

ditional food had been given so as to supplement the ordinary supply. These cases unfortunately occur more frequently at a time of the year when the severity of the cold increases the damage; but on every principle of economy they should be very carefully guarded against.

#### INFLUENCE OF CLIMATE ON WOOL GROWTH.

The climate also exerts a great influence on the growth of wool, and if it has to be produced of good and even quality this agency must be duly considered. It has been already mentioned that the pores of the skin act as a sort of gauge for the wool, and it is therefore perfectly clear that if sheep are so much exposed to cold and wet as to allow the skin to become chilled, the size of the wool must be reduced thereby; the extent of the damage is consequently regulated by the intensity of the cold. For this reason, shelter from the full force of the cold winds is found to improve the staple of the wool, and prevent, in some degree, this inequality in the size of the fibre. Injury arising from the wet shows itself more generally by giving the wool more the character of hair, and thereby injuring its felting properties. The excessive heat of summer has just the opposite influence. The warmth of the skin being considerably increased, the pores become more open, and a coarser wool is produced. The injury thus occasioned is far from being as important as that arising from cold and wet; but still, if we desire to produce wool under the most favourable circumstances, we must give shelter from extreme heat as well as from excessive cold.

#### IMPORTANCE OF BREEDING.

However much by judicious management we may enable a flock to produce wool under the most favourable circumstances, it is perfectly clear that the natural character of the breed will be a very important agency. Management will go far to favour the growth of good wool; but it certainly cannot do all we need. Hence the importance of securing sheep which are of a suitable breed, and from which we may be sure to obtain wool of the desired quality and weight. The value of long-continued and careful breeding is shown as forcibly in the wool as in the general form of the body. These flocks which, for several successive generations, have maintained one steady and uniform character of wool, offer the best source from which to breed when it is desired to improve the wool of any flock. The buyer should not look for rams suitable for this purpose without duly considering the previous history of the flock from which they may be selected. Many a sheep possesses the external qualifications desired—so far as the eye is able to judge—but unless the flock from which it has been obtained has been carefully bred, the buyer will probably be disappointed. The value of a good wool is a strong inducement for making its growth as abundant and as good as the local circumstances of a farm will allow.

#### Rearing Calves.

The following extract from a work on cattle and cattle breeding, lately issued in Scotland, from the pen of Mr. W. McCombie, of Tillyfour, contains many practical suggestions, which if they do not suit the dairy farmer in this country, will be useful to those who are more anxious to raise good stock than to save their milk. The experience and success of the eminent writer entitle his opinions and advice to great consideration, and all will be interested in learning the treatment that in his hands has proved so satisfactory. He says:—

“If the calf is to be milked from the hand it should be taken from the cow as soon as it is dropped, and before the mother sees it; if allowed to remain with the cow for some time and then removed, it will be a cause of great irritation to the mother and very prejudicial to her milking. When it is to be suckled, the calf should be left quietly with the cow; and by licking the calf and eating the placenta the cow will be settled, the calf will get to it legs, and all may be expected to be right. A warm drink should be given—cold water must be avoided—and the cow made comfortable. She should be milked out after first suckling, and this will require to be repeated two or three times a day for a few weeks, until the calf is able, and can with safety be allowed, to take all the milk. In a day or two after the calf is dropped it ought to be muzzled, and allowed a limited time to suckle the mother three times a day. It must not be allowed a full allowance for the first fourteen days after birth. A confidential servant must remove the muzzle, stand beside the calf until it has taken a safe allowance, and then return the muzzle. When the calf has got the cud, which will be observed about fourteen days after its birth, it will then be safe to remove the muzzle. I muzzle all my calves to prevent their eating straw, hair, etc., which they cannot digest, and which accumulate in the stomach and prove the death of the animal. Many thousand calves are lost in this way, the owner never suspecting the cause. If the calf is opened up after death, there will be found in the stomach a large, firm, round ball, composed of straw, hair, and other substances, with knots of curdled milk conjoined. After the calf has got the cud, and is fourteen days old, it may be allowed to suck at pleasure. It must be seen, however, that the calf has ability to clean out the udder of the cow; be part of the milk is retained, the cow must if milked by the hand.

“Plenty of good milk is the proper foundation to make a good animal; if stinted when a calf, a year's growth is lost. Selling a great deal of butter and rearing a good bullock are incompatible. Good calves are milked from the pail, and they thrive better after they are weaned; but it will generally be found that the sure way to make first-class calves is to allow them to suckle. There will be many

drawbacks at the expense of the calf if it is brought up from the pail; drafts will be required by the housekeeper for milk, butter, and cheese for the family, which cannot be made if the calf is suckled by the mother in the field. The plan adopted by some of giving skimmed milk to the calf cannot be too much reprobated; and to give old milk to a newly-dropped calf is perfectly preposterous; it is unnatural, and will probably prove the death of the calf.

“The calf should be allowed to suckle or be fed from the pail for six or eight months. It has then strength to stand weaning, and if properly cared for, will not be checked in its growth, and it will retain the good calf-flesh it has put on. The loss of the calf-flesh can not be remedied, and great care should be taken to avoid this. If the calf-flesh is lost, the animal will be reduced in value, and can never be made to yield first-class meat. Great care, therefore, must be taken by the breeder when his calves are weaned.

“To guard against black-leg, the calves should be immediately corded in the dew-lap, and receive, along with other nourishing food, each one and a half pound of oil-cake a day. This treatment is absolutely necessary during their first winter. The open straw-yard for calves is of great importance. If they are kept regularly going on, black-leg will be prevented. While proper treatment is adopted, there will be little to fear from that dreadful scourge.

“I have never lost more than two of my breeding stock from quarter-ill. There is no question that the cause of this dreadful malady is sudden transition from a restricted diet to a full and nutritious one, from a poor pasture to a rich and luxuriant one, or from a poor pasture in autumn to a full allowance of turnips; the increase of blood on the system is so great that the constitution cannot stand it. I have seen almost every calf on several large farms carried off by black-leg. There is no secret as to its prevention. Keep the young calf gradually growing, never let him want; give one to two pounds of oil-cake a day; and keep up the irritation by cords with a good hold of the dew-lap. After the first winter black-leg is little to be feared. I have had a case or two in two or three year-olds, but it is very uncommon. Prevention is the only safeguard, for I have never seen black-leg cured. To some, one to two pounds of oil-cake a day may look an expense that the calves cannot repay; but if any of my friends will divide a lot of their calves, and give the one lot turnips and straw, and the other turnips, straw, and one to two pounds of oil-cake daily to each calf, if they are dissatisfied with the result on the 1st of May, I shall pay the balance. I shall not enter upon the point of the great additional value of the manure, but leave that to the chemist.

“I allow my calves to suckle till October, and the late ones two or three months longer. Butter, and even corn, are but secondary to our cattle, and in these days of progression we must advance with the times or go down.”