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A peculiar new genus and species of tachyine ground beetles from Australia

(Coleoptera, Carabidae, Bembidiini, Tachyina)

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A new genus and species of Tachyina (Bembidiini) is described from Australia: *Aenigmatachys*, gen. nov., *rubens*, sp. nov.

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Introduction

In the course of a prepared revision of the Australian tachyine species of the genera *Tachys* s. str. Stephens, 1829, *Paratachys* Casey, 1918, and *Polyderis* Motschulsky, 1862, a peculiar species was detected, which deviates from all known tachyine genera in the combination of several character states of the external morphology, and thus, merits the description now, because the full revision is far from being finished and certainly will need much more time to be finished.

The single species was kindly loaned from the Natural History Museum, London (NHM), where the holotype is stored.

The systematics of Tachyina is not yet finally settled and quite different opinions can be found in a couple of rather recent papers. For discussion see for example Baehr (2014, 2017). I do not follow the classification as used by Kopecký (2003), or in Lorenz's catalogue (Lorenz 2005), but I consider *Paratachys* and *Polyderis* genera separate from *Tachys* s. str. At least for the Australian species distinction of the three genera is quite easy, and the most striking differentiating character states are found on the elytra:

1. location of the 4th humeral lateral puncture and seta

2. shape of the recurrent stria and location of the posterior discal puncture and seta

3. location of the anterior discal puncture and seta.

In *Tachys* s. str. the four humeral punctures are located in a distinct furrow and the 4th puncture is situated close to the 3rd one. The recurrent stria is apically markedly incurved and the posterior discal puncture is situated far inside of the curvature. The anterior discal puncture invariably is attached to the 3rd stria and usually situated rather in the middle of the elytra.

In *Paratachys* no such humeral furrow exists and the 4th humeral puncture is well removed from the 3rd one. The recurrent stria is apically not or barely incurved and the posterior discal puncture is situated close to its apex. In the Australian species the anterior discal puncture is always situated outside the 3rd stria, either near the 4th stria or at or outside the 5th stria, and is more or less far moved towards the base.

In the genus *Polyderis* the subhumeral furrow is lacking; the recurrent stria is absent or very short, in one species only moderately elongate, but the posterior discal puncture is always situated in front of the anterior end of the recurrent stria; and the anterior discal puncture is situated at the position of the 3rd stria. Moreover, not all species of *Polyderis* possess deep mental pits.

A key to all genera of Bembidiini (including those of the subtribes Tachyina, Anillina, and Xys-

Fig. 1. *Aenigmatachys rubens*, gen. nov., sp. nov. Habitus (body length 2.0 mm).

tosomina), which occur in Australia, can be found in the forthcoming 2nd part of the book on the Australian Coleoptera, that is presently being printed by CSIRO, Canberra (Australian beetles Vol. 2).

At any rate, the new species described in the present paper cannot be included into *Tachys* s. str. because it lacks the ocellae in the mentum and the subhumeral furrow on the basal part of the elytra, in which the humeral punctures are located. Inclusion into *Paratachys* is also impossible because of the absence of the mental ocellae and of shape and position of the recurrent stria.

Taxonomy

Genus *Aenigmatachys*, gen. nov.

Type species. *Aenigmatachys rubens*, sp. nov., by monotypy.

Etymology. The name refers to the surprisingly unique systematic position of the genus within Tachyina.

Diagnosis. The genus is characterized by dorsally convex body, strongly cordate prothorax and markedly oval-shaped elytra; absent metathoracic wings; depressed eye; absence of ocellae in the mentum; absent 8th elytral stria; rounded humerus; absence of a posthumeral sulcus; oblique, rather elongate, at apex not incurved but suddenly ended in recurrent stria which is located quite close to the lateral margin; presence of two discal elytral punctures and setae, both located at the 3rd stria; position of the anterior discal puncture about at basal third of the elytra; position of the posterior discal puncture in front of the apical third of the elytra and very far from the end of the recurrent stria; and presence of four very weak but just perceptible elytral striae. The aedeagus is unknown, because both recorded specimens are females. The female genitalia have not been dissected, in view of the delicate condition of the specimens.

Additional character states may be taken from the description of the single recorded species.

Aenigmatachys rubens, sp. nov.

Fig. 1

Types. Holotype: ♀ (slightly damaged), "Australia Black B … (unreadable) / G.C. Champion Coll. B.M. 1927-409" (NHM). – Paratype: 1 ♀ (slightly damaged), same data (CBM).

Etymology. The name refers to the rufous colour.

Diagnosis. Small species, characterized by dorsally convex, unicolourous rufous surface, depressed eye, cordate pronotum, elongate, markedly oviform elytra bearing four very weak striae and absent metathoracic wings. Other character states, particularly those of chetotaxy, as in the genus diagnosis. Aedeagus and female genitalia unknown.

Description

Measurements. Body length: 2.0–2.05 mm; width: 0.8–0.85 mm. Ratios: Width/length of pronotum: 1.40–1.42; widest diameter/width of base of pronotum: 1.38–1.40; width base/apex of pronotum: 0.89–0.90; length/width of elytra: 1.50.

Colour (Fig. 1). Unicolourous rufous, head or at least the area near the eye slightly darker. Antenna, palpi, and legs pale red.

Head (Fig. 1). Eye moderately large but depressed and laterad but little produced, orbit small, oblique. Labrum anteriorly straight, 6-setose. Clypeus anteriorly straight, bisetose, clypeal suture moderately deep. Frons convex without any impression. Frontal furrows simple, deep and fairly wide, almost straight but slightly oblique, anteriorly not crossing onto the clypeus, posteriorly becoming weaker, attaining almost the middle of the eye. Mandible rather elongate, straight, but apex suddenly incurved. Palpi short and thick, particularly the labial palpus; apical palpomeres of both palpi elongate. Antenna rather elongate, median antennomeres c. 1.5 × as long as wide, antenna more densely pilose from middle of 3rd antennomere. Mentum without ocellae, with short and wide mental tooth. Dorsal surface impunctate, with distinct, isodiametric microreticulation, moderately glossy.

Pronotum (Fig. 1). Rather narrow but slightly wider than the head, markedly cordate, with narrow base. Dorsal surface rather convex. Apex deeply excised, apical angle markedly projected, rounded at tip. Lateral border regularly convex, near base suddenly concave, in basal sixth straight, parallel. Base in middle slightly produced, laterally straight, basal angle right, acute, laterad slightly produced. Lateral sulcus narrow throughout, basad not widened. Apex not margined, base weakly margined. Median line distinct, slightly impressed. Anterior transverse impression very inconspicuous, posterior impression moderately deep, rather v-shaped, in middle weak, impunctate. Basal grooves deep, confluent with the basal sulcus. Base near lateral margin without carina. Anterior lateral seta inserted at apical fifth, slightly in front of widest diameter, posterior lateral seta inserted at basal angle. Surface with inconspicuous and superficial, about isodiametric microreticulation, with extremely fine, barely traceable punctures, moderately glossy.

Elytra (Fig. 1). Moderately elongate, remarkably oviform; narrowed towards base; dorsal surface convex. Humerus rounded, basal margin incomplete, attaining about level of 3rd stria. Lateral margin in basal sixth serrate. Three or even four striae in middle of elytra just perceptible, but very weak, except the sutural stria, which is composed of several moderately deep grooves or short sulci. Lateral striae virtually not visible. 8th stria absent. Only the sutural stria attaining base and apex. Recurrent stria deep, elongate, straight and slightly oblique, situated rather close to the lateral margin, at the anterior end not incurved but ending abruptly. Disk bipunctate, both punctures situated at the 3rd stria, the anterior one at basal third, the posterior one slightly in front of the apical third, far removed from the end of the recurrent stria. The latter with a puncture inside at about its basal third. No humeral sulcus present, the 4th humeral puncture far removed from the 3rd one. Surface impunctate, with rather superficial microreticulation which is composed of slightly transverse meshes, moderately glossy.

Lower surface. Impilose and glabrous. Metepisternum c. 1.3 × as long as wide at apex. Terminal abdominal sternum in female apparently quadrisetose. Metathoracic wings absent.

Legs. Latero-apical margin of protibia obliquely excised. Squamosity of male tarsomeres unknown.

Male genitalia. Unknown.

Female gonocoxites. Not dissected due to the fragile condition of the specimens.

Variation. Little variation noted.

Distribution. Australia, but whereabouts unknown, because the label is in part unreadable. However, the early sampling date of the specimens, well before 1927, suggests a sampling locality in south-eastern Australia.

Collecting circumstances. Not recorded.

Relationships. Uncertain. The combination of certain important character states, as structure of mentum, shape of the recurrent stria, and chetotaxy of the elytra, i. e. structure of the humeral punctures and location of the discal punctures, render this genus and species impossible to include into or even attach it to anyone of the described genera. On the contrary, these character states confer this genus and species an unique position within the Australian tachyine beetles and certainly also within the subtribe Tachyina.

The absence of flying wings which is very rare in Tachyina, even stresses the unique position of the genus.

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