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clusive use of this one grain bring cholera upon imported races which have been otherwise fed. As an example of this, I recall one fowl fancier who got together specimens of half a dozen different breeds, and lost, in less than fifteen months, everything clean out, but Houdans, which were of a late importation from France. That English bred fowls, especially Cochins and Brahmas, suffer as badly, soon after arriving, as home bred, is, I suppose, due to the fact that English breeders feed corn meal, because it is not only the cheapest food, but makes the greatest weight in the shortest time.

So far, no remedy has been found for chicken or hog cholera; and so on would naturally conclude that none would be, since the trouble is a radical defect in the constitution and organization, due to the too exclusive use of one article of food. But then, if it were not for the cholera, pigs and chickens are bred and fed in Central Illinois under such favorable conditions that both would increase so fast as to become means for annoyance rather than source of profit—B. F., in Country Gentleman.

KINGSOTE AGRICULTURAL ASSOCIATION.

Two-Year Old Beef.

At the meeting of the Kingsote Agricultural Association, on a discussion of the best and most profitable method of producing two-year-old beef, Mr. Hayward said:

The present high price of butcher's meat makes it an important consideration whether the markets cannot be better supplied by bringing out beef at two years old than at a greater age, if it can be done profitably. One farmer stated as his experience that he could not afford to follow such a losing business as buying lean bullocks at \$18 to \$20 each, to begin upon.

His plan, which he said paid very well, was as follows: Twelve cows are engaged in rearing calves, which are fattened from birth, and are sold at about twenty-two months old, when they weigh 100 to 120 stone. The calves are, of course, well bred, while those calves which have to be purchased are carefully selected.

They are weaned at three months old, having been previously kept short of milk and fed partly on gruel, and thus induced to feed on oilcake and hay. Supposing them to be weaned in December, their daily ration at six months old would be 1½ lb. or 2 lb. of linseed cake, with the same quantity of bean meal, and a sufficient amount of grains, mangel and hay. The cake and meal are gradually increased, till at twelve months old the calves get twice the quantities just mentioned. In summer the other articles of diet which have just been named are replaced by trifolium, which is an excellent food while it lasts, tares, which are also good, and grass, with second cut clover. The whole of the green food is cut and brought to the animals in their sheds and houses, which they do not quit until the proper period arrives for sending them to the butcher, by which time their daily rations have been increased to 4 lbs. of cake and 6 lbs. of bean meal, with roots and a moderate allowance of hay.

The principle of management is to let the animals continually master or outgrow their food, pushing them on rapidly the last three months, so as to land them fat at the desired haven at something under two years old. There is no reason to doubt that from 150 to 120 stone, or ten to twelve score a quarter, can be attained at two years old, by high feeding, but as spending a guinea to obtain a pound is a losing business, it is necessary to ascertain by actual calculation whether such an expensive system can be profitably carried out. From a moderate computation, based upon the quantities of food given in the statement just quoted, and taking into consideration the necessary incidental expenses, it is calculated that each animal fattened on the above system costs £33 10s. 3d. The gentleman who adopted this system states that he sells his fat cattle at 100 weeks old at from £33 to £40 a head, and so realizes a profit.

But the question arises, Could not a saving be profitably effected upon many farms by turning the animals out to grass the second summer, thus saving the feeding upon artificial food six months, even though they might not be ready for the butcher quite so soon?

He was quite satisfied that, even if early maturity is not the object aimed at, it is wrong to turn calves out until they are a year old. By being kept in they will escape the "hush," and other complaints young stock are liable to. Another account of a different and much more economical plan of rearing and feeding stock, which has been followed for several years on a farm in the south of Scotland, is worth quoting:

"The lot of fourteen calves to which the account refers, were partly purchased and partly bred upon the farm. Those purchased averaged 43s. a head, at which price they are

all valued. The calves, with one exception, were calved between the 5th March and 18th April, the average date of calving being the 17th March. For the first twelve weeks they were fed with 1½ gallons of milk per day; for the next four weeks they had 1 gallon per day, and a half-pound of linseed cake, and were turned out to grass; they were then weaned, and the cake was increased to 1½ lbs. They continued on this fare till about the 13th Oct., when they were housed at night and got 1 lb. of rape cake added to their allowance of linseed cake; this was their winter's fare, with the cleanings taken out of the feeding cattle's turnip boxes, which was about a wheelbarrow load among the fourteen calves. They were turned out to grass on the 18th May, and seven of them grazed on grass till near the 13th October, at which date they were shut up in open courts with covered boxes for their food, and covered sheds; they got then an unlimited supply of white turnips and chaffed hay, and also 4 lbs. of cotton cake. Swedes were substituted for the white turnips sometime in December, and the extra foods were gradually increased. The average price which they fetched was £44 7s. at the age of twenty-five months."

It is estimated that their total cost in feeding was £28 14s. 6d., leaving a balance of £5 12s. 6d. on each calf. Circumstances, however, must influence practices, and turning out calves to grass in the south of Scotland might answer, when it would not do in other parts. For the future he intended in his own practice to take the calves from their mothers at from a week to a fortnight old, giving them for the first six weeks two-and-a-half quarters of best milk morning and evening, and after that time three quarters of skimmed milk, warmed to the natural heat, for another six weeks. Each calf to have a separate stall and manger, and at three or four weeks old, when they begin to eat, to be fed with chaff, mixed with a little meal and cake. At twelve weeks old they will do without milk, and then a little pulped roots should be added to the chaff meal and cake. At this time they will not require to be kept in separate stalls, but may be put two or three together in loose boxes, where they should remain until the following summer. He found from experience that they did much better if not turned out to grass the first summer, and would be safe from "hush," which, particularly in low localities, is such a fatal disease. By this management they will first go to grass at fifteen or sixteen months old and will then do well until the autumn, when, if intended to be brought out fat at two years old, they must be stall or box-fed with a liberal allowance of meal and cake. No doubt cattle would arrive at greater weight at two years old, if never turned out, but their living in fields upon grass alone for six months, in the second summer of their lives, is a great saving of expense, and probably pays best.

The rapid increase in the population of the country, and consequently increased demand upon the supply of meat, made him think that the subject he had briefly introduced for discussion might be productive of some good. He thought they could not do better than try to increase the supply of meat by bringing their stock to maturity as soon as they possibly could; and as the man is said to be a house factor to his country who can make three blades of grass to grow where only two have grown before, surely they would still greater benefactors if they could send three fat beasts to market instead of two.—Mark Lane Express.

EYES AND LIMBS.

"Raising lambs," says Mr. Boardman, "is the most important, and requires the most skill, care and attention of anything connected with keeping sheep. In this the shepherd displays his genius, and gives proof that he is worthy of the name. When we are compelled to raise lambs on the range, we prefer not to have them commence dropping before the 1st of May, (lat 41 degrees), until the worst storms are past, and there is a good bite of grass. When from twenty to sixty lambs are coming every twenty-four hours, the shepherd needs assistance in gathering the flock in the evening, and it is necessary, also, that he should be up with them occasionally through the night. It is a good plan under such circumstances, to have some place of portable picket fence, the pickets five or six feet high (to turn any dog or wolf) with which to make pens, into which may be driven those ewes which have dropped lambs through the day. This avoids the necessity of driving or carrying the lambs to the fold. If there are twenty or more lambs dropped during the day it is better to put them in four or more pens, five or six ewes having lambs dropped about the same time as often puzzled to tell their own, and sometimes two ewes get to owning the same lamb, and by morning the cast off lamb is dead for want of milk. In such case, it would puzzle Solomon to tell which owner it ought to own, the dead lamb, and which the live one. Ewes, as shepherds know, tell their lambs by the scream till they are two or three weeks old, after which they learn their bleat. Ewes

which drop lambs through the night in the fold, are left in it the next day. * * * when we are prepared with pastures, sheds, yards and other conveniences, we do not send the ewe flock off to the range till the lambs are dropped and all able to travel. The general practice in Central Illinois is to have a large shed into which to put the lambing flock in bad nights, and other sheds into which to put the ewes having lambs. Those ewes which lamb at night are put with their lambs in a yard or pasture by themselves; those lambing through the day are put in by themselves, and so from night to day, and from day to night, as long as there are fields enough to keep them separate.

"The great art of raising large flocks of lambs consists in keeping them separate as much as possible while the lambs are young. When all the fields have got a bunch of lambs in them, the oldest bunches are doubled to make room for younger lots. This makes it easier for the shepherd to keep the run of them. He should visit each bunch two or three times a day, to see that all is going right; that each ewe owns her own lamb; that none are claiming others, lambs; that all the lambs suck, and if they are getting 'pinned' to the teats then and rub some dry dirt about the anus. A great part of the shepherd's time is spent at the 'flock-ry,' as the shed in which the lambing takes place is called. On turning his flock out of the factory in the morning, he finds say, fifteen or twenty lambs, which have dropped through the night. He has now to slip them out of the flock and see that each ewe owns her own lamb, and must also watch till he sees every lamb suck.

"Frequently, a ewe's teats are so stopped that a weak lamb cannot draw the milk, in which case the shepherd catches her and strains it, suckling the lamb at the first time. A lamb which gets up when dropped and sucks itself is half-raised if proper watchfulness is observed afterwards. In the factory are small pens into which to put ewes which will own their lambs or to put ewes having lost their lambs to make them take a twin lamb from another ewe. This is done by skinning the dead lamb and putting the skin on the live one. As soon as the ewe can be made to own her lamb she is put out with one of the small bunches, first having been marked on some part of the body with red keel, the lamb receiving the corresponding mark. When a ewe has a 'jacketed' lamb she is put out, the jacket hung over her pen, and, if, on trial, she proves refractory, the jacket is again put on the lamb, when a second penning of two or three days will generally break her in. A ewe flock requires constant watching to see that no lambs lie down behind a stool of grass, get asleep, and so get left by the flock. When a ewe refuses to allow her lamb to suck it will sometimes be found that the udder is inflamed and tender; in such case draw the milk carefully by hand, and continue to do so as often as may be necessary to reduce the inflammation, taking care that the lamb is properly supplied.—Prairie Farmer.

HOG CHOLERA.

"G. W. C." of Ashley, Ill., writes that many pigs are dying in that neighborhood. I have had no experience with such diseases. I think if the so-called hog cholera should break out in my herd, I should separate all that were sick and put them in a dry, warm pen and keep them as quiet as possible, and give them the most nutritious and stimulating food and drink I could procure. If I lived near a slaughter house I would give them fresh blood. Or I would kill a few sheep or a steer and cut up the carcass into mince-meat, and boil it for a few hours, and give the pigs some beef tea or mutton broth mixed with cooked corn meal or oat meal gruel, or any easily digested and nutritious food. A little whiskey might also be given to stimulate digestion.

Some people seem to think that the reason why we have so much hog cholera is owing to the introduction of improved breeds of pigs. I think it is precisely the other way. What do we mean by an improved breed of pigs?—Usually we mean a breed that has fine bones and little offal. A breed that is very quiet and that will turn the food it eats into flesh and fat. It is a breed that will eat and digest a stomachful of rich food and assimilate it. As a rule, the weak spot in all high-bred pigs is that their digestive powers are not as good as their assimilating powers. They can assimilate more food than they can digest. On the other hand, our common, coarse, unimproved hogs can usually eat and digest more food than they can assimilate. They are accustomed to forage for themselves. They have plenty of exercise and comparatively little food. Now then, if you take such a breed of hogs and endeavor to push them forward rapidly with rich food, it is easy to see how their blood could be poisoned by the excess of material which the animal is not able to convert into flesh and fat.

"Your remedy, then," says the Deacon, "is not to feed so high."

Later, my remedy would be to raise a better class of pigs. I would raise such pigs as would stand high feeding until they were fat

enough to go to market, and then I would dispose of them without delay. If you take pigs that are not accustomed to mature before they are three or four years old, and endeavor to so feed and force them that they shall be fit for market at twelve months old, or less, what can you expect but hog cholera? On the other hand, a breed that is accustomed, and has been for generations, to mature early, can be pushed forward rapidly without injury. I should expect the best success from pigs raised from a large, healthy, common sow, sired by a highly refined, thorough-bred boar of a breed distinguished for its gentleness, fineness of bone, little offal, early maturity, and fattening qualities. The mother would furnish the digestive powers and the sire the assimilating powers. These qualities combined with early maturity, fineness of bone and high qualities of meat, would give you precisely what a good feeder wants.—Walks and Talks on the Farm, in American Agriculturist.

COWS FOR THE DAIRY.

In a paper read before the Northwestern Dairyman's Association, Mr. Chester Hazen, while discussing the kind of cow most suitable for the dairy, remarked:—

What is needed here in the West is the best cows we can get; and if well fed and cared for, there is no doubt but that they will yield a good profit to the dairyman. I believe every dairyman should raise some heifer calves every season from his best cows. And when you get them started keep them growing until they are cows. I cannot afford to raise calves and let them stand still or let them go back in the winter. Keep them growing, and if you do well by them, they will come in when two years old, and invariably make better cows than they will to come in at three years, because coming in at two years checks their growth in bone and develops their milking qualities, making a much more desirable cow; whereas if allowed to run until three years old they grow too coarse and masculine for first class milkers. This has been my experience in breeding milking stock.

If you wish to breed grade stock of any blood, breed from a full-blooded bull. A grade bull is not to be relied upon to produce anything like a uniformity of stock which would be a serious objection to a good dairyman or breeder.

A large, coarse cow, with heavy carcass to support, is not so profitable for the dairy, as a medium or undersized cow that is a good milker. It requires a certain amount of feed to support the carcass in proportion (usually) to its size, and a small cow, that will give as much milk as a large one, is decidedly the best for the dairy. But some would say the large cow, when she is no longer profitable for milk is worth more for beef. That may be true, but support 200 pounds extra of carcass for ten years, will much more than balance the difference in the value of the cows when fattened for beef. A good dairy cow that will pay for two or three times what her carcass is worth for beef every year in milk, is far more valuable for the dairy, even if the carcass is worthless for beef. But this is not the case. The real difference in favor of the large cow for beef is, only the difference in the number of pounds of beef.

I believe I can keep five cows of 800 pounds each on the same feed that would be required to keep four cows 1,000 pounds each, and if I breed carefully from first class milking stock, they would produce one-fifth more milk, or twenty per cent, which would be a net profit of twenty per cent., in favor of the small cows. Perhaps 800 pounds is rather light for a first-class dairy cow, but my experience is decidedly in favor of medium or undersized cows.

The feeding value of a crop of roots is shown by the practice of an Irish farmer, W. Bacon Jones, of Lisselaw, in the County of Cork. He says that with 50 or 60 acres of roots he has been in the habit of fattening 200 sheep and more than thirty heaves besides keeping 200 ewes and 200 hoggets (yearling ewes), and 60 cows and 70 to 80 young stock half yearlings and half two-year-olds, through a whole winter. His method of cultivation is as follows:—The sod is plowed with a skim plow, turning a furrow three inches deep of soil, which forms a mellow bed for the seed. This bed is cross-plowed in spring and well fertilized with barn yard manure, guano, and bones. The seed (Swede turnips) is sown early in ridges 28 inches apart, and the plants are thinned at 14 inches apart in the drills. Yellow turnips are sown later and thinned to 12 inches, and the white turnips sown still later are thinned to 10 inches. Wheat and grass follow the turnip crop. Upon the farm sugar beets have been tried and found to yield well, keep well, and answer a good purpose for fattening cattle. The crop of roots amount to 40 bushels to the acre.—Michigan Farmer.