

pure Southdowns had been introduced to flocks of the established Shropshire stock. In each instance the flock "went all to pieces," as it was termed. This was a lesson for the possessors of flocks which had been cultivated for many years on the lines above described. Out of this discussion, too, came the conclusion that dark points of uniform colour, with the largest possible size of frame, were the correct objects to arrive at. The more experienced and consistent breeders came to this conclusion among themselves about the time of the "Royal" Battersea show in 1862, and most admirably have they carried it out by their skill in the art of selection.

It may seem odd at first sight to some breeders to read of a uniformity of black or dark brown faces and legs, when it is allowed or asserted that strains of the white-faced Leicesters have been introduced into flocks; but this is just a point which throws a light on two leading features connected with breeding—(1) on the skill of the modern flockmaster, and (2) on the way animals of a mixed breed will "breed back" from the strains of their ancestors of many generations ago. Take the latter point first. It occasionally happens in the best flocks of Shropshires that a lamb appears with a long, wavy, "open" or "watery" fleece. This is a clear indication that Leicester or some other Longwooled breed was introduced to the Shropshire flocks at some remote period. The symptom appears as scrofula or other blood poisoning does in the third or fourth generations of mankind. The way, however, these "open" coats have been made exceptional brings us back to our first point—viz, the skill of modern flockmasters. When the long wool appears, it is generally accompanied with a speckled, or what appears to be a halfbred, face. Whether the lamb be male or female, it is at once discarded from the flock and fed for the butcher. In this has consisted the judgment, care, and skill of the modern breeders of Shropshires, who have brought their flocks to their present state of uniformity.

There are six or seven leading breeders whose names may be mentioned, as they have been so consistent among themselves that their flocks are nearly all alike in uniformity of type and general character. These are Messrs. Crane & Tanner, Shrewsbury; Messrs. Minton, Montford; Mr. John Evans, Uffington (all of whom live near Shrewsbury). Then there are Mr. Thomas Mansell, Harrington, near Shifnal, and his son at Dunmaston, near Bridgenorth; Mr. W. J. Nock, Sutton Madock; and Mr. T. Keen, Downton, who believes in size. Mr. John Darling, Beaudesert, near Rugeley, is now the possessor of the descendants of the Marquis of Anglesea's old Cannock Chase flock above mentioned, and he is showing much spirit in endeavouring to develop it so that it shall be second to none, either in Staffordshire or Shropshire. Mr. Joseph Beach, too, The Hatton, Breewood, near Wolverhampton, inherited a flock that has been bred on the lines settled down upon by the older breeders above mentioned. We remember having a conversation with the late Mr. Joseph Beach some fifteen or sixteen years ago, when he was enthusiastic in favour of the larger size and uniformity of colour. The way this flock has been improved by selections is alike creditable to father and son.

As an instance of the growing popularity of the best of the flocks of these sheep, it will not be amiss to mention a few recent prices. Last year Mr. John Darling hired Dudmaston Hero at 160 gs. A few days ago the same sheep was sold as a two shear at 200 gs. Another sheep was let for 100 gs. As Mr. Mansell's flock possesses strains of the flocks belonging to the above-mentioned breeders, these prices will suffice

to show the high appreciation in which they are held.—W. W. G.

BUTTER MAKING.

Dr. Voelcker, the eminent chemist of the Royal Agricultural Society of England, delivered a series of four lectures on the "Principles of Butter-Making" at the recent annual exhibition of the society at Derby. We condense the following paragraphs from reports of the lectures:

"Cream consists of a certain proportion of water and fatty matters, and a small proportion of casein. If this latter element were absent, the principal difficulties in the way of butter-making would be at once overcome, because it is due to the rapidity with which casein turns sour that butter obtains the rancid taste which we sometimes detect. If by any means we could separate the fatty matter from this casein or curd matter, we should get excellent butter; and it is on this account that I believe dairy farmers will never obtain the first quality butter from whole milk, certainly not the same quality as that which is obtainable from cream. (1) The composition of cream varies greatly, and the same remark applies to the fatty matters of which it is constituted. This circumstance I attribute in a very large degree to the feeding of the cows. Nobody, for instance, can feel any astonishment that when cows are fed upon turnips, swedes, and mangels, there is a more or less disagreeable flavor in the butter made from the milk of such cows. In my opinion, the best flavored butter is made from the milk of cows fed, not upon rich pastures, but upon what are generally considered poor pastures; that is to say, those with scanty herbage, such as is to be found upon the hilly land which abounds in this county. By rich pastures I mean pastures which produce a large bulk of grass, but which are not composed of a great variety of herbage. The richer the quality of the cream, the richer will be the quality of the butter made from it.

"It has been said, with a good deal of truth, that by overmanuring pasture land we reduce the fine quality of the butter made from the milk of cows fed upon such pasture. My belief is that the finest quality of butter is produced from pasture which contains a great variety of herbs, some of which might even be ranked as weeds. The question is, Can ordinary pasture produce first quality butter? and I answer, 'Decidedly, if you take proper precautions to prevent the cream turning sour before it is churned.' This sourness, let me repeat, is the great hinderance in making high-class butter. Many persons deem this a small matter, and unconsciously allow the cream to get somewhat sour before making butter; but if you desire to produce good, sweet, keeping butter, you must churn cream as sweet as possible.

"But how are you to prevent cream getting sour? In the first place, you must carefully look after all the people employed in and about the dairy, to see that they always have the importance of cleanliness before their eyes; and above all see that those who milk the cows do so with clean hands. Secondly, you should be sure that the cows are perfectly 'stripped,' because if this is not done it is the means of sowing the germ of rancidity. Then, when the milk is drawn from the cow, it ought to be cooled down directly to about 55°, so as to take the animal heat from it.

"As to the questions of shallow or deep pans for setting for cream, I am an advocate for the use of deep ones. After being filled with milk, these pans should be placed in a vessel containing water—ordinary pump water answers well—for twelve hours; or, if the milk is extra warm, a little ice may

(1) The Dorsetshire plan coagulates the casein, and it is subsequently got rid of in the washing. A. R. J. F.