

## "SNOW-WORMS."

BY ARTHUR GIBSON.

An interesting occurrence of these so-called worms was brought to the writer's attention in February last. Mr. Lawrence W. Watson, of Charlottetown, P.E.I., sent to me some living specimens of coleopterous larvæ, with the statement that they were abundant in a field which was covered with ice of several inches thickness. In a second letter dated March 5th, Mr. Watson says: "I am now able to give you further particulars concerning the larvæ of which I wrote to you a short time ago. The first lot of specimens were collected on February 14th. February 11th, and 12th were fine, cold days. On February 13th we had a thaw followed by cold, and strong wind. February 14th was very cold. The second appearance was on February 23rd. On the 20th there was rain, but frost at night; 21st and 22nd were fine, cold days. On the 23rd it was cold and there were some snow flurries. Upon this occasion the larvæ were not so numerous. On the former appearance there were about two or three to the square foot of ground; upon the second occasion they were more scattered. To-day they are very numerous and occur more in bunches. March 2nd was mild with snow at night. The 3rd was fairly mild; yesterday we had a "silver thaw." To-day it is mild. In every case the larvæ were found in fields and 50 or 100 yards from trees. They were not seen on bare ground, always on ice or snow of a depth of two to six inches. To-day they are very active on snow."

Some of the larvæ sent by Mr. Watson were forwarded to Dr. L. O. Howard, the United States Entomologist, at Washington, D.C. As Dr. Howard's letter in reply gives much interesting information I quote it in full:—

"The larvæ sent by you with your letter of February 26th, and which were found alive on ice at Charlottetown, Prince Edward Island, are what are known as 'snow-worms.' These are the larvæ of the Lampyrid (Telephorid) genus *Telephorus*, commonly called soldier beetles. They hibernate in the ground among the roots of grasses and when, in wintertime, a peculiar combination of climatic conditions prevails—melting snow, the ground soaked with water, the temperature above freezing point—the larvæ appear above ground, often in enormous numbers of specimens, and crawl about on the surface of the snow. Such climatic conditions, however, do not occur every year, and consequently the interesting phenomenon of seeing multitudes of snow-worms is by no means a common one. However, single specimens of *Telephorus* larvæ may be seen every year on the surface of snow.



"The snow-worm in the vicinity of Washington and at Detroit, Mich., is the larva of *Telephorus bilineatus* which is also a common species throughout Canada. You will find figures of both larva and imago of this species in Riley's Fourth Missouri Report, page 29. The genus *Telephorus* contains many closely allied species and it is possible that some of them may have the same habit as *T. bilineatus*."

Occurrences of Telephorid larvæ on snow, similar to the above, have occasionally been recorded in the United States. Dr. Lintner, the late State Entomologist of New York, in his Eighth Report (1891) refers to a remarkable appearance of the larvæ of *Telephorus* which were thought to be the species *bilineatus*. In this instance the larvæ occurred at Center, N.Y., in millions about February 10th during a rain. The snow was literally alive and black with the "worms," for a distance of about half a mile long and about twelve rods wide, while beyond this strip the larvæ were abundant in every direction, but to a less extent. They were active on the snow for a few days. In the article on these insects Dr. Lintner says: "The explanation of the larvæ appearing on the snow would be, that they were drawn from the ground by the (warm?) rain, and with the change of rain into snow, they continued, with its increasing depth to mount to the surface, as other larvæ have been known to do."

*Telephorus bilineatus* is a common northern species, and it is most probable that the larvæ which were noticed on Prince Edward Island were of this species. The larva of *T. bilineatus* is of a rich velvety-brown colour; the body is narrowed at each end, and the segments are distinctly divided. The late Dr. Riley in the report referred to above, by Dr. Howard, treats of this insect as an enemy of the Codling Moth, one of the worst pests of the apple grower. It is also a well known enemy "of the larvæ of the Plum Curculio, when these enter the ground to pupate."

The Telephorids belong to the family Lampyridæ, known popularly as the fire flies which are familiar to almost everyone. Kellogg, in "American Insects," writes of the Lampyridæ as follows: "The light-giving organ is usually situated just inside of the ventral wall of the last segment of the abdomen, and consists of a special mass of adipose tissue richly supplied with air-tubes (tracheæ) and nerves. From a stimulus conveyed by these special nerves oxygen brought by the network of tracheæ is released to unite with some substance of the adipose tissue, a slow combustion thus taking place. To this the light is due, and the relation of the intensity or amount of light to the amount of matter used up to produce it is the most nearly perfect known to physicists."



Gibson, Arthur. 1909. "Snow-worms." *The Ottawa naturalist* 23(7), 129–130.

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