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Forty-third annual report of the Wisconsin Dairymen's Association : held at Ladysmith, Wis., December 1, 2, and 3, 1914. 1917

Wisconsin Dairymen's Association

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FORTY-THIRD ANNUAL REPORT

OF THE

WISCONSIN
DAIRYMEN'S ASSOCIATION

HELD AT

Ladysmith, Wis., December 1, 2, and 3, 1914

ABRIDGED REPORT OF PROCEEDINGS, ADDRESSES AND
DISCUSSIONS

COMPILED JULY, 1917.

BY

PAUL C. BURCHARD, *Secretary*

MRS. A. L. KELLY, *Stenographic Reporter*

OFFICERS—1914

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W. H. MORRISON, WALWORTH COUNTY,
President 1883-86. Died December 15, 1893.

H. C. ADAMS, DANE COUNTY,
President 1887-89. Died July 7, 1906.

PROGRAM

TUESDAY, DEC. 1, 1914

First Session, 10:00 A. M.

- 1.—Invocation
- 2.—Address of Welcome
- 3.—Responses
- 4.—President's Annual Address
- 5.—Best Crops for the Cow, and Why
T. A. HOVERSTAD, Minneapolis, Minn.

Second Session, 1:30 P. M.

- 1.—Crop Rotation...R. A. MOORE, Madison
- 2.—Feeding Dairy Cows
W. J. GILLET, Rosendale
- 3.—The Development of a Stockman
R. A. WILKINSON, Lake Elmo, Minn.

WEDNESDAY, DEC. 2, 1914

First Session, 10:00 A. M.

- 1.—What Constitutes a Good Dairy Cow
F. H. SCRIBNER, Rosendale
- 2.—The Boys' and Men's Cow Judging
Contests...F. H. SCRIBNER, Rosendale
- 3.—Awarding of Prizes to Winners in Judging
Contests and Discussion.

Second Session, 1:30 P. M.

- 1.—Silos and Silage...W. J. DOUGAN, Beloit
- 2.—Building Up a Dairy Herd
W. J. FRASER, Urbana, Ill.
- 3.—The Advantages of a Breed Center
B. H. RAWL, Washington, D. C.

THURSDAY, DEC. 3, 1914

First Session, 10:00 A. M.

- 1.—Testing 14,000 Cows in Wisconsin
H. C. SEARLES, Fond du Lac
- 2.—What the Dairy Cow Has Done for
Me.....C. A. NELSON, Waverly, Ia.

Second Session, 1:30 P. M.

- 1.—Coöperation Among Farmers
F. D. CURRIER, Nicollet, Minn.
- 2.—The Poor Cow and the Good Cow
THEO. SEXAUER, Menomohie
- 3.—Light and Barn Ventilation
J. F. KADONSKY, Ironwood, Mich.

TRANSACTIONS
WITH
ACCOMPANYING PAPERS AND DISCUSSIONS
OF THE
Wisconsin Dairymen's Association
AT THEIR
FORTY-THIRD ANNUAL CONVENTION
Held at Ladysmith, Wis., December 1, 2, 3, 1914.

PRESIDENT'S ADDRESS

PRESIDENT M. L. WELLES, Rosendale, Wis.

This association has, ever since its organization, stood for better dairying and I think we can be justly proud of the work it has been able to accomplish in the nearly half century that it has been in existence. I dare say that its founders little realized what it would accomplish as the years went by. In other words "they builded better than they knew." It can be truly said that the association has been in no sense asleep but wide awake to the interests of dairying throughout the state.

It has fought the fraudulent sale of oleomargarine and all adulterated dairy products. This we must continue to do as there are those who would like to sell oleomargarine well colored and never let the trade know but that they had pure dairy butter. It has been reported that at the next session of Congress all the present laws in regard to the sale of oleomargarine in all probability will be repealed. Of course if the butter market is affected it will affect all other lines of dairying.

The work that is being done by the association in the way of forming and keeping up cow testing associations throughout the state at the present time is of vital importance to the dairy

interests of the state. This branch of work has a wide field of usefulness and will grow to be one of the largest factors to improve the dairy cattle of the state. It is bound to be an educator for when the farmer sees how poor his cows are he will want to improve by getting a better sire. He will also pay more attention to feed and care of his herd that he may make a better showing in the years to come.

I note we are in the lead as regards the number of cow testing associations and of course we should be as we are the leading dairy state of the union having over two cows to every inhabitant of the state. The recent report of our state Dairy and Food Commissioner, Mr. J. Q. Emery, says the output of Wisconsin dairy products for the past year foots up to the enormous sum of over \$100,000,000. A sum of which we are unable to conceive. He also states that this is a gain of 85 per cent in the past five years. A very good showing I think, but we can do better and we must not be content with past achievements.

The association can well point with pride to the fact that they have ever encouraged the construction of silos. The amount of succulent food put up in the form of silage has increased very rapidly. Silos are going up so fast that one wonders where it will stop. I saw a recent estimate that 50 per cent or better of Wisconsin's corn crop for 1914 had gone into silos. It has been estimated that 95 per cent of the silage put up is used for dairy cattle. The number of silos on our rural route was recently counted and to my surprise there were eighty in all. A silo contractor in my locality had contracts for thirteen silos to be built in 1915 before he had finished building silos this fall. This would go to prove that dairying in our state will continue to grow. In conclusion I wish to say let us work together unselfishly for the best interest of dairying that we may have better herds and more of them.

BEST CROPS FOR THE COW

T. A. HOVERSTAD, Minneapolis, Minn.

When a farmer is so situated that he can go into the market and buy whatever feed he wants it is a simple problem to make

out a ration which is both profitable and will produce a large milk flow. But the pioneer is very often without money and without sufficient experience in the care of live stock, so that the ideal conditions are far from his possibilities. It is necessary to adjust the practices to the conditions in such a territory.

The most essential food is corn. Corn will grow splendidly in northern Wisconsin and produce a large amount of feed to the acre. It is wise, however, for the farmer to build a silo just as soon as possible. He can then have succulent feed for his live stock twelve months of the year and he can be quite independent of adverse climatic conditions. A farmer should build a silo, no matter if he has to borrow money for its construction. The returns from a silo are so large that a person can well afford to pay interest on the investment. It is wise for the farmer to build a silo a great deal larger than he actually will need immediately, so that he can have a large amount of silage to bridge over in any adverse season. I met one farmer who told me he had kept silage in his silo for 28 years and it was in a splendid state of preservation yet.

Corn alone is not a balanced feed. It is necessary to feed in conjunction with it some feed that contains a good deal more protein. The two crops that do well in northern Wisconsin and contain this necessary element are alfalfa and clover. Clover grows naturally, and about all that is necessary in order to secure a crop of clover is simply to sow the seed. Alfalfa, however, will produce more feed to the acre and contains a higher percentage of protein. In one experiment on some very sandy lands where clover failed on the adjoining field, we were able to secure this year eleven large loads of alfalfa in three cuttings on $2\frac{1}{2}$ acres. This land was manured, inoculated and limed.

There is a new crop that is being introduced, that promises to be of great value to the farmers of northern Wisconsin. I refer to the soy bean crop. In several trials that we have made on very sandy land the returns have been very satisfactory both for grain and pasturage. The soy bean produces a very large amount of feed to the acre and it is one of those crops that contains an unusual amount of protein.

It would appear that from these three crops a farmer can make up a ration which will be well balanced and very palatable and should give good results for the investment.

There is no doubt grain and mill feed can at times be fed with profit, but it involves the purchase of expensive feed, and the pioneer farmer usually avoids buying any more than he absolutely has to.

DISCUSSION

PROF. MOORE: We have been working on soy beans in our department for seventeen years. It was a southern crop brought up to the North and I have taken quite an interest in the experiments, not only with soy beans but with cow peas, which have been of such benefit to southern agriculture. We find we cannot grow cow peas to advantage in Wisconsin, indeed, that the less we had to do with them the better we are off, but its twin sister, the soy bean is all right for Wisconsin. We carried on breeding tests with these soy beans and bred up certain kinds which we ripen nicely within the range of our climatic conditions. We have several kinds that will mature nicely in our state. We did not begin to push the soy bean work until quite recently because there were a great many problems that had to be considered. We desire this crop mainly for sand lands. The sand lands appeal to a good many coming in to the state because they are cleared, they get located on the sand land and try to grow crops and they take out what little nitrogen there is in the soil. After the nitrogen is gone, has been taken out by the cereal crop, the man is left helpless. So we wanted to help that man on land that was too poor to grow clover. So now we have a crop that will grow on any kind of sand land and, by inoculating the seed with soil where we have grown a crop for a number of years, we get a perfect inoculation and we can grow soy beans upon these sand lands and get good crops. For hay, we can get two or even three crops of good hay, hay which is as good as the finest kind of clover and as good as ordinary alfalfa. We feel that this is going to help the dairymen upon these sand lands where he has hitherto been helpless, where he could not grow clover, could not get grass started and consequently he could not grow into that great line of farming which we are all advocating, the line of dairy farming. We find that by growing soy beans for two or three years upon this land, we fill the land with so much nitrogen that we can easily grow a corn crop or get a good catch of clover. There

is no plant that has the power of taking nitrogen out of the air, depositing it in the soil and building it up with this great requisite as the soy bean. It fills the ground with nodules and those decay and leave a great surplus of nitrogen in the soil so you can use it for other crops. It leads right up to clover on the farm; the soy bean is a preparation for clover and there is no other crop that has brought such great benefit as clover. I want you all to stick to clover, that has been the farmer's friend. Of course now we are growing alfalfa quite extensively but don't give up the clover.

MR. GLOVER: Mr. Hoverstad, don't you believe that roots can be grown to advantage on the small farms in this section where the clearing has not been sufficient to justify the construction of a silo.

MR. HOVERSTAD: We build our root houses and we build silos and we feed the roots in the fall up until about the first of February when the roots are fed out and then we feed the silage and I do not see that there is any difference in the milk flow. The cattle eat it every bit as well, in fact I like the roots a little bit better. Now, it may look like a big problem to raise roots, but it isn't really so big. The big job is to haul the crop home. I like mangels a little bit better than the rutabagas, but the rutabagas are a little bit more easily grown. The way we should grow them is to first manure the land and then grow a crop of millet for hay,—that cleans the land so it is in pretty good shape for the following year. Then cultivate the land well and sow your rutabaga seed. We usually sow the prize winner and sow it about the first of June. I sowed with a four horse grain drill. I could do the work faster by sowing it in rows about thirty inches apart and dropping the seed every inch or so. Of course that is very much thicker than we want to have the roots grow but we want to have such an abundance of plants growing that we can thin out and still have plenty left. As soon as the roots come up, set to work cultivating with a one horse cultivator. We thin them out until they were from twelve to eighteen inches apart, and when they were as far as eighteen inches apart we would really get more to the acre than when they were as close as six inches apart. After a man gets used to hoeing and thinning out those rutabagas he can do it very rapidly. The thinning of the rutabagas is much more easy than the mangels. In thinning out we must

be careful to leave the strongest plants always. We keep cultivating during the summer season. In the fall a man would go in with a sharp hoe and he would go over the field and cut the tops off, he would go right along as fast as he could walk. Then he took a harrow and turned them right over and left them. Then the big job was to haul them out. Do not put in four or five acres the first year, because if you do you will never plant them again. Grow a little patch two or three rods square in your garden and measure the space and amount that you get. The next year you can grow an acre or two. Start on a small scale and it is surprising the amount of good feed that you can get out of a very small acreage. In storing them keep them as cold as you possibly can without letting them freeze and they will stand a good deal of cold weather. A person should have a root cutter to cut them up. I have fed tons and tons of big ones without cutting up but I never feed small ones without cutting. A good many farmers find the digging and putting in an awful job but it isn't so bad and they make good feed until you get your silos. The silo will crowd out the root crop after a while.

CROP ROTATION

PROF. R. A. MOORE, MADISON

We need a rotation of crops upon the farm for several reasons, first of which we might mention for the sake of equalizing the soil elements that are taken from the soil and those returned to the soil. It is perfectly apparent that no farmer could go on continuously drawing the same elements from the soil year after year by a one crop system without exhausting these elements. It is also true that if we continue growing the same crop for a long period of years it not only takes the same soil elements from the ground annually but it invites disease and insect enemies which prey upon the crop. We have certain diseases and insects which work upon certain plants belonging to the same variety or family, and it is quite largely due to the ravages of these diseases and insects that the farmers in many instances have been made to observe some system of rotation. Many who

know the days of wheat growing in Wisconsin remember that at one time it was stated that through the efforts of W. D. Hoard and the chinch bug that Wisconsin farmers had stopped their soil robbing practice of continuously growing wheat. The wheat fields had become the breeding grounds for not only chinch bugs but for weevil and many other insect enemies and diseases. The great grain farms of the west are suffering today from the same factors that we suffered from 35 and 40 years ago.

Certain crops invite certain varieties of weeds. Grain crops if grown continuously through a series of years invite the growing of pigeon grass, wild buckwheat, Canada thistles, quack grass and many other weeds. These weeds exhaust the soil rapidly and grow where the grain should be growing and interfere with the crop very much. We desire cleaning crops on the farm occasionally, hence the rotation.

The soil on the farm through the one crop system gradually gets out of condition and loses its humus content—therefore it is of the utmost importance to grow crops that have tremendous root growth or shading power to maintain good physical condition. We receive help indirectly by following a proper rotation that is of immense importance in raising crops and maintaining moisture and fertility in the farm.

Of the many elements in the soil no one seems so important and expensive as the nitrogen supply. If secured in the form of a pure fertilizer it will cost 15c per pound. Now the farmer has it within his own power to draw on the inexhaustible supply of nitrogen in the air by the growing of crops in his rotation belonging to the clover family. The air is composed of 80 parts of nitrogen and clover plants, including peas, beans, vetch, etc., can feed upon this nitrogen, building up both root and top growth. When the roots of the plant decay nitrogen that has been taken from the air is left in the soil available for plants like corn, wheat, oats, etc., that do not have the power of taking a supply of nitrogen from the air.

For general farming on our clay or clay loam soils the four year rotation seems to meet the requirements best. In order to get this rotation properly under way it is best to plan the farm so there will be four distinct fields exclusive of garden, orchard, woodlot-pasture, or alfalfa field. For the farmer who is not practicing rotation it may take two or more years to get fully under way. The plan is to have field No. 1 planted to corn, po-

tatoes, peas or root crops; field No. 2, to grain (oats, wheat or barley), and seed down to clover and timothy when seeding with grain crop; No. 3, clover, two cuttings; No. 4, mixed hay.

Field No. 4 will be fall plowed and will be planted to the crops that were grown on No. 1 so as to have the plants in the rotation that grew on sod to best advantage. Field No. 3, from which we received two cuttings of clover, will give us a mixed crop of hay, the same as we received from No. 4. Field No. 2, the following year, naturally grows the crops grown on 3 and those on 1 take the place of 2.

This system of rotation enables the farmer to utilize the manure direct from the stable and it should go on to field No. 3 during the fall and winter. In the spring a hay rake should be run over the field to drag off all coarse litter that may have been put on while manuring the ground. This should go into compost heap. A fine tooth harrow with teeth set at a slant should follow this, distributing the manure evenly over the ground and will insure a good cutting of mixed hay for the season that follows. It also enables the grass plants to hold the fertility near the surface preventing leaching and evaporation. The crop that succeeds the mixed hay crop will be benefited by the manure applied and when the sod is backset after growing corn it makes a perfect bed of humus for the growing of clovers and grass seeds.

The four year rotation can be modified to suit the needs of the farm. If the farmer is in need of extensive pastures he can use a five year rotation, the year following the taking the crop of mixed hay from the field to use entirely for pasture. If on the other hand his soil is somewhat light and he puts up a goodly quantity of silage annually, he can use a three years' rotation and merely seed down to clover instead of a clover and grass mixture as recommended in the 4 year rotation. Otherwise use the 4th year for pasture. The growing of a clover or leguminous crop one year in 3 or 4 is the basis of all good farming and is one of the main factors in maintaining fertility and prosperity on the farm.

DISCUSSION

MR. DOUGAN: Sometimes it takes a lot of courage to put the rotation into effect. This year I had a pasture that had been

pastured for several years. In the latter part of May and the fore part of June the cattle reveled in it, the rest of the year it would not raise a chicken and the rotation called for putting it into corn. I finally mustered up courage enough to go at it and by proper handling that pasture yielded fifty dollars worth of silage per acre, which formerly would not have yielded fifty dollars for the whole pasture. I am trying hard to work out a perfect rotation system, because I am convinced there is not an improvement I can put into my farm that gives me so much assurance and helps me plan so far ahead with reference to my cattle and everything else, as this rotation matter. The only way is to take your paper and pencil and figure it out till you have a definite system for years ahead, you can't put one thing in this year and another thing next year without a definite plan. The only way is to take a paper and make a plan of your whole farm, make a system covering every part of it and then follow it. It takes a lot of courage sometimes to plow up a beautiful grass crop but you must do it if you are going to be benefited in another year. The banker and every other successful business man plans his work ahead by a definite system but we farmers have been going on too long without any definite system, running our farming in a sort of haphazard way and it hasn't paid most of us. I would plan ahead as far as I could in such a way that things would go right on. Some accident may throw your rotation out for one year but you can get right back in again.

FEEDING DAIRY COWS

W. J. GILLET, Rosendale

The dairy cows of the State of Wisconsin and of every state of the United States are invariably underfed, and not only underfed but injudiciously underfed. I want to say further that between this injudicious feeding and the inferior cows, that many of our dairy husbandmen are being caught and ground between the hether and the nether millstone.

Science has taught us that certain elements in feed when given to animals produce heat, energy, fat, body tissue. Other elements in food produce lean meat, bone, muscle and milk. Every

animal, regardless of its function, appropriates a certain amount of the food consumed for its own bodily sustenance and beyond that amount what is consumed is appropriated to one of two things, either the production of milk, as applied to the bovine race, or to the taking on of flesh and body tissue.

But we are to look at this time to the dairy cow and I have always been of the opinion that if it paid to feed any animal at all it paid to feed them well. In one sense and in a large sense the dairy cow is a machine. If you put nothing into a machine of any kind you are going to get nothing out of it. I have told you that certain elements of food produce milk; other elements of food produce fat and so on. So in considering the matter of feeding, our first object should be the selection of feeds that are adapted to our special purpose. The chemistry of the cow and the chemistry of our scientists have taught us that a dairy cow requires a certain per cent of protein and a certain per cent of carbohydrates in her feed in order to sustain body function and produce milk profitably. The science of the cow and the science of the chemist, it is true, do not always agree and yet I believe we can rely more upon the chemistry of the cow than we can upon the chemistry of our scientists. The dairy ration is a mathematical proposition; it is a proposition that you can sit down with in your study at night and figure out with a lead pencil with the proper tables of the feeds before you, but the balanced ration will vary under different conditions, will depend altogether on the condition of your animal.

Experience has taught me that the cow should go dry for a sufficient length of time to lay on a considerable amount of flesh. Some of you may think that perhaps that practice may induce a beef habit but I want to say to you and I want to say it positively and firmly, that with the proper use of feed and the proper condition of a dairy cow with proper dairy function, whose dairy function is an inherited characteristic, you will not destroy that function in any short length of time by any amount of feed that you may use to put her in proper condition for freshening time. Now, I advocate the feeding of the dairy cow to put her in this proper condition for this reason; I believe that the cow needs that rest. I believe further that she will lay up a certain amount of restored energy, which restored energy will be appropriated later in her lactation period for the elaboration of

milk and butter. Not only this, but it leaves your cow in a stronger physical condition and without stamina, constitutional vigor and vitality in a dairy cow, you have absolutely nothing upon which to build your foundation.

Now, what I mean by a dairy ration, a balanced ration, is the proportion of the carbohydrates to the protein in your feed. The nutrient ratio, I have found, might vary from one to four or as wide as one to five and one-half, depending on the condition of your cow. I would not advocate so narrow a ration as one to four, except in cases of cows in very high condition, that is cows that had been highly fitted and freshened when in very high flesh. Nor would it do to continue so narrow a ration for any given length of time. That is a matter where the skill and observation of the feeder comes in. If your ration is one to four and the cow is in high condition and the cow is evidently using up some of the body fat which she has stored up, you must watch that cow very carefully, you don't want her to become weak or emaciated, consequently the necessity of widening your ration in order to keep up her condition.

Now, our scientists have advocated that we feed a grain ration ranging from one pound of grain to three to four pounds of milk. I do not believe that there is any such rule that can be laid down as a guide for the feeder for the production of milk. When I left home we had two young cows in our barn which were producing five pounds of milk for a given pound of feed but I do not suppose they can be made to continue this for any length of time.

What I want to emphasize is this, the fact that this condition and this great food problem lies largely in education, in observation, in experience, and in the contact of the man who is in front of the cow and who is handling the feed personally.

We have heard here about growing alfalfa. Alfalfa is a good milk producing feed. We have heard that corn silage will produce milk very economically. We have heard it intimated that alfalfa and corn silage alone would make a very satisfactory dairy ration, but I want to stand squarely on record as stating that if you are going to run the dairy business and expect to feed nothing but alfalfa and corn silage, that you better not start in the business at all and if you are in it you better get out of it, because as I said before if it pays to feed at all it pays to feed well and my experience in front of the feed rack and my association

with the dairy cow teaches me that it pays to feed a good cow a well balanced grain ration every day in the year whether she is giving milk or not, because when she is giving milk she is giving it out to her owner through the pail, and when she is dry she is putting herself into condition to lay up that restored energy which we desire for the production of milk hereafter.

Our Secretary warned me that I should keep to the A, B, C's of this feeding proposition and I think the best way to do that will be to tell you how we do it on our farm. I do not say ours is the best way, but it has been very successful and we have been able to make our cows yield from \$150 to \$250 worth of milk a year besides raising their calves on new milk, because our milk goes to the cheese factory.

In the development of the dairy cow we have got to begin with the calf and that dairy calf must be brought up along certain dairy lines and trained into its particular line of work. I am a believer in the idea that there are certain influences which can be exerted by the feed to help along or to divert our purposes in developing the dairy animal. We can use too much of the carbohydrates in the feed which may develop beef characteristics and beef functions. I can remember, as can some of these other gentlemen, when we had some excellent milking shorthorn cows of the dairy type. But it is like finding a needle in a haystack today to go among the shorthorn breed in this country and find animals that are profitable dairy animals.

Now, when we select our feeds there are two or three points that should be taken into consideration. The average Wisconsin farm grows sufficient roughage to supply the needs of our dairy herds. This is found in our clover hay, in our alfalfa and in our corn silage. You cannot dairy profitably in the United States today at the present prices of foodstuffs, without the use of a silo. Silage is good for growing animals, it is good for the dairy cow, it is good for the horse, it is good for the chicken and if I had a wife or a baby that wasn't working just right, I would feed it ensilage. I think a great deal of clover, for myself personally I would prefer clover to alfalfa for the dairy cow, not only for immediate results but for the future. I have found that for immediate results through the pail you will get greater amounts of milk through the use of alfalfa than you will with clover but somehow it has failed with me to keep my cows in the condition that I like to see them in. I presume it is be-

cause of its very high protein content and being of such a rich nature that they are not able to eat sufficient of it to round them out and keep them as plump as I like to see a dairy herd. Therefore I prefer clover.

We figure on five tons of clover hay to the acre every year and we buy quantities of mill feed of different varieties.

Our general winter ration consists of about forty to fifty pounds of corn silage to a mature cow producing from fifty to eighty pounds of milk a day. Our cows will probably average in weight from fourteen to eighteen hundred pounds. This, understand, is when they are in winter quarters. We use from forty to fifty pounds of good corn silage a day; we use—oh, I should think from six to eight pounds of clover hay or alfalfa, per day. We also provide for these mature cows in full flow of milk a grain ration and we have used for a number of years the following mixture; 100 lbs. bran, 100 lbs. ground oats, 100 lbs. of gluten feed. When this gluten feed was being introduced a friend of mine requested that I take a few hundred pounds and substitute it for the barley I had been putting in my ration, and note the results. We always weigh the milk from each member of our herd and consequently we keep track of what they are doing. We were at that time milking seventeen cows and heifers and with the substitution of that gluten feed for the barley in the ration of that herd the product went up to an average of 92 pounds milk per day more than they were giving before we introduced it, and not only went up but stayed there. The barley that we had been feeding cost just as much on the market as the gluten feed so you can see what a gain it was in that little experiment. We have used a good many different feeds since that time. We are great lovers of oil-meal and I consider that for keeping up the condition of your animals, as well as from the production standpoint, that it always pays to feed a small quantity of old process oil meal and we always feed it, no matter whether it is worth \$20 a ton or forty. We feed from one to 3 pounds a day according to the price and of this other grain mixture we feed from 12 to 18 pounds per day for a regular working ration. It sometimes happens that the oats that we use in this ration are a little bit higher than some other feeds. We study those things and act according to the markets, for instance, this winter, oats were bringing 46 cents at our elevator. We have consequently substituted for oats in our ration

the Schumacher feed which contains about the same amount of protein as does oats. For testing purposes we use a much narrower ration than that will figure.

In the summer time we have to vary our ration because the grain part of our ration is a little too narrow, but we aim to raise sufficient corn so we have silage the year round. When the pastures are fresh, of course they get sufficient feed in the pasture. And right here I want to say I believe the pasture is the most expensive feed we have on the farm when we stop to consider that an acre of pasture will sustain a cow not to exceed two or three months and that the same amount of ground will raise anywhere from ten to thirty tons of ensilage which will feed a cow forty pounds of ensilage a day from one and a half to over four years. The summer ration must be varied and be made broader, but we use bran for this purpose. We cut out our gluten feed, which is a highly protein feed, about 24 to 28 per cent of digestible protein and we substitute corn meal or hominy which is a corn product.

I want to advocate the feeding of a cow well up to her limit; I want to advocate the persistent feeding of the dairy cow, no spasmodic, no impulsive feeding. You will find in your observations that it is the persistent, liberal feeder that has been the most successful with the dairy cow.

We should remember another fact and that is that when we buy a ton of bran we buy a certain amount of the fertility of the soils of the Dakotas; when we buy a ton of oil meal we rob our western districts of a certain amount of the fertility of their soil. When we buy cotton seed meal we rob the cotton seed plantations of the South of a certain amount of their fertility and we put that product into the upbuilding of the soils of Wisconsin.

At the World's Columbian Exposition at Chicago it was demonstrated beyond a doubt that size was a desirable characteristic in the dairy animal. I am not saying this to knock any of the smaller breeds, but it is a fact that most of the dairy breeders are aiming to grow size in their animals. I mean that it is the large cow in her particular breed that is giving the best results. I don't want to infer from that that we are advocating the production and breeding of large rough animals. We want with that size a certain degree of refinement that goes with the ideal type of a dairy cow. Now, providing you get that refinement

I don't believe you can get too large an animal in the dairy cow even if you get her to weigh 2400 pounds; if you can breed a cow that will maintain her dairy function with the same degree of efficiency, a cow may weigh 2400 pounds and she will consume twice as much feed as a cow that will weigh 1200 pounds, but if she has got the same function she will produce twice as much milk because she is twice as big a machine. We have got to take size into consideration in feeding. And still I have seen cows that were proportionately small cows of the breed to which they belong that were wonderful producers, but if that happens I say it is not because of their size but it is because the small cow has a natural characteristic and a strong dairy function—more so than the large one. Of course we are speaking of the same breed every time in making these comparisons. I cannot name you any ration by which you can go into your herd and feed your large cattle or your small cattle to give you a certain amount. That must lie in the judgment of the feeder. If he has got a little cow that will take one hundred pounds of grain a day and produce economically accordingly, he should give it to her. If he has got a big cow that will not pay for feeding fifty pounds, she is not profitable. A man must study, he must have a natural instinct to observe his animal and know the way to feed her according to her ability to produce economically.

I would not object to inbreeding in a grade herd, but I would in pure-bred cattle. Of course in the inbreeding you are emphasizing the poor as well as the good breed characteristics. In the average grade herd on ordinary cattle it would be entirely safe. There is no time in the history of an animal's life when you can produce as much for the feed you give her as you can for the first year of the animal's existence. The next most valuable period is the period between one and two years old. Keep your animals growing all the time, keep them well fed and well nourished, in a good thriving, growing condition. Then let them freshen at 24 to 28 months old and you will find you have got a pretty good growth and instead of being a burden on you this young animal will start to pay for your care and at the same time she will go on growing.

Our calves are taken away from their mothers as soon as they have their first or second meal. They are taken away and put into a calf pen. The calves dropped this fall will be kept in the barn until next spring until pasturing time. We have a little

pasture for them. We do not pretend to furnish much feed in that pasture, it is used more for open-air exercise. We start generally with about nine pounds of whole milk a day and we continue to increase that until they are given about fifteen pounds. If we have a calf that we desire to make some special growth on we give him more, but fifteen pounds per day is about the maximum. Now, understand me, we are forced to feed them whole milk, but when those calves are six weeks to two months old skim milk would be better I think. You can add to the good effects of that feed by putting in a little oil meal. I think you can get better, more satisfactory growth and more economical growth with skim milk than with whole milk. As I say the fall calves are kept in the barn during the winter. Then in the spring as soon as they will begin to eat ensilage and grain they are fed all they will eat and eat up clean. We commence when they are two weeks old and keep hay before them all the time, preferably chopped clover. In the spring they are turned out and remain out all day. We do not expect them to subsist on what they find in the pasture but we want them to learn to pick. These calves are put back into the stable morning and night and fed just as if they were kept in all the time. If I had skim milk I would feed it to them until they were a year old.

SILOS AND SILAGE.

W. J. DOUGAN, Beloit

Silage is simply canned vegetation; sweet, juicy, preserved with the least possible waste.

Here grows up a hill of corn coming up to fruitage one hundred fold of what was put into the soil, under the skillful care of the husbandman, with beneficent showers and sunshine and with the chemical elements that have been put into that soil. We have a beautiful hill of corn with stalks, foliage, and ears. Now what shall we do with it? Our idea is to preserve that hill of corn with the least possible waste and how shall we do it? Through the silo. Science has settled that question. They have taken that hill of corn, have studied it carefully and have decided there is only five per cent lost in its feeding value in putting it into the silo and if you do not feed it up this year keep

it and feed it next year. I have seen silage five years old just as sweet as when it was put into the silo.

You farmers would think it a splendid thing if you could go to your fields any day and cut green corn just in its prime and with all the nourishment in it and give it to your cows. Wouldn't they smile at it, think of it,—any day all winter. And yet I would rather have that corn put into the silo and taken from the silo day by day than to take it directly from the field and give it to the cow because my cows have told me that they would rather have it that way. They like it better. My cows will stop eating green corn in September and turn to silage that has been stored for two years. The University has put out a little bulletin on the subject of "silage compared to soiling crops for feeding cows." In its feeding value according to the chemist there is a little difference; in the milk flow there is a little difference,—not enough to turn the hand one way or the other, but when you come to measure it in convenience and the keeping of the cows in condition, to my mind there is a large difference in favor of silage over cutting the green crop and taking it 365 days in the year into the cow's manger.

But when I am talking about silage I am not talking about any old thing that may be put into your silo. The cows know the difference; that chemical laboratory, the cow's stomach, cannot make good silage feed out of noxious weeds. I don't know what your methods are around here in growing your crops for your silos, but silage in order to come out good silage has got to begin at planting time. You have got to plant for the silo. Yes, the farmers say, we do, we plant to get the largest number of stalks and the most tons per acre of anything that will make silage.

You want for your silage the best possible corn that your soil and your climate will raise. I traveled last August about Athens, not so far from here, and I found there that the field corn that was planted for the silo often was not worth cutting. I would not encumber my silo with it and I would not insult my cows by putting it before them, and these farmers thought they were doing good farming. One of the most intelligent men and one of the most farseeing men that I know in Athens made this remark to me. "I have learned that the corn we want for husking we have got to plant differently from that that we want for silage. We have got to checkrow it and cultivate it and prepare

it." Thus far he was all right, but he failed to grasp a great principle of silage, the silo is not merely a great storage place for fodder corn.

For silage we must put the right thing into the silo if we are going to take the right thing out. The trouble about the fields of corn at Athens was not in the soil nor in the climate, it was the man with the hoe.

In your climate don't try to drill corn. You will get almost as many tons to the acre and you will keep your fields clean of weeds if you checkrow your corn and cultivate your corn. Do not let a weed grow up in the hill. If we would put as much effort on the corn plant as we do on the sugar beet plant we would produce more to the acre with less trouble and it would do your land more good. The beet raiser knows he has got to have a beet every eight inches and he spares no pains to get it that way. The corn farmer says to himself, I would like to have three kernels to the hill, so I will slap in a lot of seed, because I don't know whether my seed is very good or not. So he goes along hit or miss and maybe he gets three kernels to the hill and maybe three ears to the hill and he puts into the silo what he happens to get.

Now, what is the real secret of good silage? How shall we get just what we want? By building the right kind of a silo and putting the silage in at the right time and the right kind of silage. I hear the question everywhere, Will it pay to build a silo? Remember that you have got to feed the dairy cow and you have got to have the right kind of silage. Keeping this in mind, try to grasp the advantage that the silo gives you over conditions, over the trickeries of the seasons. That advantage is untold. Why, you must have silage, you must have a silo for the reason that we are apt to have early frosts, and what is the use of a corn crop after it is frosted? A frosted cornstalk that has stood on the hill and dried out has no food value in it whatever. You cannot feed the dairy cow with it and expect her to produce milk. But if you have a silo, there comes along an early frost and if you are able to so adjust your labor as to push that corn into the silo inside of ten days, you have stopped the loss in that corn. It will not ripen any further but you have stopped your loss; it will go into the silo and come out without any protein loss and if you haven't a silo it is sure to be almost a total loss to you.

Or perhaps there comes the early frost and you have a crop of clover that you have been kind of holding for late cutting either for seed or kind of waiting to see whether you were going to get your silage in all right, but the frost comes along in the middle of August and that clover is nipped. Your help perhaps is a little short and it is rather long before you can get your silo filled. What can you do? Clip down that field of clover, alternate it with your corn which has also got nipped and put it into the silo and you will have the best silage a farmer ever had. I did that very thing this last fall with the fourth crop of alfalfa. I and my two men had to fill the silo alone, help was so scarce and we were a little long about it. The corn was frosted before we began. We clipped down four acres of alfalfa and put it with the corn into the silo and the upper twenty feet of that silage is the best I have had for years. You see that makes you master of the situation.

Then comes the question what kind of silos shall we build, what are the secrets of a good silo?

There are several requirements of a standard silo. It must be a permanent structure and must fit into the constant, permanent, purposeful development for permanent occupation. In other words, it must be for your sons and grandsons to use. A silo can be put up that will stand so long as this old earth stands and for very little more than the cheaper, the more destructible silo can be put up. So the first necessity must be permanency so as to fit into the plan of a permanent, a progressive agriculture.

Then, one of the essential requirements of the silo is that it must be air-tight and water-tight. Any silo that will drip out the juices of the silage around the bottom is an awful waste, it is no silo, it is a failure. I read a while ago of a whole herd of cattle all actually getting drunk from the drip of a silo. No, the silo mustn't leak, it must be impervious to water and absolutely air-tight.

One of the speakers said yesterday he would advise a farmer to go into debt for a silo. If you can put \$400 into the building of a silo and borrow another \$400 and build a perfect silo that is certainly a wise thing to do. In planning for such a building, as in all your improvements in the permanent development of your farms, you should ask not only the question, am I going to get my money's worth out of it? but, is it going to be worth what I put into it to the other fellow, to the community?

A silo must be built high enough. You have been told here that you should build your silos large enough, but I say build your silos high enough to accommodate all your future requirements. When I first built I put up a silo thirty-six feet high and it seemed to me I never wanted to go any higher, it seemed awful high. A year later, when I planned to build something more, I found I had to have more silage room. I put on thirty feet more on top of the thirty-six feet and I doubled the capacity of my silo and increased the value of my silo for curing vegetation. After I get down ten, fifteen or twenty feet from the top, my silage is just as hard as rock, there is not a particle of mold, cannot be under that tremendous pressure. So I say, the higher you can build your silo the better. This used to be the rule that was given out for building silos, only to build the silo twice the height of the diameter. Nonsense. My silo is four times the diameter and when I want more I am going to build it still higher. You can do it in safety if you build according to a purposeful plan for permanent development. You can build solid enough to run that shaft up wherever you please.

Now, how shall we put the silage into this silo to get the ideal conditions that we want? Silage that is once frozen and thawed out and quickly used is not hurt, not a particle. The surface of your silage, perhaps the whole top, will show the effects. I have asked men about that and they say, "I am not bothered at all with silage freezing. It comes away from the wall fairly easy, the cattle eat it all right and there is not enough frozen silage to pay any attention to, not enough to really do harm into the silo." Your cows don't like frozen silage. They come on to hard chunks and they lose confidence in this nice feed they look forward to getting. But those little hard processes are on the top of every silo in cold weather if it is not properly protected. Now, how can we avoid that?

In taking silage out of your silo, keep the surface like an inverted saucer. Insist always on your man digging out six or eight or ten inches around the edge and let it go down gradually toward the edge. The silage does not freeze through the wall so much as it freezes from above. Two years ago I went into my silo when my man went away for a short vacation and I discovered he had a ring of solid silage around the edge three feet high and coming up in the center. I went into the silo with a pick and I dug right under that ring clear to the cement wall

and found not a bit of frozen silage except right close up against the wall. All the rest of that cold weather two years ago, never was there a ring around the silo of frozen silage because I always insist upon keeping the silage in the form of an inverted saucer. Then, just the first snap of cold weather, I fill a lot of gunny sacks about two-thirds full of fine chaff and take into the silo, enough of them to cover the whole top of the silo. I shut up the doors and keep the doors all up as we go down, not allowing any circulation of air in the silo, stop the circulation. We lay a ring of those sacks around close to the edge and when the man puts them down he tramps every sack, keeping it just as close to the edge as possible. When you come to take out the day's portion you throw the sacks back with your fork from half of the silo onto the other half of the sacks. Just draw a straight line through the center, pick the sacks off one side and lay on the other, pitch off the silage that you want and cover it over again. At night uncover the other side in the same way. In that way you will have no trouble to keep it from freezing. You must insist on your man tamping it thoroughly every time. It takes but a moment, but it will be worth dollars to you in feeding your dairy herd in the winter.

Just a word on filling, how to fill the silo properly, and it is no small trick. You have got to fill it so as to keep your silage well canned, and the principal thing is to get the feed well mixed and to get the air out. Put the best man on the farm into the silo for filling, make him mix the silage thoroughly to and fro and keep it well tramped at the outside, the center a little lower than the outside.

DISCUSSION

A Member: At what distances apart would you plant your corn to get the best results for ensilage purposes?

Mr. Dougan: I plant in check rows 38 inches apart and cultivate both ways. If you think your soil is strong enough and you can give it good enough cultivation to get a good large per cent of ears, plant five or six kernels to the hill. But do not plant so thick that you will check the corn. Study your soils and your conditions, study how much corn you can get, and when I speak of corn I mean corn, not merely stalks. Study how much corn you can get to the acre, that is an individual question for you to ask yourselves.

TESTING 14,000 COWS IN WISCONSIN

H. C. SEARLES, Wisconsin

If a farmer wishes to feed his cows economically it is quite necessary that he should know the exact production of each, in milk and fat, and the nutrients required to produce a given amount of milk of a given per cent of fat. To aid him in this work the Wisconsin Dairymen's Association during the past seven years has been organizing cow testing associations. These associations are composed of 26 to 30 or more farmers in a community who organize for the purpose of having yearly records kept of their cows. In Wisconsin we have 30 cow testing associations with a membership of 900 farmers having 14,000 cows under test. We always have five more associations ready to start as soon as suitable men can be secured to do the testing.

After 480 or more cows have been pledged by the farmers in a community at \$1.00 to \$1.25 for each cow per year, a meeting is called of the interested parties who proceed to elect five directors from which the officers are chosen. After the officers have been elected and by-laws adopted, the next step is to hire a tester, whose work may be roughly outlined as follows:

1st. To name or number each cow in every herd, recording the breed of each together with the age, weight, and freshening period, previous to starting the test.

2nd. Weighing and recording amount of feed fed each cow, together with the value of such feed, using the one day's weight as a base for computing the cost for month.

3rd. Weighing and sampling of each cow's milk night and morning at each farm, one day each month.

4th. Testing and computing the amount of milk and fat of each cow, using the one day's weight as a base to get the month's production. Or in case any farmer wishes to weigh each cow's milk at every milking during the month, the field man will add same, giving each cow credit for exact amount.

5th. Figuring the value of fat of each cow at price received from creamery or place product is sold. Showing net profit over cost of feed, cost of producing 100 pounds of milk, cost to produce 1 pound of fat, and the returns for \$1.00 in feed fed.

6th. Balancing of rations and giving advice when asked to do so. Out of every association in the state there are 50 to

75 unprofitable cows sold before their yearly records have been completed, and which do not appear in our reports. However the following record of 10 cows will give a slight idea of how much it pays (?) to have a few poor cows in the herd:

Cow	Milk lbs.	Fat lbs.	Value	Feed	Profit over cost of feed
1	11, 066	400	\$133.16	\$45.37	\$87.79
2	3, 917	134	43.88	34.08	9.80
3	13, 700	452	151.33	54.23	97.10
4	8, 608	292	95.03	42.54	52.49
5	2, 052	91	27.26	32.70	Loss 5.44
6	3, 078	111	33.07	32.70	.37
7	8, 051	358	113.72	40.59	73.13
8	5, 709	215	68.17	37.93	30.24
9	8, 064	432	137.45	45.07	92.38
10	5, 330	229	73.67	40.87	32.80
Average ...	6, 963	271	87.67	40.61	47.06

At the beginning of the year the above herd contained 13 cows; 3 poor cows were sold and 3 happened to slip through to give Wisconsin farmers warning.

DISCUSSION

Mr. Glover: I have been closely connected with this work since it was started and a few things came across my mind as Mr. Searles was talking. We have worked together somewhat and we have helped to reorganize some associations and I want to call your attention to a few things we have discovered in this work.

We have had men come into our meetings where we are organizing a testing association, and say that it is not necessary for them to weigh the milk nor to test it; that when they milk they can estimate how much the cow has given by what they see in the pail. Another man will say, I can tell by the color of the milk whether it is rich milk or not.

All this time we are emphasizing the difference in cows, our cow testing associations are testing the man a great deal more than the cow, because the cow is most always a better dairyman than the man.

When we organize these cow testing associations we bring before the owners in a most concrete way the methods of right dairying. They begin to study the care of the animal, they learn that they must not let her stay out in cold rains. They

see that she is comfortably housed. They see that she is milked regularly and that she is fed a little better ration. It calls their attention forcibly to the necessary requirements to feed and care for the dairy function.

The dairy cow will give up more energy in a single day than the steer can manufacture in three days. A good dairy cow will do four times the work of a steer; she will give you four times the nutrients. Now, you cannot call upon the animal that is constantly giving her life blood in milk to take the same hard knocks that the steer takes. You cannot expose her to these northern winds and expect her to respond as the steer responds.

Further, she is a mother and motherhood takes strength, vitality. We men who have raised animals know that, it is no secret to us. If you will reason back to the idea that the cow is a mother, the calf is a baby, you will get back to the fundamental principles demanding that you take care of your cow. So these cow testing associations come along and they point out to the man these things that he must follow to make dairy-ing pay; that raise him up to where the cow is. She says to him, you take good care of me, such care as I ought to have, and I will return you a profit. There is not a single individual that has carried on this work for two years that has not shown a gain of from five pounds of fat up to fifty pounds of fat per cow per year, showing that the cow was ready to do her part when the dairyman had been educated to do his.

We had one man up here near Rice Lake who was drawing stable manure from the livery barn in the city of Rice Lake and raising feed for his cows in that manner. When we came to his place to get him to test, he objected. He said he had all the knowledge he desired about feeding dairy cows, but fortunately for him his good wife saw the light and she insisted on his going into this business. He is a different man, his whole outlook has changed and from a very low production his cows have grown up wonderfully. This man, Mr. Clark, with a pure-bred herd, used to think he was doing pretty well to get 200 pounds fat and now he is not satisfied unless he gets 400 from the same machine. You see we lay it onto the cow, any shortcoming, and her shoulders are broad and she isn't there to defend herself and she accepts the criticism.

We have had men quit testing their cows because they found out they were so poor that they didn't want to know exactly

how they stood at the end of the year, because they were ashamed of them. We have had them pay out their whole year's expense and then drop out of the association and tell us to get off the place. They were ashamed of the work they were doing. Those men ought to stay right by and face the situation because no man can solve a problem by turning his back on it. Ignorance is the thing that holds us all back, everyone of us. We could everyone of us do more if we only knew more.

WHAT THE DAIRY COW HAS DONE FOR ME

C. A. NELSON, Waverly, Iowa

It is a great honor to be here in Wisconsin. Fifty years ago this morning I was a citizen of Wisconsin and this is the first time in fifty years that I have walked on Wisconsin soil and it made me very happy to be back in Wisconsin because it is a splendid state, a good dairy state, and Governor Hoard lives in Wisconsin. I think you have got the greatest man in the United States, the man who has done more for America than any other man. If I had an hour or two to spend I could easily spend it talking about Governor Hoard. Forty-three years ago when he started this great ball rolling this state had about one hundred thousand dollars in the dairy business. You now have one hundred million, and Governor Hoard has had lots to do with that wonderful growth. His paper has made scores of farmers' homes and towns everything that is great and noble, not only in Wisconsin but all over the United States. Down in Iowa they love Governor Hoard as well as any other citizen.

Out in Iowa, mother and father and I had to go through the hard winters and all the experiences that early farmers in Wisconsin and Minnesota had to go through. We were without literature, sometimes without proper food, but I tell you those early experiences made an impression. Just as soon as he could my father put Durham cattle onto the farm. Everybody said my father was ahead of his neighbors in his push and energy. He got beef cattle and we milked them. I loved those cows. I never felt so sad as I did when my father would sell one of them.

After I was married I had another proposition to meet. With my home and wife to look after it meant a good deal more. God joined us together and joined us to business, and we simply

had to attend to it. My wife didn't believe in buying high priced cows, but once in a while I did it just the same and made up with her afterwards.

I tried out this dual purpose plan and found I was losing money, and when you come to that point you never feel good about it. You aren't giving your family just what you ought to; you can't hold your head up with your neighbors, and I was ambitious to do the best I could. Well, in my work I came to a point where my neighbors said to me, "You have got a fine herd of cattle, they are fat and sleek." I was obliged to answer, "Yes, but they are not paying me. They are having a jolly good time but they are not paying for the feed I give them." That is the way with those dual-purpose cows. So I woke up one morning and said, "I am going to make a change. These cows have got to go." You don't know how much a man loves a cow unless you have loved one yourself. You don't know how much of a place they take up in your life. These cows of mine had become friends and neighbors. But these cows were making me spend too much of my time in the field and in the barn and for too little money. Do you know that most of you farmers are selling your time too cheaply? You ought to take care of cows and make more than forty dollars a month doing it. Well, I found out I was selling my time too cheaply to those cows, time which ought to have been worth more money.

Hoard's Dairyman came to the rescue, but I had spent forty years with that dual-purpose outfit and I never got over it. Well, I quit that. I went and bought some Holstein cows, some pure breds. I began to feed better—not better, but differently, different things. I fed corn and timothy hay and clover because I had them and I didn't know any better thing to feed. In those days there was no way to buy a paper that would help us, and when there came to be good dairy papers many of the farmers would not allow them to come into their mail boxes. In these days a farmer who wants to be a business man and who doesn't take a farm paper, isn't fit to live. I cannot conceive of anything so foolish as the farmer that will not allow some nice paper to come and help him and his family to do better. Did you ever figure what it costs you not to read? I tell you if you are not studying conditions, keeping up with things through the papers, you are going to be an awfully sorry man

some day when your boy drifts away, your girl drifts away. When they do that you can just blame yourself, you can just lay it to the proper cause, you did not interest them with good literature, with good social things, you did not give them a chance in life. So have some paper, some good things around the house to read—the Bible is the first thing in the morning, then comes *Hoard's Dairyman* next.

Things changed pretty quick with me after I put those Holstein cows into business. I began to make money and it has been easy since then. It is easy to do things when your neighbors are all saying you are doing well, when your friends come from a distance to praise you, and when they ask you up to Wisconsin to talk to men about the dairy business. My cows have been making me money. They have been making me proud and happy. The first year I had those cows they made me \$65 apiece. I just put in four new cows and took a little better care of them, began to weigh and test, and they made me a profit of over \$30. The next year they made \$85, the next \$100, the next \$125, and so it kept on until finally those cows ran up to \$250 apiece from milk alone. I don't claim to have any special hold. You can do the same thing as well as I can.

I had to buy some feed. I paid out about \$95 a year for the support of those cows by the time they were paying me \$250 and they gave me a nice calf besides. Wasn't that a nice profit on what I paid out? But what was I doing all this time? I don't work in the field any more, I don't have time. I am taking good care of those cows; I keep them warm in the winter; I give them feed that they like, that is appetizing, the best there is in the market. The cow helps to pay for all the conveniences, she buys the automobile, puts in the electric lights, puts a diamond ring on your wife's finger, and she deserves it, too. So give the cow the best you know how; she gives you the best she knows how; she gives you the golden rule treatment every time. There is nothing too good for the dairy cow. Give her the best sunshine that God furnishes and the best air. Treat her with the utmost respect and love, and she will do her part and more than do her part.

Talk to your cows. When Mr. Marsh made that great offer in Iowa of \$1,000 for the best ten or fifteen cows, some one induced me to try for it. I said at last, "I will try, but I don't believe I can get a chance for the money." But I went out

and talked to my cows about it. I said to them, "I am going to put you in"—I talked to them just as I do to my wife. I said, "I am going to do my best this year. I am going to feed you better. I will sit up nights with you, I will do anything in the world to take good care of you and I want you to get onto that money." Well, they looked as though they would do it, and we went into that test and I almost topped the monthly report three or four times, but not quite, and when the year was out, three cows were in the line, one was fourth, one was seventh or eighth, and one was ninth. Every one of them got money because I had done my part and they had done their parts and they got nearly \$400 of Mr. Marsh's money. Do you suppose one of them deceived me? No sir. Every day and every night they were working, taking every ounce of food I put before them. Not once did they refuse their feed, not once did their milk refuse to come. The next year I put in two of them and my four-year old gave 26,000 pounds milk and she was third or fourth in the Marsh contest. The other cow milked 50,000 pounds in two years and had two calves. Can you beat that? Those cows proved they were not only cows but they were almost human. They seemed to fully realize what I was trying to do with them. And do you wonder I love them? What did they do for me besides giving all this product? I won the respect of our state. I won the respect of Mr. Marsh and the respect of all that community for doing something with those cows that showed the better things our cows can lead us into. Through those cows a Bible woman over in China and three or four little girls are being supported and educated. The old bossies are doing what I could not do without them. I am helping to support some of the great things in the world. I am helping schools and churches, and the cows are standing back of me.

When I started with those Holsteins there was not a pure-bred Holstein in Bremmer county and now there are thirty-seven herds. With the Guernseys and Jerseys and other pure breeds there are about fifty pure-bred herds. That county turns out more butter than any other in the United States.

