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TWO NEW SPECIES OF *CYCLOCEPHALA* FROM
ARIZONA AND MEXICO AND A NOTE ON
MELANISTIC *C. MELANOCEPHALA*
(COLEOPTERA: SCARABAEIDAE: DYNASTINAE)

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ABSTRACT

Cyclocephala aravaipensis n.sp. and *C. warneri* n.sp. are described from Arizona, U.S.A. and Chiapas, Mexico, respectively. An unusual melanistic form of *C. melanocephala* (Fab.) is reported from two localities in northeastern Quintana Roo, Mexico.

I was recently provided specimens of *Cyclocephala* species to study that were collected by Scott McCleve (Douglas, AZ) and Bill Warner (Chandler, AZ). Included within this material were two new species. Unfortunately, they arrived too late for inclusion in another paper on Mexican *Cyclocephala* just published (Ratcliffe and Delgado-Castillo 1991).

An unusual, melanistic form of *C. melanocephala* (Fab.) is also noted from Quintana Roo in Mexico. I had a female of this morph for several years that I was unable to identify. Warner's material contained an unidentified, melanistic male and female of the same species, thus allowing me to reliably obtain a name.

Cyclocephala warneri Ratcliffe, new species

(Figs. 1-4)

TYPE MATERIAL. Holotype labeled "MEXICO: Edo. Chiapas, rd. to Apic Pac, km 19 ex Ocozocoautla, VI-22-1990; @ light, collector W. B. Warner." Allotype and one paratype with same data. Two paratypes labeled "MEXICO: Chiapas, 12 mi. N. Ocozocoautla, July 10, 1971, taken at light, Clark, Murray, Hart, Schaffner," and one additional paratype labeled "COSTA RICA: Bijagua, Vol. Tenorio, Alajuela Prov., 20 Sept 1990, D. Thomas & F. Parker." Holotype and allotype deposited at the University of Nebraska State Museum. Paratypes deposited in the collections of Texas A&M University (College Station), William Warner (Chandler, AZ), and Brett Ratcliffe (Lincoln, NE).

HOLOTYPE: Male. Length 12.9 mm; width across humeri 5.9 mm. Color shining, testaceous, with clypeal apex, frons, central third of basal bead on pronotum, base of elytra either side of scutellum, elytral suture, and 2 elongate spots on each side of pygidium at base and near apex, portions of all tibiae, tarsomeres, posterior margins of sternites 1-4, metepisterna, and metepimeran black. *Head:* Surface moderately densely punctate (less so on vertex); punctures moderate in size, becoming smaller on clypeus. Clypeal apex strongly parabolic, weakly reflexed. Interocular width equaling 2.0 transverse eye diameters. Antenna with club subequal to segments 2-7. *Pronotum:* Surface moderately punctate; punctures on disc a little larger than those of frons, becoming large laterally. Posterior angles broadly rounded. Basal bead complete. *Elytra:* Surface with punctures

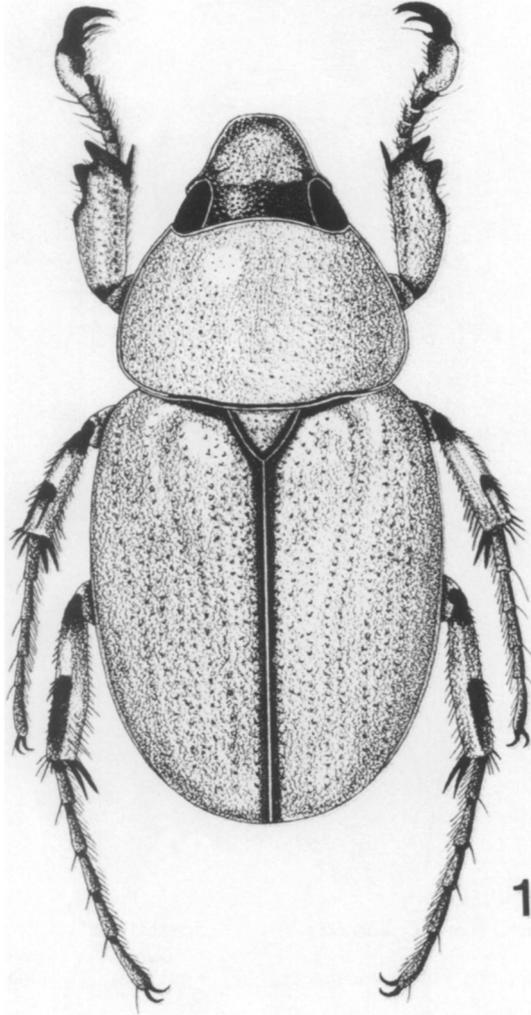
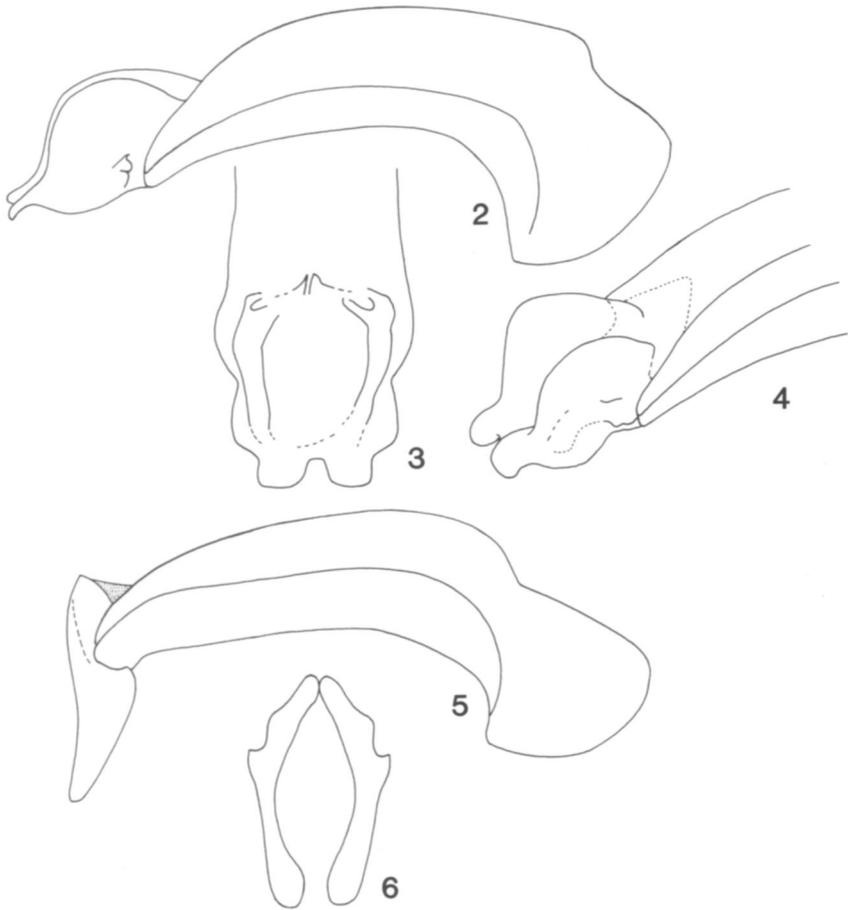


Fig. 1. Habitus of *Cyclocephala warneri*, holotype.

subequal in size to those on sides of pronotum, weakly umbilicate. *Pygidium*: Surface protuberant in apical half, sparsely punctate in center; punctures small, becoming denser laterally and rugulose at margins. *Legs*: Foretibiae with 2 teeth; apical spur strongly bent at apex. Anterior claw with larger ramus finely split at apex. Posterior tarsomeres longer than posterior tibia. *Parameres*: Figures 2–4.

ALLOTYPE. Female. Length 12.5 mm; width across humeri 6.0 mm. As holotype except in the following respects: Color black on most of head, all of anterior tibiae, most of ventral surfaces of meso- and metatibiae, and at expanded lateral margin near apical angle of elytra. *Head*: Punctures a little denser, larger. *Pronotum*: Punctures on disc a little larger. *Elytra*: Lateral margin strongly expanded near apical angle. *Pygidium*: Surface weakly convex in lateral view. *Legs*: Foretibiae with 3 strong, equidistant teeth.



Figs. 2-4. Parameres of *C. warneri*: (2) lateral view, (3) caudal view, and (4) oblique view.

Figs. 5, 6. Parameres of *C. aravaipensis*: (6) lateral view, (7) caudal view.

VARIATION. Females (4 paratypes). Length 11.1–12.5 mm; width across humeri 5.5–5.6 mm. Variation is slight in the specimens at hand and consists of each tibia having varying proportions of black and testaceous coloring.

DISTRIBUTION. *Cyclocephala warneri* is known only from the type locality in Mexico (an area of semi-deciduous tropical moist forest) and from the evergreen forests on the slopes of the Tenorio volcano in Costa Rica. The latter specimen was collected by Don Thomas, and he has confirmed (personal communication, 1991) that this specimen is Costa Rican and not a mislabeled Chiapanecan specimen.

REMARKS. This distinctively patterned species will key only as far as couplet 121 (*C. rorulenta* Höhne) or 125 (*C. maculiventris* Höhne) in Endrödi (1985) depending on whether or not my corrections (Ratcliffe 1989) to Endrödi's key have been incorporated for couplet 122. In any event, this species is clearly

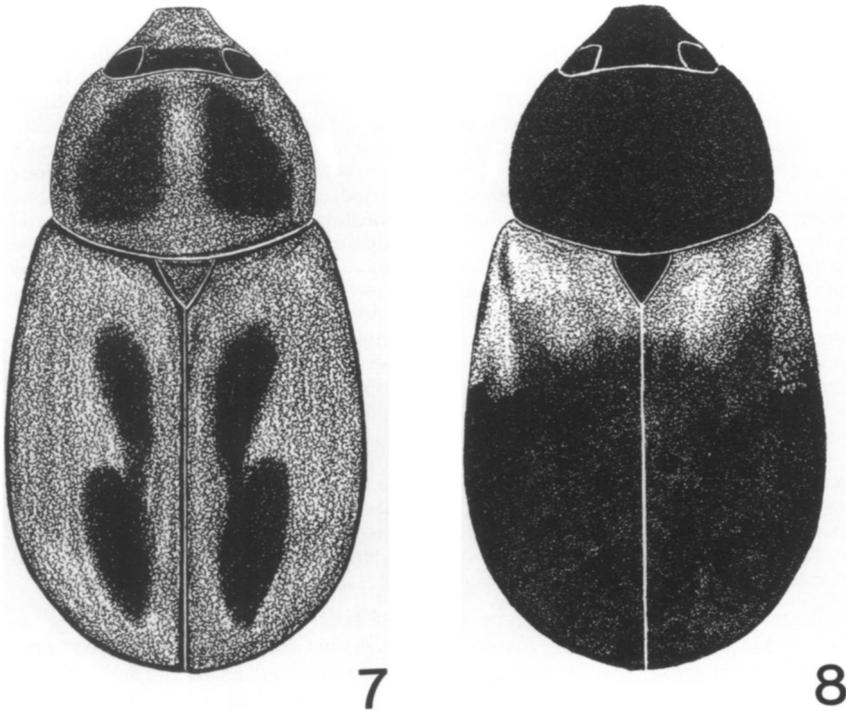


Fig. 7. Representation of vague color pattern of *Cyclocephala aravaipensis*.

Fig. 8. Melanistic form of *C. melanocephala*.

new because of the unique form of the male genitalia in combination with the color and pattern of the body and legs.

Cyclocephala warneri might be mistaken for a species of *Mimeoma* except that (1) the clypeus is not quite acute enough for *Mimeoma*, and (2) the apex of the mentum is deeply excavated whereas in *Mimeoma* the apex of the mentum is always shallowly emarginate.

ETYMOLOGY. I am pleased to name this species in honor of William Warner, who collected some of the specimens and brought them to my attention.

Cyclocephala aravaipensis Ratcliffe, new species
(Figs. 5-7)

TYPE MATERIAL. Holotype and allotype labeled "East end of Aravaipa Can., Graham Co., AZ, 7-24 & 25-1974, at light, Scott McCleve." Eighteen paratypes with same data; 3 paratypes with same data but date of VI-21-1976; 7 paratypes with same data but date of VIII-12-1975. Holotype and allotype deposited at the Florida State Collection of Arthropods (Gainesville). Paratypes deposited in the collections of Texas A&M University (College Station), University of Arizona (Tucson), U.S. National Museum (Washington, D.C.), University of

Nebraska State Museum (Lincoln), Scott McCleve (Douglas, AZ), and Brett Ratcliffe (Lincoln, NE).

HOLOTYPE. Male. Length 11.6 mm; width across humeri 5.4 mm. Color overall (including legs and sternites) dark reddish brown; frons and vertex black, clypeus piceous; pronotum either side of middle with broad, longitudinal, indistinct, fuscous cloudings; each elytron with an indistinct, longitudinal fuscous streak on mesal portion of disc behind scutellum, streak tapering posteriorly and joined with similar elongate-oval streak on posterior half of wing cover (Fig. 7). *Head:* Vertex impunctate medially; frons moderately punctate, punctures small, shallow; clypeus rugopunctate. Clypeus with apex parabolic, weakly reflexed. Interocular width equaling 3.0 transverse eye diameters. Antenna with 10 segments, club a little longer than segments 2-7. *Pronotum:* Surface sparsely punctate in center, punctures becoming moderate in density on sides; punctures small medially to moderate on sides. Base completely margined. Posterior angles broadly rounded. *Elytra:* Surface with moderately large, ocellate punctures, double rows indistinct. A few short, pale setae present on apical declivity. *Pygidium:* Surface evenly convex in lateral view, moderately punctate, becoming sparser at apex; punctures moderate in size, setigerous; setae long, testaceous. *Legs:* Foretibiae tridentate, teeth spaced subequally. Anterior, larger claw with apex entire, not split. Posterior tarsi a little longer than posterior femora. *Parameres:* Figures 5-6.

ALLOTYPE. Female. Length 12.7 mm; width across humeri 5.7 mm. As holotype except in the following respects: Pronotum generally a little darker. *Head:* Surface of clypeus coarsely rugopunctate. Clypeus with apex semicircular rather than parabolic, narrowly reflexed. *Elytra:* Lateral margin simple, not thickened or explanate. *Pygidium:* Surface sparsely punctate; punctures minute to small. A few short setae present across base, a few minute setae present elsewhere. In lateral view, surface weakly convex.

VARIATION. Males (10 paratypes). Length 10.4-13.1 mm; width across humeri 4.5-6.0 mm. The vague, fuscous markings vary from pronounced to absent on the elytra while the pronotum varies from marked as in the holotype to generally darker all over. Aside from size and markings, variation is slight. The pygidium varies from sparsely to moderately setose, and the larger anterior claw is entire in half the male paratypes and with a minute split in the other half. Since one specimen has its foretibial teeth completely worn away (presumably from digging), I believe that the minute, split claw is also easily abraded away.

Females (18 paratypes). Length 9.8-13.5 mm; width across humeri 4.3-6.4 mm. Variation among the female paratypes is slight except for size and the variable expression of markings. The dark markings may be similar to those of the allotype or reduced or completely absent.

DISTRIBUTION. This isolated species is known only from the vicinity of the junction of Aravaipa and Turkey Creeks in Aravaipa Canyon in extreme western Graham County, Arizona. The elevation is 930 m. This area, known as the Aravaipa Canyon Primitive Area, has been protected since 1969 and is administered by the Bureau of Land Management.

McCleve (1979) characterized the drainage as unique, rich in beetle taxa, accessible, but seldom visited by coleopterists. Aravaipa Creek is the least disturbed of all live streams in the Arizona portion of the Sonoran Desert and supports eight species of indigenous fish. The permanent water and high canyon walls, according to McCleve, sustain and protect large cottonwood, willow, sycamore, box elder, ash, oak, hackberry, and truly giant black walnut trees. There are a few junipers but no pines (except for piñon pines on the tablelands above the canyon).

The lush canyon provides suitable habitat for a number of plants and animals, including *C. aravaipensis*. The surrounding dry tablelands probably serve as a barrier to dispersal, thus serving to isolate these organisms.

REMARKS. Males of this species key to either couplet 157 or 184 in Endrödi (1985) depending on whether the large, anterior claw is characterized as "split" or not. The distinction may be difficult in all but the most pristine of specimens because the smaller portion of the split claw is so minute that it is easily worn away, hence not observed. If the claw is considered split, *C. aravaipensis* will key to couplet 157 (*C. complanata*). While there is an overall similarity among the parameres of both species, the two species are clearly different from one another based on body size, markings, shape of parameres, and the lateral dilation of the elytra in females of *C. complanata*.

If the large ramus of the claw is considered entire (the more likely scenario in my view), then males of this species will key to couplet 184 (*C. aequatoria*). The parameres of these two species are similar, but the two species differ in markings and color. Moreover, the lateral margin of the elytra in females of *C. aequatoria* is "knobbed" or explanate at the middle, whereas it is simple in *C. aravaipensis*.

ETYMOLOGY. This species is named after the area from which it occurs, the Aravaipa Canyon Primitive Area.

Cyclocephala melanocephala (Fab.)

(Fig. 8)

This species varies considerably in size (12–15 mm) as well as in the color of the pronotum and scutellum (reddish brown or black). As stated in Endrödi's (1985) key, the elytra in this species are "always testaceous," and this has always been consistently expressed in my experience . . . until now. I report here the existence of a melanistic form (population?) from northeastern Quintana Roo, Mexico. Three specimens were taken at Cancun on 16 August 1990 by C. and L. O'Brien and one specimen was taken at Cozumel on 5 August 1949 by C. Goodnight. All four specimens are typical of *C. melanocephala* except that the elytra are black with only the basal fifth testaceous (Fig. 8). These specimens are in the collections of Bill Warner and myself.

I recommend a notation in couplet 372 (males) and 332 (females) of Endrödi's key to *Cyclocephala* to this effect. Knowledge of this melanistic form of *C. melanocephala* should facilitate its identification.

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