Studies and Reports
Taxonomical Series 10 (2): 249-256, 2014

A new species of the genus *Coptodera* Dejean, 1825 from Tanimbar Islands (Coleoptera: Carabidae: Lebiini)

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Taxonomy, description, Coleoptera, Carabidae, Lebiini, *Coptodera*, Tanimbar Islands

Abstract. A new species of the lebiine genus *Coptodera* Dejean, 1825 is described from Tanimbar Islands: *Coptodera bastai* sp. nov. It belongs to a group of small species which occur in the Papuan Subregion of Australian Region. The species is differentiated from related species in a key. For comparison the male genitalia of the nearest related species *C. fasciolata* (MacLeay, 1887) are figured.

INTRODUCTION

The genus *Coptodera* Dejean, 1825 belongs to the lebiine subtribe Pericalina which is characterized by narrow and not excised 4th tarsomeres, denticulate tarsal claws, elongate labrum, and elongate female gonocoxites 2 which bear a dorso-median ensiform seta and usually two or three ventro-lateral ensiform setae. The genus is further characterized by a rather depressed body and wide pronotum, and by presence of 2-4 distinctly impressed setiferous punctures on the 3rd elytral interval. Species of *Coptodera* usually are small to medium sized, rather broad beetles having large, protruding eyes. Most species possess an intricate colour pattern on their elytra, usually consisting of a number of light spots or lines, and sometimes they even bear a metallic lustre. However, these patterns can vary to a considerable degree within species. Only rather few species are unicolourous piceous or black. The genus is very rich in species and is widely distributed in the tropical and subtropical regions of all continents except Europe, with the subgenus *Coptoderina* Jeannel, 1949 ranging from Africa through southern and eastern Asia into the Papuan Subregion of the Australian Region. In southern Asia, New Guinea, Australia, and certain Pacific islands *Coptodera* includes more than 50 described species, and several additional ones are known to exist and await their description. Three small species, characterized by more or less deeply excised base of the pronotum occur in New Guinea, New Britain, and Australia. The new species from Tanimbar Islands belongs to this subgroup and apparently is nearest related to the Australian *Coptodera fasciolata* (MacLeay, 1887).

In the southern Oriental and the Papuan Subregion of the Australian Region species of *Coptodera* are common inhabitants of rain forests where they usually are found on and under bark of tree trunks and logs, apparently more rarely on twigs and leaves.

In the course of determination of a number of Oriental carabid species kindly sent by J. Bašta (Brno) and M. Häckel (Prague) I detected a small series of tiny *Coptodera* collected on Tanimbar Islands, which are fairly similar to the Australian *C. fasciolata* (MacLeay, 1887),

slightly less so to the New Guinean *C. wau* Darlington, 1968, and *C. papuella* Darlington, 1968, but they differ in colouration, the degree to which the base of the pronotum is excised, and shape of the aedeagus. Therefore they are described herein as a new species.

MATERIAL AND METHODS

The genitalia were removed from specimens relaxed for a night in a jar under moist atmosphere, then cleaned for a short while in hot 10% KOH. The habitus photographs were obtained by a digital camera using ProgRes CapturePro 2.6 and AutoMontage and subsequently were worked with Corel Photo Paint X4.

Measurements were taken using a stereo microscope with an ocular micrometer. Body length has been measured from the apex of the labrum to the apex of the elytra. Length of pronotum was measured from the most advanced part of the base to the most advanced part of the apex. For better comparison measurements and ratios were taken in the same way as in Baehr (2008).

Data of examined material are given in full length and the exact labeling was used. A / with a blank before and after denotes a new line on the label.

The types are stored in the private collection of J. Bašta, Brno, Czech Republic (CBB) and M. Häckel, Prague, Czech Republic (CHP), and in the working collection of the author in Zoologische Staatssammlung, München (CBM).

Genus *Coptodera* Dejean, 1825

Coptodera Dejean, 1825: 273. - Csiki 1932: 1372; Darlington 1968: 110; Moore et al. 1987: 292, Lorenz 2005: 457.

Type species: *Coptodera festiva* Dejean, 1825 by subsequent designation by Hope (1838).

All species from the Oriental, New Guinean, and Australian Regions belong to the subgenus *Coptoderina* Jeannel, 1949. The species from Japan were revised by Habu (1967), those from New Guinea by Darlington (1968), and those from Australia by Baehr (2008). However, no comprehensive survey of the many Oriental species of the genus is available although it is very much in need, not only due to the known existence of several undescribed species.

Coptodera bastai sp. nov.

(Figs 1, 3, 5)

Type material. Holotype (♂) labelled: "INDONESIA, Tanimbar is. / Yamdema isl., 20 km NE / of Saumlaki, 150 m. / 1.-30.i.2007, / M. Obořil lgt." (CBM). Paratypes: (4 ♂♂, 4 ♀♀): same data (CBM, CBB); (1 ♂): INDOAUSTR: E-INDONESIA / Tanimbar isl. Yamdema is. / 21km NE Saumlaki Mamms. / vill. 150 m, XII.2005, lgt. S. Jakl, (CHP).

Description. Measurements. Body length: 3.3-3.6 mm; width: 1.45-1.65 mm. Ratios. Width/length of pronotum: 1.42-1.44; width pronotum/head: 1.0-1.01; length/width of elytra: 1.32-1.34; width elytra/pronotum: 1.73-1.79.

Figs 1-2. Habitus (body lengths in parentheses). 1- *Coptodera bastai* sp. nov. (3.4 mm); 2- *C. fasciolata* (MacLeay) (3.3 mm).

Colouration (Fig. 1). Head and pronotum greenish-bronze. Elytra very dark piceous to black, with a bright yellow transverse fascia in front of apex and an irregularly shaped, very serrate, oblique, much less distinct, dark yellow fascia in basal half that attains the lateral margin but not the humerus and is most distinct towards the lateral margin. Lateral margin of elytra very narrowly yellow. The 3rd discal puncture conspicuously brownish within the yellow fascia. Lower surface black. Mandibles pale red, palpi and antenna yellow, antenna slightly and gradually darkened apicad. Legs yellow, meso- and metatibiae in middle slightly infuscate.

Head - as wide as pronotum. Eye very large, almost semicircular, orbit very short. Clypeus anteriorly almost straight. Clypeal suture distinct. Labrum quadrangular, slightly longer than wide, apex slightly convex, the lateral seta far removed from apex. Mandibles moderately elongate. Antenna rather short, median antennomeres c. 1.75 x as long as wide. Frontal furrows barely indicated, surface near inner anterior margin of eye with 1-3 short wrinkles, inside of these with a shallow, about circular impression on either side. Anterior orbital seta situated about at middle of eye, the posterior seta at posterior margin. Microreticulation very distinct, coarse, isodiametric, surface with sparse, very short, erect pilosity, moderately glossy.

Pronotum - comparatively wide, especially at apex, which is almost straight to slightly

concave, apical angles obtuse. Lateral margin in apical third slightly oblique, angulate at the origin of the anterior lateral seta, then obliquely narrowed, and in front of the basal angles shortly sinuate. Base laterally very deeply excised, basal angles therefore far removed from base, rectangular and at tip acute. Central part of base straight, about half as wide as the widest diameter of pronotum. Apex not margined, base coarsely margined, lateral margin narrow, slightly explanate at basal angles, then again narrow; it attains the median part of the base. Median line distinct but shallow, attaining neither apex nor base. Anterior transverse sulcus very shallow. Disk slightly convex, in anterior third on either side with a conspicuous circular impression. Anterior lateral seta inserted about at anterior third, at the widest diameter of pronotum, posterior lateral seta situated on the basal angle at posterior third. Microreticulation finer than on head, isodiametric to slightly transverse, arranged in transverse, slightly curved rows, surface with sparse, very short, erect pilosity, slightly duller than head surface.

Elytra - short and wide, widened towards apical third, dorsal surface slightly convex. Lateral margin gently convex throughout, very faintly sinuate at basal fourth. Humerus produced but widely rounded. Apex sinuate, but sutural angle rounded and slightly incurved. Striae complete, well impressed, less so in apical half, barely punctate. Intervals gently convex. 3rd interval with four wide, well impressed punctures and setae, the anterior two located at 3rd stria, the posterior two at 2nd stria. Intervals with scattered punctures, with fine, very transverse, superficial meshes; surface with sparse, very short, erect pilosity, glossy, very contrasting to head and pronotum.

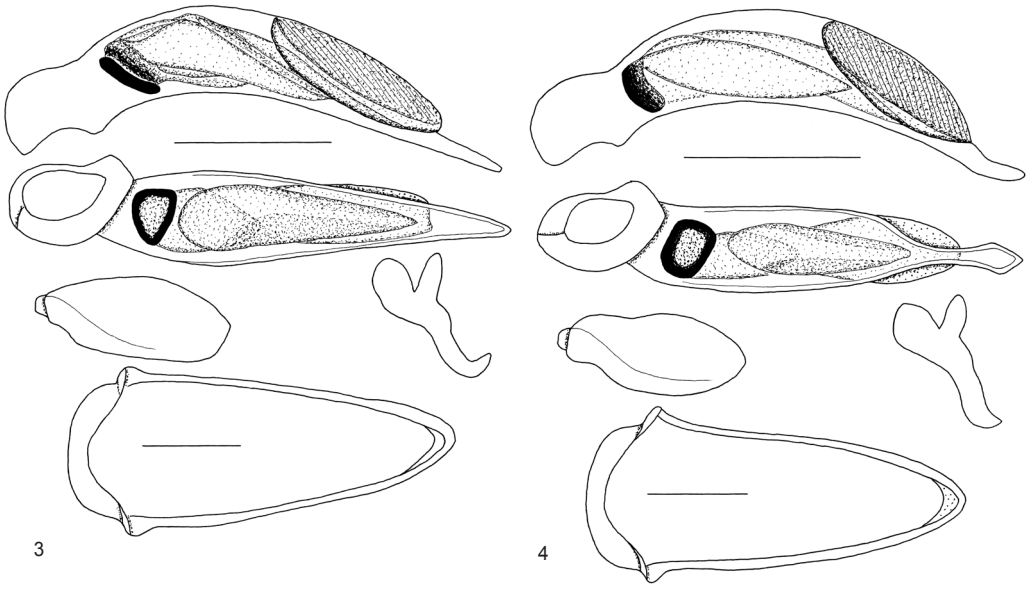
Lower surface. Whole lower surface with moderately sparse, short, on head and thorax erect, on abdomen slightly posteriad inclined pilosity. Metepisternum elongate, almost twice as long as wide at apex.

Legs - narrow and elongate. 4th tarsomeres not widened or excised. 5th tarsomeres with some elongate setae at lower surface. Tarsal claws elongate, with 4-5 small teeth of same size. Four basal tarsomeres of male protarsus slightly widened, the basal three ones with two small rows of adhesive setae.

Male genitalia. (Fig. 3). Genital ring narrow, slightly triangular, almost symmetric, apex shortly rounded. Aedeagus elongate, rather narrow, straight, lower surface in apical two thirds straight; apex narrow and elongate, triangular, at tip very slightly obtuse. Orificium fairly elongate, mostly situated on left side, upper surface of orificium characteristically obliquely striolate. Internal sac (in the inverted state) in basal half with a large, coiled, strongly sclerotized sclerite, in apical half with several not or little sclerotized and extremely finely denticulate folds. Left paramere rather large, wide, at apex obliquely transverse. Right paramere much smaller, with rounded apex, somewhat odd-shaped.

Female gonocoxites (Fig. 5). Gonocoxite 1 asetose at apex. Gonocoxite 2 narrow and elongate, in apical fourth strongly curved, with three rather elongate ventro-lateral ensiform setae which are decreasing in size from the upper one down, and a single elongate dorso-median ensiform seta located rather close to apex. No subapical nematiform seta present.

Variation. Very little variability noted.



Figs 3-4. Male genitalia: aedeagus, parameres, and genital ring (scales: 0.25 mm); 3- *Coptodera bastai* sp. nov.; 4- *C. fasciolata* (MacLeay, 1887).

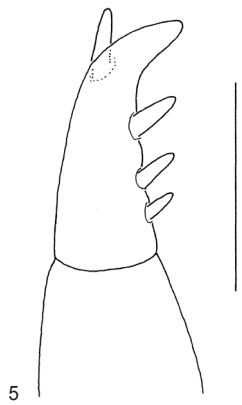


Fig. 5. *Coptodera bastai* sp. nov. Female gonocoxites (scale: 0.1 mm).

Diagnosis. Characterized by deeply excised base of pronotum, bright, well defined transverse spot in apical half of elytra, and elongate, not excised apex of aedeagus. Distinguished from the nearest related species *C. fasciolata* (MacLeay) by better defined and more conspicuous transverse elytral spot that is not in contact with the basal spot, greenish rather than reddish head and pronotum, and regularly triangular apex of aedeagus.

Distribution. Yamdema Island, Tanimbar Islands, known only from type locality.

Collecting circumstances. Not recorded.

Relationships. In shape of pronotum, surface structure, and elytral pattern most similar to *Coptodera fasciolata* (MacLeay, 1887), but distinguished by different colour and elytral pattern, and by shape of aedeagus.

Etymology. The name is a patronym and honours J. Bašta who kindly made available most specimens of the new species.

REMARKS

The group of small *Coptodera* species mentioned in the present paper apparently is restricted to the Papuan Subregion of the Australian Region, because similarly shaped and coloured species are unknown elsewhere in the Oriental Region. The new species again demonstrates that Tanimbar Islands possess strong biogeographic relations to the Papuan Subregion of the Australian Region that apparently are more important than those to the Oriental Region.

The new species from Tanimbar Islands certainly is more closely related to the single Australian species of this group, than to any Papuan species. This pattern of relationships needs some discussion. A view to the map shows that the geographical distances of Tanimbar Islands to south-western New Guinea and to the Northern Territory of Australia, respectively, are almost exactly similar. However, the single Australian species, *C. fasciolata*, does not occur in the Northern Territory, but only far away in eastern Australia which is adjacent to south-eastern New Guinea. Because no species of the *bastai-fasciolata*-subgroup has been recorded so far from New Guinea, the distribution pattern of both species is somewhat enigmatic and difficult to explain. Future collecting in New Guinea perhaps will bring new evidence through detection of species related to this subgroup.

KEY TO THE SPECIES RELATED TO *COPTODERA FASCIOLATA* (MACLEAY, 1887)

1. Pronotum as wide as head, basal excision deep, margin at position of anterior lateral seta angulate; elytra with a bright yellow, transverse spot in posterior half and a far less bright, serrate, oblique stripe in basal half (Figs 1, 2); apex of aedeagus elongate, not excised (Figs 3, 4) 2
- Pronotum much wider than head, basal excision shallow, margin at position of anterior lateral seta rounded; elytra either with two oblique, very serrate fasciae formed by longitudinal yellow lines, or with an uniformly yellow, somewhat X-shaped spot; apex of aedeagus deeply excised (see Fig. 1 in Baehr 2005) 3
2. Apical yellow spot very bright and well defined, not in contact with the basal oblique spot; head and pronotum greenish-bronze (Fig. 1); aedeagus with elongate, regularly triangular apex (Fig. 3). Tanimbar Islands ..... *C. bastai* sp. nov.
- Apical yellow spot less bright and less well defined, in middle widely meeting the basal oblique spot; head and pronotum reddish-bronze (Fig. 2); aedeagus with suddenly narrowed, arrow-shaped apex (Fig. 4). North-eastern Australia ..... *C. fasciolata* (MacLeay, 1887)
3. Elytral with an irregularly X-shaped pattern; head with coarse longitudinal ridges, surface structure of head very rugose. New Guinea ..... *C. wau* Darlington, 1968
- Elytra with two oblique, very serrate transverse fasciae formed by longitudinal yellows lines; head with simple, isodiametric microreticulation 4
4. Microreticulation of elytra coarse, surface dull; 6th and 8th striae interrupted in middle by a dark spot. New Guinea ..... *C. papuella* Darlington, 1968
- Microreticulation of elytra finer, surface glossy; 6th and 8th striae uninterrupted yellow. New Britain ..... *C. papuella nitescens* Baehr, 2005

ACKNOWLEDGEMENTS. I am indebted to J. Bašta (Brno) and M. Häckel (Prague) for the kind loan and gift of specimens and to P. Bulirsch (Prague) who made possible the loan.

REFERENCES

Baehr M. 2005: A new subspecies of *Coptodera papuella* Darlington from New Britain (Insecta, Coleoptera, Carabidae, Lebiinae). *Spixiana* 28: 33-35.

Baehr M. 2008: The Australian species of the genus *Coptodera* Dejean (Coleoptera, Carabidae, Lebiinae). *Coleoptera* 11 (2007): 175-199.

Darlington P. J. Jr. 1968: The Carabid Beetles of New Guinea. Part III. Harpalinae (continued): Perigonini to Pseudomorphini. *Bulletin of the Museum of Comparative Zoology* 137: 1-253.

Dejean P. F. M. A. 1825: *Species général des Coléoptères de la Collection de M. le Compte Dejean*. Vol. I. Paris: Méquignon-Marvis, 463 pp.

Habu A. 1967: Fauna Japonica: Carabidae. Truncatipennes group (Insecta: Coleoptera). *Biogeographical Society of Japan*, 338 pp.

Hope F. W. 1838: Characters and descriptions of several new genera and species of coleopterous insects. *Transactions of the Zoological Society of London* 1: 91-112.

Lorenz W. 2005: Systematic List of extant Ground Beetles of the World (Insecta Coleoptera "Geadephaga": Trachypachidae and Carabidae incl. Paussinae, Cicindelinae. Rhysodidae). 2nd ed. *Tutzing, printed by the author*. 530 pp.

Moore B. P., Weir T. A. & J. E. Pyke 1987: Rhysodidae and Carabidae. In: *Zoological Catalogue of Australia* 4: 17-320. Canberra: *Australian Government Publications Service*.

Received: 27.4.2014
Accepted: 20.5.2014