THE SNOW-FLY, *CHIONEA VALGA* HARRIS.

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THIS species was evidently discovered by T. W. Harris prior to 1833, for in his list of the Insects of Massachusetts, in Hitchcock's Report on the Geology, etc., of Massachusetts, 1833, page 593, he refers to it as "*Chionea*—one species." In the second edition of Hitchcock's Geology, etc., 1835, page 575, the specific name *valga* is given. Harris's first edition of his Report on the Insects of Massachusetts injurious to vegetation appeared in 1841, in which, on page 404, he refers to this insect as follows:—"There are exceptions to almost all general rules. Thus we find, among Dipterous insects, some kinds that never have wings. One of these is the thick-legged snow-gnat, or *Chionea valga*. This singular insect looks more like a spider than a gnat. Its body is rather less than one fourth of an inch long, and is of a brownish yellow or nankin color. The legs are rather paler, and are covered with short hairs. The head is small and hairy. The first two joints of the antennae are thick, the others slender and tapering and beset with hairs. Although the wings are wanting, there is a pale yellow poiser on each side of the hinder part of the thorax. The hindmost thighs are very thick, and somewhat bowed in the males, which suggested the name of *valga*, or bow-legged, given to the insect in my catalogue. The body of the female ends with a sword-shaped borer, resembling that of a grasshopper. These wingless gnats live on the ground, and the females bore into it to lay their eggs. They are not common here."

The above was reprinted in the second edition, 1852, page 482, and in the third or Flint edition in 1862, page 601; in the latter a poor figure is given. This constitutes the only description given by Harris, but it seems sufficient to identify the species, and his type (the female) is still in good preservation; of the male only the genitalia remain.

Mr. P. H. Gosse in his book entitled "The Canadian Naturalist," published in 1840, refers to them as "being doubtless the *Chionea araneoides*." He found them crawling on the snow, in pine woods, during the month of March.

In the brief and inadequate descriptions given by Walker of his two species, *C. aspersa* and *scita* (List I, p. 82, 1848), there seem to be no characters to separate them from *valga*.

The description of *C. nivicola* Doane (Journ. N. Y. Ent. Soc., VIII, p. 189, 1900), based only on the female, agrees very closely with the female of *C. valga*,

except that the antenna has eight joints. Schiner (Fauna Austr., II, p. 573, 1864), describes the European species as having six-jointed antennae. Osten Sacken (Mon. IV, p. 168) in referring to this, says:—"It seems to me that I can count four joints in the only specimen in my possession." The "four joints" refers only to the flagellum, making seven joints in all. The six specimens before me (including the type) all have seven joints. It seems singular that there should be this discrepancy in the antennæ, a generic character. The description of *C. nivicola* also calls for six abdominal segments (an unusual number for a Tipulid). A comparative study of the American and European forms seems very desirable.

Owing no doubt to its peculiar habits, it is rarely observed, and there are comparatively few records since its discovery by Harris more than eighty years ago. It has been found in Minnesota, and described and figured by the late Otto Luggar in his second annual Report, page 230, plate XVI, 1896. Later Mr. F. L. Washburn in the Tenth Annual Report, page 30, 1905, gives another figure of the species. It represents a male; the abdomen seems to be entirely too broad, and the genitalia are poorly shown. In the Canadian Entomologist for August, 1906, p. 275, Mr. C. N. Ainslie also records it from Minnesota.

Through the kindness of Mr. J. H. Emerton I am able to again record this species from New England. During a trip to the White Mountains Mr. Emerton was fortunate in finding this interesting species, and in regard to its capture says:—"Three males and one female of this rare insect were found walking slowly about on the snow, in sheltered places on the edge of the woods at Jackson, N. H., February 20, 1907. This was the last of several warm days when the snow had been melting in the sun at noon. The snow was two to three feet deep but there were open spots around larger trees and stones through which insects might come from the ground. The published figures of New England specimens are small and indefinite. I therefore give new drawings of both sexes." These specimens have been presented to the Boston Society of Natural History. There are also in the collection of the Society the type, and a specimen presented by Mr. Samuel Henshaw, which was taken by Mr. H. L. Moody at Malden, Mass. There is little to add to the descriptive remarks by Harris, and the description by Osten Sacken. The excellent figures by Mr. Emerton show clearly the genitalia and antennae, and also two minute protuberances which would indicate the normal position of the wings; these are quite distinct in the fresh specimens, which are preserved in alcohol, but in dried specimens seem to be obliterated. The three males collected by Mr. Emerton show considerable variation; the one figured measures about 6 mm., the other only about 4 mm. In one specimen the hind femora are scarcely thickened. The larva

of *C. araneoides* of Europe lives in the ground, apparently upon vegetable matter. It has been described and figured in detail by Brauer (Verh. Zool. Bot. Ver. in Wein, IV, p. 609, 1854). Our species probably has similar habits. A larva found

Chionea valga, ♂.

Chionea valga, ♀.

by Mr. Emerton in sifting for spiders, he thought might possibly belong to this species, but the structure of the head and posterior segment is very different from the larva figured by Brauer.