

do this, she is simply an illustrious daughter of a degenerate family, with back breeding tendencies that destroy her value as a breeder.

Therefore, no cow should be judged in any other way than by her own merits, together with her ability to transmit her merits to her offspring.

Summer Butter for Winter Use.

BY PROFESSOR ARNOLD.

Persons who wish to know how to keep the butter made in hot weather for winter use are advised, first, to see that the cows are so circumstanced as to be quiet and comfortable. Cows which are by any means worried, or heated by too much exposure to hot sun, or annoyed with thirst, become feverish, and the butter made from their milk will not keep. Sound and healthy milk is a *sine qua non* in making butter to keep.

Second, the milk must not be kept so warm, while standing for the cream to rise, that the cream will become stale before it can be raised and churned. Butter made from stale cream has its death-warrant signed and sealed, and nothing will prevent it from going to destruction. To make butter that will keep, the cream must be fresh—it may be a little sour, but it must not be in any degree stale. If the milk must stand in a warm room, better churn the whole milk when it begins to sour, though it should be but twelve hours old, rather than let it stand for the cream to rise till its freshness is destroyed.

Neither should the cream, after skimming, be long kept if it must be kept warm. If there is not cream enough for a churning when it is in the right condition, do not keep it till it spoils, waiting for more, but supply the deficiency with the milk, and let the churning go on before the cream loses its fresh taste.

Third, cool the cream to sixty degrees, as near as may be, before churning. Butter churned at a high temperature, so that it comes soft and white, is spoiled for keeping. If good water is at hand wash the buttermilk out, but if not press out with laddle and level with the least possible friction. It must not on any account be made greasy. If butter, either in churning or making, is treated with so much violence as to break the grain and make it greasy, it will go to decay like bruised fruit and broken eggs, and for similar reasons. Greasy butter is so perishable that there is no use in packing it away for a future day. It will depreciate from the start and fail continually—salt will not save it. Many people have an idea that salting high will save butter. No mistake could be greater. It is the avoidance of injury in making which gives to butter its best keeping quality. Butter not injured in manufacturing is the only butter that will keep. Faulty butter will "go marching on" to destruction, though buried in the best of salt.

The Export of Fresh Meat to England

The great development of the transportation of fresh meat to England must make a description of the process of interest to all, especially to those engaged in the feeding of cattle. Now that the shipment of fresh meat from this continent may be regarded as fully established, the feeding cattle for European markets must be a source of good profit to us Canadian farmers. The process is thus described in the *London Illustrated News*:

The States from which more than nine-tenths of the carcasses are obtained, are Illinois, Kentucky, Ohio and Indiana, and a great many stall-fed cattle from Upper Canada. The cattle intended for British use are all taken alive to New York. After being dressed, the carcasses are put into a refrigerating room, where a constant stream of air, passed over ice, is kept up by means of an engine of twenty-five horse-power. The object of this is to extract all the animal heat from the carcass before it is shipped; and the effect of the thorough chilling is that the meat, brought from New York in this country, keeps longer after being delivered in the summer, than the meat killed at Glasgow. It is likewise much more suitable for curing purposes, being older and the fibres more open. After refrigeration, the quarters are sewn in canvas sacks, and shipped on the following day to be in readiness for Saturday sailing. On board ship, the walls of the chambers or safes are about nine inches thick, composed of wood, a layer of resinous paper, a vacuum for the air, then a layer of felt, and lastly a covering of wood. The walls are so constructed as to prevent rats gaining entrance to the apartment, for putting out of view

the damage they might do the beef, the injury caused by the hot air issuing through their holes would be infinitely greater. There are two modes in use of keeping the meat fresh; one is known as the fan, the other as the pipe process. The former, which is exclusively used on board the Anchor Line steamers, is believed to be the best. It is simply a continuous current of air, passed over ice, which tends to keep the temperature of the chamber at from 36° to 38°. If the temperature were to get below the freezing-point, it would injure the meat, so that has to be carefully guarded against. The other plan for maintaining a low temperature is by a system of pipes ranged around the chamber, through which is forced a compound of ice and salt. With the latter process the meat has a tendency to become frozen; and only recently, one firm in Liverpool lost 800 quarters from that cause alone.

The London Standard on the Sale of Canadian Shorthorns in England.

It was quite anticipated that Mr. Cochrane's consignment of Shorthorns from Canada would be one of the sensational sales of the year; but Mr. Thornton, who sold the cattle on Monday, could scarcely have imagined that 4,300 guineas would be reached for one animal. The stock sold on Tuesday was shipped on the 17th of August from Montreal, and after a ten days' passage they looked uncommonly well, thus proving that their constitutions were hardy. The sale brought out all the principal breeders of Shorthorns, Earl of Bective, Lord Skelmersdale, Lord Faversham, Sir W. Salt, Sir John Swinbourne, &c. The animals sent over consisted of a number of first-class specimens of the Booth blood and of the Bates, the latter of which were decidedly most in favor at present. The first animal brought into the ring was Vernal Star, a cow of eleven years of age. She is a beautiful red and white that keeps her age remarkably well. She rose very rapidly to 450 guineas, at which price she was knocked down to Mr. Darling of Shropshire. White Rose was bought by the Rev. Mr. Staniforth, after a spirited competition, for 400 guineas. This was a beautifully modelled white cow, and so was also the red and white Bright Lady, that fell to Mr. Torr, M.P., for 330 guineas. When Vesper Star came into the ring there was quite a sensation. She is a charming red and white cow, full of flesh, and betokens a good milker. From 100 guineas, which were bid, she rapidly rose to 1,000 guineas, at which sum the sand-glass ran down, amid cheers, to Mr. Crosby of Kerry, Ireland. There was less animation in the next lots, yet still several of the cattle went from over 200 guineas to 800 guineas. When the third Duchess of Hillhurst stepped majestically into the ring there was a moment's pause, until 1,000 guineas was offered, and Mr. Lodor at last claimed her as his own at 4,100 guineas, amid great applause, Mr. Thornton declaring her to be the highest priced cow in England. Lord Bective however had his revenge when the Fifth Duchess of Hillhurst came into the ring. At once a thousand guineas was offered, capped immediately by 500 more. Then 3,000, 3,300, and Lord Bective, in defiance of all other competition, bid 1,000 guineas advance upon his own previous bid, and secured her for 4,300 guineas, which is, with the exception of the Duchess of Geneva, sold in New York two or three years ago, for 7,000 guineas, the highest price ever given. After these prices it was thought that the Second Duke of Hillhurst, a magnificent specimen of the Shorthorn breed, would have made more than 800 guineas; but he did not, and at this price he fell to Mr. Longman. The sale in every respect was a highly successful one, representing in the grand total £17,150, the average of 37 cows, heifers and calves being over £420, and of eight bulls £2,400.

I was visiting a large dairy in Yorkshire, and for the first time saw the system in operation of taking the milk from the cream, and I believe that that system is very little known out of that county. To take the milk from the cream requires the dairy utensils to be specially prepared for that purpose, as follows: In the dairy I refer to the milk pans were oblong in shape (made of zinc, I think) three feet long by two and a half feet broad, and about eight inches deep (I did not measure them at the time), and the bottom of the milk-holder was about one inch smaller all round than the top, and each zinc basin was fitted into a wooden frame on four legs, which carried it about two and a half feet from the floor of the dairy. In the bottom of each zinc basin near each corner there was a large

hole made, and in that hole was soldered a piece of zinc pipe about twelve inches long, projecting under the basin, and of such a diameter that a common bottle cork would fit into it. The method of using the above apparatus was as follows: When wishing to get the cream, the dairymaid placed a jar under the pipe, and withdrawing the cork allowed the milk to flow in a rapid stream, and just before the last of the milk was ready to escape she replaced the cork, and the result was that in about one minute or less an unbroken mass of cream was left in the basin—at least it was only broken around the edge. I think the above process well worthy of being adopted in all the large dairies, as it seems to me to be a very great saving of time, and it produces more cream.—*London Land and Water.*

In-and-In Breeding.

As a good deal of discussion on this subject has occurred in the *Agricultural Gazette* of late, I beg to state a point of breeding which came under my notice the other week, i. e., one of our small flock-masters was delivering some 4-shear wethers from the Moor flock; all parties who saw them admired them greatly, and of course the master was questioned as to how he got such astounding sheep, and the answer was that they were never pampered or indulged, but when they had a good ram for getting, they did not part with him as a deal of people do, changing every two years or so. The last ram, which they were using now, they had in service for six years, and the ram before was his sire, and they used him eight years. Those wethers were of the North Yorkshire Moor, and will weigh when fit for the butcher 18 to 20 lb. per qr.—*J., in Agricultural Gazette.*

The Horse.

Lung Power in Horses.

How shall a colt be treated in order to develop in him the highest degree of speed? We will take an animal at two years of age, let us say, and inquire into the best method of cultivating the faculty and power of rapid motion.

The first thing to attend to, be it observed by all, is the lungs. Lung power is the best kind of power a horse can possibly have, because it alone can make other kinds of power of avail; muscular power is very desirable, but muscles can never bring a horse to the wire in time unless his lungs are good. Nervous force is excellent; but no amount of vital energy will hold a horse up through the wear and tear of a four-mile race. A perfect bone structure is admirable; but what are bones, if the breeding apparatus is inadequate? The first point, therefore, that a breeder or owner of a lively colt should consider, is this matter of lung development. The great question with him should be, "How can I expand and enlarge his lungs?"

To begin with, then, let it be remarked that colts need a great deal of exercise. By nature they were made for rapid movement. Like young birds they develop in motion. The number of miles a colt of high breeding, and in good condition, will go when at pasture, each day, is something surprising.

Now, no sensible man will turn a colt of fine promise loose in the pasture after the second year; and we do not after the first. A good colt is too valuable to risk in that foolish manner, especially if it be a horse colt. He should be kept in a large, roomy stall, where he can be attended to and trained day by day. But do not forget his need of daily exercise. Do not think that a box stall will suffice. You might as well teach an eagle to fly in a large cage as to give the needed discipline to a colt's legs, heart and lungs, in a box-stall. Many most promising youngsters are fatally checked in the development of their powers, by lack of needed exercise in their second and third years. We hold that a colt needs a great deal of exercise, not to the halter, which is good for nothing but to sweat out a lazy groom; but sharp, quick exercise, in the taking of which every muscle is brought into play, every joint tested, and every vein, however small, swelled taut with rapid blood, as is the case when allowed the liberty of hill and plain, and to follow the promptings of nature.

"The chest of a horse in all cases should be large and capacious. In shape it may vary somewhat, according to the service to which the horse is to be put. If he is kept for slow work and heavy drawing, the chest may be nearly circular in form, because