

THREE SPECIES OF *EMPOASCA* LEAFHOPPERS KNOWN TO AFFECT ECONOMIC PLANTS IN HAITI (INCLUDING THE DESCRIPTION OF TWO NEW SPECIES)*

By DWIGHT M. DELONG
Professor of Entomology, Ohio State University

For many years it has been the opinion of entomologists that *Empoasca fabae* Harris, the potato leafhopper was a pest occurring in all parts of the United States and Central and South America. Recently the writer¹ has been able to distinguish the species of *Empoasca* by the male genital pieces and has then shown by field studies² that other important species are concerned and that these instead of *fabae* are the important economic forms in certain areas of the United States. Following this study of characters, Dr. R. C. Smith then located at Port-au-Prince, Haiti, forwarded to the writer a large series of specimens collected from beans and sweetpotatoes in that locality. Upon examination it was found that these were not *fabae* and the species was described as *E. fabalis* DeL.³ According to the survey made by Dr. Smith when these specimens were collected the species was extremely abundant upon beans and sweetpotatoes and was considered the most important species of economic leafhopper in Haiti upon truck crops.

More recently Dr. H. L. Dozier forwarded three different lots of material collected in the same area one of which has proven to be *fabalis* which he collected from sweetpotatoes. The other two species, one collected from cotton and another from *Canavalia* are apparently undescribed. There is a possibility therefore that the three have been considered as one species and each of these may be important economically. The descriptions together with an illustration of the male genital structures of each are included below.

Empoasca fabalis DeLong.

Canadian Entomologist LXII p. 92 April 1930.

Resembling *fabae* in size, form and appearance but with distinct genital characters. Length 3 mm.

* Editor's Note: *E. fabalis* is widely distributed and injurious to lima and string beans in Puerto Rico and has also been reported as injurious to tomato. The species commonly present on sweet potato here has not as yet been specifically determined but is quite probably *fabalis*. The cotton leafhopper in Porto Rico may also be *E. gossypii* herein described as new.

¹ U. S. D. A. Tech. Bull. 231, January, 1931.

² Jour. Eco. Ent. Vol. 24, p. 475-480, April, 1931.

³ Canadian Entomologist LXII, p. 92, April, 1930.

Vertex strongly produced about one-third its length before anterior margins of eyes. One-third wider between eyes than length at middle. Pronotum one-third longer than vertex.

Color pale green without distinct markings. Usually with irregular mottling and varying longitudinal stripes, white. A pair of oblique dark green spots either side of, and back of apex.

Genitalia: Female last ventral segment roundly produced and entire. Male valve twice as long as preceding segment, posterior margin almost truncate. Plates long and narrow, gradually tapered to rather acute tips, more than twice as long as valve.

Male internal genital structures: In ventral view styles short, slender, very narrow at apices which are bent outwardly. Lateral processes of pygofer long and tapered. Apical fifth very narrow and slightly bent inwardly (in ventral view). Dorsal spines of pygofers heavy at base but rapidly narrowed to ventrally directed and slightly anteriorly hooked processes.

***Empoasca gossypii* new species.**

Appearance and general form of *fabae* but smaller and with distinct male genitalia. Length 2.8 mm.

Vertex almost one-third wider between eyes than length at middle. Pronotum two-fifths wider than long. Humeral angles prominent, posterior margin strongly concave.

Color greenish marked with white and yellow. Vertex yellowish green mottled with white. Pronotum yellowish, subhyaline. Anterior and lateral margins marked with white. Scutellum mostly white. Elytra greenish, subhyaline with yellowish green longitudinal stripping sometimes very faintly colored.

Genitalia: Female last ventral segment as long as basal width. Posterior margin with lateral angles rounded and slightly indented either side of a median slightly produced broadly angled lobe which is about half the width of the segment. Male plates more than two and one-half times as long as combined width at base rapidly narrowed to compressed, flaring, and upturned apices. Ventrally set with long brownish spines.

Male internal genital structures: Styles strongly curved outward apically in ventral view. Lateral processes of pygofers short and rather stout, gently curved dorsally. Dorsal spines of pygofers wide at base curved ventrally, bifurcate apically.

This is the only species of *Empoasca* except *bifurcata*, a common species in the Eastern United States, which is known to have a bifurcate dorsal spine. It can easily be distinguished from the other described species in Haiti by this character.

Described from 35 female and male specimens collected from cotton at Hinche, Haiti, September 12, 1931, by Dr. H. L. Dozier.

Holotype male labeled Hinche, Haiti, September 12, 1931.

***Empoasca canavalia* new species.**

Resembling *fabae* in general appearance but smaller and with distinct male and female genital characters. Length 2.8 mm.

Vertex bluntly angularly produced almost one-third wider between eyes than length at middle. Pronotum more than twice as wide as long. Elytra exceeding abdomen by about one-fourth their length.

Color variable, usually some shade of green. Vertex yellowish or orange yellow marked with green. Two rather bright green areas on disc either side of vertex. Pronotum and elytra greenish subhyaline.

Genitalia: Female last ventral segment two-thirds as long as basal width. Posterior margin concavely rounded to produced central tooth which is more than one-third the width of the segment and is slightly notched at center. Male plates one-third longer than combined width at base apices rather sharply pointed and upturned. Sides straight.

Male internal genital structures: In ventral view styles gently curved outwardly. Lateral processes of pygofer as seen in lateral view rather broad, constricted near apex and terminated by a slender curved finger process. Dorsal spines of pygofer large, broad at base, produced downward and inwardly, appearing to cross each other in ventral view, gradually tapering to pointed tips.

Described from 48 female and male specimens collected from Jack Bean, *Canavalia ensiformis* (L) D. C. at Damien, Haiti. September 14, 1931, by Dr. H. L. Dozier who sent them to the writer for identification.

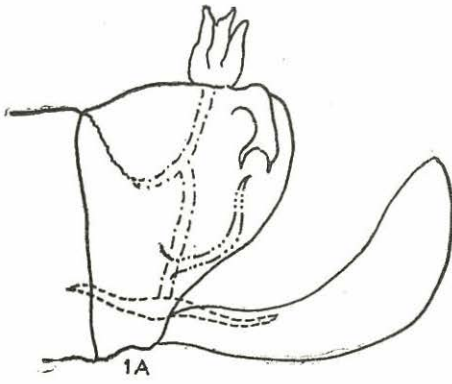
Holotype male labeled Damien, Haiti, September 14, 1931.

EXPLANATION OF PLATE XIII

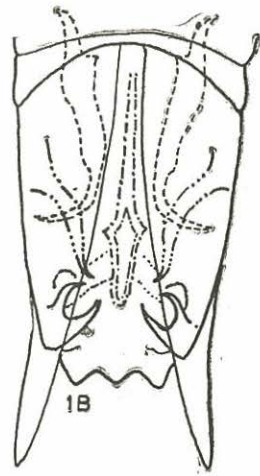
(SHOWING MALE GENITALIA)

- 1 A.—*E. gossipii* n. sp. lateral view
- 1 B.—*E. gossipii* n. sp. ventral view
- 2 A.—*E. canavalia* n. sp. ventral view
- 2 B.—*E. canavalia* n. sp. lateral view
- 3 A.—*E. fabalis* De L. lateral view
- 3 B.—*E. fabalis* De L. ventral view
- Style
- . . . — . . . oedagus
- . . . — . . . lateral process of pygofer

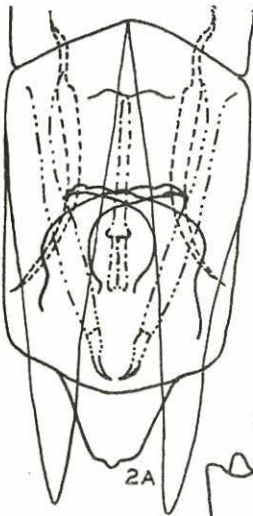
PLATE XIII



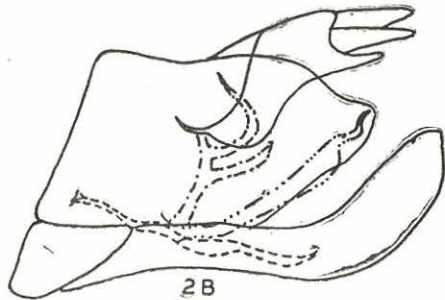
E. GOSSIPII



1B

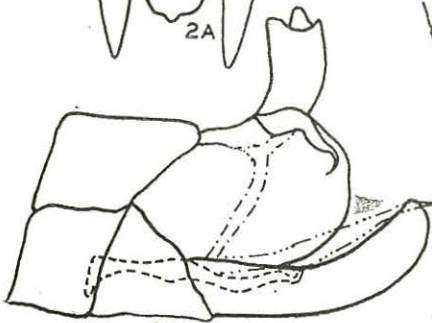


2A



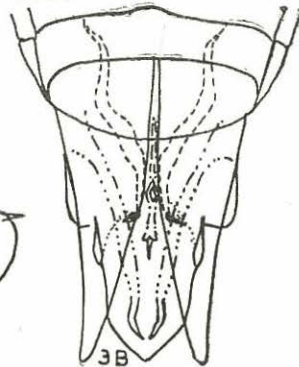
2B

E. GANAVALIA



3A

E. FABALIS



3B

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