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(Homoptera, Cicadellidae)

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BY

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PART XI.¹ SIX NEW SPECIES OF EMPOASCA FROM MEXICO

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***Empoasca irrita* n. sp.**

Resembling *crocostigmata* but with different dorsal spine and lateral processes like *curvata* and *cerata*. Length 2.75–3 mm.

External Characters.—Vertex rounded, slightly produced, whitish in color except for an irregularly shaped golden area that surrounds an elongated white spot on the mid-dorsal line. Pronotum with irregularly shaped whitish areas on lateral and anterior margins, a golden colored central area which gradually darkens posteriorly to dark purple. Scutellum dark purple except for the anterior corners which are white. Fore wings with reddish brown to purplish areas on anterior commissural line, apices smoky. In well-marked male specimens a faint purplish spot appears on the costal margin and golden spot in the center of each fore wing. Female with last ventral segment almost truncate with rounded corners.

Internal Male Genitalia.—Lateral processes tapering gradually posteriorly, bent inwardly at about half their length and then curved outward ending with blunt pointed tips. Aedeagus long and slender with a rounded apex. Dorsal spine small, almost oblong in shape with the ventral anterior corner elongated into a sharp pointed tip.

Holotype male, allotype female, and a large series of male and female paratypes from Zitacuaro, Michoacan, Mexico (160 Km.)², Sept. 29, 1941, collected by DeLong, Good, Caldwell and Plummer. Types deposited in the authors' collections.

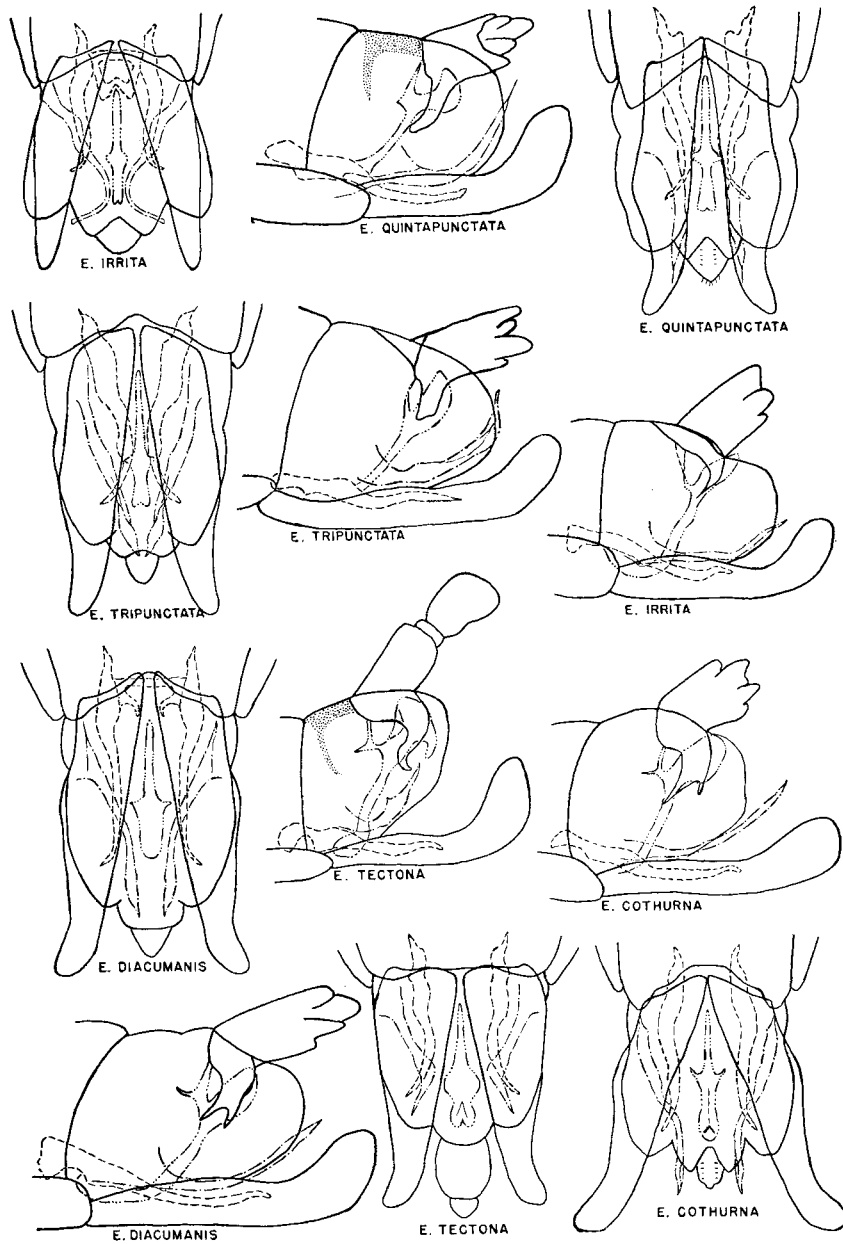
***Empoasca tripunctata* n. sp.**

A long slender species with internal male genitalia resembling those of the *alboneura* group, but with characteristic dorsal spine and coloration. Length 4–4.5 mm.

External Characters.—Vertex golden to yellow with three black spots on anterior margin. Pronotum brownish centrally and posteriorly with greenish-yellow on anterior margin. Scutellum greenish-yellow with two faint longitudinal brown stripes. Fore wings

¹Previous parts of this study have appeared as follows: Ohio Jour. Sci. 32: 393–401; 25: 29–39; 36: 225–230; 38: 90–96; 39: 110–118; 42: 12–126; 43: 214–220; and Ann. Ent. Soc. Amer., 27: 604–609; 33: 608–611; 35: 105–109.

²Kilometer figures following collecting localities indicate distances from Mexico City.



Ventral and lateral views of male genitalia of new species of *Empoasca*.

milky to subhyaline with brownish areas. Female with last ventral segment rounded and slightly produced.

Internal Male Genitalia.—Lateral processes long, directed inward and upward to dorsally pointing tips. In lateral view they appear enlarged just before they taper to the pointed tips. Aedeagus broad and rounded at the apex. Dorsal spine broad at base, narrowed to an oblong shape with the ventral anterior corner produced as shown in the accompanying illustration.

Holotype male, allotype female, and a female paratype from Guadalajara, Jalisco, Mexico (645 Km.), Oct. 3, 1941; male and female paratypes from Taxco, Guerrero (150 Km.), Oct. 26, 1941; Zitacuaro, Mich. (130 Km.), Oct. 5, 1941; Carapan, Mich. (432 Km.), Oct. 2, 1941; Tres Cumbres, D. F. Mexico (52 Km.), Oct. 21, 1941; all collected by DeLong, Good, Caldwell and Plummer. Types deposited in the authors' collections.

***Empoasca quintapunctata* n. sp.**

Resembling *tripunctata* but larger in size and with different lateral processes, dorsal spine and five black spots on the vertex. Length 5 mm.

External Characters.—Frons and clypeus yellowish. Vertex yellowish posteriorly with five black spots on anterior margin, three of which are visible from above and the other two by tilting the specimen slightly. Ivory coloration predominates in the area between these spots. Pronotum deep reddish-brown with two faint medially located yellowish areas and two lateral whitish areas on anterior margin. Scutellum reddish-brown with two darker longitudinal stripes. Fore wings subhyaline with large reddish-brown areas, the extent of the coloration varying in different specimens. Female with last ventral segment rounded and very slightly produced.

Internal Male Genitalia.—Lateral processes stout, long, directed posteriorly then curving dorsally at about half their length and tapering gradually to very sharp-pointed tips. Aedeagus long, slender, with an enlarged dorsally-directed apex and a pair of anterior projecting pieces at base of enlargement which connect to the base of the dorsal spine. Dorsal spine long and slender, tapering slightly to a ventrally and inwardly curved, rounded apex.

Holotype male, allotype female, and a series of male and female paratypes from Zitacuaro, Mich., Mexico (130 Km.), Oct. 5, 1941; and Rio Frio, D. F. Mexico (55 Km.), Oct. 7, 1941, all collected by DeLong, Good, Caldwell and Plummer. Types deposited in the authors' collections.

***Empoasca diacumanis* n. sp.**

Resembling species of the *alboneura* group but with characteristic coloration, dorsal spine and genital characters. Length 4 mm.

External Characters.—Frons and clypeus dark brown to black in color. Vertex of the same color but with four spots and the margin next to the eyes greenish-yellow. Pronotum dark brown centrally with yellowish-green antero-lateral margins. Scutellum with a dark

brown longitudinal stripe and greenish-yellow anterior corners. Fore wings with a greenish tinge, brownish spots, and smoky apices. Female unknown.

Internal Male Genitalia.—Lateral processes long, rather broad at base, then narrowed and curved slightly inward and upward, with slightly convexly enlarged outer margins just before the tapered pointed apices. These processes are almost identical with those of *utrica*. Aedeagus long and slender with an enlarged rounded apex and a pair of anteriorly directed pieces near base of enlargement that connect to the broad base of the dorsal spine. The dorsal spine is ventrally directed and ends in a pair of short stout processes, the anterior one being the longer.

Holotype male and seven male paratypes from Puebla, Puebla, Mexico (78 Km.), Oct. 18, 1941, and Rio Frio, D. F. Mexico (47 Km.), Oct. 18, 1941, collected by DeLong, Good, Caldwell and Plummer. Types deposited in the authors' collections.

***Empoasca tectona* n. sp.**

Resembling *resupina* somewhat in shape of lateral processes but with a distinct T-shaped apex on aedeagus. Length 3.5 mm.

External Characters.—General coloration lemon yellow to golden. Vertex rounded, slightly produced, with a broken median longitudinal white line and three white spots on each side. Pronotum with three irregularly shaped white spots on anterior margin. Scutellum with a median longitudinal white stripe and a spot of white on each of the anterior corners. Fore wings tinged lemon yellow. Female with last ventral segment roundedly produced.

Internal Male Genitalia.—Lateral processes, short, broad at base, then narrowed and directed inward, becoming enlarged again just before the divergent dorsally directed broadly pointed apices. In ventral view they resemble those of *sativae*. Aedeagus in ventral view constricted at apex like *stalsisa*. The apex in side view appears somewhat T-shaped. A pair of anterior projections near base of aedeagus enlargement connects to the base of the long, rather heavy dorsal spine which curves ventrally and inwardly.

Holotype male, allotype female, and a series of male and female paratypes from 12 miles south of Jacala, Hidalgo, Mexico, collected Sept. 26, 1941, by DeLong, Good, Caldwell and Plummer. Types deposited in the authors' collections.

***Empoasca cothurna* n. sp.**

Resembling species of the *alboneura* group but with characteristic internal male genitalia and dorsal spine. Length 3.5 mm.

External Characters.—General coloration golden with pale blue markings on pronotum and fore wings. Vertex rounded with a median longitudinal white line and two lateral oblique dashes of white. Pronotum with three whitish spots on anterior margin, a median bluish longitudinal stripe, and a blue spot on each of the caudo-lateral margins. Fore wings golden with pale blue markings

and smoky apices. Female with last ventral segment rounded and slightly produced.

Internal Male Genitalia.—Lateral processes rather broad at base, narrowed at about one-third their length and curved inward and upward to tapered pointed apices. Aedeagus long and narrow with an enlarged apex which curves caudad and dorsad. A pair of anterior projections at the base of the enlargement connects to the base of the broad dorsal spine. The spine curves caudad and then ventrad, ending with a pair of processes, the anterior one being long and broad and the other quite narrow and shortened. In lateral view the spine has the appearance of a high-heeled boot.

Holotype male, allotype female, and a series of male and female paratypes from Tuxpan, Mich., Mexico (186 Km.), Oct. 5, 1941; and Tehuacan, Puebla, Mexico, Oct. 17, 1941, all collected by DeLong, Good, Caldwell and Plummer. Types deposited in the authors' collections.