

STUDIES OF THE GENUS EMPOASCA. XIII. SEVEN NEW SPECIES OF MEXICAN EMPOASCA

HOMOPTERA: CICADELLIDAE

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Among the previous species of *Empoasca* which have been described from Mexican specimens, five at least have elytra which appear mottled in color, having paler areolar spots. Some are heavily marked, others are more delicate in color. This group includes *E. acantha*, *adexa*, *ingena*, *obstipa* and *serrula*. In the following pages seven species are described all of which are mottled in color and are apparently rather closely related to the five species named above.

The name *Empoasca alinca* is proposed for the species described as *E. jacinta* DeLong in the Ohio Journal of Science, page 168, vol. 52, May, 1952. The name is preoccupied by *E. jacinta* DeLong and Davidson, 1936.

The types of all species are in the DeLong collection.

***Empoasca metana* n. sp.**

Resembling *adexa* in general appearance and coloration but with distinct male genitalia. Length 3.5 mm.

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

Color pale brown with a median pale stripe from base of crown across apex and extending across face to clypeus. Pronotum with a median pale longitudinal line and a pale spot behind each eye on anterior margin. Scutellum with apex pale. Elytra with anterior portion hyaline, clavus and corium reddish brown with four staggered pale areolar spots, two on clavus and two on corium. A series of pale connected spots angularly sloping across elytra just posterior to clavus. Apices smoky, veins pale margined.

Genitalia: Female seventh sternite broadly and slightly roundedly produced on posterior margin. Male styles narrowed with sharp pointed apices which are curved outwardly. The lateral pygofer processes are slender, almost straight, tapered to pointed apices which are slightly curved inwardly at their apices. The aedeagus with a process arising anteriorly a little before apex which extends anteriorly then dorsally to about the length of aedeagus. The pygofer hook is rather broad at base. The apical third is narrowed to a long pointed apex which curves ventrally and slightly anteriorly.

Holotype male, allotype female and male paratypes collected at Mexico City, D. F., September 13, 1939, by DeLong. Male paratypes collected at Puebla, Pue., Mexico, October 18, 1941, by DeLong, Good, Plummer and Caldwell.

***Empoasca aracoma* n. sp.**

Resembling *acantha* in general appearance but with distinct male genital structures, Length 3 mm.

Crown rather broad and blunt on anterior margin about one-fourth wider between eyes at base than median length.

Color pale brownish green. Face with a distinct white cross between eyes. Margin of crown pale, connecting with a median pale longitudinal line and an elongate pale spot next each eye. Pronotum with a pale median longitudinal line, posterior margin pale and with a large pale spot just back of each eye. Basal angles, median line and apical half of scutellum pale. Elytra with veins broadly pale margined with dull green or smoky. The greatest amount of pigment is along the veins posterior to the clavus. The palest coloration is on the clavus and corium.

Genitalia: Female seventh sternite with posterior margin appearing truncate. Male styles gradually narrowed on apical half to outwardly curved pointed apices. The lateral pygofer

processes are long, rather narrow with outwardly curved narrow pointed apices. The aedeagus is erect with a process arising anteriorly just before the apex which extends anteriorly then dorsally. The pygofer hook is sickle shaped with the apex downward. The middle portion is thickened, the apical portion is narrow, elongate, sharp pointed and extends ventrally.

Holotype male, allotype female and male paratype collected at Guadalajara Jal, Mexico, October 3, 1941 (Km 645) by DeLong, Plummer, Caldwell and Good.

***Empoasca tolana* n. sp.**

Resembling *serrula* in general form and appearance with different coloration and male genitalia. Length 3 mm.

Crown short, bluntly rounded, almost twice as wide between eyes at base as median length.

Color of face rusty with a median pale longitudinal line. Crown dull greenish tinged with red, with a median pale stripe and a minute pale spot on each side near base. Pronotum yellowish brown with three pale anterior spots, one at middle and one just back of each eye. Scutellum with a pale median longitudinal stripe and a pale spot at apex. Elytra whitish hyaline, costal portion unmarked, yellowish areas tinged with red on clavus and corium. Veins of apical portion white, bordered with smoky.

Genitalia: Female seventh sternite slightly produced and broadly rounded on the posterior margin. Male narrowed on apical half with the apices pointed and curving outwardly. The lateral pygofer processes slope inwardly and are concave on inner margin just before pointed apex which appears turned inwardly. The aedeagus has a short thick anterior process which arises just before the apex. The pygofer hook is broad, rather short and pointed on the anterior ventral margin.

Holotype male, allotype female and male and female paratypes collected at Coscomatepec, Veracruz, Mexico, September 30, 1924, by Dr. A. Dampf. Female paratypes collected on the Acapulco Rd., Mexico, November 22, 1938, by Dr. J. S. Caldwell.

***Empoasca mosella* n. sp.**

Resembling *adexa* in general form and coloration but with different male genitalia. Length 3 mm.

Crown blunt, broadly curved anteriorly, about one-fourth wider between eyes at base than median length.

Color dark reddish brown, a median longitudinal pale line on face which extends onto crown. A white spot either side on margin of crown and a larger spot next each eye at base. Pronotum with a median paler longitudinal stripe, a small pale spot just back of each eye and one on each humeral angle. Scutellum with a pale spot on each side of apex. Elytra reddish brown with five round areolar spots on basal two thirds. A series of three pale spots on each side arranged transversely at apex of clavus. Apex smoky with pale veins.

Genitalia: Female seventh sternite rather strongly produced and convexly rounded on posterior margin. Male styles narrowed on apical half to form sharp pointed apices which curve outwardly. The lateral pygofer processes are long, narrow and with narrow pointed apices. The aedeagus forms an anterior process at about its middle which extends forward for some distance and this gives rise to a dorsally produced process near its apex which is slender and extends parallel to the aedeagus shaft and to about its length. The pygofer hook is thickened at base, is sickle shaped with the apical half narrow and with a sharp pointed apex which extends ventrally and anteriorly.

Holotype male and allotype female collected at Carapan, Mich. (Km. 432) Mexico, October 2, 1941; male paratypes collected at Zimipan Hgo (K. 223), October 30, 1941, and September 26, 1941, by DeLong, Plummer, Caldwell and Good.

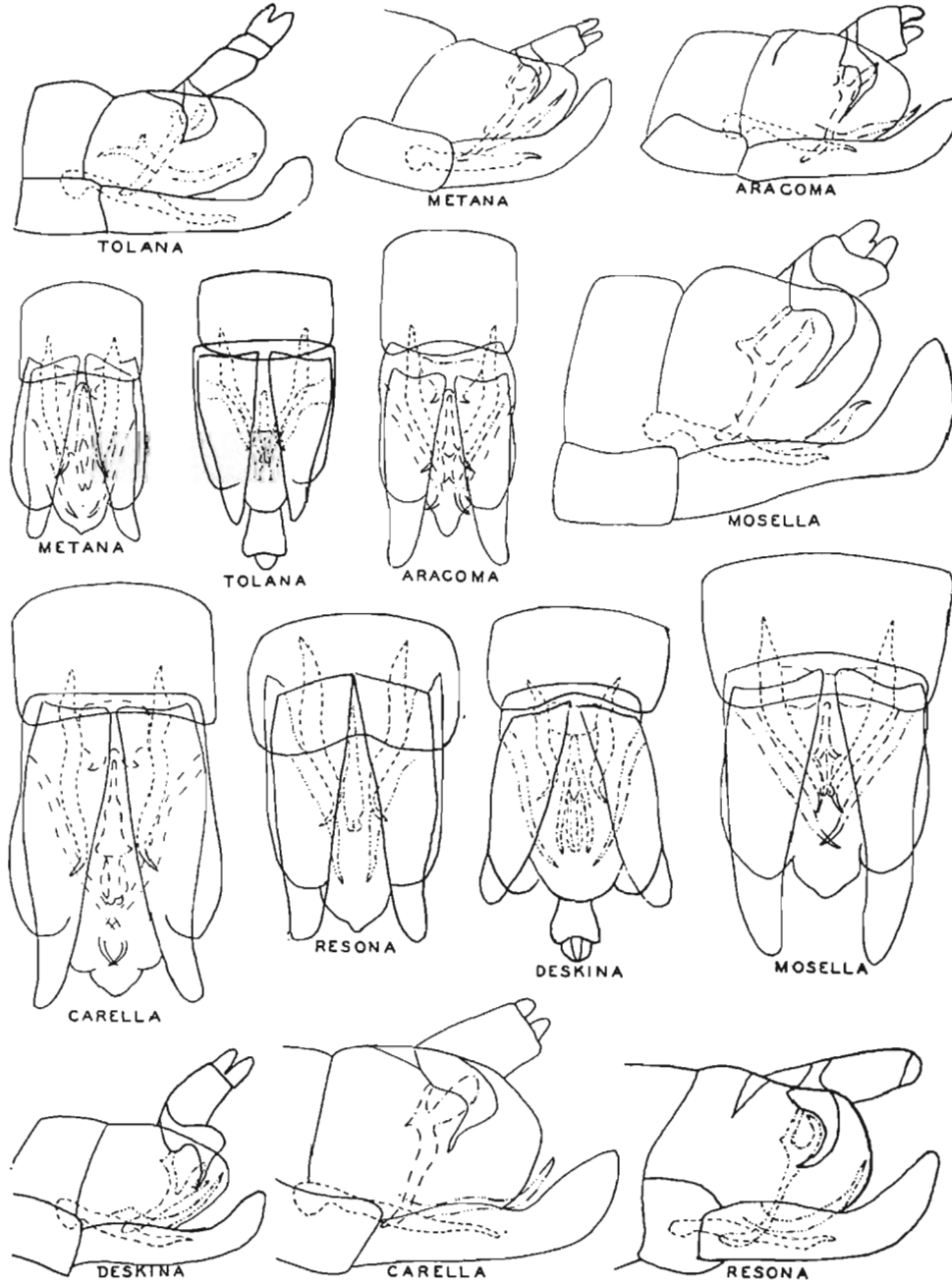
***Empoasca resona* n. sp.**

Resembling *acantha* but with different coloration and male genital structures. Length 3.5 mm.

Crown produced, blunt, rounded, almost one third wider between eyes at base than median length.

Color of face sordid with a pale median longitudinal stripe. Crown embrowned at apex with a median pale stripe and a pale spot either side on margin. Portion next eyes pale. Pro-

notum brown with a pale spot just back of each eye and pale humeral angles. Scutellum brown, a pale spot each side of apex. Elytra with a yellow costal margin. The clavus is brownish with two white areolar spots. The portion of corium along clavus is reddish with two pale areolar spots. Apex smoky, veins pale. A series of pale spots transversely arranged at apex of clavus.



Lateral and ventral views of the apical portion of the abdomens of the males of species of Empoasca as labeled.

Genitalia: Male style narrowed and curved outwardly at pointed apex. The lateral pygofer processes are long, the apical third is quite slender with long attenuated pointed apices. The aedeagus is curved anteriorly at apex. The anterior process arises near the apex and extends anteriorly then dorsally and is as long as the aedeagus shaft. The pygofer hook is rather long, thickened near base then gradually narrowed to a pointed apex which extends ventrally and is curved anteriorly.

Holotype male collected at Carapan, Mich., Mexico (Km. 432), October 2, 1941, by DeLong, Plummer, Caldwell and Good.

***Empoasca corella* n. sp.**

Resembling *adexa* in coloration and general appearance but with distinct genital structures. Length 3.5 mm.

Crown bluntly produced about one-fourth wider between eyes than median length. Elytra much longer than abdomen.

Color crown and face rather dark brown, a median pale stripe on face from margin of crown to clypeus. Crown with a median longitudinal pale line, a large pale spot next eye on base at either side and a small pale spot on margin between apex and eye. Pronotum dark brown with three pale spots along the anterior margin, one at middle and one behind each eye. Scutellum with basal angles and apical angle pale. The elytra are dark brown with three white areolar spots on each side along commissure. The posterior spot is just outside the clavus at its apex. The claval vein is reddish. The apical veins are pale. The median costal margin is pale.

Genitalia: Female ventral sternite broadly roundly produced on posterior margin. Male styles elongate, slender, with outwardly bent pointed apices. Lateral processes long, quite slender, apices pointed, curved outwardly. Aedeagus indented on posterior margin at about two-thirds its length forming a rounded, elongate apical lobe and an anterior process with a ventral pointed outer margin and a dorsal narrow produced finger like process. The pygofer spine is thick at base, sloping caudally then bent anteriorly forming a narrow pointed apex which extends ventrally.

Holotype male, allotype female and male and female paratypes collected at Carapan, Mich., Mexico (Km. 432), D. F., Mexico, October 2, 1941; male and female paratypes from Tres Cumbres (K. 52), D. F., Mexico, October 21, 1941; Cordoba Veracruz, Mexico, October 8, 1941. Collected by Caldwell, Good, Plummer and DeLong. Paratypes from Taxco, Gro., Mexico, Sept. 9, 1939, collected by Plummer and DeLong.

***Empoasca deskina* n. sp.**

Resembling *adexa* in general appearance and coloration but with distinct male genitalia. Length 3.5 mm.

Crown rather broad, rounded in front, almost twice as wide between eyes at base as median length.

Color rather dark brown, a pale line from margin of crown to clypeus which is black. Crown with a pale spot next each eye at base and a small pale spot on each side of anterior margin. Pronotum brown with a median pale spot on anterior margin and one just back of each eye. Scutellum pale at apex. Elytra brownish with two pale areolar spots on clavus, one basal, anterior to clavus, one on corium and a series across elytra just posterior to clavus. Apices smoky with pale veins.

Genitalia: Female seventh sternite slightly produced and broadly rounded on posterior margin, male styles long and slender, apices pointed and turned outwardly. Lateral processes long, tapered to slender apices. Aedeagus branched just beyond middle forming a long slender anterior process which extends dorsally and anteriorly and a posterior portion which is straight, slender and with a posterior slender spur just before its apex. The pygofer spine is broad with anterior ventral excavations and a narrow pointed elongate apex which extends ventrally and anteriorly.

Holotype male from Cuernavaca, Mor., Mexico (K-57), collected October 21, 1941. Female allotype and paratype, female from Jacala Hgo., September 26, 1941. Male and female paratypes from Mexico, D. F. (Km. 43 S.), September 5, 1939; Orizaba, Veracruz (K-280), October 17, 1941, by DeLong, Plummer, Good, and Caldwell. Paratypes from Mexico, D. F., September 19, 1932, by Dr. A. Dampf.