, a good sheep-shearer is said to be able to shear fifty sheep daily, for which he has 2s. 6.; or 1s. the score, and board. Great care should at all times be taken not to injure the sheep in shearing, as the least cut is sometimes dangerous, though at others not. In cases of cuts, wax ointment or well boiled tar must be used, and the sheep have an open airy pasture.

The very same method is taken in shearing the lambs as in that of the old sheep, which, in many districts, takes place nearly at the same time, or about the latter end of June and the beginning of the following month; some shearing them immediately on their being weaned, but others some little time before, for the sake of allowing the old ewes to become fat. See *SHERLING of Lambs*.

The writer of the "General Treatise on Cattle," states, that the royal flocks of fine-woolled sheep in Spain are sheared in the beginning of May. There are shearing-houses, each of which will contain twenty thousand sheep, and cost in building above five thousand pounds sterling. To shear a flock of sixteen thousand sheep requires one hundred and twenty-five men, a man shearing twelve ewes, or eight rams, in a day. The sheep are sweated previously to being sheared, in a long, narrow, low gut, called the sweating place, where they remain a night, crowded as close together as the shepherd can keep them. The shorn sheep are permitted to go to pasture if the weather be fine, returning home in the evening, to pass the night within shelter of the walls, or in the house, if cold or cloudy; by which means they are brought by degrees to endure the open air.

And it is a point of great consequence in this business to have a person well conversant with the winding of the wool, in order that it may be well performed, and look in a proper manner to the buyer. In some places the wool is laid in a heap on being wound, and conveyed in the evening of the same day to the wool-lofts, or other depositaries. Some store their wool constantly in upper chambers, as the moisture which is produced by it on ground floors, when it is continued there for any length of time, is supposed to be very injurious to it. See *WOOL*.

SHEEP-Fold, in *Agriculture*, a space of arable or other land hurdled in for the purpose of being manured, or a sort of yard or other contrivance for the purpose of confining and keeping sheep in during the nights or in bad weather, in order to afford them protection and shelter. They are sometimes fixed, being constructed of any convenient sort of light materials, so as to inclose a space in proportion to the number of sheep in the form of a kind of yard or fold, which is kept constantly well littered with some sort of dry substance, such as stubble, refuse straw, dry sand, &c. during the time the sheep are folded and foddered in them, in order that as much manure may be raised as possible. In some cases also, for the more perfect protection of the sheep, they have sheds all round them, under which the sheep may lie without injury from rain, snow, or any sort of moisture. These are usually termed *standing folds*, and are either formed about the home-stalls, or in some dry, rather elevated situations, on the farms, having the bottoms well laid with some sort of material that is capable of keeping the sheep dry and clean. And in the *covered fold*, or what is termed *cotting*, which is in use in Herefordshire, they are sometimes formed into different divisions, so as to contain certain numbers or kinds of sheep.

They are, however, in other cases formed so as to be moveable,

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moveable, either by means of wheels or other contrivances, being drawn to different situations according as they may be wanted. See *SHEEP-Houfe*.

There is likewise another sort of more imperfect sheep-fold, which is formed by the planting of trees in different methods, so as to afford the animals a sort of protection from the severity of the winter season, as well as from the excessive heats of the summer. These are termed *tree-folds*, and sometimes *plantation folds*, from the manner in which they are formed. See *TREE-Fold*.

In the construction of the second sort of sheep-folds, which were mostly formed in some distant parts of the farm, in which cases they were often denominated *standing-out* folds, a cheap and simple method was had recourse to by an excellent sheep-farmer in Suffolk (Mr. Macro). He inclosed a double fold with thirteen dozen of old hurdles seven feet long each, formed of wands, and raised a haulm fence around them, composed of upwards of sixty loads of wheat stubble, the area of the fold being littered with about thirty loads more: in this the flock were to be lodged where the field fold was unsafe, or could not be removed from place to place, on account of frost, snow, or flood; and it is stated, that he made during the same winter season, 493 loads of manure, improving at the same time the condition of his flock. The land, it is observed, lay at too great a distance to be manured from the home-stall. He likewise adds, that before he thought of this plan, his sheep were always obliged to lie in bad weather, upon a certain sheltered part of the heath, where the fold manure was not only lost to his farm, but the grafs on which the dung was heaped in such quantity became so coarse and sour, that nothing would eat it; and that, exclusive of this injury, he used to lose by mortality, in a wet or severe season, during yeaning time, a much greater number of both sheep and lambs, for want of the dry, warm lodging of a sheltered fold, the advantage of which he estimated at thirty or forty pounds a-year at least. He saved not less by his improved plan than thirty lambs in a year, besides sheep amounting to a greater number of lambs than he usually reared in one year during the period of his farming business.

And by the forming of these folds in any other cheap convenient manner, similar benefits may be derived by the sheep-farmer.

In all these cases the sheep should be littered down as above as often as necessary, and be well fed, twice in the day at least, with such food as has been provided, being let out during the middle of the day, except when the season is very stormy and severe. It is stated in the *Annals of Agriculture*, that one hundred and thirty-four sheep confined in this way for the period of six weeks, and littered with five loads of forty trusses each of oat-straw, forty pounds to the truss, made twenty-eight large loads of manure, consuming two acres of turnips within the time.

The great superiority of this sort of fold over that of the naked moveable kind, is therefore sufficiently obvious, and may probably be had recourse to at all seasons with some advantage. See *SHEEP*, and *FOLDING of Sheep*. Also *SHEEP-Yard*.

A sheep-fold has been lately invented by Mr. Plowman of Broome, Norfolk, upon an improved and very simple principle, combining many advantages over the old and expensive method of folding by hurdles; and as the whole fold can be removed with ease at all times, it will be found peculiarly useful in feeding off turnips on the land in frosty weather, when hurdles cannot be used. It is stated that the expense, in the first instance, will exceed that of hurdles, for the same given quantity of sheep; but having had

one in use nearly three years, he is satisfied the saving will be very considerable: for, before he adopted this method of folding, he lost from thirty to forty nights folding in the year, owing to the land being hard in dry seasons; which renders folding almost impracticable, as they never can be set without great labour and destruction of hurdles. He is also clearly of opinion, that the flock of sheep will be greatly increased when this method of folding becomes more known; and that it will enable many small farmers to keep from 50 to 100 sheep, who are now deterred from it on account of the small quantity of feed they have not answering to keep a man for that purpose only; but by this plan, they may keep a boy at 3s. or 3s. 6d. per week, who can attend on 100 or 200 sheep, and move the fold himself without any assistance. In heavy gales of wind it frequently happens that the hurdles are blown down, and the sheep of course being at liberty to range over the crops do incalculable mischief, which cannot happen with this fold. And in some counties in England, where hogs are folded, great difficulties are experienced for want of stowage, for them to feed off winter tares, &c. &c. as they root up every flake or hurdle; and having tried the experiment, he is certain this fold will keep them in, and defy their attempts to displace it. And an astonishing quantity of time is saved, as a man can remove a fold to contain 300 sheep in five minutes, which by the old method frequently takes some hours to accomplish. Many are now using folds from his model; and he received for the invention the gold medal of the Society for the Encouragement of Arts, &c.

It is further remarked, that where the fold is wanted to be used on very hilly ground, it must be begun at the top and worked down to the bottom for the ease of removing it, and then drawn up again with a horse. This, however, he has never had occasion to do, for his land is ploughed in a contrary direction, and he works the fold in the same course as the ridges. By this means the inconvenience is avoided of crossing the furrows; and they are also a guide to keep the fold in a straight direction. With respect to the sheep getting under, he does not recollect that circumstance to have ever happened, nor does he conceive that any land, which is cultivated, can be so uneven as to admit of it.

This sheep-fold is twenty-one feet in length and three feet eleven inches in height, being composed of a top-rail, and bars below passed through uprights; the whole moving on low cast-iron wheels, and made strong, but in a light manner.

SHEEP-Houfe, a sort of slight wooden building, constructed for the purpose of containing and protecting sheep in bad weather, &c. Houses of this kind are usually made low, for the sake of warmth in the winter, being mostly a third part longer than they have breadth; they should also be sufficiently large for the quantity of sheep they are to contain. The sides should be lined with boards, and the bottoms be laid in an even manner with stone or some other material, that the litter may be well impregnated with the urine of the sheep. And it has been advised to have the sides exposed to the sun, set with lined moveable hurdles, that when it shines the whole may be laid open, to afford due refreshment, and give the sheep an opportunity of feeding upon the pasture wherein they stand. They should be well and securely covered with some sort of proper material upon the tops. They are sometimes fixed in particular situations, but in other cases, which is the more improved method, so constructed as to be capable of being removed as they may be wanted. One of the latter kind, employed on the farm of the Hon. George Villiers, in Hertfordshire, which is very complete, is described, with a plate, in the *Corrected Agricultural Survey*

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vey of that district, lately published by the Board of Agriculture.

In this sheep-house the wheels are fixed to the sides, being fifteen inches in diameter, and having an axle-tree to harness the horse to, with weather-boarded flaps hung with hinges, to turn up and button against the sides when it is removed. It has also folding doors to open when the sheep are let in or out, and fixed weather-boarding, with cover-boarded windows to open on hinges sideways, in order to put fodder into the racks. Likewise a canvas roof, with open railing for air.

It is observed, that the length of the building is from twenty feet to any length; the width to be such as to enable the building to pass through the field-gates; the weather-boarding and flaps to be made as thin as possible, and covered with pitch.

But how far the advantages of houses of this sort may compensate the expences of constructing and keeping them in repair, has not been fully shewn; nor has perhaps a sufficient number of trials been made to shew the benefit of confining sheep in covered houses or folds, or whether the economy of the animals is well suited to such a system. Some circumstances of advantage attending the practice of housing sheep have certainly been stated, but no satisfactory comparative experiments have, so far as we know, been made. And from the plan being little or not at all adopted in many extensive sheep districts, and in others where it once prevailed being either wholly in disuse or much on the decline, as is well known to be the case in Gloucestershire and the county of Hereford, there seems reason at least to presume that it is not so necessary or so well suited to the habits of the animal, nor even so beneficial as has been supposed by some writers on the subject. See SHEEP, and *FOLDING of Sheep*.

Houses of this nature, for the purpose of sheltering sheep and lambs in bad weather, are formed in a very cheap and simple manner in Romney-Marsh, as may be seen in Price's account of the sheep-husbandry of that district.

SHEEP-Hurdles, the flakes or sort of fence-gates which are set up so as to confine sheep at the time of folding them on arable land, or while they are feeding down, or upon any particular sort of food. They are of several different kinds, and either close or open; but the former are in general to be preferred, as affording the most shelter. It is obvious that the number required to inclose a certain space must depend upon the length. See HURDLE.

SHEEP-Husbandry or Farming, that sort of farm management which relates to or has sheep for its principal object. There are various modifications of this sort of farming, depending upon the differences in the circumstances of the lands, their nature and situations, as well as other local matters. See SHEEP.

It is not improbable but that in this sort of husbandry and farming, the most benefit and advantage may often be derived where there is a judicious intermixture and conjunction of other sorts of management, as those of cultivation, cattle, planting, and some others, sheep being constantly the great object. By such means advantages are afforded and brought forth in a great variety of different ways to the individuals themselves as well as the community at large.

In this sort of farming management it is of much consequence to have recourse to the fixing upon such plans and methods as are the best and most suited to the state and nature of the farms and markets for the sales of the animals. In cases where the farms are high, and of a cold exposed nature, the wether system may often enter largely into the

plan which is to be adopted. Where they are of the more mixed nature, and consist of high, as well as low lands, they may sometimes be most suitably stocked, in a partial manner, with ewes and lambs, and with wethers. In those of the more common sort, the breeding or rearing systems, according to circumstances, may frequently be the most profitable modes. And in rich grass land and mixed farms, which are provided with parks and pastures, as well as arable lands, the sheep-farmer may not unfrequently be tempted to fatten the saleable part of his sheep-stock, particularly where the markets are convenient for him in respect to distance.

In all these sorts of farms in this kind of husbandry, the breeds or kinds of sheep should always be selected and provided with a perfect consideration of their nature, and the management of the sheep be carefully directed with the same intention. The means of disposing of them should also be well regarded. Many other circumstances likewise require attention in this sort of husbandry and management. The inquirer may find much useful information on the subject of Highland sheep-farms and sheep-farming, in the third volume of the "Transactions of the Highland Society."

SHEEP-Marks, and Marking, the marks and means of performing those which are put upon sheep in different ways and manners; as by means of tar, ochre, redde, wad, and other similar substances, and by cutting the ears of the animals in different forms and methods. These are useful and necessary to the sheep-farmer on many occasions and accounts; they serve to distinguish his particular sheep and flocks from those of others, to discriminate the several different kinds, and to point out the various sorts of management which are necessary with different kinds of sheep and lambs, as well as to answer different purposes in the sale of them, &c. In the marking with tar, a tool or contrivance having letters fixed to the end of it, is mostly made use of, the initials of the name of the farmer being most commonly employed. With the other matters different methods are taken; such as wetting and rubbing them on slates, stones, or other matters, and then marking the sheep with them in the ways that may be thought necessary. Sheep and lambs are marked by these means in many different parts, as in the faces, on the sides, the hips, and in several other places; the work being mostly done according to the fancy of the person engaged in it, or of the owner of the flock, often in different curious modes and forms, as straight lines, curves, circles, and a variety of other more out-of-the-way methods. The marking of the sheep in the ears is performed by cutting them with a sharp knife in different forms and manners, as in that of a fork, an under and upper slant, an under and upper square, an under and upper notch, a staple, an under and upper slit, straight slit, a crop, a crop and slit, a hole, a hole and slit, &c. All these several modes may be seen represented in Price's System of Romney-Marsh Sheep-grazing.

Marking sheep in the ears, in these or other methods, forms excellent and correct means of distinction, for knowing them by, in a variety of cases and circumstances in sheep-farming.

Dr. Lewis recommends the following composition for marking of sheep; *viz.* 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, refitted 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

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weight of tar, which will readily wash out along with it from the wool. Lewis's Com. Phil. Techn. p. 361.

SHEEP-Pens, the divisions made by the small moveable gates or hurdles, which are set up to keep sheep in some particular situation. They are usually formed on a dry place, about the corners where different inclosures of the pasture kinds meet, so as to be convenient for the whole. They are useful in examining and selecting the sheep, being divided so as to contain about three dozen sheep each, as by this means they are always at the command of the shepherd for any purposes he may have in view. The bottoms should be firm and dry, so that the sheep may not be soiled.

Pens or coops are likewise made and used in the pounds where the ewes are lambed or put, in some sheep districts. These are usually about two feet seven or eight inches in the square, into each of which one ewe and the lamb are put, and suckled, where there is a disinclination in the ewes to let their own lambs suck, as occasionally happens, and where strange lambs are put to them. Two of the side-boards of these pens are capable of being lifted up and let down so as just to admit the ewes; in which they move with difficulty, consequently are not able to reach the lambs to beat them away; by which means they thus find an opportunity of sucking against the wills of the ewes. These pens are therefore often very convenient in these cases, two of which are mostly kept in each lambing-ground or yard. See *SHEEP-Pound*.

SHEEP-Pound, any sort of narrow inclosure for the confining of sheep. Pounds of this kind are of many different sorts, and useful for several different purposes in the management of sheep-flocks, as those of lambing, catching, sorting, and dressing them in different ways, &c. They sometimes occupy pretty large spaces of ground, but at other times are only of very small extent.

SHEEP Rubbing-polls, the small posts and pieces of wood which are fixed up in sheep-pastures for them to rub themselves against. They are sometimes simple upright polls, but at others they have cross pieces put through them. They are very necessary and useful to the animals. See *RUBBING-Poll*.

SHEEP-Shears, the shears used in clipping or shearing of sheep. They are frequently termed wool-shears. They are made with a spring bow in the handle part, which causes them to open readily in working with them. The handle part is mostly about six inches in length, and that of the blade about five; but shears of this kind vary much in size in different places.

SHEEP-Skin, or *Pelt*, the common covering by which the sheep is surrounded and defended. The skins of these animals differ much in thickness, size, and other properties, according to the nature of the different breeds. Sheep pelts, or skins, sometimes form an article of great utility and profit to sheep-farmers, being sold to the fell-mongers, or other persons in their neighbourhood, under constant contracts by the year, at different prices; as from the time of shearing to Michaelmas, at from 1s. to 1s. 6d.; from that until Shrovetide, at from 2s. to 2s. 6d.; and from Shrovetide to shearing-time again, at from 3s. to 3s. 6d. Something of this method is pursued by the South Down sheep-farmers in the sale of their sheep-skins, as well as by those of several other great sheep districts, by which great advantage often arises.

SHEEP Washing-Hooks, the long-handled hooks which are made use of in washing sheep in some places. The hooks are in these cases fixed at the small ends of the long handles, in several different forms, as in that of somewhat the manner of an S; that of two small sorts of half circles, with a little

straight portion in the middle, to which the handle is joined, and, in short, quite straight portions. They are very useful, in some instances, in guiding and directing the sheep in this business.

SHEEP-Yard, any sort of inclosed yard or place in which sheep are confined and kept, either for the purpose of bringing forth their young, feeding, or fattening. These sorts of yards are now becoming pretty general in many sheep districts, as well as some other places. They are made in several different ways, according to the nature of the situation and other circumstances; and are often capable of being formed in easy, cheap, and convenient methods. See *SHEEP-Fold*, and *SHEEP-House*.

It is stated in the Agricultural Report of the County of Oxford, that at Clifton, Mrs. Latham has one of the most complete sheep-yards in it: a shed surrounds three sides of it, in which are racks and troughs for the sheep to take their food from; it is thirty-one yards in length and sixteen in breadth; the sheds being five yards broad. This sheep-yard does very well for two hundred ewes. The ewes are usually brought into the yard from four to six weeks before the lambing-time, and continued in it until that is over, going out however in the day-time. This is said to be considered as a very excellent method, but attention must be paid in it, that the dung does not accumulate, as by its fermentation the sheep are liable to be injured. It should, of course, be carted out in a repeated manner. When not removed so often as to prevent its taking on heat, it has also been found, in Essex, to prove dangerous to lambing ewes, as well as ewes and lambs.

The sheds may be raised on the sides of these yards so as to serve as fences also. Stubble, haulm, and other similar matters, may likewise be made to form warm walls as the outside fences of them.

All yards of this sort should be kept constantly well littered with suitable substances of that kind, upon foundations laid with good earth, sand, or some other proper material.

In some large sheep districts, as the South Down, in Sussex, the farmers have sometimes two or three of these yards, which are well sheltered for the sheep to lie down in at night, in very rainy and stormy weather. In some instances a yard of this nature, including the sheds, comprehends a space of not less than three hundred and fifty-five square yards; the sheds around which are about four yards wide. The whole are kept, for the most part, thoroughly well littered down. They are commonly extremely warm, and found to preserve many lambs in bad weather. The whole of the circumference around them, in some cases, has a rack for containing hay.

In the Dorchester district of the first of the above counties, natural grass being extremely scarce, straw is given in large quantities to sheep, as soon as ever the frosty mornings come on; barley-straw is had recourse to in these yards, or in standing pens; and afterwards bean and pea-straw, which they are very fond of: they pick off the pods and tops, and do very well with these substances. These sorts of straw are occasionally carted to the field for their use; and what they do not consume, brought back to the yards; a practice which is pursued to the saving a great many tons of hay. Such dung as is made in this way is found to be very good.

Peas may likewise be applied in these yards, or other ways, in fattening lambs, the mothers of which are at turnips. They are given in troughs, six or eight weeks after the lambs have been dropped. By the lambs having the liberty of running through the openings in the hurdles, where the field mode is followed, it is often some time before they will take to this

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fort of food, but they mostly come on gradually, until a score will eat a peck a day. Peas are sometimes given in this manner, till they reach six shillings a bushel, and found to answer. A great many sorts of food of these and other kinds may be used with superior advantage for sheep in these yards, and a vast supply of good manure be provided at the same time.

SHEEP-Clatter, in *Rural Economy*, a term applied in some sheep districts to the person who has the care of clatting the ewes just before the lambing-time begins.

SHEEP-Lamber, a name given to the person who has the care and management of the ewe-flocks, which are under the state of lambing, in some sheep districts. It is of very great advantage to a sheep-farmer to have a careful, steady, active lamber, unless he attends to the business himself, which is always the best way where it can be done; as few will be found who are sufficiently attentive and diligent at this period, and, of course, much loss may be sustained. Where persons are hired for this purpose, they should, it is supposed, be rather elderly than young, as being more experienced and less apt to be hasty, as the business is intricate, tedious, and often subject to much trouble, confusion, and disorder, which stand in need of a great deal of patience to have them properly attended to and rectified. If they are, or have been lookers, it is so much the better, but this is far from being always the case, even in the principal situations where sheep are kept. In the great sheep district of Romney-Marsh, it is the custom for the lambers to have the skins of the dead lambs as a perquisite, which are usually sold at about 5s. the dozen. This is certainly a bad practice, as it tends to the making of rogues. The interest of the sheep-master and his servant, which ought to be the same, are separated, as what is the loss of the one is the gain of the other, and much injury and disappointment result from it.

In the above great district for sheep, it is usual for the lamber to go his regular rounds at four o'clock in the morning, and to continue with the ewes until about seven or eight, returning to the fields until dinner-time; then going off again at one, and returning about five; setting off on his last round at six o'clock, when he does not return until dark. There is indeed sometimes so much to do, that he cannot come home above once or twice a day: the lambing should on no account be ever left until the lamber has every thing in a fair way, especially at the time of night.

SHEEP-Looker, the name of the person who has the overlooking and management of the sheep-flocks, in some districts. Persons of this kind should always be of careful, steady, active dispositions; with sufficient experience, and a full knowledge of the different modes of sheep management. See SHEPHERD.

SHEEP Lambing-Hooks and Marks, the instruments of the hook and mark kind, which are made use of in laying hold of the lambs, and in marking them, in particular cases and circumstances. In the former the handle is about seven feet in length, the head, or circular open part, three inches in width; the neck, or opening part to it, two inches and one-eighth wide; and the guide, or bill, six inches and a half in length. The latter have the handles about seven inches and a half long, with straight and curved or circular marks at the ends, one inch and three-eighths in length, and one inch and two-thirds in width, inside the circle. These instruments are very useful on many occasions.

SHEEP Hay-Rack, that sort of rack which is provided for the use of sheep in their consumption of hay and other sorts of fodder of the same nature. They are made in many different ways, as open or covered on the tops, and boarded

or barred up a little height at the bottom part, as well as raised on low wheels, or wholly without them.

They are usually from about six to nine feet in length, and about two feet and a half in height; the space for the hay at the top about one foot ten inches, but which is sometimes contracted at the bottom so as for the two sides to come nearly together, standing out in the manner of common horse racks. The openings for the sheep to feed through from three, four, or five inches to seven or eight. The smaller they are the less loss there will be, provided they are sufficient for the sheep getting at the fodder. The bars and boards put at bottom in some sorts of these racks prevent the animals getting into them. When formed with covers and screens for keeping the hay or other food, and the sheep, while feeding, from being wet; they are the most complete, especially if, at the same time, they be provided with low wheels, so as to be capable of being moved from place to place. In small racks, where wheels are put at one end, they can be easily moved about.

These racks are of very great use and convenience on all farms where sheep are kept in any quantity. See RACK.

SHEEP Corn-Bin, any sort of trough or bin formed for the purpose of containing the corn, or any other similar kind of food for sheep, either in fattening, or in other modes of managing them. Bins or troughs of this nature are usually contrived in a light manner, so as to be moveable on low wheels; having covers at some height over them, supported from below by the ends and upright pieces in somewhat the roof-form, so that the wet may be prevented from getting to such provisions, and the sheep enabled to feed dry. They are generally made very narrow, but of considerable length, the box or trough for the food having only the depth of a few inches.

Sheep-bins of this sort are very necessary and useful in many kinds of sheep management.

SHEEP-Dung, the manure afforded by sheep, which, by means of proper folding in yards properly littered with straw, stubble, &c. may, in many cases, be increased to a considerable extent, so as to render it an object with the farmer. See DUNG, FOLDING of Sheep, and MANURE.

SHEEP-Drains, a name sometimes given to those small drains which are frequently formed upon the more soft and damp sheep-walks and pastures in different parts of the kingdom, in order to render them in a state of greater dryness. They are often made not more than two feet in width at the surface, and one spit and the shovelling in depth. They are most suited to that sort of wetness where the bottom is of a clayey or tilly nature. Such sort of work can, in some places, often be done at three-halfpence the rood of six Scotch ells. These drains should constantly have a gentle slope or declination across the declivities of the grounds on which they are made.

SHEEP-Farm, that sort of farm which is principally conducted under some system of sheep management. Many situations are suited to some branch of this husbandry, which cannot be converted to the purposes of raising grain or fattening cattle, &c. See SHEEP, and FARM.

The more dry the lands are, and the more fine and short the grass is which is upon them, the better and more proper and suitable they are, in general, for the purposes of sheep-farms. Where the substratum is of a lime-stone quality, this is mostly the case, in the most favourable degree. But in many instances now, arable farms are likewise sheep-farms, to a very considerable extent; artificial food being grown and raised for the sheep-flock in sufficiently suitable proportions. There is probably much advantage in this combination in all cases in which it can be properly admitted. Sheep-

farms should constantly be formed with great attention to the nature of the grass, the exposure, and the shelter for the animals. They should also be kept dry and in good order on the surface, with every sort of proper convenience for the management of sheep. See *SHEEP-Husbandry*, and **FARMING**.