The Farmer's Advocate
AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE DOMINION.

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1. THE FARMER'S ADVOCATE AND HOME MAGAZINE is published every Thursday. It is impartial and independent of all cliques and parties, handsomely illustrated with original engravings, and furnishes the most practical, reliable and profitable information for farmers, dairymen, gardeners, stockmen and homemakers, of any publication in Canada.
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12. WE INVITE FARMERS to write us on any agricultural topic. We are always pleased to receive practical articles. For such as we consider valuable we will pay ten cents per inch printed matter. Criticisms of Articles, Suggestions How to Improve "The Farmer's Advocate and Home Magazine," Descriptions of New Grains, Roots or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation, are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.
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Questions will be answered through these columns or by mail according to our usual custom. We plan to have the manufacturer of each type of car answer all questions on his car, so do not neglect to state the name and model of your car when writing. We invite correspondence on the use of the car in your business, on its value as a pleasure car for farmers, and let us know how it works out as a means of keeping the boys on the farm. Our automobile department will be interesting and valuable. If you help us we can help you. Read this week's article.

As time goes on we hope to add to this, more special work on farm machinery and farm motors. The day of the small tractor dawns. The gasoline engine and electric motor now does much farm work hitherto done by horses or by hand. If you have an engine or a motor tell our readers how it saves time and money for you.

The Important Factor.

After all, just about the most important consideration in the farmer's business is the weather. Plans may be made for a greater production. Patriotism may be appealed to. Better cultivation may be exhorted for. A larger acreage may be sown, but unless the weather is at least partially favorable crops cannot be put in the bumper class. The man in town thinks the farmer has the best of the job deal. Maybe he has. He certainly hasn't the worst job on earth but it should always be remembered that frosts, rains, hail, wind and all the elements combine to make farming not all smooth and plain sailing. Is it any wonder then that the weather is always the first topic of conversation? It has rained in Ontario for days and weeks. It is in times like these that we notice the effects of the weather. We are not always thankful enough to a Divine Providence for good weather and good crops so we need adverse conditions as an awakener once in a while. Yes the weather is the important factor and remember that the farmer has no control over it so do not blame him, always, for crop shortage.

Nature's Diary.

A. B. KLUGH, M. A.

As we walk along the margins of ponds and slow-flowing streams at this time of year we find forests of little plants with pipe-like stems projecting from the water. These are the stems of the Water Horsetail. The Horsetails are allies of the Ferns, and are the descendants of the Calamites, which in the Carboniferous period attained the size of trees. Their stems are jointed, hollow except at the joints, and may be compared to a line of drain-pipe, each section of which fits into the slightly flaring top of the one below it. At the top of each joint there is a papery sheath which is toothed on its upper border and which represents a circle of confluent but reduced and functionally useless leaves. (See Fig. 3.) The stems contain silica which gives them their firmness and brittleness. As is the case with the Ferns the Horsetails reproduce by means of spores. These are borne at the tips of the stems in cone-like spikes or catkins. The catkins consist of numerous six-angled plates attached to the stem by a central stalk and bear from five to nine little sacs, or spore-cases, on their margins. (See Fig. 4.) The sacs extend horizontally toward the centre of the cones

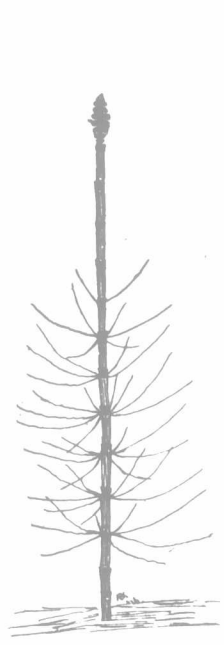


Fig. 1—Water Horsetail. Old fertile frond.

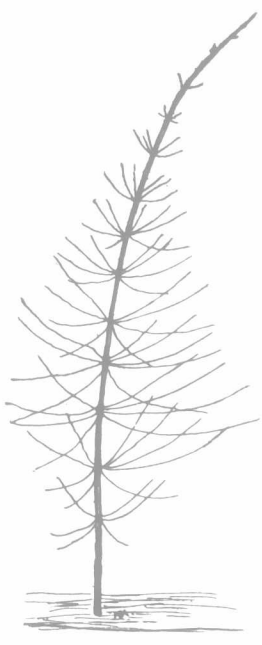


Fig. 2—Water Horsetail. Sterile frond.

Fig. 3 — Water Horsetail. Tip of young fertile frond.

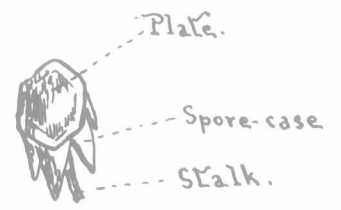


Fig. 4—Plate of catkin with spore-cases.

Fig. 5—Spore with elater coiled.

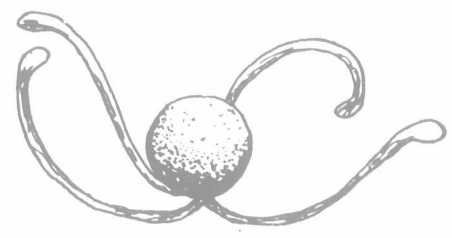


Fig. 6—Spore with elater uncoiled.

and only the angular plates to which they are attached are to be seen before maturity. When ripe the cone lengthens slightly drawing the plates apart, the spore-cases open on the side next the stalk that bears them and the spores escape. The spores are tiny, globular, single-celled bodies, bright green in color and so small that single individuals cannot be distinguished by the naked eye. Each possesses two filiform appendages with enlarged ends, called elaters, which are attached to the equator of the spore by their middle. When moist the elaters coil spirally round the spore and when dry they uncoil and spread out. (See Figs. 5 and 6.) As the spore-case dries at maturity the elaters uncoil and assist in the liberation of the spores and in floating them in the air.

Just as in the case of the Ferns the spores do not give rise directly to a plant like the one which bore them. Instead they produce, on germination a little flattish, green body called a prothallium which bears the sexual organs. In most of the Ferns one prothallium has both male and female organs, but in the case of the Horsetails a prothallium bears only the organs of one sex. Since in the Horsetails each spore gives rise to a prothallium of one sex only we can see a further use for the elaters in the fact that they become entangled and thus several spores float off together and germinate side by side, obviating the danger of non-fertilization which would exist if the prothallia were too far separated. From the fertilized egg of the female prothallium a Horsetail develops.

In the Water Horsetail the fronds are of two kinds, fertile fronds which have the cones at their tips and which are unbranched when young, and sterile fronds which are branched. After the maturity of the spores the fertile fronds also send out branches, when they appear as shown in Fig. 1, but the branches are not as long as those of the sterile fronds. These branches are sometimes referred to as leaves, which is incorrect as the leaves are, as we have seen, mere scales, and in the Horsetails the function of leaves is taken over by the stem and branches. The young stems of the Water Horsetail are a favorite item of diet with the Muskrats.

A bird which is extending its range gradually farther and farther north in Ontario is the Green Heron. This species is about seventeen inches in length. The crest, long feathers of the back and wing-coverts are lustrous dark green, the neck is purplish-chestnut behind and on the sides and white in front, and the underparts are brownish gray.

Writing in 1894 Mr. McIlwraith says of this species, "This handsome little Heron finds its northern limit along the southern border of Ontario. According to Dr. Macallum it breeds regularly on the banks of the Grand River near Dunnville and has also been observed, occasionally near Hamilton and at St. Clair flats." Later Mr. W. E. Saunders mentions it as a rather rare breeder near London. In 1902 I found it breeding at Puslinch Lake near Guelph, and more recently I have found it in the marshes about Kingston. I should be glad to hear of any records of its occurrence north of the points I have mentioned.

THE HORSE.

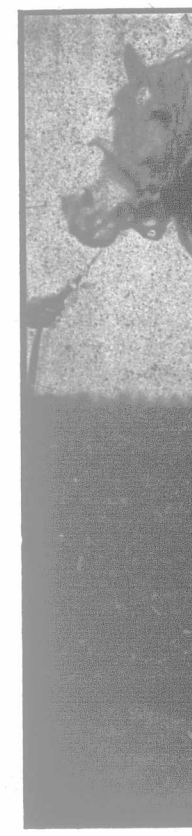
Lameness in Horses—XXVI.

Chorea—String Halt.

Chorea may be defined as an irregular convulsive choreic action of some of the voluntary muscles. In the horse it is generally confined to the muscles of the posterior extremity, constituting what is known as "string halt." Many views have been held regarding the pathology and nature of this disease. By some it is regarded as entirely functional, and independent of organic change. By others it is held that it is due at least in some cases to some disease of the blood, the nature of which has not been determined, and that it may be associated with some diseases, as rheumatism or diseases of the heart. The late Professor Dick held that it was due to tumors in the brain, and supported his views by a *post-mortem* proof, but it has been proven that tumors in the brain may be present without chorea, and that chorea is often present without such tumors. Others have claimed to have traced its origin to an enlarged condition of certain nerves, or to the pressure of a bony growth on a nerve, or to paralysis of the muscles antagonistic to those affected by the spasm. Other theories have also been advanced, but no person has yet been able to prove his theory correct, hence it must be admitted that the nature of the disease is not well understood.

String halt may be defined to be an involuntary convulsive motion of the muscles, generally those of one or both hind legs, but it has been noticed in the fore legs. The limb or limbs affected are convulsively elevated, to a greater or less height from the ground and brought down again with more than normal force. This is not always noticed at every step the horse takes. He may progress for a variable distance without exhibiting any symptoms of the disease, then, all at once, the limb or limbs will be suddenly elevated from the ground with a peculiarly sharp, sudden jerk. In most cases the disease is progressive, and in many cases progression is very slow, several months, or even years elapsing after the first symptoms are noticed before the symptoms become serious or even well-marked, while in other cases development is rapid. In most cases the symptoms are more severe in cold than in warm weather. It is sometimes necessary to turn the animal round from right to left, or from left to right, in order to make him show any symptoms of the disease, the symptoms being exhibited as he turns one way only. In other cases the horse will show symptoms only upon being backed slowly for a few steps and then walked slowly forward and this should be repeated a few times, as a diseased horse may not show symptoms each time. As the disease progresses, the symptoms become more marked and constant. In advanced cases the sudden elevation will be noticed at almost or quite every step, the height of elevation varying greatly in different patients and even in the same animal at different steps. In severe cases it is sometimes so great as to fetch the foot or fetlock joint in contact with the abdomen. In all cases even slight symptoms should be considered an unsoundness, and as a cause of depreciation of the animal's value.

Treatment.—No reliable treatment has been dis-



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