

much foreign cargo is imported and the fact that specimens were taken over a five-year period, there is strong evidence that *dichrous* is established in this area.

The larvae of several species of *Melanotus* are known pests of agricultural crops, but there seems to be no records of *dichrous* as a pest. I do not know of any references to the larva of *dichrous*.

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### THREE NEW EPICAUTA FROM MEXICO (COLEOPTERA: MELOIDAE)<sup>1</sup>

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ABSTRACT—Three new species are described: *Epicauta* (*Epicauta*) **laevicornis** from the State of Jalisco, **hubbelli** from the State of Chiapas, and *Epicauta* (*Macrobasis*) **prosopidis** from the State of Durango. All have unusual modifications of the male antennae. The species groups of subgenus *Macrobasis* in which antennal segment 1 is at least slightly excavated externally at apex are realigned and keyed to include a Prosopidis-Group made up of *distorta* (Champ.), *disparilis* (Champ.), *torsa* (LeC.), *maculifera* (Mayd.), *purpurea* (Horn), and *prosopidis*. A key to males of this group is given.

The new species described here have such unusual modifications of the male antennae that I am describing them to call them to the attention of other workers. Two were taken in areas frequently sampled for Meloidae. I am much indebted to the collectors, who not only turned over the specimens for study but permitted me to deposit the holotypes in the Museum of Comparative Zoology at Harvard University.

*Epicauta* (*Epicauta*) *laevicornis* Werner, new species

Black except for a narrow rufescent spot on frons, subopaque, with short, fine inconspicuous black pubescence; moderately slender, 14-16 mm; antennae moder-

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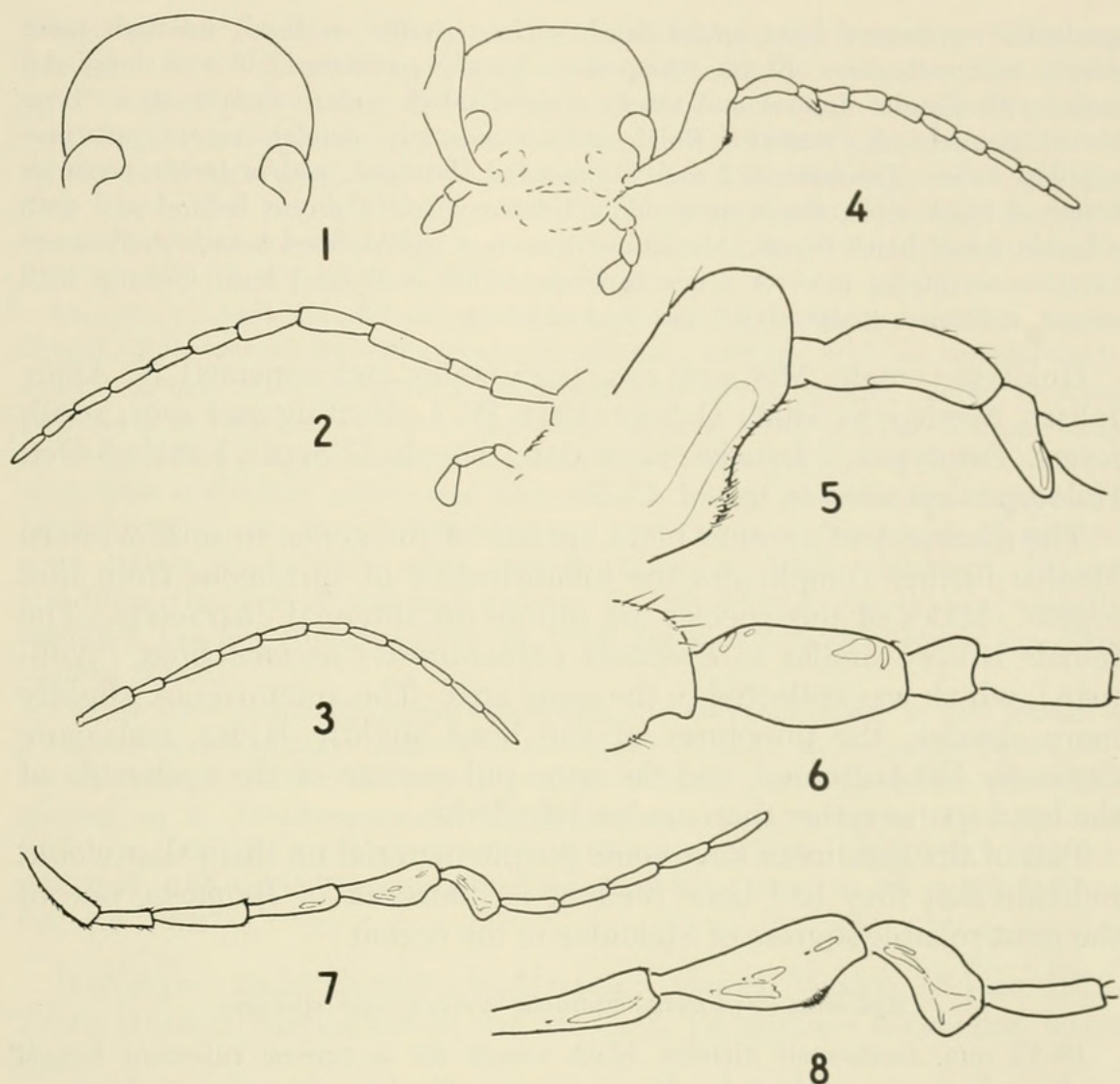


Fig. 1-3, *Epicauta laevicornis*: 1, head of holotype male; 2, right antenna and maxillary palpus of same; 3, left antenna of female. Fig. 4-6, *Epicauta prosopidis*, holotype male: 1, head; 2, details of antenna in front view; 3, same in ventral view. Fig. 7-8, *Epicauta hubbelli*, holotype male: 7, left antenna; 8, details of antenna in front view.

ately long, slender and tapering (fig. 2-3), with segments 3-5 slightly larger and slightly flattened in male (fig. 2), which has segments 1-5 shiny.

Holotype male: head narrowly rounded behind eyes (fig. 1), 5.2 mm long to clypeofrontal suture, 6.0 wide behind eyes; disc slightly flattened, median impressed line fine but distinct; surface evenly covered with shallow, flat-bottomed punctures, the narrow intervals microreticulate; punctures sparser on frons, absent on calluses next to antennae. Eyes  $1.5 \times 0.75$  mm. Antennae ca. 9.5 mm; segment 1 without sign of apical emargination, its pubescence and sculpture nearly normal; 2 also nearly normal; 3-5 slightly flattened (3 about 0.04 mm wide, 0.28 thick), shiny and nearly glabrous, 5 with more normal punctures and pubescence near apex. Maxillary palpi (fig. 1) slightly enlarged; flattened and nearly glabrous below, their segments  $0.90 \times 0.32$  mm,  $0.70 \times 0.35$ , and  $0.95 \times 0.40$ , base to apex. Pronotum 2.7 mm long, 2.4 wide, sides roughly parallel,



gradually convergent from apical third; surface similar to head, intervals more deeply microreticulate. Elytra subopaque, densely punctured, 14 mm long, 4.6 wide, with distinct humeri and nearly parallel-sided, widest toward apex. Legs almost unmodified. Posterior tibial spurs moderately slender, center just perceptibly wider. Trochanters 2 and 3 somewhat flattened, with a feeble posterior fringe of black setae, the corresponding femora nearly glabrous behind and with a feeble dorsal black fringe. Metasternum with a well-defined broad, shallow excavation occupying most of space between middle and hind legs. Female with simple antennae, palpi, legs and metasternum.

Holotype: male, Mts. and cns. [mountains and canyons] N. Ajijic, Jalisco, Mexico, to 5400'; 11 Sept. 1964, W. L. Nutting and sons; scrub forest. Paratypes: 2 females, same date; 1 male 17 Sept.; 1 male 3 Oct. Holotype deposited in the M. C. Z.

The discovery of another black species of the genus in southwestern Mexico further complicates the identification of specimens from that region. Males of this species are unique in antennal characters. The female is very similar to *Epicauta* (*Macrobasis*) *melanochroa* (Wellman), which was collected in the same area. The antennae are slightly more slender, the punctures of the head slightly larger and more distinctly flat-bottomed, and the erect pubescence of the underside of the head sparse rather than moderately dense.

Part of the specimens have some purple material on them that would indicate that they had been feeding on blossoms of *Ipomoea*, one of the most reliable sources of Meloidae in the region.

*Epicauta* (*Epicauta*) *hubbelli* Werner, new species

18–19 mm, moderately slender, black except for a narrow rufescent frontal mark; pubescence moderately dense, black, with luteocinereous markings as follows: on head (small median mark at base, narrow in front); pronotum (0.5 mm wide midline, slightly wider at base; narrow fringe across base; lower portion of sides); scutellum (0.5 mm wide down middle); elytra (0.2 mm wide at suture of each, 0.3 mm at side margin, both narrowed and stopping before apex; margin of apex, to 0.5 mm; and a line 0.3 mm wide from very base to middle of apex); prosternum (mixed setae); mesosternum (posterolateral zone, mixed setae); mesopleura (solidly on sides, black ventrally); metasternum (sides except at base); metepisterna (small oblique zone at basal  $\frac{2}{5}$ , parallel to anterior edge); coxae (on sides, conspicuous on hind coxae); and abdomen (apical  $\frac{1}{2}$  of sides of visible sterna 1–4, gradually smaller; and narrowly across apex of terga of visible sterna 4–5).

Holotype: male, 18 mm; head moderately narrow, 2.9 mm long to clypeo-frontal suture, 3.2 wide just behind eyes, 3.3 wide across the not very prominent eyes, which are  $1.7 \times 0.75$  mm. Temporal angles feebly indicated, the base almost a semicircle; surface subopaque, microreticulate, punctures moderately dense but shallow; frons slightly less densely punctured and shinier, with a narrow glabrous midline; calluses next to antennae with setae except on a small zone anterior to eyes. Antennae (fig. 7–8) 11.5 mm, slender; segments 1–6 moderately shiny, with pubescence about like body; 7–11 with dense, short pubes-



cence and fine punctures. Segments 3–6 modified, 3–4 by flattening; 5 flat, expanded,  $1.65 \times 0.7 \times 0.32$  mm, with a subapical anterior excavation that grades onto the dorsal surface, largely glabrous but with a zone of short setae on edge at excavation; 6 forming an opposing structure,  $1.15 \times 0.55 \times 0.27$  mm, with some short setae on grasping edge and a zone of pubescence like segment 7 apically, both above and below. Maxillary and labial palpi flattened below, somewhat flattened. Measurements, base to apex: maxillary  $1.2 \times 0.4$  (curved forward),  $0.85 \times 0.5$ ,  $1.15 \times 0.4$ ; labial  $0.5 \times 0.2$ ,  $0.65 \times 0.4$ .

Pronotum nearly parallel-sided, 3.3 mm long, 2.9 wide, the anterior angles abrupt. Pubescence, including contrastingly pale midline, with an orientation to centers toward sides of dorsal portion and just behind middle, mostly directed posteriorly in front, anteriorly in back, and laterally across middle. Surface similar to head but punctures and pubescence denser, especially along middle. Elytra with finer and denser punctures. Metasternum with a shallow, broad concavity behind middle, not sharply delimited and not glabrous. Inner spur of anterior tibia slightly stouter than outer, strongly incurved. Hind trochanters, femora, and tibiae flattened on opposing surfaces but not fringed; middle legs similarly modified, but less strongly. Posterior tibial spurs moderately slender, the outer slightly wider.

Of the male secondary sexual characters, the only indication in the female is a slightly longer antennal segment 5 and shorter 6, with an indication of the offset of these segments; there is a gradual transition of pubescence, the dense starting on 5. Measurements of female antenna, base to apex:  $1.4/0.35$  mm,  $0.75/0.3$ ,  $1.3/0.3$ ,  $1.1/0.3$ ,  $1.25/0.4$ ,  $0.85/0.4$ ,  $1.0/0.35$ ,  $0.95/0.35$ ,  $0.95/0.3$ ,  $0.85/0.27$ ,  $0.95/0.25$ . The unmodified maxillary palpi measure  $1.0 \times 0.3$ ,  $0.55 \times 0.3$ ,  $0.9 \times 0.37$ .

Holotype: male, Cumbre de Arriaga, Chiapas, Mexico, 18 June 1972, Peter Hubbell, deposited in the M. C. Z. Paratypes: 5 females, same data.

The only species with even similar antennal modification is *Epicauta curvicornis* (Haag), which does not have the flattening of segments and has segment 2 short. The color pattern is unique in the Mexican fauna.

*Epicauta (Macrobasis) prosopidis* Werner, new species

Black, tibiae, tarsi and a feeble spot on middle of frons rufescent; pubescence cinereous, appressed, absent from small spots around short, erect tactile setae, the resulting black spots especially noticeable on elytra. Male with antennal segment 1 long and excavated toward apex (fig. 4), 2 curved and flattened to oppose the excavation of 1, and 3 produced into an acute apical angle (fig. 5–6); segment 1 of anterior tarsi short, glabrous, contorted. Female unknown.

Holotype male, 8 mm: head subquadrate, slightly flattened on front, 1.32 mm long to clypeofrontal suture, 1.60 wide across eyes, slightly less behind. Surface strongly microreticulate, with moderately sparse, small but well-defined punctures; midline distinct, with a clear zone about 0.15 mm wide. Head and pronotum with a feeble indication of glabrous spots, but these small, and inconspicuous because the pubescence is moderately sparse. Calluses next to antennae glabrous, microreticulate. Eyes  $0.84 \times 0.40$  mm. Antennal segments 1 and 2



with some cinereous setae dorsally, moderately sparsely punctured and pubescent; 3-11 densely and finely punctured and short-pubescent. Excavation of 1 glabrous, but angle before it with some longer setae; flattened surface of 2 with some short, decumbent setae, shallowly impressed from just beyond base in front to just before apex behind; 3-11 slightly flattened, process of 3 flattened and glabrous on surface next to 4. Maxillary palpi apparently unmodified.

Pronotum with surface similar to head, 1.3 mm long, 1.35 wide, nearly quadrate; midline impressed and narrowly glabrous, ending in a shallow excavation near base. Elytra 6.5 mm long, 2.2 wide, subparallel, with distinct humeri; surface more densely punctured and pubescent, with nearly uniform glabrous spots about 0.15 mm in diameter. Pubescence black in distinct humeral lines and adscutellar spots. Underside with pubescence similar to pronotum, slightly denser on sides of abdomen, sparse ventrally, with many ill-defined glabrous spots. Tibia 1 darker than rest. Posterior tibial spurs slender, outer slightly wider. Apical pecten of tibia 3 distinct, of 3 strong teeth. Tibia 1 apparently slightly thickened, with a single, nearly straight apical spur. Anterior tarsal 1 distinctly shorter than 2, lacking pad, glabrous behind, almost glabrous basally in front but with a pubescent knob toward apex. Trochanters 2 and 3 somewhat flattened and glabrous, femora 2 and 3 glabrous behind; these areas fringed with long, sparse, pale setae. Femur 1 glabrous on surface facing tibia except for normal sericeous patch, with area basad of patch slightly flattened. Last abdominal sternum with surface like rest, its apex not excavated.

Holotype: male, Mexico, Km. 739, Hwy. 45 [from Zacatecas] to Durango, 15-VII-69; Coll. Ward, Tenorio, and Bennett; Texas Tech. Mesquite Proj. Deposited in the M. C. Z., through the courtesy of Dr. Charles R. Ward, who informs me that the locality given is near Vicente Guerrero in the State of Durango, just inside the eastern border, at about 6400', and that all specimens bearing Mesquite Proj. labels were taken on *Prosopis*.

Assignment of this species to group within the subgenus is difficult. By its characters, it would go to the *Disparilis*-Group (Werner 1954), but it seems more logically associated with *purpurea* and similar species. A modification of the groupings seems in order. The second half of the table of species-groups of *Macrobasis* (in the paper cited but under the name, *Gnathospasta*) can be changed to the following, on the basis of male character.

1. Antennal 1 at least slightly excavated externally at apex.
2. Tibia 1 with 2 spurs. Anterior tarsal 1 normal.
3. Large species; antennal 2 from longer than 3 to slightly shorter. (see Selandier & Mathieu 1969). ----- Albida-Group
- 3' Small to medium species; antennal 2 distinctly shorter than 3. -----  
----- Uniforma-Group
- 2' Tibia 1 with 1 spur.
4. Anterior tarsal 1 normal, not at all compressed or narrowed at base and with normal pad. Excavation of antennal 1 feeble. ----- Funesta-Group
- 4' Anterior tarsal 1 modified in varying degree, but at least compressed and narrowed at base.



5. Antennal 2 shorter than 3. Anterior tarsal 1 lacking pad.  
 6. Antennal 3 as long as and similar to 4. Anterior tarsal 1 with a knoblike protuberance on inside of apex. ----- Ochrea-Group  
 6' Antennal 3 shorter than 4, and more like 2 in form. Anterior tarsal 1 produced apically and overlapping 2 mesally, but not knobbed. -----  
 ----- Virgulata-Group  
 5' Antennal 2 longer than 3, at least slightly curved to form a clasping structure when opposed to excavation of 1. ----- Prosopidis-Group

The Prosopidis-Group, as here defined, would include the nominate species and all those formerly included in the Torsa-, Purpurea-, and Disparilis-Groups. Since the species-group category is an informal one, I prefer to abandon all of the previous names and substitute an entirely new one.

#### Key to Males of Prosopidis-Group

1. Antennal 2 narrower in plane perpendicular to surface facing excavation of 1.  
 2. Anterior tarsal 1 with reduced pad but very little modified otherwise, its anterior face pubescent. Tan, elytra with a line of denser pale pubescence down middle. ----- *distorta* (Champ.)  
 2' Anterior tarsal 1 lacking pad, shiny in front, and with a pubescent knob near apex. Black, pubescence of upperside black, elytra narrowly margined with cinereous. ----- *disparilis* (Champ.)  
 1' Antennal 2 at least slightly wider in plane perpendicular to surface facing excavation of 1.  
 3. Antennal 2 with surface facing excavation of 1 not flattened. Anterior tarsal 1 with reduced pad, but little modified. Black with sparse, inconspicuous tannish pubescence. ----- *torsa* (LeC.)  
 3' Antennal 2 with surface facing excavation of 1 flattened.  
 4. Anterior tarsal 1 with reduced pad. Tan, with moderately dense cinereous pubescence, absent in small spots around short tactile setae. -----  
 ----- *maculifera* (Maydell)  
 4' Anterior tarsal 1 without pad.  
 5. Anterior tarsal 1 as long as 2, pubescent. Black, upperside with pubescence black except cinereous in markings that include a narrow midline and margins on elytra. ----- *purpurea* (Horn)  
 5' Anterior tarsal 1 short, mostly glabrous, but with a short-pubescent knob near apex of front surface. Antennal 3 unique, acutely angled apically. Black, with moderately dense cinereous pubescence, absent in small spots around short tactile setae. ----- *prosopidis* Werner

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