

Pupa.—Of the usual generic type. In color a vivid green, but with the wing cases and sometimes the abdomen clouded with creamish. The whole body, excepting the wing cases, but especially on the anterior half, covered with pale tapering wavy sharp hairs, .30 mm. in length on the average. Prothoracic stigmata prominent, velvety black. The cremastral spine pyramidal, truncate, longitudinally and irregularly sulcate; the cremastral hooklets .30 mm. in length, stout, castaneous. Spiracles long oval, .20 mm. in length, .08 mm. in their greatest width, with a slightly fuscous areola; the spiracles not at all prominent. The tongue case only very slightly extending beyond the tips of the wings. Length, 18.5 mm. Greatest height of thorax, 5.5 mm.; greatest height of abdomen, 4.7 mm.; width at eyes, 4.5 mm.; width at basal wing tubercles, 5.5 mm. Suspended by a median girdle, very loose but strong, and a Y-shaped posterior attachment.

THE IMMATURE STAGES OF THE CATNIP LEAF-HOPPER (*EUPTERYX MELISSÆ* CURTIS).

BY M. D. LEONARD AND G. W. BARBER,

ALBANY, N. Y., AND THE BUREAU OF ENTOMOLOGY.

On October 27, 1919, the writers found a small patch of catnip (*Nepeta cataria* L.) on Inner Brewster Island in Boston Harbor. The plants were infested by a small leafhopper which was present in all stages in great abundance. The feeding of the insects had resulted in a characteristic yellowish-white discoloration of the leaves and injury to the plants was becoming apparent. Some of the infested material was collected and brought to the laboratory where the several nymphal stages were readily separated.

Eggs were found in considerable abundance in the petiole of the leaves. They were inserted at a slight angle or nearly parallel with the petiole, the cap apparently being flush with the surface. Egg-punctures could be readily distinguished by means of a small brownish discoloration of the epidermis.

Adults were submitted to both Prof. Herbert Osborn and Mr. W. L. McAtee who identified them as *Eupteryx melissæ* Curtis, as understood by McAtee (Ent. News, 30: 182-183, 1919).

Little is known of the life-history or habits of this species. The

insect has previously been recorded in the United States from New York (Van Duzee, Bull. Buffalo Soc. Nat. Sci., 10: 511, 1912), California (Baker, Invert. Pac., 1: 8, 1903), Pennsylvania and Maryland (McAtee, *l.c.*). No food plants are mentioned. In Europe where it has long been known, the species is common on various plants of the family Labiatae. Buckton (Mon. Brit., Cicadae, 2: 128-130, 1891) in his discussion of *E. melissae* states that there are probably two broods annually. He records finding the insect in October on garden mint and afterwards above the roots of the same plant throughout the winter and into the following spring. In January, 1887, he found active young nymphs after extremely low temperatures and after snow had been on the ground for five weeks. He states that he was unable to find autumn eggs. In the latitude of Massachusetts the insect undoubtedly spends the winter in the adult stage in the protection of leaves or trash on the ground. The writers were unable to gather any data on the length of time required by the insect to pass through its various stages.

The Egg.—(Fig. 1.) Length, .85 mm.; width, .17 mm.; pale translucent whitish, as time of hatching approaches becoming tinged with yellow and the eye spots of the embryo distinctly red; cylindrical, shining, somewhat curved, bluntly rounded at posterior end and tapering slightly, and more sharply pointed at the anterior end.

Stage I.—(Fig. 2.) Length, .92 mm.; width across eyes, .18 mm.; color, pale yellowish; eyes reddish brown; antennae, except basal segments, claws and extreme tip of beak, dusky.

Stage II.—(Fig. 3.) Length, 1.16 mm.; practically same as first stage excepting hind border of meso- and metathorax more concave and laterally expanded.

Stage III.—(Fig. 4.) Length, 1.4 mm.; width across eyes, .34 mm.; pale greenish yellow; eyes pale, slightly tinged with gray; setigerous tubercles on thorax slightly darkened, on abdomen not so. Wing-pads becoming apparent. Hairs long and whitish. Third and fourth segments of beak tinged with dusky.

Stage IV.—(Fig. 5.) Length, 2.1 mm.; width across eyes, .46 mm.; pale yellowish; eyes grayish, slightly tinged with green. Setigerous tubercles darkened; those on fifth and sixth abdominal segments not so. Light to dark brown markings on head and thorax as shown in figure. Wing-pads extend back nearly to fourth abdominal segment. Third and fourth segments of beak tinged with dusky.

Stage V.—(Fig. 6.) Length, 2.5 mm.; width across eyes, .57 mm. Above greenish yellow, irregularly mottled with light and dark brown as shown in figure. Hairs pale; setigerous tubercles darkened; those of fifth and sixth abdominal segments whitish. Below pale yellowish green; legs and eighth and ninth abdominal segments more greenish; remainder of venter tinged with cream color. Ninth segment of venter with a somewhat dusky stripe either side of the median line. Face below disc similarly marked. Second to fourth segments of beak tinged with dusky. Wing-pads extend back to fifth abdominal segment.

Adult.—(Fig. 7.) Following is the redescription of the species by McAtee (*l.c.*): "Head evenly and fully rounded both laterally and vertically. Length of vertex: interocular width:: 6:10. General color of upper surfaces of body and of the legs pale yellow; of forewings delicate green fading toward apex; eyes yellowish green. Head with 2 smaller spots on front, 2 larger on transition from front to vertex, and one of about same size on middle of hind margin, black. All of these spots vary from round to V-shaped or quadrangular; hence do not have the importance in distinguishing species assigned to them by European authors. Pronotum with two black spots, just behind median spot on vertex, and one lying just behind and to the side of each of these. Most of disc of pronotum covered by a greenish fuscous cloud, nearly touching the black spots. A dimly visible brown line connects the black spots, and, being a little more conspicuous at the ends, forms a curved brown dash, to the outer side of each of the posterior pair of dots. Scutellum with two pairs of black dots, the anterior larger and more separated.

"Forewings with irregular greenish fuscous markings, the color deepest at periphery (like blots the center of which has been sucked up), as follows: One larger and a few smaller on inner anterior angle of forewing, three larger (the median decidedly so) on main body of clavus and a long narrow one along whole claval suture; between second and third sectors, three, of which the anterior is largest; and one just outside latter on costa. The veins of the apical cells are margined with brown clouds and there are two black spots near exterior border of wing at a point two-thirds of the distance from base.

"Long triangular mark on cheeks below insertion of antennæ,

lower surface of thorax and entire abdomen black, the segments of latter margined posteriorly (sometimes very broadly) with yellow. Last ventral segment yellow, genitalia chiefly yellow in male, mostly black in female. Tarsi and apex of beak black. Length 3-3.25 mm."

EXPLANATION OF PLATES.

PLATE XX.

- Fig. 1. Egg.
- Fig. 2. First stage nymph.
- Fig. 3. Second stage nymph.
- Fig. 4. Third stage nymph.
- Fig. 5. Fourth stage nymph.
- Fig. 6. Fifth stage nymph.
- Fig. 7. Adult.

PLATE XXI.

- Fig. 8. Fore wing.
- Fig. 9. Hind wing.
- Fig. 10. Face of adult.
- Fig. 11. Genitalia of female.
- Fig. 12. Genitalia of male.

NEW SPECIES AND SYNOPSIS OF STATIRA.

BY CHARLES W. LENG,

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Mr. Charles Liebeck of Philadelphia sent me a few months ago seven specimens of *Statira* which he had found to be undescribed. These specimens led to my examining other species of the genus in the collections of the American Museum of Natural History, also in those of Mr. Charles Schaeffer, who has described several species, and of Mr. William T. Davis. There is some difficulty in using the synopsis by Dr. Horn. All our species have the last joint of the antennæ elongate and all have more or less setigerous punctuation of the elytra. Dr. Horn's synopsis was primarily based upon this punctuation which, as Mr. Schaeffer has already indicated (Brooklyn Mus. Sci. Bull., I: 175), is difficult to observe accurately. I have therefore tried to prepare a synopsis by which the species may be separated without using the punctures as a primary character. It is as follows:



Leonard, Mortimer Demarest and Barber, George W. 1923. "The Immature Stages of the Catnip Leafhopper (*Eupteryx melissæ* Curtis)." *Journal of the New York Entomological Society* 31, 181–184.

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