

etc., to answer all inquiries and direct close attention to the markets. The increasing demand for Danish butter in England is, perhaps, largely owing to the efforts of the present Danish official in England.

The cheese trade supplies us with an object lesson. In 1886 the United States supplied England with one half of its import of cheese, and Canada a little better than a quarter. To-day the positions are reversed—Canada supplies more than the half and the United States contributes less than the quarter. This is directly due to the adulteration of United States cheese as compared with the genuineness of that manufactured in Canada—the success of the genuine article over the spurious. If this can be done in cheese, why not in butter?

The Susceptibility of Butter to Taints.

A little joke which forcibly illustrates the susceptibility of butter to flavors is told by a lady reader of the FARMER'S ADVOCATE as follows: "One evening in April two visiting ladies were taking tea at our house, when one remarked, 'What a delicious grass flavor your butter has?' while the other friend—a farmer's wife—knowing that no pasture was yet obtainable, also remarked upon the peculiarly pleasant taste of the butter. I did not consider it necessary to make an explanation, but knew at once the secret of the mystery. A few evenings before last churning some oranges came home to be made into marmalade, and knowing the habits of brothers, of which I have several, I placed the package inside the churn for safe keeping. They were not there long, and the churn was, as usual, scalded well before turning in the cream, yet the peculiar orange flavor was easily perceptible in the butter." Unfortunately, all the flavors that come in contact with butter are not harmless as orange.

"A Good Dairy Cow: How to Get Her, and How to Keep Her."

[A paper read by D. Munroe before the Manitoba Dairy Association.]

It is fair to suppose that no one disputes the advantage of a good cow over a poor one, and yet the fact remains that the very great majority of our cows are poor ones. It is as surely a fact that we may have good ones if we will. I don't bring you anything "new under the sun," but only hope to show from actual practice the value of teaching already old. "A good cow?" Yes, everyone knows she is more desirable than a poor one. How to get her? You have all read of and been talked to death about slim necks, wedge shapes, big udders, pure-bred sires, raising heifers from best cows, etc. How to keep her? I'm sure you're tired of being preached to about lots of feed, good warm stables, gentleness, cleanliness, and 101 stale but sound principles of cow keeping. Do you want to hear all this from me now? I'm afraid not. Do you believe these fundamental principles? I think everyone does. Then why all the talk and printer's ink, and precious time wasted about it? Well, there seems to be an element in human nature that will shout *Amen* to the truths of religious gospel, of dairy truths, and of animal, agricultural, and commercial principles, then wilfully violate them both in the spirit and the letter, and come back to shout *Amen* again. What am I going to do about it? I'm going to try to show the working out of these old truths in actual commonplace practice. I'm going to try to alarm you at the negligence that so generally exists.

Dairying, dairying, everywhere dairying, and a steady decline in prices is the unmistakable turn things are taking. Elgin butter market quotations 1st October each year: In 1893, 13,800 lbs., at 29c.; 1894, 41,420 lbs., at 25c.; 1895, 21,600 lbs., at 22c.; 1896, 63,360 lbs., at 15c. Nearly 50,000 lbs.—400% increase in quantity—90% less in price.

Do I hear you say you are doing well enough, why bother your head about us? Yes, but all that benefits you benefits me, and if we are benefited you are. If the country gets a good name we each get a slice of its reputation; and reputation is a good thing to trade on. John W. Decker, who is a leading authority on cheesemaking in the United States, said publicly a month ago: "The cheese factories of Western Ontario rule the English market." Can you tell me of any good reason why the butter from Canada, perhaps from Manitoba, should not rule the English butter market? I don't know of one. Are we too small? We feel big enough; at least we are broader than Elgin or Denmark, and they do a lot toward making prices because of quality and reputation. We have with us Prof. Robertson, who will tell us we can surely equal if not excel them. How shall we figure to get to the position of boss? We must begin at the cow end. The cow and her care is the central sun around which all dairy prosperity must revolve, which by its light and heat animates and nourishes it, around which all its life must dance attendance. Ambition, intelligence, care, energy and all the good qualifications that may grace a good dairyman are dwarfed or blotted out if devoted to a poor cow, and yet this poor cow cuts a figure everywhere. The average for New York State—an old-established dairy country containing many noted herds of large producers—is less than 130 lbs. butter per cow annually. The average of Manitoba does not exceed 125 lbs. probably. Records show that we have some good cows; sorting them out only makes the distinct inferiority of the inferior ones more painful. Shall we not make some improvement distinguish 1897 over 1896? You cannot do

business any more with the old grain cradle, hand rake and straw bands; nor can you do any better with poor old Brindle and the straw pile, and the log stable without windows or much plastering.

You keep cows? Yes, a herd of twenty-five. What is the average cost to keep? \$15 per year. What the average product? 125 lbs. butter at 12c., \$15; profit, nothing. That came out well, didn't it? Didn't lose a cent.

No, we'll keep 25 good cows only. The average product is 300 lbs. butter per year, at twelve cents, \$36. We'll feed them each \$10 worth of grain more than the ones that we didn't lose a cent by, and they then cost for keep each \$15 and \$10, \$25; profit, \$11. Such cows pay an income of 22% on a cost of \$50 each after all expenses are paid, and the coarse feed has been marketed at home at full values. Then the calf from this kind of cow is worth something, for having good cows you would breed from a first-class sire. The manure from this herd is worth something too. You have fed about 50 tons of bran and its manurial value is more than \$3 per ton, or about \$6 per cow. The better the quality of the feed the more value in the manure, and consequently the more loss if wasted. This calf and this fertilizer are worth fully the cost of the labor, and you thus have a very fair percentage of profits. This good cow has another value, she is part of the best kind of a programme to keep the children on the farm, and give them a practical, useful education that will qualify them for the actual life's work. The farmer's son or daughter is either unfortunate in natural inheritance, or else badly reared, who cannot be attracted by a good, well-kept cow, that by the profit on her daily industry helps to earn and furnish a home and home comforts, and besides affords an interesting, profitable study in the yearly propagation and improvement of her species. Likewise no boy or girl of the timber go-heads are built of will be satisfied to remain on the farm to waste their days on a no-account cow or perpetuate her by rearing her offspring. Encourage the children of the farm with interesting, attractive work. I've tried to impress the lesson that the number of cows is no indication of profit. It's better to keep one cow and get \$10 profit than 25 cows and get nothing for profit. Then increase that one kind as fast as we can, but by all means get rid of the no-profit kind.

I've spoken to you before of Menzo Wilcox, of New York State. He started with cows making less than 300 lbs. In 1895 his herd averaged 418 lbs., and for 1896, 465 lbs. of butter each. This is from a herd that does not boast of pedigrees and fancy figures. They are mostly Jersey grades.

BE SURE YOU'RE NOT MILKING THE WRONG COW.

This brings us to part second of our subject—"How to get her"—which implies, of course, that you must know her. You would at once say it's a very ignorant person who does not know the difference in value in a pound of stone or a pound of gold. There is no more need of being ignorant of the difference in value of the good or the poor cow. The accuracy, simplicity, and cheapness with which the cow's product may be tested and valued is no longer a matter of dispute. To get her we may buy her, or must raise her. To buy her, the usual plan has been to depend on one's skill to select by signs the good and avoid the poor. In this the most expert are more or less failures. As a rule, dairy quality follows dairy type, but more especially is this true of the quantity of milk. There are signs which are said to indicate quality, but they are not so reliable as the signs of quantity. To illustrate: A friend visiting, shortly after purchase of some cows, walked out to the field to see them. "I don't think much of her," said he, pointing to "No. 5." "Nor do I," was my reply, "but the auctioneer got the drop on me, and I got a cow I didn't want, though I bid on her." Well, "No. 5" has a record of 316 lbs. butter last year. That friend is an acknowledged authority on cattle judging. The "Babcock" judgment revealed the incompetence of both of us. If one is buying without a chance for testing, he must depend on his skill in selection, and take the risk of being taken in; but if an opportunity for testing is given, her real value can be known to a certainty. This test may not be infallible, but the attendant conditions, such as the feed, care, condition, period of lactation, etc., can be pretty accurately estimated. The Babcock test is a great boon to dairymen if they will only use it; simple, cheap, practicable, reliable. It has established some facts which have knocked the wind out of some theories.

Under normal conditions the average percentage of butter-fat is practically permanent and regular, varying in the different periods of the milking season on a nearly fixed scale.

The more her ancestry is backed by continuous lines of good performers, the more certainly is the quantity of milk and percentage of fat determined. The percentage of fat is practically a fixed qualification in the cow, and cannot be increased by the quantity or quality of the food after she is regularly supplied with a properly balanced ration sufficient in quantity to equal her full capacity; but if she is fed a ration too small, or badly balanced, both quantity of milk and percentage of fat will be diminished. The percentage of fat is very perceptibly affected by changes, by worry, exposure to cold or storms, by lice, rough treatment, etc., and more variably than the quantity of milk. Cows of a beefy type are not so easily affected by such things as those of pronounced dairy type, and

this is very conclusive evidence that the milk-giving function is directly a result of the operation of nervous forces, and also a very good reason for exercising great care that the dairy cows should be especially protected from such hurtful conditions or treatment.

I would not buy a cow on superficial signs alone, without deducting from her probable value sufficient to cover the risk of failure. The records so frequently advertised of pure-bred dairy cattle, covering a short period of one day or seven days, are usually, to a certain extent, misleading, being the result obtained from a few days' forcing that the animals would not stand for a whole season. Several experimental stations, notably Guelph, Michigan, and Minnesota, and a few prominent breeders, are working on the only true system by making the tests cover a whole year. For these reasons I do not regard our exhibition-ground tests as worthy of being continued on our present plan. Hence, from my experience "to get her" by buying, the Babcock test is the only sure method of value. But by far the most satisfactory way is to raise her. The right sort of breeding will almost invariably give the results you are entitled to look for, and the right sort of handling will establish correct habits, which adds much to her value. Only don't forget that one or a few poor cows as breeders yield but little evil influence as compared with the damage a poor sire may spread through the whole herd, and it will be three years—three generations of breeding—when you have realized it.

[TO BE CONTINUED.]

POULTRY.

How to Make Hens Pay.

- 1.—How many hens do you consider it wise to keep on the average 100-acre farm, and to what age?
- 2.—With a view to eggs, table birds or both, what breeds or crosses would you recommend as likely to give most general satisfaction?
- 3.—What plans would you suggest for improving an ordinary farm flock of mixed fowls, such as selection or "weeding out," new breeding birds, setting of eggs, etc.?
- 4.—What period of the year is it advisable to retain male birds with the flock? How about numbers together?
- 5.—By what means do you secure the best eggs for hatching?
- 6.—What treatment would you suggest for a pen of breeding hens (from which the eggs are to be set) during the latter part of winter and spring?
- 7.—What sort of a house do you recommend with regard to (a) size, (b) location, (c) warmth, (d) sunlight, (e) ventilation, (f) dust bath, and (g) watering, and to what extent should fowls run out in winter?
- 8.—How do you manage to keep hens free from lice and disease?
- 9.—What foods or mixtures do you recommend for (a) egg production, (b) fattening, (c) how often would you feed per day, and (d) what value do you place on green bones, and vegetables, and sunflower seed?
- 10.—How many eggs per year should a good farm bird lay to be profitable, and at what age should broilers be sold?
- 11.—Should turkeys, ducks or geese be allowed to run in the same house with hens; if not, why?
- 12.—What is your idea of keeping turkeys, ducks or geese on the average farm, and how do they compare with hens as to profit, etc.?

To Prevent Hens from Sitting—The Poultry Question Well Handled.

- 1.—The number of hens one might keep for profit depends on the accommodations provided for them. The average farm could support from three to five dozen hens and give a nice profit. The smaller the farm the better the hens can be made to pay, for more attention can be given to them. Don't keep any more than you can care for properly. As to age, I would not keep any, except a valuable fowl, after they are two years old. I generally market the old hens in February and keep some for consumption in summer.
- 2.—I am much pleased with Barred Plymouth Rock hens crossed with Dark Brahma cockerel, or Light Brahma hens crossed with Barred Plymouth Rock cockerel; either of these will please almost any person. They mature earlier than pure-breds and are large, plump fowls. If you would like a lighter fowl try Plymouth Rock cockerel with Leghorn or ordinary hens. For the shiftless farmer who allows the hens to scratch for themselves, the Barred Plymouth Rock, or Rock and Leghorn cross (which is an active hen with small comb), comes close to filling the bill. However, I have a good word for the Langshan, for they are excellent winter layers and also good mothers. Their eggs, like the Brahmas, are the popular color and always command a ready sale, sometimes bringing an advance in price per dozen.
- 3.—For improving the ordinary hen I would say get a pure-bred male only (a good vigorous one) and no other. They can be bought for \$1, and I am safe in saying it will be the best small investment you ever made. Any of the following, Brahma, Plymouth Rock, Indian Game or Wyandotte, will produce superior results. Never practice inbreeding. Procure an early-hatched, well-developed cockerel with yellow beak and shanks. My plan is to select six or seven yearling hens and place with a cockerel and save these eggs for hatching.
- 4.—It is better to keep the males from the flock from 1st July until 1st March; then you will not be troubled with fall chickens. In 1893 I had only two cockerels (Brahmas). I kept them caged from fall until 10th March, then I placed one with six and the other with seven hens. The eggs hatched remarkably well: one hen hatched thirteen chicks from thirteen eggs (pure Lt. Brahmas). The remaining hens I left without any male. They laid exceptionally well for three and a half months, and only one hen wanted to sit. The hens were Lt. Brahmas and Barred P. Rock crossed. Last