

the house." Professor Wrightson, in his handbook on "Live Stock," says: "The Ayrshire cow is the very type of a milking animal, being long and narrow in the head, angular in form, thin of flesh, and is deservedly popular;" and Professor Long asserts in his book, "The Dairy Farm," that "three Ayrshires can certainly be kept for the cost of two Shorthorns." This cumulative testimony from various sources—all of them outside Scotland—sufficiently warrants the position in which we have placed the Ayrshire, as the foremost of the distinctively dairy cattle of the British Isles. Let us now consider the history of the breed.

William Aiton's "Survey of Ayrshire", published in 1811, is the standard work of reference as to the origin of Ayrshire dairy cattle. Aiton was a native of Ayrshire, who practised as a writer in Strathaven. His work is valuable and interesting; but in dealing with live stock he has a favorite theory which he pushes to the front on all occasions. Briefly stated it is this: Outside crosses have done little or nothing to improve the breeds of live stock. At one place he strongly argues against the notion that any foreign cross had done much towards the improvement of the Ayrshire. His words are: "The dairy breed of Ayrshire is in a great measure the native breed of the country improved in size, shape, and quality, chiefly by judicious selection, crossing and coupling, feeding and treatment, principally carried on by the inhabitants of Cunningham, or the northern section of the county. The breed is known first to history as the Dunlop breed, and the oft quoted adage,

"Kyle for a man,
Carrick for a coo,
Cunningham for butter and cheese,
And Galloway for 'oo,"

plainly points to the existence of a superior dairy breed in Cunningham at a comparatively early time. A district famous for dairy products must have been favored with a superior race of dairy cattle. The cows of Carrick referred to in the rhyme were not dairy cattle, but the beef-producing Galloways. While, therefore, I am not disposed to quarrel with Aiton's main contention that the influence of improved methods of selection, mating, feeding, and treatment by the farmers of Cunningham had had a most beneficial effect in improving their cattle, I would be disposed to expand the theory, and contend that farmers and breeders who were so enlightened were the very men likely to avail themselves of the service of an imported cross when it came their way, and to secure its full advantage by the adoption of all the means of improvement specified by Aiton. In other words, I believe the correct view to be that both instrumentalities were employed to form the celebrated west country breed of dairy cattle, and that the use of stock of a superior character for crossing would have been of but transitory benefit, had it not been followed up by the means which the Cunningham farmers are said by Aiton to have adopted. It was a local proverb: "The cow gives her milk by the mou", and this is a saying which clearly points to an appreciation of the benefits accruing from generous treatment of the milking stock.

The outside influences which Aiton says were introduced were probably English or Dutch cows and bulls of a size greatly superior to the native breed in the country; and he argues that better results were secured by crossing imported cows with native bulls than by crossing native cows with imported bulls. There is no reason to believe that the native cows of North Ayrshire were in any way different from the pre-historic cattle of the West of Scotland, and it is in accordance with the analogy furnished by the history of other breeds to conclude that the Arran cow—a reduced and deteriorated example of the Kyle, perhaps not quite extinct—gives a fairly good idea of what the native breed of Ayrshire would be like. It has been pointed out that the formation of the Ayrshire horn suggests a Kyle affinity, and Aiton says that until about the year 1780 the prevailing color of the Cunningham cows was black, with some white on their face, belly, neck, back, or tail. This is as nearly as possible the description of an Arran cow whose portrait, taken about 1820, we remember to have seen. At the same time there is much good sense in the suggestion of Professor Wallace, of Edinburgh, that the wild white cattle whose remnants browse in the Cadzow forest may have mingled with the native cattle of North Ayrshire, and that to this influence may be referred the presence of those superabundant white colors which have cropped up in the breed and are not wholly desirable. The recurrence of such examples in atavism is not unknown in the history of breeds, and indeed it is one of the best instruments at the disposal of the breeder, as its possibility affords him a ground on which to work should he wish, by the use of suitable means, to recover a quality once possessed by a breed, but now dormant. It is at least certain that white colors predominate in Ayrshire now, because there is something in the early constituents of the breed of this character which responds to an affinity at present active in its constitution. The white cattle of Cadzow were not always confined to their present narrow limits; they once roamed at will in the Strathclyde forests, and there is no reason to doubt that there may have been intercrossing between them and the early Kyles of North Ayrshire. This theory is strengthened by the fact that while the remains of the wild white cattle which are to be found at Cadzow, Chillingham, and Chartley are, as is the case with all wild breeds, deficient in milking pro-

perties, an intermediate breed exists at Somerford Park, in Cheshire, which bears a striking resemblance to the wild breeds, but differs from them in this—that the members of it are polled, and that they are remarkably deep milkers. The average yield of milk for each cow in the herd is three gallons per day, but individual cows appear now and then which give when in bloom as much as fourteen quarts at a milking, or three and a-half gallons in the day. There are also remains of a somewhat similar breed possessing the same characteristics in Norfolk, and the conclusion to which the possession of these qualities point is, as Professor Wallace remarks, that there existed a superior power of milk-production in the aboriginal races of our islands. To what this may be attributed we do not at present stay to inquire. The facts adduced, I think, warrant the conclusion that the breeds specified may have had something to do with the creation of the Dunlop breed, whose products were proverbial, and whose modern development into the Ayrshire breed it is now our purpose to trace.

In 1750, or thereabout, the Earl of Marchmont, who held estates in Berwickshire and in Ayrshire, purchased and imported several cows and a bull from Durham or Yorkshire, which were of the Teeswater, or, in other words, the Holderness breed. These were brown and white in color, and their superiority was such that to them Aiton traces the popularity of these colors amongst the improved Dunlop cows. Bruce Campbell, who was factor on the Marchmont estates, in Ayrshire, brought some of the Durham cows to Sorbeg, in Ayrshire. They there proved themselves to be superior to the native breed, and a bull of the stock, after crossing with many cows about Cessnock, was bought by Mr. Hamilton, of Sundrum, and left a numerous progeny in that part of Ayrshire. This piece of history, therefore, clearly points to an improvement having been effected by means of cattle of the same breed as that which formed the foundation of the improved Shorthorn. In Ayrshire their properties were developed in the line of milk production, whereas in the Teeswater district they were developed with a view to the production of beef.

SCOTLAND YET.

Chatty Letter from the States.

The dearth of really prime beef cattle at market these days is a subject of general comment. Farmers and feeders have been so many times disappointed that they are doing less feeding than usual, and so if there is an increase in prices it will, as usual, redound to the benefit of the few.

Distillery cattle feeders are of the opinion that they will find money where they lost it last year, and a good deal more than they lost, too.

Native "beef cattle" were extremely low a year ago, the bulk of the 1050@1250-lb. steers selling at \$3.35@3.75, and most of the 1300@1500-lb. steers at \$4.10@4.50. Considering quality, present prices are about \$1 per 100 lbs. higher than a year ago, when plenty of 1450@1530-lb. steers sold at \$4.10@4.40, good 1250-lb. Kansas steers at \$3.75, and 1195-lb. beef cattle as low as \$3.00.

The London and Liverpool cattle markets do not act to please the cattle shippers. The recent advance was all too quickly lost.

Hogs are the highest they have been since 1883. Ten years is a long time, but it has been that length of time since hogs sold above \$8, and \$8.10 was the top notch then. The cause of the high prices for hogs is not far to seek. The supplies are running far short of the previous years, and, above all, the quality is way below the usual run. That is illustrated by the records of one firm:—Squire & Co. bought about 13,000 hogs here one week that averaged 230 lbs. and cost \$7.50 per 100 lbs. During the month of January, 1892, their hogs averaged 200 lbs., and the average cost price that month was \$1.24. February, 1892, their hogs averaged 278 lbs., and cost \$4.75. Farmers who have nerve enough to feed hogs now are paying far more for store pigs than they would realize at market, but there are thousands of farmers who believe it will pay them better to take the current fancy prices for pigs than to feed them and take chances on letting the market go back on them. However, as a stockman said recently:—"Prime hogs ought to sell for \$8.50, the way this trash is selling. Farmers are getting \$1.25 per bushel for their corn at the prices for fat hogs, and there is plenty of corn in the country."

The sheep feeders are doing a fairly satisfactory business. There is quite an impression about that the sheep feeding business is being overdone, but it remains to be seen. Odbert & Winnett, sheep feeders at Lincoln, Neb., marketed a consignment of sheep which averaged 108 lbs. and sold at \$5.40. It is their first shipment this season. Last year they marketed the first on Feb. 23, and sold them at \$5.60. About the first of April they sold sheep at \$6.30. Mr. Odbert says sheep in Nebraska are looking splendidly, but he thinks that hardly as many are being fed as last year. He feeds largely on wheat which is worth about 25@30c. now in Nebraska. Screenings are also fed quite freely, but not a great deal of corn.

How I Feed Dairy Cows.

BY C. P. GOODRICH.

INTELLIGENT FEEDING.

I believe that the true way to feed dairy cows for profit—and profit is what we are all after—is to feed the proper food for the production of milk to the full capacity of the animal's power to digest, assimilate and manufacture these foods into milk. This way of feeding or "forcing," as some term it, is objected to by some on the ground that this cow machine will sooner be worn out. Suppose for a moment that position is correct. Is there a sensible man who would think of running any other machine that takes a certain number of hands to attend, and a certain amount of power to get up speed enough to do any work at all, who would run his machine at one-fourth or one-half its capacity, for the sake of making his machine last a little longer?

PROFITABLE FEEDING.

Then suppose you had a steam thrasher that could do first-class work up to 1,500 bushels a day as its limit. Is there any man who would think it economy to run such a machine with only steam enough to thresh 500 bushels a day for the sake of prolonging its life a year or two? It would take nearly as much fuel to get up steam, the same engineer, the same feeder and other attendants, but his machine might last 11 years instead of 10. Such a man you would unhesitatingly pronounce foolish; but in my opinion he would be wise indeed compared with the man who would run his cow machine at anything less than its full capacity. The cow, unlike the thrasher, improves by use, for animal nature has the faculty to adapt itself to the uses to which it is put up to a certain limit. In other words, the more and better milk you manage to make a cow give, the more and better milk she can give until that limit is reached, as you develop her capacity to do so, and this improvement will be, in a measure, transmitted to her progeny, so that the heifer calves of a cow will be better than those produced before such development has taken place. In that way each generation will be better than the preceding one. These facts I have demonstrated to my satisfaction in my own experience. Others have done the same thing, and I cite you as very high authority on this subject Prof. E. W. Stewart. You will find this subject quite fully treated of in his work on "Feeding Animals." But it is not true that high feeding of cows if judiciously done, so as not to impair their digestive organs, will tend to "wear out the machine." More cows are "worn out" by under feeding than by high feeding. I have had them last with high feeding, with scarcely any diminution of their powers, till they were 15 years old.

MILK PRODUCING FOOD.

To make the greatest profit in dairying the cow should be fed and managed in such a way as to make her consume as much as possible of good milk-producing foods. To do this she should have the greatest possible variety of foods. Her appetite—her like and dislikes—should be catered to as much as can be consistently. In summer her pasture should contain a great variety of grasses. And when my cows are put in the stable to milk twice a day they have some good clover hay, and they never fail to eat some, no matter how good the grass in the pasture is. They also are fed in summer, except some of them that are dry a short time at that season, all the grain—corn and oat meal or bran—they will eat, which, of course, is not nearly as much as they eat in winter. In winter they have as great a variety of fodder as possible each day—clover and meadow hay, corn fodder and straw, with a grain ration, in two feeds, of from 12 to 15 pounds. I observe the greatest regularity possible in feeding, having the same kind of food given at exactly the same time each day, so that they are never worried or disappointed by having one kind of food thrust before them when they are expecting another kind.

ECONOMY.

To produce milk as economically as possible, I try to provide the necessary elements in that food which will cost the least, having due regard all the while for the likes and dislikes of the cow herself, for I believe her pleasure should be consulted as much as the housewife consults the pleasure of her family when providing food for them. If oats are cheaper than corn meal and bran, I feed oats mainly for a grain ration; but if two tons of oats will buy three tons of bran, then I make the exchange. Chemical analysis seems to indicate that good clean wheat bran is fully as good as oats for milk production, but my observation seems to prove that oats are, at least, a little better. Corn is usually a very cheap grain food, but it is too carbonaceous and should not be used for more than about one-third of the grain ration. Corn ensilage made from well eared corn is the cheapest food I can provide for my cows; but it is not of itself a perfect ration, and needs to be balanced up with bran or oats and clover hay.