

Papéis Avulsos de Zoologia

A REVIEW OF *EURYSOLEUS* CHAUDOIR (COLEOPTERA, CARABIDAE)

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ABSTRACT

In this preliminary account of the genus Eurycoleus Chaudoir (Curabidae, Lebiini), the number of valid species is reduced from nine to six: E. fasciatopunctatus Reiche is synonymized with E. macularius Chevrolat; E. belti Bates with E. tredecimpunctatus Chaudoir; E. piresus Liebke is transferred to Lia Eschscholtz. The genus and species are redescribed and new distributional data added.

In the course of preparation of a revision of the large Neotropical genus of Lebiini, *Lia* Eschscholtz, 1829, I had the opportunity to study materials of *Eurycoleus* Chaudoir, 1848, including some of the types preserved in the British Museum (Natural History), London, and in the Muséum National d'Histoire Naturelle, Paris.

I wish to acknowledge the help received from the Royal Society (London), the Conselho Nacional de Pesquisas (Rio de Janeiro) and the Fundação de Amparo à Pesquisa do Estado de São Paulo, which enabled me to spend some time in Europe in 1970/1971, and permitted the study of the collections of the Muséum National d'Histoire Naturelle, Paris (MNHN) and the British Museum (Natural History), London (BMNH), on which a considerable part of this paper is based. Additional materials studied belong to the Museu de Zoologia, Universidade de São Paulo (MZUSP), the American Museum of Natural History, New York (AMNH), the Canadian National Collection, Ottawa (CNC), the Museu of Comparative Zoology, Cambridge (MCZ), the Instituto Biológico, Secretaria da Agricultura, São Paulo (IB), and to the private collection of my friend Jacques Nègre, Versailles, France (CN). Special thanks are due to the persons responsible for these collections, for the facilities extended to my work. I am also indebted to R. L. Araujo and U. R. Martins for criticism of the manuscript.

Little is to be said about methods. Redescriptions rest heavily on color characters. As in most Lebiini, the species are morphologically very homogeneous, the best characters being color patterns. Lack of suitable material prevented a comparative study of the male geni-

talia. Only *E. poecilopterus* had these organs studied (fig. 6). Literature references are complete, except as to catalog citations. It does not seem very purposeful to repeat these references if there be no important change in nomenclature.

Eurycoleus Chaudoir, 1848

Eurycoleus Chaudoir, 1848: 124; Lacordaire,, 1854: 129-130; Chaudoir, 1869: 235-236; Bates, 1883: 185.

Relatively large Lebiini (10 to 12 mm), of yellowish testaceous ground color on elytra, and orange yellowish on head, pronotum and ventral areas; elytra with very variable pattern of black spots.

Head with very large, bulging eyes; fronto-clypeal suture well-marked; two pairs of ocular setae and one pair of setae on clypeus. *Mouthparts* (of *E. poecilopterus* Buquet; figs. 1-4): mandibles large and flat, left one with a small, median tooth; labium without basal tooth. *Antennae* short, usually reaching slightly behind pronotum, eleven-segmented, with relatively small scape, pilose from apical half of IV; pilose segments, on both sides, with a longitudinal and glabrous area along the middle; usually black, in some species scape and one or two following segments testaceous. *Pronotum* slightly wider than head, of typical shape (fig. 7), with to pairs of pronotal setae (one at widest point, at lateral angle, and one at basal angle); median line always impressed; shiny, very finely punctate; in most species testaceous, in some with black margin or black marginal spots, and in one, *septemplagiatus* Chaudoir, with two discal spots. *Scutellum* small, triangular, finely punctate; usually testaceous. *Elytra* always much wider than pronotum, with well developed humeri; outer apical angle usually rounded, apical margin usually concave-convex; without apical, transparent membrane; sutural angle sharp. Striate-punctate, each elytron with short, scutellar striole and nine complete striae; striae only very finely punctate, the punctures usually very difficult to distinguish from the dense, interstitial punctuation. Elytra convex from suture to IX stria, where slightly expanded laterally on a horizontal plane; setigerous punctures thus pre-marginal; except for these long, pre-marginal setae, elytra are glabrous. *Hind wings* completely developed in all species. *Adbomen* with more or less equally well developed segments; all segments very shiny; last tergite not completely covered by the elytra, usually with black spots. *Legs*: IV tarsal segment not bilobed; claws pectinate; in males I to III segments thicker than in females, more or less symmetric, biserially squamulose (phânères adhésives of french authors) underneath. In all species legs with black "knees", tibiae and tarsi.

Discussion

Relationships of *Eurycoleus* with other Lebiini are very difficult to define, especially because the Lebiini in general have not been as yet satisfactorily classified, and also because the survey of the Neotropical fauna is far from satisfactory. The genus was originally placed in the Coptoderini ("Coptodérides" of Chaudoir, 1869; Coptoderinae of Bates, 1883), a taxon close to the Lebiini, at present sometimes given separate status (*e. g.* in Basilewsky, 1953: 205) or considered as a subgroup of Lebiini (*e. g.* Lindroth, 1969: 1014). However this group is treated, *Eurycoleus* Chaudoir is best placed near *Catascopus* Kirby, *Coptodera* Dejean and *Lelis* Chaudoir.

Thus defined *Eurycoleus* is not very closely related to *Lia* Eschscholtz, with which it is sometimes confused, especially because of the similar facies. In most undetermined collections the two genera are found together. There has been some confusion in the literature as well. In the original description of his *Lebia macularia* (= *Eurycoleus macularis*), Chevrolat (1835, n.º 131) mentions that: "...M. de Laporte a formé, avec les insectes de cette division, un genre qu'il a nommé *Chelonodema*". *Chelonodema* Castelnau, however, is a synonym of *Lia* Eschscholtz, and has nothing whatsoever to do with *Eurycoleus*. At that time the limits of carabid genera were still very broad. It is more surprising to see the confusion made by Liebke, who, after having published a study on the species of *Lia* (Liebke, 1928, 1929), in 1935 described *Eurycoleus piresus* from Ribeirão Pires, São Paulo, Brazil. The types of this species (one specimen said to be in Liebke's own collection and probably destroyed, and one said to be in the Paris Museum), have not been located, but I have seen specimens from near the type-locality. They answer Liebke's description (in spite of its failing to mention important characters such as the IV tarsal segment, bilobed in *Lia* and simple in *Eurycoleus*), thence my present transference of this species to *Lia*, where it is better placed, as will be seen in the forthcoming revision of that genus.

As understood by myself now, *Eurycoleus* includes only 6 species, all restricted to the Neotropical Region, and more densely concentrated in Central America and Mexico. In South America species of *Eurycoleus* have a northern distribution, the southernmost record being that of *E. macularius* in Bolivia (at ca. 20°S). No species has, as yet, been recorded from the Antilles.

Only very few specimens of each species were known until now, and variation had not been accounted for. I have seen larger numbers of specimens of some forms, having noted abundant random variation, which lead to the synonymization of two species.

The 6 known species are arranged into two groups: the group of *poecilopterus*, including *poecilopterus* (Buquet, 1834) and *macularius* (Chevrolat, 1935), and that of *tredecimpunctatus*, including *tredecimpunctatus* Chaudoir, 1869, *septemplagiatus* Chaudoir, 1877, *octosignatus* Bates, 1883, and *ornatus* Bates, 1883.

Key to species

1. Each elytron with more than 10 small, transverse, black spots 2
 Each elytron with less than 10 spots, the spots usually larger
 and more or less circular 3
2. Pronotum unicolor; antennae black; ground-color of elytra uniformly testaceous; Mexico to Colombia
 *macularius* (Chevrolat, 1835)
- Pronotum with a black spot on each margin, the spot of posterior margin larger, more or less trilobed; antennae with testaceous scape; ground color of elytra cream, frequently with three transverse, irregular, yellow-orange bands, one on anterior third, one median and one preapical; Bolivia, Peru, Brazil (Mato Grosso, Amazonas, Pará and Amapá), French Guiana, Guiana and Venezuela *poecilopterus* (Buquet, 1834)

3. Pronotum testaceous around margin 4
 Pronotum with black margin 5
4. Pronotum with two discal, black spots; elytra with two spots fused along suture; Brazil ("Rio de Janeiro")
 *septemplagiatus* Chaudoir, 1877
 Pronotum completely testaceous; elytra with three spots fused along suture; Mexico to Brazil (Amazonas)
 *tredecimpunctatus* Chaudoir, 1869
5. Elytra with two spots fused along suture and three discal spots on each; lateral margin darkened but not black; Mexico
 *octosignatus* Bates, 1883
 Elytra with three spots fused along suture; three discal spots on each elytron, the humeral small, the median large, both touching the black margin; Mexico *ornatus* Bates, 1883

***Eurycoleus poecilopterus* (Buquet, 1834)**

(Figs. 1-8)

Lebia paekiloptera Buquet, 1834: 675-676 (Types, "près des sources du Jari", probably Brazil, and French Guiana, Cayenne; MNHN, not located).

Eurycoleus poecilopterus; Chaudoir, 1869: 238; Reichardt, 1971: 82-83.

Head, pronotum and ventral parts reddish; elytra testaceous, sometimes almost ivory. Penultimate segment of maxillary palpi, and basal half of apical segment of both palpi, as well as apex of mandibles, black; antennae with testaceous scape, brownish pedicel, and remainder segments black; apical part of last segment frequently testaceous. Pronotum and elytra with black markings as indicated in figures 7 and 8; in some specimens there is an indication of somewhat reddish, transverse bands, placed one just behind the scutellum, one in the middle of elytra and one near apex. Last abdominal tergite with a median and two lateral, black spots. Legs: "knees", tibiae and tarsi black. Total length, 10.4-11.9 mm.

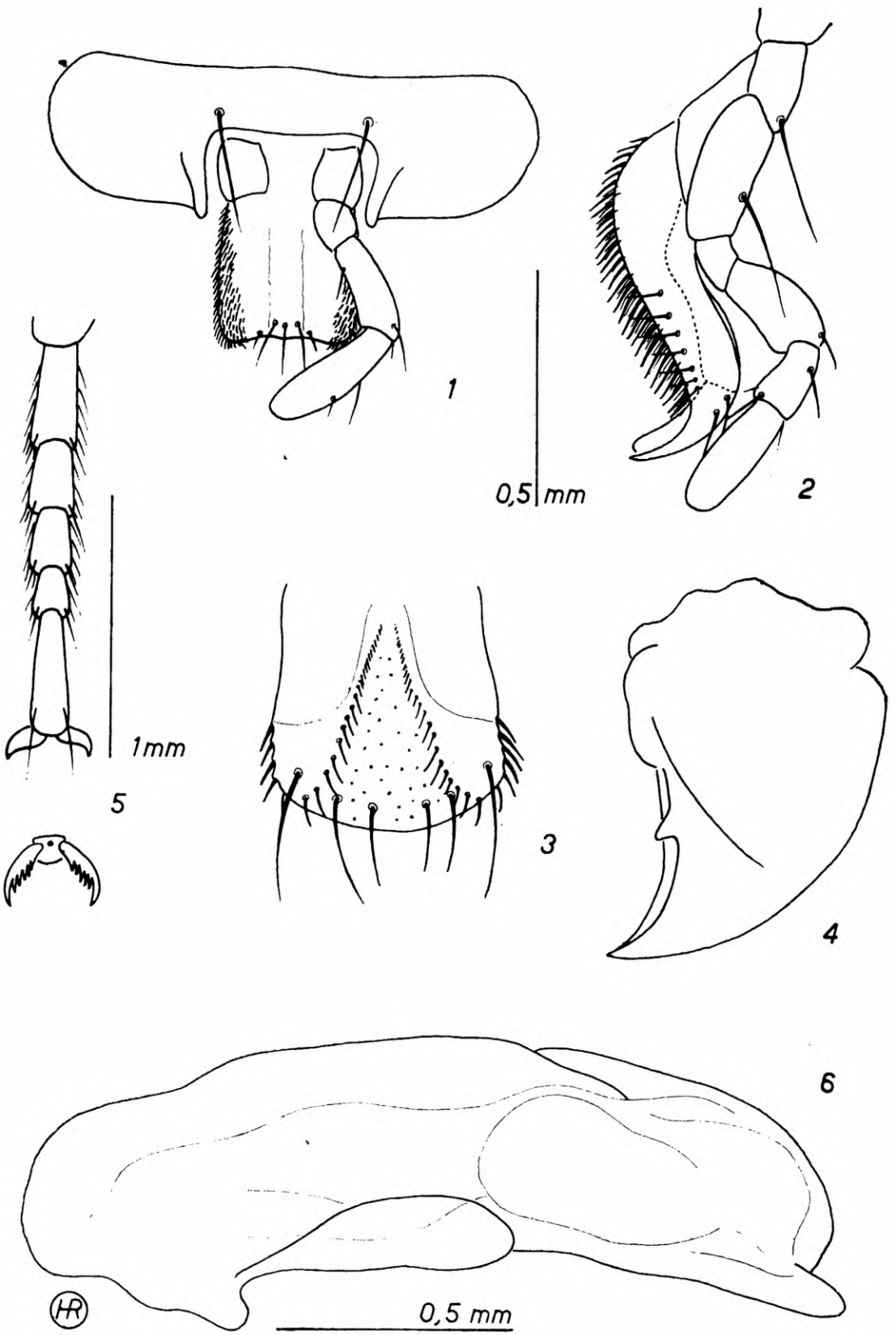
Elytral surface very densely and somewhat coarsely punctate; striae not clearly marked.

Material examined

BOLIVIA. *Santa Cruz*: Chiquitos, Santiago, 700 m (2 exx., CN).

PERU. *Cuzco*: Chanchamayo (1 ex., MNHN). *Loreto*: Chambiruyaca, near Yurimaguas (1 ex., MNHN). *Junin*: Satipo (1 ex., MCZ).

BRAZIL. *Mato Grosso*: Utiariti, Rio Papagaio (1 recently molted ♂, ex-*Polyporus*, MZUSP); Corumbá, Serra do Urucum (2♀, MZUSP); Rondonópolis (1♀, MZUSP). *Amazonas*: Tefé (7 exx., MNHN; 1 ex., MCZ); São Paulo de Olivença (1 ex., MNHN); Maués (1 ex., MNHN); Coari (1 ex., MNHN); Benjamin Constant (1♂, 2♀, AMNH). *Pará*: Óbidos (1♂, IB). *Amapá*: Pôrto Santana (2♂, 1♀, MZUSP).

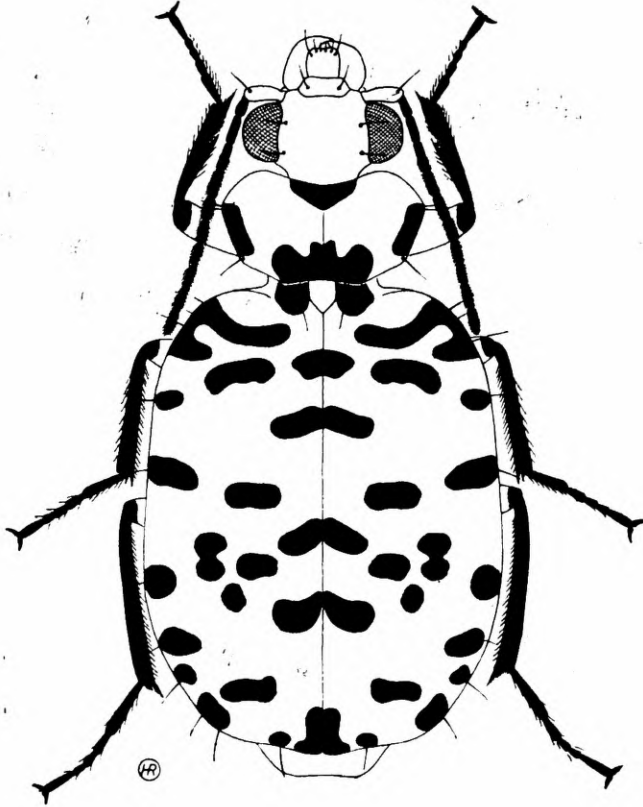


Eurycoleus poecilopterus, male from Brazil, Pôrto Santana: 1, labium; 2, maxilla; 3, labrum; 4, left mandible; 5, front tarsus of male; 6, aedeagus.

FRENCH GUIANA. Cayenne (1 ex., MNHN, possibly one of the original specimens; 1 ex., MNHN); Gourdonville (2 exx., MNHN).⁷

GUIANA. Essequibo River, Moraballi Creek (1 ex., BMNH).

VENEZUELA. Carabobo: Barbula, 460 m (1♀, CLS). Amazonas: Parusito (1♂, 1♀, MZUSP, CLS).



7, *Eurycoleus poecilopterus*, male from Brazil, Pôrto Santana.

Discussion

As to the elytral pattern, *Eurycoleus poecilopterus* is very similar to the Central American and Colombian *macularius* Chevrolat, but easily distinguished by the completely testaceous pronotum of the latter.

E. poecilopterus is a very variable species: in some specimens the elytral spots are small and clearly individualized (the transverse, orange bands very faintly indicated), whereas in others the spots are larger, some fused, and the orange, transverse bands very conspicuous.

This species is widely distributed, and apparently restricted to the Amazonian Basin. Reichardt (1971: 82) has already recorded new localities for the species (Venezuela and some states in Brazil); at present the species is registered for the first time for Peru and Guiana.

Eurycoleus macularius (Chevrolat, 1835)

(Figs. 9, 10)

Lebia macularia Chevrolat, 1835, n.º 131 (Holotype, Mexico, Veracruz, Orizaba; Oxford University Museum, not seen).

Eurycoleus macularius; Chaudoir, 1869: 237; Bates, 1883: 185 (specimens from Nicaragua and Guatemala).

Coptodera fasciatopunctata Reiche, 1842: 313 (Holotype, "Colombia"; MNHN, examined). *Syn. n.*

Eurycoleus fasciatopunctatus; Lacordaire, 1854, pl. 4, fig. 2; Chaudoir, 1869: 236; Bates, 1883: 185-186 (specimens from Panama and Nicaragua); Liebke, 1932: 195 (specimen from Panama).

Head, pronotum and ventral areas reddish; elytra testaceous. Palpi black, only apex of last segment testaceous; antennae black, base of scape slightly brownish. Pronotum completely testaceous. Elytra with black spots as in figures 9 and 10. Last abdominal tergite with a median, elongate, black spot and two irregular spots on both sides. Legs: "knees", tibiae and tarsi black. Length, 10.8-12.1 mm.

Surface of elytra very densely and regularly punctate; striae not clearly marked.

Material examined

MEXICO. *Veracruz*: Cordova (4 exx., BMNH; 4 exx., MNHN); Jalapa (1 ex., BMNH); Orizaba (1 ex., BMNH); Lago Catemaco (1 ex., MNHN); Paso de Telaga, Jicaltepec (1 ex., MCZ); (?) Soacomapan (1♀, CNC). *San Luis de Potosi*: 2 km S of Tamazunchale (1 ex., MCZ). Not located: Taxtla, Sallé col. (2 exx., BMNH). No locality (14 exx., MNHN, MZUSP).

GUATEMALA. *Verapaz*: Panzos (1 ex., BMNH).

NICARAGUA. *Chontales* (5 exx., BMNH, MNHN).

COSTA RICA. *Cartago*: Tuis (1 ex., BMNH); Reventazón, Hamburgfarm (1 ex., BMNH). *Alajuela*: San Carlos (1 ex., MCZ).

PANAMA. *Chiriqui*: Bugaba (3 exx., BMNH; 1 ex., MNHN). *Canal Zone*: Barro Colorado Island (1 ex., MCZ). Not located: Juan Diaz (2 exx., MCZ).

COLOMBIA. *Distrito Especial*: Bogotá (1 ex., CN). *Boyacá*: Muzo (1 ex., MNHN). *Cauca*: Santa Rosa, between S. Francisco and Cartago (1 ex., MNHN). Not located: Guasso (1 ex., BMNH; 2 exx., 1♂, MNHN, MZUSP). No locality (2 exx., MNHN; holotype of *fasciatopunctatus*, MNHN).

Discussion

Eurycoleus macularius is very closely related to *E. poecilopterus*: they are the only two species of the genus with an elytral design formed by a large number of small, somewhat transverse, black spots.

E. poecilopterus, which is widespread in northern South America, but not yet recorded from Colombia, is easily distinguished from *macularius* by the spotted pronotum (fig. 7).

Eurycoleus macularius and *E. fasciatopunctatus* are herewith synonymized on basis of the material studied. The two forms were described from very distant localities, with only very slight differences noted in the original descriptions. Subsequent collecting brought the two areas very close together, and since I encountered considerable variation in size and form of the elytral spots, I prefer to consider the whole as a single species, which occurs from Mexico to Colombia.

The similarities between the two forms were already noted by Bates (1883: 185): "the differences pointed out by Chaudoir with regard to the shape and position of the black spots between this species [*fasciatopunctatus*] and the preceding [*macularius*] do not hold good when a large series is examined. *E. fasciato-punctatus*, however, always has the humeral spot larger and less virguliform, and the accessory marginal spot near it is always absent."

***Eurycoleus septemplagiatus* Chaudoir, 1877**

(Fig. 13)

Eurycoleus septemplagiatus Chaudoir, 1877: 202 (Holotype, Brazil, "Rio de Janeiro"; MNHN, examined).

Original description

"*Eurycoleus septemplagiatus* Chaudoir. Long. 11; larg. 5 1/2 mm. Un peu plus grand que le *tredecimpunctatus*, auquel il ressemble, à part la disposition des tâches des élytres. Corselet un peu plus large et plus transversal, angles postérieurs plus obtus. Élytres à peu près parallèles pour la forme. La coloration générale est la même (voy. Annal. de la soc. entom. belg. XII. p. 238.) mais il y a deux petites tâches noires sur le lisque du corselet, et sur les deux élytres réunies 7 grandes tâches presque arrondies, dont deux, communes aux deux, à cheval sur la suture, placées, l'une derrière l'écusson, l'autre, un peu moins grande, aux deux tiers; une tâche ronde, moins grande que celle post-scutellaire près de l'épaule qu'elle n'atteint pas; sur le disque de chaque une tâche presque ronde, la plus grande de toutes, occupant tout l'espace entre la deuxième et la neuvième strie, et une troisième, plus petite que l'humérale, non loin du bord postérieur; l'extrémité de la suture n'est pas brune. Palpes, antennes et pattes colorées de même, avec plus de noir à l'extrémité des cuisses. Un individu de cette jolie espèce, rapporté du Brésil par M. Chabrillac, figure dans la collection de M. le Comte de Mniszech."

Discussion

I have only seen the holotype of this species. The original description only mentions "Brésil" as provenance; the specimen is labelled "Rio-J.", which could mean the State of Rio de Janeiro or the town of Rio de Janeiro in the State of Guanabara.

In elytral spotting *E. septemplagiatus* is very similar to *E. octosignatus* Bates (from Mexico), but the latter has a unicolor pronotum and darkened apical margin of elytra. *E. septemplagiatus* is the only species of the genus with two discal pronotal spots.

Eurycoleus octosignatus Bates, 1883
(Fig. 12)

Eurycoleus octosignatus Bates, 1883: 186 (Holotype, Mexico, Oaxaca, Tehuantepec; BMNH, examined).

Original description

"*E. belti* affinis, sed differt thoracè et elytris anguste nigromarginatis, his maculis rotundati subaequalibus octo, scilicet duabus communis ad suturam tribusque untrunque discoidalibus in linea dispositis (prima marginem basalem attingente); antennis rufescentibus, articulis 3^o et 4^o fuscis; thorace sicut in *E. belti* transversim striguloso; elytris multo laevioribus absque interstitiis elevatis; genibus, tibiis tarsisque nigris, his apice rufis. Long 4 3/4 lin. *Hab.* Mexico, Tehuantepec (*Sumichrast*)."

Material examined

MEXICO. *Oaxaca*: Isthmus of Tehuantepec (Holotype, BMNH; 1 paratype, MNHN). *Durango*: Ventanas (= Villa Corona), 2,000 ft. (1 paratype, BMNH).

Discussion

As seen above, *Eurycoleus octosignatus* is similar to *E. septemplagiatus*, but easily distinguished by several characters, especially the unicolor pronotum.

Eurycoleus ornatus Bates, 1883

(Fig. 11)

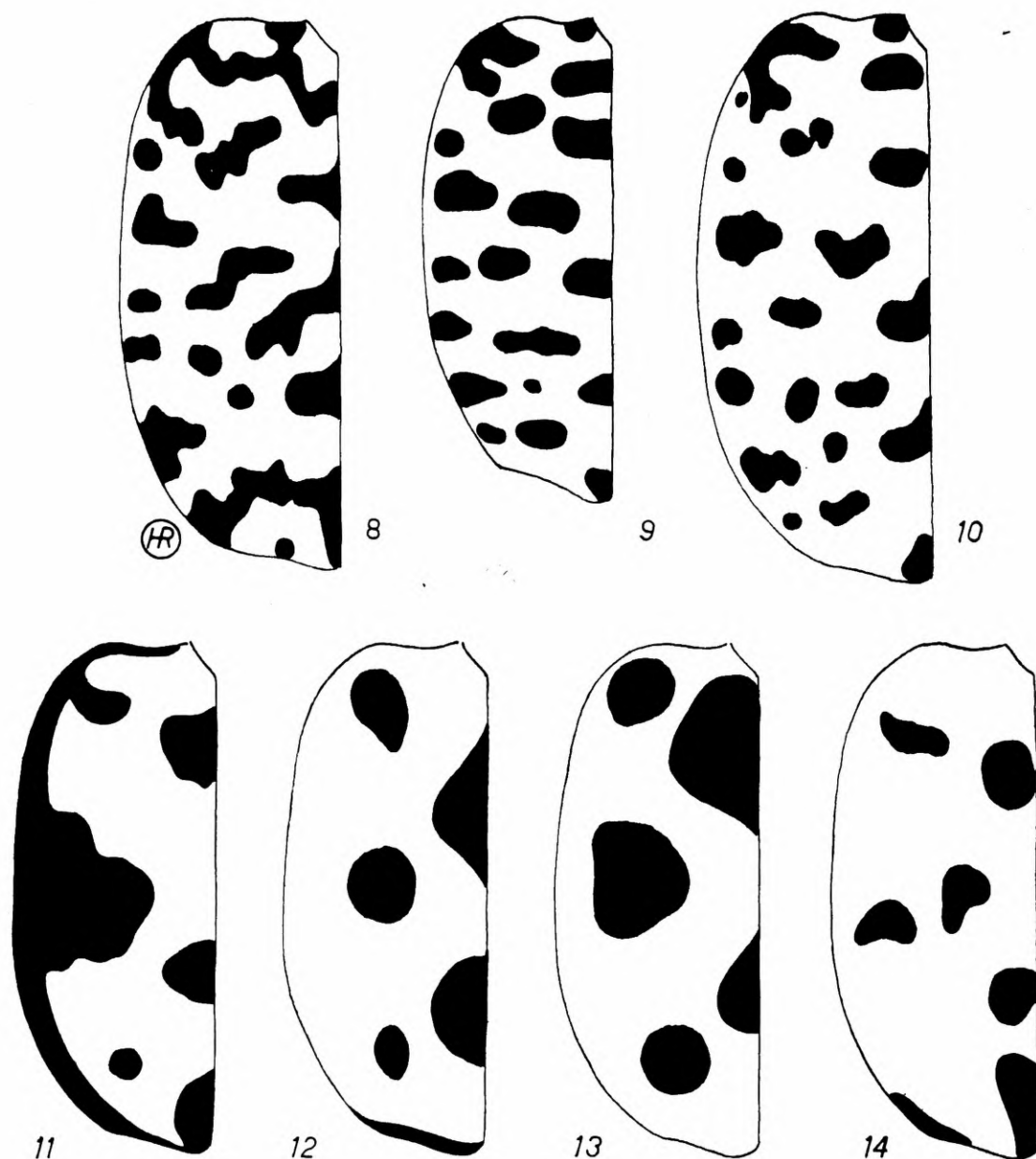
Eurycoleus ornatus Bates, 1883: 186, pl. 7, fig. 20 (Holotype, Mexico, Veracruz, Cordova; BMNH, examined).

Head, pronotum and ventral areas reddish; elytra testaceous. Penultimate segment of maxillary palpi, and basal half of apical segment of both palpi, black; mandibles almost completely black; labrum brownish; antennae with brownish scape and pedicel, III and basal half of IV segment black, remainder of IV and following segments brownish, with black median line. Pronotum with irregular, black margin, widest on sides and base. Each elytron with 6 black spots: three placed along suture, one in front of the middle, one slightly behind the middle and one at apex (all three completely fused along suture); a small humeral spot and a large, more or less triangular spot on middle of elytra, both connected with the black elytral margin; a small, round spot near apex. Scutellum black. Last abdominal tergite with elongate, median spot and two somewhat irregular spots on sides. Legs: "knees", tibiae and tarsi black. Length, 10.3 mm.

Elytral surface without indication of striae, and interstices irregularly punctate, with rugose aspect.

Material examined

MEXICO. Veracruz: Cordova (Holotype, BMNH); Lago Catemaco (1 ex., CN); (?) Soatecomapan (1♂, CNC). No locality (1 paratype, MNHN).



Left elytron of: 8, *E. poecilopterus* (♀, Brazil, Serra do Urucum); 9, *E. macularius* (♂, Colombia, Guasso); 10, *E. macularius* ("Mexico"); 11, *E. ornatus* (♂, Mexico, Soatecomapan); 12, *E. octosignatus* (sketch from Mexico, Ventanas-specimen); 13, *E. septemplagiatus* (sketch from holotype); 14, *E. tredecimpunctatus* (sketch from "Guatemala" specimen).

Discussion

Eurycoleus ornatus, at present known only from a very few specimens from Veracruz, is a very characteristic species. The very wide black margin of the pronotum, the black scutellum, the entire and wide black margin of the elytra, as well as the large, median spot of elytra, which is connected with the lateral margin, easily distinguish this species.

***Eurycoleus tredecimpunctatus* Chaudoir, 1869**

(Fig. 14)

Eurycoleus tredencimpunctatus Chaudoir, 1869: 238 (Holotype ♂, Brazil, Amazonas, Tefé; MNHN, examined).

Eurycoleus belti Bates, 1878: 606 (Holotype, Nicaragua, Chontales; BMNH, not located); 1883: 186, pl. 7, fig. 19 (specimens from Mexico and Guatemala). *N. syn.*

Head, pronotum and ventral parts reddish; elytra more testaceous. Apex of mandibles, penultimate and basal half of last segments of maxillary palpi black; antennae with testaceous scape, II brownish, III and IV almost black, remainder brownish, with black median line. Each elytron with 7 more or less irregular, black spots: three along the suture, one well in front of the middle, one well behind the middle, and an elongate spot near apex (only this apical spot is completely fused along the suture, the two anterior ones are brownish near the suture); one subhumeral spot, two median spots, one near suture and one near margin, one spot near the apex; elytral margin irregularly black near the outer-apical angle. Last abdominal tergite with elongate, median spot, and one irregular spot on each side. Legs: "knees", tibiae and tarsi black; last tarsal segment somewhat lighter in color. Length, 11.7 mm.

Surface of elytra very clearly and finely punctate; striae not very clearly marked.

Material examined.

MEXICO. *Veracruz*: Cerro de Palmas (1 ex., BMNH). *Oaxaca*: Isthmus of Tehuantepec (2 exx., BMNH; 1 ex., MNHN).

GUATEMALA. *Suchitepéquez*: Moca, 3,000 ft. (1♂, AMNH). *Escuintla*: El Zapote (1 ex., BMNH). No locality (1 ex., BMNH).

NICARAGUA. *Chontales* (1 ex., BMNH; 2 exx., MNHN).

COSTA RICA. *Cartago*: Reventazón, Hamburgfarm (1 ex., BMNH).

BRAZIL. *Amazonas*: Tefé (Holotype ♂ of *tredecimpunctatus* and 1 ex., MNHN). Doubtful locality: "Ste. Cathérine" (1 ex., CN).

Discussion

The above description is based on the Guatemalan specimen from Moca (AMNH), the only specimen at hand. Even though the distribution of the two forms I am now synonymizing is not continuous, it

seems to me that *E. tredecimpunctatus* is a widespread species, reaching from Mexico into northwestern South America. The usually noted differences between the two forms refer to the elytral spots along the suture. In one form (*belti*) only the posterior spot is supposedly fused along the suture, while the two anterior spots end near the suture, with at least a brownish line between the spots; in typical *tredecimpunctatus* the three spots are completely fused along the suture. I have noted that this character is variable, and I am thus synonymizing the two forms.

The elytral pattern of this species is very typical and characteristic.

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ADDENDUM

After this paper was sent to press I received 2 specimens of *E. septemplagiatus* Chaudoir, 1877 (1♀, *Espírito Santo*: Linhares, Parque Sooretama; 1♂, *Paraná*: Prainha, "em cogumelo") from the Departamento de Zoologia, Universidade Federal do Paraná, Curitiba. They are interesting because they enlarge very much the distribution of the species, formerly only known from the type-locality, as well as because of the reference of the male having been collected in a mushroom. One specimen of *E. poecilopterus* has already been recorded from *Polyporus*. This suggests that at least some species of *Eurycoleus* live in this habitat.

