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A new revisionary note on the genus Paracryptocerus Emery (Hym. Formicidae)

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A New Revisionary Note on the Genus Paracryptocerus Emery (Hymenoptera: Formicidae)

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(With 3 text-figures)

The purpose of the present note is to fill in a few more gaps in our knowledge of the Myrmicine genus *Paracryptocerus*, of which I have already given an overall revision in several preceding papers (Kempf, 1951, 1952, 1958). Here, the description of the types of *duckei* and *goeldii*, not previously available, is presented. Two new synonyms are also proposed and two hitherto accepted «races» are raised to full specific rank.

Acknowledgments. — I am most grateful for the loan of critical specimens from the following institutions: Museum of Comparative Zoology, Harvard University, U.S.A. (MCZ); Muséum d'Histoire Naturelle de Genève, Switzerland (Forel collection) (MHNG), courtesy of Dr. Claude Besuchet; Fundación Miguel Lillo, Tucumán, Argentina (ML), courtesy of the late Dr. N. Kusnezov; Naturhistoriska Riksmuseum, Stockholm, Sweden (NRS), courtesy of Dr. Gunnar Hallin. The remaining specimens used in this study are of my private collection (WWK). Likewise I am deeply obliged to the «Conselho Nacional de Pesquisas» of Brazil for the continuing help in the form of a research stipend.

Paracryptocerus spinosus (Mayr)

(Fig. 1)

Cryptocerus spinosus Mayr, 1862: 761-2 (Worker; Brazil: Amazon river). — Wheeler, 1922: 11 (Trinidad: Port of Spain).
Paracryptocerus spinosus: Kempf, 1951: 187-91, figs. 116-117 (Worker, soldier, female; revision). — Kempf, 1964: 254 (Peru: Valle de Chanchamayo, Tingo Maria; Ecuador: El Reyo).
Cryptocerus quadrimaculatus Fr. Smith, 1854 (*nec* Klug, 1824): 219, pl. 19, fig. 8 (Female).
Cryptocerus punctatus Mayr, 1862: 762-3 (Soldier; Brazil: Amazon river).
Cryptocerus laminatus peruvianus Forel, 1911a: 297 (Soldier; Peru: Chanchamayo, elev. 1200 m.). — NOV. SYN.
Cryptocerus spinosus peruvianus Forel, 1911b: 260 (New combination).

A revision of this species, together with complete references, is contained in my earlier study (Kempf, 1951: 187-91). Later (Kempf, 1964: 254) I have given additional locality records for *spinosus*.

Here I want to synonymize the race *peruvianus*, the holotype soldier (MHNG) of which I have now come to examine. Aside from the somewhat aberrant petiole (Fig. 1), with extremely

short spines, this specimen matches entirely all other soldiers of *spinosus* so far examined. Since the normal *spinosus* is now also known from the Chanchamayo valley (cf. Kempf, 1964: 254), there is no reason to admit *peruvianus* as a race.

The present species occurs in the Amazon river drainage and in the Guianas. In short, it is a Hylaean species. The Port of Spain, Trinidad, record (Wheeler, 1922: 11) was overlooked in previous installments and is given here.

New records: — Bolivia, Beni: Chapara, March 1, 1950, H. Marcus leg. 6 workers (ML), S. Antonio, August 6, 1946, H. Marcus leg. 3 workers, 4 soldiers, 2 females (ML, WWK). — Peru, Junin Dept.: Victoria, July 11, W. F. Walker leg. 1 worker (MCZ). — Brasil, Acre: Rio Branco, May 16, 1952, M. Alvarenga leg. 1 worker (WWK); Rondônia: Vila Rondônia, 378 km S of Pôrto Velho, Jan.-Febr. 1961, F. S. Pereira & Machado leg. 2 workers (WWK); Pará Jacarèacanga, Oct. 1959, M. Alvarenga leg. 2 workers (WWK).

Paracryptocerus inca (Santschi) Nov. Status

Cryptocerus multispinus inca Santschi, 1911: 278 (Worker; Peru: "La Massa").
Paracryptocerus multispinus inca: Kempf, 1951: 208, fig. 134 (Worker; Peru: Piura).

This form, distinguished by huge epinotal and petiolar spines, is apparently confined to the western slopes of the Andes in northern Peru. Inasmuch as the fact of its being a geographical race of *multispinus* (which occurs in Central America and northern Colombia) has not been securely established, I rather prefer to raise it to specific rank. It is likewise close to the hylaean *complanatus*. The relationship between these three allopatric forms, viz. *complanatus, inca,* and *multispinus* bears further investigation when more material is at hand and their real distribution is better known.

New locality record. — Peru, Lambayeque Province, Chiclayo, Hda. Patapo, March 4, 1963, Rafael Pardo leg. 2 workers (WWK).

Paracryptocerus ramiphilus (Forel), Nov. Stat.

Cryptocerus complanatus ramiphilus Forel, 1904: 678 (Worker, soldier; Brazil, Amazonas: Bom Fim de Juruá).
Paracryptocerus complanatus ramiphilus: Kempf, 1951: 196-9, figs. 130, 135 (Worker, soldier; Brazil, Amazonas: Itacoatiara).

While revising this form in 1951, I was too much taken in by the conservative viewpoint and let it go by as a race. Since it is quite distinct from the sympatric *complanatus,* this

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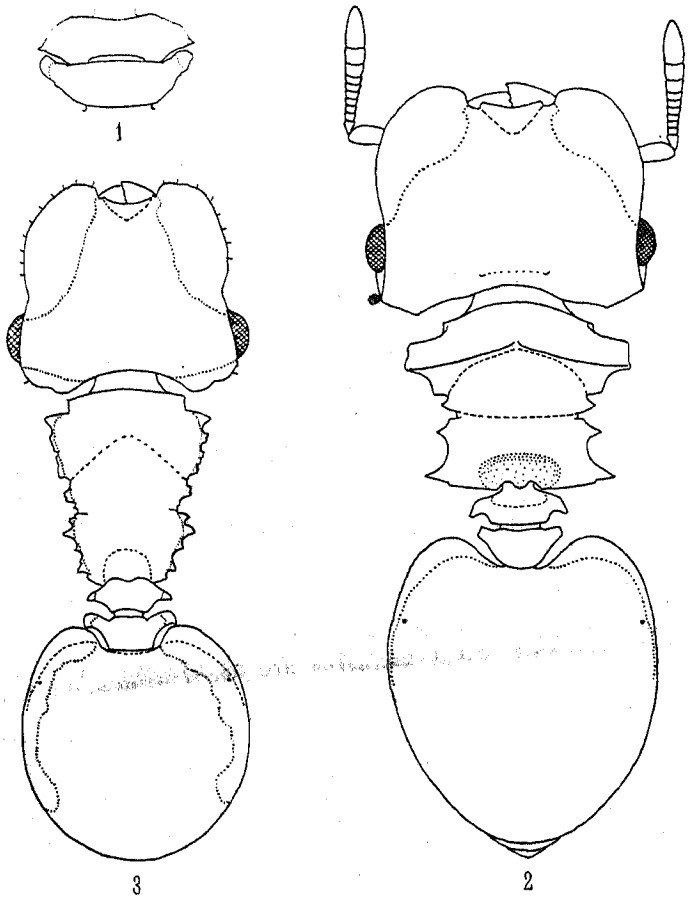
mesially interrupted transverse keel; behind the keel, the lateral border is excised and converges toward the posterior rectangular corner. Promesonotal suture vestigial. Mesonotum flat, strikingly transverse, bearing on each side a small projecting tooth. Mesoepinotal suture vestigial. Epinotum broad, with a shorter anterior triangular spine and a posterior more projecting and more pointed spine, the posterior border of which runs transversely mesad toward the petiolar insertion; declivous face consisting in a deeply impressed, transversely elliptical mesial groove. Sides of thorax without costae and striae. Epinotal stigma lying below lateral expansion between anterior and posterior spine. Femora incrassate, II and III dorsally subangulate in the middle. Tibiae prismatic, tarsite I of all legs strongly compressed, broadened and subfoliaceous.

Petiole deeper than long, with an oblique anterior face, more or less distinct from the narrow dorsal face, bearing on each side a thick and prominent spine, pointing obliquely caudad. Postpetiole dorsally gently convex in both directions, its lateral appendages pointing laterad and slightly forward, their apex obliquely truncate. Gaster oblong cordiform, with a broad antero-lateral lamellate border, which continues caudad behind the dorsal stigma as a sharp carina which almost attains the posterior border.

The partype soldier is smaller in size, its measurements have already been given above in parentheses; the denticles and the transverse carina on vertex is practically absent, the transverse pronotal carina is weaker; for the rest identical with the lectotype.

D i s c u s s i o n. — This is a rather aberrant species, still known only from the two type specimens just described. The transverse carinae on vertex and pronotum show clearly that the specimens are soldiers and not workers, as Forel pretended. On the other hand, they are not fully grown and represent a somewhat intermediate stage between the soldier and worker caste. Its systematic position, already uncertain on other accounts, is therefore even more difficultly ascertained.

It is fairly certain that *duckei* belongs to the first evolutionary level of genus *Paracryptocerus*, in which the soldier caste has not as yet acquired a fully delimited, more or less oval or circular saucer-shaped cephalic disc, being solely an overgrown worker. Upon this level, it bears no preference for any of the three recognized species-groups. It differs from the *spinosus*-group rather significantly in the shape of the lateral pronotal projections and the compressed and broadened tarsites, aside from other character differences which could be attributed to the fact that these soldiers are not fully developed. The distinction from the *complanatus*-group consists principally in the presence of marked humeral corners, the shape of the lateral pronotal projections and the declivous face of the epinotum. Finally, the more orthodox members of the *pavonii-*



1. *Paracryptocerus spinosus* Mayr, soldier, petiole of "ssp. *peruvianus*". — 2. *Paracryptocerus duckei* Forel, soldier, dorsal view of lectotype. — 3. *Paracryptocerus goeldii* Forel, worker, dorsal view of holotype. — (Kempf *del.*).

group, which *duckei* imitates as regards the shape of the lateral pronotal flanges, differ conspicuously by the crenulate border of the frontal carinae, and the depressed petiole which lacks an anterior face. In short, *duckei* is a highly distinctive and taxonomically isolated species, which should not offer any trouble in identification. It is also quite different from the other isolated species in the group, *manni*, on account of the lack of projecting setulae on the cephalic rim, the marked scapular angle of thorax, the shape of pronotum and epinotum and the narrower pedicel.

Paracryptocerus goeldii (Forel)

(Fig, 3)

Cryptocerus goeldii Forel, 1912: 205-6 (Worker; Brazil, Rio de Janeiro State: Serra Vermelha).
Paracryptocerus goeldii: Kempf, 1958: 93-4.

At last I was able to examine the holotype worker of the present species (MHNG), not available when undertaking the revision of the genus. It is rather close to *angustus* but seems sufficiently distinct to be kept as a valid form. Only the holotype is known so far.

Worker (holotype). — Total length 4.6 mm; maximum head length 1.36 mm; maximum width of head above eyes (the latter excluded) 1.39 mm; thorax length 1.39 mm; petiole width 0.58 mm; postpetiole width 0.64 mm; gaster width 1.49 mm.

The worker of this species shares with *angustus* and *striativentris* the unique feature (in the *angustus*-group!) of having the gaster laterally sharply marginate well beyond the anterior half, the translucid antero-lateral lamella extending backwards much beyond the distinctly visible dorsal stigma.

The differences from *angustus* are as follows: Tip of scape, tibiae and tarsi rather yellowish brown than ferruginous; gastric markings more extensive, a broad and well circumscribed band just lies inside the lateral border. Occipital lobes subhyaline, yellowish, conspicuous. Dentition of thoracic border somewhat different, principally on epinotum, where there are four distinct teeth. Promesonotal suture quite distinc (usually obsolete, sometimes vestigial in *angustus*). Lateral spines of pedicelar segments not needle-like but broader and flattened; those of postpetiole distinctly recurved. Petiole without antero-dorsal denticles; postpetiole dorsally completely flat. Gaster short, subcircular, with the antero-lateral hyaline border broader than in *angustus*.

The differences from *striativentris* are as follows: color, occipital lobes and antero-lateral border of gaster as stated under *angustus*. Sternum I of gaster without coarse costae or rugae but smooth.

Forel compared the species with «*denticulatus*» (= *conspersus*) which differs, however, in the lateral margination of the gaster which does not extend beyond the stigma. Furthermore, the occipital lobes are concolorous and the antero-lateral gastric borders are narrow. The thoracic dentition, to the contrary, is practically the same.

There is no doubt that *goeldii* is a puzzling form of apparently restricted distribution and rare occurrence.

Paracryptocerus notatus (Mayr)

Cryptocerus notatus Mayr, 1866: 907 (Female; Brazil).
Paracryptocerus notatus: Kempf, 1958: 140.
Paracryptocerus fleddermanni Kempf, 1958: 87-92, pl. 2, fig. 3; pl. 3, fig. 4; pl. 5, fig. 1 (Soldier, worker, female; Brazil, São Paulo State: São Sebastião, Alto da Serra). — NOV. SYN.

Type. — A lone female, dealate (holotype), somewhat damaged, from Brazil, F. Sahlb. leg. (NRS).

This specimen proved identical with the lone female from Alto da Serra, São Paulo Sstates, which I associated in my earlier revision (1958) with the newly described *Paracryptocerus fleddermanni.* Although this association has not as yet been established conclusively by collecting workers, soldiers and females from the same colony, it is nevertheless reasonably certain, so that *fleddermanni* must be dropped as a junior synonym of *notatus.* Thus falls my earlier suspicion (Kempf, 1958: 907) that *notatus* be identical with *striativentris* Emery.

The holotype of *notatus* possesses the following measurements: total length 8.30 mm; head length 1.92 mm; head width 1.60 mm; thorax length 0.77 mm; length of tergum I of gaster 2.9 mm; width of tergum I of gaster 1.65 mm. For structural details see the description of *fleddermanni* (Kempf, 1958: 91-2, pl. 5, fig. 1).

New locality records: Brazil, São Paulo State: São Sebastião, Bairro de S. Francisco, in cavities of a guava tree, March 6, 1958, W. W. Kempf leg. many workers and soldiers (WWK n. 2376); Caraguatatuba, April 2, 1962, K. Lenko leg. workers and soldiers (DZSP n. 1910, WWK). Guanabara Sstate: Rio de Janeiro, Corcovado Mt., Nov. 10, 1958, C. A. C. Seabra leg. 2 dealate females (WWK).

Distribution. — According to these new records, the range of the species extends now from Rio de Janeiro to Santos on the coastal mountains and plains.

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