

previously shorn, leaving the animal covered with a short coat of young wool, which in its turn undergoes the same regular mutations. Wool.

Hairs are commonly of the same thickness in every part; but wool constantly varies in thickness in different parts, being generally thicker at the points than at the roots. That part of the fleece of sheep which grows during the winter is finer than what grows in summer. This was first observed by Dr Anderson, the editor of the *Bee*, and published in his *Observations on the Means of exciting a Spirit of National Industry*.

While the wool remains in the state it was first shorn off the sheep's back, and not sorted into its different kinds, it is called *fleece*. Each fleece consists of wool of divers qualities and degrees of fineness, which the dealers therein take care to separate. The French and English usually separate each fleece into three sorts, viz. 1. Mother-wool, which is that of the back and neck. 2. The wool of the tails and legs. 3. That of the breast and under the belly. The Spaniards make the like division into three sorts, which they call *prime*, *second*, and *third*; and for the greater ease, mark each bale or pack with a capital letter, denoting the sort. If the triage or separation be well made, in 15 bales there will be 12 marked R, that is, refine, or prime; two marked F, for fine, or second; and one S, for thirds.

The wools most esteemed are the English, chiefly those about Leominster, Cotswold, and the isle of Wight; the Spanish, principally those about Segovia; and the French, about Berry: which last are said to have this peculiar property, that they will knot or bind with any other sort; whereas the rest will only knot with their own kind.

Among the ancients, the wools of Attica, Megara, Laodicea, Apulia, and especially those of Tarentum, Parma, and Altino, were most valued. Varro assures us, that the people there used to clothe their sheep with skins, to secure the wool from being damaged.

Of late a great deal of attention has been paid to wool in this country, as well as several others. Several very spirited attempts have been made to improve it, by introducing superior breeds of sheep, and better methods of managing them. For this purpose has been formed the

*British Wool Society*, an association formed for the purpose of obtaining the best breeds of fine-woolled sheep, with a view of ascertaining, by actual experiments, how far each species or variety is calculated for the climate of Great Britain; the qualities of their wool respectively; the uses to which each kind of wool could be most profitably employed in different manufactures; and the comparative value of each species of sheep, so far as the same can be determined.

Attention had for some time been paid by the Highland Society to a famous breed of fine-woolled sheep in Shetland; but it occurred to Sir John Sinclair of Ulbster, baronet, and to Dr James Anderson, well known as the author of many useful publications, that the improvement of British wool was a matter of too much importance to be entrusted to a society which is obliged to devote its attention to such a variety of objects as the general improvement of the Highlands of Scotland. The latter of these gentlemen, therefore, in an Appendix to the Report of the Committee of the Highland

**WOOL**, the covering of sheep. See **OVIS** and **SHEEP**.

Wool resembles hair in a great many particulars; but besides its fineness, which constitutes an obvious difference, there are other particulars which may serve also to distinguish them from one another. Wool, like the hair of horses, cattle, and most other animals, completes its growth in a year, and then falls off as hair does, and is succeeded by a fresh crop. It differs from hair, however, in the uniformity of its growth, and the regularity of its shedding. Every filament of wool seems to keep exact pace with another in the same part of the body of the animal; the whole crop springs up at once; the whole advances uniformly together; the whole loosens from the skin nearly at the same period, and thus falls off, if not

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Society of Scotland, for the year 1790, proposed the plan of a patriotic association for the improvement of British wool; and the former, who was convener of the committee to whom the subject of Shetland wool had been referred, wrote circular letters, recommending the plan. The consequence of which was, that on the 31st of January 1791, several noblemen and gentlemen of the highest respectability met in Edinburgh, and constituted themselves into a *Society for the Improvement of British Wool*. Of this society Sir John Sinclair was elected president; after which, in an excellent speech, he pointed out to the members the objects of the institution, the means by which those objects could be attained, and the advantages which would result from their united labours. This address was afterwards printed by order of the society.

The particular breeds of sheep to which the society proposed to direct its attention, were sheep for the hilly parts of Scotland; sheep for the plains, or the Lowland breed; and sheep for the islands. They were to try experiments also with sheep from foreign countries, distinguished by any particular property.

The principal objects which the members had in view, during the first year of their association, were, 1. To collect specimens of the best breeds which Great Britain at that period afforded, in order to ascertain the degree of perfection to which sheep had already been brought in this kingdom. 2. To procure from every country, distinguished for the quality of its sheep and wool, specimens of the different breeds it possessed, in order to ascertain how far the original breed, or a mixed breed from it and the native sheep of the country, could thrive in Scotland. 3. To disperse as much as possible all these breeds, both foreign and domestic, over the whole kingdom, wherever proper persons could be found to take charge of them, in order to try experiments on a more extensive scale than the society itself could do; to spread information, and to excite a spirit for the improvement of sheep and wool in every part of the country.

Sir John Sinclair had previously collected a flock, consisting of sheep of the Spanish, Herefordshire, South-down, Cheviot, Lomond hills, and Shetland breeds, and of a mixed breed from these different sheep. This flock amounted to 110 rams, ewes, and lambs. M. d'Aubenton, in consequence of a correspondence with Sir John Sinclair, sent over to the society ten rams and five ewes, of real Spanish breed, which had been originally entrusted to his care by the late king of France: these, after encountering a number of obstacles, and after being stopped and threatened to be slaughtered at the customhouse of Brighthelmstone for the use of the poor, arrived safe at Leith. Lord Sheffield, at the same time, sent to the society four rams and six ewes of the South-down and Spanish breeds. Mr Bishton of Kilsall, in Shropshire, presented them with three Hereford rams, reckoned by many the best breed in England; the society at the same time ordered 150 ewes of the same breed, and two ewes of the Long Mountain breed, reckoned the best in Wales, to be sent along with them. They purchased 57 rams and 173 ewes of the Cheviot breed, reckoned the best in Scotland, for the hilly parts of the country. Lord Daer sent them 20 ewes of an excellent breed, which existed at Mochrum in Galloway. The late earl of Oxford sent them in a present

three rams of the Norfolk crossed by the Cape or Good Hope breed. Mr Isaac Grant junior of Leghorn, in conjunction with Mr Sibbald, merchant at Leith, presented them an Apulian ram and ewe; the ram arrived in safety, but the ewe unfortunately died on the passage. Mr Baron Seton of Preston, in Linlithgowshire, sent them a ram and two ewes of a Spanish breed, which had been for some time kept in Sweden unmixed with any other. They purchased 100 ewes of a small breed existing in the parish of Leuchars in Fife, much resembling the Shetland. The Right Honourable William Conynghame of Ireland sent them 11 Spanish rams, seven Spanish ewes, 15 three-fourth breed and 16 one-half breed Spanish and Irish ewes. Lord Sheffield sent them eight rams and 18 ewes; and his majesty made them a present of two rams.

Thus, in the course of one year, the society acquired by donation or purchase about 800 sheep of different sorts and ages, and many of them from foreign countries: about 500 of these were distributed over different parts of Scotland, the greater number of which were sold to gentlemen anxious to promote the views of the society, and well qualified to make experiments on the different breeds which they had obtained. The greatest part of the remainder were taken by different gentlemen, who kept them for the society, and according to their directions, without any expence.

It is impossible to produce an instance of so much having been accomplished by a society of private individuals in so short a time. Nor was this all; the same year Mr Andrew Kerr, a very intelligent sheep-farmer on the borders of England, was sent, at the expence of the society, to examine the state of sheep-farming along the east coast of Scotland and the interior parts of the Highlands. His tour was printed by order of the society, and contains the first intimation of the possibility of the Cheviot breed thriving in the north of Scotland.

In the year 1792, Messrs Redhead, Laing, and Marshall were sent by the society, to make a survey of the state of sheep-farming through some of the principal counties of England; the result of which was also published by the society, and contains more information on the subject of the different breeds of England than any work hitherto published; and in 1794, Mr John Naismyth was sent on a tour through the southern districts of Scotland, which completed the circuit of almost the whole kingdom.

Thus a few private individuals, unaided by the public purse, had boldness enough to undertake ascertaining the comparative value of the different kinds of sheep in their own country, and to introduce some of the most celebrated breeds of other countries, and succeeded in the spirited attempt. It is impossible in this place to state more minutely the various other transactions of the society; to enter into any detail of the premiums given by this respectable institution for the improvement of the celebrated Shetland breed; or to explain how, as if it were by magic, in a country where the manufacture of wool was little known, articles manufactured of that material were made, rivalling, and in some cases surpassing, the most celebrated fabrics of other countries. A war having unfortunately arisen, it became impossible to pay the same attention, or to carry on with the same success, novel enterprises; even

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old establishments often fall a sacrifice amidst the horrors of war. The utmost that the British Wool Society could expect to do, was to preserve the institution in such a state, that when peace shall be happily restored it may revive with double energy and spirit.

It is a curious fact that the Romans, during their residence in Britain, established a manufactory of woollen cloth at Winchester, which was so extensive as to supply their army; and there is reason to believe that the trade which they introduced into Britain, was not neglected by the native inhabitants, for the first 900 years of the Christian era. The long Spanish wool was imported into this country so early as the 12th century, and we find that since the days of Edward III. British fleeces were admirably adapted to the kind of cloth which was in greatest request, though now they are generally unequal to the production of that which is sought after.

*Wool-Combing*, a well known operation, which, when performed by the hand, is laborious, tedious, and expensive. The expence of it through all England has been calculated at no less a sum than 800,000l.; and to lessen this expence, the Rev. Edmund Cartwright of Doncaster in Yorkshire bethought himself, some years ago, of carding wool by machinery. After repeated attempts and improvements, for which he took out three patents, he found that wool can be combed in perfection by machinery, of which he gives the following description.

Plate  
DLXXVIII.  
fig. 1.

Fig. 1. is the crank lasher. A is a tube through which the material, being formed into a sliver, and slightly twisted, is drawn forward by the delivering rollers; B, a wheel fast upon the cross bar of the crank; C, a wheel, on the opposite end of whose axis is a pinion working in a wheel upon the axis of one of the delivering rollers.

*Note.* When two or more slivers are required, the cans or baskets, in which they are contained, are placed upon a table under the lasher (as represented at D), which, by having a slow motion, twists them together as they go up.

Fig. 2.  
Fig. 3.

Fig. 2. is the circular clearing comb, for giving work in the head, carried in a frame by two cranks. Fig. 3. the comb-table, having the teeth pointing towards the centre, moved by cogs upon the rim, and carried round upon trucks like the head of a windmill. *a, b*, The drawing rollers. *c, d*, Callendar, or conducting rollers.

*Note.* Underneath the table is another pair of rollers, for drawing out the backings.

In the above specification, we have omitted the frame in which the machine stands, the wheels, shafts, &c. Had these been introduced, the drawing would have been crowded and confused; besides, as matters of information, they would have been unnecessary, every mechanic, when he knows the principles of a machine, being competent to apply the movements to it.

The wool, if for particularly nice work, goes through three operations, otherwise two are sufficient: the first operation opens the wool, and makes it connect together into a rough sliver, but does not clear it. The clearing is performed by the second, and, if necessary, a third operation. A set of machinery, consisting of three machines, will require the attendance of an overlooker and ten children, and will comb a pack, or 240lb. in twelve hours. As neither fire nor oil is necessary for

machine-combing, the saving of those articles, even the fire alone, will, in general, pay the wages of the overlooker and children; so that the actual saving to the manufacturer is the *whole* of what the combing costs, by the old imperfect mode of hand-combing. Machine-combed wool is better, especially for machine-spinning, by at least 12 per cent. being all equally mixed, and the slivers uniform, and of any required length.

Wool-  
combing

*Note: The referenced plate is on galvanism. There is no plate on wool manufacture.*