

sympathy with the subject he is endeavoring to teach before much interest in it may be aroused in the minds of the pupils. He needs knowledge of the underlying principles, and ability and training to apply those principles to the solution of particular problems. Agriculture is not a dead science. It cannot be taught as mathematics are, or as literature is, in the public schools, by storing the memory with certain facts. Knowledge of its underlying principles is valuable only as it may be practically applied. The interesting part, therefore, of agricultural study, and the part longest to be retained, is the connecting by the teacher of the principle with the practice. Previously, we have been trying, where we have tried at all, to teach some hard and dry basic facts regarding agriculture, leaving untouched the larger, and to the child, the only department of the subject in which interest exists.

The first step in the remedying of this condition of affairs lies in the education of the teachers. If their knowledge of agriculture is derived in the manner in which it previously has been, or is not derived at all, as is more commonly true, no progress may be expected in the teaching of the subject in our public schools. Broad sympathy with the subject, together with a training in the connecting of dry fact with interesting practice, is the result that should follow logically upon the spending by our teachers of a brief time at the agricultural college. Too many of them now have too little understanding of what the term agriculture means and implies, let alone the training necessary for the successful teaching of it.

HORSE

PREMIUM PICTURES OF GREAT HORSES

We have just completed arrangements for new premiums for horsemen. Splendid photo engravings of the celebrated Clydesdale Stallions, Baron's Pride, Hiawatha and Oyama, have been purchased, and will be given to anyone who helps us with our subscription work. For two new names at \$1.50 we will send the three pictures, or for one new name at \$1.50, which ever two pictures are asked for.

Many of our readers already have a Baron's Pride picture, and this gives them a chance to make an interesting collection, as we will from time to time get pictures of other great horses.

The engravings are 8 x 11 inches in size, and are printed in soft tones, on heavy coated paper.

Getting the Harness Ready

Harness should be cleaned once a year at least, and the spring, before heavy work begins, is as good a time as any for putting it into shape. It needs to be cleaned, oiled and repaired, broken traces mended, torn parts sewn up, last year's deposit of dirt washed out, and the leather oiled, to maintain its softness, elasticity and wearing qualities.

To properly clean and oil harness proceed as follows: Take the harness apart, and place the parts in a tub of luke warm water with a handful of washing soda in it. Let it soak about 20 minutes, and then scrub each piece with an ordinary scrubbing brush on a board. When the leather is nearly dry use edge blacking; get half a gallon from any harness maker. If you cannot get it, then take half a gallon of vinegar and put pieces of iron in it, for three or four days until the fluid is a deep golden color. Give the leather a good coat of the fluid. When it dries blue, take a cotton cloth and rub the harness thoroughly, after which take a quart of neatsfoot oil and half a pint of kerosene; mix and warm, then give the leather two coats using the oil freely. When the oil has dried in thoroughly, sponge with white castile soap. Use the imported soap, as the domestic, has not the right kind of oil in it.

Harness treated in this way, may be kept in good form by going over it occasionally, with a sponge and castile soap.

Breeding Aged Mares

EDITOR FARMER'S ADVOCATE:

I have a pair of mares 12 years of age that have never raised foals, but I want to breed them this spring. What treatment should I give them to aid in getting them in foal? They are in very good condition, and are built close and solid.

Alta.

The fact of these mares being as described, is no reason why there should be any trouble getting them in foal. It is popularly supposed that close knit, solid mares, are not as ready breeders as the more loose and open type, but it does not follow that the former are generally non-breeders. In fact it is often the case, that a close, solid mare, makes a phenomenal breeder.

The age at which a mare is first bred, sometimes has something to do with getting them in foal, and also with the ease of delivery. It is generally accepted that to get the best of a brood mare of which she is capable, she should be bred before she is six or eight years old, but we have seen mares worked hard until they become crippled and too old to work, go on and raise several foals.

Of course it is quite frequently the case that mares become sterile, and we suggest that our enquirer read "Whip's" article in this issue, on the subject, and treat his mares accordingly.

But there are precautions which everyone should take, with breeding mares. Avoid sudden changes of feed, sudden changes from idleness to work. Protect from exposure. Keep the digestive system in natural condition, and return regularly to the horse.

Very often a mare will not take the horse at any time and in such cases they may be brought around by hopping them and breeding them against their wills. This generally results in their coming regularly.

Do not make the mistake of being too kind. Work the mares regularly, but do not abuse them. Do not leave them standing in the stable for days without exercise or work. Do not feed heavily. Try to keep near normal conditions, and in the state of nature, horses breed somewhat later than they are customarily bred under artificial conditions.

Common Colics

EDITOR FARMER'S ADVOCATE:

Speaking both as a farmer and as a veterinary surgeon, I find the most common ailment of horses is what is popularly known as "colic."

Originally this term colic, was applied rightly and solely to pain in the colon, or large bowels, but now it is loosely given to any and every kind of abdominal pain. Whether the pain arises in the stomach, intestines, liver, kidneys, bladder or any other organ it is called colic. This is unfortunate for several reasons. A farmer sees his horse in pain,—he immediately flies to some quack medicine, some cure-all for colic, and the result is—death of the horse. Veterinary surgeons know that the sixteen or seventeen kinds of colic, i. e. abdominal pains, arise from different causes, have their seat in different organs, and require different treatment, and we know also that the treatment for one may be fatal for another,—since it either kills by increasing the trouble, or by wasting valuable time.

It is quite impossible for the average farmer to diagnose all these forms of disease, but the three most common forms he can readily distinguish.

Spasmodic Colic.—In the first case we have what is known as Spasmodic colic, or the common colic. In this case there is the usual pawing, rolling and looking back to the flanks—but notice particularly there are intervals of ease, during which these actions cease, and the horse may even eat. Hence, we say, the pain comes in spasms or is spasmodic. Notice also that there is no abdominal swelling. Here, then, we have two distinctive symptoms to guide us, and these may be regarded as diagnostic, viz.—the pain followed by intervals of ease, and the absence of swelling.

Now for treatment: This disease resembles gripes, or colic or belly-ache in man. What would you do for yourself if you personally had an attack of gripes? Remember the horse is essentially built on the same plan as ourselves. It has the same flesh, blood and nerves, and drugs, to a very great extent, have the same action upon the horse as they have upon ourselves. Well, then, what would you do if you yourself suffered from colic? A good glass of spirits is not a bad thing, and may even be repeated. Suppose we

try the same thing for the horse. Try the effect of half a cup of whisky added to a cup and a half of water, and give this as a dose.

N.B. See that the horse has it. If the horse has the colic and the man takes the medicine, the care is most uncertain. Don't leave this to the hired man. Watch it given. A little exercise may also be given and will help matters. Repeat as desired—say, every half hour. A little ginger may be added if desired.

There are few fatal cases from this form of colic, if the disease be not complicated by the addition of other troubles, and many cases pass away unaided. This is the form that gives the quack medicine, the patent cure-all their credit. A horse is sick from colic—a dose of Couper's Cure for Colic is given—the horse recovers. A glowing letter of thanks is sent to the manufacturing chemist (who knows as much about horses' diseases, as the horse knows of his, and who probably got the prescription second-hand from a veterinary). However the letter is sent and published broadcast. Now, note the result: Farmer Giles reads it, buys a bottle, tries it in a case of colic and his horse dies. Why? Simply because it was the wrong medicine for his particular case. Let me repeat. "There is no universal cure for all forms of colic."

I have given a cure which is very little known outside the profession, yet it almost invariably succeeds. Whisky (or any alcoholic beverage) is one of the most common drugs to be found in the farm house. It is cheap. It is good, and, best of all, it can do no harm.

Flatulent Colic.—Now let us notice Farmer Giles' case, in which the patent mixture failed. There were, to a great extent, the same symptoms, yet by a little careful examination various little differences could be noticed. There were no intervals of ease, because the pain was constant. It was perhaps not quite so violent, but it was continuous. The body, too, appeared to be fuller than usual, or, in other words, it was swollen. This swelling was to be seen more especially in the hollow just in front of the hip, particularly on the right side. Very probably the hollow had quite disappeared.

Here the Farmer had a much more dangerous disease to treat. It was most probably caused by the food. Other reasons may be given, but follow them to the root and you will arrive at the same conclusion. Some food inside, instead of passing onward as usual had through various causes become arrested. The heat and moisture inside the body, aided most invariably by bacteria caused the formation of gas. Now had the passage been clear this might have passed away as readily as it had been formed. Then all would have been well. But, if as is usual in such cases, it became stopped, blocked up, say by a mass of partly digested food or even by some fold of the bowels, this gas will accumulate and inflate the bowels to such an extent that there may even be a rupture.

Now what shall we do in such a case? The gas is there. It must come away, and we must remove the cause of this fermentation, also. In other words we must open the passage. Personally I never hesitate for a moment in such a case, to push an instrument called a trocar and canula through the skin and into the bowel and thus allow the gas to escape. I have saved many a desperate case by this and have yet to see my first bad result. Having got rid of the gas, we must get the bowels to work freely and we must try to stop the formation of more gas. Here a mistake is made by many so-called horse doctors. It is usual with some to give a dose of laudanum with the intention of easing the pain, and, so far, so good, although it is curing the result, not the cause. Laudanum has not only the effect of deadening pain—the peristaltic movements as we say—so that by paralyzing the bowels it prevents this offending material passing onwards, and this materially aids in the formation of the products of the fermentation; in other words, it helps the gas to accumulate. The result of using laudanum is generally that the farmer has to hunt up another horse, and pay for it, too.

Suppose, now, however, that he had given, say rather less than a half teacup full of turpentine (to be exact 1 ounce) added to a pint of raw linseed oil, what would have been the result? Why, the turpentine is an antiseptic. It destroys the germs which cause the gas, and it is to some extent a painkiller. The oil (mind, I said raw linseed oil) acts as a mild purgative and thus helps to move onward the blocking material.

If he had lived near a chemist he should have asked him to add a dram of Fluid Extract of

Belladonna. This drug num in deadening pain action of the bowels. B rid of the gas already i

It may be that the b rectum—the last piece use a pump or syringe a of warm water. This l thing obstructing the w it away. Not only this last part of the bowel generally find that thi cated to the whole in a the whole trouble is re comes away readily. I syringe? Well, I have rubber hose and a ten used a rubber spout fro end, raised up the oth from a jug into it.

Suppose you have no do as I have often done off your coat, roll up y with the warm water (o gently force it inside, a perhaps enough of the t the rest to pass. Mea intestines are inflated throws himself violent even rupture these sw to give him some exerc tion of the bowels, bu stable, be so secured t self violently.

Enteritis.—Now we most dreaded form of c tion of the bowels. W symptoms as in the oth ing, looking back to the first we have no perio second we have no blo

To the trained eye f erences, but a recapit erage farmer would only are some diagnostic sy could distinguish. The sensitive to the touch, rubbed he will show si use his heels or teeth. his belly gives ease. turn on his back in o from his abdomen bec again he frequently p manure; in fact, he s to have a form of diarr the eyelid it will be not beef appearance.

It is most important from the two precedi is radically different. desire was, to stimulat the pain.

In the second we reli bowels to move, and g present case we want body, and more espec If we can stop the acti Nature may remove th held post mortem ex flamed part did not ex inches. In other case flamed.)

For the purpose of o of the best drugs to giv either powdered opium num). We must have syringing (enemas).

Tincture of aconite dition, if we could onl known a tablespoonfu given to a horse and r results, while fifteen d other kind. For this recommend its use.

Now a few words i worth at present a lot a number of years for surgeon to amount t For this reason I ear waste no time. If the —if there be any sign if the symptoms de be present, hurry away surgeon.

An hour's delay m between recovery and patent "cure-all" and the help of that w local quack, who with his time of money i