July 2017

The Potato Stalk-weevil

C. P. Gillette

Iowa State College

Follow this and additional works at: http://lib.dr.iastate.edu/bulletin

Part of the Agriculture Commons, and the Entomology Commons

Recommended Citation

Available at: http://lib.dr.iastate.edu/bulletin/vol1/iss11/5
THE POTATO STALK-WEEVIL.

(Trichobaris trinotata Say.)

C. P. GILLETTE.

It seems best at this time to briefly call the attention of the farmers of the state to the Potato Stalk-weevil. Judging from all accounts that can be gathered, this has been one of our worst insect pests the past season. I believe that a half million of dollars would fall far short of making good the loss that it has occasioned the state this year from its injuries to the potato crop.

The Potato Stalk-weevil at this place (and so far as I can learn, it is the first mention of the insect in the state) was first discovered by Mr. F. A. Sirrine, assistant botanist of the station, on 23 August, last, while he was engaged in examining potato roots for the presence of a fungus. Since that date I have personally examined a large number of potato patches in this vicinity and have found none that have escaped severe injuries from the ravages of this insect. In gardens where potatoes have been grown year after year, I have seldom found less than 75 per cent. of the stalks infested and from this to 93 per cent. In field patches at a distance from where potatoes were grown last year, I have found as few as 20 per cent. of the stalks infested, but in no case have I found the injuries less abundant than this.

I wrote a short article which appeared in the Iowa Home-stead' for 5 September, calling the attention of the readers of that paper to the work of the Stalk-weevil and especially requested that information should be sent to the Station from all parts of the state as to whether or not this insect was present in potato fields, but as is common in such cases, only a few replies came in. Mr. N. J. Graham, Adel, Dallas county, Mr. N. K. Fluke of Davenport, and Mr. M E. Hinkley, Marcus, Cherokee county, reported the borers plentiful in their vines. I have also met men, whose names I can not give, from Polk and Boone counties who said that they had examined the potato tops in their respective counties and found the weevils in them. So there is no doubt, I think, but what this insect is generally distributed over the state. It is probably most abundant in the eastern, central and southern portions.
Through the kindness of Dr. Riley I am able to give a very good illustration of this insect, somewhat enlarged, as grub (a), pupa (b), and beetle (c) in the accompanying illustrations. The real length of the full grown insect in the different stages is represented in each case by a straight black line.

The larva, or grub, (a) and pupa are white or yellowish white in color and the beetle is of a beautiful ash gray color. This color of the beetle is due to a covering of gray scales. If the scales are removed the color is black. The beetle has a short snout or beak and for this reason is called a weevil.

The female beetle deposits one egg in a place in a slit made in the stalk of the potato, a little above the surface of the ground. The grub soon hatches and tunnels its way down deep into the root. It then works its way back again and when fully grown changes to the pupa state and then to the mature beetle in the stalk (see illustration) just below the surface of the ground.

This tunneling of the root and stalk weakens the vines very seriously, the leaves begin to turn brown as if sun-burnt, and soon, especially if the weather be warm and dry, the whole top dies down. The potatoes, in consequence, are small in size and few in number.

**Remedies.**

The only remedy at present known is to pull the vines as soon as they are found wilting and dying and burn them. If the tops are left until time to dig the potatoes many of the beetles will have matured and escaped and these will live over winter and lay eggs to produce another brood the next year. On examining potato tops as late as 8 October, I found many pupae and beetles were still in the roots so that even late pulling and burning will destroy many of the weevils. When the weevils are found in the vines the latter should always be burned when pulled and the earlier they are pulled the better.

From the observations that I have made this season it seems that the earliest planted potatoes were most attacked but I am not sure that they suffered more than the late ones, the latter having their vines smaller and more subject to injury when attacked by the weevils.

As the Potato Stalk-weenil promised to be one of the worst insect pests of the state, it will be a subject of special study
another summer. Any information concerning the presence of this insect and its ravages in different parts of the state will be gladly received and will help me in my work.

THE APPLE CURCULIO.

(Anthonomus 4-gibbus Say.)

C. P. GILLETTE.

A number of inquiries have been received at the station concerning the Apple Curculio, and I therefore give the following information concerning it.

*Egg Laying:* I am not aware that anyone has published actual observations on the method of oviposition of this insect. On the 13th of last June I was fortunate enough to see a female perform the entire operation, which was done as follows: First a cavity (Fig 3. b) was eaten in the apple as deep as the beak was long, the bottom being much enlarged and sub-triaangular in outline. The walls of the cavity converge to the opening, which is only large enough to admit the slender beak. When first noticed the beetle had begun her work and it was 30 minutes before the egg-cavity was completed. The beetle, almost immediately after withdrawing her beak, turned about and applied the tip of her abdomen to the small opening into the egg-cavity. After remaining in this position for about five minutes she walked away without turning about to inspect the work that she had done. I at once plucked the apple and examined closely the identical spot where the beetle had been at work and was surprised to find that there was no puncture to be seen in the skin of the apple, but only a minute brown speck. I found that the beetle had plugged the little opening with what appeared to be a bit of pomace, probably excrement, and she

*This portion of this article was read before the Iowa Academy of Science, September, 1890.*

Published by Iowa State University Digital Repository, 1888