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as it is one knowing of a place where it grows should be careful to whom he gives this information, and should only guide to the place persons he can trust not to injure the plants. Many people have a wild idea that they can succeed in transplanting this species and growing it in their gardens. Such efforts are only a waste of the plants and of the individual's time, for garden conditions are not bog conditions. A friend of mine, one of the best gardeners I have ever known, and a man who knew Orchids, both native and foreign, from A to Z, tried his best to grow this plant in his garden—and failed. He did succeed in getting it to live for three years, but the plants in the second and third years were small and weakly, and by the fourth year were dead.

Ornithology on the American continent has experienced a sad loss in the death of Wells W. Cooke, who for the past fifteen years has had charge of the bird-migration work of the United States Biological Survey. His work brought him into close touch with those interested in bird life all over the continent, and many of these observers who sent in reports to him were located at different points in Canada. A great deal of our knowledge of bird migration in North America is due to the pains-taking work and clear thinking of W. W. Cooke, and our only consolation for his passing while still in his prime is that he made the best use of the time allotted him.

THE HORSE.

Lameness in Horses—XXIX.

Open Joint.

Each true joint is enclosed by a thin ligament, called the capsular ligament. This ligament resembles a section of a sack, one end of which is firmly attached to the lower end of the upper bone of the joint, and the other end to the upper end of the lower bone, thus forming a cap or sac which completely encloses the joint. The inner surface of this ligament is lined by a synovial membrane, which is plentifully supplied with little glands, which secrete synovia or joint oil, which is for the purpose of lubricating the joint. That condition known as "open joint" is when the skin and underlying tissues are punctured or incised, and the wound penetrates the capsular ligament and allows escape of synovia. In some cases the ligament is not actually punctured at first, but is bruised or injured to such an extent that it sloughs and causes open joint.

Symptoms.—In cases where the wound has actually penetrated the ligament, there will be a more or less free discharge of synovia at once. Synovia is a thin clear, slightly amber-colored, oily looking substance. It has a well-marked oily appearance and if a drop be pressed between the thumb and finger, it has a well-marked oily feel; at the same time the actual percentage of fatty matter is very small. In many cases the discharge is slight for a few days, and the general symptoms slight. In a period varying from 2 to 10 days the patient commences to show severe symptoms. The joint becomes swollen. The swelling is at first tense, but elastic, however, it soon becomes hard and unyielding, and accompanied by more or less severe constitutional disturbance; the pulse becomes hard, wiry and frequent, and the animal evinces acute and agonizing pain. Lameness is excessive. The patient is scarcely able to put the foot to the ground, whilst at the same time the pain causes him to keep it in an almost continual state of motion. He may stand quietly for a few minutes, and then suddenly flex the limb, which motion often causes a considerable quantity of synovia to escape in a jet. An injury, not at first penetrating the joint may do so in the course of 3 or 4 days, by sloughing of the tissues, these having been destroyed, but not removed by the violence of the injury.

The discharge of synovia may be slight for a few days after the accident; but it gradually increases as the inflammation advances, is thin in consistency, and mixed with flakes of lymph; coagulates upon the tips of the wound, and oozing through this there will be a thin watery discharge. There generally is an exudation of a large quantity of lymph into the tissues surrounding the joint, which becomes partly organized, forming a hard, firm swelling. The excretion from the wound becomes purulent, or tinged with blood, and abscesses are liable to form around the joint. A purulent discharge, tinged with blood and accompanied by well-marked constitutional disturbance, indicates that air and infectious matter have entered the joint, and that the articular cartilages are sloughing. In such cases recovery is doubtful and the best recovery that can be effected is a permanently stiff joint. Unless the animal is valuable for breeding purposes, the owner should consider carefully, whether he will be justified in going to further expense and trouble, or whether it would be wiser to destroy the patient.

Treatment.—If the wound has been inflicted by a clean-cutting object, and the condition noticed promptly, prompt treatment may result in a cure in the course of a few days, if the introduction of air and infectious matter into the wound can be avoided. The patient should be placed in a clean, comfortable stall, and kept as quiet as possible. It is not wise to place in slings, as he suffers very little and slings tend to excite, but he should be tied so that he cannot lie down. The wound should be thoroughly washed with a solution of corrosive sublimate, say 15 grains to a pint of water; the wound then filled with 1 part

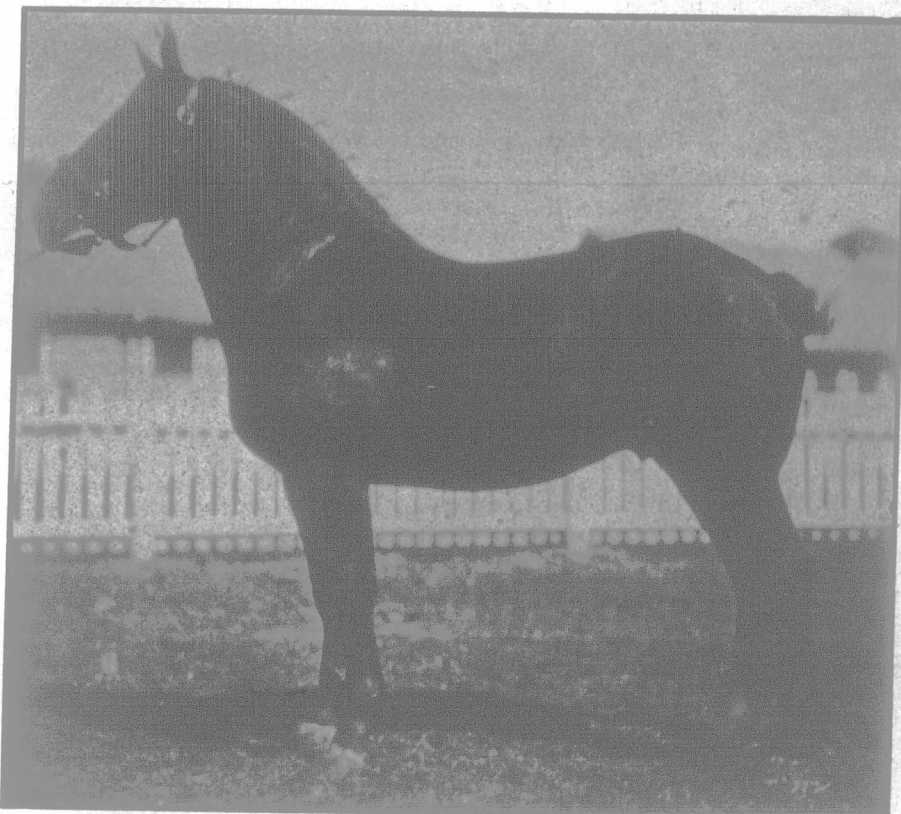
iodoform and 4 parts boracic acid, then covered with collodion and bandaged. This dressing (provided considerable swelling or well-marked constitutional disturbance is not manifested) should not be removed for about 10 days, by which time the wound will have healed and recovery have taken place. Of course, such recovery can take place only in cases where no foreign substance has been introduced into the wound and treatment has been adopted soon after the injury has been inflicted.

In other cases, where local and constitutional symptoms are marked, it is not wise to endeavor to check discharge suddenly, as infection has taken place and the infected matter must be allowed to escape. It is now wise to place the patient in a sling. As if he should lie down the exertion and flexion and extension of the limb during the act and when rising, or attempting to rise, tend to make matters worse. The wound should be cleansed with the above lotion, all foreign bodies or partially detached tissue removed and endeavors made to prevent acute inflammation, as far as possible, check secretion of synovia and encourage healing. The constant application of cold, as pounded ice, or irrigation by keeping a small stream of cold water constantly running over the joint, will probably give the best results. If the application be intermittent, the wound should be dressed frequently with an antiseptic, cooling lotion, as one made of 1 oz. each of acetate of lead and sulphate of zinc in a pint of water, or 4 drams each of acetate of lead and sulphate of zinc in 7 oz. water, add to this 1 dram each of glycerine and tincture of muriate of iron. Saturate a little absorbent cotton with this and keep it on the wound.

Different methods of plugging the wound or forming a coagulum are recommended, but the writer's experience has been that it is better to gradually decrease the discharge, as when quickly stopped the pus will seek another exit, which complicates matters.

Constitutional treatment consists in administering a laxative of 1 to 1½ pints raw linseed oil and feeding on laxative food, and if necessary giving rectal injections to cause movement of the bowels. If pain be excessive it is good practice to administer an anodyne as 1 to 2 drams of the solid extract of belladonna 3 or 4 times daily.

WHIP.



A Three-year-old Percheron Stallion.

Attend to Details and Save the Team

July and August are usually hard months for the average work horse. The work may not be as steady nor as heavy as at some other season of the year, but irregular hours and frequent change of work appear to have a detrimental effect on the animal system. Many horses get thin and have a haggard appearance. In the busy season of haying and harvest there is a tendency to somewhat neglect the horses. They are rushed from barn to field, oftentimes given only a short time to feed and go from noon to sundown without their grain ration. As they are too wet to clean properly they are turned to the pasture uncleaned for the night. It is not the work that hurts the horse so much as the irregularity in feeding and lack of sufficient cleaning. It does not pay to neglect the teams. Although a few minutes extra time may be gained in harvesting the crop, the spirit of many horses is broken, and they do not regain their usual life for the fall work. In the end time is lost.

Turning the horse on pasture is good for it, but when doing heavy work it should have its regular feed of grain in the morning, and be given a thorough cleaning to remove sweat and dirt from the skin. There is often as much in the cleaning as in the feed

for keeping a horse in condition. The forenoons' work is fairly regular, but when hauling in, trotting to the field with the empty wagon is often as hard on a draft horse as drawing the load at a walk. On many farms the custom is to have tea at five o'clock and then work until dark. Too frequently the horses are turned to the mow to secure their supper, and are deprived of grain until the day's work is finished. If man is forced to continue working two hours past the regular time of quitting with only a lunch to sustain him he feels the effects of it. If the horse is to be kept in fair flesh he must have his regular feed at the right time. Sometimes too much is expected of a horse in the hot weather.

At best, haying and harvest is heavy work for horses, and an effort should be made to make it as light as possible. A tongue truck on the mower and binder will lighten the load on the neck and possibly prevent sore necks. During the summer grease wears off the wagons and other implements very quickly. Before the teamster realizes it there is a call for oil or grease. When it gets to this stage the draft has been greatly increased. A little oil makes machinery run smoothly, and well-greased wagons make the load draw light. It is neglect on the part of the teamster to pay attention to details that knocks the life out of his team. It is a pleasure to drive a team that is in good condition and has plenty of life, but it is a disagreeable task goading on horses that have had their spirit broken by hard work and neglect.

LIVE STOCK.

Removing Tuberculosis from Pure-bred Cattle.

Whether tuberculosis can be entirely removed from all the cattle in an entire province or state and kept away after such removal has not yet been proved. That it could be done would seem possible, but in a province containing hundreds of thousands of cattle it may be questioned whether the cost involved would justify such a course of action.

The experiment in this line in British Columbia will doubtless throw light on this question. In that province the testing of cattle for tuberculosis is compulsory when kept for breeding uses. But it is possible to virtually free the pure-bred cattle in a province or state from the disease. This has been shown in the experience of the breeders of pure-bred stock in the State of Minnesota during recent years. This experience is worthy of careful observation.

In 1910 the Live Stock Sanitary Board of Minnesota secured the passage of a law which prohibited the sale of pure-bred cattle over the age of one year to any party within the state without furnishing a certificate from the said Board that the animal was free from tuberculosis. The farmers had been prepared gradually for this legislation, which may seem radical, by what had been done previously. Why was this legis-

lation aimed specially against pure-bred stock? For two or three reasons. In the first place the Board had ascertained that it was through the distribution of pure-bred sires more than through any other source that tuberculosis was being distributed throughout the state. In the second place the fact was obvious that when cattle were sold to go out of the state it was usually for breeding uses, and that usually they were purely bred. To have them tested made them ready for shipment to any state calling for such a test without further delay. In the third place, the important cities had adopted measures for the testing of cattle which supplied milk for the same and these were usually grades. It was felt that there was no necessity for duplicating this work.

What was the outcome? In the first place virtually compelled the owners to test their calves. They grew them for sale, and after they were a year old they could not sell them as breeders unless they passed the test. They soon found that it was inconvenient to have to send to the Live Stock Sanitary Board a request to have an animal tested, to have had sold. They found it was far easier to have the whole herd tested every year. Finding that the each test gave them a certificate that certificate herd was free from tuberculosis, the result was that lasted a whole year. The se-