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**STUDIES OF THE GENUS EMPOASCA (HOMOPTERA-CICADELLIDAE) XV. FIVE NEW SPECIES OF MEXICAN EMPOASCA.**

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The group of species described in this report are all pale in color and are marked with red or orange spots or broken longitudinal bands and superficially resemble species of *Erythroneura* of the *comes* or *obliqua* groups. The types of all of these species are in the DeLong collection.

***Empoasca allera* n. sp.**

Resembling in general appearance an *Erythroneura* of the *obliqua* group with longitudinal reddish markings. Length male 3.5 mm.

Form narrow, crown well produced, blunt at apex, a little wider between eyes at base than median length. Wings appearing long and narrow.

Color, crown white with a pair of elongate reddish spots just above apex and a longitudinal band either side extending from the anterior margin across pronotum, basal angles of scutellum and onto basal portion of clavus. Each tegmina has an elongate reddish spot on the posterior portion of the clavus along the commissural line and an elongate reddish interrupted stripe extending from near base onto disc of the tegmina. Beneath pale yellowish.

Genitalia: Male plates rather broad. Styles short and thick with the apices abruptly narrowed, sharply pointed and curved outwardly. The lateral processes are rather long with the apical portions curved outwardly. The aedeagus is the usual type without accessory processes. The dorsal spine is rather broad at base and extends caudally then curves ventrally and is rapidly narrowed near apex to form a sharp pointed tip which is directed ventro anteriorly.

Holotype male collected on the Acapulco Rd. Mexico, November 22, 1938 by Dr. J. S. Caldwell.

***Empoasca zebulona* n. sp.**

Resembling *allera* in general appearance but broader and more robust. Length male 3.5 mm.

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Crown broad, bluntly angled at apex with tip rounded, almost twice as wide between eyes at base as median length.

Color, crown, pronotum and scutellum white. A broad longitudinal stripe varying from yellow to red extends from apex of crown next the eye on each side across the pronotum, basal angles of scutellum and onto base of clavus. The tegmina are white with six rather large red spots or blotches distributed on the claval and discal areas resembling the markings of an *Erythroneura*. Beneath yellow.

Genitalia: Male plates long. The styles are short, broadened near middle with the apical half gradually narrowed to form outwardly curved pointed tips. The lateral processes are long, gradually narrowed on apical half to form divided pointed apices. The aedeagus in form is the usual divided apical third but the two portions are widely separated. The dorsal spine is rather long, widened beyond the middle so as to form a rounded lobe on the caudal margin from which a narrow anteriorly and slightly dorsally curved apical spine arises on the ventro anterior margin.

Holotype male collected at Puebla Pue, Mexico (K-78), October 18, 1941 by Good, Caldwell, Plummer and DeLong.

#### ***Empoasca sobella* n. sp.**

Resembling *allera* in general appearance and coloration but with broad head and distinct genitalia. Length male and female, 4 mm.

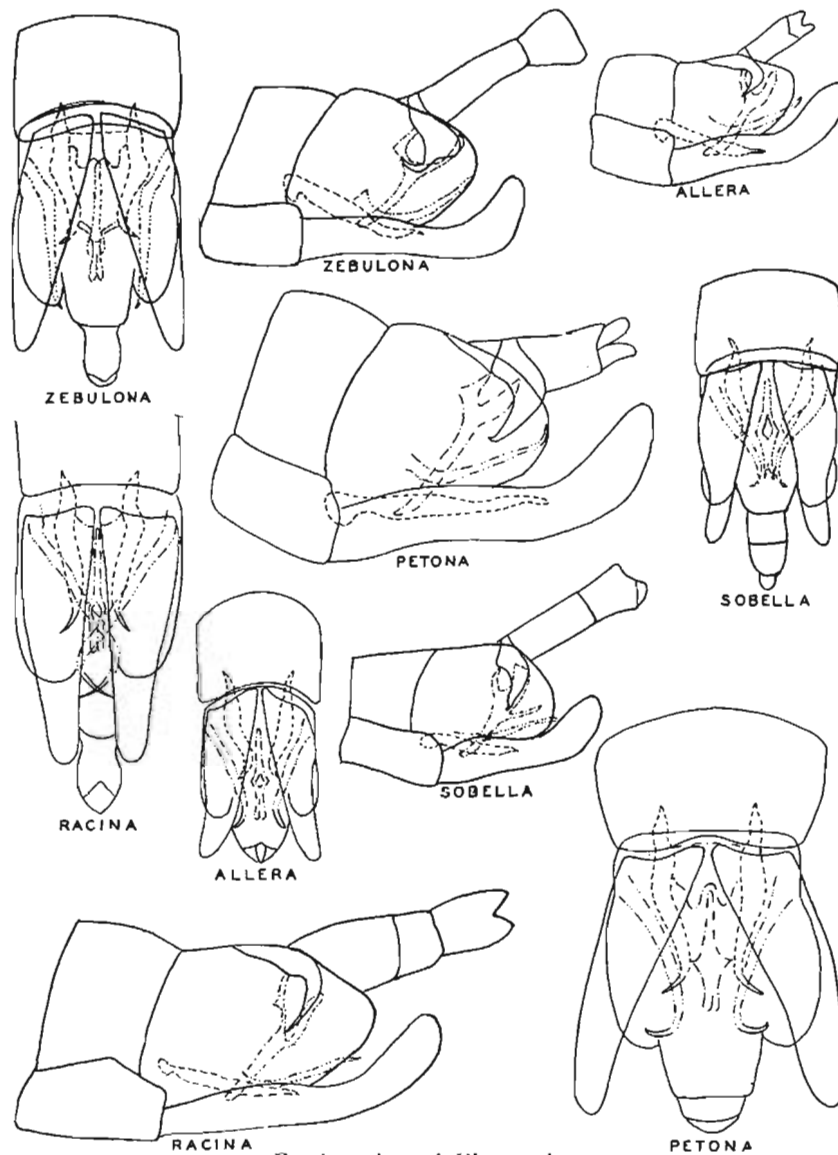
Crown broad, bluntly angled, not quite twice as wide between eyes at base as median length.

Color white with red and yellow markings. A dark yellowish longitudinal stripe extends from the margin of the crown across crown, pronotum and basal angles of scutellum. The portion on the crown encloses a pair of white areas on margin and a white spot next to either eye. The tegmina are marked with elongate reddish spots, two on clavus and three extending from base across corium. Face dark yellow with a broad white median longitudinal stripe.

Genitalia: Female seventh sternite with the posterior margin produced and bluntly rounded. Male plates elongate, apices rounded. Styles short broadened at middle, gradually narrowed to sharp pointed apices which are curved outwardly. Lateral processes long, gradually narrowed to slender pointed apices which are curved outwardly. The aedeagus is broadened at about two-thirds its length with the caudal apical portion continuing as a broadened portion. Two caudal processes arise on the ventro-caudal margin.

BULL. B. E. S. VOL. LI

PLATE III



*Explanation of Illustrations*

Ventral and lateral views of male genitalia of species of *Empoasca* as labeled.

The one nearest the base is long and narrow. The process arising at about the middle of the aedeagus is less than half the length of the ventral process. The dorsal spine is broad and long, convexly curved on the caudal margin, concavely curved anteriorly on the anterior margin forming a rather thick, gradually narrowed and pointed apex.

Holotype male, allotype female and female paratypes collected at Rio Frio D. F. Mexico (K-56), October 21, 1941 by Caldwell, Plummer, Good and DeLong.

***Empoasca racina* n. sp.**

Resembling *allera* in general form and appearance. White with faint markings. Length male and female, 4 mm.

Crown angularly produced, apex blunt, one-third wider between eyes at base than median length.

Color white, crown, pronotum, scutellum and tegmina marked with pale yellowish elongate spots. The longitudinal line on each side across the crown, pronotum and scutellum is broken, especially on the crown. The pale elongate yellow spots of the tegmina are on the claval, discal, and basal portions.

Genitalia: Female seventh sternite with posterior margin produced and bluntly rounded. Male plates long, rounded at apex. Styles short with the apical fourth narrowed, sharply pointed and curved outwardly. The lateral processes are long, narrowed to pointed apices and are curved outwardly on the apical fourth. The aedeagus is bifid on the apical one-third, both apical portions are slender. The dorsal spine is long. The basal half is rather broad and extends caudally along the dorsal margin of the pygofer. It is then narrowed by a concavity on the ventral margin and is narrowed and bent sharply ventrally forming a long gradually narrowed, ventrally directed sharp pointed spine.

Holotype male and allotype female collected at Tres Cumbres D. F. Mexico (K-52), October 21, 1941 by Plummer, Caldwell, Good and DeLong.

***Empoasca petona* n. sp.**

Resembling *allera* in general appearance but with distinct male genitalia. Length male and female, 3.5 mm.

Crown bluntly angled, one-third wider between eyes at base than median length.

Color white with orange reddish markings. A pair of orange red, longitudinal stripes extend from the margin of the crown

across crown, pronotum and basal angles of scutellum on to the clavus. The tegmina are marked with elongate reddish orange spots. There are four on clavus and three extending from base of tegmina almost to the anteapical cross veins and just anterior to claval vein.

Genitalia: Female seventh sternite produced and rounded on the posterior margin. Male plates long, apices rounded. Styles broadened at middle, then gradually narrowed on apical half to form slender pointed apices which are curved outwardly. The lateral processes are long, tapered from base to form slender apices which are bent sharply outwardly at right angles to the processes. The aedeagus is bifid on the apical one-fifth. The caudal portion continues with about the same width as the body of the aedeagus. The dorsal spine is long and broad, extending caudo ventrally at base. At about its middle it is bent anterior ventrally and is narrowed to form a pointed apex.

Holotype male and allotype female collected at Tres Cumbres (K-52) D. F. Mexico, October 21, 1941 by DeLong, Plummer, Caldwell and Good.