

The eggs are laid in the fall, under a stone or in a crevice in the bark of a tree. They hatch in the spring into tiny little creatures, which look exactly like old Daddies except for their size.

A daddy is very particular about its legs, and cleans them frequently. It will grasp one close to the basal joint in its jaws and pull it slowly through, meanwhile holding the legs up to the jaws with the palpi, while it nibbles it clean for its whole length. The Daddies have the power of growing new legs if one is lost, and a Daddy is frequently seen with one or more legs only half grown.

Many of our insect pests are forms introduced from Europe. Not so the Potato Beetle. Its native home was in Colorado, Arizona and Mexico, where it fed on the leaves of the Sand Bur, (*Solanum rostratum*), which belongs to the same family as the potato. About 1850 it began to attack the potatoes of the early settlers in Colorado, by 1859 it had reached Nebraska, in 1861 it has spread to Iowa, and in 1865 it crossed the Mississippi. By 1874 it had reached the Atlantic Ocean, and it did not stop its march even then, as it soon appeared in Europe, though it has never become a pest there.

The life history of the Potato Beetle is as follows. Some of the adult beetles winter beneath the surface of the soil, burrowing down a foot or more to escape the frost. As soon as the potato plants appear above ground in the spring these beetles lay their eggs on the leaves. The eggs hatch in about a week into little hump-backed larvae which feed upon the leaves. The larvae shed their skins four times. In about sixteen days from hatching the larvae descend into the ground and form a little cell in which they change to pupae, and in from one to two weeks, according to the temperature, they emerge as full-grown beetles. The entire life history may be passed through in about a month if the weather is warm, and there may consequently be two or three generations in a season.

The Potato Beetle is rendered objectionable to most insect-eaters by the ill-smelling orange juice which it excretes when seized. This fluid is secreted by little glands along the hinder edge of the thorax and front portion of the wing-covers. The Rose-breasted Grosbeak is one of the very few birds which feed upon these insects.

This insect is often termed "Potato Bug," but bugs are insects which have the wings hard at the base and membranes at the apex, while the beetles have the hard wing-covers such as may be seen in the Potato Beetle. Bugs also have sucking mouth parts, while the beetles have biting mouth parts.

THE HORSE.

Bone Diseases in Horses.

Editor "The Farmer's Advocate":

Of the many bone diseases horses are heir to, sidebone is most often found among heavy haulage animals, and it arises from several causes, to wit, hereditary influences, concussion in tramping on dry, hard roads, etc. What actually takes place is a hardening or ossification of the ligaments which bind the pedal bone to the bones of the fetlock; the result is obviously decreased freedom in the movement of the joint. When the formation of sidebone is suspected, a slight swelling or fullness can be felt just over the heels when tested; or, when smartly tapped at the spot, the animal shows signs of sharp pain. A little later the same spot is much harder to the touch, and as the swelling increases in size so does it in hardness. The animal is observed to place the toe on the ground first, and to move the limb with a "stiff leg" action. As soon as this is detected, poultice a few times, but in cases where the formation is more developed apply a blister and put on a bar shoe without high calkins. In all cases rest must be allowed.

Ringbone is usually the result of severe and long-continued inflammation of the ligaments of the fetlock joint, which finally causes a bony deposit. As soon as the slightest formation appears, or can be felt, extract pain and inflammation by frequently bathing with equal parts of vinegar and water, keeping the leg swathed in cold, wet bandages. After the inflammation is subdued, closely shave the hair off around the part, and, having well fomented, dry and apply a strong blister for twenty minutes, directing the friction to the tumor and about two inches all round; repeat the blister if necessary. If the trouble is of recent formation this treatment will prove sufficient to overcome and take away the enlargement. Keep on bran mashes and green food. Complete rest, or, at any rate, not more than work at the walking pace, is necessary.

Bone spavin is bony enlargement upon the lower and inner side of the hock, producing lameness and a tendency to wear off toe or front of the shoe. It comes from the severe strain of heavy loads or overwork, and also from hereditary influence. Sometimes this unsoundness—for it must be considered an unsoundness—when not severe, can only be detected when the animal is

brought out in the morning; there is a stiffness, a "wooden leg" action about the movement of the hock. In more advanced cases, however, the affection is only too apparent at sight, and, finally not only do the bones of the leg become united, but additional bony deposit is formed, which gradually makes the use of the joint more and more awkward and painful.

Remove the shoes. Allow perfect rest; this is absolutely necessary. Reduce inflammatory action by frequent fomentations. Then use a strong blister, and repeat in three weeks' time, or when the scurf from the first dressing has disappeared.

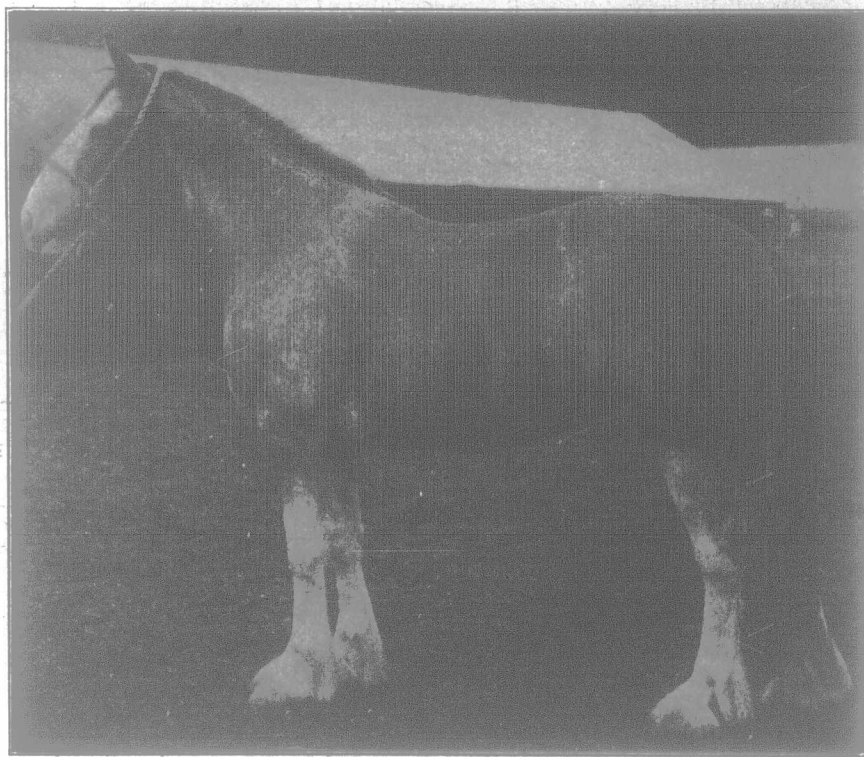
Bog spavin is a common disfigurement of the hind legs of the heavier class of horses, and is mostly due to sudden over-exertion or long-continued hard work.

It is situated in the front of the hock joint; it is, of course, an entirely different ailment to bone spavin, which occurs in the same spot. It is caused by the escape of the joint fluid into the space between the tendons and the skin.

Splint is a deposit of bone, which may occur in many positions, but frequently on the inner side of a foreleg. It is also the result of inflammation, or it may be hereditary. The primary cause of this inflammation may be concussion, especially where the animal's action is inclined to be stiff or "wooden-regged" as we call it in the Old Country. The best thing to do to treat splint is to give the horse a rest and cold water applications until the inflammation goes; then blister, and if necessary, follow up with a plaster bandage.

Should the bony deposit grow worm eaten, as is often the case, cut down and scraping with a bone spoon might be found effective.

G. T. BURROWS.



Lady Bountiful.

First-prize two-year-old Clydesdale filly at the Highland Show, at Hawick.

The Better Age to Handle Colts.

Opinions differ greatly as to the age at which it is wise to handle colts. Some claim that it is neither wise nor profitable to spend time and trouble on a colt until he has reached that age where he is required for work, and to then put him in harness and "break him." While others claim that it is wise to handle them at a very early age. A well-known and successful horseman recently remarked, "I have no use for horses that have not been handled, and broken until three or four years of age." This, of course, is an extravagant expression. There are very many high-class horses of all classes, many of which win in the show-ring in good competition, that have run practically wild until the ages mentioned and some to a greater age. At the same time it is quite probable that the same horses would be even better mannered and more tractable, and would have given less trouble to their teachers if they had been carefully handled during colthood.

We commonly speak of "breaking a colt," or in referring to a colt say, "he is broken both single and double," and probably also "to saddle." The term "break" is used whether it be a case in which a mature animal that has never been handled be hitched and put to work without preliminary education, or whether he has been gradually educated before being asked to perform the functions of a horse. In the former case the word "break" is correctly applied, but in the latter it would be more correct to say, "teach" or "educate." Colts or horses should

be "taught" not "broken," but the term "break" is so commonly used that we may be excused if we frequently use it when we mean "teach or educate."

The results of early or late handling of colts depend greatly upon the class and individuality of the animal, and also upon the person who has done the handling. Unhandled three-year-olds or over of the heavy classes are much more easily managed than those of the lighter classes of the same age. Then again, some colts appear to be congenitally mean, and if allowed to go unhandled until adulthood the meanness has had opportunities to increase and become intensified, while had they been handled during colthood they would have learned in life that they must submit to control, and the "meanness" would practically have been displaced with an evident desire to do as required. On the other hand many colts have evidently no "meanness" in them, and they do not become spoiled even if allowed to reach adulthood untaught and uncontrolled. On general principles we say, "handle the colt when young."

The ultimate value of a horse, more especially of the lighter breeds, depends greatly upon his manners, and if a colt be carefully handled from a very early age until maturity, his manners should be much better than his brother who was not taught anything about "manners" until adulthood. The writer claims that a colt should be carefully handled from very early life. He should be taught to lead at a few days old, to stand tied and allow his feet to be lifted and handled and his body to be groomed at a few weeks old, or at the latest during the first winter. During the second year his education should be continued. Where time is valuable in the country probably little will be done during the second summer, but during the winter he should be gradually taught to wear harness, first "giving him a mouth" by putting a light bridle on and leaving it on a few hours daily until he ceases to fight the bit; then gradually adding other parts of the harness until he is wearing a whole set. Of course, always be careful not to allow any straps to hang down sufficiently low that he might step upon them and become frightened. During the latter part of his second year or the first part of the third he should be taught to drive in single or double harness or both, or if he be saddle-bred should be ridden a little by a light-weight man or boy. During the third summer it is generally wise to allow him to run at pasture again, but during the third winter his education should be continued until he has acquired good manners, and is reasonably safe and satisfactory to drive or ride.

A colt that is handled wisely when young usually gives his trainer much less trouble than one that has not been taught anything until he has reached three years or over. At the same time those who have had much experience in handling colts of different ages must admit that while an unhandled or unbroken four, five or six-year-old can be careful handling be made a good-mannered horse. While we recommend early training, we decidedly object to an immature colt being asked to do the work of a horse. Too many think that at three years old a colt should be put to regular and steady work. We consider this a great mistake. The three-year-old will, in many cases, perform the functions of a mature horse with reasonable satisfaction and continue to do so during his fourth and fifth year, and then apparently be none the worse for having worked when young, but he will be an old horse at an earlier age than the one that has not been asked to do much work until he is at least five years old. With possibly a few exceptions, horsemen of experience will admit this. When any horseman who has owned and worked or driven a large number of horses, carefully considers those he has owned and kept until old age, he will discover that those that have been physically young when really quite old, those that have been useful at thirty years of age or older are generally those that have done little work until five or six years old. There is unfortunately too great a hurry to get the colt to work. This applies to light as well as heavy horses. Early speed is wanted in race horses of all classes, and it is wonderful what extreme