

Except low-lying and old mossy land, it is more advantageous to add lime to pastures and grass land in the form of compost, which had better be applied in the autumn, in order that it may sink into the ground and thus be able to stimulate early spring growth. For this purpose, the lime may be allowed to slake, or a compost made, in some part of the field. It should be applied direct from the cart, and not formed into small heaps, as is the practice on arable land.

Broad or "frying-pan" shovels are the best implements for filling carts with lime, and spreading it on the land. The spreading must not be done in rainy weather and a calm day is most suitable for this operation. In the case of a slight breeze the direction in liming should be against the wind. In spreading, the lime should be thrown right and left from the middle of the ridge towards the furrows, which will become, after ploughing, the crowes of the future ridges. Care should be taken to spread it as evenly as possible over the surface.

Chalk (carbonate) and marl are also sometimes employed; the latter is a clay containing particles of chalk visible in its mass. Both these, it must be remembered, are far less active agents than quick lime, and are chiefly effective in improving the texture of the soil.

The best way to apply lime to grass land is not to add it, alone, but to mix it with earth in the form of a compost, and to top-dress the fields with this, taking care, however, that the mixture be not too weak in lime. The proper proportion is one cubic yard of lime to three cubic yards of earth, well mixed together.

The danger of over-liming has already been alluded to. In this matter the appearance of the crop will be a safe guide. A crop of scant growth and poor color will be benefited by a liberal application of lime. If, on the contrary, growth is too rapid, the color over deep, the ripening slow, or if there is a tendency to the laying of the crop, then the amount of lime should be diminished.

Dr Voelcker, in speaking of the importance of liming poor land before dressing it with dung or other manure, expresses himself as follows in respect of action on soluble phosphates: "The presence of much or little lime in a soil has also a powerful influence on the changes which soluble phosphates, or manures containing soluble phosphates, undergo in contact with the soil. It is a curious, and apparently anomalous circumstance, that on sandy soils, and on all soils deficient in lime, concentrated superphosphates, rich in soluble phosphate, do not produce nearly so beneficial an effect upon root-crops as upon calcareous soils, or upon soils containing even a moderate proportion of lime.

"When applied to root-crops upon sandy soils greatly deficient in lime, a concentrated superphosphate produces a smaller crop than a manure containing only one-fourth the percentage of soluble phosphate. When this fact was first brought under my notice, I ascribed it to prejudice, or accidental and unserved circumstances; but direct experiments and an extended personal experience have shown me that there is no mistake about this matter. The true explanation no doubt is that the excess of acid soluble phosphate in a concentrated superphosphate is not precipitated as efficiently in a soil deficient in lime as it is in land containing a good deal of lime."

The Horse.

THE EDUCATION OF THE HORSE.

Two systems of breaking horses for riding.—Insular vs Continental, or the ordinary English and Irish method as opposed, to the riding school; or manege.—Horse taming not horse breaking.—Superiority of the former, in the writer's opinion, for all horses, except those intended for military use.—Horses broken to harness without blinkers, much more reliable than others.

The system of procedure, by which exceptionally skilful and fearless riders, in Australia, South America and our own North-West, manage to mount unbroken horses and straight way ride them into a certain sort of subjection, without any preliminary handling, although worthy of unbounded admiration, on account of the wonderful powers of pluck and adhesiveness displayed by these adepts at their art, and most interesting to see, or read about, is not a system of training or breaking horses, worthy of the name, or at all suited to a community where we require at least fairly good manners for our gees.

Nor, are those rapid methods of handling vicious or uncontrollable animals, as practised by different professors of the art from Mr. Barey downwards very permanent in their effects, as far as rendering them thoroughly reliable, afterwards, in the hands of average moderate horsemen. There are some men who say that they can do this, and cure any horse of any kind of vice. Now this is manifestly absurd, and it is a matter of congratulation for us, that there are very few really vicious horses naturally, although there are a good many spoilt ones, or with some defect of temper which prevents them from being as useful as they might be. While for subsequent reasons, I prefer what I have termed the Insular method i. e., that of the best English and Irish breakers, since the practice of riding to hounds in England, became general, I will dispose of the continental or school method first.

Of course the school method, was formerly that of England also, and still is as far as the army is concerned, while on the continent any other system is looked down upon, and despised accordingly. In reading about school methods and talking with army rough riders and riding masters of La Haute Ecole, the first thing that strikes you is the different estimate formed by the different exponents of these two schools of breaking, of the intelligence of the animal, whose education is the subject matter of their handi-work. I never met a school-man, yet, that did not tell me that the horse was a very stupid animal, with the one redeeming point of a retentive memory to save him from utter idiotcy.

They look upon the horse, as a mere machine, which must not be allowed to do a single thing, however right, of his own free will, and do everything in answer to certain well defined signals, always to be kept in a state of absolute servitude and subjection. No matter how he is made, he must be taught to carry his head and neck in a certain manner, which we venture to think is often not the correct one, and he must

not dare to think for himself on any matter whatsoever. In other words the horse is to be always at the mercy of his rider, which is bad for the horse, sometimes, and with this system, there is certainly not much chance, at any rate in cross-country riding, of his learning to take care of the bigger fool of the two, as poor Whyte Melville used to say. We, of the cross-country school, like Whyte Melville, and all those who breed and break their own horses, think that although, no doubt, there are some very stupid horses, there are a great many more very intelligent ones. If our horses lived with us in our tents, as the Arab horses do, or in our houses, as do our dogs, I think that there would be very little dispute about that.

It is a mistake to think that the natural timidity of a horse is of any advantage to us as far as breaking him is concerned, on the contrary it is the most fertile source of accidents; but intelligence is always most useful. Flanking back over the pages of an old volume of "Scrutator," I find the following lines about the points of a hunter, and I think they show, that we can read intelligence in a horse face. "Haul I to choose a hunter, said one of the finest horsemen and judges of his day, by seeing one point only, it should be his head; for I never knew one with a small clean, intelligent face and prominent eyes to be bad.

There is one cause for this difference of opinion, which may be easily explained. School-horses including, of course, all cavalry remounts, represent, as a whole, a much less well bred type of animal, than the high class hunters or hacks entrusted to the care of our best English and Irish breakers, and, we all know that the higher bred a horse is the more intelligent he is, and highly bred horses form much larger proportion of horses in England than they do on the continent. They may be more sensitive in disposition; more inclined to resent bar treatment, but they are not inclined to be more bad tempered than lower bred horses, and possess the advantage of better anatomical formation for the free and efficient performance of any mechanical movement, required in the carrying of a rider.

On the other hand, a more sluggish disposition renders the school-horse more amenable to rigid and irksome discipline and the control of severe bits and other school aids. As a rule, the school men prefer half-breeds to thoroughbreds. But the most perfect manners, subjection to school aids, and obedience to the rider, cannot make up for the want of perfection of anatomical mechanism the suppleness of joints, the frictionless working of the perfectly shaped equine machine, and thoroughbred or very well bred horses alone can supply that. The most thoroughly made school-horse of inferior breeding cannot compare for ease of natural motion and paces with the thoroughbred of the right shape that has never been inside a riding school, and that has learnt his business in the trainer's paddock, on the road, and in the hunting field. The school men will expatiate at great length upon the necessity of teaching a horse to change his leg, etc. I answer that, mounted on a thoroughbred horse of the right shape, I neither feel, nor care when he changes his leg. I know that he will do it at the right time and that it will give me no uncomfortable feel in the saddle. He is a different sort of riding machine from the low bred one, who when he does so, makes you feel, as if you were in a

train car that had bumped over a rail. The school men will tell you that no young horse will either hold himself, or trot, in the right manner, unless taught to do so in the school. I have seen lots of unbroken young horses, move off with the most perfect action, the first time they were mounted, and for that matter, gallop and trot in the most perfect manner, before they were ever handled.

If a thoroughbred yearling did not gallop in good form in a paddock, before even he had ever been backed, he would not fetch much of a price at private sale.

But people will say, given a perfect equine machine, that moves perfectly, will it not be still further improved by school discipline and handling? With the single exception of military purposes, I should think not. For all sporting purposes, of course, and even for hacking on the road, I think that there is something to be lost, and nothing to be gained by subjecting a very well bred horse to school discipline.

As a means of making up, by education, as far as possible, for the awkwardness of movement inseparable from ill shaped, less bred animals, the school system is admirable, as far as it goes. It renders servicable as troopers, a great many horses that, on first inspection, do not look very promising, but it is of no use for an animal well made enough and well bred enough for a hunter, a steeple-chaser or a covert hack. Of course for all racing purposes, anything like teaching a horse to move in the over collected form of the school would be fatal to any pretensions to speed, any horse mouthed and bitted according to school methods must necessarily acquire a habit, of galloping round, and fighting in his gallop, to the great loss of time in getting over the ground.

Under the school method, on the continent especially, a raw 4 year old is put into the school at once, without any preliminary handling except a little lounging on a cavesson; a double bridle is put into his mouth and a man with spurs is put upon his back who proceeds to get to work to get his head, into what he calls the right position, by the usual flexings with bit, and bridoon, aided by the pressure of the leg, and the application of the spur, all of which procedure, it would take much too long to enumerate. There are some advantages of handling a young horse in the school, which are not to be despised. The horse does not shy, because there is nothing for him to shy at, and he does not try to run away, the ground is soft for fully and is convenient in all weathers. A horse will buck, kick or rear, in the school, but does not usually shy or twist round very suddenly. The long school seat is one very well adapted to most of the antics a horse usually indulges in there, with shortish stirrups a man can not sit a buck or a kicker, on the other hand, a man riding rather long, is very much less able to avoid being thrown, when, a young horse galloping freely along at sight of some object that he does not like, it may be two or three fields off, and not noticed at all by the rider, suddenly slicks out a fore leg, and pivots round it like a top. It is very much worse than any refusal at a fence, as it is quite unexpected, and the odds are always on the horse. The way to sit this, is not to let the horse do it, but "Aliquando bonus dormitat Homerus," the warriest rider is caught sometimes, just about the time that he thinks his pupil has become quite confidential and