

ART. IX.—LARVA OF MAY BEETLE WITH PARASITICAL FUNGUS.
—BY HARRY PIERS.

Read December 10, 1888.

Mr. D. R. Boyle, of West Arichat, Cape Breton, forwarded to the Museum a number of "potato grubs" whose peculiar aspect had greatly puzzled him. They were accompanied by a letter in which the writer asked for information regarding what he had sent.

Upon examination I found the grubs to be the larvæ of the May Beetle (*Lachnosterna quercina*, Knoch) a common and well-known insect in Nova Scotia. What had excited Mr. Boyle's curiosity, and about which he desired to be enlightened, was a long fungus arising from the head and bending backwards like an enormous horn. The Museum already possessed a case of a similar growth, in a specimen of the New Zealand Swift Caterpillar to which we will subsequently refer.

The grubs which had the growth upon the head were found in the ground close to the potatoes on the 18th of October, 1888. They were all dead. They were great numbers without the growth and these were mostly within the potatoes.

Mr. Boyle informs me that he had never before seen the grubs affected in this manner, and that the same had been said by several others whom he had questioned.

The growth—or more properly speaking, growths, arise from a spot immediately behind the head on either side. That on one side is long and tapering and that on the other short and conical—at least this is the case with all the specimens which I have examined.

The shorter growth, in a perfect specimen, measures about .08 of an inch in length and the longer about 1.50. The latter, as it now appears in alcohol, has numerous longitudinal raised lines or wrinkles, and, when examined with the microscope, the whole

surface to within a short distance of the end is tomentose. A longitudinal section, examined in the same manner, showed it to be of a fibrous nature. Near the base, the centre can be separated from the other portions as a core.

When first taken from the ground the growths were of a dark purplish colour, changing to white at the extremity. They have been gradually becoming darker until now they are almost black. The interior parts are white. There is no appearance of fruit.

Wood, in his Natural History, gives a figure of the larva of *Hepialus virescens*, which has a similar growth upon the head. He thus describes it (p. 530):

“The New Zealand Swift is a truly curious insect, not so much for its form or colours, but for the strange mischance which often befalls the larva, a vegetable taking the place of the ichneumon fly, and nourishing itself on the substance of the being which gives it support. A kind of fungus affixed itself to the larva, and becomes developed on its strange bed, taking up gradually the fatty parts and tissues of the caterpillar, until at last the creature dies under the parasitic growth, and is converted almost wholly into vegetable matter.”

In the Museum Collection there is a specimen of this larva with the fungus growth as described above. It is from New Zealand, and was presented by Mr. A. Crichton. The fungus proceeds from the summit of the head in the same manner as shown in Wood's plate.

With the exception of about an inch of the extremity, the whole surface, under the microscope, appears tomentose. The basal portion is of an ochre colour and the extremity for about an inch is brown-red. Length of caterpillar 2.50 inches. Length of fungus 4.60 inches. (Dry specimen.) This is doubtless *Torrubia robertsii*.

A writer makes the following remarks upon the sight of one of these doomed insects in the grasp of its merciless murderer.

“It is a curious spectacle to behold the heavily-burdened larva bearing erect upon its body a vegetable growth often three or

four times its own length—colour-bearers, as they look to be, bearing not the ensign of victory, but the signal of individual distress, telling plainly of the sure but inevitable approach of death.”

Here we have the larva of a moth and the larva of a beetle affected by two nearly related fungi, the one in New Zealand and the other in Nova Scotia. Both larvæ are subterranean and both are ultimately destroyed by this death-dealing parasite whose unbidden presence, unwelcome and not to be got rid of, marks their sure and certain dissolution. It seems to be one of Nature's quiet ways of keeping these troublesome insects within proper bounds.

Note.—Since writing the above, Mr. A. H. MacKay has kindly furnished me with notes from which it seems probable that the fungus, mentioned in the above paper as occurring on the Potato Grub, is *Torrubia melolonthæ* (Tulasne). The absence of fruit makes any detailed comparison with descriptions impossible.