

**COMPLETE TREATISE**  
**ON**  
**MERINOS**  
*AND OTHER SHEEP,*

**WITH PLATES.**

**RECENTLY PUBLISHED AT PARIS,  
BY ORDER OF THE GOVERNMENT,  
COMPILED BY**

**MR. TESSIER,**

**INSPECTOR OF THE RAMBOUILLET ESTABLISHMENT  
AND OTHERS, IN FRANCE.**

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**CONTAINING  
THE METHOD OF FORMING GOOD FLOCKS,  
OF INCREASING THEM,**

*And of treating them properly both when healthy and when diseased,  
FOLLOWED*

*By documents, extracts, and short explanatory notes, not contained in  
the original, which were deemed necessary to make this important  
work complete, and to render it more instructive to the Agricul-  
turalists of the United States.*

**TRANSLATED FROM THE FRENCH,  
AND DEDICATED TO THE  
AGRICULTURAL SOCIETIES OF THE  
UNITED STATES.**

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*CONTINUOQUE GREGES VILLIS MOLLIBUS ALBOS.—Virg. Georg.*

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**1811.**

cient when it was known that still greater advantages were like to ensue by substituting Spanish for French rams. Some persons even thought that all common sheep should be put a way from the flocks, and none admitted but merinos. Directions were wanted with respect to the mode of raising and tending these animals. There was at that time a board of agriculture, which, having been part of one of the executive commissions, was attached to the interior department. This board deemed it necessary to compose a work exhibiting the most proper means of securing the propagation of Spanish sheep. The compilation of it was entrusted to *Gilbert*, one of the members of the board, and a professor in the veterinary school of Alfort, a man of an ardent mind and animated by an eager desire for the welfare of his country. All that he wrote, before being printed, was submitted to the judgment of his colleagues, and discussed in their meetings. The first edition was printed in 1797, and a second in 1799; both of the same size with the larger work of *Daubenton*. This work was equally well received by the public with that of *Daubenton*; as it afforded instruction to those who were desirous of procuring merinos and of propagating the breed.

These two editions, which the government caused to be distributed gratis, being expended, the minister of the interior induced *Mr. Tessier*, a member of the Institute, a celebrated agriculturalist, and inspector of the Rambouillet and other establishments in France, to publish a new edition of the work, in which the knowledge obtained since the publishing of the former editions might be imparted to the proprietors of flocks and to such as were desirous of rearing them.

This task was not free from difficulty; and it required a man of *Mr. Tessier's* abilities to perform it properly.

Such is the work which the editors hasten to present to the agriculturalists of this country. It is followed by documents, extracts and short explanatory notes, not contained in the original, which were deemed necessary to render this important work more instructive to the agriculturalists of the United States.

The method pursued by *Mr. Tessier*, as he himself remarks, is agreeable to the very nature of things.

“ After some remarks upon the principal breeds of sheep,” says he “ I explain the characteristics of one of them, viz. of the breed of true merinos, the particular object of this work ;

I mention the use which may be made of them to form flocks of a mixed or of a full breed, and show how the greatest advantages may be derived from them. All these articles might be considered as a first part.

“ In what follows, I give details on copulation, yeaning, the attentions requisite in sheltering sheep, on their food, the manner of pasturing them and of conducting them in journeys, also on what relates to shearing, to the fleeces, the wool, the cleaning of the wool\*, the trade which is made of them, and the sale of the animals. I should call the articles which treat of the above objects the second part.

“ I then enter into a detail of the diseases to which merinos, like other sheep, are subject; of the modes of treatment, and especially the methods of prevention. This part is at least as large as either of the others. It appeared to me so useful to give agriculturalists information on this important point, that I have endeavoured to omit nothing which is essential for them to know.

“ I have added, at the end of the work, an article relating to shepherds, a class of men without whose care and skill it is impossible to have good flocks. I have even shown the method of training dogs of a proper kind, in order to facilitate the leading of sheep to pasture and during a journey.

“ Throughout this treatise, I have endeavoured to unite perspicuity and simplicity; qualities which are peculiarly proper in works of this kind. If I have attained this end, or if I have made a near approach to it, I shall have satisfied the desire which I feel of meeting the views of the Minister by whom I have been entrusted with the performance of this work.”

The judicious reader will be convinced by the perusal of *Mr. Tessier's* work that its learned author has fully attained the end which he had in view. His treatise is complete; and we do not doubt that it will entitle him to the thanks of the agriculturalists of every country.

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\* In French this is called *dessuintage*.

## *To reduce Paris Long Measure to English.*

The Paris royal foot of 12 inches	=	12.7977	}	<i>English inches.</i>
The inch	=	1.0659		
The line, or twelfth of an inch	=	.0888		
The twelfth of a line	=	.0074		

## *New French Measures Weight.*

### ENGLISH GRAINS.

Milligramme	=	.0154				
Centigramme	=	.1544				
Decigramme	=	1.5444	AVERDUPUIS.			
Gramme	=	15.4440	<i>Poun. Oun. Dram.</i>			
Decagramme	=	154.4402	=	0	0	5.65
Hecatogramme	=	1544.4023	=	0	3	8.5
Kilogramme	=	15444.0234	=	2	3	5
Myriogramme	=	154440.2344	=	22	1	2

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# TREATISE ON SHEEP,

By Mr. TESSIER.

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## OF THE DIFFERENT BREEDS OF SHEEP, AND PARTICULARLY OF MERINOS.

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AMONG the animals which ruminates, SHEEP form a very interesting class ; which class is divided into several distinct races ; the number of which may be reduced to seven ; viz :—

1. *The African Race.* It is without horns, of a tall make, with an upright forehead, a head that projects a great deal, and short hair : under its throat it has a dewlap, and on its neck a mane, in which grow tufts of wool which successively fall in order to make room for others.—Three sheep of this kind have been kept at Rambouillet.\*

2. *The Arabian Race.* It is found at the Cape of Good-Hope, in the country of the Hottentots, also in Egypt, whence the French army brought several to France. Its tail is thick, broad and heavy, but is terminated by a part no larger than an ordinary sheep's tail ; in this respect, this race differs from all the following. Some of these sheep are to be seen in the gardens of the Museum of Natural History in Paris, and at the Veterinary School of Alfort.

3. *The Race of Crete or Candia.* Its wool is undulated, its horns are straight and incircled by a spiral groove ; it is called *Sterpsiceros*.

4. *The Indian Race,* imported by the Dutch into Europe. It is remarkable for its height and for the length of its body. The ewe produces, every year, several lambs. The Dutch placed them in the Texel and in Flanders ; so that the sheep of this race are called, *Sheep of the Texel, Flemish Sheep.*

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\* I attempted, by means of these animals, to ascertain in how many generations, by crossing Spanish sheep with an African ram, the wool becomes hair, thus making an experiment the inverse of that of *Daubenton*. Mine, however, could not be completed.

5. *The Race of the Feroe islands, Iceland and Norway.*— It is very small, wild and lives in the midst of snows; its fleece has silken filaments, others resembling hair, and others of the quality of common wool.

6. *The Indigenous Race of France*, which may be divided into several varieties. It is not tall like the Flemish breed, nor diminutive like that of the north, but between the two, and has ordinary wool. Habit teaches to distinguish all its varieties; for instance, the *Roussillonne*, the *Berichonne*, the *Ardennaise*, the *Beauceronne*, the *Normande*, &c. all of which have distinguishing marks.

7. *The Merino Race*, known by the name of *Spanish sheep*. It is the most esteemed because it possesses properties which render it superior to the others; of this race in particular, I purpose to treat in the following work, although the instructions which shall be given may be equally applied to other sheep.

A persuasion prevails in France that the Merinos came originally from Africa; no satisfactory proofs however, can be given of the truth of this opinion. All that we know is, that they have a long time existed in Spain. We have imported them from that kingdom.

The merino is a distinct breed among sheep; as in the class of dogs, the Danish dog, the greyhound, the shag-dog, the lap-dog, &c. and, in the same manner as among dogs, the cross-breeds may afford individuals more or less approaching to the species, but never the species itself.

Its size, in Spain, when compared with other breeds, is neither the largest nor the smallest, but middling. From the extremity of the forefoot to the withers, it measures from 20 to 25 inches; in its greatest circumference, 3 feet and some inches; from the top of the head to the origin of the tail about 3 feet; so that its circumference is nearly the same as its length. when alive, it weighs from 30 to 40 kilogrammes; in equal bulks, it weighs more than most sheep of the common breeds; the rams are larger than the ewes.

In France, all these dimensions increase, according to the distance of time from the period of importation of these sheep, and in proportion to the care bestowed upon them and the quality of their food: a hoggit of eight months weighed 40 kilogrammes, and a too-toothed teg, 72 kilogrammes and a

half; both raised in the pays de Caux, a department of the lower Seine.

The shape of the merino is rather round ; its face is broad and not upright ; its back is not arched ; its body is broad ; its legs are short : some have dewlaps like that on the neck of a stag ; some have their cheeks, the lower part of their under jaw and their forehead entirely covered with wool, which sometimes extends to the eyes ; some also have folds upon their shoulders, their buttocks and neck.

The males have large hanging testicles, separated by a longitudinal crease very strongly marked ; they have thick broad horns, twisted in a spiral form and of great length : I have seen horns of this description which measured across from the extremity of one to that of the other, 20 inches ; the length of each, measured along its windings, was 2 feet. All have not horns : those which are without them do not form a distinct species, for experiments made during several years at Rambouillet and Perpignan, have taught us that if rams without horns produce rams without horns they also produce such as have horns, for which reason, the want of them should be considered merely a *lusus naturae*. Mr. Ollivier, who superintends the imperial establishment of the eastern Pyrenees, says that rams without horns may with certainty be obtained, if, during several generations, rams which have none be put to ewes the issue of rams in the same situation. I do not warrant this assertion ; experience alone must decide. Some ewes also have horns, but they are small.

The wool of the merino is what principally distinguishes it ; this wool is very fine, abundant, soft to the touch, very greasy, thick, somewhat spiral, elastic, not so long as that of the common breeds, and of a dirty and brownish white, occasioned by the dust and filth which adheres to it. The whole body of the animal is covered with wool, except the arm pits, the flat part of the thighs and a part of the face. The young ones, especially those of the second year, have it to the extremity of their feet. The skin beneath the wool of such as are healthy is of a rose-colour. It often happens that in sheep newly imported, one may perceive among the filaments of the wool, particularly on the cheeks, the top-knot, the buttocks and thighs, shining hairs of a bright gray, which are called *jarre*, or *dog's hair* : in France, careful proprietors cause these hairs to disappear, by preventing the copulation of such males or females as have them. This hair must not be confounded with that sort of down which often appears on new dropped

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lambs even of the finest breed; when they are two or three months old, this down disappears and is succeeded by fine wool; those which had the most of it are commonly the best sheep.

By means of the above characteristics, it is easy to distinguish a merino from a common sheep: but there is no way of distinguishing it from a mongrel of the fourth or fifth generation; the exterior resemblance is so perfect, that a person who wishes to be assured of a creature's being full-blooded must not trust to inspection alone.

The merino ewe may live twenty years, and even longer.— Such longevity is rare; many reach fifteen years, and continue to bear young all the time. The ewe commonly produces a lamb each year; sometimes she yields two at once; the ram might, with care, be employed an equal number of years, but there is more advantage in making use of none but those which are young.

If merino rams be castrated while quite young, and if they be fed in good pastures, their meat becomes excellent, and differs from other mutton only in being not quite so brown.— These animals are also capable of being made very fat and of producing good tallow. These facts were disputed upon the first introduction of merinos into France\*, but they have since been established by experience.

#### *Flocks of a single cross.*

Crossing the breed, was the first method which presented itself to improve the wool of our sheep; *Daubenton* started the idea and proved its utility; this mode was simple, easy, expeditious and economical. The existing flocks were not destroyed; on the contrary, they were preserved and made use of, and they were improved; all that was done, was to employ rams in covering that bore fine wool, in place of those whose wool was coarse. At first, people chose the best they could find in their neighbourhood; afterwards they went farther, without however going out of France; at length the government stepped in to the aid of private exertion, which it favoured by the introduction of flocks of merinos, and especially by that of Rambouillet,

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\* The butchers at first rejected even the mixed breed, in order to get them cheaper; now they buy them without hesitation, and at a greater price than they give for common sheep, if they buy them when their wool is long.

which was almost the first nursery, or at least the most productive, whence were taken those precious germes which have given life to our rural affairs.

I shall not mention the obstacles which were to be overcome before we could arrive at our present state of improvement, the difficulties which were presented by prejudice, habit, prepossession against every innovation, personal interest and dishonesty. As the evil becomes more distant, it should be forgotten, and the succeeding benefits alone attended to. When a great change is to be brought about, one must expect to meet with impediments.

The first improvers, on seeing the good effects of their crossings, which produced finer rams than those of the native breeds, were induced to employ them for covering, through motives of economy and because they hoped in this way, to be making continual improvement. Several generations were thus benefited; but what had been almost a matter of necessity in the beginning, on account of the scarcity of merino rams, which were not sufficiently numerous to answer the demand for them, has eventually become a real evil; a belief prevailed that at the fifth, fourth, or third mixture, according to the breeds, rams issued from cross-breeds might be regarded as full-blooded, as true merinos; they were made use of and sold accordingly.— This opinion, which appeared plausible in the infancy of improvement, but which it would be unpardonable to maintain now, spread itself with great rapidity; it was entertained by *Daubenton* and *Gilbert*: the former said it was of little importance from what country rams came, provided their wool was finer than that of the ewes which were to be crossed; the latter, actuated chiefly by the desire of seeing our coarse wool disappear, paid little regard to the disadvantages resulting from putting ewes with rams of a mixed breed. The error took deeper root from the authority of these two able men. It gained still farther credit by the beauty of the wool produced by the breeds which had been several times crossed, and by the resemblance of their form to that of merinos. It would have been better to suffer the improvement to advance more slowly than to endeavour to accelerate it by a method calculated in reality to retard it. It was therefore necessary to attack this opinion, and to oppose the proprietors of mixed breeds, in order to prevent farmers, upon whom they imposed, from buying their rams. The result has been, that the former, in consequence of their too great haste to become gainers, have no longer any confidence reposed in them, and that many persons have begun anew to cross their breeds by procuring full blooded rams from places where they are to be had with certainty.

It is known that, in the animal kingdom, the influence of the males upon the offspring is generally very great; it is particularly remarkable in the breed of merinos. Although in the union of the two sexes the male and the female both contribute to the formation of the foetus, yet the first generations possess, in a more striking manner, the characteristics of the male.— If it be wished to continue a remarkably good breed, care must be taken to choose, for copulation, no rams but such as possess the qualities which it is wished to perpetuate; by employing mongrel rams to cross common ewes, a breed will be obtained which, after becoming much more beautiful than that of the original ewes, will remain some time stationary, and will then degenerate; the influence of these dams, though long counteracted, will sooner or later be visible, and degeneration will be the consequence of it, because the rams produced by these crossings have in their blood a germe of maternal baseness which will by degrees display itself.

It is certain that offspring frequently, indeed commonly, resemble their progenitors more than their parents. The number of merino rams at present in France is so considerable as to render it inexcusable to prefer mongrel rams to them; whatever their price may be, it is far below the profits which they afford; it is known that a single male is sufficient for many females.

In order to make a good cross-breed, a sufficient number of merino rams must be chosen: in Spain, the proportion generally is one ram to fifteen ewes; in France, three to a hundred. The quality and number of the young which they produce, prove that more are not requisite. When in this proportion, they do not fatigue themselves and they may be preserved a long while. As to the ewes, the best must be taken from that domestic breed to which the preference is given: the wool of all the different breeds may be brought to the highest perfection; but some require a shorter and some a longer time\*. The breed of Roussillon is that, among the French breeds, which attains perfection in the fewest number of generations; in the third, its wool is as fine as that of merinos. I place in the second rank the breeds of Berry, Solange and Ardennes.— Their wool is thin, and the fleeces of the cross-breeds obtained

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\* In order to determine in how many generations and in how many years the wool of the different French breeds might be changed into very fine wool, experiments were set on foot by the Commission of Agriculture, first in Raincy park; they were continued at Sceaux, then at the menagerie of Versailles; they have since been removed to the veterinary school of Alfort, where they are still continued.

from them are not so heavy as those of several breeds whose wool is coarser; they are small, which is another disadvantage. Whatever economical calculations one makes, whatever breed of ewes one chooses, one should always, in beginning a cross, take the finest and healthiest individuals, from three to four years old. If a person desires to cross the breed of that part of the country in which he lives, and chooses sheep from among the flocks in his neighborhood, he has the advantage of being sure that the creatures conceal no latent disease, because he is already acquainted with them.

It is not uncommon in one generation, to have young sheep equal or nearly equal in beauty to their merino sires, not only as to the fineness of their wool, but also as to the shape of their body.

This however, is only an exception which does not destroy the rule. The great mass of lambs produced in this first cross, has only a certain degree of fineness, which increases in each succeeding generation, and its shape does not become perfect until the mixture has been repeated for several generations.

Care should be taken to castrate all the males of the mixed breed before they are able to get young, and to put the females to full-blooded rams. I repeat it, that without this care, the improvement of the breed will be retarded.

I before observed that this method of improving the breed of sheep, by means of crosses, was simple, easy, expeditious and cheap. It has now been seen how simple and easy it is, since all that is requisite, is to procure some merino rams, and among the native breeds to choose the handsomest and best ewes. The expedition and cheapness of this method may easily be shown. In fact, the benefit begins the first year, on account of the increased value of the lambs; to this profit must be added, the following year, that of the wool of the antenois.\* This twofold gain becomes afterwards still greater, by the continual improvement in the quality of the sheep and of the wool. The acquisition of a few merino rams and of a flock of one of the native breeds, is not above the means of the poorest farmers.

*Progressive Flocks. (Troupeaux de progression.)*

I supposed, in the preceeding article, that the proprietor of a flock of common ewes, bought only some merino rams, to

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\* In their second year, the animals are called *Antenois* by the French.

make a cross by uniting them with the ewes. In this way however, though great advantages result from it, he can have only a mixed breed; thirteen years must elapse before all his ewes are of the fifth generation, which time is necessary, if all the ewes with which he began the cross were of a breed which bore very coarse wool; only eleven or nine years are required if he employs breeds which already have a degree of fineness. At the end of this time, he doubtless enjoys a profit; but his stock is not yet become very valuable, because the price of the mixed breed is much below that of merinos. He is obliged, during that time, to renew his rams two or three times, for which he must pay dear, if he is at a distance from full-blooded flocks.— A more lucrative method would be, to form a *progressive establishment*, that should enable him to take his rams from his own stock, and to form gradually an entire flock of merinos.— This method, of which I am about to speak, has been perfectly well explained by Mr. *Morel de Vindé*, a correspondent of the Institute, in a tract upon the means of rendering general in France flocks of merinos. The operation is as follows.

Suppose a farmer has three hundred ewes of a common breed; let him buy, in order to cross them, a sufficient number of merino rams, and at the same time some females of that fine breed, suppose twelve or eight or even four. The capital required for this latter purchase will not exceed the price of the rams which he would be obliged to procure, in order to keep up his stock, if he followed the above described method of simply crossing the breed. By employing the mode here recommended, his flock, during the first years will be composed of two classes, 1. of male and female merinos, produced by the full-blooded rams and ewes; 2. of males and females of a mixed breed, issued from the union of merino and common sheep. His first care must be, without fail, to castrate all the males of a mixed breed, in order to sell them as wethers; he must for some time keep the females of the common and mixed breeds, and get rid of them gradually, beginning with the common breed and the mixed breed of the first degree, in proportion to the increase of the full-blooded breed. From among the rams produced by the full-blooded ewes and a full-blooded ram, let him choose the finest for covering, and dispose of the rest, either by selling them in the state of rams, or by making wethers of them. When the number of his female merinos amounts to three hundred, there is no longer to be found in his flock any sheep of a mixed breed.

In order to obtain this result, eleven years will be requisite, if the proprietor begins with twelve merino sheep; twelve, if

with ten ; thirteen, if with eight ; fourteen, if with six ; and fifteen, if with four. In case a great mortality should prevail and carry off a large number of full-blooded ewes, which rarely happens in flocks that are well attended, it will be necessary to wait one or two years more, to complete the number of three hundred ewes.

We have frequently advised the purchasers of merino rams, when they came for them from a great distance, to take also some ewes of the same race, in order to enable themselves to recruit from their own flocks, and thus to be spared from the trouble of journeys for the purpose of replenishing their stock ; this was but anticipating the useful views of Mr. *Morel de Vindé*.

By following this method of improvement, one may obtain, with a small capital, a very valuable flock and with no greater pains than would be required for one of a different race ; it will be handsome, productive and healthy, in proportion to the care taken by the proprietor to feed and tend it properly and to choose for covering the finest and healthiest rams.

It may perhaps be asked how it is possible accurately to distinguish the different generations. Nothing is more easy, if such marks be made use of as cannot be obliterated. For instance :

- The ordinary sheep, without any mark.
- The first generation, a hole in the right ear.
- Second generation, a hole in the left ear.
- Third generation, a hole in each ear.
- Fourth generation, without any mark ; for, by that time, all the ordinary sheep have disappeared.
- Fifth generation, a hole in the right ear : there are none of the first generation remaining.
- Sixth generation, a hole in the left ear ; none of the second generation remain.
- Seventh generation, a hole in each ear ; none of the third generation remain.
- Eighth generation, without any mark ; none of the fourth generation remain : and so on for any number of generations.

Instead of holes, slits may be made in the ears, and varied in different ways ; the holes are made with a punch. Whatever mark is employed, it ought to be made soon after the birth of the lambs, that no doubt may exist of the dams to which they belong.

It is to be wished that farmers who are able to purchase a few merino rams and ewes would prefer flocks of the nature we have just described to those in which the common breed is merely crossed ; and too much cannot be said to persuade them to apply, for merino rams and ewes, to the establishments formed by the government, or to individuals whose flocks are known to be of a very pure blood. Their success depends upon this precaution.

### *Full-blooded Flocks.*

A flock of sheep composed entirely of the full-blooded race is a stock far more valuable than one of either of the kinds above described ; whenever such a one can be procured, it ought to be done without hesitation. The abundance and quality of the wool, and the intrinsic value of the animals, whatever be the diminution of their price, are powerful and encouraging motives : in no way can money be more advantageously vested, provided the flock be well taken care of by its owner, or committed to the charge of some honest and attentive farmer who will not neglect it.

The circumstances in which France has been placed, have singularly favoured this species of establishment. The desire of proprietors of land to augment their fortune or to repair its losses, the diminution of the interest of money, the low price of corn for several years past, lastly the high price of merinos resulting from a general sense of the advantages which they afford, all these things have excited a desire to have flocks of this breed and to profit by their means.

That has taken place which always takes place when a branch of industry prospers ; on perceiving the gains resulting from the sale of merinos, rich merchants, and associations of private individuals, sent agents into Spain, to bring thence fine-wooled sheep into France. The choice made by these agents was rarely such as it ought to have been ; instead of making their purchases from the flocks distinguished by the beauty of their race and the fineness of their wool, they had recourse, for the most part to smuggling traders who furnished them with animals of an inferior breed : it would however have been very difficult to procure these animals in any other way as the great proprietors of flocks in Spain would not sell, for exportation, any of their spare sheep, and as the laws of the country prohibiting them from being sent abroad were very strictly executed. Before explaining the disadvantages of these furtive acquisitions, I shall mention the different kinds of sheep

found in Spain, and of the migration of those which twice a year change their pastures; these notices may perhaps be useful to undeceive those who think that the sheep which come from that kingdom are all of the same quality.

There are in Spain two principal kinds of sheep, *Transhumantes*\* and *Estantes*: the *Transhumantes* are divided into the races of *Leon*, *Segovia* and of *Soria*: the *Estantes* are so called because they do not migrate; a part of them contain a mixture of the blood of the transhumante, and consequently have fine wool; the rest are a base breed and carry coarse wool; these latter are called *Churras*. The transhumantes pass the summer in the northern mountains and in winter return to the plains of the south.

On a map of Spain may be traced the routes followed by the sheep which migrate. The leonese breeds, of which is composed the *Cavagne* (great flock) of *Negrete*, which is the most distinguished, after having been stationed during the winter near *Merida* in the province of *Estremadura*, on the left bank of the *Guadiana*, begin their march about the 15th of April, in divisions of from two to three thousand, they pass the *Tagus* at *Almarez*, and direct their course to *Villa Castin*, *Trescasas*, *Alfaro*, *l'Espinar* and other *esquileos* (houses for shearing), to be there shorn. After this operation is performed, each division sets forward towards the kingdom of *Leon*, to be distributed, in flocks of five hundred, among the pastures of *bervera*, near *Aquilar del Campo*. In this march, the flocks follow each other without any confusion; some remain upon the *Sierra*, a mountain which separates old from new *Castile*.

The *Sorian* breeds remain during winter on the confines of *Estremadura*, of *Andalusia* and of *New Castile*. These flocks begin to move about the end of April, pass the *Tagus* at *Talavera de la Reyna* and at *Puente del Azobispo*, and proceed towards *Madrid*; thence they go to *Soria*, from which place a part enter the neighbouring mountains, and the rest cross the *Ebro*, to reach the pastures of *Navarre* and of the *Pyrenees*.

The most esteemed of the *estante* breeds remain on the sides of the passes of *Guadarama* and *Somo Sierra*, and in the environs of the *esquileos* which are near *Segovia*.

Of all the breeds of sheep, those of *Leon* are without doubt superior to the rest, in shape, and in the quantity and quality of

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\* This word, without doubt, is derived from *trans* and *humus*; and signifies, what leaves one tract of country to go to another.



their wool ; and among these breeds of Leon certain shades of difference are found which give to some a superiority over the others.

The difference is very sensible between the leonese and sorian breeds, although the proprietors of the latter are careful to take their rams from the former. The price of sorian is always a third or a fourth below that of the leonese wool ; it has even been remarked that the sale of the sorian wool has diminished since the mixed breeds have been multiplied in France ; our best wool from these breeds greatly resembles the sorian wool.

I am indebted for these details to Mr. *Poufféré de Cère*, who has pursued his inquiries in Spain with equal zeal and intelligence. From what has been said, it plainly appears how much a person who wishes to form a flock of the finest kind ought to be on his guard against those who sell sheep imported from Spain as being of the highest breed.

It is from the races of Leon, either by immediate importations or by propagation from those importations, that the animals have been drawn which compose the establishments of the Government ; viz. that of Rambouillet, of Malmaison (Seine-et-Oise,) of Perpignan (Pyrenees-orientales,) of Arles (Bouches-du-Rhone,) of Saint-Genet-Champagnelle near Clermont-Ferrand (Puy de Dome,) of Saint-Georges-de-Ronains near Villefranche (Rhone,) of Ober-Emmuel near Freves (Sarre,) of chateau de Palan near Aix-la-Chapelle (Roer,) of chateau de Clermont near Nantes (Loire inferieure,) of Cere near Mont de-Marsan (Landes).

This circumstance alone, if there were no other motive, ought to inspire the public with full confidence in these establishments and in the animals which are there purchased. The same thing may be said of those which belong to individuals who have been careful to form their flocks of none but fine-wooled sheep which they have procured either from the best Spanish flocks or from the establishments belonging to Government, and which consequently may be safely depended upon.

All that have been smuggled into the country, have been procured from either the estante breeds, or from the sorian race, at the time when the flocks were in Navarre, and as near as possible to France. Any one may easily be convinced of this, if he will reflect upon the uncertainty which there was of success after penetrating farther into Spain, the difficulties attending

the purchase of them, the almost insurmountable obstacles which would have been presented by the revenue officers, and the price which it would have been necessary to pay for the animals. Besides having been taken from inferior breeds they have been driven by forced journeys, not only during the passage through the Pyrenees, but even after entering the Frontiers of France, with a view of increasing the profits and diminishing the expence. On their way they have been scarcely allowed time to take sufficient nourishment ; a part of them have died the first and second years, and the remainder have had nothing but abortions ; it is only by culling out individuals, by excellent and abundant food, and by purchasing fine rams in the flocks of the breed of Leon, that French proprietors who had procured sorian or estante sheep, have at length become able to offer handsome flocks to public view.

It appears from the above remarks, that all sheep which come from Spain are not of the same quality. At some future period perhaps in France these different breeds, after having intermingled and after undergoing some changes from the mode of treating them, may form a distinct and peculiar race which may in some sort be considered as national. My only object, in what I have now said, is to shew that two different breeds of merinos are found in Spain, and have thence been exported, and that one of these is preferable to the other.

The error therefore which is run into when a flock is formed of sorian or estante sheep, is in some measure reparable. They may be meliorated, as I have said, by rams of the best breed ; but this will not be the case if rams of a mixed breed be employed : however pure the females may be to which they are allied, a degeneration is justly to be feared. When we reflect on the fault of those who, by chance or through a mistaken economy, buy sheep from flocks originally ill composed, without examination or inquiry, we can only pity them and regret their want of care.

I have dwelled upon this matter, on account of its great importance and because of the retardment which is in this way generally given to the improvement of the breeds : I thought that it would be rendering a service to agriculturalists to give them all the light possible on this subject.

A flock of merinos, to be in full perfection, should be composed of rams and ewes of from three to five years old ; this is the age at which they are chosen when they are bought in Spain : If taken younger, they would with difficulty perform the

journey; at a more advanced age, the advantages resulting from them would not be sufficiently lasting to defray the expences incurred. At the sales made from the different establishments belonging to government, many purchasers reject the old ewes; while others prefer them, because their wool is finer; they are more likely to produce fine lambs; they are better mothers. The young rams are preferred to the old, because they have more vigour. In both sexes the power of propagating commences before the age of three years, and continues a long time. If the ability to breed began late and continued but a short time, the profits of the proprietor would be too trifling. It is difficult to purchase a sufficient number of sheep of the proper age when one is forming a flock. Neither the Spaniards nor the proprietors of merinos in France sell them so well sorted. If they did so, they would injure their stock, and would have remaining none but inferior animals of which they could never dispose. For the most part, the old ewes alone are offered for sale.

Some persons are in the habit of dividing the ages, and of offering to purchasers a fifth or a fourth consisting of animals of the second year, and of other ages, up to six years; in this way an equality is maintained in their flocks, and they never have more than a small number of old sheep.

There is no country in Europe in which the merinos do not succeed. They have been tried in all parts of France, in the south, in the north, in the east and in the west, in the plains, in the vallies, on the hills, even on lofty mountains, near the sea, in situations exposed to all the violence of the winds, and in such as are sheltered from them.\* Nowhere, if properly attended to, do they suffer or degenerate; some have even been known to preserve their form and their original characteristics; after having been purposely abandoned in islands during several years.

We cannot have among us flocks as large as those which they have in Spain, except in places where there are extensive pastures. We already possess a great number of merinos divided into many small flocks, and we shall in time possess still more. They are most easily reared in well cultivated grounds, because food for their support may be there procured at all times.

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\* The local situations of several establishments belonging to government afford examples. Those of Perpignan, Arles and Mont-de-Marson are in the South; those of Trèves and Aix-la-Chapelle, in the north; that of Clermont is near Puy-de-Dôme, and in an elevated country; that of Nantes is not far from the sea and on an eminence, &c. The flocks in these establishments do very well.

Generally speaking, wherever common sheep can be kept; merinos may be kept equally well; and instead of a flock which is worth but little, the advantage is obtained of possessing one which is very valuable.

Sheep of a small size should be preferred where the pastures are scanty, the soil dry, and fodder scarce; or a smaller number should be kept.

In hilly grounds, or such as, though level, are dry, chalky, or sandy, there is no doubt of their success, provided they can find sufficient nourishment.

When the land is divided into hills and vallies, they ought to do still better because they may be led to different parts according to the weather or the season.

Very wet lands, in which common sheep die with the rot, or are fattened and changed yearly, do not answer for merinos.— Yet it may be remarked that the sheep-grounds of Rambouillet are of a clayey soil, that there are woods, ponds and other pieces of water, and that the animals are consequently exposed to fogs and moisture; some few spots only are higher than the general level; but constant care and attention and good nourishment during the winter, have vanquished the natural disadvantages of the situation. In cases of this nature, the water must be drained off, and meadows formed, capable of affording abundant food to the flocks; when well fed, they are less subject to the rot.

There is a very numerous description of men, to be met with particularly among farmers, who reject without examination or reflection whatever is new, or not known to them, or announced by persons who have never followed the plough. Distrust is not in itself blameable, it is frequently a safeguard; but it ought not to be carried too far. Many objections were at first made to the introduction of merinos into France, which objections are now all done away, and these animals have already been propagated there very extensively; for the force of truth has prevailed, and the advantages which they have been proved to afford have opened the eyes of many proprietors of flocks, who at first confidently maintained that they could not succeed. I will mention but two of these objections. It was said that they would degenerate; because they would no longer enjoy the food and climate of Spain, and because it was supposed necessary to remove them yearly from place to place. This opinion is unfounded; an experience of twenty three years, afforded

by the establishment of Rambouillet, proves that in France the merino wool preserves all its fineness, that its length is increased, and that the fleeces are larger; they live very well upon the grasses produced by the soil of France; their health does not require that they should remove from place to place; in Spain they migrate like some species of birds, for the purpose of finding something to live upon; in summer they would die of hunger in the parched plains, and in winter it would be impossible for them to live upon the mountains covered with snow. It is therefore through necessity that they remove from place to place; being in this way plentifully fed, they acquire a healthfulness which has an effect upon their wool; but if well fed without travelling, the effect is the same. They accommodate themselves with great facility to a new climate; the race, and not the country whence it comes, is the only thing to be considered.— It remains the same in whatever part of the globe it is transported. The young of the first imported merinos resembled their parents; and the successive generations have not differed from each other: it is proved that, unless it be adulterated, this race will continue the same as when first brought from Spain. Many instances might be produced; it will be sufficient to mention that the Rambouillet flock, imported in 1786, has, in twenty three years, lost none of the qualities which it had on its arrival from Spain. The wool is equally fine;\* the form of the animal is well preserved, and has become more marked than it was: the size is augmented; the fleeces are heavier, and the animal is more fleshy. The merinos, instead of degenerating, are rather improved; which is not surprising, upon the principle that animals thrive as they proceed northward.— The care of land holders in France has doubtless contributed much towards this improvement. It must also be remarked that the atmosphere of Spain is subject to inconveniences which seem to belong peculiarly to less southern regions, namely, late colds and snows; that by migrating, its flocks continue in a temperature little different from that of our own country: and that the soil of Spain is in general more elevated than that of France.

The second objection is directed against the attentions required by the race of merinos. It has been said that they require much more care than the indigenous breeds: upon these latter very little was wont to be bestowed, although it would have been for the real interest of the proprietors. When com-

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\* I have specimens of wool taken from Rambouillet, year after year, without interruption, from 1786 to the last shearing inclusive: it is easy, by inspecting them, to perceive the truth of what I advance.

mon sheep fell sick, the danger of losing them caused no anxiety; they were either carried off by the disease, or cured by the unassisted power of nature; in winter, they were kept shut up in suffocating houses; in summer they were led to pasture on all sorts of ground; they were worried and sometimes killed by dogs; they were entrusted to children who paid no attention to them; and they were but scantily fed.—It is easy to perceive that a flock of merinos cannot admit of such negligence, on account of its much greater costliness; their thick wool renders them subject to be incommoded by insects which conceal themselves in it, and to get the scab, which, by a little attention, may be prevented or cured. They require fresh air in their houses, they should be kept from unwholesome pastures, & from the neighbourhood of flocks which are infected with contagious disorders; they should be conducted to the fields with gentleness; and they should be well fed: these attentions are necessary in order to keep them in health and to obtain from them an increase which may compensate the expence and trouble indispensably required by them. The objection which I combat is dictated solely by the negligence of the proprietors and the slothfulness of the shepherds. Merinos, far from requiring greater care than a common flock which is well kept, can endure more than any other race, by reason of their native hardiness and longevity: they only who were in the habit of neglecting their flocks, complain of the care which the great value of merinos obliges them to bestow.

One cannot calculate with certainty either the immediate or the future profit resulting from a flock of merinos; it depends upon the price at which they are bought and at which they are sold; upon the judgment of their owners and the confidence which they inspire. Their wool will always be superior to that of the native breeds, both in quality and in quantity, and will deserve that a preference should be given to it. Moreover, the advantages obtained from the rearing of this fine race, will be increased in proportion to the ease and cheapness with which food and persons to tend them can be procured. Artificial meadows will be one of the principal means of economy.

### *Management of flocks.*

A flock may be managed in three ways; 1. by one's own superintendance, on one's own farm or a farm worked by one's self; 2. by hiring a farmer, pastures and sheep-houses; 3. by placing a flock out on shares \*

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\* The French word for this contract is *Cheptel*.

The first of these methods is that in which the animals are always attended with most care; vigilance is there prompted by personal interest; the eye of the master, which gives life to every work, is open to the minutest circumstances; the shepherds commit no blunders, or, if any are committed, they are immediately checked and corrected. Diseases rarely spread among flocks thus managed; those to whom they belong, besides an abundance of manure with which their grounds are enriched, obtain every year valuable fleeces, and see their profits increased by the birth of fine lambs.

The advantages of the second method are not so great; they are however considerable: it is well suited to a capitalist who, not wishing to risque his funds in commercial enterprises, would rather expend his money in the purchase of sheep, and thus put it to a sure and legitimate use. His profits arise from the sale of his wool and of a certain number of animals each year, which, after deducting all expenses, afford a surprising income, much greater than any other speculation. The farmer who thus takes another person's flock, receives for his share the rent of his pastures and folds, the manure afforded by the sheep, both in the pens and in the sheep-houses, for which latter he need give nothing but straw, and of this he cannot make a better use; he incurs no expence, has no wages to pay; without making any disbursement, he obtains the means of diminishing his ground-rent and of enriching his land. Sometimes, instead of being obliged to carry to a distance and over bad roads his surplus fodder as well as some sorts of grain, he finds a sure market at home, in the flock that is stationed on his own farm.

A farmer may, indeed, be negligent of this stock which does not belong to him; it is to be feared that he may have an understanding with the shepherds, so as to keep the sheep penned too long, to leave the dung in the sheep-houses longer than is consistent with the health of the creatures, and perhaps to retain for his own use a part of the fodder for which he is paid and which he ought to furnish. These inconveniences must be avoided by looking out for honest and careful farmers: and fortunately a great number may be found who deserve the utmost confidence; there are even some who make it their business to attend themselves to the flocks which they take, and who do not give the owners reason to regret not being able to attend to them in person, nor to visit them as frequently as they desire.

To place a flock out on shares, is to give up, during a certain time, fixed by contract, a part of its products, in order to pre

serve the main stock. This species of contract is very common, both for lands and for cattle, in a great part of France ; and laws have been passed to regulate it, and to prevent difficulties from arising between the contractors ; that is, between the farmer who takes and the proprietor who lets out the flock.— This method of managing stock is advantageous both to the owner and to the receiver ; to the owner, by enabling him to have a flock without being obliged to attend to it himself, or to buy or hire a farm on which to place it ; to the receiver, by affording him an opportunity of acquiring a stock, little by little, in a few years, merely by care, by supplying food, and by paying for the necessary labour. In agreements of this kind, the interests of the two parties are so allied that the absence of the owner does not endanger the flock which he has let out.

*Conditions on which a FLOCK is put out on shares, and what is to be expected from this contract.*

This contract may in general be considered in two points of view, 1. with respect to the immediate value of the animals which are entrusted to a farmer, and that which the increased stock will have at the expiration of the contract ; 2. with respect to the situation of the farm on which the creatures are to live.

If ewes of a common race, and some merino rams for the formation of a mixed breed, be given on shares to a farmer ; as it is certain that the young ones will have qualities not possessed by their dams, if the farmer receives, during the contract, half the produce in wool and wethers, and, at its expiration, half of the whole number of animals, he will gain more than the owner.

If the flock, when first put out, is of the first, second, third or fourth degree of mixture, the owner, in the division both of the annual sales and of the flock at the expiration of the contract, ought to have a somewhat greater share than the farmer, because he paid more for these sheep than he otherwise would have done, on account of the breed being crossed.

Many farmers are desirous of having merinos on shares ; but they do not wish any preliminary estimate to be made and to be taken into account at the expiration of the contract ; they insist that an equal share of the products and of the whole flock ought to be given to them, as no more than a fair compensation for their expense and trouble ; they say moreover, that the wool and the merinos may fall as well as rise in price, so that



if the owner, on the final division of the flock, should take a number of animals equivalent to his original disbursement, he might perhaps take nearly the whole flock : so that the farmer, in his share, would not have sufficient to defray his expenses, and would consequently suffer an injury. On the other hand, the proprietor, who knows how to calculate as well as the farmer, would think himself much wronged if, without making any valuation of the sheep, he were to suffer the farmer to take half the profits arising from the sales during the continuance of the contract, and to make an equal division with him of the animals at its expiration ; for instance, suppose he puts out on shares two hundred merino ewes and six rams, which, at 200 fr. each, cost him 41,200 fr. he cannot consent to make a present to the farmer of 20,600 fr. and lose, for his sake, the interest which he might have gained upon that sum if it had been otherwise employed. The farmer's pretensions are unreasonable, in as much as he demands an equal division, without being obliged to restore the value of the original stock. We have every reason to suppose that the price of the wool and of the animals will, with some variations, be kept up a long while. If their value was fixed, estimates would be made, as in all leases, at the time of concluding the bargain, and the usual course would be pursued. In the mean time, to obviate the inconveniences which I have just mentioned, and that justice may be done to the owners as well as to the farmers, it appears to me, 1. that when common ewes with merino rams are put out on shares, an estimate ought to be made, and an equivalent to be taken by the owner when a division of the flock is made ; 2. that, setting aside this estimate and this equivalent when the sheep are of a mixed breed, the portion of the owner ought to be about a seventh more than that of the farmer, if the breed is crossed but once, a sixth if crossed twice, a fifth if crossed four or more times ; 3. that, in like manner renouncing the estimate and the equivalent when the sheep are merinos, the owner ought to take three fourths of the profits and of the animals, if the flock be placed at a distance from towns which afford a market in which fodder may be disposed of; or two thirds, if it be in a situation where every thing is dear.

Another contract of this nature has been mentioned to me ; it does not encroach upon the funds of the proprietor, yet it is advantageous to the farmer. The conditions are these ; suppose that seven hundred ewes and six rams of this race are put out ; the contract is for twelve years ; the farmer engages, for a certain time, to pay the wages of the shepherds, to furnish them and their dogs with food, to provide the flock with lodging, fodder, provender and necessary pasture and to have it shorn and, in case of sickness, tended at his expense ; the increase

