

It belongs to the family known as Bark-borers, or *Scolytidae*, all of which are rather slow-moving and small insects. Most of the species in this family live in and beneath the bark of trees, where they do much damage. The insect under consideration is a new pest in Canada, having been imported from Europe; it has only been complained of in North America since 1878, when specimens were sent to the United States Entomologist, Prof. Riley, from the state of New York. It has, however, already spread over a considerable area, and is now a formidable enemy of the clover grower. In order that the insect may be recognized by farmers, I give here with an illustration of the insect in all its stages, which has been drawn with great care by Prof. Riley. All the figures of the insect are much enlarged, the actual size being only about that of the letter *a* by the side of the stem. The life-history is as follows: Early in the spring the mature beetles emerge from the ground, where they have passed the winter in the roots of the clover plants, which they had destroyed the previous season. After pairing, the female bores a cavity in the crown of the root, and deposits there about half-a-dozen small white eggs. These hatch in about a week, and eat their way down into the root, hollowing it out, as shown in the figure. The burrows are filled up with the excrement of the small, white grubs (Fig. B), which, when full grown, are only about $\frac{1}{16}$ inch in length. These change to chrysalids, and in September the perfect beetles may be found in the roots. In the specimen sent by Mr. Arnold I found full grown grubs, chrysalids and the perfect beetles. These would all have attained the perfect form before winter, and remained in the root until spring, feeding upon its substance. Although the perfect beetle feeds on the roots, it is in the grub state that the chief part of the injury is done. When the larger roots are particularly attacked, Prof. Riley found that in many cases the plants were entirely cut off at the surface of the ground, and the flower stalks were also in many cases eaten into.

Remedy.—No better remedy has been suggested than the ploughing under of clover when it is found to be infested. As a rule this is not detected until the second crop is found to fail. In infested districts the fields should be examined frequently, and if indications of the pest are found the clover should be ploughed under as soon after the first cutting as there is a pretty good growth on the ground. The value of the clover plant as a fertilizer is well known, so that the loss to the farmer is materially reduced on that account, when this treatment is found necessary. When gas-lime can be had cheaply and conveniently it will render the treatment much more thorough if a heavy application of from two to four tons to the acre be made previous to the ploughing.

Potatoes.

To estimate roughly the number of bushels of potatoes in a bin, measure the bin and multiply the dimensions so as to ascertain the number of cubic feet; two-thirds of this cubic contents will be roughly the number of bushels.

One reason why potatoes stored in a pit come out in better order than from the average cellar is because the pit is absolutely dark; another reason is that there is no circulation of air to dry the tubers and wilt them as sometimes happens in cellars. Make your cellar perfectly dark, as cool as may be without freezing and as close as possible, and you will keep your potatoes or other roots almost as well as in a pit with the advantage of being able to get at them for use or market with less trouble than when in a pit. A very little light and air are injurious, the cellar windows should be curtained inside where roots are stored.—[Massachusetts Plowman.]

One point gained on the road of progress, and the next is gained easier, for when we make an advance step we derive a certain stimulus from it that urges us on with fresh vigor.

Stock.

Stock-breeders Meet.

ONTARIO'S EXHIBIT OF LIVE STOCK AT THE WORLD'S FAIR DISCUSSED—THE ONTARIO AND DOMINION GOVERNMENTS TO BE ASKED TO HELP—IMPORTANT RESOLUTIONS PASSED.

A joint meeting of the Agricultural and Arts Association of Ontario and Stock Breeders' Association was held the 17th, of September, at the offices of the Agricultural and Arts Association, Toronto. Those present were: N. Awrey, M.P.P.; H. Wade, secretary Agricultural and Arts Association; J. C. Snell, Edmonton, Ont.; John Weld, of the Farmers' Advocate, London, Ont.; F. W. Hodson, Hog Breeders' Association; R. Gibson, Delaware, and J. Russell, Shorthorn Breeders' Association; Ira Morgan, J. McGillivray, Q.C., J. Jackson, Dominion Sheep Breeders' Association.

Mr. Awrey was appointed chairman, and stated the object of the meeting, which was to discuss what action should be taken by stock breeders towards securing a first-class exhibit of live stock at the World's Fair in Chicago in 1893. The chairman said a deputation had waited on Hon. Mr. Carling, and had been assured by him that the Dominion Government would deal with the stock breeders in a liberal manner.

It was stated that the period devoted to the exhibition of animals for awards in the following divisions will be as follows:—Cattle, September 11 to September 27; horses, jacks, and jennets, August 24 to September 27; sheep and swine, October 2 to October 14; kennel show or dogs, June 12 to June 17; poultry, pigeons, pet stock, etc., October 18 to October 30.

Mr. Gibson thought that all the live stock would be on the grounds for six weeks.

The Chairman said he would like to have the opinion of the stock breeders present as to sending a deputation, composed of representatives of all the Stock Breeders' Associations, to interview the Dominion and Ontario Governments regarding the selection of the stock to be exhibited, and other details. To make their exhibit a success the Governments ought to relieve the exhibitors of all expense, such as maintenance, transportation, etc., and thus encourage the stock breeders.

Mr. Hodson said that this was

A GREAT INTERNATIONAL FAIR,

and it would be a great means of advertising the country, and the Governments should bear all the expense.

Mr. Awrey said that if the Dominion Government would bear the expense of maintenance and transportation of the stock and exhibitors the Ontario Government should pay the expenses of the selection of Ontario exhibit.

Mr. Gibson thought the Ontario Government should duplicate the prizes. The National Committee had awarded \$150,000 in money prizes for the live stock, to be competed for by all exhibitors, but several States had supplemented this by giving large grants for prizes of exhibits in those States only. Now that the Ontario Government had practically done away with the Provincial Fair, he thought they should also contribute money prizes for competition among Ontario exhibitors at the World's Fair.

Mr. Jackson said that the stock breeders

should be made sure of something, and the Government should grant some money for this purpose. Money prizes were wanted, not medals.

The meeting thought that the Agricultural and Arts Association should make the selection of the Ontario stock and give the prizes, and not a committee composed of representatives of the various stock breeders' associations. It was also suggested that representatives of all the stock breeders' associations should wait on the Hon. Mr. Dryden, and find out what the Ontario Government would do.

MR. AWREY WARNED THE STOCK-BREEDERS

that the people in the United States, especially those from the State of Illinois, which is the greatest rival of the Province of Ontario for stock-breeding, would be purchasing choice cattle for the purpose of exhibiting them at the World's Fair. He advised them not to sell their best stock and then exhibit inferior cattle against them. If Canadians kept their best stock they would be successful in competition against all other exhibitors, and the breeders in the States would recognize Ontario as the best stock-raising part of the continent and come here to purchase. If, however, Illinois stock-breeders succeeded now in buying the best stock in Ontario, the other States would look upon Illinois as the place where the best cattle can be purchased, and this would be a great loss to the province. Breeders here must be convinced that sufficient inducements will be given them by the Dominion and Ontario Governments to keep their best stock to exhibit at Chicago.

It was resolved upon motion of John McGillivray, Q. C., seconded by J. C. Snell, That in order that the Dominion of Canada and this, the premier province of the Dominion, should be properly represented at the approaching World's Fair to be held in Chicago in 1893, in the matter of all its industries, the Federal Government be urged to make an appropriation for defraying the expenses of transportation of all exhibits, the cost of keeping the live stock, and the necessary personal expenses of exhibitors and those in charge of the exhibits while upon exhibition, and while going to and returning therefrom; and further, that the Government of our own province be asked to make a sufficient appropriation for the purpose of bearing the expenses of selecting the stock and other products to be exhibited, and for prizes to be awarded to Ontario exhibitors thereat.

It was also resolved that a committee be appointed to work out the necessary details as to the line of action to be adopted, the selection of stock, and management of exhibits and the cost thereof, and submit their report at as early a date as possible to the Departments of Agriculture of both the Ontario and Dominion Governments for their approval or rejection, the said committee to be composed of Messrs. Awrey, Gibson, McGillivray, Snell, Jackson, Morgan, Hodson, and Wade. The secretary was requested to secure all information that will enable the committee to arrive at a proper decision.

Mr. Awrey was appointed chairman and Mr. Wade secretary of the committee, after which the meeting adjourned.

To succeed one must venture and risk much. A while ago a German steamship went to pieces, and the captain of the De Ruyter was sent home disgraced because he had lost his vessel, but had he succeeded, when he made his choice of the two courses open to him for selection, he would have made the fastest trip on record and been received with highest honors, upon his return home. The peril remained the same, but a successful result would have been praised while the failure is censured bitterly.