

a limiting factor. For instance, it is stated by some, that early breeding is not desirable where breeding is carried on with the object of improving the strain, that is where the colts of the mating are to be used for breeding purposes, while if the colts are bred for sale, as drafters, nothing is lost, and considerable is gained by breeding the two-year-old. True, from the standpoint of selling drafters there is something to be gained by breeding the two-year-olds, and upon weighing the matter carefully, is there not some value in breeding a strain of horses which will mature early and have, at the same time, that inherited tendency to early breeding? More care is necessary in breeding the young fillies to improve the breed than where the colts are sold for work, but if these fillies are well-grown, strong and robust, a good colt as a breeder should result. The writer remembers several cases where the first foal of a filly bred at two years of age, was of exceptional merit, and one particular case where the filly was bred and got with foal as a three-year-old, leaving another good colt. This mare was a particularly well-grown colt at two years.

In the Old Land many breeders follow the practice of breeding their well-developed two-year-olds. They do not give them much work while carrying their first colt, and in many cases are not bred at all the following season, being put to steady breeding at four years of age. This gives the mare a rest, and tides her over the bad (teething) fourth year.

A prominent horse breeder of this country recently expressed the opinion that an in-foal two-year-old, provided she is a good type and reasonably well-grown, is a very attractive proposition as a breeder, and we are inclined to agree with him. True, the two-year-old is a little more difficult to get with foal, and there are those who believe that every time a mare is served and does not conceive the more difficult it is to get her pregnant, but it is doubtful if there is enough difference in this respect between a two-year-old and a three-year-old to warrant deferring breeding to the three-year-old form. Where all conditions of feeding, care and growth warrant, we would say breed the two-year-old.

Horse-Breeding for Farmers.

There are many farms in all parts of the country where the raising of horses as a business could not be carried on with reasonable profit. This is especially true where the lack of pasture land, the greater adaptability of the farm to other things, or the opportunity afforded by its location for following some well-paying specialty, are potent considerations. On such farms, as a rule, the horses that are needed are not raised, but are bought in the market. "Situated, as we are," said a farmer who lived in a section where the raising of early potatoes was a specialty that nearly all followed, "we can't afford to raise horses. It's much cheaper to buy them."

Though there are plenty of cases in which this is true, there are a great many where it is not true, and where the farmer, even though his location and environment are not favorable to making a business of horse-breeding, would find it much to his advantage to raise at least the horses that he used, or, perhaps, even now and then to have one to sell. Every farmer who buys his horses knows how heavy the expense seems when it is necessary to purchase a new team—and in these days of high-priced horses, it seems heavier than ever. Yet, on a great many farms, this expense can be avoided.

In the case of the man who decides to raise his own horses, however, there is fully as much need that he go about it understandingly as the man who takes up horse-breeding as a business. The farmer cannot afford to go into any haphazard breeding undertaking. He requires a team of a certain kind for his own use, and to make it worth his while to attempt to raise horses, he must be at least reasonably certain of the result. Often he is constrained to use mares of unknown breeding, which does not make his task any easier, but is by no means a bar to his success.

In pointing out the path that leads to the greatest certainty in breeding, it is necessary for me to refer briefly to a very ancient and well-organized law—the law that "like begets like." This law is, in the first place, a general one, and is based simply upon the well-known tendency in parents to reproduce themselves in their offspring. This tendency exists in all animals, regardless of their breeding. In reproducing themselves, however, animals are also continuing or carrying forward the stock from which they spring; hence comes the liability of the offspring to revert or "take back" to some ancestor more remote than his immediate parents.

Now, if his ancestry runs back through a number of animals of different types, it will be seen that, if reversion takes place, he may resemble any one of them, and thus be quite different from

his parents. It is clear that in such a case the probability of parental resemblance is not strong enough to be worth depending upon. But if his ancestors are all alike in type, varying only in such degree as always exists in different individuals, he will, if he chances to "take back," resemble an animal that closely resembles his immediate parents. In its practical working, therefore, the law that "like begets like" is more surely operative when we are dealing with pure-bred or high-grade stock. With such stock like tends to an advanced degree to produce like, as far as general type is concerned. But with mongrel stock the tendency is not so marked. When the parents, even though of the most mixed and heterogeneous blood-lines, are similar in conformation and general characteristics, the tendency to reproduce themselves is stronger, because in both it is in the same direction. But if they are different—as when a loosely-built, weedy mare is bred to a compact, closely-built horse—the result is doubly uncertain, because the tendency is in different directions.

Now, let us see what will happen when one parent—for instance, the sire—is a pure-bred, and the other a mongrel. On the sire's side there is very little danger from reversion. On the dam's

was brought to the horse. She was a beautiful animal, was considerably taller than the other mare and weighed more; but she was, of course, about as different in type from a draft-horse as she could well be. I told her owner I did not approve of mating such extreme types, and urged his breeding her to another horse that we had of Trotting and Thoroughbred blood. But he was not to be dissuaded and she was bred to the Percheron. The resulting colt was very handsome in contour, but his limbs, though clean and flat, were much too slender for his body, and I was not surprised when, before he reached maturity, he threw out a pair of curbs.

One great bar to the occasional raising of a colt by farmers who are not in the business is the belief that there will be a considerable loss in the use of the mare during the period of gestation and while she is suckling the foal. This loss is usually over-estimated. Mares which are in foal need exercise, and they are much better off if used regularly than if allowed to stand idle in the stable. Their work, of course, should not be unduly severe and they should be fed generously, remembering that they have a double duty to perform.

After foaling, the mare should, if possible, be

given a vacation and allowed to run with her foal in pasture. Both will do enough better as a result of this always to make it worth while, even if it puts the owner to some little additional trouble and expense. But, though such a rest is highly desirable, if it is not practicable, the mare can continue to work after two or three weeks' rest. In this case the colt should have a roomy box-stall, with high, smooth walls, where he can remain without danger of injuring himself while his dam is working. Colts kept in this way rarely do as well as those which run with their dams in pasture; but many good ones are raised under just such conditions, and this method when made necessary by circumstances, is satisfactory if good judgment is used.

T. A. TEFFT.



May Mist (2314).

A Highland pony filly. First in her class at the H. & A. S., 1912.

it is less than it otherwise would be, because, pure blood, being always more prepotent, the blood of the sire will preponderate in the offspring, notwithstanding the fact that, mathematically speaking, the latter is only a half-blood. These things hold good even when little care or skill is used in the mating. If, then, we use proper care and breed a grade mare to a pure-bred stallion whom she resembles in type, we have, as factors favorable to the result we aim at: First, the natural tendency that exists in all parents to reproduce themselves; second, the prepotency of the pure-bred sire; third, the danger from reversion to a different type so largely eliminated that there is very little fear of its upsetting our calculations. We can in such cases form a pretty accurate idea of what the colt will be—an idea, in fact, that is only less accurate than when both parents are pure-bred.

These laws, simple as they are and clearly as they are recognized by successful breeders, are constantly ignored by those who are only occasional breeders. But they can never be disregarded with impunity, and their earnest study is the first requisite of success in breeding.

Assuming that extremes are avoided and that parents are fairly similar in type, good results do not depend very much upon their being alike in size. A mare weighing less than one thousand pounds was once brought to a Percheron stallion which weighed nearly eighteen hundred pounds. She looked almost like a pony beside him, but she was strongly built and in general conformation so like him as to look almost like a Percheron in miniature. Her owner had some time before decided to breed her to this horse, but when he saw them together, he began to doubt his judgment. I told him that, though I should prefer that the parents were nearer of a size, I believed that a very good colt would result from this cross. She was bred and, after foaling, was bred again. The two colts grew into an exceedingly handsome pair, active, clean-limbed and well-built, and years of subsequent service proved them as good as they looked.

Later in the same season a Thoroughbred mare

Chataqua Co., N.Y.

LIVE STOCK.

Few branches of mixed farming offer the opportunities for handsome profits and quick returns which may be had from pork production.

A spray of blue-stone solution, at the strength of about a handful to a pail of water, was used by Geo. Raymond & Son, of Oxford County, for lice on cattle, with very satisfactory results. Jas. Raymond tells us that it not only killed the lice, but left the hair in nice condition, free from dirt and stickiness left by some other specifics. Have others tried it with equal satisfaction?

Few, indeed, are the farms in the older settled districts which can afford the loss which results from the selling of raw material. What is farm raw material? Grain, hay, straw and other products of the soil which might be fed on the land to increase the production of beef, pork, mutton, milk, or poultry, and by this keep up the fertility of the soil and increase the crop returns of future years.

"Where can I get some extra good stocker and feeder steers?" Here is a question for the stockman to consider—a question which one hears almost daily, but which is seldom answered to the satisfaction of the would-be buyer. All classes of beef cattle are scarce, and the better quality is extremely so. Here is an opportunity which the beef cattlemen of this country should grasp. Produce the stockers and feeders and, better still, the finished product by the use of the best sires on the good cows, and by following a cropping system best suited to the production of beef at lowest cost.