

which will consume a lot of food is almost sure to be a profitable one; for what she eats will go towards production, and not to keeping up a large frame-work. G.R. brings out this point very well in a comparison between Daisy Texal and Calamity Jane, and because Daisy is a small cow and eats a lot he has great expectations.

He goes on to say that a cow producing 3 lbs. of butter will eat more than one producing 1 lb. regardless of weight. This is not necessarily the case, for the one producing 3 lbs. may be doing it at the expense of the fat in her body and this is one of the great objections to milk tests. As is often the case, a man brings in a big cow in good flesh, freshly calved, and she will produce 3 lbs. of fat per day, while nine months hence she would not produce one on the same feed. The extra 2 lbs. of butter is made at the expense of the animal's body. This is just what has been taking place in our dairy tests, and to weigh the food will not entirely overcome this trouble. But weigh the cows, and those that are fresh will weigh more and the more they weigh the greater disadvantage they would be at. The only way that it could be arrived at justly and fairly would be to weigh every animal.

Your correspondent then goes on to say that the little Jerseys ate more than the big Shorthorns in the World's Fair test. I am surprised that some of the Jersey breeders have not entered an action for libel for this statement. We all admit that the Jersey will eat as much for her size as any cow, and we will also admit that there are other cows as large as Shorthorns that will eat as much as Jerseys in proportion to their weight. I don't think that a greater difference in comparison could be made between cows of different weight for the amount of food that is required per 1000 lb. weight than between Jerseys and Shorthorns. I am very sorry that there were not some Holsteins in this test so that we could compare the Jersey with the Holstein. I suppose the fixed scale was at too great a disadvantage in this test, for I understand they entered but backed out.

Now let us take a glance at the results of the test at Chicago. Every one will admit it was one of the most carefully and extensively performed experiments which has ever been conducted, either in this or any other country with purebred animals. In the first place, let us see what the weight of the little Jerseys was. We find they averaged 920 pounds, while the big Shorthorns only averaged 1133, a little over 200 pounds difference.

In cheese, test No. 1, the Jerseys ate \$98.18 worth of feed, and the Shorthorns ate \$99.36 worth. I would like to know why our friend didn't also make a comparison between the Guernseys and Shorthorns, for the Guernseys averaged about the same in weight, while they ate only \$76 worth of food, and the Shorthorns ate \$99 worth.

In cheese, test No. 2, Jerseys ate more value in chop and mill feed than the Shorthorns, but far less in hay and silage. The Shorthorns ate \$145 worth, while Jerseys ate only \$54 worth. Then, in the thirty-day butter test the cost of food per pound of butter for Jerseys was 13.28 cents; Guernseys, 12.81 cents; Shorthorns, 15.77 cents.

Now let us notice the cost of feed for different cows of the same breed. There were 15 Jersey cows which weighed over 900, with an average of 965. There were 10 which weighed less than 900 with an average weight of 850. The average cost of food per cow of the 15 weighing over 900 was \$4.12, while for the 10 under 900 it was only \$3.78. I think this will show that the cost of feed is in proportion to the weight of the animal.

Coming to the cost of food for individual cows of different breeds. The highest cost of food per cow was a Shorthorn and which was \$4.76. The highest for any Jersey cow was \$4.23, and the greatest cost of any Guernsey cow was \$3.33.

Bulletin 149 of the M.A.C. claims, as every experienced and practical feeder knows, that the ration should be varied according to the period of lactation, the temperature, and the individuality of the cows, etc., and it also claims that the correct basis to compute rations for stock is per 1,000 lbs. live weight.

Coming to individual cows again we will notice Bulletin No. 127, M.A.C. We have the record of three cows of the same breed but different weights. Rosa Bonheur weighs 1850 and the average daily consumption was 52.43 lbs. of dry matter; Houwhize D. weighing 1600 lbs. with an average daily consumption of 33.8 lbs. of dry matter per day; Bell Sarcastic, another cow, weighing 1,550. Her average daily consumption of dry matter was 29.9 lbs. By these and various records we are led to believe that the consumption is in proportion to live weight.

Take pigs, for instance, and it has been demonstrated time and time again that the amount of food required to produce a pound of pork increases in proportion to the increase in live weight of the animal. A report of an experiment conducted this last summer by G. E. Day, B.S.A., O.A.C., will be found on page 326 of FARMING upon these lines.

In his next paragraph he makes a new discovery, and "solids other than fat are in proportion to fat." It is likely our friend has heard this over in Michigan also. I think if the four Holsteins had produced 8 lbs. of fat in place of 15, this new theory and the explosion of it would not have occurred just here.

Great exception seems to be taken to the statement that "Fat gives milk almost its entire commercial value." W.A.C. winds up his essay by saying that the food value of the cow's products is the Omega. I would like to ask him if he can formulate a test upon this method. I met a dairy professor last year who advocated this, but he couldn't. I can't agree with this, either, for we are producing butter and cheese for their commercial value, and not for food value. In making butter the greater part of the food value goes to the skim milk, and the solids in that are worth no more than 2c. per lb., while the butter-fat is worth 20c.

Butter-fat is more than a measure of the value of milk. In case of good butter it is 86 per cent. of the whole, the other 14 per cent. being mostly water, and the most of you are aware how valuable that is. In good cheese it forms about 33 per cent., and without fat cheese would be an unknown product in commerce. Butter-fat forms so much of the value of milk for all purposes that it is taken as a measure, and that is what should be done in milk tests.

G. R. says that it is the total solids which make the cheese. I think there would be far more cheese made if the total solids went into cheese and Canada would supply England with the remaining 40 per cent. I think if our friend were to analyze cheese he would find it largely composed of fat, casein and water. I wish G. R. would give your readers the name of the professor who says skim-milk is worth more than fat. It is likely he would soon have a host of enquiries as to the probable price of skim-milk for the coming season. With six years' experience with a private creamery, where we get skim-milk fresh, we find that skim-milk on an average is worth 20c. per 100 while the fat in the milk brings from 65 to 85c. per 100 lbs. of milk.

I quite agree with the last part of our friend's article that dairy tests should be to encourage greater productiveness and not to bloom any particular breed. That it would be better to have a separate class for all breeds. I cannot agree with what he says about the score card for the dairy cow. That is what has been the means of bringing her to the present state of perfection, and while the Babcock and Lactometer may help to develop her producing powers it may do so at the expense of constitution if the scoring or judging of animals is entirely left out.

As a great deal has been said and written upon this subject I think if representatives of the different breeds could meet with our leading authorities upon dairying that possibly a test could be formulated which would give general satisfaction to the breeders of the various breeds. We would like to see a meeting held for this purpose sometime in the near future. Thanking you for the space I have taken,

I am, yours respectfully,

W. E. BUTLER.