

NOTES ON THE GENUS PLATYCOTIS STAL.

H. L. DOZIER.

The genus *Platycotis* is represented in the United States by two distinct color varieties of one and the same species, *Platycotis vittata* Fabr., and a smaller, pale yellow species, *P. minax* Godg. which is found in California on oak.

Van Duzee gives the distribution of *P. vittata* as follows: N. J., Pa., Md., D. C., N. C., Ga., Fla., Texas, Ariz., Calif., Vanc. Isd (Mexico). The writer found last instar nymphs on oak at Columbia, S. C., April 23, 1918.

P. vittata and its color variety *quadrivittata* have long been regarded as two distinct species on account of coloration. The fact that each of these also is found in two forms, with and without a porrect horn, in both sexes has only added to the synonymy of the species.

This confusion seems to be cleared up by the following observations, which were made at Gainesville, Fla., while attempting to work out the life history. A colony of sixteen males and fourteen females, all typical *quadrivittata* adults, was confined about the first of April, 1918, on an oak limb, enclosed in a new bobbinet netting for observation. This colony was confined at the edge of "hammock" forest under natural conditions, being on the same limb from which the colony was taken *en nature*.

Observations were made every few days but no eggs were deposited. On April 17, a little over two weeks, all were living but had changed in markings from *quadrivittata* to almost typical *vittata*. They had lost all of the lines, except a bare trace of the one on side of pronotal horn near its end, and had assumed the mottled appearance of *vittata*. On this date observations were discontinued due to the writer leaving Florida. Whether the change in markings was physiological, due to being confined or whether it is a question of senility or what is unknown.

This seems to prove conclusively that these two color varieties are the same species. This is the position taken by Van Duzee in his "Check List of Hemiptera."

Platycotis vittata Fabr.

Fabricius, Syst. Rhyng., p. 20, 1803, *Centrotus*.

Crescent City, Sevenoaks (Van Duzee), Lake City IV-9-93 (Station Collection), Gainesville III-18-18. This species is less abundant than the color variety, *quadrivittata*, occurring on oak shrubs.

This species may be easily distinguished from all our other species of membracids (except *Umbonia* and *Lephopelta*) by its very short posterior tarsi. It usually has a long compressed pronotal horn which varies greatly in length and may be entirely absent. The wing venation shows considerable variation. Green body color, mottled or speckled with orange.

TECHNICAL DESCRIPTION.—Sea-green, mottled or speckled with orange spots; a long, compressed porrect horn darker and sanguineous at tip; the pronotal horn varies much in shape and length and may be entirely absent; eyes bright red; tegmina hyaline, bases punctate and marked with green and orange, veins fuscous. Very striking in shape and coloration. Sexes similar in size and markings.

Head, including eyes, over twice as broad as long, yellowish with fuscous markings on upper margin adjoining the eyes; base sinuate; eyes large, bright red, changing to brown in dried specimens; ocelli not prominent, brown, nearer each other than to the eyes; clypeus triangular, tip rounded, rugose, hirsute.

Pronotum coarsely punctate, not pubescent; a dorsal median impunctate line extending from the pronotal horn to the posterior process; ground color sea-green, mottled with orange spots; metopidium yellowish on the margin adjoining head, two transverse, polished, fuscous callosities just beneath the furrow above which is a polished interrupted yellowish-green ridge, two smaller, fuscous, impunctate spots above this ridge and fuscous markings at base of pronotal horn; humeral angles prominent, angular but blunt; a long, compressed porrect horn, greatly variable in shape and length and may be entirely absent, tip sanguineous; posterior process gradually acute, slightly decurved and extending beyond the abdomen, tip fuscous.

Tegmina hyaline, base and costal region lightly punctate, marked with green and orange, veins fuscous; under wings entirely hyaline. Under surface of body yellow with slight greenish tinge. Legs yellow, hirsute; tibiae marked with fuscous on outer side; tarsi fuscous.

Length 9 mm.; length including horn 13 mm.; width between humeral angles 5 mm.

var. ***Platycotis quadrivitta*** Say.

Say, Jl. Acad. Nat. Sci. Phila., vi, p. 300, 1831; Complete Writings, ii, p. 379, *Membracis*.

Abundant in March and April. St. Augustine (Johnson), DeLand III-25-18 Col. F. Wooten, Lake City IV-9-93 (Station Collection,) Gainesville III-25-17, III-18-18, IV-17-18.

This variety may be distinguished at once from *vittata* by its coloration: pale yellowish-green with four sanguineous vittæ or lines extending near to the middle, the lateral ones short and oblique. Abundant during the latter part of March and through April on oak (*Quercus laurifolia* and *Q. virginiana*) at edge of the "hammocks." Sometimes abundant on oak shade trees in the city. It is gregarious, occurring in large colonies of from fifty to a hundred individuals collected along the branches as shown in Fig. 1.

TECHNICAL DESCRIPTION.—Identical in size and structure with *vittata*. Differs only in coloration, as follows: Ground color of thorax yellowish-green, four sanguineous vittæ extending near to the middle, the lateral ones short and oblique, extending backwards and joining with margin of thorax; lower margin of thorax red; tip of posterior process fuscous. Base and costal region of tegmina marked with lighter green and yellow.

A horned male adult of this variety collected by E. A. Hartley, at Colorado Lake, near Corvallis, Oregon, has the humeral angles, pronotal horn and the sanguineas vittæ considerably marked with dark fuscous.

The life history of the species has never been worked out. The writer's observations tend to show that it is single-brooded. According to Funkhouser (1917, *Biology of Membracidæ*), all the species studied by him have five instars. The following description of the last stage nymph, presumably the fifth instar, has been drawn up from a large series that produced typical *quadrivittata* adults. In this stage they are gregarious. The pronotal developments are very pronounced and the wing pads fully formed.

The vestigial porrect spike of the nymph is strikingly suggestive of the adult *Platycotis* and together with the two simple, heavy spines and bright red eyes make the identification of the species reasonably sure in the last instar.

TECHNICAL DESCRIPTION.—Length 8 mm.; maximum width 3.5 mm.

Body robust; ground color yellowish-white marked with black. On upper margin of head a black transverse band extending from eye to eye; a like band connecting the lower borders of the eyes; thorax of the ground color, a black band extending near the anterior margin from base of wing pad to wing pad; a dorsal median line of the ground color extending from head, through pronotal horn, to tip of abdomen; this median line bordered with fuscous on thorax; each abdominal segment on dorsum heavily banded with black, broken on each side, with exception of the last three segments, by a heavy band of red, variable in width; anterior pronotal process porrect; pronotum not entirely covering mesonotum dorsally but extending posteriorly as far as the metanotum as an acute point; wing pads fully developed, second pads not extending quite as far posteriorly as the first; legs flavus.

Head much deflexed; frontal tuberosities small; eyes bright red; ocelli pale; clypeus distinct; beak well developed, light fuscous. Prothorax well developed and strongly chitinized; anterior process projecting far forward as a compressed blunt cone, black; mesothorax and metathorax distinct; two simple, heavy, black, divergent spines arising one on each side of the mesonotum; wings pads long. Abdomen greatly swollen, no dorsal spines; under surface yellowish-white marked with fuscous along margins, in female showing impression of ovipositor, fuscous. Legs flavus without markings, hirsute.

NOTE: On September 16, 1919, nymphs and a hornless adult of *P. vittata* were sent to the Ohio Agr. Expt. Station from Yellow Springs, Ohio, where they were feeding on the cut-leaved birch (*Betula alba* var.) Some of these nymphs, which appeared to be in the last instar, were hornless, others horned. This raises the interesting question as to whether hornless adults are produced from hornless nymphs and horned adults from horned nymphs.

Ohio State University, Columbus, Ohio.

EXPLANATION OF PLATE I.

- Fig. 1. Adults and last instar nymphs on oak branch, showing their gregarious habits. Nat. size.
- Fig. 2. Beginning above: (a) Adult of the color variety, *Platycotis quadrivittata*, horned form. (b) Last instar nymph. (c) *P. vittata*, unhorned form. (Greatly enlarged.)

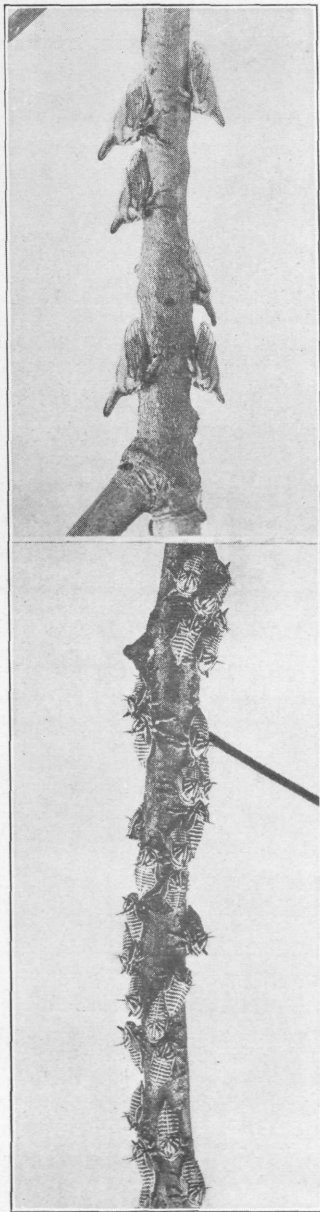


FIGURE 1

H. L. Dozier

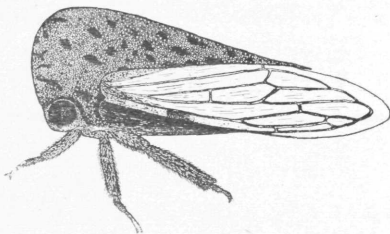
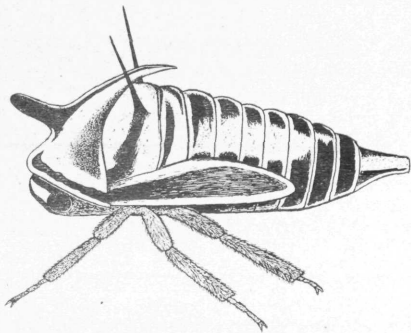
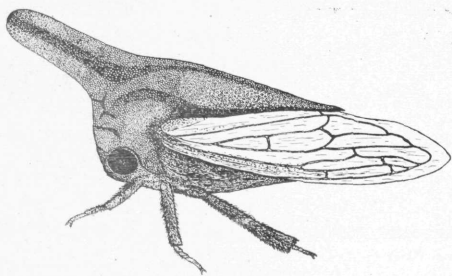


FIGURE 2