

it is easy enough. I think it a better way to keep my cows than the way grandfather did. We put our cows in the stable the night of October 5th and they have been there every night since. Next day there was an average gain of a pound and a half of milk per cow.

Mr. Shepard—I feed my cows some grain every day in the year. I may not get it all back through the milk pail, but I am satisfied that I do by way of fertilizer left in the pasture. I only regret that I am unable to get such cows as my friend, Mr. Wilcox, over here, does. Somehow, I can neither breed nor buy them, that is, I have not been able to yet.

Mr. Lyons—Mr. Wilcox's success does not all come from feeding. He is a wonderfully sharp man, having a special eye for a cow and seems to know a good one just as soon as he gets that eye upon her. Besides that, his pastures are permanent, and the grasses mixed and of the best varieties, because they contain the elements that make good milk.

Q. How much and what kinds of grain does Mr. Gould feed his cows?

A. I feed grain to my cows every day in the year, except when they are not giving milk. There are about two weeks in August when the cows are dry, that the grain ration is taken off. My cows go dry during the time when the flies are doing their best work and when milk brings lowest prices. About September 1st they begin to come fresh, then we begin feeding peas and oats as a soiling crop; these are followed later with corn out in the field. November brings the ensilage out. We feed but a little hay as I have but four acres of meadow on my farm. Besides that, I cannot afford to feed much hay; it is too expensive; what I do feed is either clover or mixed hay. Would not feed timothy hay if it were given to me, and I am fully satisfied the day is not far distant when every dairyman will have the same opinion. It not only costs too much in this day and generation, but it is not a milk producing food, just as corn meal is not. Both will have to go, sooner or later. About two and a half pounds of mixed or clover hay per day is all my cows get. One good sized forkful goes the whole length of the mangers. Mill feed is the principle grain ration, about six pounds per cow per day, in two feeds, morning and night. I have tried all the rations I ever saw recommended and have settled on mill feed—nearly all bran—as the one best for me. I know that it is worth more than the same amount of cotton seed meal for the purpose I want it. That and good ensilage with the small ration of hay does the business for me every day in winter.

Mr. Lyons—We mix corn and cotton seed meals, half and half, for our dairy. Have never found any other combination that would give better results; our cows are Jerseys and we make butter.

Q. How long do you keep your cows in the stables in winter?

Mr. Gould—Twenty-four hours and fifteen minutes every day.

A Farmer—How would you like to stand with your head between two stanchions all winter, or even 24 hours and not have a chance to go out?

Mr. Gould—What man having any sense would put his cow's heads in a stanchion? My cows are not kept that way, the stanchion having never found a resting place in my stable. I have an inherited dislike for the stanchion which knocks it out where my cows board, if nothing else would

Years ago, when it was a pleasure as well as a pastime, to hang Quakers, in Massachusetts, my great-grandfather, who was of the Quaker order, hearing that a brother Quaker was to be hanged in Boston, went up there to give him some religious consolation, but old Governor Endicott didn't look at the matter in that way, so to block the consolation game he ordered my ancestor taken out and put in the pillory where he stood all night. The Goulds have been down on the stanchion ever since that night. But there was another good thing which came out of it, and that was the sum of 50 pounds cash which my grandfather was awarded by the court, and which Gov. Endicott subsequently paid, as damage for his pillory stanchion experiment on the old man. That cash bought my grandfather a farm and laid the foundation for the immense wealth of the subsequent Goulds, including my own, and yet I'm down on the stanchions.

Hoard.

body; that they furnish the material necessary to repair the losses sustained by wear of tissues; that they supply material for new growth; that they give the fuel needed to maintain the animal body at a temperature suited to its working requirements; that they give the body strength to do work; that they enable their nutritious parts to circulate through every part of the body, and thus supply to each what is needed. These points were expanded and illustrated by the speaker.

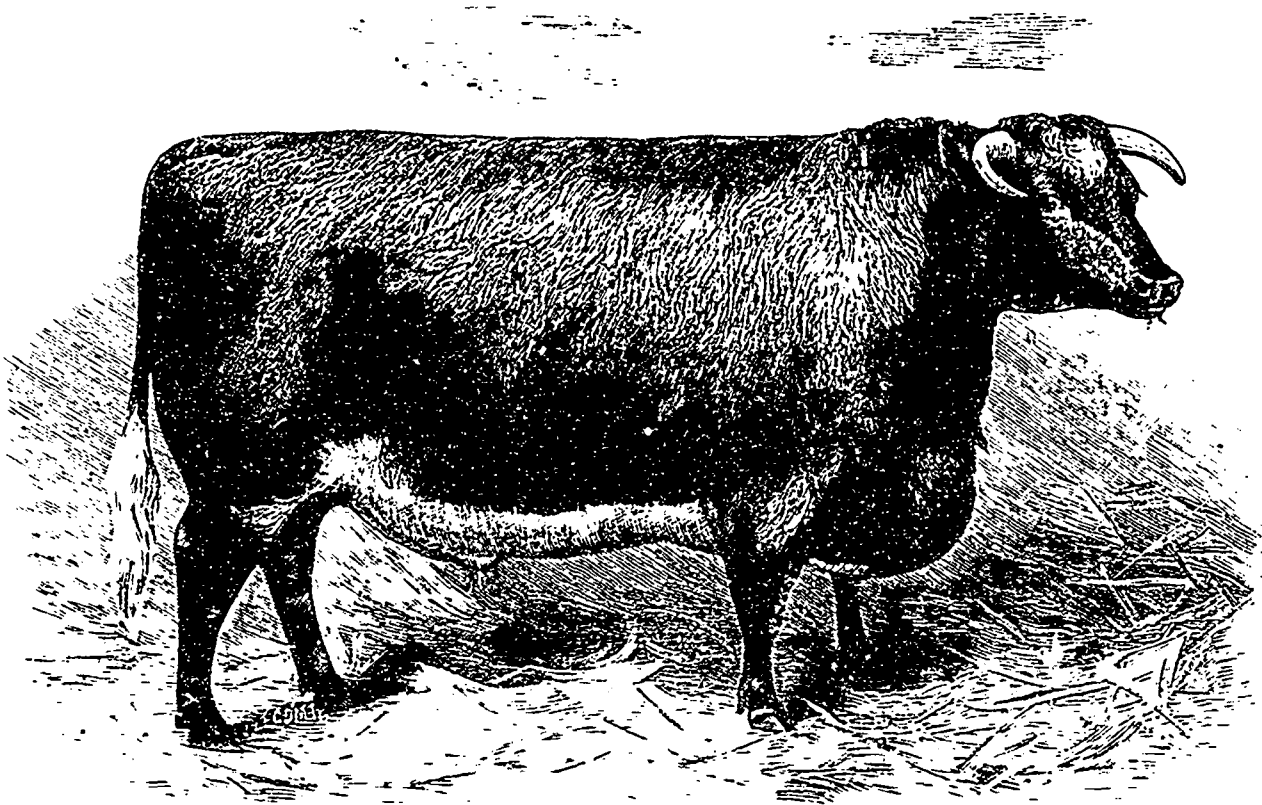
He then came to the unsolved problems. One such, of high importance in dairying, concerns the source of formation of milk fat. Where does the milk-fat come from? Some say that it is formed from the protein of food, but there is no experimental evidence that the milk-fat necessarily comes from protein. Such a belief has made some persons feed highly nitrogenous rations. *There is unquestioned proof that fat is formed from carbohydrates. There are also good reasons for believing that milk-fat comes more*

We know that milk is very largely made up of water, averaging about 87½ lbs. for 100 lbs. of milk, with large variations in both directions from the average. We know also that the quantity of water in milk is influenced by various conditions, such as breed, individuality, stage of lactation and quality of food, health and care. While we can control to some extent the quantity of water in milk, we are very far from doing so completely.

It was formerly supposed that milk-fat was a simple compound, but we now know that it is a very complex mixture, containing glycerine, united with a considerable number of different acids. But we know little as yet about the details of how this mixture of compounds contained in milk fat is put together.

THE PLAGUE OF ABORTION.

On the following day, we had the pleasure of inspecting the Berkeley



SHORTHORN STEER, MASTERPIECE.

Bred by and the property of Her Majesty the Queen, Prince Consort's Shaw Farm, Windsor.

Winner of Plate as Best Steer or Ox at the Smithfield Club Show, and Reserve for the Championship at Birmingham and London. (v. p. 47.)

Dr. L. L. Van Slyke of the Geneva Experiment Station spoke on "Some Solved and Unsolved Problems of Dairying." He presented a general survey of what has already been accomplished in dairying, and also of what remains to be done before we come nearer our ideals. He spoke first of breeding. It would be untrue to say that our knowledge of the science of breeding has not advanced for we know much more about the "whys" of breeding than we once did; but this knowledge has served rather to explain why successful breeders secured good results than to work any revolutions in these methods. We know that it is easily possible to control the character of offspring, and to direct it along lines that are suited to a more or less special purpose. We also know that we have not yet complete control of all conditions.

Great advance has been made during the last generation in regard to our knowledge of food, its uses and adaptations. We know that foods perform several functions in the animal

or less largely from fat consumed in food. (1)

Another unsolved problem is in regard to controlling the per cent. of fat in milk, particularly with reference to increasing it. Another is in relation to the mixing of food nutrients. I regard it as a species of humbug for any one to make one ration for a Jersey cow, another for a Guernsey cow, and still another for Holstein cow, when the object in each case is to produce milk fat. *The tendency has been too much in the direction of regarding a fixed, definite standard, universal in its application, as a solved problem.*

To a layman, it may be a surprise to learn that chemical methods for determining the actual food constituents of our feeding materials are very far from complete. For instance, we have as yet no satisfactory method for determining the quantity of fat or oil in a food. What we report as fat is very impure. The determination of starch, sugar, &c., is still a matter of study and experiment.

(1) Italics ours.—Ed.

Castle shorthorn herd in the company of the noble owner and a party of his friends. But, before making any remarks on the principal members of the herd, it is important to note some remarkable facts as to its past history. Twenty years ago the Berkeley Castle shorthorn herd was one of the leading shorthorn herds in England, and a large proportion of the most prominent prize-winners of the day were drawn from its ranks. As already noted, the famous bull, Duke of Connaught, was bought at the Dunmore Sale in 1874 for this herd at the record-breaking price of 4,500 ga. The purchase of this animal at this fabulous price proved to be one of the most profitable purchases ever made for any herd, as during the years he stood at the head of Berkeley Castle herd he earned for more than his purchase price in service fees for cows sent from the best herds in England to be mated with him. He also begot in the Berkeley Castle herd a host of valuable animals, some of which were retained in the herd, while many others were