MORNING SESSION.

The Institute met at 9 o'clock. H. C. Taylor in the chair.

BREEDING AND DEVELOPING A DAIRY HERD.

CHAS. L. HILL, Rosendale, Wis.

To me a dairy herd means one kept for the sole purpose of producing the greatest profit possible from their production of milk or its products.

From the careful work done at Experiment Stations we now know that the value of one hundred pounds of milk depends upon the amount of fat it contains, whether cream, butter or cheese is to be the product sold.

Breed up the Herd.

It is the herd of special purpose dairy cows we are to discuss and not the herd kept to furnish chores for the owner or hired man, and eventually to make salt junk for Spanish soldiers in Cuba. It is not possible, or wise, for many farmers to own a herd of full blood cows, but it is every farmer's own fault who has been keeping cows for five to ten years and has not reached or passed the 300-pound mark in butter production. What has been done can be done. Note the example of such men as H. D. Griswold, C. P. Goodrich, Charles Thorp, Sebastian Heller, and dozens of others, who with grade herds have reached an annual butter production of 350 to 400 pounds and even more, per cow.

The Dairy Sire.

Every herd of native cows must contain one or more cows, that, if properly fed and cared for, would enter the list. These, if bred to a full blood bull, should become the foundation of the future herd. It is a common saying that the sire is half the herd or "flock," and any man who has made a success as breeder will tell you that even more than half depends upon the sire. How good shall he be? The best is none too good. His mother should be a cow that is a producer of at least 350 pounds of butter per year, and one from a 500-pound cow will be cheaper in the long run. What breed shall he be? The breed that, after careful investigation, you decide is best suited to your conditions, and after you have decided, stick to it. When you get a sire that suits you, keep him as long as he is useful, as an old bull certainly sires better calves than a yearling.

Care of the Calf.

Raise only such heifer calves as you have reason to believe will increase the production of your herd. Feed only such foods as will grow bone and muscle, and not fat. Keep in mind that you are after a herd of dairy cows and just as soon as you fat one of these calves its tendency will be away from this purpose. Don't starve her, however, but give her plenty of skim milk, bran, oats, and clover hay. Just at first a little oil meal or flaxseed jelly will help keep the calf thrifty. If you have a silo, a little of the leafy ensilage without grain will be good for her.

Let her be well acquainted with you, so she can easily be handled and halter broken. Have her come in milk at about two years of age. Two or
three months before she is to become a mother increase her grain ration to about all the bran or other similar food she will eat, as any fat she may put on at this late period will all disappear after she gets to milking. We do this to induce her to make a large udder this first time she is fresh, as her business is to be the production of milk, and the sooner her functions all tend in that direction, the better.

who are constantly saying of the successful dairyman, "He pays out more for feed than he gets for the milk," unless you have carefully estimated just how much they do feed, and have stopped to figure what the 300 pounds of butter, each cow should produce, is worth.

The Babcock Test and a Pair of Scales.

If there is any one thing that will

GUERNSEY BULL—BEN BISHOP 3506. FULL BROTHER OF MADAME TRICKSEY. GEO. C. HILL & SON, ROSENDALE, WIS.

The very best time to have a heifer drop her first calf is in the flush of grass, in May or June, and let her milk continuously for thirteen or fourteen months, dropping her second calf in October. This will help establish your cow as a persistent milker. Always treat your cows with kindness. Feed, water, and milk regularly. Remember it is nearly always true that the more grain you can get your cow to eat and assimilate, the larger will be your profit.

Don't number yourself among those help us to succeed as dairymen, more than any other, it is a constant use of scales and the Babcock test on our farms. It will pay any farmer to keep an accurate record of the milk produced by each cow. It is not as much work as you think. I have here a sample of the milk record sheet that we use. This is more elaborate than it is necessary to use. A sheet of foolscap paper ruled, will answer every purpose. Once a week weighings will answer just as well to show approximately a cow's yearly record, but the
daily weighing will more than pay in keeping track of milkers and of the individuality of each cow. It will pay if you have many cows to have one of the scales made for this purpose, so that it reads zero with the pail on, and shows the net weight of the milk. A twenty-five cent spring balance will answer, however.

The middle of each month take a composite sample of each cow's milk never expect to do it again, but I think if a lot of your animals freshen at one season, it will pay to milk three times a day.

Mr. Arnold—Judging from your experience in breeding, what proportion of the improvements in dairy qualities do you consider is due to the feeding, what proportion to training, and what to breeding?

Mr. Hill—There is just enough truth

GUERNSEY COW—NUBIA'S VESTA 5086 556 LBS. BUTTER IN 6 MOS.: 25 LBS. 8 OZ. IN 1 WEEK. GEO. C. HILL & SON, ROSENDALE, WIS.

for from four to eight milkings, and test it with the Babcock test; then at the year's close you will be able to tell just what each cow has done, and weed out your cows intelligently. Finally, brethren, love your business; study every detail of it, and be satisfied with nothing short of success.

DISCUSSION.

Question—Do you milk three times a day?

Mr. Hill—No, I never have, with one exception when I made a test, and I in the old saying that we hear from some farmers, that the corn crib is good enough for them, to make it hard to answer such a question. First-rate stock can be ruined any time by feeding or improper handling, while, on the other hand, cattle can be bred up to be real good dairy animals from what are inferior ones, by the right kind of feeding. The training goes right along with the feeding, and I should say that half of it was due to breeding and half to the feeding. Any breed of animals cannot probably be
Improved a great deal by one alone, but by feeding and breeding you can make great improvement.

The Chairman—For that word "improvement" I would substitute the word "development."

Mr. Hill—Yes, I would, too. I have seen miserable, poor scrubs that only gave fifteen pounds of milk in their flush as two-year-old heifers, develop after a while into good cows, because of the grandmother more than I do of the sire himself.

Question—Will Mr. Hill give his method of raising calves?

Mr. Hill—Unless the calf is a weak one, and even then, I don't know as it makes much difference, we take it away from the cow almost immediately, and put it by itself.

Question—What do you mean by immediately?

They had been on farms where they rustled for a living and never knew what it was to have a good, straight meal, such as a dairyman feeds his cows.

Mr. Arnold—In selecting a herd, don't you think that the progeny is more apt to go back to the grandparents than to the sire?

Mr. Hill—I think a great deal more of knowing what the sire's mother is, than any other one thing, and I expect in the progeny to see the production

Mr. Hill—Well, you may let him have one meal, if you will, but I find it just as well not even to allow that, and if I can get him away from his mother without her seeing it, I am just as well satisfied. That night I do not try to feed that calf. They will learn to drink a great deal quicker if they are hungry the first time you try to feed them. I let them go until the next morning; then I take the mother's warm milk, fresh milk, and let them suck my finger as little as possible. Four out
of five times, the calf will drink the second time. We feed whole milk until 10 days old, then change gradually until at three weeks old, it gets all skim milk, helping out with a little oil meal stirred in hot water and added to the milk. The only thing to be careful about with the oil meal feeding is continuing this so long as to fatten your calf. I teach it as early as possible to eat half bran and half whole oats and if they don't accomplish that in two or three weeks, I throw a few oats on the nose while it is damp, and they will soon get to eating the grain all right. I increase this up to two quarts of feed, half bran and half oats, by measure, which will make it two-thirds oats. Then I gradually shut off the oats until they get on an all bran ration. A little of the leaves taken from ensilage is good for the calf. I continue this skim milk ration for the calf, with clover hay, just as long as I have the milk to spare.

Question—Along this line of breeding and developing the dairy cow, is it not true that in order to develop the cows you have got to begin with the calf at a very young age, so that she has the greatest tendency toward muscle growth and the least towards flesh? If before it comes to milk the first time that calf is allowed to get fat, it detracts just so much from its value as a future cow.

Mr. Hill—That is certainly so. There is not any other one thing that I would caution against in raising a calf to make a No. 1 dairy cow, as I would caution you against any tendency to letting it get fleshy up to a month or two before it comes in, but especially before one year of age. You can ruin almost the best calf that ever was born by doing that one thing.

Mr. Briggs—Have you ever had any of this contagious disease among your calves, where quite a number of them die off at a week or ten days old?

Mr. Hill—Yes, we did have.

Mr. Briggs—What is the cause of it, and what the remedy?

Mr. Hill—You have got me, as to the cause of it, anyway, and I don't know but you have me as to remedy. We commenced to feed a patent calf food and it stopped immediately. I am not prepared to say that that did it.

Mr. Briggs—Were you feeding your milk fresh from the separator?

Mr. Hill—Yes; but they were sick long before they had skim milk, if they were sick at all.

Mr. Briggs—The only remedy I have found is to let the calf die and throw it away.

Mr. Goodrich—Have you ever had calves have the scour even before they were taking any milk at all?

Mr. Hill—No, sir.

Mr. Goodrich—I had a letter from a man the other day stating that his calves died; they were taken with scour right off, and they never had any milk at all.

Mr. Hill—Mr. Bradley has told me that he has had such trouble. The first thing we did for our calves was to give them some oatmeal gruel, but that is lots of trouble to prepare. We would take about two cupfuls of oatmeal, boil it to a jelly, and mix it with warm water and feed that.

Mr. Everett—Would you not place a great deal of importance upon the dairy form in the cow, and where do you get this dairy form?

Mr. Hill—I never owned what I called a good cow that hadn't the dairy form.

Mr. Everett—Give us the Wisconsin idea.

Mr. Hill—First of all things, I would place the capacity to eat a whole lot of food, and going along with that a constitution to stand it year in and year out. I had my attention called the other day by a man who was buying cows, to a nine years old Jersey, that was almost an ideal cow. She looked to be about five or six years old, and she will be just as good at twenty years as she is today, if nothing happens. Capacity first, along with constitution, and shape
almost exactly opposite of what we know as the beef type, showing an entire lack of beefiness. Have them broad on the hips, on the loins. I don't care so much for the wedge shape, because I don't want them to lack heart girth. Have plenty of room for an udder. I like to see good milk veins and lots of things besides that, but just how far they go towards utility we do not know. I like to see a big jaw, showing capacity to eat, and a good eye.

Mr. Foster—How much do you feed your calf?

Mr. Hill—After we get onto an all skim milk ration, about six pounds twice a day. It makes some difference what kind of skim milk it is in the solids that remain. If I had skim milk from milk that originally tested three per cent., I would feed more than if it was from five per cent. milk.

Mr. Goodrich—How much oil meal do you put in when you put the calf on skim milk?

Mr. Hill—Only a small handful; at first just a small teaspoonful to each calf.

The Chairman—You intend to feed the calf to keep it in healthy, growing, thrifty condition, whether it will take more or less.

Mr. Hill—I feed that oil meal quite as much as anything else to keep the calves' bowels in first class shape. I know it does it by the condition of the hair.

Mr. Merrill—What importance do you attach to the training of the heifer during the first milking period, as to the length of the period?

Mr. Hill—As I said, the very best way is to milk them continuously the first time and let them go over fifteen months from the first calf to the second one, so as to milk them through a specially long milking period. It is the persistence in milk that comes out best at the end of the year, it is not the cow that gives fifty pounds of milk at first, but the one that gives twenty-five pounds and continues to do it through the year.

A Member—During the second period of the calf's life, just previous to the first freshening, we all know there is a natural tendency to flesh up. Then after they have freshened, they do not seem to lose this beefy tendency. How do you combat that tendency?

Mr. Hill—In my experience, if they are bred right, they will lose it. I never take alarm at this fleshing up that comes, if it is not more than a couple of months. They will lose that as soon as they come to milk. Of course the more strictly your animal is bred along dairy lines, the less inclination it will show to put on flesh. About the only way I know to combat it is in the class of feeds you should feed. Confin the ration largely to bran, and perhaps new process oil meal.

Mr. Everett—We find a good many farmers who are not satisfied with the tests at the factory, showing the fat contents of milk; they argue that they are feeding corn meal and the milk should test higher. I would like to have Friend Hill state to this convention the facts in this case, as regards feeding the fat into milk.

Mr. Hill—As far as my experience goes, I will say that I know the amount of fat in milk comes from the breed and not from the feed, unless it is by a very slow increase from year to year; and that fat cannot be fed into milk.

Question—How soon after your heifers have their first calf do you put them on full feed?

Mr. Hill—Well, with my heifers I wouldn't have them off full feed. I never have had any trouble in giving them a good ration two months before they freshened, and keeping it right up.

The Chairman—Heifers with their first calves should be fed quite liberally, even if they are in high condition, but, of course, upon the right kind of feed.
Question—You said that no sire was too good. Does it make any difference what you do with him, whether you turn him out or keep him in?

Mr. Hill—The more exercise they can get the better. We use ours twice a day on the tread power. They should be fed on something to keep them in condition, but not fleshy.

Mr. Convey—As to whether butter fat can be fed into milk, I think there is a misapprehension on the part of a great many persons. I have always claimed that you could increase the butter fat by feeding in this way, so as to shrink the milk flow, thus increasing the per cent. of fat, but that is not in the line of profit.

CHEAPEST MILK PRODUCTION.

A. G. JUDD, Dixon, III.

Mr. Chairman, Ladies and Gentlemen:—Doubtless you all realize by this time, that the best results received from these meetings come from the freedom with which you ask questions, and determine how far you can apply the principles promulgated by the speaker to your own individual business. It must also be remembered constantly, that methods adapted to a black loam soil will not produce similar results on a heavy clay soil; neither will the methods that I shall state, as applied by me with my surroundings, produce similar results for you, if your surroundings are radically different.

If my talk is to be of practical benefit to you, do not expect highest results from moderate conditions, but be willing to improve conditions until higher results are reached.

The Dairy Cow.

We have not time to go back and follow the history of the cow down to the present day, or the characteristics of the different breeds. The dairy cow is a cow, bred, fed and handled for the single purpose of producing milk, the quantity and quality of said milk determining the value of the cow and the amount of profit her owner shall receive. As the quality is determined by inheritance, it remains for the owner to apply his skill in developing the quantity and preserving the quality. By that, I mean if a cow is born with the ability to produce five or six per cent. milk, no foods or system of feeding can materially increase that per cent. of butter fat. But it is possible to feed so as to reduce that per cent. of fat; hence the necessity of the dairyman’s learning at the outset, that nothing but a well-balanced food ration and careful handling under favorable conditions, will enable any dairy cow to do her best.

Now, let us for a moment study the outlines of a dairy cow. She should possess a medium long, thin head, large nostrils for plenty of air, great breadth between the eyes, high forehead, a bright, clear eye, sound teeth, thin neck, deep through the chest, with large lung capacity, long, large backbone for plenty of nerve force, broad hips, high pelvic arch, thin thighs well apart, giving plenty of room for a good udder. She should be deep through the flanks, with plenty of store room for food; the udder should be well developed, extending well up behind and well forward on the body, with large milk