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New species and new records of the genus *Anomotarus* Chaudoir, subgenus *Anomotarus* s. str., from New Guinea

(Insecta, Coleoptera, Carabidae, Lebiinae)

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As a supplement to the revision of the species of the genus *Anomotarus* Chaudoir s. str. from the Oriental-Papuan Region, a new species, *A. cordifer* sp. n. is described from Papua New Guinea, and the Australian *A. ruficornis* Sloane is for the first time recorded from New Guinea. The key to the species of the Oriental and Papuan Regions is extended to cover both mentioned species. New records of *A. fuscipes* Darlington are also enumerated.

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Introduction

Just when the revision of the species of the lebiine subgenus *Anomotarus* s. str. from the Oriental and Papuan regions was printed, I detected in the rich unidentified material of the Australian National Insect Collection, Canberra, a new species of the subgenus *Anomotarus* s. str. from New Guinea and also a single New Guinean specimen of the Australian species *A. ruficornis* Sloane. This latter species is widely distributed through northern tropical Australia, though was not yet recorded from outside of Australia. The new species is herein described, and together with the New Guinean record of *A. ruficornis* Sloane it is inserted in the recent key to the Oriental-Papuan species of *Anomotarus* s. str. A few new records of *A. fuscipes* Darlington from Papua New Guinea are also enumerated.

Methods

Examinations and descriptions follow the methods used in the revision of the Oriental-Papuan *Anomotarus* s. str.

(Baehr 2004). It should be mentioned again, however, that body length has been measured from apex of labrum to apex of elytra; length of orbit was taken from posterior margin of eye to the position where the orbital curvature meets the neck; length of pronotum was measured along midline, and width of base of pronotum at the position of the posterior lateral setae.

The types are stored in Australian National Insect Collection, Canberra (ANIC) and in the working collection of the author at Zoologische Staatssammlung, München (CBM). Additional material is from Institut Royal des Sciences Naturelles, Brussels (IRSNB).

Anomotarus cordifer, spec. nov.

Figs 1, 2

Types. Holotype: ♂, PAPUA NEW GUINEA: Laloki, CSIRO Screw Worm Lab Apr. 1987 S. Bakker ex flight intercept trap (ANIC). – Paratype: 1♀, same data (CBM).

Diagnosis. The species is immediately recognized, and distinguished from all other species, by its pattern of a light cordiform sutural spot in the posterior part of the elytra.

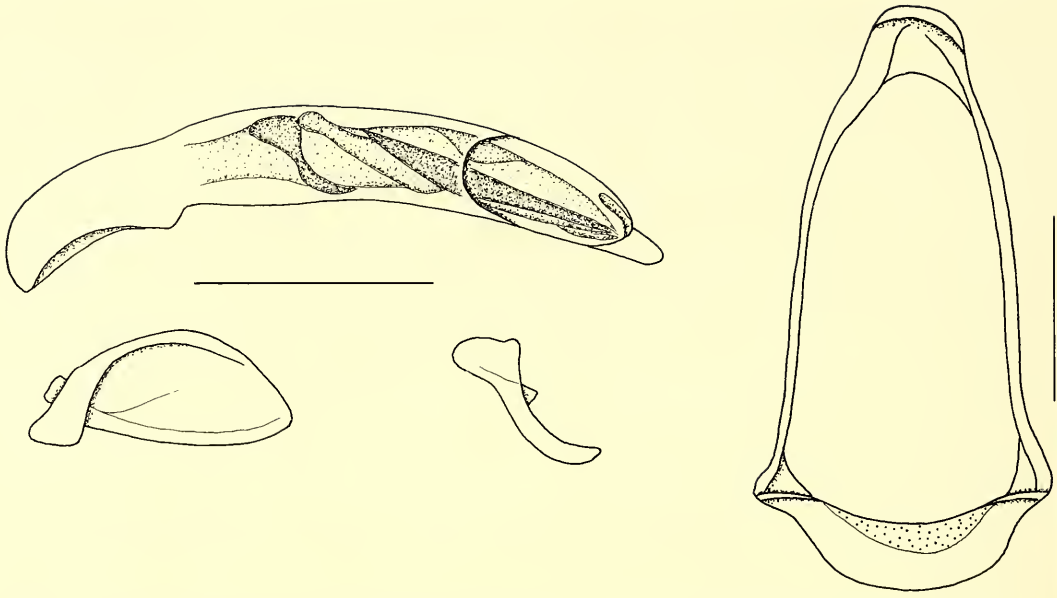


Fig. 1. *Anomotarus cordifer*, spec. nov. Male genitalia: aedeagus, parameres, and genital ring. Scales: 0.25 mm.

Description

Measurements. Length: 3.6 mm; width: 1.4 mm. Ratios. Length eye/orbit: 2.0-2.2; width/length of pronotum: 1.27-1.30; width widest diameter/base of pronotum: 1.36-1.38; width pronotum/head: 1.14-1.16; length/width of elytra: 1.41-1.45; width elytra/pronotum: 1.61-1.63.

Colour (Fig. 2). Black, elytra with some bluish lustre, and with a distinctly limited, bright yellow, cordiform sutural spot behind middle that occupies the three inner intervals. Labrum and mandibles piceous with reddish margins, other mouth parts, and antennae reddish. Femora dark, tibiae and tarsi reddish. Lower surface dark piceous to blackish.

Head. Eyes large, about twice as long as orbits, though laterally but little protruding over orbits. Orbits short, very convex. Frontal ridge inside of eye distinct, attaining about middle of eye. Labial palpus in male remarkably securiform. Mentum with acute median tooth. Antenna short, just attaining base of pronotum. Upper surface with dense and distinct isodiametric microreticulation and very sparse, barely perceptible punctuation. Surface moderately glossy.

Pronotum. Moderately wide, rather cordiform. Apex gently excised, apical angles slightly protruded though widely rounded off. Lateral margins anteriorly very convex, in posterior half very little convex, almost straight, sinuate just in front of the

small, though distinct, acute basal angles. Base laterally oblique and excised, in middle much projecting. Surface rather depressed. Median line shallow, in parts even superficial, anteriorly incomplete, near base impressed to a form a moderately deep furrow bearing sharp margins. Lateral margin narrow, little widened towards base, marginal channel moderately deep, margins distinctly upturned. Apex in middle not bordered, base bordered throughout. Anterior marginal set situated at widest diameter, just in front of apical third, posterior marginal set situated at basal angle. Surface with very sparse and extremely fine punctuation and with many extremely shallow and superficial transverse furrows. Basal field with some stronger longitudinal furrows, surface of basal field rough. Disk with traces only of extremely superficial, transverse microreticulation. Surface very glossy.

Elytra. Rather short and wide, gently widened towards apex, comparatively depressed. Apical margin barely excised, almost transverse. Lateral channel wide, depressed. Striae narrow, shallow, impunctate, intervals depressed. Surface with remarkably sericeous lustre, caused by the very dense, irregular, transverse microreticulation. Punctuation apparently absent. 3rd interval bipunctate, punctures situated near 2nd stria, the anterior one slightly in front of middle, the posterior one at apical quarter, difficult to detect.

Inner wings. Fully developed.

Lower surface. Prosternum with sparse and extremely short pilosity. Metepisternum elongate, $>2\times$ as long as wide at apex. Terminal abdominal sternite in male 2-setose, in female 4-setose.

Legs. Of average size. Two basal tarsomeres of protarsus in male squamose, but not widened. Claws with three rather large teeth.

Male genitalia (Fig. 1). Small in comparison to body size. Genital ring rather narrow, triangular, little asymmetric, apex short and rather wide. Aedeagus narrow and very elongate, slightly asymmetric, in middle barely widened, orificium moderately short, situated completely on left side. Lower surface very gently concave, apex short, rather wide, straight, situated on right side. Internal sac with rather simple folding, with a small, moderately sclerotized piece in basal part. Parameres very dissimilar, aetose, left one large, wide, triangular, right one small and short.

Female genitalia. Very similar to those of *A. stigma* Chaudoir, as figured in Baehr (2004).

Variation. Barely recognized.

Collecting circumstances. Both specimens were sampled in a flight intercept trap which means that they were caught during flight.

Distribution. Central Papua New Guinea. Known only from type locality.

Etymology. The name refers to the cordiform elytral spot.

Relationships. According to colour pattern of the elytra and to shape and structure of the aedeagus the new species seems to occupy a rather isolated position not only within the New Guinean *Anomotarus*, but in general within the whole subgenus. The absence of heavily sclerotized pieces in the internal sac and the different elytral pattern exclude any close relationship with the *ornatus*-group of the revision, and thus, *A. cordifer* might be more or less remotely related to the *stigma*-group with which it is provisionally grouped.

Anomotarus r. ruficornis Sloane

Sloane, 1917: 436; Csiki 1932: 1493; Moore et al. 1987: 305; Lorenz 1998: 471.

Note. Although the type(s) of this widespread Australian species are lost (Moore et al. 1987, Baehr in press), it is rather easily identified by size, shape, absence of the apical elytral spot, and extremely inconspicuous or almost completely wanting hu-



Fig. 2. *Anomotarus cordifer*, spec. nov. Habitus. Length: 3.6 mm.

meral spot. In Australia, this species (in the nominate subspecies) is widely distributed through the whole wet tropical belt from northeastern Queensland to northern Western Australia north of Great Sandy Desert, and it is not uncommon there. Most records, however, are from samplings at light which means that the species is not only capable of flight but flies deliberately and perhaps also over quite long distances.

The first record from New Guinea corroborates this opinion. In view of the record of a single specimen only, it is still unsettled, whether this was a unique straggler from northern Australia, whether the species is indigenous to Papua New Guinea. This question can be solved only by additional collecting efforts. It should be stressed once more herein that the material of *Anomotarus* available from this large island still is rather scarce, thus, discoveries of additional species or records are very probable.

New record: 1♂, NEW GUINEA, Morobe District, Bulolo, c. 1216 m, 15.xii.70, B. B. Lowry (ANIC).

Recognition

Both additional species are fairly easily included in the key to the Oriental and New Guinean species of the genus *Anomotarus* Chaudoir (Baehr 2004: 29). When trying *A. ruficornis* Sloane, either caption 7. is reached when the humeral spot is regarded inconspicuous, or caption 13. is reached, as for *A. cordifer*, spec. nov., because both species do not possess any apical or subapical elytral spot. References to figures of the revision are included in the key below with added "B04".

As a consequence, caption 7 has to be altered as following:

- 7. Striae shallow, intervals absolutely depressed; femora piceous. Papua New Guinea.....
.....*unicolor* Baehr
- Striae deep, intervals convex; femora testaceous..... 8.
- 8. Surface of elytra glossy; colour dark piceous, lateral margin of elytra narrow, not conspicuously light.....8a.
- Surface of elytra distinctly reticulate, far less glossy; colour of head and prothorax dark piceous, elytra commonly light brown, lateral margin of elytra wide, conspicuously lighter than surface. Northern Australia, Papua New Guinea.....*ruficornis ruficornis* Sloane
- 8a. Smaller species, length c. 4 mm; prothorax wider (ratio w/l >1.4), with narrower base (ratio diameter/base 1.33); eyes laterally distinctly surpassing orbits (B04, fig. 59). San Cristobal Is., Solomon Islands*lamprus* Baehr
- Larger species, length c. 5 mm; prothorax narrower (ratio w/l c. 1.2), with wider base (ratio diameter/base 1.24); eyes laterally but slightly surpassing orbits (B04, fig. 58). Umboi Is., Bismarck Archipelago.....*impictus* Baehr

Caption 13 has to be altered as following:

- 13. Elytra with common cordiform light spot slightly behind middle (Fig. 2). Papua New Guinea.....*cordifer*, spec. nov.
- Elytra without common cordiform light spot slightly behind middle 13a.
- 13a. Elytra with indistinct elongate humeral spot (B04, fig. 43). Papua New Guinea..... 13b.
- Elytra with transverse oval-shaped pale spot before middle (B04, fig. 56). Western Irian Jaya*ocellatus* Darlington

- 13b. Surface of elytra conspicuously sericeous; elongate, narrow, and depressed species, length commonly >5 mm. New Guinea
.....*gressitti* Darlington
- Surface of elytra not sericeous; shorter, wider, and less depressed species, length usually <5 mm. Northern Australia, Papua New Guinea.....*ruficornis ruficornis* Sloane

Anomotarus fuscipes Darlington

Darlington, 1968: 190; Lorenz 1998: 471; Baehr 2004: 55.

This species is so far known from Papua New Guinea and eastern Irian Jaya and it seems to be one of the commonest *Anomotarus* of New Guinea.

New records: 1♂, Papua New Guinea, Sisimangum village, Madang prov., I.G.: 26373, 1.VII.1981, Leg. J. Van Goethem (IRSNB); 1♀, Papua New Guinea, Wau, Morobe prov., Wau Ecology Institute, 1200 m, I.G.: 26373, 20-21.VI.1981, Leg. J. Van Goethem (IRSNB).

Collecting circumstances. Both specimens were caught at light, the male "near river".

Remarks

The discovery of an additional new species and the new record of an Australian species demonstrate that the number of species of the subgenus *Anomotarus* s. str. occurring in New Guinea is by no means adequately known. Although specimens of *Anomotarus* seem to be quite rare on this large island, or at least they are rarely captured on whatsoever reasons, the number of species is large and including the new species and new record at present amount 12 species. Even this number is large for this area if compared with numbers recorded from the whole Oriental region. However, habits and life histories of almost all New Guinean species are very little known, because most records are from light traps which give no indication to the ecological requirements of the sampled species.

As indicated by Baehr (2004, in press), most *Anomotarus* species seem to prefer open environments, from tropical savannah to semidesert, but few species only seem to live in rain forest. This latter preference of most New Guinean species may explain in part the rarity of specimens sampled, but certainly the still absolutely unsatisfactory sampling efforts in this large and extremely rugged island may likewise account for the rarity of specimens so far.

It should be repeated, at this place, that, in spite of the new record of a clearly Australian species, the

Anomotarus fauna of New Guinea undoubtedly is of Oriental origin, with Australian elements occurring only in a restricted area in the southeast of the island that bears climatic and floristic conditions much alike those characteristic of Northern Australia.

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