to throw in plenty of straw and keep them clean in that way.

(4) I find it difficult to get satisfactory results with any kind of feed in feeding for the market in winter, unless when I can give them a little skim-milk. With skim-milk any sort of grain ration will do well. I like about one-half barley chop and one quarter each of shorts and bran.

(5) Wet. Keep a feed ahead all the time.

(6) Have never used turnips as pig feed.

(7) Usually confine their diet to mangolds or red carrots until sows are near farrowing, when I give them the same as the market pigs, plenty of room for exercise being always provided them. Yours truly,

J. G. CLARK.

Woodroffe Dairy and Stock Farm,
Ottawa, Ont.

A FRAME BUILDING BEST.

Editor of FARMING

SIR,—(1) We prefer a frame pen, double boarded, with tar paper between (think this is plenty warm enough for pigs during winter), with plank floor; the pens to be made into two compartments so as to have a feeding pen and a dry sleeping pen, although part of our own pen is stone, with cement floor. If we were building again we would have nothing but a frame pen for winter quarters. We find a stone hog-pen too damp, and the pigs never thrive as well as in the frame pens.

(2) We prefer allowing our pigs to run out during the day in the winter. We find pigs closed up during the winter are not nearly as hardy, and we have more or less sickness.

(3) We have our pens slanted about six inches towards the trough, and under the trough we have a trench about four inches deep, which carries off all the liquid to the outside of the pens into a tank. This keeps the pens quite dry, and we give them a thorough cleaning out three times a week.

(4) We find mixed grains give us the best returns, such as peas, barley, bran and shorts in equal parts.

(5) In feeding grain we feed it wet.

(6) We don't feed turnips at all, but do feed raw mangolds.

(7) In feeding stock boars and brood sows we feed mangolds twice per day, with a little grain for noon—plenty good enough, and not an expensive food. We allow them to take all the exercise they wish to take, with a good dry place to sleep in at night.

Yours respectfully,

A. GEORGE & SONS.

Crampton, Ont.

FOOD, CARE AND MANAGEMENT OF DAIRY COWS.

Editor of FARMING:

SIR,—When fresh in October, if pasture is good, we let our cows have it as long as the weather is favorable, supplementing it with a grain ration of a mixture of bran and chopped grain, and also roots, mangolds being preferred. If the pasture is not sufficient we feed corn, or better still, ensilage. We feed liberally, using good common sense. As soon as it becomes chilly or cold at night we keep them in the stable, and let them out to pasture in the daytime until the weather is too cold, when they are stabled altogether, and put on full rations. These are 40 lbs. ensilage, from 6 to 10 lbs. of bran and chopped grain (we prefer pea meal and bran in equal parts by weight, but any grain ground fine is good if enough is fed), and what hay or straw they will eat up clean per day, each divided into two feeds. Last winter, hay being scarce, we fed no hay at all, just straw for dry feed, as they appear to crave for a certain amount of dry feed, and it was fed without any loss of product, and it was much cheaper.

We keep our cows in the stable all the time in winter. We have the water in a trough in front of them where they can drink as they want it. We find many advantages from it; each cow drinks all she needs every day in a comfortable place with the water at the same temperature as the stable. We have no risk of the cows becoming chilled, and have an even flow of milk. Both stable and cattle are kept much cleaner, and a great deal of time is saved and feed also. All stables should be properly ventilated. If a man prefers, or is obliged to let his cows out in the winter for water, it should only be for a short time in a warm yard, and the water should be close at hand, if not it tends to reduce the quantity of milk and thereby cause a loss.

We keep the cows clean by preventing them from getting dirty, then by cleaning them with brush and comb when they are dirty. The length of the stall should be suited to the cows. Use horse manure in the gutters to soak up liquids, and sawdust on standing platforms. Use the brush and comb frequently all winter, and as soon as hair begins to come out do so every day or two; it will more than pay. Continue this feeding and care until the weather and grass are favorable to turn out to pasture. Care should be taken when turning out to do so by degrees, especially if the cows have been in the stable all the time, as they will suffer from the sun.

If cows calve in the spring treat and feed them about the same during the fall, only not as heavy as the others until after calving. Give them six weeks or two months' rest, but they will require to be fed well while dry, in order to build them up for their summer's work. Never allow a cow to become poor in flesh. Keep their bodies built up for business. We find we have learned a good deal by experience, but also that there is a great deal yet to learn.

We remain, yours truly,

ALEX. HUME

Burnbrae, Ont.

RAISING HEIFER CALVES FOR THE DAIRY.

Editor of FARMING:

SIR,—The first step, and a very important one, is selecting the calf, and a heifer should not be raised for the dairy unless her dam and sire are worthy of a place in a dairy herd. Our calves are left with the dams until they are dry and have but one feed. They are then taken to a box stall where they are fed new milk for about two weeks. We then add a little skim milk and oil cake or linseed meal, and gradually increase the quantity till at six weeks old it is getting no new milk.

They are fed bran, chopped oats and clover hay as soon as they will eat them, and at three months old are allowed grass, cut corn, pulped roots or ensilage. From this time on they are encouraged to eat all the coarse fodders they will, but are allowed very little grain after they are eight months old till within six or eight weeks of calving. We then feed oat chop liberally, as it develops the milk vessels. The heifers are not apt to become too fat at this stage, and there is little danger of milk fever with their first calf.

Most of our heifers calve in the fall when they are from twenty-two to thirty months' old and are milked for twelve or fourteen months.

While heifers intended for the dairy should never be kept too fat we think more are spoiled from starvation than from over feeding. A little handling as the heifers are growing will make them gentle and easily managed at calving time, when they are naturally nervous and excitable.

We raise from fifteen to thirty heifers each year, and find the best results are obtained from this treatment. Our bulls are kept separate after they are six months' old, but otherwise they receive the same feed as the heifers do.

The most common errors in heifer rearing are:

(1) The calves are sired by the bull that is most convenient, regardless of his breed or merits. While half a dollar may be saved in this way it often means ten or twenty dollars loss in the value of the cow, and a good cow can be served with the same feed and care as a scrub.

(2) The calves are kept because they are heifers that are dropped in the spring of the year and will be old enough to stand the winter. They are left exposed to the summer sun, the flies, and to the autumn rains until the frost comes. They are poor when they come in from the pasture, remain so till spring, and are no bigger at one year old than they should have been at six months.

Yours respectfully,

B. H. BULL & SON.

Brampton, Ont.

HEIFER CALVES.

Editor of FARMING.

SIR,—In feeding, as in every thing else in this world, the first, and in fact the main requisite, with the breeder is common sense.

Two months before your cow is due to calve dry her up. Turn her out in a good pasture, and see that she has plenty of fresh water, and twice a day give her 3 lbs. of crushed oats and bran (1½ lbs. of each), with half pound of linseed gruel twice a week. With this treatment we expect a fine, bony, strong young calf, that, as soon as it is dropped, is looking for its feed; and we never get disappointed. We allow the calf to remain with its mother until after the seventh milking. The cow is pretty well milked out before we let the calf to her to suck. At the expiration of four days we take the calf away and place it in a loose box with plenty of room to kick its heels and enjoy itself. We then feed it its mother's milk for one month, all it will drink. At the end of the month boiled oatmeal, made like porridge, is mixed with the milk, which is gradually shortened until the calf is three months old. It is then turned out with the other cattle and fed with them. During the winter the feeding is about the same, with the difference of hay and roots in place of the pasture. Fresh air, fresh water, and lots of exercise are given. Do not imagine that your stables want to be like hot-houses, or that your cattle are like exotic plants. Such is not the case. If you want pneumonia, coughs, colds, lung trouble, etc., then keep your stable doors and windows closed up tight, so that no air may enter, and you will no doubt get what you want.

When the heifer is about 14 or 15 months' old we put her to the bull. About two months before her calving time she is fed and handled the same as the other cows, only with the difference that she has to be taught what her udder is for, consequently when she comes in with the other cows at milking time her udder is well rubbed and her teats gently pulled. She is taught to stand quietly; place her leg so that when she calves there is no kicking and no fooling around. She has been treated from her calfhood up as a pet and there is never any trouble with her.

One of the worst errors in breeding that we have noticed is the practice of dosing cows before calving. We have heard it said by breeders and farmers that it is well to keep their bowels right, and that is the reason they give them medicine. I know of one breeder of Jerseys who gives his cows before calving a good handful of wood ashes and the same of salts. Just imagine such a dose inside the stomach of a cow, a delicate organism like that, the result is that about 60 per cent. of his calves die of diarrhœa. Another error that we notice in feeding is that one likes to see his calf in good order, or practically fat. It is always well to remember that a fat calf never makes a good dairy cow. Err, if you err at all, on the side of under feeding, instead of over feeding. Give your calves plenty of fresh air, fresh water and exercise, winter and summer.

Bull calves we rear in the same way as the heifers, with this difference that a handful of pea or cornmeal may be added to their oatmeal when about ten months old if they are intended to be used for service at once. We are, yours truly,

S. WICKS & SON.

Buttonwood Farm, Mount Dennis.
Oct. 28, 1897.

THE DECADENCE OF THE FAIR SYSTEM.

Editor of FARMING:

SIR,—I was glad to see your article entitled "The Decadence of the Fair System," in your issue of Nov. 2nd. It has for some time been my opinion that we have too many so-called agricultural exhibitions. If we had just three really good exhibitions, held at, say, Toronto, London and Ottawa, it would surely be much better for the farming community generally, and also for exhibitors. With only three good fairs, the prizes could be largely increased, exhibitors would be encouraged to come forward, and competition would naturally be keener. The successful exhibitors would feel that they had some return for the labor experienced in fitting their stock or produce for the fairs, not only by receiving a substantial prize, but also by the advertisement of gaining a prize against strong competition.

If outside attractions are necessary, they should be of a high character, but should not form the principal feature of an agricultural fair. I hope some of your readers will express their opinions, whether favorable or adverse to the abolishment of local exhibitions.

Yours, etc.,

J. E. RICHARDSON.

Creekside Farm, Princeton, Ont.

BOOKS AND BULLETINS.

Nearly all "Bulletins" mentioned under this heading can be obtained free on application to the Directors of the respective Stations or Colleges. In cases of doubt as to address write to FARMING.

Human Food Investigations and the Rational Feeding of Men. Bulletin No. 54, by the chemist, H. Snyder, B.S. Agricultural Experiment Station, St. Anthony Park, Minnesota.

Milk: Its Value as a Food, and Studies which Suggest a Different Method of Sales. By C. B. Voorhees and Clarence B. Lane. New Jersey Agricultural Experiment Station, New Brunswick, N.J., U.S.

Losses in Boiling Vegetables and the Composition and Digestibility of Potatoes and Eggs. From the Department of Agriculture, Washington, D.C.

Composition of Full Cream Cheese. By Wm. Frear, Ph.D., chemist. Bulletin No. 2. The Pennsylvania State College Experiment Station.

Dominion Shorthorn Herd Book. Vol. XIII. Containing pedigrees of 1,407 bulls and 1,369 cows, a total of 2,776. This includes sixty-five pedigrees of bulls and several cows that should have appeared in Vol. XI., but the pedigrees were not sent in in time. List of transfers for the year 1896. From the secretary, Henry Wade, Parliament Buildings, Toronto.

Beekeeping. Farmers' Bulletin No. 59. By *Frank Benton, M.S., assistant entomologist*, U.S. Department of Agriculture, Washington, D.C.

Home Butter Making. By C. C. Macdonald, Dairy Superintendent of Manitoba. Contains full instructions as to the best way of handling cream and of making and marketing butter. From the Department of Agriculture, Winnipeg, Man.

Steer Feeding Experiments. Bulletin 67. From the Experiment Station, Manhattan, Kansas, U.S.

Studies and Illustrations of Mushrooms. Bulletin 138. Cornell University Experiment Station, Ithaca, N.Y.

Journal of the Jamaica Agricultural Society for September. Shropshire Sheep, Notes on the Management of Fowls, The Kerry Cow. Stock Breeding, Budding and Grafting the Orange. Published at No. 3 King street, Kingston, Jamaica.

The Seventh Annual Report of the Agricultural College of the University of Wyoming and of the Wyoming Agricultural Experiment Station for the year ending June 30, 1897.

The Guernsey Grade Cow. From W. H. Caldwell, Secretary and Treasurer of the American Guernsey Cattle Club, Peterboro', N.H.

The Constitution of Milk, with Especial Reference to Cheese Production, by S. M. Babcock; Tainted or Defective Milks; Their Causes and Methods of Prevention, by H. L. Russell; Bulletins 61 and 62 of the Wisconsin Experiment Station, Madison, Wisconsin.

The Veterinary Profession: Its Relation to the Health and Wealth of the Nation, and what it offers as a career. In noticing this excellent pamphlet, in our issue for October 12th, Dr. E. M. Michner's name was given as the author of it, and the party to whom applications should be addressed for copies of it. The name should have been Dr. Leonard Pearson, Dean of the Department of Veterinary Science, University of Pennsylvania, Philadelphia, and to him applications should be made for copies of the work.

Fruit Growers' Association.—The annual meeting of the Ontario Fruit Growers' Association will be held in Waterloo on Wednesday and Thursday, December 15th and 16th. Mr. Orr, Provincial Superintendent of Spraying, will show results of his work, also exhibit specimens of the San José scale and speak about his work. *Prof. Fletcher*, of Ottawa, will give an address. Addresses will be delivered on "Our Export Trade," "Cold Storage of Fruits," and other allied subjects. A good programme has been prepared. Mr. L. Woolverton, of Grimsby, is the secretary of the association.