

the one just mentioned. He being sired by the same sire, and from a daughter of Prilly. Five of this bull's daughters were sold to a man in Idaho, who had never had any experience in official testing, and this past winter two of them made over 30 lbs. each, and one of them was under four years old and the other a little past four. These facts that I have just mentioned show the importance of the careful selection of our foundation stock.

Notwithstanding the importance of the proper selection of the female members of the herd, yet still more important is the selection of the male to head that herd. Before a choice is made, a careful study should be made of the individuality and the characteristics of the females, and if there are any defects that are general in the herd a careful selection of a sire should be made, whose own individual characteristics would have a strong tendency to correct those faults. A careful study should also be made of the ancestors of the bull, back for at least four or five generations, as he is fully as apt and I sometimes think more apt to transmit the qualities of his grandsires and grandams and even his great grandsires and great grandams, than of his own sire and dam. This is the reason so many people are disappointed in the bull they purchase, as they buy a bull from some high-record cow without considering carefully the breeding back of her. People are learning this, as many of the inquiries we are receiving indicate, as many of them are now asking for a bull having a high-record dam, grandam, and great grandam. As this holds true in regard to production, so it does in connection with individual characteristics. After the selection of the foundation animals, then comes the caring for them and the growing and developing of the young ones, or in other words, it is up to the owner to work with those animals and accomplish the results desired. A careful study of the likes and dislikes and requirements of the animals and using judgment in supplying them is necessary for the accomplishment of the best results. Our agricultural colleges teach us about balanced rations and many facts necessary to know, but no institution of learning can put into a man's head the good, sound judgment that it is necessary to have in the application of knowledge to the every-day duties in order to succeed. To be able to answer questions and pass an examination on a subject is one thing, but to make the practical applications of that knowledge is quite another thing, and it is more important that a man should make the proper use of what knowledge he has than it is that he should know a great many facts and misapply them.

A man, in order to grow into a herd of large producers, as I have already shown, must first breed them, and then comes the raising of the calf and the development of the young animal. The calf should never be allowed to stop growing from the time it is dropped until it is fully developed. It should be fed food that will form bone and muscle, but never fattened until a short time before the heifer drops her first calf, and then a moderate amount of fat should be stored away in the system in order that she may have it to draw upon to supply the necessary fat for the large flow of milk we expect her to give the first season. For it will be impossible for her to give as large a flow as she ought to, if she is forced to manufacture all the fat contained in the milk as she is producing it.

For some time after calving the heifer should be milked three times a day and even four times is better in order to develop her. She should be fed so as to produce a large flow of milk the year through, until about two months before she drops her next calf, when she should be dried off and again be fed so as to be built up ready for another season of hard work. If this process is continued until the heifer is fully developed it will only take a few such cows to produce as much milk as some large herds are now producing.

Do not judge a cow from one or two good qualities and perhaps those of minor importance at that, but pass your judgment after taking into consideration every part of the animal. If you place certain emphasis on certain qualifications, be sure that emphasis is in the right place and not do as many are doing, discard a great cow because she has not a long, slim tail, or a bull because he has not good rudimentaries or something similar, things which really are of minor importance.

There is another thing that even our best judges are placing great stress upon, that I do not wish to criticize, yet I fear there is too much stress being placed upon it, for it is only a mark of beauty and not a mark of productiveness, but a lack, if either, in that direction, and that is the straight level back. Now, the idea that a cow should carry well out to roots of tail is a good one, but many of our best producers have the high pelvic arch, and this gives the animal the appearance of having a sloping rump. The mammary nerves center in this region, and if there is a great preponderance of those nerves the tendency is to cause an elevation of that point, and consequently the animal has the ap-

pearance of having a sloping rump. Of course, the animal with a good level back is more pleasing to the eye, and I would not discourage the effort of trying to breed them that way, providing we can do so and not injure the producing ability of our animals. What I have to say applies not alone to the breeders of Holsteins, but to the breeders of all dairy cattle. Let us ever keep in mind that the primary object of our efforts is the breeding of an animal that will be pre-eminently useful as a producer of dairy products, and if we fail to do this we are an utter failure as a breeder, no matter how pleasing the animal may appear to the eye. The Holstein cow, as we see her to-day, is the result of centuries of earnest thought and careful development on the part of those who have been breeding her, and she has become such a great producer that those of us who are now breeding Holsteins have a difficult task to perform if we expect to continue this improvement, and if we do not breed wisely our breed will become less rather than more valuable as dairy animals. We owe much to those who have been developing this breed for many generations, in that they have been able to hand down to us such a wonderful breed of cattle, and it is our duty to hand down to our children a still better breed than we have to-day.

(An address by A. A. Hartshorn, President of the American Holstein-Friesian Association, during Farmer's Week at the Massachusetts Agricultural College, Amherst, Mass.)

Some Experience With Jerseys.

I fell in love with the dairy cow thirty-five years ago, I have never regretted the courtship. She has been my hope, my anchor; she has led me out of deep waters. Her products contain the only natural food for man, all the food nutrients, and properly balanced necessary for the physical development of young childhood. Milk enters into combinations of more foods than any other half dozen productions of the soil, the sea, the air. It is the most palatable of all foods, and the most economical in present market prices. The mentality of any nation or people increases as the consumption of milk increases, is essential to the best health and physical development. It has been chemically demonstrated that if one pound of porterhouse steak is worth thirty cents, a quart of milk contains twenty cents worth of food nutrients. If one pound of round steak is worth twenty cents, one quart of milk is worth 16½ cents, and one pound of ham at 25 cents, one quart of milk is worth 16½ cents. Milk taken with other foods adds five per cent. to the digestibility of all.

Again the cow giving 6,000 pounds of milk in one year adds to the food supply of man more than 720 pounds of dry solid matter, all digestible, and the cow left to repeat the operation for many years, and a calf each year to grow into another cow or steer. The gain on a beef steer in one year will be less than 100 pounds solid dry matter, not all digestible.

The above is the foundation for the hope of the future for the dairy farmer. I know of nothing in agriculture offering equal possibilities to that of dairying. My plea is for the special dairy cow. The functions of the dairy cow and the beef are as clearly defined as those of the race horse and the draft horse. We have four distinct breeds of dairy cattle, i. e., Jerseys, Holsteins, Guernseys, Ayrshires, all developed along dairy lines for many hundred years, so now we have this accumulated experience and development to select from. So it seems to me a waste of energy and capital to go outside those four breeds for dairy stock, better to take up the work where others have advanced it high unto the harvest.

I was not reared in a dairy section, and knew nothing or very little of dairying until I was nearly thirty years old. The farmers' wives all kept a few cows, none exceeding five or six. The prevailing feeling in that community among men and boys was that milking cows and making butter belonged exclusively to women. In fact we thought it beneath the dignity of men and boys to milk cows. I imagined it cramped my hands to milk, and did not get this tired feeling out of my system until I realized that my wife was making more money from her cows than I was from all the balance of the farm, and I really had to go to her to borrow money for my personal expenses and to buy little equipments for the farm. She would only make the loan on condition that I would help her feed and milk the cows, and buy more dairy stock for her to make more money to loan me or rather give to me as she knew I could never pay it back. In fact she never required any obligations from me. She was very kind to me and I soon became interested, a partnership was formed, and it no longer cramped my hands to milk cows. From 1874 to 1880 my wife had among others two especially good cows, of no known breeding. There was no pure-bred dairy stock in that community. Since then I have owned thousands of pure-bred dairy cows, but among all very few better butter producers than those two mongrel-

bred cows. The other farmers' wives in that community thought that if they had as good cows as Mrs. Bailey's they could make as much butter, and, of course, just as good. We bred those cows to the best dairy-formed bull we could find. The offspring we could sell for three or four times as much as we could get for those from our other cows or our neighbors could get. We needed the money so awfully bad the temptation was too great for us, so we sold them. We thought at the time we were doing our neighbors a favor and ourselves an injustice. We watched the development of those calves into cows—all disappointing—not one of the heifer calves ever developed into a cow equal to the dam. Those cows were "sports," having nothing back of them to fix their qualities in their offspring.

In 1878 I became the owner of a registered Jersey bull, cow and heifer calf. They proved to be good ones, true to their ancestry—the offspring always equal to or superior to the dams. Our interests in the dairy cow increased, and we bought as many high grades as we could find and our means would permit. The reputation we had gained with our two "sport" cows aided us very much in new and advanced efforts with real dairy cattle. In 1880 we moved onto a rented farm of 250 acres, about one-third timber, land poor and very poor fences and buildings, with no stabling for cows. We rented this farm for five years at \$400 per year cash rent, with permission to go to the woods to cut all the timber we wanted for buildings for the farm. With two yoke of oxen and a team of horses we went to the timber, cut logs and hauled to a nearby sawmill for lumber for a cow stable, which we built by planting four rows of poles ten feet apart, spiking on two-by-four scantling for stringers and boarding up and down for outside weather-boarding, we put in rigid stanchions, a platform for the cows to stand on, and a loft overhead for hay and grain. A clapboard roof was provided from the best splitting oak we could find. This stable was 25 by 50 feet, holding twenty-eight cows. There was a good spring, and a partly fallen down spring-house which we patched up the best we could. We needed ice so we went to the sawmill, got slabs, made a slab ice house 12 by 14 feet, by packing about one foot of sawdust around the inside of the walls and against the ice, by giving it careful attention we kept ice all the summer. This was our equipment on the rented farm. We started the dairy business in this way. Since then we have had much better buildings and equipments, but never have we attained greater success than we did on that rented farm. What we lacked in buildings and equipment we tried to make up by close attention to our work. During those first five years we showed some cattle at West Virginia State Fair. Some time after this we shipped in two-pound fiber boxes some butter to special customers in Pittsburgh. Nothing was said about prices, but returns came every month and very much better than we were getting in our local market. After we had been shipping about four months I got on the train and went to see them. I told them what we were trying to do, and that we thought we could keep up the quality and supply in winter as in summer. I emphasized that we were anxious to make a product that would please their trade and would do our very best, and in return we wanted their very best encouragement in the way of price, thirty-five cents a pound for all we could make, the year round, and I did not have the heart to ask them any more but thanked them, showing my appreciation. On my return home there was a regular old-fashioned love feast in our home. We were buying wheat bran at \$8.00 to \$12.00 per ton, and corn at 25 to 30 cents per bushel. Butter at 35 cents per pound was a pretty good proposition. This success took ten years off my life, and made my wife fifteen years younger. Remaining on this farm for six years, we rented another farm, on which we spent about \$150.00 in arranging stabling. We had no spring house so we made a dugout or cave for our spring house, in the bank below the house low enough so that we siphoned water from a well above. We put in this a butter worker and barrel churn. Butter made in this little dugout on the hillside shown at the First National Dairy Show, in 1887 in Madison Square Garden, New York, won third prize in competition with over 200 entries of private dairy butter of the best makes of the East. This again took ten years more off my life, and returned the bloom of youth to my wife's cheeks.

Twenty-three years ago there was a young man working in a stone quarry in Highland Co., Ohio. After accumulating \$75.00 he bought a couple of cows, and started to peddle milk in a small town. For seven years he never missed a day in delivering that milk himself, attending strictly to his business, and catering to the demand of his customers. The demand for his milk rapidly increased. He bought grade cows at first, but replaced them later as his means would permit with registered Jerseys. He built modern barns, now owns 225 acres as good farming land perhaps as any in Ohio, and milks 135 cows, having altogether over 200 head registered