

harmful to the growth of the plants, adheres better to the foliage, leaves, on drying, a white coating on the plants so that it can be determined after spraying which plants have been effectively treated, and it has not undergone the same advance in price, due to the war, as has Paris green. The dry powder should be mixed with water in the proportion of two pounds to fifty gallons, and should be sprayed from a machine with a nozzle which will give a very fine spray. The plants should be sprayed a few days after setting out, and sometimes this spraying will be all that is required, but usually two or three applications will be necessary to be made, when examination of the plants show the need for it. We read a good deal about the danger of application of arsenicals to cabbages and cauliflower, but it has been conclusively proved that this danger is an imaginary one, as twenty-eight heads of cabbage treated with arsenical would have to be eaten by an adult human being at one meal before poisonous effects could be produced. Even one of the prize-winning "great eaters" would, I fancy, balk at a cabbage feast of such proportions. It has also been shown by chemical analysis that cabbages prepared for cooking in the ordinary way a week after spraying with an arsenical showed that not even a trace of arsenic remained.

THE HORSE.

Weak Fetlocks in Foals.

The most common form of weak fetlocks in foals is that form in which the fetlocks knuckle forwards, often to such a degree as to allow the anterior surface to come in contact with the ground, with the result, in many cases, of the skin becoming raw, and in some cases wearing through to the underlying tissues. The opposite condition (not so often seen) is when the fetlock descends backwards, the foot turns upwards at the toe, hence the heel and fetlock pad come in contact with the ground.

In order that either condition may be intelligently treated it is necessary that the person giving treatment should know where the weakness exists. Is it in the joint? We answer "No." The bones of the joint are held together by ligaments, but these ligaments have little or nothing to do with keeping the bones between different joints in position; their function simply being to keep the bones of the joint together in proper opposition. The relation and relative position of the bones of the joint to the bones of the limb is largely controlled by the muscles and their tendons. The muscles are composed of what is commonly called flesh. Each muscle is prolonged at each end by a tendon, the end of which is firmly attached to a bone. Tendons are composed of white, fibrous tissue, and are practically non-elastic; between the tendons is the flesh or muscle, which is capable of great extension and contraction at the will of the animal, but when at rest is of definite length between its tendons, hence making a definite distance between the attachment of the bone of the tendon of origin and the attachment to a bone at the other end of the tendon of insertion.

An examination of a horse's leg will show muscles both in front and in rear of the bone, between the elbow and the knee. Below the knee there is practically no muscular tissue, but the tendons of the muscles extend well down, some of them being attached to the bone of the foot. The muscles posterior to the bones are called "flexor muscles," their function being to flex or bend the limb during progression. Those anterior to the bone are called "extensor muscles," their function being to extend or straighten the limb and carry the foot forward. When each set of muscles is of normal strength the bones of the limb remain in the proper position when the animal is either standing or in motion.

When the anterior or extensor muscles are weak, there is too little tension exerted on the tendons, and the fetlock joints drop forward to a greater or less degree, according to the comparative weakness of the said muscles to the strength of the flexor ones. As stated, in many cases the anterior surface of the fetlock joint strikes the ground. When the weakness exists in the flexor muscles, there is not sufficient tension exerted on their tendons to prevent descent, to a greater or less degree, of the fetlock backwards and downwards.

Being acquainted with the above facts and knowing that neither ligaments nor tendons are elastic, neither are they, to any appreciable degree, susceptible to the action of applications to cause either contraction or relaxation of their elements, we can readily see that the application of ingredients of any kind whatever to the tissues between the knee and the foot have little effect for the purpose under discussion. If we could exert the desired action upon the tendons, we should, in a case where the joints drop forward, cause contraction of the extensor, and relaxation of the flexor tendons, and produce the reverse actions where the joints descend backwards.

Many recommend strong astringents, stimulants, and even blisters to the whole circumference of the leg from the knee to the foot. If such should have any marked action upon the tendons, both flexor and extensor would be acted on alike, hence no relative difference would be caused. Applications to muscles have some effect. Hence it can readily be seen that if we can cause a contraction, hence a shortening of a muscle it will cause greater stress upon its tendons, as in like manner, if we cause a relaxation, hence a lengthening of a muscle eases the tension upon its tendons.

Theoretically, the application of stimulants or blisters causes a contraction of muscular tissue, and the application of relaxers, as a solution of belladonna, causes a relaxation. Hence, when the joints drop forwards, stimulants should be applied to the anterior muscles above the knees, and relaxers to the posterior ones. When the joints descend backwards the applications should be reversed. Our experience with applications for this purpose has been somewhat extensive but very unsatisfactory.

The object in treatment should be to supply temporary support to the limbs between the feet and the knees, support which will hold the bones in normal position, thereby giving the muscles rest and an opportunity to gain the necessary strength and tone to properly perform their functions. For this purpose plaster of Paris or starch bandages, splints and bandages, leather boots, felt boots, etc., have been extensively tried. The great trouble is the tendency of these applications to scarify and complicate the trouble. Whatever device is used should be such as can readily be removed and readjusted, and should be removed and left off for at least a few minutes two or three times daily, in order to allow the air to circulate around the limb and cool it. We have had the best results from boots made of thick felt, such as harness-makers use for sweat pads, housings, etc. The felt should reach from the foot to the knee, and be wide enough to surround the whole limb, or even overlap a little. Attached to this, of course running crosswise, should be six straps with buckles, these straps being about equal distances apart. Extending from above downwards, between the straps and the felt, and tacked to the straps, should be three pieces of tough, green hickory or elm or other hard wood about 1 to 1½ inches wide and about ¾ of an inch thick. One of these should be in the centre



Good Live Stock Increases Production.

and pass down the front of the limb, the wood extending a short distance down the hoof, and one pass down each side of the limb, but not extending over the hoof.

Before applying it is good practice to wrap the limb with wadding or batton, making it thicker where there are hollows, as below the fetlock pad, on each side just above the fetlock joint, etc., then the boot is applied and each strap buckled securely, but not too tightly.

These can be readily removed and readjusted, and when weakness is manifested in the fetlocks only, will generally effect a cure; but where the knees also are weak and turn outwards to a marked degree the prospects of a cure are less, as, if appliances to keep the knees in position are used, it interferes very materially with the power of progression.

Since the use of starch for laundry purposes has been forbidden in Britain, there will be a great deal more comfort around John Bull's neck, wrists and bosom. Sunday shirts and collars are still board-like in Canada, however, and relief would come from such an order here.

Watch Navel-III.

The greatest danger to the foal crop each year is from navel-ill, sometimes called joint-ill or septic arthritis and the disease is generally most prevalent where the usual precautions as to cleanliness and disinfection are not taken. Foals born in a grass paddock are not, as a usual thing, so likely to become contaminated as those dropped in a box stall, and particularly in a stall which has not been regularly cleaned and freshly bedded. The best place for the mare to drop a foal is in a clean grass field, and she should be prevented from foaling near watering troughs or in corners of the field under shade trees, where the grass has been tramped away and stock filth has accumulated. The best method of prevention has been outlined several times in this paper, and consists in thoroughly disinfecting the navel cord immediately after the foal is dropped and two or three times a day until it is dried up. A ten-per-cent. solution of carbolic acid or a one to thirty solution of corrosive sublimate will do the trick. When it is necessary to bring the mare to a box stall at night or on account of wet weather be sure it is clean and well bedded.

Breed The Draft Mare.

We read that the American and French Governments have suddenly ceased buying horses in the United States, and that this has somewhat upset the horse market in that country. On the other hand, it is announced that the British Government is about to buy extensively in Canada, and we believe that in the near future the American army will require thousands upon thousands of horses. In the end the demand for horses should stiffen and probably will outstrip the supply in this country.

Activity may not be great in the horse markets throughout the summer, but indications are that the best and safest plan for all owners of good heavy draft mares would be to breed them this year to the best available horses. The tractor and the motor can never drive the horse completely out of business. It has been proven without a doubt that in war the horse is absolutely essential, notwithstanding the increased use made of all kinds of motor vehicles. On the farms the tractor will no doubt increase, but as work increases year after year horses in great numbers will continue to be a necessity, and on the smaller farms, of course, will be the only practicable means of working the land. Certain types of horses will never see the demand which they once enjoyed, namely, light horses for fast work and fancy horses for city driving. The automobile has taken their place very largely, but there will always remain a demand for the top-

notchers in high steppers and speed. However, the one horse which cannot be gotten along without is the drafter or the best type of farm horse, and the only horse which it pays the farmer to breed on a large scale is the heavy-draft animal. To this end use the farm mares this year and breed all that can be spared from the heaviest of the work. As a general thing the best success comes from working the brood mare. Make the mare do her share of the farm work and at the same time raise a colt.

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