beetle eggs were parasitized. All of the eggs of *L. kalmii* and *O. fasciatus* in these experiments were parasitized, indicating a possible reason for the scarcity of milkweed bugs in this area in 1942.

The life cycle of *H. parkeri* takes a period of 14–16 days in the eggs of milkweed bugs at temperatures ranging from 65°–90° F.

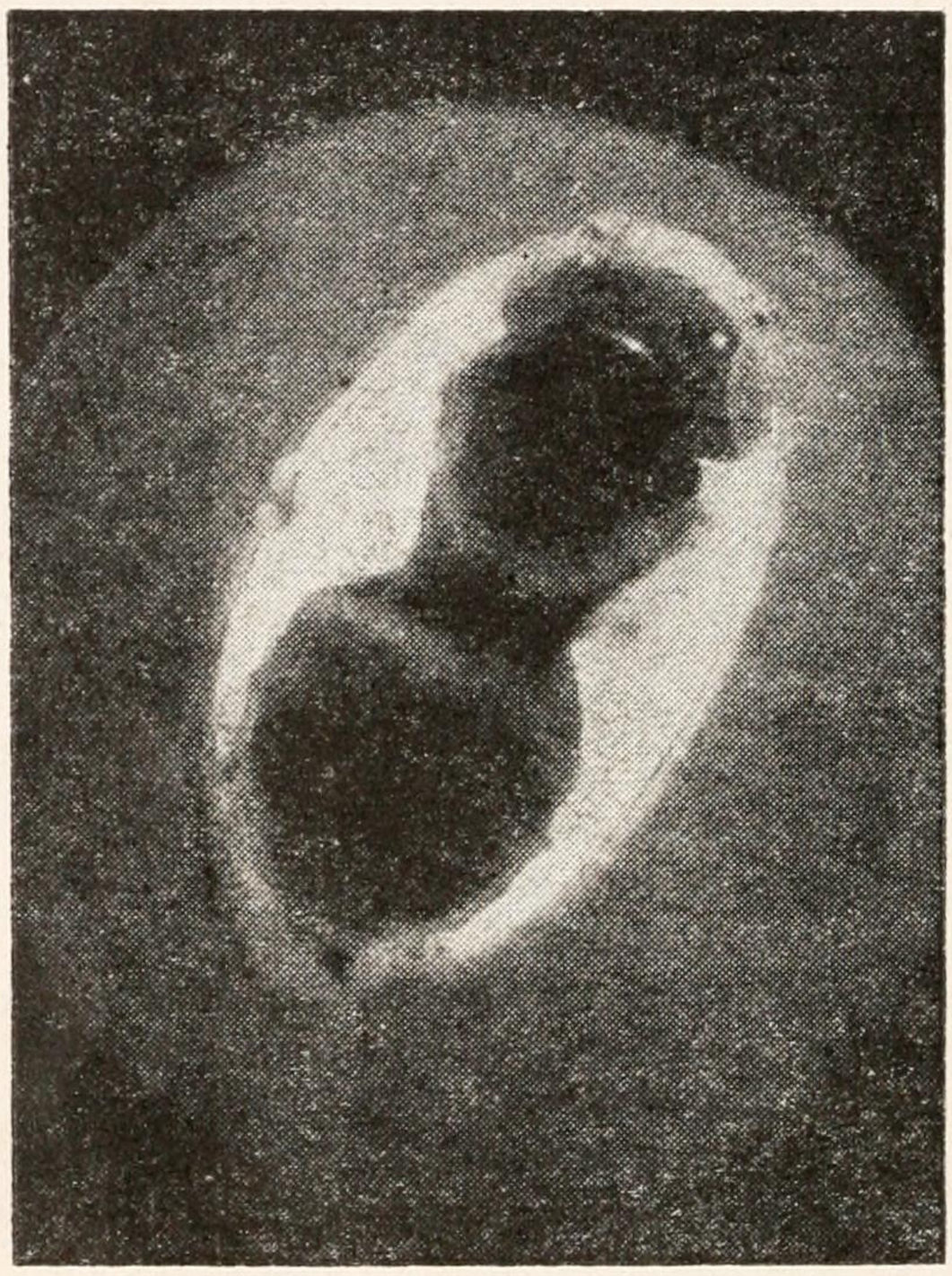


Fig. 1.

An interesting photograph taken of a parasitized egg of *L. kalmii* shows *H. parkeri* about one day before emergence as an adult. Details of the abdomen, ocelli and parts of the legs, antennae, etc., may be seen through the semi-transparent shell of the parasitized egg. See fig. 1.

Notes on Oecleus Stal (Homoptera: Ciciidae)

By John S. Caldwell, Circleville, Ohio

The species listed by Fowler [1] are roughly divided into two groups; those with three carinae on the mesonotum and those

[1] Biologia Centrali-Americana Homoptera, 1: 88–92, 1904.

with five. In practically all cases the intermediate carinae are very weak, the appearance of five prominent carinae being due to color contrast rather than base relief. As stated by other workers *tenellus* Fowler belong in the genus *Oeclidius*. All types are in the author's collection unless stated to the contrary in the script.

Oecleus seminiger Stal

This is one of the few species easily differentiated by color and marking. The dark brown body and basal half of the elytra are distinct. The medio-ventral process of the male pygofers is elongate-ovate and as long as the styles. One male, Veracruz, Mexico (Dampf).

Oecleus pellucens Fowler (figs. 1 & 1a)

Variable in size and marking but with constant male genitalia. Length over all 4–7 mm. Costal nerve broadened at base. The fuscous band refered to by Fowler may be either entirely absent or present in varying degrees of intensity and width. Sometimes this band is enlarged to include the entire apex of the elytra and in some examples the claval area is dark fuscous. It is probable that *centronus* Ball & Klgb.[2] belongs to this species. Specimens present from Chiapas, Guerrero, Jalisco, Michoacan, Oaxaca, Puebla, Quintana Roo, San Luis Potosi, Veracruz, and the Federal District in Mexico, and from El Salvador and Guatemala.

Oecleus dubius new species (figs. 2 & 2a)

Length 6–7 mm. Orange over all with black frons; mesonotum sometimes with central tablets darkened. Veins of elytra evenly and strongly punctate with black.

Vertex narrow, slightly produced more than in *pellucens*. Frons narrowed between the eyes; median carina prominent. Profile angular. Base of costa broadened; punctations on this surface few and not prominent.

Medio-ventral process of male pygofer more elongate than in *pellucens;* aedeagus with different spur arrangement and number.

Male *holotype,* female *allotype,* and *paratypes* from Gualan,

[2] Annals Ent. Soc. Amer., 27: 193–213, 1935.

GUATEMALA, January and February, 1905, are in the H. Osborn collection at Columbus, Ohio. This species is very close to *pellucens* Fowler and may prove to be only a variety.

Oecleus decens Stal (figs. 13 & 13a)

For all practical purposes this species is today an unknown element in our fauna. It is my belief that *decens* Fowler is not *snowi* Ball as found in Arizona although the two species are similar. I am not sure that I have interpreted the description of the male genitalia as given by Fowler; however the chrotic characters compare well with the figure in the Biologia (Pl. 10, fig. 6). Specimens from Jalisco and Morelos in Mexico (Dampf).

Oecleus apicatus new species

Length 5.5 mm. Frons dark with light median carina; clypeus testaceous. Pronotum whitish with smoky spots; mesonotum smoky with yellowish carinae. Elytra evenly browned with exception of a clear apical area. Punctations on veins scattered, black. Profile somewhat rounding. Vertex produced its apical width before the eyes; widened in apical fourth. Base of costa broadened; thickening of costa at stigmal spot long, narrow.

Female holotype from Tamazunchale, San Luis Potosi, MEXICO, 8–29–39 (DeLong).

Oecleus parallelus new species (figs. 3 & 3a)

Length 6.2 mm. Black with light carinae on face and pronotum. Mesonotum with orange carinae and large orange dash in either lateral compartment. Elytra somewhat yellowish, especially in claval area.

Vertex narrow, produced; lateral margins parallel for full length. Frons narrowed between the eyes. Profile right-angled. Elytra broad; base of costa broadened. Punctations on veins not prominent. Medio-ventral process of male pygofers broadly quadrate basad, greatly produced apically.

Male holotype from Tehuacan, Puebla, MEXICO, 10–17–41 (DeLong, Good, Caldwell, and Plummer).

(*To be continued*)

Notes on Oecleus Stal (Homoptera: Ciciidae)

By JOHN S. CALDWELL, Circleville, Ohio

(*Continued from page 176*)

Oecleus apterapunctatus new species (figs. 4 & 4a)

Length 6.5 mm. Yellow with extremities of frons dark. Fore-femora dark for basal two-thirds. Eyes black. Mesonotum black between intermediate and median carinae.

Vertex produced, broadened before the eyes, closed caudad. Frons with very prominent lateral carinae. Profile right-angled. Base of costa broadened. Punctations not visible on veins. Medio-ventral process of male pygofers elongate-bulbose apically.

Male holotype from Tehuantepec, Oaxaca, MEXICO, 10–13–41 (DeLong, Good, Caldwell, and Plummer).

Oecleus concinnus Fowler (figs. 5 & 5a)

This is not *lineatus* Ball as stated by that writer but is a distinct species easily identified by the bright carinae of the thorax, yellowish elytra, and broadened costal base. The medio-ventral process of the male pygofers is also very elongate and slender. Specimens from Morelos (DeLong and Plummer) and Jalisco (Dampf) in Mexico.

Oecleus minimus Fowler (figs. 6 & 6a)

This species is between 4–6 mm. and for the length is much more slender than *pellucens* which it resembles. The punctations on the veins are much more pronounced and slightly denser. The costal vein is not broadened at the base. As a rule the general color of the thorax is darker than the darkest variations of *pellucens*. Specimens from Chiapas, Guerrero, Oaxaca, San Luis Potosi, and Veracruz in Mexico.

Oecleus infuscatus new species (figs. 7 & 7a)

Length 6–6.8 mm. General color black. Wings fuscous. Carinae of face yellow. Pronotum with light carinae and a

yellow dash on either side far laterad. Mesonotum with intermediate carinae and two dashes in lateral compartments dark orange.

Face rounded in profile. Vertex scarcely produced before the eyes, very broad, open caudad. Costa not broadened at base. Anal segment of male long, straight. Lateral margins of pygofers produced somewhat basad; medio-ventral process, broad, subtrianguler.

Male holotype and female allotype from Acapulco, Guerrero, Mexico, 9–10–39 (DeLong and Plummer).

Oecleus delongi new species (figs. 8 & 8a)

Length 5–6.8 mm. Face dark; lateral carinae light; median carinae orange. Mesonotum black with orange carinae and two dashes in either lateral compartment, one dash cephalad near the lateral carinae and the other caudad near the outer angles. Elytra hyaline, whitish, with veins becoming darker apically; two dark dashes present along sutural margin before apex of clavus.

Profile rounding. Vertex produced before the eyes, broad, not closed caudad. Base of costa not broadened. Medio-ventral process of male pygofers quadrate basad, produced apically.

Male holotype, female allotype, and paratypes from Tamazunchale, San Luis Potosi, Mexico, 8–29–39 (F. M. & D. M. DeLong).

The writer takes great pleasure in naming this distinct species in honor of the collectors, Dr. and Mrs. D. M. DeLong.

Oecleus constrictus new species (figs. 9 & 9a)

Length 4.5–5 mm. Uniformly light to dark yellow with the exception of dark eyes, tarsi, and dark brown bordering the lateral carinae of the mesonotum. Punctations on veins black, small but very distinct. Vertex very narrow, produced. Profile angular. Frons much narrowed between the eyes. Base of costa not broadened. Anal segment of male elongate. Medio-ventral process of pygofers elongate, subtriangular.

Male holotype, three paratypes, and female allotype from Huetamo, Michoacan, MEXICO, 8–22–33 (Dampf).

Oecleus cephalicus new species (figs. 10 & 10a)

Length 4.5–6 mm. Orange species with black eyes, tarsi, and the spaces between the carinae of the mesonotum. Female with two black dashes in the lateral compartments, one cephalad and the other caudad; male with only one dash. Punctations on veins very prominent, black; cross veins and apical terminations of all veins broadly fuscous.

Vertex greatly produced, apex broad, flat. Frons very elongate, scarcely narrowed between the eyes. Profile acute; apex of head projecting dorsad. Elytra short, broad, small in proportion to rest of body. Base of costa not broadened. Medio-ventral process of male pygofers very small, acute.

Male holotype and female allotype of this unique species from San Miguel. EL SALVADOR, 3–19–42 (Plummer).

Oecleus spatulatus new species (figs. 11 & 11a)

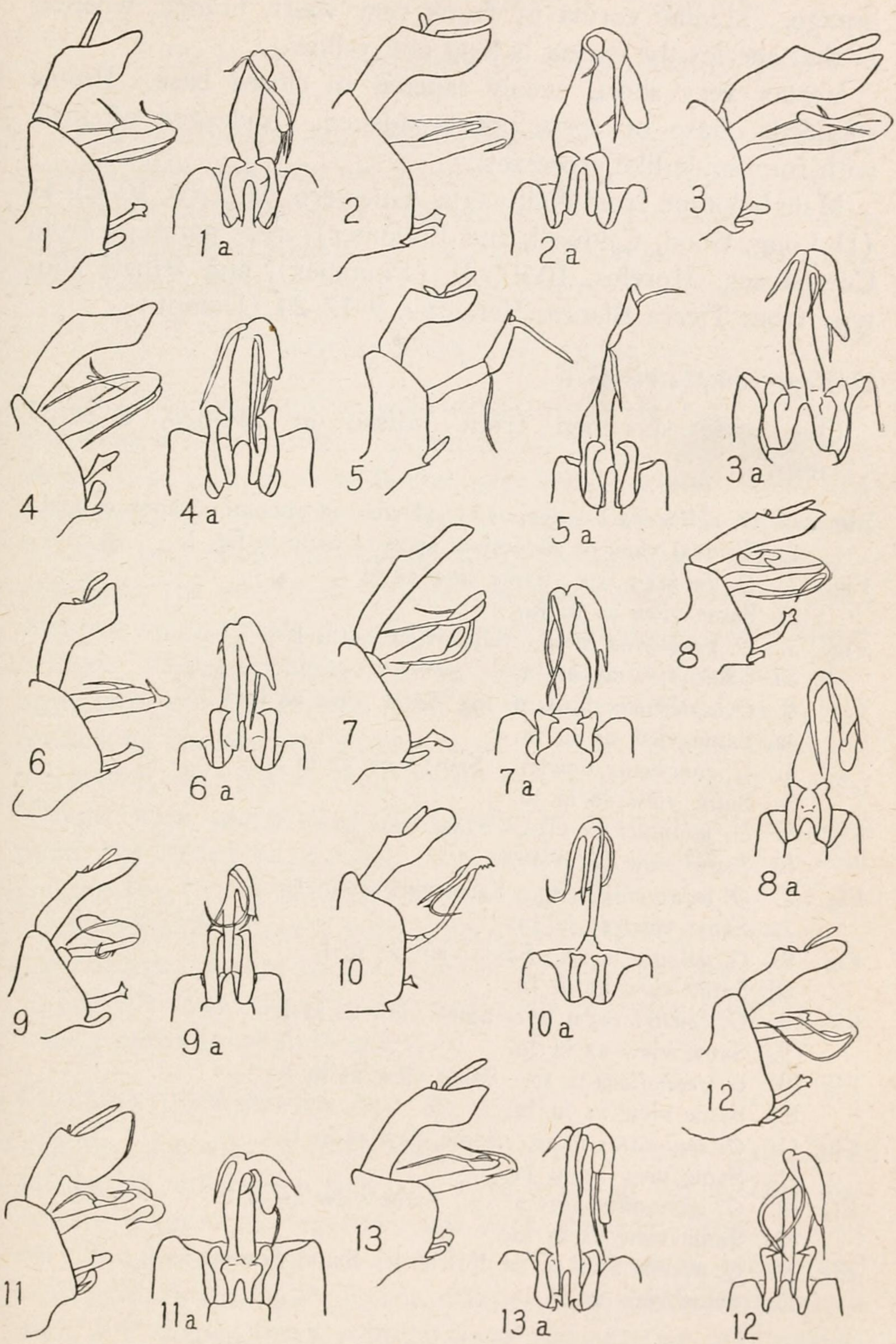
Length 4.5–5 mm. Vertex and face dark with orange carinae. Eyes and pronotum gray. Mesonotum black with orange carinae and a large orange spot in either lateral compartment. Elytra whitish, hyaline, with yellow veins; punctations black.

Vertex produced, much widened before the eyes; tapered closed caudad. Frons very narrow. Profile right-angled. Base of costa not broadened. Anal segment of male greatly enlarged apically. Medio-ventral process quadrate basad, produced apically.

Male holotype, female allotype, and paratypes from Los Amatos, GUATEMALA, 1–17–05, paratypes same locality 2–25–05, and from Point Barrows, 3–3–05, are in the H. Osborn collection at Columbus, Ohio, paratypes in writer's collection.

Oecleus quinquilineatus new species (figs. 12 & 12a)

Length 5–5.5 mm. Coloration and marking very similar to *quadrilineatus* Van Duzee from Arizona. In addition to the four intercarinate dashes, the median carina is very narrowly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orange. Median carina of frons very short, orange, whereas in that species the carina is long and yellow.

Vertex very short, evenly tapered to closed base. Profile rounded. Base of costa not broadened. Aedeagus of male with four spine-like processes.

Male holotype from Xaltiangus, Guerrero, MEXICO, 10–23–41 (DeLong, Good, Caldwell, and Plummer), male paratype from Cuernavaca, Morelos, 10–14–31 (Plummer), and female allotype from Tierra Blanca, Veracruz, 9–17–24 (Dampf).

Oecleus campestris Ball

One male specimen from Jalisco in Mexico, 8–24–37 (Dampf).

Fig. 1. *O. pellucens* Fowler. Lateral view of abdominal apex of male.
1a. Ventral view of abdominal apex of male in fig. 1.
Fig. 2. *O. dubius* n. sp. Same view as in 1.
2a. Same view as in 1a.
Fig. 3. *O. parallelus* n. sp. Same view as in 1.
3a. Same view as in 1a.
Fig. 4. *O. apterapunctatus* n. sp. Same view as in 1.
4a. Same view as in 1a.
Fig. 5. *O. concinnus* Fowler. Same view as in 1.
5a. Same view as in 1a.
Fig. 6. *O. minimus* Fowler. Same view as in 1.
6a. Same view as in 1a.
Fig. 7. *O. infuscatus* n. sp. Same view as in 1.
7a. Same view as in 1a.
Fig. 8. *O. delongi* n. sp. Same view as in 1.
8a. Same view as in 1a.
Fig. 9. *O. constrictus* n. sp. Same view as in 1.
9a. Same view as in 1a.
Fig. 10. *O. cephalicus* n. sp. Same view as in 1.
10a. Same view as in 1a.
Fig. 11. *O. spatulatus* n. sp. Same view as in 1.
11a. Same view as in 1a.
Fig. 12. *O. quinquilineatus* n. sp. Same view as in 1.
12a. Same view as in 1a.
Fig. 13. *O. decens* Stal (after Fowler). Same view as in 1.
13a. Same view as in 1a.