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To  
*The Honble  
Lord Swinton*

R E P O R T

OF THE

COMMITTEE

OF THE

*Highland Society of Scotland,*

ON THE SUBJECT OF

S H E T L A N D W O O L .

From  
*The Highland Society  
of  
Scotland.*

## R E P O R T

OF THE

COMMITTEE

OF THE

*Highland Society of Scotland,*

TO WHOM THE SUBJECT OF

SHETLAND WOOL

WAS REFERRED.

WITH AN

A P P E N D I X,

Containing some PAPERS, drawn up by

SIR JOHN SINCLAIR AND DR ANDERSON,

IN REFERENCE TO THE SAID REPORT.

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*Patrem familia bonum agamus; que accepimus faciamus meliora;  
major ista hereditas a nobis ad posteros transeat.* SENECA.

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EDINBURGH:

PRINTED FOR THE USE OF THE SOCIETY,

And sold by W. CREECH, J. DONALDSON, and A. GUTHRIE, *Edinburgh*;  
T. CADELL, J. STOCKDALE, J. DEBRETT, and J. SEWEL, *London*;  
DUNLOP and WILSON, *Glasgow*; ANGUS and SON, *Aberdeen*.

*Anno 1790.*

## ADVERTISEMENT.

AT a General Meeting of the Highland Society of Scotland, held at Edinburgh, on Friday the 9th of July 1790, the following resolution was unanimously adopted.

“ That the Meeting approve of the measures proposed  
 “ by the Directors for the preservation and continuance of  
 “ the Shetland breed of sheep, so remarkable for their  
 “ fine wool; and they entirely agree in opinion with  
 “ the Committee, that their Report on that subject, laid  
 “ before the Society, shall be printed and published for  
 “ the information of the public; and they remit to the  
 “ Committee of Directors to superintend, and give orders  
 “ for printing the same, with all convenient speed \*.”

In consequence of the above resolution, the Report, with the Appendix, are now printed for the use of the Society; and as they relate to a subject of great national importance, and interesting to many other districts of the kingdom, besides the Highlands, it was thought proper to permit the publication

\* The thanks of the Society were, at the same time, unanimously voted to Sir John Sinclair of Ulbster, Bart. for the great pains and trouble bestowed by him on the subject of the Report;—to Dr James Anderson, for the intelligent and ingenious papers written by him, in reference to the same;—to Arthur Nicolson, Esq. younger of Lochend; and to the Rev. Mr John Morison, minister of Delting, for the useful information they were so obliging as to communicate to the said Committee. The Committee of Directors were also authorised to issue precepts on the Treasurer for the premiums and sums proposed by the said Report to be given and advanced.

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publication of them, that the information they contain might be more generally made known and circulated.

It may be proper to add, that as there are many individuals who may have material facts or observations to communicate respecting the wool of the Northern and Western Islands of Scotland, or who may be desirous of contributing to the preservation and the increase of so valuable an article among the productions of Great Britain, that any letters addressed either to Sir John Sinclair of Ulbster, Bart. M. P. Convener of the Committee of Directors on this subject, or to William Macdonald, Esq. the Secretary, will be laid before the Society, and properly attended to.

*Edinburgh, 24th August 1790.*

TO THE  
DIRECTORS OF THE HIGHLAND  
SOCIETY OF SCOTLAND,

THE  
REPORT of the Committee to  
whom the subject of SHETLAND  
WOOL was referred.

IN the investigation of this important subject, your Committee was favoured with the attendance of Arthur Nicolson, Esq. younger of Lochend, in Shetland; of the Rev. Mr Morison, minister of Delting in Shetland; and of Dr Anderfon of Cotfield, near Edinburgh, whose zealous and public spirited attention to the improvement of the British fisheries, and to other points connected with the prosperity of this country, is well known to the Society.

It appears to your Committee, from the evidence of these gentlemen, that the subject recommended to their enquiry is one of the most important that could possibly be brought under the consideration of the Highland Society. The number of sheep in Shetland, it is believed, cannot

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not be less than 100,000, and are probably more. Their fleeces, which, at an average, do not produce above a pound and a half of wool each, is not worth at present above six pence per pound, or L. 3250 in all; whereas the finest wool might fetch at least five shillings per pound; and consequently the fleeces of the same number of sheep, if they yielded nothing but fine wool, might be valued at L. 32,500, or ten times the above sum. If the same breed were reared in the Hebrides, and in the Orkney Islands (where they would thrive equally well), wool might be produced in those neglected parts of Great Britain to the value of perhaps half a million: In process of time, also, the same species might be extended to other districts of Great Britain. Your Committee, however, think it proper to remark, that attention to the fineness of the wool must always diminish in proportion as the carcase becomes valuable; and, consequently, that fine-wool'd sheep are more likely to be preserved in their highest state of perfection, in remote parts of the country, than in the neighbourhood of the metropolis\*.

At

\* In Dr Anderson's opinion, the Northern and Western Islands of Scotland are peculiarly well calculated for rearing fine-wool'd sheep: For, in the first place, the climate is favourable  
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At the same time, were the Spanish breed of sheep introduced and multiplied in this country (since they produce a species of wool better calculated than the Shetland for some manufactures, particularly broad cloth †), and were the importation of Spanish wool prohibited, it would soon become of more consequence to attend to the fleece in every part of the kingdom.

From the information of the gentlemen above mentioned, it would appear, that the permanent fineness of the wool depends entirely upon the breed of sheep; for, on the same pasture, and in the very same climate, sheep with  
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for that purpose; in the second place, the quality of the wool would be the object of the farmer, as the carcase would be of less value; and, in the third place, when a good breed was once obtained, there would be less risk of its being debased by improper mixtures, where the sheep were kept in separate islands, than where various breeds were contiguous to each other.

† The exact nature, quality, and uses of the Shetland wool have never been fully ascertained. It is certainly preferable to any other for stockings, and probably for all light woollen manufactures, as shawls, waistcoats, &c. Perhaps, mixed with Spanish, it might also answer for broad cloth; but it has not perhaps staple sufficient for that manufacture of itself. There can be no doubt of its answering for hats, a manufacture that ought to be encouraged in the Highlands, and which even the women in that part of the country might wear, with advantage to their looks and appearance.

## 4 THE REPORT, &amp;c.

the *finest* and with the *coarsest* wool are maintained; insomuch that, from the wool of the same flock, some stockings worth *two guineas* per pair, and others worth less than *four pence*, are produced.

Your Committee have not been able to collect materials sufficient for attempting a long investigation into the peculiar nature and qualities of the Shetland breed of sheep; but they beg leave briefly to state some of the most important particulars which have come to their knowledge.

1. It would appear that there are two kinds of sheep producing fine wool to be found in these islands: One, known by the name of the *kindly sheep*, whose whole body almost is covered with it; another, whose wool is fine about the neck only, and other particular parts of the body. The colour of the fine wool also varies, sometimes being of a pure white, which is supposed to be the softest and most silky, at other times of a light grey, sometimes of a black, and sometimes of a russet colour.

2. The sheep producing this wool are of a breed, which, for the sake of distinction, might be called the *beaver sheep*; for, like that animal, many of them have long hairs growing amongst

## THE REPORT, &amp;c. 5

amongst the wool, which cover and shelter it; and the wool is a species of fine fur resembling down, which grows in some measure under the protection of the hair with which the animal is covered.

3. Your Committee understand that the sheep producing this fine wool are of the hardiest nature; are never housed nor kept in any particular pasture; and that in the winter season they are often so pinched for food, that many of them are obliged to feed upon the sea-ware driven upon the shore. It is observed, however, that the healthiest sheep are those which live constantly upon the hills, and never touch the sea-ware.

4. Lastly, It appears that the Shetland sheep are never clipped or shorn, but that, about the beginning of June, the wool is pulled off (which is done without the smallest pain or injury to the animal), leaving the long hairs already mentioned, which shelter the young wool, and contribute to keep the animal warm and comfortable, at a season of the year when cold and piercing winds may occasionally be expected in so northern a latitude\*.

Your Committee have the satisfaction of adding,

\* It is said that these long hairs come off later in the season, towards the end of September.

## 6 THE REPORT, &amp;c.

ing, that they have reason to believe that some remains of the same breed of sheep may still be found in the Western Islands, and perhaps in some of the remotest parts of the Highlands, where the native race of the mountains have not been contaminated by a connection and intercourse with animals of an inferior species in regard to the quality of their wool, and valuable principally for their carcase.

Your Committee will now proceed to state some circumstances, which seem to render an immediate attention to this subject absolutely necessary.

1. The proprietors of the Shetland Islands have so much bent their attention to fishing, as in a great measure to neglect other occupations. No pains therefore has been taken to keep up this valuable breed, or to preserve it from degenerating. At present the different kinds of sheep are so mingled together in almost every part of the Shetland Islands, that in a very short space of time the finest race might become totally extinct, unless the opportunity which now fortunately presents itself is seized.

Indeed, both in Shetland, and in every part of the country, it ought to be inculcated as much as possible, that, by proper attention, the best sort of every species of animal may be obtained.

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obtained. It is well known to what perfection particular kinds of sheep and cattle, which in their judgment were preferable to every other, have been brought by Messrs Bakewell and Culley. In Galloway, polled cattle prevail, to the exclusion of other breeds, because in that country there is a strong predilection in their favour. By attention, Mr Farquharson of Invercauld, in the very heights of Aberdeenshire, has obtained, without any foreign assistance, a breed of cattle, producing the richest milk of any in Great Britain; and if the inhabitants of the Shetland, of the Orkney, and of the Western Islands, will make a point of it, there is no doubt, that by breeding always from the best rams and ewes, and gradually extirpating the inferior species, the best breed of Shetland sheep may be multiplied with amazing rapidity. The experiments made by M. Le Blanc, and the celerity and success with which he has propagated the Spanish breed of sheep in France (an account of which will be found in the Appendix), fully justify this assertion.

2. In Shetland, as in other places, improvements are attempted with the best intentions, which often turn out to be the reverse. Thus, with a view of mending the Shetland breed, some

some sheep from the southern parts of Scotland were lately brought to those islands. From such an importation, the Society will easily perceive that no improvement in regard to the fineness of the wool could be expected. Unfortunately, also, the sheep thus imported were diseased, and have introduced into the Shetland islands a distemper among their flocks, by which many have already perished, and which may prove destructive to many more: Nor is it possible to say to what dreadful extent its ravages may yet be carried.

3. There is reason to suppose that the most is not made of the fine wool now produced in Shetland; for though some high-priced stockings from that country are sold, yet the price of the wool is in general very low (at an average not exceeding sixpence per pound); and it is believed, that from inattention, or from ignorance of the art of sorting the fleece, much fine wool is thrown away, and lost among the coarse wool, made into stockings of from 3d. to 3s. per pair.

As a proof how little the real value of the Shetland wool is known in that country, your Committee thought it advisable to have the following experiment tried. They directed some of the coarse Shetland stockings, sold at Edinburgh

burgh for about 5d. per pair, to be purchased, and *decomposed*, or reduced again to wool. The wool, after being carded, was delivered to Mr Izet the hatter, who very obligingly agreed to try how far it might answer for the manufacture of hats, both by itself, and with a mixture of other wool. The strength of the wool, it is evident, must have been much injured by being spun and knit, and afterwards untwisted and decomposed; yet the wool was found capable of being made into hats, and there is reason to believe that the raw material was more valuable than the stockings when manufactured.

*Lastly*, The Committee are decidedly of opinion, that the finest breed of Shetland sheep might be extended to the other islands of Scotland, and in process of time to other districts of Great Britain. On this head, they beg leave to refer to a very ingenious paper drawn up by Dr Anderson, which will be found in the second number of the Appendix to this Report.

In another paper also (see Appendix, No. III.) the Doctor has drawn up a plan for establishing wool markets, in order to raise the value of that article by a competition of buyers; which would probably prove an effectual means of encouraging the production of fine wool in Shetland, and in other parts of Scotland, were proper at-

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## 10 THE REPORT, &amp;c.

tention paid to that great and valuable source of national wealth and industry.

The Committee will now submit to the consideration of the Directors the measures, which, they are humbly of opinion, might be of essential service in promoting so important an object, as the preservation and extension of this valuable species of sheep, the last remnant of the ancient breed of Scotland.

1. It seems to be very desirable for the Directors to have ocular inspection both of the best breed of Shetland sheep, and of the finest wool which they produce. For that purpose, it is suggested, that a sum be laid out from the funds of the Society, in the purchase of wool and sheep, to be sent by the first ships from Shetland to Leith. Mess. Nicolson and Morison have very obligingly promised to lay out the money to the best advantage; and Dr Anderson, who resides at Leith, has offered to take the sheep and wool under his care, until they are called for by the Directors.

2. It seems proper to have the fullest and most authentic information respecting the history, the real nature, and qualities of the Shetland sheep in general, and more especially of those which produce the finest wool; and also similar accounts of the sheep of the Western Islands, which are supposed to have been originally the same.

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same. They are of opinion, that the most probable means of obtaining this information, would be, for the Society to give an honorary premium for the best and approved account of the Shetland breed of sheep, and also for the best and approved account of the sheep of the Western Islands. The accounts to contain the fullest information that can be procured respecting the history of the different breeds to be found in those parts—the manner in which the sheep are in general managed—their food—the quantity, colour, fineness, and value of their wool—their diseases, and their cure—and whether the sheep are folded, housed, clipp'd, &c.—Their size, weight, price at different ages, and the age to which they are in general kept, ought also to be mentioned.

3. It would be very desirable to induce the gentlemen of Shetland to pay every proper attention to their native breed, and to prevail upon them, if possible, to confine themselves to the best species only. They have already proved what they are capable of effecting, by their successful exertions in carrying on the fisheries on their coasts; and consisting, in general, of respectable and intelligent individuals, there is no plan recommended by the Society, which they will not probably be disposed to follow, particularly one which would prove equally advantageous

tageous to themselves, and to their country. With a view, therefore, of directing their attention, and that of the inhabitants of Shetland in general, to so important an object, it is suggested, that premiums should be given to such proprietors as shall keep a parcel of fine-wool'd sheep in a separate holm or small island; and also to such persons as shall produce the finest-wool'd tups for the improvement of the breed; and that proper judges should be appointed for determining these premiums.

For carrying these purposes into execution, the Committee submit to the Directors the propriety of recommending it to the Society to adopt the following resolutions.

1. That the Committee of Directors be empowered to lay out a sum, not exceeding ten guineas, in the purchase of sheep and wool from Shetland, and other places, where the same breed of sheep are supposed to exist.

2. That a premium of five guineas value be given to the person who shall give in to the Society the best and approved account of the Shetland sheep, with regard to the nature and history of the different breeds which are to be found there—the manner in which the sheep are managed—their food—the quantity, colour, and value of their fleeces—their diseases, and the usual remedies,—and also the weight of their carcases,

carcases, their price at different ages, the age to which they are in general kept, together with any other facts and observations which may be judged material.

3. That a like premium be given for a similar account of the sheep in the Western Islands, or any of them.

4. That a premium of five guineas value shall be given to any proprietor or inhabitant of the Shetland Islands, who, in the course of summer 1793, shall produce the greatest number of fine-wool'd or kindly sheep, which have been kept for two years in a separate holm or island, so as to have no communication with any other sheep, particularly at the rutting season, the number of such sheep not to be less than thirty at the time they are produced.

5. That a premium be given of three guineas for the best and finest wool'd tup, two guineas for the second, and one guinea for the third, to be produced at each of the following places, viz. Grimista near Lerwick, North Brae, and Mid-yett, at any time to be publicly advertised in the different parish churches, on or before the 20th of October 1790.

6. That the judges for determining these premiums shall be Arthur Nicolson, Esq. younger of Lochend; the Rev. Mr John Morison, minister of Delting; Mr Thomas Bolt, factor to

Sir

Sir Thomas Dundas; Gideon Gifford of Busta, Esq.; Thomas Mouat of Garth, Esq.; and Mr John Mouat, surveyor of the customs at Lerwick. That any three of them shall be a quorum: That they shall have power to nominate and assume three other persons to act with them: That Mr Nicolson be convener; and that they be instructed, in judging of the merit of the sheep, which shall be produced to obtain these premiums, to attend to the rules laid down by Dr Anderson, in the paper marked Appendix, No. V. which appears to the Committee to contain many very useful practical observations.

*Lastly*, The Committee submit to the Directors the propriety of encouraging the extension of this native breed to other parts of Great Britain, and of trying, in proper situations, various experiments respecting the nature of their wool, &c. With that view, it might be advisable to recommend this subject to the attention of the Duke of Argyle, the Earl of Breadalbane, Lord Macdonald, Col. Macleod of Macleod, Mr Mackenzie of Seaforth, Mr Macleod of Harris, Mr Macdonald of Clanranald, Mr Macdonald of Boisdale, Mr Macniel of Barra, Mr Maclean of Coll, Mr Macneil of Colonsay, Mr Campbell of Shawfield, Mr Campbell of Jura, Mr Macniel of Gigha, and the other proprietors in the Western Islands,—of Sir Thomas Dundas, Mr Honyman, and Mr Trail,

Trail, in the Orkney Islands,—and of the Earl of Moray, and Miss Scott of Scotstarvet, in the Forth, all of whom have small holms or islands in which this breed might be kept separate from other sheep; and farther, with a view of denoting the zeal of the Society for attaining this object, it might not be improper to vote an honorary premium to them, in the same manner as to the proprietors in Shetland, in the event of their keeping apart a parcel of fine-wool'd sheep, either of their own breed, or imported from other places.

The Committee cannot conclude without recommending the paper marked, No. IV. in the Appendix to the attention of the Society. In it, Dr Anderson proves, from the most indisputable authorities, that, in ancient times, the wool of Great Britain was not only greatly superior to the Spanish, but was accounted the finest in the universe. Its present degeneracy, therefore, can only be attributed to neglect; and its former excellence may yet be recovered, under the protection of a patriotic Sovereign, by the encouragement of such public spirited bodies of men as the Highland Society, and by the exertions of zealous and active individuals, whose time cannot be devoted to a more important purpose, or yielding more real and permanent satisfaction.

*POSTSCRIPT.*

### POSTSCRIPT.

SINCE the preceding Report was sent to the press, the author of it was led to examine the account of the famous Ryeland, or Herefordshire breed of sheep, given by Mr Marshall. (Rural Economy of Gloucestershire, vol. ii. p. 233). It is well known that this breed produces the best wool of any in England, which, though not fine enough to be an entire substitute for Spanish wool, yet in some degree supplies its place, and sells at the rate of two shillings per pound, when Spanish wool sells for three. It is singular, that in this work, published in 1789, a similar apprehension is stated, lest this excellent breed should be irretrievably lost, unless some proper means are soon devised for its preservation. The Ryeland breed having been tried, and found to answer in the most northerly county of Scotland (which the author can assert from his own experience), he is persuaded that they might be introduced with success into other districts; and, in particular, he would recommend them to the proprietors of the Western Highlands and Islands, as peculiarly well adapted for that part of the kingdom.

### APPENDIX.

## A P P E N D I X.

### No. I.

*An Account of the Experiments made by M. Le Blanc, for improving the Quality of Wool in France.*

[Extracted from the Tableau General du Commerce, par M. Gournay, Avocat, voce, *Marcuil-le-Port*.]

IN 1762, M. Le Blanc, Member of the Provincial Assembly of Champagne, collected a flock of 300 sheep, whose wool he sold the succeeding year for 410 livres (about L. 17 Sterling). Little satisfied with the result, he determined to try what could be effected by improving the breed. He procured, therefore, some sheep of a better race from Flanders, Picardy, and the provinces in that neighbourhood; and in three years time he sold the wool of 300 sheep for 520 livres, and in six years for 680 livres, or L. 28 : 6 : 8.

This success was far from satisfying his ambition. In 1775, he set about procuring sheep of a still better quality. In 1783, he obtained a ram and two ewes of the Escorial breed from Spain, and two rams of the same species from the famous flock of M. D'Aubenton, at Montbard \*. From that period, the quantity and the quality of his wool improved so much, that the fleeces of 300 sheep, in 1788, sold for 2300 livres, or about L. 100 Sterling †.

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\* M. Le Blanc has since been intrusted with a flock of two rams and twenty-eight ewes, of the best Spanish breed, presented by the King of France to the Province of Champagne.

† The quantity of the wool, by attending to the proper breed, was so much increased, that even young rams, of two years old, produced six pound two ounces

The experiments made by M. Le Blanc have fully ascertained, that neither the soil, nor the climate, has such influence on the quality of the wool, as is commonly imagined\*. France possesses in her extensive dominions a great variety of climate, and pastures of various kinds, calculated for maintaining every species of sheep. Yet it is only within these few years that it could boast of flocks of fine-wool'd sheep. According to M. Le Blanc, the bad quality of the wool in France, and he might have added, in other parts of Europe, is entirely owing to the inattention and ignorance of the farmer, who, neglecting to preserve the best species, and to extirpate the bad, insensibly suffers the most valuable part of his property to degenerate and to perish before him. "Under the hand of an intelligent possessor (he adds), nature is embellished and brought to perfection; whereas, when left to ignorance and sloth, it is rapidly degraded."

From the same experiments, it appears, that the quality of the wool depends principally upon the male; and that, when the ram is of the best species, the second or third generation always carries the finest possible wool. It is astonishing, therefore, with what rapidity any breed might be multiplied and brought to perfection. An hundred rams and a thousand ewes of the Spanish breed, and a proper number of English ewes, might, in the space of ten years, be increased to a million, and might supply these kingdoms with all the fine wool that it now imports from Spain. For it is to be observed, that one ram is sufficient for fifty ewes at an average; and that the offspring of English ewes would produce,

ounces of washed wool; and as the first and second quality of his wool fold, in 1787, for four livres per pound, it follows, that the fleece of a young ram was worth about 24 livres, or L.1 Sterling.

\* M. Le Blanc acknowledges, that the pasture has great influence on the size of the sheep, and consequently that the large sheep of Flanders and Lincolnshire would diminish in a dry and arid pasture; but the wool which the animal produced would continue nearly the same.

produce, in the second or third generation, as fine wool as the original Spanish breed.

These observations are not only applicable to France and England, but even to Scotland. For M. Le Blanc asserts, that the Spanish breed is superior to every other for the strength and vigour of the species, as well as for the excellency of its wool, accommodating itself to all climates, and feeding on any pasture. Nor does it require more pains, nor a greater quantity of food, to rear and nourish sheep of a good quality, than of a bad, whilst the wool produced by the former is above four times more valuable than the latter. There are many parts of Scotland, therefore, particularly such as are not much incommoded with snow in the winter season, where this breed might be propagated to advantage.

It may be proper to add, that, in the opinion of M. Le Blanc and of other writers, there is no sensible difference, in point of quality, between the wool of the Spanish sheep that travel from one part of that kingdom to the other, and of the sheep that always continue in the same place, where equal attention is paid to the breed; and there is reason to believe that those annual peregrinations, on which so much stress is generally laid, is owing to necessity, and the scarcity of food, in consequence of the multitude of sheep that are kept together, and not from any idea that a change of pasture, or any continuation of the same temperature or climate, is at all essential.

These observations are not perhaps immediately connected with the original subject of the Report, namely the sheep of Shetland. But they were thought too material to be omitted, and they corroborate the principle therein stated, that the quality of the wool depends upon the breed, and not upon the soil or climate; and farther proves in how short a space of time 100 rams and 1000 ewes of the best breed, with the assistance of a proper number of ewes of an inferior quality, might replenish the Shetland Islands with fine-wool'd

fine-wool'd sheep, provided a proper plan is followed for that purpose.

No. II.

*Memorial concerning the Improvement of Highland Wool, presented to a Committee of the Highland Society of Edinburgh, June 8. 1790. By James Anderson, LL. D.*

THE wool of Great Britain was, for many ages, the finest in Europe, and, as such, it sold at the highest price in the manufacturing districts of the Netherlands and Italy. Many are the treaties on record concerning this important branch of commerce, and various are the regulations and political events to which it gave birth. At that time, Spanish wool, though valuable, held only a secondary and very inferior rank in the mercantile world; and it was only after the effects of many injudicious legislative regulations in Britain began to be felt, which, by sinking the mercantile value of wool, made the *carcase* an object of principal concern to the farmer, that British wool was gradually neglected, and the wool of Spain began to obtain an ascendancy over it. At the present time, Spanish wool is of a fineness so far superior to that of England, as not to admit of a comparison: The consequence is, that the finest cloths, which in every part of Europe used formerly to be made of British wool, are now universally made of Spanish wool entirely; and England, which, in consequence of that superiority, established an unrivalled woollen manufacture, is now obliged to depend entirely on Spain for what share in this manufacture that proud and rival power shall be pleased to permit. At present, Britain pays to Spain on an average of years about 600,000*l.* *per annum* for wool alone, though her exports of *fine* woollen cloths are greatly diminished.

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These facts, which cannot be controverted\*, ought to make a deep impression on the mind of every real well-wisher of his country;—and the first question that occurs is this,—Is the breed of sheep that formerly produced such valuable wool so entirely lost as that it cannot at all be found, or is it still in our power to recover it, and by what means? For, since it is certain that the soil and climate of this island did once produce the finest wool, it seems unnecessary to spend time in proving that it might be once more made to yield it, could the same breed of sheep be recovered, or another of equal value be obtained.

After the most diligent enquiry I have been able to make, it seems to me highly probable that this fine breed of sheep is totally and irrecoverably lost *in England*. The adulterated remains of it still exists indeed in the county of Hereford, on the border of Wales; but there, it has been so much debased by intermixing with other breeds, as to produce wool of a staple, which, though still fine, is far inferior to that of Spain, which it formerly so greatly excelled.

*In Scotland*, it is probable we shall be obliged to come to the same conclusion. For more than a century past, the coarse-wool'd sheep have been imperceptibly debasing this breed, under the name of improving it, so that I am inclined to believe, that on the *main-land* of Scotland, the true unmixed breed is now irrecoverably lost.

In the time of Hector Boethius, this breed of sheep, we know, was common. In Annandale, Niddisdale, and Galloway, sheep of this kind then universally prevailed; and though in the greatest part of these districts the *pure* breed be now entirely lost, still some degenerate remains of it are found in some of the most remote parts of Galloway. In those days the same breed of sheep spread over a large district in the north-east parts of Scotland also, extending from the vale of Esk, on the borders of the county of Angus, to the

\* For the proof of this see Appendix, No. IV.



the district of Buchan, in Aberdeenshire: But at present it cannot be found in either of these places. No vestige of this kind of sheep has been found in Eskdale for many years past: But in the most mountainous parts of Aberdeenshire, it is known, that some of these sheep still were to be found tolerably pure, about forty years ago. They are now, however, there also so much adulterated, as scarcely to leave a mark of their former qualities. The same may be said of the West Highlands, where, though some fine-wool'd sheep do still remain, yet they are debased; and every day adds to the degree of deterioration. Even in the *Western Isles*, the furor of improvement has so generally prevailed, that it is believed none of them contain the breed entirely unmixed, though the sheep are there less debased than on the main-land; and it is not impossible, but by a diligent search there, some of them might still be found that have not been much debased.

If this breed of sheep still exists entirely unmixed any where, it is in the Shetland Isles; but, even there, it is upon the very verge of being irrecoverably lost. A mixt breed very generally prevails in these islands, and no care is taken to prevent the best from being debased. Several attempts to *improve*, as it has been called, their breed, by introducing foreign sheep into these islands, have been made; and one in particular, of modern date, has been attended with consequences that threaten to be very fatal. A disease has been by that means introduced among the sheep, that has already killed many, and threatens the remainder with destruction. Still, however, a considerable number are alive. In some remote corner among these islands, where the sheep have been neglected, it is not impossible, but a few individuals of the true fine-wool'd breed may yet be obtained, if proper measures shall be adopted for discovering and preserving them. The value of that wool is well known. It has been admired by all who have had access to see it; but no attempts

attempts have been made to save the breed from entire annihilation. Now is the time, or never; and what object can be more becoming the attention of this Society than the preservation of a most valuable production, that has long been in some measure peculiar to the Highlands of Scotland! The opportunity is favourable. Two gentlemen are present\*, who, with an ardour becoming the ancient race of Caledonian patriots, are willing to second the views of the Society to the utmost of their power, if these views shall be directed towards this point; and few, it is believed, with equal good will, have equal skill, and equal power to be of service. By their means the breed may be preserved from total destruction; and, were a few of the true breed of fine-wool'd sheep once obtained, they can be placed, by the favour of an eminent member of this Society†, in a situation where the breed cannot be adulterated but by design, and where there cannot be a doubt that they will prosper abundantly; where also experiments could be made with ease for ascertaining the value of the wool, and means of improving it.

I am happy in having this opportunity of representing to the Society my idea of the importance of this object, and indulge the pleasing hope, that, from the well known zeal of the Members of this Society for the promoting of every valuable improvement in these kingdoms, effectual measures will now be taken to preserve the valuable breed of sheep in question, and that future ages shall not be able to say it perished through neglect in *our* time.

\* Arthur Nicholson, Esq. younger of Lochend, and the Rev. Mr John Morison, minister of Delting, in Zetland.

† The Duke of Argyle.

## No. III.

*A Memorial, containing some Hints for awakening a spirit of Industry in the Highlands, and Proposals for establishing Markets for Wool in that part of the kingdom.*

IT is an undoubted fact, that nothing tends so much to excite industry as a ready market for the articles it produces, and a fair price proportioned to their intrinsic value.—In every country where such markets abound, industry is found to flourish; and wherever they are not, the people are indolent, and discover a want of energy in all their enterprises. To this circumstance we are in a great measure to ascribe the national character of the Dutch for industry; and to the same cause we must refer the indolence of the Poles, Russians, Turks, and many other nations. The natives of the Highlands of Scotland experience this misfortune in an eminent degree, which checks the hand of industry at home, and gives room for the people being branded with opprobrious epithets, which experience has proved to be entirely groundless. Where is the country, I would ask, in which a native of the Caledonian mountains has access to a ready market, that he does not outstrip all his rivals, and make money in situations where others less industrious than he are reduced to beggary and want! Give them, therefore, ready markets for the productions of their native wilds, and they will become active and industrious, rich and flourishing.

Among the few productions of their native mountains, no one article, except live stock, is perhaps of greater value than wool; and this promises to become from year to year of greater and greater value still. Their climate is peculiarly favourable for producing wool in greater perfection than any other part of Britain; and they possess natural advantages for improving their breeds of sheep, and meliorating their wool,

wool, that no other nation in Europe can pretend to equal\*. Their remote situation, too, renders the cultivation of wool of greater importance to them than to the natives of other parts of Britain, because the carcase there must always be of smaller proportional value.

It were vain, however, to expect that ever the natives can be taught to make the proper uses of these singular national advantages, unless care shall be taken to open among them convenient markets for their wool, in central and accessible places, where the different wool-growers could meet with a variety of rival merchants, who, by their competition, might bring every species of wool to its fair intrinsic value, and thus enable the wool-growers to judge with precision which kind it was most their interest to rear. This therefore, as an object of the first importance, ought to be kept steadily in view by those who wish to promote the improvement of the Highlands of Scotland, and to excite a spirit of industry among its people.

At the present moment they possess wool of great value, for which no adequate price can be drawn; it is therefore often applied to uses that wool of a very inferior quality might answer, and of course it may be less profitable to the grower than wool of a quality greatly inferior. The breeds of sheep, therefore, which ought to be valuable chiefly on account of their wool, are neglected, and others that are really of much inferior value, but which are accidentally from this cause at present more profitable, are preferred in their stead.

To remove these evils, it appears to me, that one of the first enterprises of this Society ought to be, to establish some large annual fairs in those parts. Wool is an article there of such importance, and it is to be now had on these coasts in such quantities, and at so low a price, as to be an object sufficient to bring monied men from a distance

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for

\* See Appendix, No. IV.



for the purpose of purchasing that commodity; and wherever much money is to be got, and many people are brought together, various other articles of general use will be produced for sale. Every person, on these occasions, each in his respective sphere, will be induced to bring forward the articles that his ingenuity or industry have enabled him to obtain, which he will be disposed to sell to those who shall have occasion for them. A wool fair, therefore, though it may be nominally such only, will be, in effect, a seminary of general industry, and lay the foundation of future institutions, that in succeeding times may be objects of admiration and envy to surrounding nations. Antwerp, which for many ages excelled every other place in the universe, owed its origin to a temporary concourse of people of this sort; and Leipzig, to this hour, is in a great measure supported by its annual fair.

Fairs have in general owed their origin to accidental circumstances, and have therefore, as being detached institutions, been frequently established in places that were inconvenient, and have been held at times that were inconvenient, considered in relation to each other. In the present case, however, should this Society think of encouraging some institutions of this nature, it would be becoming the wisdom of such an august body to plan these institutions *in concert*, to use the language of Lord Bacon, so as they might mutually accord with and support each other, rather than to interfere in any respect. They ought, therefore, to be so situated, in respect of *place*, as to be convenient for the inhabitants of large districts around them, and accessible to strangers *by sea*; and so arranged, as *to time*, as to allow the same person to attend the whole of them in rotation, if he should so incline.

On these principles, I would beg leave to suggest, with a view merely to give an idea of what might be done in other places, when it might become necessary to establish

fairs

fairs in them, that at present it might be proper to fix on the following places in the shires of Argyle and Inverness; as the circumstances of the country seem to call for them, and in the following rotation.

At *Tobermory*, in Mull, for the southern district of the Western Isles—at *Fort William*, for the extensive country of Lochaber—and at *Bunaw* and *Inveraray*, each for their respective districts of Argyleshire, now become a considerable sheep country. The rotation in point of *time* might be on the same day in each succeeding week. *First*, Tobermory—*Second*, Fort William—*Third*, Bunaw—and *fourth*, Inveraray. By this means the same *person* could not only attend the whole, but the same *vessel* might accompany him to each, to take his goods on board, without being at the expence of warehouse rent, &c. This might at present be done with regard to the three first—and were the proposed canal at Crinan made, the whole of the four might then be included.

It is here unnecessary to enter into details respecting the tolls to be levied at these fairs; for this Society is too enlightened not to see that tolls, considered as an article of *profit*, ought to be entirely excluded, though, if these tolls are extremely moderate, considered as a mean for ascertaining the progress of improvement, they might have their use. The Society, if ever they shall come to think seriously on this subject, will also see the necessity of obtaining some alterations with respect to laws that at present tend to check the transporting of wool and other productions and manufactures of those islands, from place to place, concerning which it would be here improper to enlarge.

The only apology I make for taking up so much of the time of this Society, is the idea I entertain of the vast importance of those countries to which these hints allude, considered in a national light, if they should ever be employed for the purposes that nature evidently intended them, and

and the deference I pay to the superior judgment of those who have seen and approved of these proposals.

## No. IV.

*Memorial concerning British Wool, proving its superior value and fineness in former times, and the Natural Advantages of the Northern and Western parts of Scotland for raising the Finest Wool, and Improving the Breeds of Sheep in other respects.*

THE facts assumed in the two preceding papers are of too much consequence to be admitted without proofs: But it would far exceed the bounds which the present memoir admits of, to adduce all the proofs of them that might easily be produced. It shall suffice, therefore, here to state only a few of the many that might be found, from such authorities as may be relied on.

The fineness of British wool was such as to induce the Romans, while they were in possession of this island, to establish a cloth manufacture at Winchester, for the use of the *Emperors* \*. This, therefore, must have been deemed the finest wool in the universe at that time; for it is well known, that the Romans were peculiarly attentive to sheep, and held fine wool in the highest degree of estimation; and that then almost the whole civilized nations on the globe, were subjected to the power of the Roman Emperors. Before they became acquainted with Britain, the wool of *Turdetania*, a province of ancient Spain, was much esteemed by them, but that, in time, gave place to the wool of the *Coraxi*, a people of Asia. Strabo, speaking of *Turdetania*, says, "*Frequens inde primum vestis veniebat, nunc vero Coraxorum amplius lanificium excellentissima pulchritudinis, unde ad-*

\* Gibbon's Camden's Britannica, p. 118.

*missarii arietes talento emantur.*" A talent was equal to L.216 Sterling; a high price for a fine-woolled ram. Strabo lived under the reign of Augustus, before the productions of Britain were well known to the Romans; and it appears from the fact above stated, that even the wool of the *Coraxi* was in its turn deemed inferior to that of this island, for it was here that the Roman Emperors, during their most luxurious æra, chose to supply themselves with their most sumptuous robes.

In conformity with this idea, we find that *Dionysius Alexandrinus*, in his treatise *de situ orbis*, as quoted by Hollinghed, makes use of the following hyperbolical phrase, strongly expressive of the uncommon fineness of British wool, as well as the dexterity of British *spinners*, according to the prevailing opinion of the time. "The wool of Britain (says he) is often spun so fine, that it is in a manner comparable to the spider's draught \*." A phrase, which, if not strictly just at the time, seems to have been prophetic, as I at this time produce to the Society a specimen of the singularly fine woollen yarn, spun by Miss Ann Ives of Spalding, in Lincolnshire, which, though strong, is drawn to such a fineness, that a pound weight of the yarn measures no less than 168,000 yards in length, which is equal to 95 miles †.— This young lady, who has so far outdone any thing of this sort that has been known, hopes to be able to make it still finer, had she some of our Shetland wool. "I think (says she) your Shetland wool the softest I ever felt, and make no doubt it would spin beautifully fine. If a small quantity could be got, I should like much to try it." The wool shall be sent; and I hope to be able to show the Society some of the yarn made of it still nearer in fineness "to the spider's

\* Hol. Chron. of Eng. p. 221.

† This is equal to eleven spindles, wanting one and one third cuts of the measure for yarn in the neighbourhood of Edinburgh. This yarn was spun from English wool produced by a mixed breed, reared by Sir Joseph Banks, Bart. from the finest wool'd Lincolnshire ewes, improved by a Spanish ram.

der's draught," than that I have now the honour to produce.

During the distractions that prevailed in Britain after the Romans left this country, the manufacture of cloth, like every other branch of industry introduced by that civilized people, fell into neglect: But a manufacture of such general utility could not be entirely lost. From probability only, we might therefore safely conclude that it was still carried on to a certain degree. But notwithstanding the general ignorance that prevailed for many ages, and the inattention of our writers to the progress of useful arts, we are still able to gather from a few scattered hints that have been accidentally preserved, that the manufacture of wool was at all times considered as a favourite employment by the people of England, and that the superior fineness of that wool over all others was universally known and freely acknowledged; though our historians in general have, through inattention, disregarded these facts, and given an erroneous account of the introduction and progress of the woollen manufacture in England. The very name by which unmarried women in England are designed, viz. *Spinsters*, is a proof at once of the antiquity and universality of this manufacture; for the practice must have been universal, when it was thought proper to design *all* women *Spinsters*; and the antiquity of this epithet is beyond the limits of any record, or even traditional account of its origin.

The mother of Alfred the Great is represented as being skilled in the spinning of wool herself, and busied in training her daughters to the same employment. This seems indeed to have been the favourite employment of the great people of those times; for Fabian, speaking of Edward the Elder, who died *anno* 925, says, "He set his sons to *scole*, and his daughters he set to *wool werke*, taking example of Charles the Conquestadour \*."

\* Fabian, Chron. ch. 179.

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It has been commonly asserted, and generally believed, that the woollen manufacture was introduced into England by Edward III. but the fact is, that this manufacture had been always considered in this island, from the days of the Romans in it, as its chief and favourite manufacture. This was so much the case, that Gervase of Canterbury, who wrote about the year 1200, found this manufacture of such old standing in Britain, that no trace of its origin, nor tradition concerning its introduction there, could be obtained. "The art of *weaving* (says he) seemed to be a peculiar gift bestowed upon them (the people of Britain) by nature \*."

Madox, in his history of the Exchequer, has also preserved many interesting facts, which clearly prove that the woollen manufacture was an old established business, carried on to a vast extent, even in separate departments, by numerous and powerful guild fraternities, long before the time our historians have said it was introduced into the country. From these notices the following striking facts are selected.

*Anno* 1140 (the 5th of King Stephen), he takes notice, that

"The *weavers* of Oxford pay a mark of gold for their gild."

"The *weavers* of London, for their gild, L.xvi."

"The *weavers* of Lincoln, two chafceurs, that they might have their rights."

"The *weavers* of Winchester, one mark of gold, to have their customs and liberties, and right to elect the alderman of their gild." And,

"The *fullers* of Winchester, L.vi for their gild †."

Thus it appears, that weaving was at this time an old and long-established business, carried on to a great extent by guild fraternities established in many and far distant parts of the country; and that even the subordinate department of *fulling* was not only carried on as a distinct employment

by

\* Gerv. Chron. col. 1349

† Madox Hist. Exch. p. 332.

by individuals, but had also attained to such a magnitude, as to be erected into a separate *guild*; and all this two hundred years at least before the days of Edward III. the supposed introducer of the woollen manufacture into England.

That the art of *dying* was carried on by a *guildry*, I have not been able to learn, though it is highly probable; but that it was carried on as a separate, honourable, and lucrative business, is clearly proved by the following fact that incidentally occurs in the same author.

"Anno 1201, David the Dyer pays one mark, that his manor of — may be made a burgage \*."

That some adequate notion may be obtained of the magnitude and importance of the woollen manufacture in those days, when compared with others, I shall select from the same author the following facts, by which the reader may compare the wealth and power of the *weavers* and the *bakers*.

"Anno 1150. The *weavers* of London stand charged with iii marks of gold for the farm of their gild for two years; the *bakers* of ditto, with one mark and vi ounces of gold."

"Anno 1164. The *weavers* of London rendered L.xij *per annum* for the farm of their gild; the *bakers* of ditto, L.vj *per annum* †."

In both these cases, it is observable, that the gild of *weavers* pay precisely twice as much as that of the *bakers*; which proves in a most convincing manner, that it must have been at that time a very great and flourishing manufacture, indeed the staple of the country, as no other gild paid so much in those days.

Other notices prove that the woollen manufacture was then carried on to a very great extent, and that the sale of cloth had even been a great business, and of old standing, at this early period. Thus,

"Anno 1140. The *men* of Worcester pay C shillings, that

\* Mad. Hist. Exch. p. 278.

† Ib. p. 232.

that they may buy and sell dyed cloth, *as they were wont to do in the time of King Henry the First* \*. We shall by and by have occasion to shew that this must have been British made, and not foreign cloth; so that the manufacture was not only of old standing, but extremely extensive in the days of Henry I. Other notices to the same purport occur.

"Anno 1225. The *weavers* of Oxford pay a cask of wine, that they may have the same privileges that they enjoyed in the days of King Richard and King John †."

The extent of the woollen manufacture in England, at the period of which we now treat, may be gathered from other circumstances. The business of *dying*, as has been already observed, was then a distinct and honourable employment; and though we shall have occasion to show that cloth was then dyed of many colours, yet blue must have been one of the chief colours, and *woad*, as being the only blue dye in those days, in great request. So great was the demand for this article, that, though Britain was at all times noted for its culture, it became necessary to import woad from foreign parts; and we find the following sums accounted for by fundries, as the *customs* paid for woad imported in the year 1213. That the reader may be able, without trouble, to form an idea of the value of these sums in those days, two additional columns are made; the first denotes the present value of the silver actually contained in the respective sums, if estimated at the same price *per ounce* it would sell for at present; and the other the comparative value of the same sum at the time, according to the estimate of Mr Hume and others.

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CUSTOMS

\* Mad. Hist. Exch. p. 286.

† Ib. p. 286.

CUSTOMS paid for woad imported into England, anno 1213, viz.

|                               |   |   | Silver at the<br>present stan-<br>dard. | Estimated va-<br>lue at the<br>time about |             |
|-------------------------------|---|---|---|---|-------------|
| " In Kent & Suffex, Dover ex- |   |   |   |   |             |
| cepted,                       | - | - | L.103 13 4 =                            | L.321 10 6 =                              | L.3200 0 0  |
| " Yorkshire,                  | - | - | 98 13 4 =                               | 306 10 0 =                                | 3090 0 0    |
| " London,                     | - | - | 17 13 4 =                               | 54 18 9 =                                 | 540 0 0     |
| " Norfolk and Suffolk,        | - | - | 53 6 0 =                                | 165 4 7 =                                 | 1650 0 0    |
| " Southampton,                | - | - | 72 1 10 =                               | 223 9 8 =                                 | 2230 0 0    |
| " Essex,                      | - | - | 4 2 4 =                                 | 12 3 4 =                                  | 121 0 0*    |
|                               |   |   | L.349 9 2                               | L.1083 16 10                              | L.10831 0 0 |

This account serves not only to prove that the woollen manufacture was then carried on to a great extent, but it also gives some notion of the places where it was established. From this, and some of the former notices, it appears that this manufacture still kept its ground at *Winchester*, where the Romans established it, as *Southampton*, the port of *Winchester*, stands very high in the above list.

Sir Mathew Hale remarks, that, "in the time of Henry II. and Richard, this kingdom greatly flourished in the manufacture of cloth; but, by the troublesome wars in the time of King John and Henry III. and also of Edward I. and Edward II. this manufacture was *wholly lost*, and all our trade ran in wools and wool fells, and leather†." That the woollen manufacture *greatly declined* in those troublesome times is not to be doubted; but that it was *wholly lost* is fully proved to be a mistake, even from the facts already specified, of which we shall soon find farther proofs. The account just now stated, of the importation of woad, it deserves to be remarked, was for the 14th year of King John.

It was judged to be not improper thus to prove that the woollen manufacture was established in Britain even before the Flemings are known to have possessed it at all; nor is it improbable that they might even receive the first rudiments of the art from hence, along with the wool that was necessary

\* Hist. Exch. p. † Hale's prim. orig. of Mankind, p. 161.

necessary for its support: There is reason at least to believe, that, during the troublesome times taken notice of by Sir Mathew Hale, many of our manufacturers took refuge in the Low Countries, and improved the woollen manufacture of that country. Be that, however, as it may, it is more our business in this place to take notice, that British cloth was in those days made of British wool alone, and that this sold at such a high price as to give encouragement to the importation of the cheaper wool of Spain into Britain, which was of such an inferior quality as made it necessary to prohibit the use of it, lest it should have debased our manufactures. Thus,

"Anno 1172, King Henry II. expressly ordained by statute, that Spanish wool should not be mixed with English wool in the making of cloth.\*"

And that the cloths so made of English wool were broad cloths, and that these cloths were of a fine quality for foreign markets; and that, at this period, the English manufacturers possessed the knowledge of several particulars in that art that were afterwards lost, and carried on such an export of various kinds of cloth, as to become a considerable object of revenue, will appear from the following facts.

Anno 1212, in the *Magna Charta* of King Henry III. it is particularly provided, as follows, viz.

"That there be one breadth of dyed cloths, ruffets, and haberjets, i. e. two yards within the lifts †."

And, in the year 1284, Edward I. imposes the following duties on woollen goods exported, viz.

"For cloth dyed scarlet in grain †, two shillings a cloth."

"Item,

\* Anderson's History of Commerce, p. 189. † Ib. anno 1212.

† By *scarlet in grain* we are here certainly to understand that fine crimson made from kermes, called afterwards crimson ingrained, because of its permanency of colour. Scarlet, properly so called, made from cochineal, was not known for many ages afterwards. It was probably the same colour that is called *browne* in the 47th act, parliament 2d of James II. of Scotland.

"Item, 1s. 6d. for every cloth in which a *grain colour* is intermixed.

"Item, 12d. for every cloth without grain \*."

The art of dying *grained colours* seems to have been then well known, though, in the days of Elizabeth, our manufacturers appear to have been ignorant of that branch of the business.

From the days of Edward I. to those of Charles I. the *woollen manufacture*, and the exportation of English *cloth* and *wool*, were the principal objects of legislation, in as far as it respects commercial objects. During all this period, British cloth, made entirely of home materials, was sought for with great avidity by all nations; and English wool, in particular, was so much coveted abroad, as to be the object of innumerable treaties with foreign Princes. The commercial history of this period exhibits, indeed, little else than an uninterrupted series of petitions from various descriptions of men for obtaining it, and of treaties and special grants from the Crown for that purpose. To enumerate these in detail would be too long for this essay—But it is almost impossible to look into Anderson's History of Commerce, or to turn up a page of Rymer's Fœdera, without meeting with them. To these authors, therefore, I beg leave here to refer. I shall only at present observe, that among these petitioners are to be found merchants, priests, cardinals, popes, and kings, too numerous to be particularly named. One of these petitions only, from the singularity of circumstances respecting it, I shall mention. It is from Don Duarte King of Portugal, and brother-in-law to the King of Castile, with whom he lived in the strictest friendship and brotherly love. Yet this King of Portugal found it necessary to apply "to King Henry VI. of England in the year 1437, for liberty to export *sixty sacks of Cotswold wool*, by means of which he was to procure certain cloths

\* Hist. of Com. anno 1284.

of gold from Florence for his own use \*." Such was the estimation in which English wool was held in Italy at this time, as to be preferred to any commodity, even to gold itself, and so great the demand for it, as to require the intervention of crowned heads to obtain it for the merchants. Neither ought it to pass unobserved, that it was *English*, and not *Spanish* wool these merchants coveted, which the same King could probably have obtained of his brother-in-law with little trouble.

During the long period above specified, I have not been able to meet with a single fact that tends to show that *Spanish* wool was, in any case, reckoned equally fine with English wool. Lewis Guicciardin, a native of Italy, who wrote the history of the Low Countries about the year 1470, when the Flemish States were in their highest glory, takes notice, on several occasions, of the great supplies of wool which these States obtained from *Spain*, as well as *England*. And though he nowhere, that I can find, draws an express comparison between them, yet, on every occasion where he mentions them incidentally together, he gives the *first* place to that of England, as deserving to be preferred to the other. In one case, he calls English wool "*lane finissime*," and Spanish wool he calls "*lane bonissime* †, by which it would seem that *fineness* was the distinguishing peculiarity of English wool at that time, when compared with that of Spain. In another place, however, he incidentally draws a sort of parallel between them, in which the superiority of English wool is still more clearly expressed. His words are: "*Le lane del paese sono grosse, et non ha che fare di bonta con quella di Spagna, et maneo con quelle d'Inghilterra §.*" That is, the wool of the country is coarse, and cannot be compared with that of Spain, and far less with that of England. Here the superior fineness of English wool is very distinctly

\* Hist. of Com. vol. I. p. 263.

† Guicc. descr. de Paese bassi. Anversa 1577, p. 122.

§ Ib. p. 103.



distinctly marked, though the precise difference in this respect is not ascertained.

This deficiency in Guicciardin and other historians may be in some measure supplied by the following fact that incidentally fell in my way. In the year 1470 a Spanish vessel bound for the Netherlands, having been taken by an English privateer, the owners of that vessel lodged a claim of damages, and in the account presented for that purpose, the wool is stated as being worth, *in the Netherlands*, L.4 per sack, weighing one quintal Spanish \*, which is equal to L.9, 12s. per sack English of 364 pounds. About that time the best English wool, as may be gathered from Smith's *Memoirs of Wool*, (vol. I. *passim*), sold in Flanders for not less than L.18 or L.20 per sack. Rapin, in one case, expressly mentions that English wool, *anno* 1337, sold in Flanders at the exorbitant rate of L.40 per sack; ten thousand sacks having brought in Brabant no less than four hundred thousand pounds †. This superiority in price necessarily supposes a great superiority in the quality of English wool at that time.

This superiority in the quality of English wool over all others then generally known in the commercial world, continued down to the days of Elizabeth. In the days of that great Princess, attempts were made to recover some of the branches of the woollen manufacture that seem to have been lost during the troubles occasioned by the contests between the York and Lancastrian parties for the crown, particularly respecting the art of dying, and perhaps dressing cloth.—For, though the exports of cloth from England in the days of Elizabeth were very great, amounting on an average of years to about two millions Sterling ‡, yet a great part of these cloths were exported without having been dyed, which

\* Hist. of Com. anno 1470.

† Rapin's *Acta Regia*, p. 151.

‡ Smith's *Mem. of Wool*, cap. xx.—xxvi.

gave room for complaints, and occasioned inconveniences that we must not take time here to specify.

To remedy these evils, a project was set on foot in the year 1579, to send out one *Mr Morgan Hubblethorne*, dyer, into Persia, with a view to perfect himself in some particular branches of the art of dying, which were wanted; and *Mr Richard Hackluytt*, of Oxford, a man of great knowledge in those days, having been appointed to draw up a set of instructions for that occasion, thus expresses himself respecting English wool, in the preface to these instructions.

“For that England hath the best *wool* and cloth in the world \*,” &c.

And in another set of instructions for a principal English factor at Constantinople, are the following remarkable particulars on this head.

“First, You cannot denie that this realme yeeldeth *the most fine* wooll, the most *soft*, the most strong wooll, the most durable cloth, and most apt of nature of all other to receive die; and no island, or any other kingdome so small, doeth yeeld so great abundance of the same, &c.

“Spaine now aboundeth with woolls, and the same are clothed (i. e. draped, or made into cloth). Turkie hath woolls, and so have divers provinces of Christendome and Heathenesse, and cloth is made of them in divers places.

“1st, But if England have the most fine and the most excellent woolls of the world in all respects (as it cannot be denied but it hath); 2d, If there may bee added to the same excellent artificiall, and true making, and excellent dying; 3d, Then no doubt but we shall have vent for our clothes, although the world did abound much more with woolls than it doeth †,” &c.

Mr Arthur Edwards, agent for the Russian Company *anno* 1568, gives the following particulars respecting the trade

\* Hackluytt's *Collections*, vol. II. p. 161.

† *ib.* p. 163.

trade to Venice in wool and woollen stuffs from England at that time, viz. " That the Venetian merchants in London  
 " sent to Venice, and thence to Turkie by Haleppo, and  
 " Tripoli in Syria, and thence into Persia, great abundance  
 " of fine kerfies, of broad cloths of all sorts and colours,  
 " as scarlets, violets, and other of the *finest cloths of all the*  
 " *world*. Also that the Venetians brought out of Eng-  
 " land, not only such cloths ready made, but furthermore,  
 " great plenty of *fine wooll* to mingle with their woolls, of  
 " which they could not otherwise make fine cloths; affirm-  
 " ing, that there went out of England that waies above  
 " two hundred thousand kerfies, and as many broad cloths,  
 " besides *fine wooll* and other merchandize; beside also  
 " great abundance of the like cloths, the which were car-  
 " ried into *Spaine*, Barbarie, and divers other countries\*."

The following passages from a poem, whose versification appears to us not a little uncouth on account of the language in which it is written, being now obsolete, that seems to have been composed during the indolent reign of Henry VI. con- cur with the foregoing and every other account preserved concerning these ancient times, in representing English wool as indisputably the best in the known world at that time.

—————" For the wolles of England  
 " Sustaineth the common Flemings I understand;  
 " Then if England would her wolles restrain  
 " From Flanders, this followeth in certaine,  
 " Flanders of nede (a) must with us have peace,  
 " Or els (b) shee is destroyed without lees (c).  
 " Also if Flanders thus destroyed bee,  
 " Some merchandy of Spaine will never ythee (d);  
 " For destroyed it is, and as in cheefe,  
 " The wolles of Spaine it cometh not to preece (e),

But

\* Hack, vol. I. p. 392.

(a) Need. (b) Else. (c) Release, recovery. (d) Find vent.  
 (e) Does not stand the test, or proof.

" But if it be costed and mended (a) well  
 " Amongst the English wolles the greater delle (b).  
 " For Spanish wolles in Flaunders draped is,  
 " And ever hath bee (c) that men have minde of this;  
 " And yet wolles is one of the cheefe merchandy (d)  
 " That longetts to Spaine: who so will espie,  
 " It is of little value, trust unto mee,  
 " With English wolles but if it mended (e) bee."  
 \* \* \* \* \*  
 " Our goodly wolles, which is so generall,  
 " Needful to them of Spaine, and Scotland als (f),  
 " And other costes (g) this sentense is not fals (h). \*

On these two last quotations I shall beg leave to make a few remarks, as the subject is of very great importance, and either has not been adverted to, or wilfully misrepresented in all the publications I have seen on this subject.

1. I presume these authorities put it beyond a doubt, that at and before the year 1579, English wool was superior in quality to Spanish wool, and sold in a fair market at a higher price.

2. That England then manufactured cloth of the finest quality that was to be found in any part of the world, and as such it was coveted by the most luxurious nations in the south of Europe, and in Asia and Africa.

3. That these fine cloths were made *entirely* of English wool, without the smallest admixture of Spanish wool at all. Mr Hackluyt's words on that head are clear and expresse, so as to admit of no doubt, and they are at the same time so announced as to show that he had not at that time an idea that ever the people in England would think of employing

F

Spanish

(a) Mixed. (b) The greater deal, part. (c) Been. (d) Merchandize.  
 (e) Mixed be. (f) Scotland also. (g) Other coasts, countries. (h) Is not false.

\* Hackluyt's Collect. vol. I. p. 188.



Spanish wool in the fabrication of their fine cloths, far less than they had already done so. From the business in which he was employed he must also have been particularly well informed of things of this nature, by the manufacturers on whose account he was engaged; so that his authority alone is worth a thousand vague assertions.

4. That English wool was coveted abroad as a commodity of great value, to be mixed with other wool for perfecting their finest manufactures. On this last head, I beg leave to remark, that this fact, which was real and undoubted, at that time, has been asserted thousands of times since then, after circumstances were sadly changed; and these assertions have been greedily believed without proof or examination, as this opinion flatters the national vanity; and it has been employed for very destructive purposes.

5. That the wool so much coveted then, was short clothing wool, and not long combing wool, which is the only kind now coveted abroad. That it was clothing wool, appears evident from two circumstances, viz. 1. The places where it was chiefly coveted, viz. Florence, Genoa, and Venice; as it is well known that the fine woollen manufactures of these places were *cloths*, and not *stuffs*, in which combed wool could be useful; and, 2d, From the kind of English wool usually specified in the petitions, viz. *Cotswold* wool, which was always of the short carding sort.

Let us now contrast these well authenticated facts, with the following facts, that are equally undeniable, with regard to the present situation of the wool and woollen manufacture of England—and then draw some necessary inferences.

1. English clothing wool is now much inferior in quality to that of Spain, and sells at a price greatly below it in every free market where they can be brought together.

2. That England still manufactures fine cloths of a very good quality; but that fine cloths are made in France and other countries, which are generally preferred to them in the markets

markets in the Levant, and many other southern countries, to which we can now export few or no *cloths* at all.

3. That *not one ounce of English wool* can be employed in the fabrication of our *finest cloths*, either for our own wear, or for foreign sale.

4. That though it be still often asserted in the most barefaced manner, in contradiction to these undeniable facts, and in defiance of common sense, that English clothing wool is coveted abroad, for the purpose of perfecting their cloths, and that other nations, particularly the French, never can make fine cloths without the aid of English wool to mix in their manufactures, yet such assertions are false, groundless, and absurd. Can any thing be more ridiculous, than to hear persons seriously maintain that English wool is necessary in France for perfecting a manufacture, in which the people of England dare not venture to employ an ounce of that wool without debasing it? or that the French cannot make *fine cloth* for want of *materials*, when they have easier access than ourselves to buy the very same materials of which we ourselves are compelled to make our best cloths? They have even finer wool of their own growth, fit for that purpose, than could be had in England.

5. It is a certain fact, that the only kind of wool in England, which can now lay claim to any kind of superiority over that of other nations, is not the short carding wool which was of old so highly prized, and so much sought after by foreign nations, but a kind of wool of a longer staple, fit for being combed, and which can be only employed, not in the manufacture of cloth, but of other lighter fabrics of various denominations.

From these facts thus accurately compared, we are led to see that the following inferences are undeniable.

1. Since it is clear that Britain did actually possess very fine clothing wool in great abundance in and before the reign of Elizabeth, which evidently does not now exist in the

the island, its disappearance must be owing to some cause, either *physical*, or *moral*; and it imports the nation much to know what has been the real cause of a phenomenon of such great national importance. And,

2. Though it be certain that we now do possess combing wool of a very good quality; yet, as we have already lost the fine carding wool, which was of a quality still more supereminently excellent than our combing wool can boast, there is great reason to fear, that, unless we discover the cause of the deterioration of our clothing wool, and obviate it, that through the operation of the same malign influence, if not guarded against, we may gradually suffer the combing wool to be debased, till it also shall become inferior to that of some of our neighbours.

That this change has proceeded from *natural* causes, no person can suppose. The climate and the pastures are so little altered since that time, as to be altogether inadequate to the producing this effect. Indeed the probability is, that, were it not for other causes, the changes produced in respect of pasture must have been favourable to the growth of wool, instead of the reverse.

This change must therefore have been effected by *moral* causes; and among these, no one, unless it be some radical change in the laws, seems to be capable of producing an effect that would have been sufficient to controul the commercial spirit, whose influence on human affairs is unbounded and indefinite.

In revising the system of legislation that has prevailed in Britain respecting this article, before and after the period here in question, we do accordingly find that a system of legislation, respecting the commerce of wool, was adopted soon after the days of James I. extremely different from that which had been followed before that time in this country, which gives reason to fear the deplorable change that has

has taken place, in this respect, may have been owing to that cause.

Before the days of Charles II. the exportation of wool from Britain, though subject at all times to a high duty, and liable to temporary interruptions on monopolizing principles, was still however permitted, in one way or other. Since that time, it has been totally prohibited, under the severest penalties. This matter has been much misrepresented, as might be easily proved, were it here proper.

On examining what ought naturally to be the effect of such a prohibition, in a country that had been accustomed to carry on a considerable foreign trade in wool, it is evident that the *first* effect of it must have been greatly to lower the price of *fine* wool.

Before the prohibition took place, the difference between the price of fine and of coarse wool must have been very great; because, as the duty on the exportation of wool was the same in all cases, it was only that which was *very fine*, and which of course bore a very high price in foreign markets, that could find its way thither. The coarse wool, which sold at a price in foreign markets not much higher than the duty (which was sometimes L.5 per sack), together with freight and charges, could never go thither; great exertions, therefore, would be then made by the wool growers to obtain *fine* wool fit for the foreign market. No sooner, however, was this outlet stopped up than the immense glut of *that kind* of wool in the home market would lower the price of that fine wool, so very much as to make it no longer worth the wool growers while to rear it\*.—Regardless, therefore, of the quality of his wool any longer, his attention must now be turned chiefly towards the improving

\* For a particular enumeration of the evils that actually were experienced from this cause, see a treatise of Roger Coke, entitled, *The equal Danger of Church, Trade, and State of England*, 4to, printed anno 1600—and Smith's *Memoirs of Wool*, *passim*, and other pamphlets there referred to.

proving the carcase of his sheep; and therefore a breed of coarse wool'd sheep might become more profitable to him, than the fine wool'd sort, which used to return the best profit. These coarse wool'd sheep must of course be universally preferred—and, in these circumstances, nothing can be more natural than the change we have had occasion to remark—nor, if the same system of legislation be persisted in, will it be in the least surprising if the fine combing wool, that now furnishes the subject of so many vain panegyrics, should in its turn disappear. I think there are evident symptoms of its degenerating.

The *manufacturers* have been accused of obtaining this law, with a view to their own emolument; but, if it be so, it will be easy to show that the effects have been very different, in regard to their business, from what they have hoped it would be. At the *first*, there was no doubt some slight advantage derived from it by individuals among them; but the consequences of it to that manufacture now are highly prejudicial.

In former times, and as long as the exportation of British wool, under a duty, was permitted; it must either have been of a quality, equal at least to that of Spain, to bring the same price in a free market abroad, or finer, if it brought a higher price than the Spanish wool abroad, though it must have sold at a lower price at home. Say then that the duty, freight, commission, and expences was L.5 per sack; this wool must either be sold in a foreign market, at the same price with Spanish wool of the same quality, or it could not be sold at all.—Admitting then it was equally fine with the Spanish wool, it will follow that the English manufacturer might buy it at least L.5 per sack cheaper than either it or Spanish wool of the same quality could have been bought for by foreign manufacturers.—If therefore rival manufacturers found it necessary to buy this wool, they must pay for it at least L.5 per sack more than the British

British manufacturer could have had it for at his door—and this premium ought to have operated greatly in enabling him to undersell them in foreign markets. Such would have still been the condition of the English cloathier, had the exportation of wool continued to be permitted as in the days of Elizabeth. What is it now? At present no *British* wool fit for making *superfine* cloth is to be found. If he must make *fine* cloths, therefore, for foreign markets, he must buy Spanish wool at the same price at least with his rival competitors, and thus he is entirely deprived of the whole of the premium he would have had, if British wool had continued to be exported as formerly. Thus is the nation at large deprived of a beneficial branch of commerce it might easily have enjoyed, and the King of Britain has lost a considerable revenue, which would have had this singular advantage over most sources of revenue, that it would have operated at the same time as a bounty to the farmer\*, and as a premium to the manufacturer, to enable him to extend his foreign consumption of British manufactures far beyond what ever can take place under the miserable system of policy that has prevailed for some time, which has been adopted through ignorance, and can be continued only through imbecillity of mind.

This digression has led me much farther than was expected—but it is hoped the importance of the subject discussed, and its intimate connection with the object of the present enquiry, will be a sufficient excuse.

The same legislative regulations that banished fine wool from England, have operated in a similar manner in Scotland—And though it be true that the woollen manufacture in Scotland never had risen to the same perfection as in England—and though we have had no *Madox* nor *Rymer* to collect together the scattered facts that serve to indicate the

\* This must only be considered as a bounty to the farmer *relatively*, when compared with the present system of legislation—not *absolutely*.

the progress of the arts here, yet there are still to be found a few, though indeed a very few hints, that sufficiently serve to show that there were woollen manufactures here of some note, and that wool was to be found in that country also of a very superior degree of fineness.

Guicciardin, in his history of the Low Countries, takes notice several times of the wool of Scotland as an article of trade to that country. And,

As early as the year 1393, Thomas Dunbar, Earl of Moray, granted to the town of Elgin "the liberty of exporting "all the *wool, cloth*, and other things that go by ship out of "his harbour of Spey, duty free"\*. Thus, it appears that *wool* and *cloth* must have then been deemed the most principal exports from thence, as they alone have been thought worthy of being mentioned by name. But when subjects had thus a right of exacting national duties, it is not to be expected that any distinct account can be now obtained, either of their nature or their amount. It is also ordained, by the 40th act of the third Parliament of James I. of Scotland, anno 1425, "That of ilk pound's worth of woollen "claith had out of the realme, the King shall have of the "out-haver for custome twa shillings." Cloth was therefore an article of export from Scotland in those days.—How different at present? Cloth and salmon are the only articles of export mentioned in that law.

Hector Boethius, who wrote about the year 1460, takes notice of the fineness of the wool produced in various parts of Scotland; but, in general, he mentions not any criterion by which that fineness can be ascertained—only, in speaking of the sheep in the vale of Esk, in the shire of Angus, he uses the following words, as translated by Hollingshed: "Whose sheep have such white, fine, and excellent wool, as the like of it is hardly to be found again "within the whole island\*." Here it is paralleled with that

\* Hist. of Moray, p. 193.

† Hollingshed's Chron. p. 14.

of England, which was without doubt at that time the finest in Europe.

Sebastian Munster, in his *Cosmographie Universalis*, printed in the year 1550 at Basil, has the following short notice concerning the subject of our present inquiries:—"Pascua in utroque regno (*scil.* Scotia et Anglia—he is "treating of Scotland at the time) sunt optima, unde et "nullibi melior et tenerior lana\*." This once more puts the Scotch and English wool in the same class, and in the first rank for fineness.

Petrucio Ubaldini, who wrote a description of Scotland in the Italian language, imprinted at Anversa 1588, mentions the wool of this country in terms of greater approbation, and takes notice of some other peculiarities of our manufacture, owing to the fineness of the wool.

His words are,—

"Ma che diremo noi della lana (it is of Scotland he "is speaking), la quale apresso di tutte le genti é in pregio "grandissimo?" *i.e.* "But what shall I say of the wool, which bears a very high price among all nations?" And immediately he adds: "Ma quello che non bene é notó "ad ogniuno, non piccola parte di quella delicata et "gentile, della quale si fanno i panni scarlatti, et di color di porpora, et di altri colori finissimi di contestura "eccellentissime, et calze, et camicevole, et guanti, "commodita et ornamento d'illustri, et gran madonne, "non era da tacere†." "But what is not well known to every one, and what ought not to be concealed, there is no small quantity of that fine delicate sort, of which is made scarlet cloths of an excellent quality, and purple, and other fine colours, and stockings, and waistcoats, and

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gloves,

\* Cosm. Univ. p. 49.

† Descr. del regno de Scotia de Petruccio Ubaldini Cittadin Fiorentin, p. 58.

gloves, convenient and ornamental, for distinguished persons, and ladies of high rank." Signior Ubaldini, during his residence in Antwerp, probably had an opportunity of seeing some of these kinds of goods brought to market; and the description applies so well to that kind of delicate wool still found in some parts of Shetland, as gives reason to believe he had been very well informed as to these particulars.

These fine-woolled sheep, however, though they certainly did exist in Scotland at the time Ubaldini wrote his book, and long afterwards, have now, like the fine-woolled sheep in England, disappeared on the main land, though they possibly may be recovered from some remote and neglected corner among the distant isles. But when they shall be found, it will be difficult to increase the breed: For though, in consequence of the prohibition to export wool from Britain, fine wool has become here so scarce, as to oblige us to have recourse to Spain for a supply, and by consequence has raised the price of fine wool here much higher than it would have been, and thus it may be thought holds out a strong temptation to the wool grower in Britain, to try to rear fine wool once more; yet so long as the market continues limited, as it must be while the present laws subsist, and the restraints these laws produce continue to hamper the wool grower, no vigorous effort to regain that lost object of commerce, can be expected to be made; and if it were made, there are difficulties occur in this attempt, which, unless in particular circumstances, must for ever render such attempts abortive. Fortunately for Britain, some parts of Scotland possess such peculiar advantages in this respect, as no other rival nation can boast of: so that *where, and there only*, an effort to improve the breed of fine-woolled sheep can be attended with a reasonable prospect of success.

Experiments

Experiments have clearly proved, that the *permanent* qualities of any breed of sheep can only be affected by a change in the parent stock\*; and that of course, if a new breed be introduced into any country, it will infallibly be soon debased by intermixing with the native breed of the country, unless an entire seclusion of them shall be made at the rutting season. At the rutting season, however, it is well known, that no fences a farmer can rear are sufficient to keep them separate. They therefore intermix and degenerate, in spite of every effort that can be made to prevent it. Though it be not therefore a *physical* impossibility, to keep a few sheep of a particular breed, for any length of time, *entirely* free from degenerating, in a country where other sheep abound, yet it has been ever found to be *morally* impracticable†. Nature, however, has provided a set of fences perfectly capable of answering this purpose, at *no expence to the owner*, along the coasts of Scotland, by having scattered there innumerable islands of various sizes, on which any particular breed of sheep may be kept, without trouble or expence, *entirely* secluded from all others, if it be required; so that if ever so few of the parent stock were originally obtained, they can be there kept till they shall increase to any number wanted, without a possibility of being debased in the

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smallest

\* Observations on the means of exciting a spirit of national industry, Let. vii.

† The patriotic efforts of Mr. D'Aubenton in France, shew the utmost that man can do in this respect; and his success in improving the wool of France has been what might be expected, under the management of a person inspired with such an ardent zeal for promoting national improvements, as that gentleman possesses: But were his guardian arm withdrawn, and an attempt made to spread the improvements in general among the sheep owners of that country, it requires no spirit of prophecy to foretell the event. The same may be said of Mr. Le Blanc's experiments, mentioned App. No. I.

smallest degree. Here then, accurate experiments could be made, to ascertain the value of any particular breed of sheep that might be suspected to possess particular excellencies, so as to enable those who are concerned, to speak with *certainty* of the particular value of each, and the circumstances in which one kind could be kept with greater profit than another; a kind of knowledge which cannot so well be attained in any other situation.

These islands are also peculiarly well adapted for the rearing of fine-woolled sheep, on account of the climate they enjoy. There, little variation of heat and cold is experienced at different seasons of the year, in comparison of continental countries; and since it has been proved by repeated experiments, that the thickness of every part of each filament of wool is in proportion to the heat the animal was subjected to at the time that part of the filament was protruded from the skin\*, it follows, that if the heat of summer where the sheep pastures be great, that part of the wool which grows at that season must be very coarse; and if the cold of the winter where the same sheep lives be intense, that part of the wool which grows during that season will indeed be very fine; but as it constitutes one part of the same filament with the coarse wool that grew in summer, it will be impossible ever to separate the fine from the coarse by sorting; so that very fine wool, upon the whole, cannot there be obtained.

On the western islands of Scotland, however, as the summers are always cool, the wool that grows during that season from the same breed of sheep is much finer than if it had been kept in a warmer climate; and as the cold during winter is also extremely moderate, all the parts of each filament of wool are more nearly of the same quality, in respect to fineness, than in almost any other

\* See Observations on the means of exciting a spirit of national industry, Letter vi. and postscript to ditto.

other country. The wool, therefore, which is there produced, will not only be fine upon the whole, but of a more uniform texture and strength throughout than other wool\*.

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\* What is here said, does not exactly coincide with the opinion of Mr. Le Blanc, as expressed in Appendix, No. I. It is easy, however, to account for this seeming discrepancy, in a way that, it is hoped, will prove satisfactory to the reader.

The facts here stated have been ascertained in the most undeniable manner, by repeated experiments, which are particularly detailed in the performance quoted above, but which it is judged unnecessary here to repeat.

But Mr. Le Blanc having never, in all probability, heard of these experiments, and having observed the striking effects produced on his flock, by the introduction of another breed of sheep among them, though no change on the climate had taken place, very naturally inferred that the climate was not to be regarded in any attempt to improve the quality of the wool.

The writer of this article has also, from his own experience, found, that the climate has no effect whatever in altering the *permanent* fineness of the wool of sheep; and that this can only be effected by an alteration in the parent stock. But his experiments are, at the same time, clear and decisive in proving that any considerable alteration in the climate, with respect to heat and cold, has a great and irresistible *temporary* effect in altering the fineness of the wool, as is stated above; and these experiments, when they shall be repeated by Mr. Le Blanc or others, he is confident, will not fail to operate conviction.

That his meaning here may be clearly understood, he begs leave to observe, that by a *permanent* change is here meant, such an alteration, as that when this new progeny shall be placed in the *same circumstances* with the parent stock, it will always produce wool of a quality different from that parent stock; and by a *temporary* change, must be understood an alteration produced on the quality of the wool of the same animal in *particular circumstances only*, and which is of such a nature, that when the animal is placed again in the same circumstances as before, the wool produced then will be of the same quality as formerly. For example; when English sheep are carried to the West Indies, their close pile of wool is changed into a thin sort of coarse hair; but if the same sheep, or their progeny, (if they have not been adulterated by foreign intermixture), be brought back to England,



The mildness of the winters there are productive of another advantage in regard to the rearing of wool, which ought to be highly prized in a manufacturing country. For, in consequence of that mildness, snow seldom lies there ;

England, these sheep again produce a close fleece of wool of the same quality as before they went away.

I call this sort of change *temporary*, for the want of a word to express it more properly. For it will readily occur to the reader, that wool thus altered will continue to be of the same quality for ever, *if the heat of the climate in which the sheep are placed continues invariably the same*. In this sense, therefore, it might be said to be *permanent* ; and as the fineness of all wool may be altered by a similar change of circumstances, the alteration produced by a change of breed, cannot perhaps in this sense be said to be invariable ; and therefore it cannot be called, in strict mathematical accuracy, *permanent* : But being thus explained, it is hoped that no ambiguity can arise from the use of these terms.

Mr. Le Blanc, upon the authority of some foreign (with respect to Spain) writers, who have treated slightly upon the subject of Spanish sheep and wool, and who, probably influenced by the general outcry against the intolerable privileges belonging to the *Mesta* (so the perigrinating sheep in Spain are called), has adopted the opinion that the fixed sheep (*estantes*) in Spain produce wool equally fine with that of the migrating sheep. This opinion, when thus vaguely expressed, may or may not be true, as the reader will perceive from what has been already said. For if the fixed flocks, to which he alludes, do remain all the year round in the mountains of Leon and Asturias, or in any other cold place, there can be no doubt but that the wool of such sheep will be as fine, and in some respects finer in the pile than that of the same breed of sheep, if it descends during the winter, as is usual, into the warmer plains of Andalusia. But reverse the case, and say that these sheep remain fixed all the year in Andalusia, or similar warm parts of the country, and the case would be widely different ; for the wool of these sheep would necessarily be much coarser in pile than that of the same breed which had pastured all summer on the cool mountains of Leon and Asturias, or which had travelled to these mountains only during the summer season. This conclusion the writer of this article would have relied on as certain, had he even had no other authority for it but his own experiments. But when these experiments are corroborated by the express authority of *Ussaritz*, the best informed of all the Spanish writers on this subject, who asserts that the sheep which remain

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there ; and abundance of food for the sheep is to be found at all seasons, without trouble or charge to the farmer ; whereas, in countries where severe cold takes place, and snow for a long time covers the ground, the sheep are apt to

in Andalusia during the whole year, carry coarse fleeces, rather resembling hair than wool, there cannot remain a doubt but that Mr. Le Blanc has been imposed upon by some equivocal expression concerning the fixed sheep in Spain, to believe that the perambulations of the sheep there were of no use in preserving the wool. These perambulations, however, as he supposes, were probably not adopted at first with a view to the improvement of the wool, but merely as a necessary measure for the preservation of the sheep. For the mountains during winter are so long covered with snow, that it would be very difficult to preserve large flocks of sheep alive there during that season of the year, while the plains are covered with verdure ; and in summer, the hills produce abundance of rich pasture, while the grass in the plains is so entirely scorched as to afford no sufficient sustenance to numerous flocks ; so that these perambulations became in some measure necessary, and extremely convenient for the preservation of the sheep ; and the improvement of the wool, in consequence of that management, has been an unexpected and accidental improvement : But the improvement is not the less real because it was accidental.

Mr. Le Blanc's opinion, that the quality of the wool depends upon the male rather than the female, is equally problematical. Mr. D'Aubenton, from whom this notion has probably been borrowed, goes yet a little farther, and maintains, that the quality of the wool in sheep, and the hair of other animals, always takes its peculiarities from the male only, while the form of the carcase itself depends on the female. The fact, however, is, that among sheep as well as other animals, the quality of the wool, as well as the shape and make of the body, are nearly alike influenced by the male and by the female ; though particular instances sometimes occur, where the progeny in general participate more of the nature of the parent of one sex than of the other : But this happens not to be so general in any one way as to give room for any rule to be established concerning it.

This circumstance is necessary to be here adverted to ; because the conclusion drawn from it by Mr. Le Blanc, *viz.* that the nature of the ewe, in attempting to improve the breed of fine-wooled sheep, is of little or no consequence, might, if adopted, be attended with very bad consequences. I enlarge not, however, on the proofs of what is here asserted, as the experience

to be stinted for food; and, if ever that happens, the wool produced at that time is found to be of a dry and brittle quality, that can never be made to wear well in any fabric of cloth whatever. The wool of these regions, therefore, should not only be fine, but soft, tough, and elastic,

perience of every man who has ever bred stock of any kind will be sufficient, if he be not prejudiced, to convince him of the truth of what is said.

Should a ram only of a fine breed be introduced, the improvement produced *on the whole* would doubtless be much greater than if a ewe only had been obtained; for there may be from 50 to 80 lambs produced in one season from one ram, though only one or two, or, at the most, three lambs could be afforded by one ewe. But by means of a ram only, the breed could never be improved to equal the parent stock, as the following reasoning will fully shew.

Let us suppose that the quality of the fine breed was as *one*, and that of the coarse as *two*; and that, on an average, the cross breed should equally participate of the nature of both parents.

The first cross breed produced by the ram, (which would be produced when he was two years old), when compared to the fine stock, would be as one and a half to one.

The second cross, (which, allowing the ewe to be two years old, would be produced when the ram was four), would be, when compared to the fine stock, as  $1\frac{1}{4}$  to 1.

The third cross, if the ram lived till he was six years old, would be as  $1\frac{2}{3}$  to 1.

Supposing this ram then to die, and no fresh importation of the parent stock, it is plain, that this breed could never be finer than  $1\frac{1}{3}$ , even if it should be kept from intermixing with the coarse stock. But if a breed of  $1\frac{1}{2}$  fine were to mix with the original breed at 2, the cross would be only the fineness of  $1\frac{2}{5}$ ; and so on, by every fresh intermixture, the fine-woolled breed would gradually be debased; and by approaching nearer to the original stock in the country, it would at last totally disappear.

But if along with the ram one or more ewes of the same breed were introduced, and kept entirely apart from other rams, the breed would be preserved in its original purity, the ewes of that breed would increase in number, and pure rams could be sent off from it in abundance, always to go on improving the quality of the cross breed, till they should at last become, in many generations, so much the same with the other as not to be distinguishable from it.

elastic, to a greater degree than that reared in climates of an opposite quality.

These observations apply nearly as well to the west coasts of Scotland as to the islands. In one other respect does the west coast of Scotland possess a peculiarity of climate highly favourable to the rearing of sheep, that has either not been hitherto adverted to at all, or, if it has been taken notice of, it has been rather considered as unfavourable than otherwise. These countries, when compared with those on the east coast, are in general thought to have a much more rainy climate. The fact, however, is, that the quantity of rain which falls upon the east coast, is nearly the same with that which falls upon the west coast, throughout the whole year; but the rain falls out at different seasons of the year in these two places. On the east coast, the rain falls chiefly during the winter and spring months, in heavy dashes; and on the west coasts, the rain is more abundant during the summer, and in autumn; and it then falls in frequent gentle showers: and as men are much out of doors at that season of the year, and are liable to be wetted by the continued showers, it has been much more taken notice of than that upon the east coast, where it falls chiefly at a time of the year when men are, from necessity, obliged to keep the house in a great measure.

The effect of this diversity upon the sheep, however, ought to be specially adverted to. On the east coast, the rain falling in *winter*, while the wool is long, drenches the fleece, which becomes not only so weighty as to prove extremely burdensome to the animal; but by being kept long wet during that *cold* season, the sheep is chilled by the cold, and rendered thereby unhearty and diseased. The earth also, being drenched with water, becomes a puddle; and food being then scanty, these multiplied calamities taken together, tend much to injure the health,

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and to diminish the strength of this delicate creature. Thus weakened by the winter rains, it is ill prepared to encounter the hardships that the spring rains produce, when the wool, at its greatest length, forms a burden when wet, by which the animal is so reduced, as the lambing season approaches, as to be often no longer able to subsist under it, and dies.

The case is very different upon the west coast. The winter season being there generally dry, the fleece serves to keep the animal warm, without overloading it, instead of chilling and oppressing it: the earth, too, being firm to the tread, and the herbage dry, the sheep then continue active and hearty: and, as severe rains are rare in the spring, they are at that trying season in much better health than the others can expect to enjoy. When summer comes on, the fleece is removed. The light showers therefore cannot then prove oppressive by the weight of the fleece, on account of its shortness nor chilling to the animal, because of the genial warmth of the season. The sun and the winds then also quickly dry them. These summer showers, therefore, though frequent, do not in the least incommode the sheep itself; and on the dry hilly pastures, the rains only serve to keep up a constant supply of fresh herbage, which otherwise would have been much less abundant. From these considerations, it plainly appears that the climate on the west is much more favourable for breeding sheep than that on the east coast of Scotland. Indeed experience proves, since it has been tried, that they thrive better there than elsewhere.

When all these circumstances are duly adverted to, it will, I trust, appear undeniable, 1<sup>st</sup>, That the climate of Britain, especially the west coasts of Scotland, is peculiarly favourable for the rearing of fine wool: 2<sup>d</sup>, That Britain once did possess a breed of sheep that carried wool undoubtedly finer than any other wool produced at that time

time in Europe: 3<sup>d</sup>, That at present Spanish wool, though probably no finer than it was at the time when it was inferior to that of Britain, is now of a much finer quality than any wool that can at present be bought in Britain in quantities sufficient for the purposes of manufactures\*: 4<sup>th</sup>, That Britain still, however, possesses some remains of sheep that carry very fine wool, as well of the short carding

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\* The circumstance here mentioned, that has been hinted at in several other parts of this essay, deserves to be particularly noticed, and the consequences of it as to the measure here proposed, specially adverted to. There is not any reason to believe that Spanish wool is now in the smallest degree finer than it was at former periods, when it was of an inferior quality to that of Britain; and if it be now the finest of the two, it is owing to the debasement of our wool, and not to the melioration of theirs. This leads us to observe, that the words *fine* and *coarse* are merely relative terms, that denote no definite and precise standard of quality. The wool, therefore, which in one age acquires the name of *fine* wool, may perhaps be of a much coarser quality than that which obtained the same name at another period. A necessary consequence, however, of a change in this respect will be, that *fine* cloths, which at a period when the *very finest* wool could be obtained in the market, will possess a delicacy and softness of texture, when compared with other kinds of goods that may be employed as clothing, which they will not possess at those times when the wool that obtains the name of the *finest*, is of a coarser pile and harder texture. This circumstance will necessarily tend to render woollen goods more in vogue at the one period than at the other; though this circumstance will not be in general adverted to. This is probably one reason why woollen goods have been in less repute during the present century than at some former periods.

Another inference to be drawn from this circumstance, which it imports us here more particularly to advert to, is, that though a particular kind of wool may have, for a time, occupied the highest place in the market, and been deemed the finest in the universe, it may, nevertheless, be indeed of such an inferior quality to some other kinds of wool that have been neglected, that when these kinds of finer wools shall come to be reared by the attention of some patriotic community, in such quantity as to admit of furnishing materials for extensive manufactures, they may so far excel the wool that was formerly finest, as to banish it from the market, or make it hold only the second or third place in the scale of fineness.

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as the combing sort, both of which are degenerating and may soon be entirely lost, if not at present retrieved: *5th*, That it would be an easy matter to select the best of each of these breeds at the present time, to be set apart for the sake of experiment: *6th*, That Britain possesses peculiar advantages in regard to the carrying on this class of experiments, that no other rival nation can boast of, by means of which it is perfectly easy to have the intrinsic value of any particular breed ascertained with the most perfect accuracy, though in other parts of the world this be morally impracticable: *7th*, That if our own sheep should not be found to carry wool suited to every purpose wanted, it is still in our power, by selecting other valuable breeds of sheep from foreign countries, to obtain those peculiarities that shall be wanted; and thus, by persevering

Even though no wool in the world should be found of a superior degree of fineness to that which bore the highest vogue at the time, it is not at all impossible, from the above stated facts, that a finer kind may still be produced by attention and care, in proper circumstances; for, if a kind of sheep shall be found in a *warm* climate that yields wool of a quality as fine, though no finer, than that afforded by another breed of sheep that live in a *colder* region, it is a matter of certainty, that if the best of that breed shall be transported from the warm climate to a colder, a kind of wool would be thus produced, of a finer texture than ever before was known on the globe.

Upon these principles, I think I am well founded to conclude, that Britain may once more regain a superiority over Spain in respect to the fineness of wool. Nor is this all; since it is well known that there are sheep in other parts of the world, that do at present yield wool of a quality greatly superior to that of Spain; and as some of these sheep are found in regions that are probably warmer than Scotland, there is reason to believe, that if these sheep were transported hither, and carefully preserved, Britain might in time acquire wool, not only finer than that of Spain, but perhaps of a more delicate texture and finer quality *than any wool that has been hitherto produced on the globe*. Were this the case, it is hard to say what might be the delicacy of the fabrics the ingenuity of our manufacturers might contrive to make of it, or the demand that might in time be made from all nations for those delicate fabrics, which thus might be in a measure exclusively the production of this nation.

ing in a set of accurate experiments, we may, by due attention, be enabled in time to rear, not only finer wool than is to be obtained from any other country, but may also be able to conjoin with it every other valuable peculiarity, such as, closeness of fleece, a good mould of carcass, hardiness, a capability of being easily fattened, largeness of size, and every other valuable quality, adapted to every peculiarity of situation in the islands.

Such are the important objects that may be effected by a continued attention to the subject that now claims the deliberations of the Gentlemen of this Society.

#### POSTSCRIPT.

As some arguments of importance occurred in the course of the deliberations of the Society on this subject, it is proper they should be here mentioned, with the answers.

It was justly observed, that *profit* is, and ever must be the object of the farmer's attention in choosing a kind of sheep to breed from; and that general experience is perhaps a better proof of that profit than any other criterion that could be adopted. But since experience has proved that the breed of coarse-woolled sheep has been gradually making encroachments on the fine-woolled sort, so as at last to banish them entirely from the best part of this island; this seems to afford a clear and convincing proof, that it has been found universally to be more profitable to rear the coarse-woolled sheep than the others; and as this inconvenience may be expected to be felt in future as well as in times past, it seems to be a vain attempt to endeavour to retrieve that fine-woolled breed.

To this it may be answered, that though the argument be fair and plausible, the conclusion cannot, in this case, be admitted as just. By the same mode of reasoning,

ing; an opposite conclusion might have been drawn on this subject, before the days of Elizabeth: For, during that time, it appears that the fine-woolled sort kept their ground, and consequently were at least equally profitable with the others, though that fine wool, at that time, could not be sold at a foreign market, without being loaded with a high duty: and as it then sold in foreign markets at a price equal at least to that of Spain, it must have been sold *in England* at a price much below what Spanish wool could have been afforded for there, had it been brought to this market. But if it was profitable to rear fine wool in this country, when it sold for a lower price than Spanish wool of the same quality, it ought to be more profitable to rear it now, when it could be sold at a price equal or superior to that of Spain, if its quality should be equal or superior to Spanish wool.

From this train of arguing, it seems natural to conclude, that were circumstances the same in this nation as formerly, and were the fine-woolled and coarse-woolled breeds of sheep equally easy to be had, it ought to be now much more profitable to rear the fine than the coarse-woolled sort: But neither would this conclusion be strictly just.

We have already traced the causes of the degeneration of our wool; but in consequence of that debasement of its quality, it is a certain fact, that though the destructive laws that produced this effect were repealed, and things were put upon the same *legal* footing as formerly, it will require long and continued exertions, before things could be put into the same actual situation with respect to the farmer, and to enable him to derive the same profit from his fine-woolled sheep, that he then could easily have obtained.

Not only is it difficult for him now to procure the best breeds of sheep—not only is it difficult, and extremely expensive

expensive for him to preserve that pure breed, in the present situation of things, from being contaminated, by intermixing with others, as has been fully proved above—both which circumstances must greatly diminish his profits, should he attempt to prosecute this improvement:—not only do these things stand perpetually in his way, as a powerful bar to his exertions; but, were they even removed, and were he actually to become possessed of wool of a very fine quality, it will be long before he can have it in his power to avail himself of that advantage, or to derive a profit from that wool, proportioned to its intrinsic value.

It has been already remarked, that very fine wool is actually at present produced in some remote parts of Scotland, and its isles; but that this wool, from the ignorance of the natives, is often applied to very inferior uses; and a stronger proof of that cannot be afforded, than the experiment now under the eye of the Gentlemen of this Society. Some pairs of Shetland hosiery, that were bought in Edinburgh at  $5\frac{1}{2}$  d. *per* pair, and which probably were sold at first hand at or below 3 d. weighing, each pair, about half a pound, have been untwisted, so as to discover the materials of which they were made. This wool consists in part of a very coarse sort indeed, resembling hair; but a considerable proportion of it is very fine wool, of an exceeding soft texture, which a manufacturer, who must be a judge of that matter, declared would be worth 4 s. the pound, were it entirely freed from the coarse wool with which it is intermixed. Supposing, then, one half of it to consist of that fine wool, we would here have at least 1 s. worth of fine wool given away *for nothing*; for undoubtedly the workmanship, and the remainder of the coarse wool, is worth more than the price for which the stockings were originally sold. When such is the way in which fine wool

wool is disposed of, can it be a wonder, if the sheep that produce it, should not, in these circumstances, be profitable, though, in other circumstances, they might be highly advantageous.

Fine wool, where it can be obtained at all, in consequence of improving the breed, can only be obtained, at first, in small quantities: And in a remote country, where this object has been long neglected, it is impossible to find a wool-sorter who could put it into a state so fitted for the market as to yield nearly the price it ought naturally to have given. If the farmer tries to send it to market, therefore, it must to him be a losing game, though in other circumstances it might have been highly lucrative.

But can it be supposed that the farmer, in these circumstances, will ever be able to send it to a proper market? Were it even sorted to his hand, the *small* quantity he has to spare, neither renders it an object of sufficient importance to him, nor does he know to whom to consign it, without danger of being imposed on; nor can it bear the expence of bonds, cockets, freight, and charges\*. Were it therefore of ever so great value, he cannot reap profit from it; so that, unless measures shall be adopted for removing these difficulties, the attempting to introduce a breed of fine-woolled sheep into a distant part of the country, can never be profitable to the individual who begins it, however profitable it might be to individuals, and

\* The bonds, freight and charges for a few pounds of wool, as the laws of Britain stand at present, if sent by sea, could not be under twenty or thirty shillings, and might, in certain circumstances, be much more; besides the danger of subjecting the owner to high forfeitures in case of any accidental breach of forms required by law, which an uninformed farmer, in a remote corner of the country, never can be acquainted with. The dread of those evils must therefore prevent him from ever thinking of engaging in such a dangerous enterprise.

and to the public at large, after it had been fairly introduced. It is necessary, therefore, that some society, or joint body of men, who can act in concert, should pave the way for a national improvement of this sort.

One other objection may be mentioned before this long memoir be closed: It is a prevailing opinion, that sheep which carry fine wool are always, and necessarily, of a more diminutive size and delicate constitution, than those which carry coarse wool, and afford likewise a smaller quantity of wool; therefore it has been supposed that the large, as well as the hardy breeds of sheep, ought to be extirpated, were the improvement of British wool attempted. This, however, is a great mistake; for largeness of size is by no means necessarily connected either with fineness of wool, hardiness of constitution, or weight of fleece. It is indeed true, that the fine-woolled *Highland* breed is a small-bodied sheep; but the coarse-woolled sheep in Shetland are of as small a size as those of the *kindly* sort, and in every respect as tender; and every body knows, that the South Country breed of Scotch sheep, which carry very coarse wool, and are in general esteemed very hardy, though larger than the Shetland breed, is much smaller, and yield lighter fleeces, in proportion to their size, than several kinds of English sheep which carry wool of a very fine staple. The fine-woolled Spanish sheep, I am assured from the best authority, is a large, well bodied hardy sheep, much larger than any breed commonly reared in Scotland; and the Thibet sheep, which carry the finest wool in the world, is still of a larger size; being considerably larger, by the accounts I have received, than the largest sized English sheep. Fine wool, therefore, may undoubtedly be obtained without diminishing the size of the carcase of the sheep in the smallest degree, and also without diminishing the weight of the fleece, or losing any other peculia-

rity that could render any particular breed peculiarly desirable \*. This would, no doubt, require pains and a careful selection of the best breeds, wherever they could be found, and an attentive and cautious procedure; but no one can easily imagine how much can be done by attention in this respect. Mr. Bakewell's success has been already taken notice of; and though my own experiments on sheep were continued only for three years, yet even in that time, I had some wool that measured full half a yard in length, which was equally fine as the best Spanish wool I could find, and greatly softer than it to the touch. I have seen no English combing wool so fine as this was. If such were the effects of only three years attention, in a situation that did not admit of an accurate selection of different breeds at the rutting season, what might be expected from a course of experiments conducted on a more enlarged principle than I could afford to attempt, in a place where an entire selection of breeds could be easily effected, continued for half a century? No one can pretend to say to what perfection we might arrive: But there is every reason to believe, that not only finer wool would be obtained, of every different quality that can be wanted for the various kinds of manufactures, in greater perfection than can at present be found in any part of the world, and that along with it might be conjoined every other valuable peculiarity of carcase or otherwise, that can render any particular breed at present desirable.

*N. B.* I have not taken any notice above of some popular stories commonly circulated concerning the breed of fine-woolled Spanish sheep having been obtained from England, or the breed of English sheep having been obtained

\* See Essays relating to agriculture and rural affairs, vol. ii. disquisition xxxix. where this matter is more fully treated than the limits of this essay permitted.

ed from Spain; both of which stories, though directly contradictory, are asserted with equal confidence; and for aught I can learn, are entitled to equal credit; as I have not been able to find any authorities that confirm either report: and they are here mentioned only that the reader may not think they have been inadvertently omitted.

A more probable account is given by Mr. Carlier of the origin of the fine-woolled sheep in Spain, though I am far from thinking it indisputable. Columella says that his uncle, Marcus Columella, introduced some rams from Barbary, which helped greatly to improve the quality of the wool of Spain. The same experiment is said to have been repeated by Don Pedro IV. king of Castile, in which he was followed by the great Cardinal Ximenes, who thus is said to have secured to his country the pre-eminence in that respect, for which they have been since that time so justly famous \*. I have not, however, had an opportunity of investigating this last part of the Spanish history with such attention as to enable me to speak of it with certainty. Mr. Carlier asserts it as fact without hesitation; and if it shall be found to be true, it affords a strong inducement for us to exert ourselves to recover our fine wool, by adopting a similar conduct, and trying the Barbary and other breeds of sheep.

\* *Traité des bêtes à laine*, par M. Carlier, p. 13.

## No. V.

*Directions for selecting Sheep in the Northern and Western Islands of Scotland.*

TO assist those who, from the foregoing considerations, shall be inclined to select a particular breed of fine-wooled sheep, for the sake of experiment, among the Northern or Western Islands, the following particulars are recommended to their attention.

1<sup>st</sup>, As the fineness of the pile, and the softness of the texture of the wool are, in this case, the peculiarities chiefly wanted, these are the circumstances that ought to be adverted to, as of the most essential importance. No other particular, therefore, should counterbalance a superior degree of fineness of pile, in any case.

2<sup>d</sup>, But in case two sheep are found which are entirely equal in these respects, that one which has the fewest hairs through the fleece ought certainly to be preferred; for although these hairs may be separated, as the natives of Shetland experience, by letting the wool rise entirely from the skin, without being shorn; yet in large flocks that practice would become extremely inconvenient, and the necessity of having recourse to it should be guarded against.

3<sup>d</sup>, If fineness and purity are equal, that sheep which has the closest pile, or thickest fleece, should be preferred.

4<sup>th</sup>, If fineness, purity, and closeness of pile, be equal, prefer that which has the greatest uniformity in the texture of the whole fleece.

5<sup>th</sup>, All the above named particulars being equal, the general shape and figure of the animal ought to influence the choice: A round compact body, a full and deep chest,

chest, straight back, straight firm legs, neither very long nor too short, and a strong hardy figure upon the whole, with a lively mild looking eye, are the particulars respecting shape that should be preferred; but this circumstance should be a subordinate consideration to those already enumerated.

6<sup>th</sup>, All other circumstances being equal, that sheep which is in the best condition at the time, if their pasture has been nearly equal, should always be preferred.

7<sup>th</sup>. *Lastly*, If two sheep shall be found which are equal in all the foregoing respects, that which is of the largest size of the two may be preferred: but it ought ever to be adverted to, that for mountainous countries of difficult access, and where a wide range of pasture is necessary, largeness of size is not a quality that should be much coveted.

\* \* In choosing ewes, the same peculiarities should be adverted to as in choosing the rams; and in all cases the ewes should be chosen, as nearly as they can be found, of the same quality with the ram. It is only after the best breeds are once got, pure, that experiments should be tried, to see what will be the effect of crossing with others.

†† In every case, the *colour* ought to be particularly adverted to; and though there may be exceptions, it will be found that a pure white breed is, upon the whole, the best colour for general use, as white wool admits of being dyed of all colours with greater facility than any other.

†† If, however, a breed of sheep shall be found of a light brown, or fawn colour, of a pure silver grey, with a fine silky gloss, which is not apt to change colour by wear, or of a pure black; and if any one inclines to try to improve



improve these particular breeds, it may be a very proper subject for experiment. But in every case of this sort, the ram and the ewes selected ought to be exactly of the same kind, and should be carefully put apart by themselves, till such a quantity of this wool could be obtained as might serve to ascertain what were its peculiar qualities, and its intrinsic value. In no case should any sheep be selected to breed from, that are spotted in any way; for that peculiarity can never be beneficial to the rearer.

†§ It is understood that the wool of the Highland sheep is in general of a short staple, and fitter for being carded than for being combed; but it is not impossible but that among the varieties of sheep that exist among those neglected and unknown regions, there may be some breeds found, that bear wool which might admit of being combed; and if such a thing could be found, of a fineness and softness of texture equal to the other, it would prove a very valuable discovery. It is therefore recommended to the gentlemen and others in those regions, to be attentive to this particular; and if a ram of this breed can be found, to try, if possible, to obtain some ewes that have the same quality of wool, to be put apart for obtaining a breed of this kind. If I mistake not, this peculiarity may at present be expected to be found more readily among those of a silver grey than the others. In choosing sheep to breed from of this colour, all those should be rejected where the white filaments are not of a very pure lustre, and the black of a clear shining glossy transparency, and pure black.

†† Those who have not adverted to the effects produced by selecting proper breeds of sheep for breeding from, but who have been accustomed to let their sheep run promiscuously,

miscuously, and breed together without any selection, can have no idea of the surprising effect that an attention continued for a few years would have on improving the wool, the shape, the temperament, and general hardiness of their whole flock, and will therefore be inclined to look upon these directions as unnecessary refinements. The natives of the isles, however, may rest assured, that these observations are the result of experience, and not of speculative reasoning; and that, if any of them shall make trial of selecting a few sheep, and of excluding them during the rutting season, from all others, they will themselves be astonished at the effects; and they would be very agreeably surprised to find that they might be able to obtain from three to five shillings for every pound of their wool, which they undoubtedly might do, were it improved to the utmost degree it is susceptible of. It deserves also to be here repeated, that the sheep which carry the finest wool, if carefully selected, are in general equally hardy, equally easily fed, and yield fleeces of equal weight, and may possess every other valuable quality in an equal degree with other sheep, that yield the coarsest wool that can be found.

††† It is surely unnecessary to add, that sheep which are known to have any disease, especially if that disease be likely to affect the progeny, should on no account be selected to breed from.

N. B. It may be proper to observe, that if sheep are at any time intended to be transported to a distance, to compete for premiums or otherwise, it is of great importance they should be tamed, and rendered as familiar with men as possible. This is easily effected, if they be brought near to the habitations of any person while they are lambs, as they can then be easily tamed, and may be made

made as familiar as a dog, so as to admit of being carried to any distance, without danger to themselves, or difficulty to those who conduct them.

††† If males or females of a particular breed are to be brought from a great distance, it will always be necessary to send two or more of each sort, to supply the want, in case of death or accidents by the way.

¶ In case any sheep should be obtained from distant places, the following experiment is recommended, with a view to mark the changes that shall take place, in respect to the wool of the same animal, in consequence of a change of climate, or other circumstances.

Before the sheep be removed from its native country, let a lock of wool be cut from the sheep, and put up with a proper tally for preservation, that it may be compared with the wool of the same sheep cut from the same place, at any future period.

And that the wool may always be taken as nearly as possible from the same part of the body of the animal, let the following mode of ascertaining that particular be adopted. Take a small cord of a sufficient length; let one end of it be applied exactly to the joint at the knee of one of the fore legs; then lay the cord lightly across the body in as straight a direction as may be, till it reaches the other fore knee: Mark the cord there, and then double it; and double that once more, so as to mark the fourth part of the whole length: put a pin into the cord at that mark, and lay it once more across the sheep as before; and at the place directly under the pin on the right shoulder, cut out the lock of wool wanted, and lay it up for preservation. Next year repeat the same operation, and in like manner cut out a lock of wool for comparison; and so

so on annually as long as the experiment is to be continued, always tallying each lock, so as to mark distinctly the individual sheep from which it has been taken, and the precise time and place when and where the lock was cut.

It is plain, that as no fixed measure is here assumed, but only a *proportional* length, any alteration that may take place in the size of the animal will occasion such a small variation as to the place where the wool is cut, as to occasion no sensible mistake. Were a lock of wool thus cut from any number of sheep, at ever such a distance from each other, it would afford a good method of forming a judgment of the comparative fineness of the wool.

#### No. VI.

*Plan of a Patriotic Association for the Improvement of British Wool. By Doctor Anderson.*

IT is proposed to establish a new Society, whose *sole* object shall be to adopt measures for obtaining the best breeds of fine-woolled sheep, and of other domesticated animals, carrying fine fleeces or furs, with a view of ascertaining, by actual experiments, how far each species is calculated for the climate of this country—the qualities of their wool respectively—the uses to which each kind could be most profitably employed in different manufactures—and the comparative value of each species, so far as the same can be determined.

The name of the proposed Association to be, *The Society for the Improvement of British Wool.*

The Society to consist of an indefinite number of members. Each ordinary member to contribute One Guinea



*per annum*, or Ten Guineas on being admitted, towards effecting the objects of the institution. Every member to be at full liberty to withdraw his name, on giving notice to the Secretary in writing, at least one month previous to the general meeting to be annually held for the purpose of choosing new members, and of inquiring into the progress made by the Society.

The money arising from the subscriptions of the members to be paid into the hands of a Treasurer, and put under the management of a President, a Vice-president, and fifteen Directors, to be chosen annually, by ballot, at the general meeting. The Committee to have power to transact all the ordinary business of the Society, in conformity to such general principles as may be laid down at the annual meeting. The Committee to be accountable to the Society for their proceedings; an account of which shall be annually printed for the use of the members of the Society, and for the information of the public.

Those who contribute Two Guineas *per annum*, or Twenty Guineas at their admission, to be called Extraordinary Members; and, in the event of an equality, the member who was first admitted into the Society amongst these members, to have a double vote, in all cases where any doubt as to the majority of votes occurs.

The above to be considered as fundamental rules of the Society: All other subordinate regulations to be left undecided until the Society is constituted, when these matters shall be adjusted according to the opinion of the majority of the members met to deliberate on the subject.

It is proposed, that Sir John Sinclair, as Convener and Chairman of the Committee on Wool, shall transmit the report he has drawn up for the use of the Highland Society, to such persons, whether in Scotland or England, as are the most likely to encourage so useful an undertaking,

taking, and shall take such other steps as may tend to promote the establishment of the proposed Society, without delay; and in particular shall request Sir Joseph Banks, President of the Royal Society, and other public-spirited individuals, who have already devoted their attention to the melioration of British wool, to co-operate in forming a plan that may prove of such general benefit to these kingdoms.

It is farther proposed, that the original members, or founders of the Society, shall concur in a respectful application to the King, as the father of his people, and the patron and support of every useful undertaking for the benefit of his subjects, and whose attention to this particular subject is so well known, that his Majesty would be graciously pleased to take this infant Society under his protection, and would confer on it the name of *The ROYAL Society for the Improvement of British Wool*; and that application should also be made to his Royal Highness the Prince of Wales, and to the other Princes of the Royal Family, for permission to enrol their names among the members of the said Society.

By the exertions of such an Association, the experiments which might be tried under its directions, and the knowledge which it would rapidly diffuse on this subject, in every corner of the kingdom, it is probable that the value of the wool of Great Britain, great as it may appear at present, *might be doubled*, and occupation found for many thousands, who may not otherwise be able to find the means of industry and of employment.

N. B. It is hardly necessary to remark, since it can have no influence with any person of real public spirit, that, in the course of a very short period, the subscription of every member of the Association may probably be repaid, from the increase and profit of the sheep, originally

purchased by the contributions of the Society, and multiplied under its direction; and thus merely by the temporary advance of a small sum of money by each contributor, a great public benefit will be insured, without almost the risk of loss to any individual of the Association.

#### No. VII.

*Observations on the Advantages that might be derived from SNOW PLOUGHS\*, by the Sheep Farmers in the Highlands, and on the Increase of Sheep Farms in that Part of the Kingdom.*

IN Sweden, where particular attention is paid to the public roads, and to the best means of preserving them in repair, they have invented a very simple machine for clearing their roads of snow in the winter season, to which they have given the name of the *Snow Plough*.

It

\* In Marshall's Rural Economy of Norfolk, vol. i. p. 59. a similar machine is described among the other implements of husbandry in that part of the country, under the name of the *Snow Sledge*. This beautifully simple implement, he observes, is used for uncovering turnips buried under a deep snow. It is simply three deals or other boards, from one to two inches thick, ten or twelve inches deep, and from seven to nine feet long, set upon their edges in the form of an equilateral triangle, and strongly united with nails, or straps of iron at the angles, at one of which is fastened, by means of a double strap, a hook or an eye, to hang the horses to. This being drawn over a piece of turnips covered with snow, furrows up the snow into a ridge on each side, while, between the ridges, a stripe of turnips is left bare, without having received any material injury from the operation.

It is of triangular shape, and though of a very slight construction, so that two men can easily carry it, answers the purpose effectually. At the point there is a block about eighteen inches in height, through which there is a strong timber pin for the purpose of fastening the horses, and by which the machine is dragged in a manner similar to the common harrow. There are two deals of the same height, nailed on each side of the block, of from eight to ten feet in length, and of the same width or distance from each other at the extremity. About two feet from the end of the deals, there is a cross deal to keep the other two firm and steady. The description I had drawn up of the machine being lost, it is only from a very imperfect recollection of it that the preceding account is given.

It is believed, that this machine may be of considerable service in clearing the roads of snow in many parts of Great Britain. But its utility to the storemaster or sheep farmer, is a matter of still greater importance. At present, when the ground is covered with snow, there are no means to procure food for such multitudes of sheep as are now kept in many parts of the Highlands, but by teaching them to rake up the snow with their feet so as to get at the top of the heather; and when the frost has also begun, the surface must be broken by harrows, otherwise none but very experienced sheep will attempt it. But with one or two of these machines, and half a dozen of small horses, many acres may be cleared in a few hours, where the ground is not stony, and the snow has only recently fallen. If the frost has begun to harden the top, harrows must previously be made use of. By means of these machines, the snow may be laid in ridges, with intervening spaces of from 25 to 30 feet perfectly clear of snow; and thus, at the smallest possible expense, the farmer may always command abundance

dance of pasture for his flock, even in the depth of winter \*.

There are doubtless many respectable friends to the prosperity of the Highlands, who, disliking the increase of sheep farms, may not be inclined to relish any idea that can tend to render them less hazardous, and consequently more prevalent. Nor is it possible to form a decided opinion on the propriety of extending sheep farms in that part of the kingdom, without more experience than we have as yet acquired, and more facts to judge from, than have as yet been collected. The Highlands at present are in general peopled by a number of small farmers, who maintain themselves by the produce of the small spots of arable land they cultivate, and who pay the rent of the landlord, from the profit of the cattle they possess. The indolence in which they can indulge themselves, and the abundance of fuel they enjoy (an important article in a cold climate), with the natural attachment which every individual must feel for his native soil and birth-place, make them attached to that mode of living, and unwilling to quit it. In a public view, also, a brave and hardy race of men, who, without much detriment to agriculture, or to commercial industry, can at once be converted into soldiers, is an object of great importance; and the want of which, were it lost, the public might sensibly feel, in very critical emergencies †. At the same time it is certain, that the rent

\* It is supposed, that every sheep farmer will preserve the least stony, and most fertile part of his farm, for the express purpose of winter pasture, to be cleaned of snow by these machines. In that case, his flock can never perish for want of food.

† There is a striking alteration in the appearance of the people, where sheep farms have taken place in the Highlands. Being better clothed, and living more upon meat than formerly, they have insensibly acquired a resemblance to the peasantry of England, and will soon be considered as a very different race of people from their Highland neighbours, and will probably feel themselves less disposed to warlike exertions than formerly.

rent and value of Highland property might be doubled; and, in process of time, tripled, nay, quadrupled, by sheep farming \*. By sheep also, the present heath-covered mountains of the Highlands would be rendered green and fertile, and greatly more productive than at present. Whilst, by improving and extending the fisheries, and by establishing towns and villages, in proper situations for the woollen and other manufactures, the actual population of the country might not be diminished, yet the general face and appearance of it, and the value of its productions, might be greatly improved †.

As this is a question of considerable moment to the general interests of the empire, it would well become so respectable a body of men as the Highland Society, to have a subject with which they are so peculiarly connected, probed to the bottom. For that purpose, it might be proper to ascertain, 1. What districts in the Highlands, now in a great measure occupied as cattle farms, are calculated for sheep. 2. What may be the rent of these districts at present, and what would be their value under sheep. 3. What is the population of these districts, and to what would the population be reduced, if sheep farms universally took place. *Lastly*, Could any measures be adopted, by encouraging fisheries and establishing manufactures, and by erecting towns and villages in the island, as well as the maritime parts of the country, that would effectually counteract the destructive consequences of sheep farms, and prevent the depopulation of the country.

\* The number of sheep that might be maintained in the northern and western islands, and the value of their fleeces, were fine-woolled sheep alone reared in that part of the kingdom, would far exceed the most sanguine calculations of those who have as yet investigated that subject.

† Some new articles of produce might also be introduced; for instance, the *Fromage de Roquefort*, a village in the province of Rouerque, near Lan-guedoc, where great quantities of ewe milk cheese is made, which sells at a very high price, and is much in request.

## No. VIII.

*An Account of the Steps which have been already taken for attaining the Objects mentioned in the preceding Report, from the beginning of June, when the Inquiry was originally suggested, to the Middle of August 1790.*

DIRECTIONS were given for purchasing some of the finest woolled sheep, and specimens of the finest wool that could be procured in Shetland, and for transporting the same to Leith by the first opportunity.

Mr. Macdonald of Clanronald, the proprietor of several islands upon the western coast of Scotland, no sooner heard of the deliberations of the Society upon this subject, than he made an offer to appropriate some of the smaller isles belonging to him, for the purpose of enabling the Society to make such experiments for improving the quality of wool, as they should judge proper.

In the absence of the Duke of Argyle, who had not then returned from Italy, Mr. James Ferrier, his agent at Edinburgh, made a similar offer on the part of his Grace; as did Mr. Isaac Grant, in the name of Mr. Campbell of Shawfield, the proprietor of the extensive island of Ilay, and its dependencies.

Mr. Campbell having been informed of the possibility of getting some of the best breed of Shetland sheep, by the assistance of the Gentlemen who were examined before the Committee, requested Dr. Anderson to endeavour to procure for him, by their means, such a number of the very best sort of these sheep, as might be proper for trying a fair experiment, how far they would answer in the western islands. A score of ewes, and five or six rams, were accordingly ordered, and an island is appropriated for their reception. Mr. Campbell has, at  
the

the same time, given directions for selecting some of the finest woolled sheep in the Hebrides, for the purpose of making a comparison between the two breeds; and in order that the effect of a cross breed between them may be tried\*.

In consequence of the attention paid to this subject by the Highland Society, the different proprietors in the northern and western islands, who have had an opportunity of communicating their sentiments to the Committee, have expressed the greatest zeal and eagerness for promoting the measures recommended in the Report. It is certain, that they are more deeply interested in their success, than any other set of men, as there are no means by which the value of their property can be so rapidly increased, fine wool being an article of much surer sale, of much greater importance, and much more easily transported, than the droves of black cattle on which they now principally depend. At the same time it may be remarked, that there is no individual who ought not to feel an interest in these inquiries. It is only by bringing to the greatest possible behoof the natural advantages of a country, that a nation can prosper. A truly zealous and public spirited citizen, therefore, above narrow or local prejudices, will feel as ardent a desire to promote the improvement of the most distant part of the kingdom, as of the districts with which he is more immediately connected.

\* Amongst other exertions, tending to the improvement of wool in these kingdoms, though unconnected with the measures here proposed, it deserves to be mentioned, that Colonel Fullarton of Fullarton has lately imported into Britain some of the Colchis breed of sheep, whose golden fleeces are so much famed in ancient story; and that some sheep of the Thibet breed, also, are likely soon to visit Scotland.

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