



## Review of the species in the *Cyclocephala bicolor* Laporte species group (Coleoptera: Scarabaeidae: Dynastinae)

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### Abstract

The species in the *Cyclocephala bicolor* Laporte species group are revised. *C. bicolor* Laporte, *C. bicolorata* Endrödi, *C. sarahae* Ratcliffe, and *C. dichroa* Dechambre are redescribed, and *C. anibali*, **sp. n.** is described from Venezuela. The group is characterized and a key for identification of the species, drawings of the key characters, and distribution maps are presented.

**Key words:** Coleoptera, Scarabaeidae, Dynastinae, *Cyclocephala*, Neotropics, new species, taxonomy, identification key

### Resumen

Se revisan las especies en el grupo de *Cyclocephala bicolor* Laporte. Se describen *C. bicolor* Laporte, *C. bicolorata* Endrödi, *C. sarahae* Ratcliffe y *C. dichroa* Dechambre y se describe *C. anibali*, **sp. n.** de Venezuela. El grupo es caracterizado y se presentan una clave para la identificación de las especies, ilustraciones de los caracteres sinópticos y mapas de distribución.

**Palabras clave:** Coleoptera, Scarabaeidae, Dynastinae, *Cyclocephala*, Neotropico, nueva especie, taxonomía, claves de identificación

### Introduction

The *Cyclocephala bicolor* species group consists of five species similar to *Cyclocephala bicolor* Laporte and is characterized as follows:

Body broad, short, oval; pronotum red to black and elytra yellowish-brown, both without distinct dark markings; dorsal surface and pygidium glabrous; antennae with 10 antennomeres with club longer than antennomeres 2–7, but shorter than 1–7; clypeus with straight lateral borders, apex truncate and straight; anterior angles distinct to weakly rounded, surface without tubercles; pronotum without marginal bead at base; legs stout, more so in the female; protibiae with basal tooth separated from middle tooth by greater distance than that separating middle from anterior tooth; protarsi of males enlarged, largest claw cleft; mesotibiae and metatibiae with two diagonal carinae posteriorly margined with bristles, basal carina obsolete in males.

This group includes five species: *C. bicolor* Laporte, 1840; *C. bicolorata* Endrödi, 1964; *C. dichroa* Dechambre, 1992; *C. sarahae* Ratcliffe, 1992; and *C. anibali* Joly, new species.

It is necessary to comment on some characters previously used by Endrödi (1985). Endrödi separated *C. bicolor* and *C. bicolorata* (the only species in the group as defined here known to him) from *C. confusa*; *C.*

*testacea* ab. *ovulum* Bates, 1888; and *C. epistomalis* ab. *mollis* Endrödi, 1963; by the shape of the incision of the inner anterior claw of males. “Inner claw of anterior tarsi finely incised, similar to Fig. 11” (Endrödi 1985, key item Nr. 402(407), p. 108) to include the last three species, and “Inner claw of anterior tarsi broadly incised, both branches **strongly divergent**” (as in Fig. 12) (Endrödi 1985, item key Nr. 407(402), p. 109, and Fig. 12), to include *C. bicolor* and *C. bicolorata*. This character does not apply to *C. bicolor* and *C. bicolorata*. I have seen many specimens of *C. bicolor* (including some identified by Endrödi) and all the males have the inner claw of anterior tarsi widely incised, but not “strongly divergent” (Endrödi 1985, p. 109, and Fig. 12). In *C. bicolor* and *C. bicolorata* the branches of the claws are separated from one another, but their external sides (and longitudinal axes) are subparallel; in Endrödi’s (1985) Fig 12 that illustrates the character “strongly divergent” claws, the branches of the claws are separated from one another, but their external sides (and longitudinal axes) are progressively separating from one another (divergent).

In contrast those of *Cyclocephala bicolor* species group have the basal tooth of anterior tibiae distinctly more separated from the middle tooth, instead those of the mentioned species (*C. confusa* Endrödi, 1966; *C. testacea*; and *C. epistomalis*) not included in the group have it more closely set to middle tooth.

Another character used by Endrödi is the length of the antennal club. Following Endrödi’s key (Endrödi 1985, p. 108, item key Nr. 398(377)) the species in the group must have the club “about as long as the shaft without basal joint” but all species included in the group have the club evidently longer than the shaft excluding the basal antennomere.

The mention of these mistakes in Endrödi’s keys (and also in the descriptions) together with others were already pointed out by Ratcliffe (1987). These problems must be taken in account to prevent possible errors in identifying the species with Endrödi’s 1985 keys.

Collection acronyms used in the text:

AMNH	American Museum of Natural History, New York, USA.
BDGC	Bruce D. Gill Collection, Ottawa, Canada.
CCBM	Colección Carlos Bordón, Maracay, Venezuela.
CFMM	Colección Familia Mattei, Puerto Ayacucho, Venezuela.
CNCI	Canadian National Collection of Insects, Agriculture Canada, Ottawa, Canada.
HAHC	Henry and Anne Howden Collection, Ottawa, Canada (now donated to the Canadian Museum of Nature).
JMAL	Colección J. M. Ayala, Porlamar, Estado Nueva Esparta, Venezuela.
MIZA	Museo del Instituto de Zoología Agrícola “Francisco Fernández Yépez”, Universidad Central de Venezuela, Maracay, Venezuela.
MHNSL	Museo de Historia Natural La Salle, Caracas, Venezuela (currently at MIZA).
MNHN	Museum National d’Histoire Naturelle, Paris, France.
NMNH	National Museum of Natural History, Smithsonian Institution, Washington, USA.
UNSM	University of Nebraska State Museum, Lincoln, Nebraska, USA.

### Key for identification of the species of the *Cyclocephala bicolor* group of the genus *Cyclocephala*

1. Anterior tarsi enlarged (males) ..... 2
- Anterior tarsi slender (females) ..... 6
2. Second ventrite with a triangular, flat projection on posterior half; basal tooth of protibiae (Fig. 29) distinctly directed forward, separated from middle tooth by a distance about 2.0 times longer than that separating middle from anterior tooth; clypeus on apical half slightly convex in lateral view (Fig. 12) ..... *C. dichroa* Dechambre.
- Second ventrite without triangular projection; basal tooth of protibiae (Figs. 24, 26, 28, 31) with anterior border usually perpendicular to longitudinal axis of tibiae and separated from the middle tooth by a distance 1.5 times or less than that separating middle from anterior tooth; clypeus on apical half more or less flat to slightly concave in lateral

- view (Figs. 4, 8, 16) ..... 3
3. Frontoclypeal suture (Fig. 15) posteriorly projecting angularly; punctation on scutellum very fine, much more so than on middle of base of pronotum; punctation on apical region of pygidium very fine, distinctly finer than that of basal region, which is moderately fine ..... *C. anibali*, **sp. n.**
- Frontoclypeal suture (Figs. 3, 7, 11) posteriorly projecting arcuately or almost straight; punctation of scutellum fine, scarcely finer than that on center of pronotal base; punctation on apical region of pygidium fine, scarcely smaller than that of basal region, which is strong to moderately strong ..... 4
4. Punctures on base of clypeus not discrete, closely set, mostly confluent, appearing as irregular and fine, more or less transversely striate; frontoclypeal suture posteriorly projecting arcuately (Fig. 3); surface of pygidium smooth (50X) ..... 5
- Punctures on base of clypeus moderately strong, discrete, somewhat transverse, the distance between most punctures smaller than the diameter of puncture; frontoclypeal suture very slightly arcuately projecting posteriorly (Fig. 7); surface of pygidium finely alutaceous (50X) ..... *C. bicolorata* Endrödi
5. Labium (Fig. 5) with strong, dense piliferous punctures on basal two-thirds; metatibiae (Figs. 49–50) with piliferous punctures almost restricted to those of normal longitudinal series close to posterior border; distances between most punctures on apex of pygidium usually smaller than 2.0 times the diameter of punctures; apex of pygidium (in posterior view) feebly convex-truncate ..... *C. bicolor* Laporte
- Labium with one longitudinal series of long bristles on each side, converging towards base; mesotibia and especially metatibiae with numerous piliferous punctures over all surface, in addition to those of normal longitudinal series; distances between most punctures on apex of pygidium usually 2.0 times or more larger than the diameter of punctures; apex of pygidium (in posterior view) rounded ..... *C. sarahae* Ratcliffe
6. Basal tooth of protibiae distinctly anteriorly projected, separated from the middle tooth by a distance about 2.0 times larger than that separating the middle from the anterior (Fig. 30); clypeus convex in lateral view (Fig. 12) ..... *C. dichroa* Dechambre
- Basal tooth of protibiae more diagonal and/or its anterior border more or less perpendicular to longitudinal axis of tibiae, separated from the middle tooth by a distance 1.5 or less than that separating the middle from the anterior (Figs. 25, 27, 29, 32); clypeus more or less flat in lateral view (Figs. 4, 8, 16) ..... 7
7. Punctures on apical region of pygidium distinctly smaller than those of basal region. .... *C. anibali* **sp. n.**
- Punctures on apical region of pygidium scarcely smaller than those of basal region, which are strong to moderately strong ..... 8
8. Pygidium feebly convex in lateral view, surface smooth, punctures more or less strong almost to apex, on apical region somewhat smaller, usually dense, sometimes scattered ..... *C. bicolor* Laporte
- Pygidium strongly convex in lateral view, surface finely alutaceous (50X), punctures more or less strong at base, smaller on apex, most distances between punctures 2.0 or more times larger than diameter of puncture. .... *C. bicolorata* Endrödi

### *Cyclocephala bicolor* Laporte, 1840

(Figs. 1, 3–6, 19, 24–25, 33–35, 41–42, 49–50, 58, 69–70)

**Bibliography.** *Cyclocephala bicolor* Laporte 1840: 124 (description). Type (sex?) MNHN. Type locality: Cayenne. Burmeister 1847: 60 (description), Cayenne. Prudhomme 1906: 13, French Guiana. Bodkin 1919: 215, British Guiana. Höhne 1923: 359 (compared with *C. vestita*). Arrow 1937: 8, Guiana. Blackwelder 1944: 251, Guiana. Endrödi 1964: 442 (compared with *C. bicolorata*), Fig. 11 (genitalia). Endrödi 1966: 91 (key, male), 140, 143 (key, female), 156 (description male, female), Figs. 386–397 (genitalia), Venezuela, British Guiana, French Guiana, Suriname, Brazil. Gruner 1971: 845, French Guiana. Dechambre 1979: 160, Venezuela, British Guiana, French Guiana, Suriname, Brazil. Endrödi 1985: 109 (key, male), 146 (key, female), Figs. 648–649 (genitalia), French Guiana, Suriname, Guyana, Brazil. Ratcliffe 1992: 187 (compared with *C. sarahae*). Lachaume 1992: 16, plate 1, Fig. 28, Guyana, French Guiana, Suriname, Brazil. Dechambre 1992: 67 (compared with *C. dichroa*), Fig. 32 (genitalia), plate 1, Fig. 28.

**Description.** Short, oval, moderately shiny. Brownish red, frons and vertex black, elytra testaceous. Dorsal surface and pygidium glabrous, ventral pubescence sparse. **Length:** 9.0–13.0 mm.

**MALE: Clypeus** (Fig. 3) about 2.3 times as wide across base as long; sides straight, strongly convergent to truncated and feebly reflexed apex; shallowly sulcate longitudinally along middle and shallowly depressed laterally before apex, in lateral view flat to slightly concave on apical half; surface finely alutaceous, with

fine, shallow and widely annulate punctures, annulation wide, not well defined posteriorly, usually confluent, appearing as irregular and fine, more or less transverse striae; punctures simple toward apex and anterior half of sides. Frontoclypeal suture thin, arcuately projecting posteriorly. **Frons** width about 2.5 times transverse diameter of eye, finely alutaceous; punctures similar to those of clypeus, but less dense, somewhat thinner and better delimited.

**Mandibles** with external border sinuate, apex projecting externally. **Maxillae** (Fig. 6) with galea moderately robust, with two apical, one median, and three basal teeth; basal teeth very small and arising from common base; stipes projected anteriorly on inner side and with a brush of fine, black setae on apex of projection; maxillary palpi (Fig. 19) moderately robust, second palpomere longer than third, weakly widened towards apex, fourth palpomere fusiform, 2.5 times longer than preceding. **Labium** (Fig. 5) with sides almost parallel on basal two-thirds, constricted at middle of apical third; apex truncate on middle and fimbriate with long, fine yellowish-golden setae; surface almost flat, with some very small punctures on disc and one longitudinal series of long bristles on each side, converging towards base.

**Antennae** with 10 antennomeres, club more than 2.0 times the length of antennomeres 2–7 together.

**Pronotum** 1.5 times as wide as long, widest near base, sides more strongly convergent to apex on anterior half; anterior border widely and arcuately projected at middle; basal angles widely rounded; basal border without marginal bead, almost uniformly arcuate, slightly more projected in central third; surface smooth (40X); punctures annulate, moderately fine and dense, the distance between most punctures on disc, as long as or longer than diameter of punctures, punctures gradually larger and denser towards sides, the diameter of a puncture at basal angle at least 2.0 times the diameter of those on center of disc, more dense on basal angles, where the distance between most punctures is as large or smaller than the diameter of a puncture; all surface also covered with numerous minute punctures (50X or more). **Scutellum** triangular, sides feebly arcuate, apex briefly rounded; punctures similar to those of pronotal disc.

**Elytra** 1.1 times as long as wide, arcuately widened from first quarter to middle, then rounded to apex, sutural angle well defined, but rounded; humeral and apical umbones weak, with a feeble, short, elongate tumescence behind humeral umbones on external border; surface smooth, with large, shallow, annulate punctures, much smaller on sides and apex, double rows not evident, additional numerous minute punctures (50X or more) scattered over the surface; sutural interstria flat, slightly elevated on apical half. Epipleura narrow, more so apically.

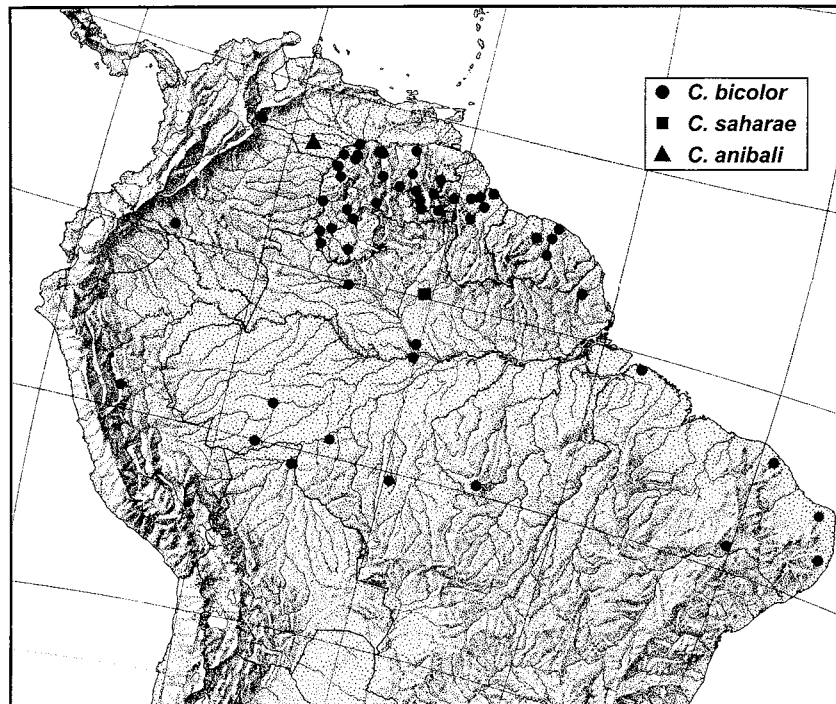
**Pygidium** 2.0 times as wide as long; in posterior view the inferior borders slightly convex, converging to feebly convexly truncated apex at an angle distinctly greater than 90°; in lateral view (Fig. 62) uniformly convex; surface smooth, shining, with large annulate punctures, punctures more dense on lateral angles; on apex more shining, the punctures smaller and less dense, the distances between most punctures less than 2.0 times their own diameter.

**Protibiae** (fig. 24) tridentate, small basal tooth separated from the intermediate tooth by a distance 1.5 times as long as that between the intermediate and the anterior teeth; intermediate and anterior teeth well developed, basal tooth with its anterior border more or less perpendicular to long axis of tibiae; apical spur almost straight, surpassing the apex of the first tarsomere. **Protarsi** (Fig. 34–35) enlarged; tarsomere 5 shorter than 1–4 together, without ventrointernal carina, ventral side with short and fine longitudinal striae on inner side of apex and sometimes also on inner side of base; tarsomere 4 longitudinally striated on about apical half, tarsomere 3 on apical third; largest claw (Fig. 41–42) wide, flattened, moderately widely cleft at apex, both branches feebly divergent (external border of small branch not continuous with internal curvature of the claw). **Metafemur** (Fig. 49) about 2.3 times as long as its maximum width. **Metatibiae** (Fig. 49) robust, widened at apex, bristles on diagonal carina and apex strong. **Metatarsi** (Fig. 33) subequal in length to tibiae, with first tarsomere widened towards apex, with apical bristles similar to those of apex of tibiae.

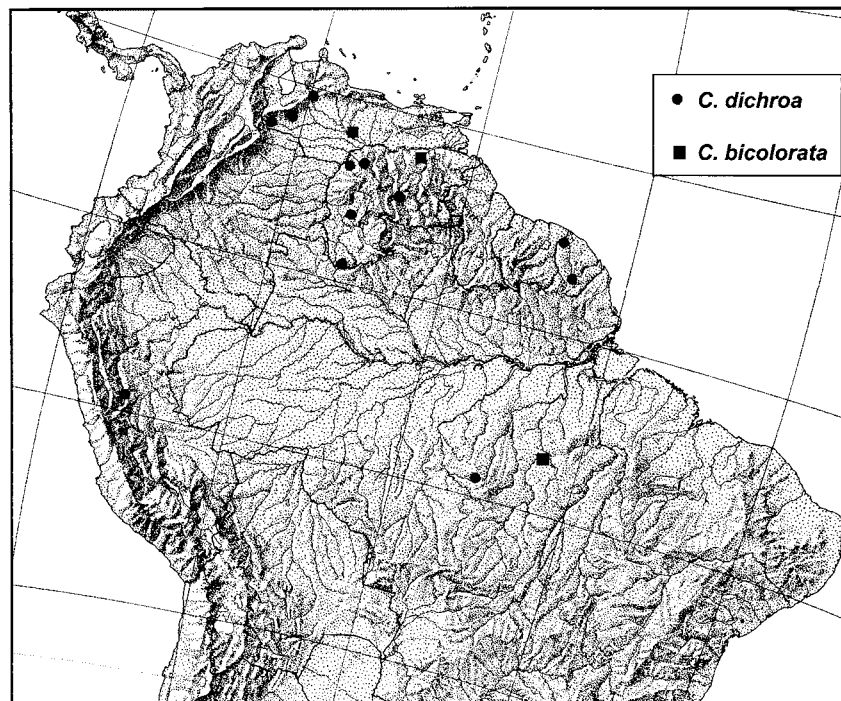
**Prosternal projection** high, apex alutaceous, anterior part transversely oval, externally pointed; posterior part shorter but wider than anterior, posterior border fimbriate with long bristles.

**Pronotal hypomera** alutaceous, with sparse, erect setae. Mesopleura, metapleura, and sides of metasternum alutaceous, with large and very dense confluent, annulate punctures; disc of metasternum

smooth, with small, scattered punctures; metacoxae with punctures similar to those of pleurae but smaller and more disperse. Ventrites with annulate, moderately dense punctures, punctures smaller and sparser on apical ventrites.



**FIGURE 1.** Distribution of *Cyclocephala bicolor* (circles), *C. anibaldi*, **sp. n.** (triangle), and *C. saharae* (square).



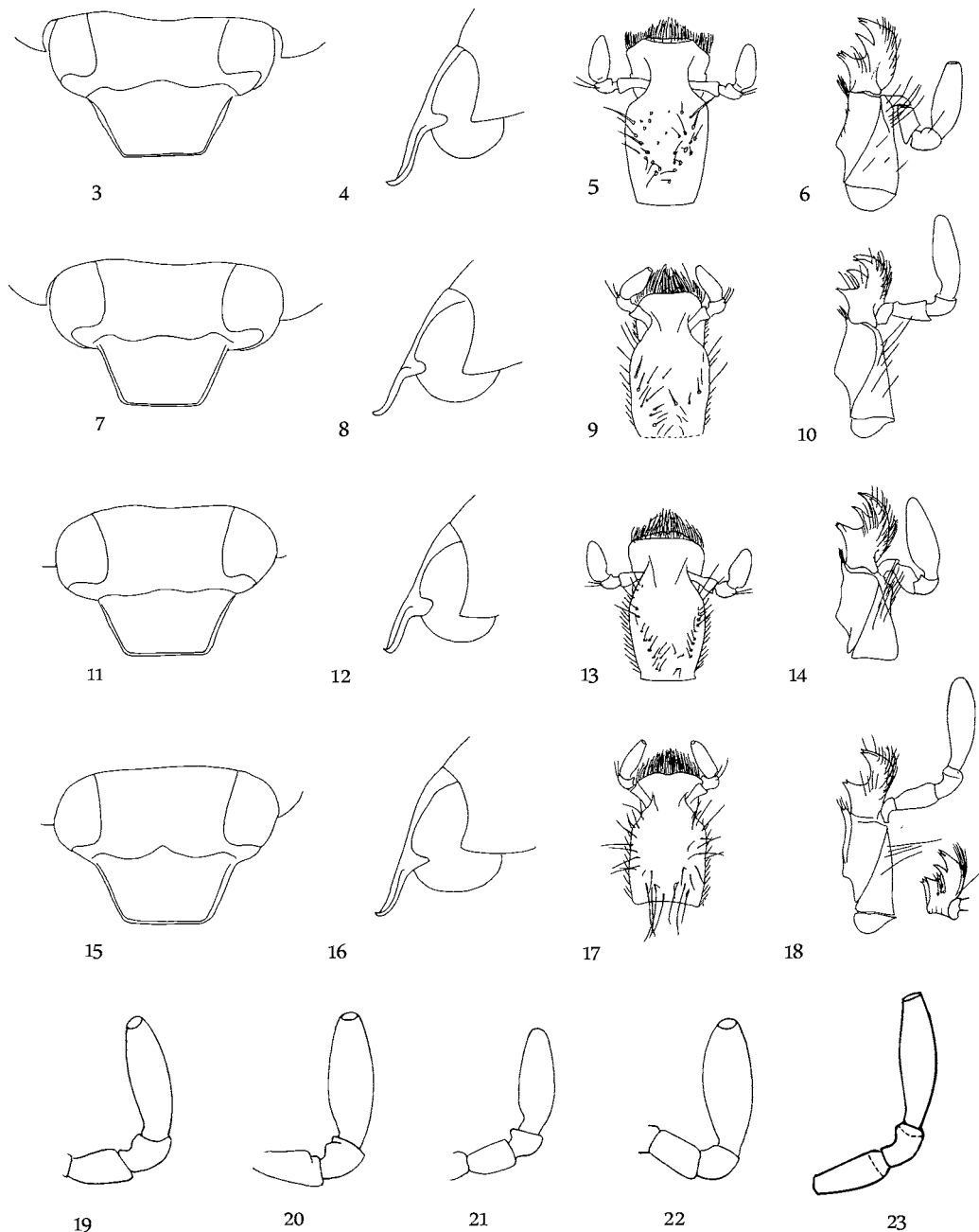
**FIGURE 2.** Distribution of *Cyclocephala dichroa* (circles), and *C. bicolorata* (squares).

**Aedeagus:** Figs. 69–70.

**FEMALE:** differs from the male in the following characters: punctation generally stronger, that of pygidium of the same size; protibiae Fig. 25; protarsi slender; posterior femora (Fig. 50) somewhat stronger;

epipleura (Fig. 58) strongly narrowed at level of metacoxa, then widened up to level of middle of fourth ventrite.

**Distribution:** Venezuela, Colombia, Guyana, Suriname, French Guiana, Brazil, Peru, and Bolivia. Colombia, Peru, and Bolivia are new country records.



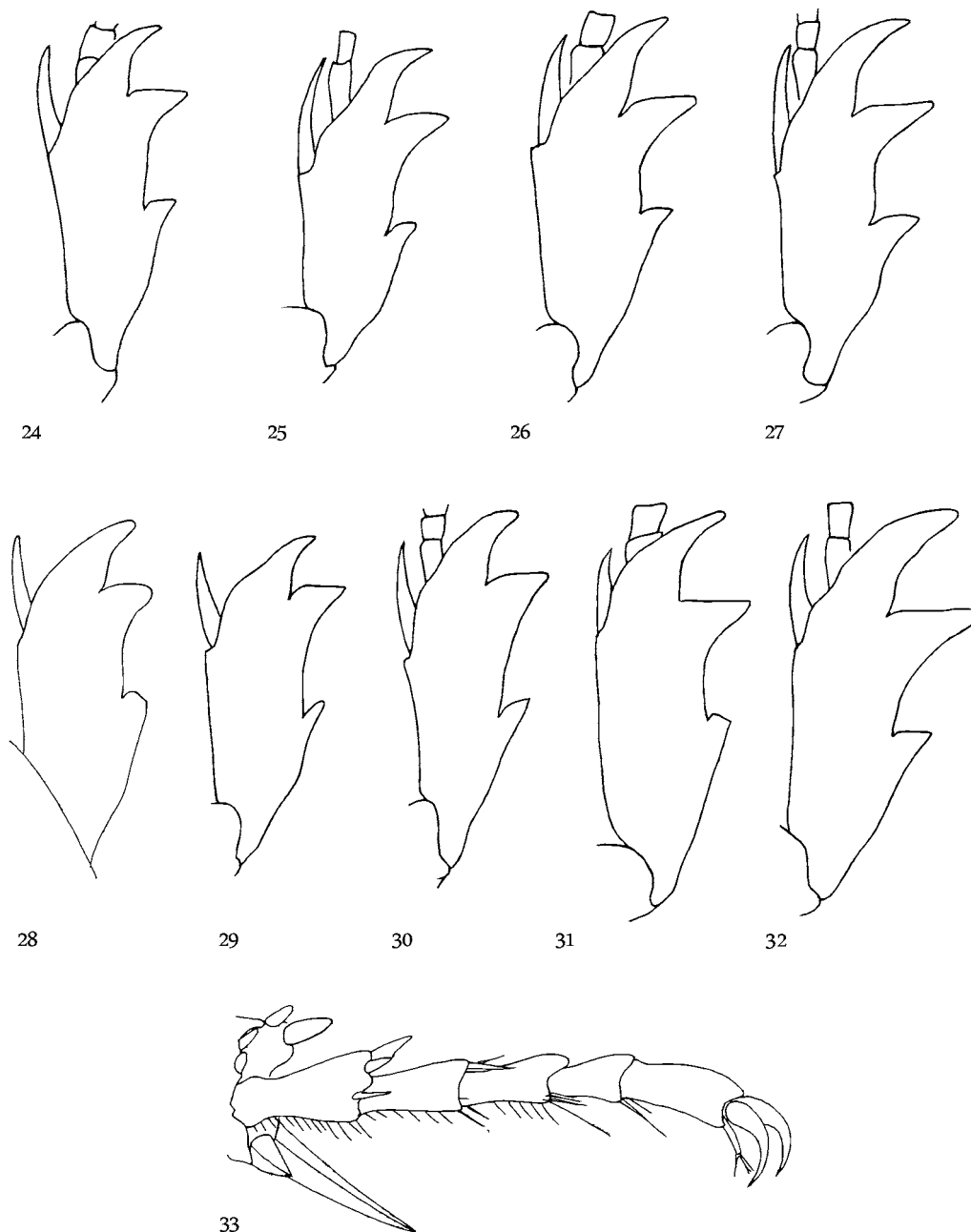
**FIGURES 3–23.** Figs. 3–6. *Cyclocephala bicolor*: 3) head frontal, 4) head lateral, 5) labium, 6) maxilla. Figs. 7–10. *Cyclocephala bicolorata*: 7) head frontal, 8) head lateral, 9) labium, 10) maxilla. Figs. 11–14. *Cyclocephala dichroa*: 11) head frontal, 12) head lateral, 13) labium, 14) maxilla. Figs. 15–18. *Cyclocephala anibali* (holotype): 15) head frontal, 16) head lateral, 17) labium, 18) maxilla. Figs. 19–23. Maxillary palpi: 19) *C. bicolor*, 20) *C. bicolorata*, 21) *C. sarahae* (holotype), 22) *C. dichroa*, 23) *C. anibali* (holotype).

**Specimens studied:** **VENEZUELA:** Amazonas: Coromoto, Dto. Atures, VI-1979, 1 F (HAHC). Culebra, Caño Negro, P. N. Duida-Marahuaca, 3° 33' N, 65° 55' W, 6-16-X-1983, Exped. Terramar, 4 F (MIZA). La Esmeralda, LF Station, 01-X-1997, leg. Krimse, 1 F (MIZA). Pto. Ayacucho, 22-IV-1967, P. J. Anduze, 1 M (HAHC); 4-15-XII-1992, G. Romero, 1 F (MIZA). San Carlos de Río Negro, 7-13-1982, A.

Chacón-G. Yépez, 1 M, 15 F (MIZA); idem, 1° 55' N, 67° 01' W, 4-14-III-1984, J. Clavijo-J. De Marmels, 1 F (MIZA). San Fernando de Atabapo, 17-VIII-1982, CEUM Fac. Agronomía, 1 F (MIZA). Santa Lucía, 15-21-XI-1982, A. Chacón-G. Yépez, 1 F (MIZA). Talud Cerro Aracamuni, 1 ° 29' N, 65° 38' W, 600 m, 18-24-X-1987, Exped. Terramar, 3 M, 4 F (MIZA). **Bolívar**: Anacoco, 60 m, 6° 5' N, 61° 8' O, 10-30-VIII-1979, Expedición La Salle, 3 M, 2 F (MIZA). Canaima, Río Carrao, (Campamento Yuri), 9-15-II-1972, J. M. Ayala, 1 F (JMAL). El Paují, 100 Km O Sta. Elena, 1100 m, 5-IV-80, 2 M, 2 F (CCBM). El Dorado-Sta. Elena, Km 88, 160 m, 28-IX-1967, C. J. Rosales-M. Gelbez-L. Rodríguez V., 2 F (MIZA); 27-IX-1967, L. J. Joly, 1 F (MHNLS). El Dorado-Sta. Elena, Km 109, 460 m, 6-IX-1964, P. J. Salinas, 1 F (MIZA). Carret. El Dorado-Sta. Elena, Km 88, 100 m, 27-IX-1967, L. J. Joly, 1 F (MHNLS); idem, 200 m, 7-IV-80, C. Bordón, 1 F (CCBM). 5 Km E Caicara, 11-VI-1996, B. D. Gill, 1 M (BDGC). Carret. Caicara-San Juan de Manapiare, Km 170, 300 m, 21-30-XII-1973, J. L. García, 1 M (HAHC). Cerro Guaiquinima, 1000 m, 5° 53' N, 63° 30' O, 3-4-II-1990, Exped. FUDECI, J. De Marmels-A. Chacón, 2 F (MIZA). Guri, Río Caroní, 100 m, 16-XI-1966, J. & B. Bechyne-E. Osuna, 3 F (MIZA); 11-IV-1968, J. Salcedo, 1 M, 1 F (MIZA). Kamarata, 450 m, 24-II-1978, L. J. Joly, 2 M, 5 F (MIZA). Kanarakuni, Alto Caura, 450 m, 10-13-IX-1964, F. Fernández Y.-J. Bechyne, 5 F (MIZA). 35 Km N Las Trincheras, 17-VI-1987, S. & J. Peck, woodland, forest edge, UV trap, 15 Km N Corocito, 2 M (HAHC). Los Pijiguaos, 190 m, Exped. MIZA, UCV, 3-13-VI-1992, 4 M, 4 F (MIZA). Pendare, Río Parguaza, 6° 6' N, 67° 5' W, 6-7-VI-1997, E. Osuna-A. Chacón-F. Rojas, 1 M, 38 F (MIZA). Río Caroní, Salto Las Babas, 8-10-IV-1983, Exped. Inst. Zool. Agric., 5 M, 5 F (MIZA). Río Caura, El Playón, 23-XI-1978, 3 F (MIZA). Río Caura, Salto Pará, 250 m, 21-XI-178, B. Bechyné, 3 F; idem, 20-22-XI-1978, A. Chacón, 1 F (MIZA). Río Caura, Jabillal, 100 m, 25-XI-1978, A. Chacón, 2 F (MIZA). Río Guaniamo, 6° 45' N, 66° 01' O, 160 m, 25-28-V-1979, J. Clavijo-A. Chacón-G. Yépez, 3 M, 2 F (MIZA). Río Paragua, E Río Cachicamo, 425 m, 11-IV-1983, Exped. Inst. Zool. Agric., 1 F (MIZA). San Ignacio de Yuruaní, Gran Sabana, 830 m, 19-IV-1988, A. Chacón, 1 M (MIZA). Suapure, Caura River, V-27-1899, E. A. Klages, 1 M (HAHC). Uonquen, 850 m, 4-III-1966, A. Pérez, 1 F (MIZA). **Táchira**: Navay, 200 m, 30-X-78, C. Bordón, 1 F (CCBM). **COLOMBIA**: **Caquetá**, Río Caquetá at Tres Esquinas, 18-I-1969, R. E. Dietz IV, 1 M (NMNH). **GUYANA**: British Guiana, 4 M, 1 F (AMNH), 1 M (MIZA). Demerara (Bartica), R. J. Crew, 1 M, 3 F (NMNH). Kamakusa, Jan, 1923, 1 M, 1 F, (AMNH). Kartabo, Bartica District, 7-IX-1920, Wm. L. Beebe collection, 1 F (AMNH); 11-X-1920, Gift of N. Y. Zool. Soc. 1 F (AMNH). Mazaruni, Potaro District, Takuku Mountains, 6° 15' N, 59° 5' W, 7-XII-1983, at blacklight in forest clearing near streams, Earthwatch Research Expedition, P. J. Spangler & W. E. Steiner, 1 M (NMNH). Penal settlement, Bartica District, 1917, Gift of N. Y. Zool. Soc., 1 F (AMNH). Rupununi, XI, 1913, 1 F (AMNH). Rockstone, Essequibo River, 4 F (NMNH). Tumatumari, 1918, 19 F (AMNH), 1 F (MIZA); idem, VIII, 1913, 1 M, 17 F (AMNH). Tumatumari, Potaro R., 29-VI-1927, Cornell Univ. Lot 760 Sub 117, 1 F (HAHC). **SURINAME**: Aibinia, 29-VII-1975, D. Engleman, at light, 1 F (UNSM). Brokopondo District, Brownsberg Natuurpark, Mazaroni Plateau, 400–500 m, 20 August 1982, W. E. Steiner, Earthwatch Suriname Expedition, August 1982, Collins, Early, Oberman, Pollock, Putnem, Steiner, 4 M, 2 F (NMNH). Moengo Boven, Cottica, 16-V-1927, Cornell Univ., Lot 760, Sub. 60, 1 F (NMNH). **FRENCH GUIANA**: Kaw Rd. PK 37, 19-VIII-1995, 1 M (UNSM). Maroni River, 1 F (NMNH). Route de Petit Saut PK9 25-VIII-2000, Y. Ponchel, 5 M (HAHC). St. Jean, W. M. Schaus col. 7 F (NMNH). 13 Km W D-5, Risq. Rd. 14-VIII-1995, J. E. Wappes, 3 M, 6 F (UNSM); 22-VIII-1995, 2 M, 1 F (UNSM), 1 M, 1 F (HAHC). **BRAZIL**: Robinson bequest, 1929, 1F (NMNH). **Amazonas**: AM 010, Km 244, 20-I-1977, B. C. Ratcliffe, 7 M, 6 F (UNSM). AM 010, Km 268, 18-I-1977, B. C. Ratcliffe, 3 F (UNSM). Manaus, 30-X-83, C. Bordón, 2 M, 1 F (CCBM); 13-I-1978, B. C. Ratcliffe, 4 M, 2 F (UNSM); 13-XI-1978, B. C. Ratcliffe, 3 M, 3 F (UNSM). CEPLAC, 30 Km NE Manaus, 12-XII-1976, B. C. Ratcliffe, 1 M, 1 F (UNSM). **Amapá**: Serra Lombard Lomao, 24-VIII-1961, J. & B. Bechyne, 3 F (MIZA). **Ceará**: Fortaleza, IX-1943, at light, Mac Creary, 1 F (NMNH). **Mato Grosso**: Reserva Humboldt, 10° 11' S, 59° 48' W, 13-14-VII-1977, B. C. Ratcliffe, 1 F (UNSM). **Pará**: Braçançã, 20-I-1949, J. M. Díaz, 1 M (HAHC). Rio Negro, Santa Isabel, X-1930, Holt, Blake & Agostini, 5 F (NMNH). Cachimbo, 400 m, 14/21-IX-1955, L. Travassos & Oliveira, 5 M, 1 F (HAHC). Rio Xingu Camp., 3° 39' S, 52° 22' W, ca 60 Km S Altamira, 1-7-X-1986, 1F (NMNH). Santarem, IX-1933, L. C. Scaramuzza, 2 F (NMNH). **Pernambuco**: Recife, 10-X-50,

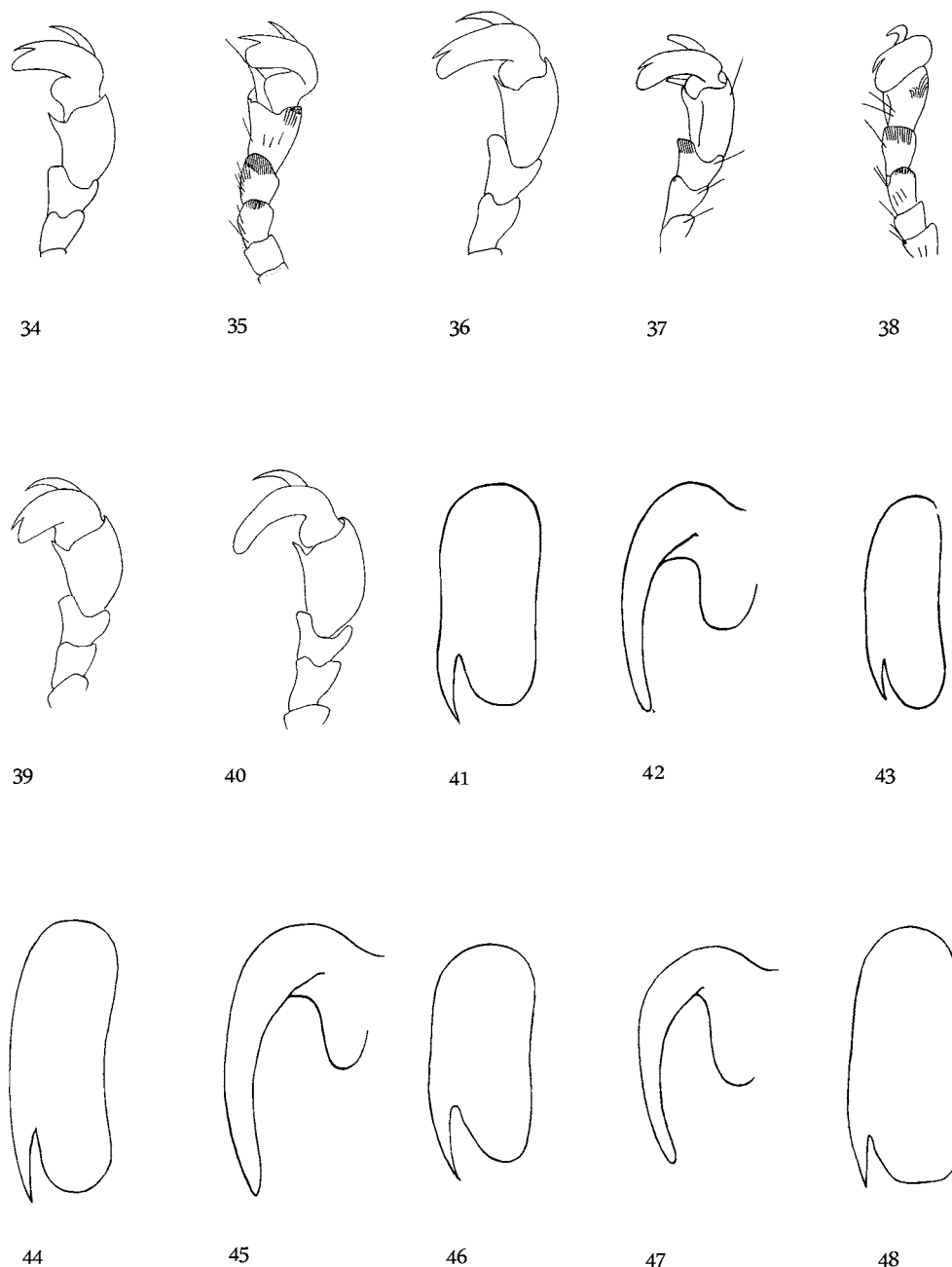
Asua leg, 1 F (HAHC). **Río Grande do Norte:** Natal, VIII-X-1954, 1 M (HAHC). **Rondonia:** Porto Velho, Rio Madeira, Mann & Baker, 1918, 1 F (NMNH). **Terr. Acre:** Río Branco, 15-V-1952, M. Alvarenga col., 1 F (HAHC). Ro. (?): Santa Cruz da Serra, 20-VIII-85, J. P. Caldwell, 3 F (HAHC). I have also seen specimens from **BOLIVIA:** Beni, Guayamerin (AMNH). **BRAZIL:** Amazonas: Pará (AMNH). **PERU:** Tingo María (AMNH).

**Other localities:** **SURINAME:** Pakira-Iméné; Paramaribo; Demerara. **FRENCH GUIANA:** Acarouany; Ante cume Pata (Haut Kialo); Carbet République; Cayenne; Fleuve Oyapock, du Saut-Maripa à Massikiri; Kourou forêt; Mana; Organabo; route Conte; Saint Élie; Sinnamary. **BRAZIL:** Gorotire; São Felix do Xingu (Moyen Xingu) (Endrödi 1966, Gruner 1971, Dechambre 1979).



**FIGURE 24–33.** Figs. 24–25. *Cyclocephala bicolor*: 24) protibiae, male; 25) protibiae, female. Figs. 26–27. *Cyclocephala bicolorata*: 26) protibiae, male; 27) protibiae, female. Fig. 28 *Cyclocephala sarahae* protibiae, male (holotype). Figs. 29–30. *Cyclocephala dichroa*: 29) protibiae, male; 30) protibiae, female. Figs. 31–32. *Cyclocephala anibaldi*: 31) protibiae, male (holotype); 32) protibiae, female (allotype). Fig. 33. *Cyclocephala bicolor* metatarsus.





**FIGURE 34–48.** Figs. 34–35. *Cyclocephala bicolor* male: 34) protarsus, lateral; 35) protarsus, ventral. Fig. 36. *Cyclocephala bicolorata* male protarsus, lateral. Figs. 37–38. *Cyclocephala sarahae* male (holotype): 37) protarsus, lateral; 38) protarsus, ventral. Fig. 39. *Cyclocephala dichroa* male protarsus, lateral. Fig. 40. *Cyclocephala anibali* male (holotype) protarsus, lateral. Figs. 41–42. *Cyclocephala bicolor*, male: 41) largest claw, apical; 42) largest claw, lateral. Fig. 43. *Cyclocephala sarahae* male (holotype) largest claw, apical. Figs. 44–45. *Cyclocephala bicolorata*, male: 44) largest claw, apical; 45) largest claw, lateral. Figs. 46–47. *Cyclocephala dichroa*, male: 46) largest claw, apical; 47) largest claw, lateral. Fig. 48. *Cyclocephala anibali* male (holotype) largest claw, apical.

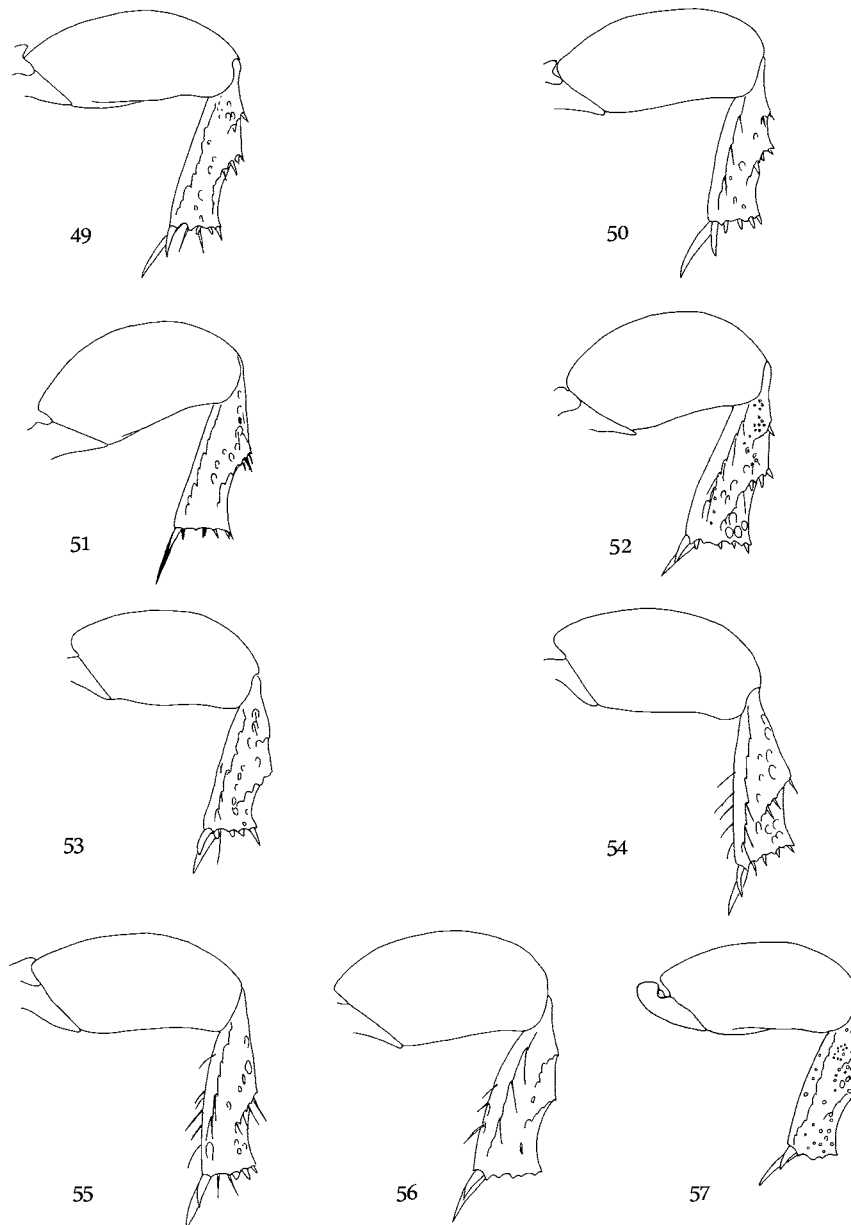
***Cyclocephala bicolorata* Endrödi, 1964**

(Figs. 2, 7–10, 20, 26–27, 36, 44–45, 51–52, 59, 63–64, 73–74)

**Bibliography.** *Cyclocephala bicolorata* Endrödi 1964: 441 (description, male; compared with *C. bicolor*), Fig. 10 (genitalia). Holotype male Col. Endrödi. Type locality: Venezuela: Llanos. Endrödi 1966: 91 (key, male), 143 (key, female), 157 (description, male), Fig. 388 (genitalia), Venezuela. Dechambre 1979: 160,

Venezuela, Brazil. Endrödi 1985: 110 (key, male), 146 (key, female), Fig. 650 (genitalia), Venezuela. Dechambre 1992: 67 (compared with *C. dichroa*), Fig. 33 (genitalia).

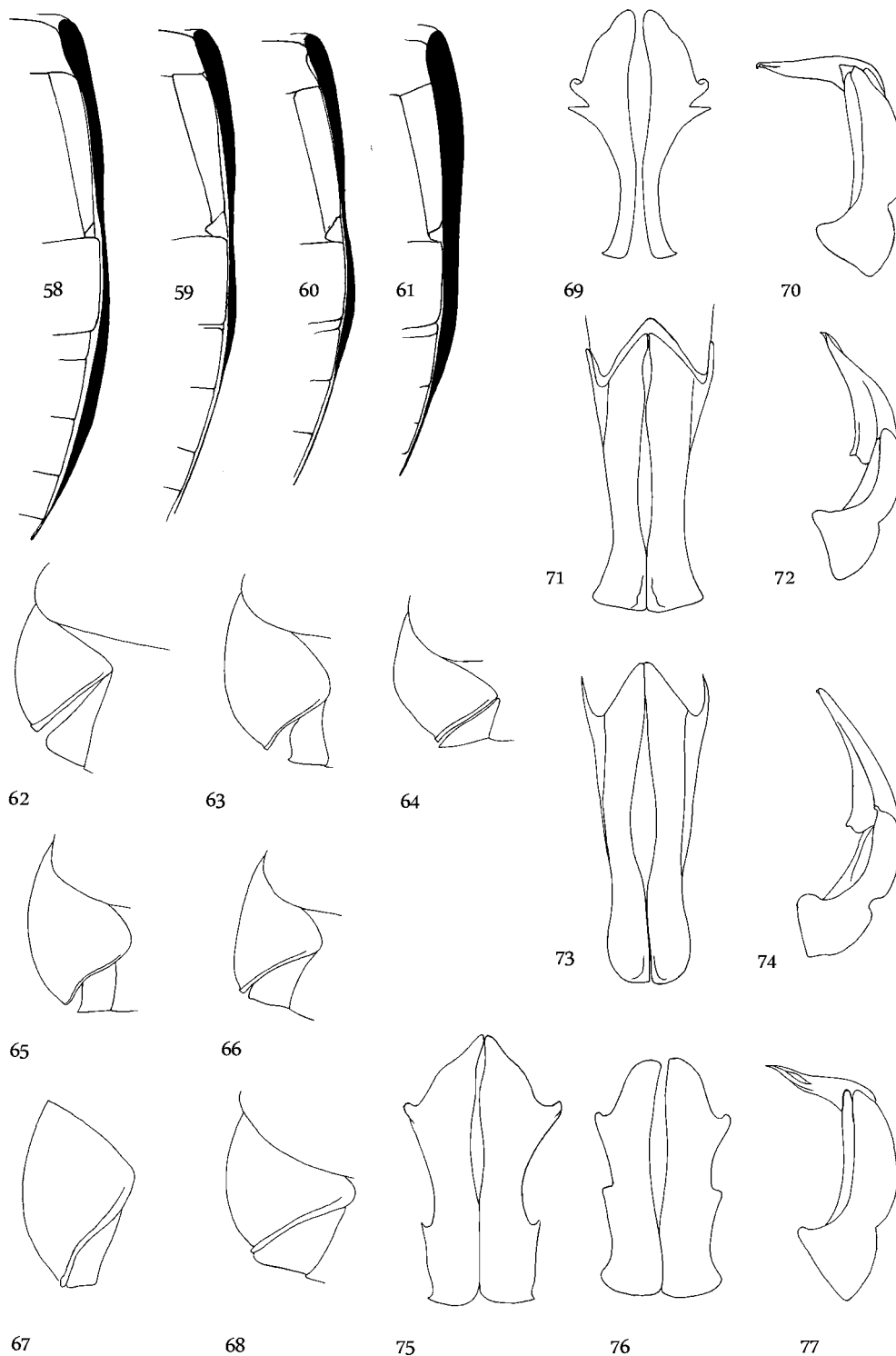
**Description.** Short, oval, moderately shiny. Red to brownish red; frons and vertex black, elytra testaceous. Dorsal surface and pygidium glabrous, ventral pubescence sparse. **Length:** 11.0–11.8 mm.



**FIGURES 49–57.** Figs. 49–50. *Cyclocephala bicolor*: 49) metaleg, male; 50) metaleg, female. Figs. 51–52. *Cyclocephala bicolorata*: 51) metaleg, male; 52) metaleg female. Figs. 53–54. *Cyclocephala dichroa*: 53) metaleg, male; 54) metaleg, female. Figs. 55–56. *Cyclocephala anibaldi*: 55) metaleg, male (holotype); 56) metaleg, female (allotype). Fig. 57. *Cyclocephala sarahae* metaleg, male (holotype).

**MALE: Clypeus** (Fig. 7) about 2.4 times as wide across base as long; sides straight, strongly convergent to truncated and feebly reflexed apex; shallowly sulcate longitudinally along middle and shallowly depressed laterally before apex, in lateral view flat to slightly concave on apical half; surface finely alutaceous, with punctures moderately strong, discrete, somewhat transverse (especially on base), dense, the distance between most punctures smaller than the diameter of the puncture, more dense towards apex. Frontoclypeal suture (Fig. 7) thin, slightly arcuately projecting posteriorly. **Frons** width about 2.5 times transverse diameter of eye,

finely alutaceous; punctures similar to those of clypeus, but somewhat more scattered, except on a narrow, smooth, transverse band behind frontoclypeal suture and another longitudinal band along midline.



**FIGURE 58–77.** Figs. 58–61. Female epipleurae (ventral view): 58) *Cyclocephala bicolor*, 59) *C. bicolorata*, 60) *C. dichroa*, 61) *C. anibaldi*. Figs. 62–68. Pygidium (lateral view): 62) *C. bicolor*, male; 63) *C. bicolorata*, male; 64) *C. bicolorata*, female; 65) *C. dichroa*, male; 66) *C. dichroa*, female; 67) *C. anibaldi*, male (holotype); 68) *C. anibaldi*, female (allotype). Figs. 69–70. *Cyclocephala bicolor*: 69) parameres, caudal view; 70) aedeagus, lateral view. Figs. 71–72. *Cyclocephala dichroa*: 71) parameres, caudal view; 72) aedeagus, lateral view. Figs. 73–74. *Cyclocephala bicolorata* (holotype): 73) parameres, caudal view; 74) aedeagus, lateral view. Fig. 75. *Cyclocephala sarahae* (holotype), parameres, caudal view. Figs. 76–77. *Cyclocephala anibaldi* (holotype): 76) parameres, caudal view; 77) aedeagus, lateral view.

**Mandibles** with external border sinuate, apex projecting externally. **Maxillae** (Fig. 10) with galea moderately strong, with two apical, one median and three basal teeth, the basal teeth very small and arising from a common base; stipes projected anteriorly on inner side and with a brush of fine, yellowish brown setae on apex of projection; maxillary palpi (Fig. 20) moderately robust, second palpomere with a small projection at base, longer than third, fourth palpomere fusiform, 3.0 times as long as preceding. **Labium** (Fig. 9) with sides slightly convex on basal two-thirds, not constricted at the middle of apical half; apex truncate on ventral side, with two small projections at middle on oral side, and fimbriated with long, fine, yellowish brown setae; surface without punctures on disc, with one longitudinal series of long bristles on each side, converging towards base.

**Antennae** with 10 antennomeres, club about 2.0 times the length of antennomeres 2–7 together.

**Pronotum** 1.4 times as wide as long, widest near base, sides more strongly convergent to apex on anterior half; anterior border widely and arcuately projected at middle; basal angles widely rounded; basal border without marginal bead, almost uniformly arcuate, slightly more projected in central third; surface finely alutaceous (40X); punctures annulate, moderately fine and dense, the distance between most punctures on disc as long as or longer than diameter of punctures, punctures gradually larger toward sides, diameter of a puncture about 2.0 times the diameter of those on center of disc, more dense on basal angles, where the distance between most punctures is as long as or shorter than the diameter of a puncture; surface also covered with numerous minute punctures (50X or more). **Scutellum** triangular, sides feebly arcuate, apex briefly rounded; punctures similar to those on pronotal disc.

**Elytra** 1.2 times as long as wide, arcuately widened from first quarter to middle, then rounded to apex, sutural angle well defined, but rounded; humeral and apical umbones weak; with feeble, short, elongate tumescence behind humeral umbones on external border; surface smooth, with large, shallow, annulate punctures, much smaller on sides and apex, double rows not evident; also with numerous minute punctures (50X or more) scattered over all surface; sutural interstria flat, weakly elevated on apical half. Epipleura narrow, more so apically.

**Pygidium** 2.0 times as wide as long; in posterior view the inferior borders straight, converging to narrow and feebly convex-truncate apex in an angle distinctly greater than 90°; in lateral view (Fig. 63) slightly convex, more strongly convex on apical half; surface finely alutaceous, with abundant minute punctures and with large annulate punctures, more dense on lateral angles; punctures on apex distinctly smaller and less dense, the distances between most punctures more than 2.0 times its own diameter.

**Protibiae** (Fig. 26) tridentate, small basal tooth separated from the intermediate tooth by a distance 1.4 times as long as that between the intermediate and anterior teeth; intermediate and anterior teeth well developed, basal tooth with its anterior border more or less perpendicular to longitudinal axis of tibiae; apical spur almost straight, surpassing apex of first tarsomere. **Protarsi** (Fig. 36) enlarged; tarsomere 5 shorter than 1–4 together, without ventro-internal carina, ventral side with very short and very fine longitudinal striae on inner side of apex; tarsomere 4 longitudinally striated on less than apical half; tarsomere 3 striated only on inner side of apical half; largest claw (Figs. 44–45) wide, flattened, moderately narrowly cleft at apex, the external border of small branch continuous with internal curvature of the claw. **Metafemur** (Fig. 51) robust, 2.0 times as long as its maximum width, its anterior border strongly convex. **Metatibiae** (Fig. 51) robust, widened at apex, bristles on diagonal carina and apex very strong. **Metatarsi** subequal in length to tibiae, with first tarsomere widened towards apex, with apical bristles similar to those of apex of tibiae.

**Prosternal projection** high, apex alutaceous, anterior part transversely oval, externally pointed; posterior part shorter but wider than anterior, posterior border fimbriate with long bristles.

**Pronotal hypomera** alutaceous, with sparse erect setae. Mesopleura, metapleura, and sides of metasternum alutaceous, with large, dense confluent, annulate punctures; disc of metasternum smooth, with small, scattered punctures; metacoxae with punctures similar to those of pleurae but smaller and more disperse. Ventrites with annulate, moderately dense punctures, smaller and sparser on apical ventrites.

**Aedeagus:** Figs. 73–74.

**FEMALE:** differs from the male in the following characters: punctation generally stronger; protibiae Fig.

27; protarsi slender; metafemora (Fig. 52) somewhat stronger; metatibiae Fig. 52; epipleura (Fig. 59) strongly narrowed at level of anterior border of metacoxa, then widened up to level of middle of second ventrite; pygidium in lateral view Fig. 64.

**Distribution:** Venezuela, Brazil.

**Specimens studied:** **VENEZUELA:** **Apure:** Hato El Frío, Fundo El Ceibote, 100 m, 29-V-1975, C. J. Rosales, 1 F (MIZA). **Bolívar:** Guri, Río Caroní, 11-IV-1968, J. Salcedo, 1 M (MIZA).

**Other localities:** **VENEZUELA:** Llanos. **BRAZIL:** São Felix do Xingu (Moyen Xingu) (Dechambre 1979).

### ***Cyclocephala sarahae* Ratcliffe, 1992**

(Figs. 1, 21, 28, 37–38, 43, 57, 75)

**Bibliography.** *Cyclocephala sarahae* Ratcliffe 1992: 187 (description male, female; compared with *C. bicolor*, *C. testacea* ab. *ovulum*), Fig. 6 (photograph), Figs. 27–28 (genitalia). Holotype male UNSM. Type locality: Brazil (Amazonas, Rio Demeni, nr. equator).

**Description.** Short, oval, moderately shiny. Brownish red, frons and vertex black, elytra testaceous. Dorsal surface and pygidium glabrous, ventral pubescence sparse. **Length:** 11.4 mm.

**MALE:** **Clypeus** about 2.8 times as wide across base as long; sides straight, strongly convergent to truncate and feebly reflexed apex; shallowly sulcate longitudinally along middle and shallowly depressed laterally before apex, in lateral view flat to slightly concave on apical half; surface finely alutaceous, with shallow and widely annulate punctures, the annulation wide, not well defined posteriorly, most punctures confluent, appearing as irregular and fine, more or less transverse striae. Frontoclypeal suture thin, bisinuate, not pointed posteriorly at middle. **Frons:** width about 2.8 times transverse diameter of eye, finely alutaceous; punctures smaller than those of clypeus, somewhat transverse by confluence of punctures, most punctures separated by distances more or less their own diameter.

**Mandibles** with external border sinuate, apex projecting externally. **Maxillae** not visible; maxillary palpi (Fig. 21) moderately robust, second palpomere longer than third, scarcely widened towards apex, fourth fusiform, 3.5 times longer than preceding. **Labium** narrow, lateral borders slightly arched on basal two-thirds, slightly constricted at middle of apical third; apex truncate on middle of ventral side, more arcuately produced and with small emargination at middle on oral side, and fimbriate with long, fine blackish brown setae; surface convex on anterior part, depressed on center of base, basal two-thirds with strong, dense piliferous punctures, the setae long; anterior third with minute, scattered punctures.

**Antennae** with 10 antennomeres, club about 2.0 times the length of antennomeres 2–7 together.

**Pronotum** 1.5 times as wide as long, widest near base, sides more strongly convergent to apex on anterior half; anterior border widely and arcuately projected at middle; basal angles widely rounded; basal border without marginal bead, almost uniformly arcuate, slightly more projected in central third; surface finely alutaceous (40X); punctures annulate, moderately fine and dense, the distance between most punctures on disc as long as or longer than diameter of punctures, punctures gradually larger towards sides, the diameter of a puncture at basal angle at least 2.0 times the diameter of those on center of disc, more dense on basal angles, where the distance between most punctures is as large or smaller than the diameter of a puncture; surface also covered with numerous minute punctures (50X or more). **Scutellum** triangular, sides feebly arcuate, apex briefly rounded; punctures similar to those of pronotal disc.

**Elytra** 1.2 times as long as wide, arcuately widened from first quarter to middle, then rounded to apex, sutural angle well defined, but rounded; humeral and apical umbones weak; a feeble, short, elongate tumescence behind humeral umbones on external border; surface smooth, with large, shallow, annulate punctures, much smaller on sides and apex, double rows not evident, also with numerous minute punctures (50X or more) scattered over all the surface; sutural interstria flat, weakly elevated on apical half. Epipleura narrow, more so apically.

**Pygidium** 2.2 times as wide as long; in posterior view the inferior borders slightly convex, converging to widely rounded apex in an angle distinctly greater than 90°, but less than in *C. bicolor*; apex not truncate; in lateral view uniformly convex; surface smooth, shining, with large annulate punctures, more dense on lateral angles; shiner apically, the punctures smaller and less dense, distances between most punctures more than 2.0 times their own diameter.

**Protibiae** (Fig. 28) tridentate, small basal tooth separated from intermediate tooth by a distance 1.5 times as long as that between the intermediate and the anterior teeth; intermediate and anterior teeth well developed, basal tooth with its anterior border more or less perpendicular to longitudinal axis of tibiae; apical spur almost straight, slightly surpassing apex of first tarsomere. **Protarsi** (Fig. 37–38) enlarged; tarsomere 5 shorter than 1–4 together, without ventro–internal carina, ventral side with very short and very fine longitudinal striae on inner side of apex; tarsomere 4 longitudinally striate on apical half, tarsomere 3 striated on apical third; largest claw (Fig. 43) wide, flattened, narrowly cleft at apex, the external border of small branch continuous with internal curvature of the claw. All **femora** almost uniformly, not densely pilose, especially the mesofemora, on which, in addition to the normal longitudinal series of piliferous punctures close to anterior and posterior borders (seen in natural position of the leg), with numerous piliferous punctures over all the surface. **Metafemur** (Fig. 57) 2.3 times as long as its maximum width; **metatibiae** (Fig. 57) robust, widened at apex, bristles on diagonal carina broken in the holotype, and those of apex very strong (mostly missing from the holotype). **Metatarsi** subequal in length to tibiae, with first tarsomere widened towards apex, with apical bristles similar to those of apex of tibiae.

**Prosternal projection** high, apex alutaceous, anterior part transversely oval, externally pointed; posterior part shorter but wider than anterior, posterior border fimbriate with long bristles.

**Pronotal hypomera** alutaceous, with sparse erect setae. Mesopleura, metapleura, and sides of metasternum alutaceous, with large, dense, confluent, annulate punctures; disc of metasternum smooth, with small, scattered punctures; metacoxae with punctures similar to pleurae but smaller and more disperse. Ventrites with annulate, moderately dense punctures, punctures smaller and sparser on apical ventrites.

**Aedeagus**: Fig. 75.

**FEMALE**: differs from the male in the following characters: punctuation generally stronger; protarsi slender; metafemora more robust; epipleura differences with *C. bicolor* not observed when studying the allotype.

**Distribution**: Brazil: Amazonas (only known from type locality).

**Specimens studied**: **BRAZIL: Amazonas**: Rio Demeni, N. R. Equator, IV-10-78, L. A. Lacey, 1 male (holotype), 1 female (allotype) (UNSM).

### ***Cyclocephala dichroa* Dechambre, 1992**

(Figs. 2, 11–14, 22, 29–30, 39, 46–47, 53–54, 60, 65–66, 71–72)

**Bibliography**. *Cyclocephala dichroa* Dechambre 1992: 67 (description of male; compared with *C. bicolor*, *C. bicolorata*), Fig. 31 (genitalia), French Guiana. Holotype male, MNHN. Type locality: French Guiana: Route du Kaw, PK12.

**Description**. Short, oval, moderately shiny. Brownish red, posterior part of clypeus, frons brownish red or black, vertex black, elytra testaceous, sometimes with base and a reddish brown posteriorly narrowed sutural band; dorsal surface and pygidium glabrous, ventral pubescence sparse. **Length**: 10.0–13.0 mm.

**MALE: Clypeus** (Fig. 11) about 2.4 times as wide across base as long; sides straight, strongly convergent to truncate and not reflexed apex, shallowly sulcate longitudinally along middle and shallowly depressed laterally before apex, in lateral view slightly convex on apical half; surface finely alutaceous, with fine, shallow and widely annulate punctures, annulation wide, not well defined posteriorly, sometimes confluent, in which case appearing as irregular and fine, more or less transverse striae. Frontoclypeal suture (Fig. 11) thin, not well defined, feebly bisinuate, but not pointed posteriorly at middle. **Frons**: width about 2.4 times

transverse diameter of eye, finely alutaceous; punctures stronger and more discrete than those on clypeus.

**Mandibles** with external border sinuate, apex projecting externally. **Maxillae** (Fig. 14) with galea moderately robust, with two apical, one median and three basal teeth, the basal teeth very small and arising from a common base; stipes projected anteriorly on inner side and with a brush of fine yellowish brown setae on apex of projection; maxillary palpi (Fig. 22) moderately robust, second palpomere widened towards apex, longer than third, fourth fusiform, more than 3.0 times as long as preceding. **Labium** (Fig. 13) with sides slightly convex on basal two-thirds, not constricted at middle of apical third; apex uniformly convex on ventral side, more arcuately produced, with small emargination at middle on oral side, fimbriate with long, fine, yellowish brown setae; surface almost flat, impunctate on disc, with one longitudinal series of long bristles on each side converging towards base.

**Antennae** with 10 antennomeres, club almost 2.0 times the length of antennomeres 2–7 together.

**Pronotum** 1.5 times as wide as long, widest near base, sides more strongly convergent to apex on anterior half; anterior border widely and arcuately projected at middle; basal angles widely rounded; basal border without marginal bead, almost uniformly arcuate, slightly more projected in central third; surface finely alutaceous (40X); punctures annulate, moderately fine and dense, the distance between most punctures on disc as long as or longer than diameter of punctures, punctures gradually larger toward sides, the diameter of a puncture about 2.0 times the diameter of those on center of disc, more dense on basal angles where the distance between most punctures is as long as or shorter than diameter of a puncture; all surface also covered with numerous minute punctures (50X or more). **Scutellum** triangular, sides feebly arcuate, apex briefly rounded; punctures similar to those on pronotal disc.

**Elytra** 1.1 times as long as wide, arcuately widened from first quarter to middle, then rounded to apex, sutural angle well defined, but rounded; humeral and apical umbones weak; a feeble, short, elongate tumescence behind humeral umbones on external border; surface smooth, with large, shallow, annulate punctures, much smaller on sides and apex, double rows not evident, also with numerous micropunctures (50X or more) scattered all over the surface; sutural interstria flat, a little elevated on apical half. Epipleura narrow, more so apically.

**Pygidium** almost 2.0 times as wide as long; in posterior view the inferior borders almost straight, converging to feebly convex-truncate apex in an angle distinctly greater than 90°; in lateral view (Fig. 65) convex, more strongly on apical half; surface smooth, shiny, with large annulate punctures, more dense on lateral angles; on apex more shining, the punctures somewhat smaller and less dense, the distances between most punctures 1.0–2.0 times their own diameter.

**Protibiae** (Fig. 29) tridentate, small basal tooth separated from the intermediate tooth by a distance 2.0 times as long as that between intermediate and anterior teeth; intermediate and anterior teeth well developed, basal tooth acute and anteriorly projected; apical spur almost straight, surpassing apex of first tarsomere. **Protarsi** (Fig. 39) enlarged; tarsomere 5 shorter than 1–4 together, without ventro-internal carina, ventral side with inconspicuous longitudinal striae on inner side of apex; tarsomere 4 longitudinally striated on about apical half, tarsomere 3 usually without apical striae, sometimes (2 out of 6 males) with 1–2 striae on inner side of apex; largest claw (Figs. 46–47) wide, flattened, moderately widely cleft at apex, the external border of small branch continuous with internal curvature of the claw. **Metafemur** (Fig. 53) 2.0 times as long as its maximum width. **Metatibiae** (Fig. 53) robust, widened at apex, bristles on diagonal carina and apex very strong. **Metatarsi** subequal in length to tibiae, with first tarsomere widened towards apex, with apical bristles similar to those of apex of tibiae.

**Prosternal projection** high, apex alutaceous, anterior part transversely oval, externally pointed; posterior part with posterior border fimbriate with long bristles.

**Pronotal hypomera** alutaceous, with sparse, erect setae. Mesopleura, metapleura, and sides of metasternum alutaceous, with large, dense, confluent, annulate punctures; disc of metasternum smooth, with small, scattered punctures; metacoxae with small, moderately dense punctures, more dense and confluent on posterior and external borders. Ventrites with moderately dense annulate punctures, some open posteriorly; second ventrite with strong, triangular carina along middle, from basal quarter to apex.

**Aedeagus:** Figs. 71–72.

**FEMALE:** differs from the male in the following characters: punctation generally stronger, that of pygidium of the same size; protarsi slender; protibiae Fig. 30; metafemora (Fig. 54) somewhat more robust; metatibiae Fig. 54; pygidium (Fig. 66) flattened in lateral view; epipleura (Fig. 60) strongly narrowed before anterior border of metacoxae, then widened up to level of middle of second ventrite.

**Distribution:** Venezuela, French Guiana, Brazil, and Peru. Venezuela, Brazil, and Peru are new country records.

**Specimens studied:** **VENEZUELA:** **Amazonas:** Culebra, P. N. Duida-Marahuaca, 3° 44' N, 65° 46' W, 24-26-I-1992, Exped. Terramar, J. Clavijo-A. Chacón, 1 F (MIZA). Pto. Ayacucho, 22-IV-1967, P. J. Salinas, 1 M (MIZA); 4-15-XII-1982, G. Romero, 4 F (MIZA). Río Baría, 0° 55' N, 66° 10' W, 140 m, L. J. Joly-A. Chacón, 1 F (MIZA). **Barinas:** Reserva Forestal de Ticoporo, 230 m, 10-IV-1968, en la luz, F. Fernández Y.-L. J. Joly, 1 F (MIZA). **Bolívar:** El Barroso, Río Matú, 7-I-1972, J. Salcedo, 1 F (MIZA). Los Pijiguaos, 600 m, 3-13-VI-1992, Exped. MIZA, 1 M (MIZA). Río Guaniamo, 6° 45' N, 66° 01' W, 8-12-V-1979, 1 M (MIZA). **Portuguesa:** Biscucuy, 13-IV-1981, 1 M (MIZA). **Táchira:** Nula, 9-III-1967, L. J. Joly-V. Obregón, 2 M, 1 F (MHNLS). **BRAZIL:** **Pará:** Cachimbo, 400 m, 14/21-IX-1955, L. Travassos & S. Oliveira, 5 M, 1 F (HAHC). **PERU:** **Huánuco:** Tingo María, 17-V-1947, 2,200 ft, J. C. Pallister Coll. Donor Frank Johnson, 1 F (AMNH).

**Other localities:** **FRENCH GUIANA:** Route de Kau; Saül; St. Laurent (Dechambre 1992).

### *Cyclocephala anibali*, new species

Figs. 1, 15–18, 23, 31–32, 40, 48, 55–56, 61, 67–68, 76–77

**HOLOTYPE male, ALLOTYPE female. VENEZUELA:** **Apure:** Capanaparo, Hato Los Turpiales, 8-V-1980, E. Osuna (MIZA). **PARATYPES. VENEZUELA:** **Apure:** Fundo La Florida [6° 52' 30" N, 68° 57' 44" W], cr. río Quitaparo, 7° 05' N, 68° 36' W, 12-13-XI-2001, E. Osuna, 1 M, 1 F (MIZA).

**Description. Holotype male.** Short, oval, moderately shiny. Brownish red, frons, except anterior part, and vertex black, elytra testaceous. Dorsal surface and pygidium glabrous; ventral pubescence sparse. **Length:** 11.0 mm.

**Clypeus** (Fig. 15) about 2.3 times as wide across base as long; sides straight, strongly convergent to truncate and arcuately reflexed apex; shallowly sulcate longitudinally along middle and shallowly depressed laterally before apex, in lateral view flat to slightly concave on apical half; surface finely alutaceous, with fine, discrete, shallow, punctures thinner and sparser toward apex and anterior half of sides. Frontoclypeal suture thin, bisinuate and angularly projecting posteriorly at middle. **Frons:** width about 2.8 times transverse diameter of eye, finely alutaceous; punctures, except on smooth longitudinal middle line, fine, confluent by pairs so they appear as transverse, stronger and not confluent posteriorly.

**Mandibles** with external border sinuate, apex projecting externally. **Maxillae** (Fig. 18) with galea moderately robust, with two apical, one median, and three basal teeth, the basal teeth very small and arising from a common base; stipes anteriorly projected on inner side, and with a brush of fine yellowish brown setae on apex of projection; maxillary palpi (Fig. 23) moderately robust, second palpomere subcylindrical, longer than third, fourth fusiform, more than 3.0 times as long as preceding. **Labium** (Fig. 17) with sides slightly convex on basal two-thirds, not constricted at middle of apical third; apex convex and widely emarginated at middle, and fimbriate with long, yellowish brown setae; surface almost flat, with one longitudinal series of long bristles on each side, converging towards base.

**Antennae** with 10 antennomeres, club about 1.5 times the length of antennomeres 2–7 together.

**Pronotum** 1.5 times as wide as long, widest near base, sides more strongly convergent to apex on anterior half; anterior border widely and arcuately projected in middle; basal angles widely rounded; basal border without marginal bead, almost uniformly arcuate, slightly more projected in central third; surface smooth (40X); punctures annulate, moderately fine and dense, the distance between most punctures on disc as long as



or longer than diameter of punctures, punctures gradually larger towards sides, the diameter of a puncture about 1.5 times the diameter of those on center of disc, more dense on basal angles, where the distance between most punctures is as large as or smaller than diameter of punctures; all surface also covered with numerous minute punctures (50X or more). **Scutellum** triangular, sides feebly arcuate, apex briefly rounded; punctures much finer than those of pronotal disc.

**Elytra** 1.2 times as long as wide, arcuately widened from first quarter to middle, then rounded to apex, sutural angle well defined, but rounded; humeral and apical umbones slight; a feeble, short, elongate tumescence behind humeral umbones on external border; surface smooth, with large, shallow, annulate punctures, much smaller on sides and apex, double rows not evident, also with numerous minute punctures (50X or more) scattered over all the surface; sutural interstria flat, weakly elevated on apical half. Epipleura narrow, more so apically.

**Pygidium** 1.9 times as wide as long; in posterior view the inferior borders almost straight, converging to widely and feebly convex-truncate apex at an angle of about 90°, in lateral view (Fig. 67) uniformly convex, more strongly on apical half; surface smooth, shiny, with small and dense annulate punctures, distances between most punctures as large as or smaller than diameter of punctures on basal half; punctures on apical region much smaller, simple, the distances between most punctures much longer than the diameter of punctures.

**Protibiae** (Fig. 31) tridentate, short basal tooth separated from intermediate tooth by a distance 1.2 times as long as that between intermediate and anterior teeth; intermediate and anterior teeth well developed, basal tooth with its anterior border more or less perpendicular to long axis of tibiae; apical spur almost straight, surpassing apex of first tarsomere. **Protarsi** (Fig. 40) enlarged; tarsomere 5 shorter than 1–4 together, without ventro-internal carina, ventral side with very short and very fine longitudinal striae on inner side of apex; tarsomere 4 longitudinally striate on apical third, tarsomere 3 on apical fifth; largest claw (Fig. 48) wide, flattened, moderately narrowly cleft at apex, external border of small branch continuous with internal curvature of claw. **Metafemur** (Fig. 55) 2.3 times as long as its maximum width. **Metatibiae** (Fig. 55) robust, widened at apex, bristles on diagonal carina and apex very strong. **Metatarsi** subequal in length to tibiae, with first tarsomere scarcely widened towards apex, with apical bristles similar to those of apex of tibiae.

**Prosternal projection** high, apex alutaceous, anterior part transversely oval, not externally pointed; posterior part not wider than anterior one, posterior border fimbriate with long bristles.

**Pronotal hypomera** alutaceous, with sparse erect setae. Mesopleura, metapleura, and sides of metasternum alutaceous, with large and very dense confluent, annulate punctures; disc of metasternum smooth, with small, disperse punctures; metacoxae with punctures similar to pleurae but smaller and more disperse. Ventrites with fine, annulate, moderately dense punctures.

**Aedeagus:** Figs. 76–77.

**Allotype female.** differs from the male in the following characters: punctation generally stronger; protibiae as in Fig. 32; protarsi slender; metafemora (Fig. 56) somewhat more robust; epipleura (Fig. 61) relatively wide in relation to other species in the group (see Figs. 58–60), gradually narrowed to beginning of second ventrite; pygidium in lateral view as in Fig. 68.

**Etymology.** This species is named in honor of my friend Anibal Chacón.

**Distribution.** Venezuela.

**Diagnosis.** *Cyclocephala anibali* can be differentiated from all other species in the *Cyclocephala bicolor* species group by the following combination of character states: Surface of clypeus finely alutaceous with discrete punctures; frontoclypeal suture posteriorly projecting angularly; antennal club about 1.5 times as long as antennomeres 2–7 together; punctures on scutellum very fine, distinctly finer than those on middle of base of pronotum; punctures on basal half of pygidium small and dense, distinctly finer on apical half; prosternal projection with anterior part not externally pointed; basal tooth of protibia not forwardly directed, its anterior border more or less perpendicular to longitudinal axis of tibia; pygidium about 1.9 times as wide as long. The aedeagus is relatively wide with apical external angles rounded

*Cyclocephala sarahae* is very similar to *C. anibali*, but it can be differentiated because most punctures on

clypeus are confluent, the frontoclypeal suture is sinuate, not posteriorly projecting angularly, the antennal club about 2.0 times as long as antennomeres 2–7 together, punctures on scutellum similar to those on pronotal disc, punctures on basal half of pygidium large, smaller on apical half, the prosternal projection with anterior part externally pointed, the pygidium about 2.2 times as wide as long and the aedeagus is pointed on external apical angles.

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## References cited

- Arrow, G.J. (1937) Dynastinae. *Coleopterorum Catalogus*, 21, part 156, 3–124.
- Blackwelder, R.E. (1944) Checklist of the coleopterous insects of Mexico, Central America, the West Indies and South America, Part. 2. *Bulletin of the United States National Museum*, 185, 189–341.
- Bodkin, G.E. (1919) Notes on the Coleoptera of British Guiana. *Entomologist Monthly Magazine*, 55, 210–219.
- Burmeister, H. (1847) *Handbüch der Entomologie*, volume 5, 1–584. Berlin.
- Dechambre, R.-P. (1979) Missions entomologiques en Guyane et au Brésil (Coleoptera Dynastidae) *Revue Française d'Entomologie*. (N. S.), 1(4), 160–168.
- Dechambre, R.-P. (1992) Nouveaux Cyclocephalini des genres *Cyclocephala* et *Aspidolea* (Col. Dynastidae). *Les Coléoptères du Monde*, 14, 57–75, color plate 12.
- Endrödi, S. (1964) Eine Reihe von neuen *Cyclocephala*-Arten (Col., Melolonthidae, Dynastinae). *Folia Entomologica Hungarica* (n. s.), 17(31), 433–470.
- Endrödi, S. (1966) Monographie der Dynastinae (Coleoptera, Lamellicornia). I Teil. *Entomologische Abhandlungen Staatliches Museum für Tierkunde in Dresden*, 33, 1–460.
- Endrödi, S. (1985) *The Dynastinae of the World*. Dr. W. Junk Publishers, Dordrecht. 800 pp.
- Gruner, L. (1971) Scarabaeidae Melolonthinae, Dynastinae, Rutelinae, Cetoniinae [Coleoptera] récoltés en Guyane Française par la Mission du Muséum National d'Histoire Naturelle. *Annales de la Société Entomologique de France* (N. S.), 7(4), 843–848.
- Höhne, W. (1923) Neue Cyclocephalen (Col. Dyn.). *Deutsche Entomologische Zeitschrift*, 1923 (4), 345–375.
- Lachaume, G. (1992) Dynastidae américains. *Coléoptères du Monde*, 14, 1–56, plates A–C + 1–11.
- Laporte, F.L. de (1840) *Histoire Naturelle des Insectes Coléoptères*, volume 2. Duméril, Paris, 563 pp., 36 plates.
- Prudhomme, M. (1906) *Catalogue des coléoptères de la Guyane Française recueillis par M. Prudhomme de 1870 à 1906*. Impr. Gouvernement, Cayenne, 46 pp.
- Ratcliffe, B.C. (1987) Book Review. *The Dynastinae of the World*, by S. Endrödi. *Bulletin of the Entomological Society of America*, 33, 196–197.
- Ratcliffe, B.C. (1992) New species and country records of Brazilian *Cyclocephala* (Coleoptera: Scarabaeidae: Dynastinae). *Tidschrift voor Entomologie*, 135(2), 179–190.