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A new species of the genus *Adelotopus* Hope from northern Queensland, Australia

(Insecta, Coleoptera, Carabidae, Pseudomorphinae)

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Adelotopus parrotti, spec. nov. is described from northern Queensland, Australia. It belongs to the "*rubiginosus*-group" of species in the sense of Baehr (1997) that includes a large number of externally extremely similar, convex, reddish species that are most common in the drier areas of the continent. With respect to the male aedeagus, the new species most probably is closely related to the widespread *A. rubiginosus* Newman, but is distinguished by slightly more depressed body, in particular by the wider, more depressed pronotum with more explanate lateral margins, and by sparser punctuation of the elytra.

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Introduction

In a determination sample of diverse Australian ground beetles that included some pseudomorphine beetles, within a small series of the common and widespread *Adelotopus rubiginosus* Newman two specimens were detected that at the first glance differ in body shape, in particular shape of the pronotum, from *A. rubiginosus*. Closer examination revealed that the two specimens belong in the *rubiginosus*-subgroup within the *rubiginosus*-group, which subgroup is defined by the lack of any microreticulation on the frontal part of the head. Although the male aedeagi of the two mentioned specimens rather match that of *A. rubiginosus* – at least better than any other species of the subgroup – some character states of body shape and structure of surface are different. Hence these specimens are described as a new species. The sampling locality of the new species is far outside of the known range of the common and comparatively well known and well documented *A. rubiginosus*.

The *rubiginosus*-group of the pseudomorphine genus *Adelotopus* Hope at present covers 25 species (Baehr 1997, 2002) that are very similar in external shape and structure. All species are more or less uniformly reddish to yellow, rather convex and of small to medium size. Species identification and distinction using only external characters is very difficult if not impossible, and not only the males, but likewise females are best identified through their genitalia: male aedeagus and female stylomere and lateral plate.

The genus *Adelotopus* is an apotypic one within the outstanding carabid subfamily Pseudomorphinae, and, apart from the confirmed vivipary, this status is also demonstrated by the female stylomeres which are very depressed, foliaceous structures without any distinction between basal and apical stylomeres (see figures in Baehr 1997). However, shape of the stylomere and of the likewise very depressed lateral plate, and the number of setae on both structures are characteristic for most species.

Style and format of the description exactly corresponds to those in my pseudomorphine revisions (Baehr 1992, 1997, 2002, 2005) which also can be used to gain additional information about the genus *Adelotopus* Hope, its morphology, distribution, and

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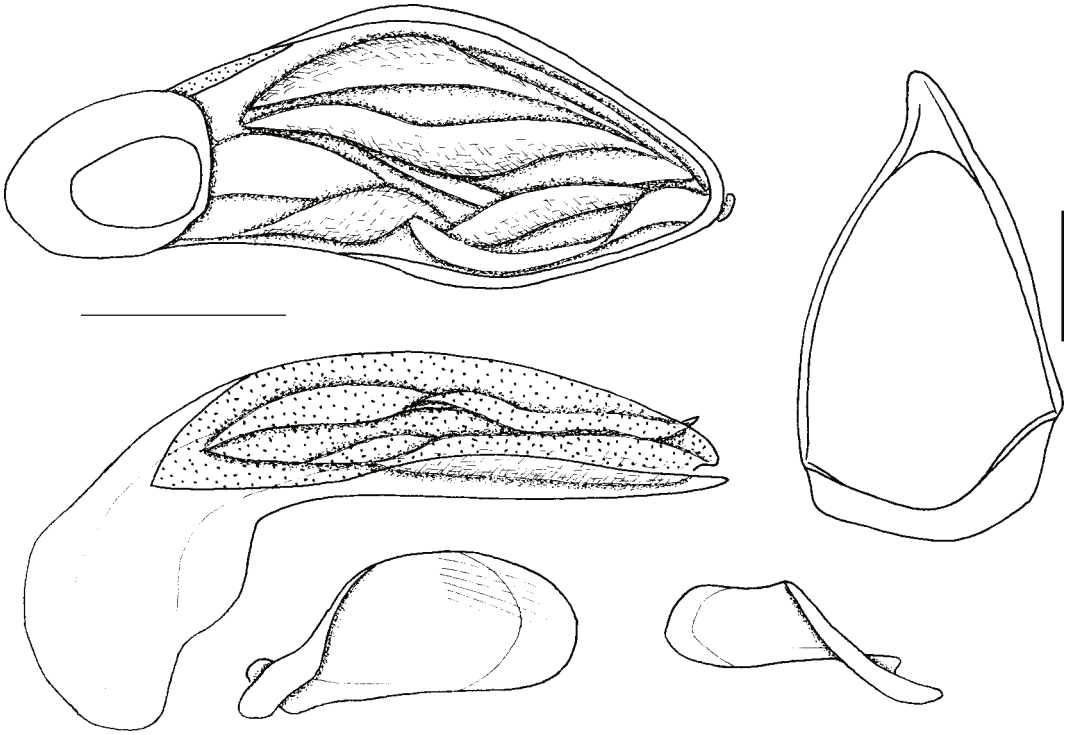

Fig. 1. *Adelotopus parrotti*, spec. nov. Details of male genitalia: Lower surface and lateral view of aedeagus; parameres, genital ring. Scales: 0.25 mm.

habits, and generally about the Australian pseudomorphines.

Adelotopus parrotti, spec. nov.

Figs 1, 2

Types. Holotype: ♂, Australia, N. Qld. Little Mulgrave June 7.1970 R. E. Parrott (Agriculture Canada, Ottawa). – Paratype: 1♂, same data (working collection M. Baehr, in Zoologische Staatssammlung, München).

Diagnosis. Species of the *rubiginosus*-group and therein of the group of species that lack any microreticulation on the head surface. In shape of aedeagus fairly similar to *A. rubiginosus* Newman, though aedeagus slightly wider; also body more depressed, pronotum wider with wider lateral margins, and elytra with sparser punctuation.

Description

Measurements. Length: 4.4-5.0 mm. Width: 1.95-2.20 mm. Ratios. Width/length of pronotum: 1.54-1.58; width base/apex of pronotum: 1.47-1.52; width pronotum/head: 1.55-1.56; length/width of elytra: 1.53; length elytra/pronotum: 2.48-2.51.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish, fore body faintly darker.

Head. Rather short, fairly wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex fairly concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus moderately widened, fairly securiform. Terminal palpomere of labial palpus very wide, markedly securiform, at apex about as wide as at lateral margin. Antenna short, 8th-9th antennomeres almost twice as wide as long. Microreticulation absent, punctuation fine, fairly dense. Surface with weak sulcus medially of eyes, without wrinkles, impilose, glossy. Ventro-laterally

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of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum. Wide, markedly convex, base distinctly wider than apex, lateral margins evenly curved, rather incurved towards base, hence widest diameter situated at basal third. Apical angles moderately produced, at apex obtusely rounded, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, markedly convex in excision, feebly bordered. Margins moderately wide, rather channelled, finely bordered. Basal angles very widely rounded off. Base almost straight, finely and rather irregularly bordered. Surface near base with very shallow transverse impression. Microreticulation absent, punctuation fine on disk, laterally slightly coarser, moderately dense, but not at all rugose. Surface impilose, very glossy.

Elytra. Rather wide, moderately convex, slightly depressed on disk, rather parallel, though usually faintly narrowed in basal third. Lateral borders almost straight. Apex wide, slightly oblique, barely convex, apical angles widely rounded off. Humeri rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, visible along the whole length. Basal border incomplete, attaining outer third of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind humerus. Marginal setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, punctuation moderately coarse though not rugose, fairly dense, surface impilose, very glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex very short, narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 1.8 x as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and very shortly setose.

Legs. Elongate, 1st tarsomere of protarsus slightly longer than wide, tibial groove of profemur moderately deep, anterior plate overlapping the groove for about apical third, posterior border of groove sharp. Femur wide. Metatibia elongate, c. 6 x as long as wide, 1st tarsomere of metatarsus almost 2.5 x as long as wide.

♂ genitalia (Fig. 1). Genital ring rather wide, convex, fairly asymmetric, left arm convex, right almost straight, with elongate apex and slightly asymmetric, narrow, little excised base. Aedeagus rather short, fairly depressed, in middle considerably widened, slightly asymmetric. Basal part rather long, moderately bent. Lower surface gently convex, not perceptibly striped. Apex moderately wide, evenly rounded off, rather symmetric. Orifice elongate, internal sac complex, with a distinct oblique fold near apex. Both parameres large, rather elongate, square, with widely rounded apex, left paramere considerably larger than right, upper part of lateral surface moderately striped.

Fig. 2. *Adelotopus parrotti*, spec. nov. Habitus. Length: 5.0 mm.

♀ genitalia. Unknown.

Vivipary. Unknown.

Variation. Apart from some differences of body size little variation noted.

Collecting circumstances. Unknown, though most probably this is a subcorticolous species like all other species of the genus.

Distribution. North-eastern Queensland, Australia. Known only from type locality. The type locality is a small river valley in submontane rain forest.

Material examined (2). Only the holotype and the paratype.

Etymology. The name is an acronym in honour of the collector.

Relationships. Member of the *rubiginosus*-group in the sense of Baehr (1997, 2002) and, according to the absence of any microreticulation on the head and to the structure of the male aedeagus, most closely related to the widespread *A. rubiginosus* Newman.

Recognition. For recognition the revised key to the species of the *rubiginosus*-group in Baehr (2002) should be used. According to absence of microre-

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ticulation on head, and by comparison of shape and structure of the aedeagus using the figures in Baehr (1997, 2002, as **B97** and **B02**, respectively) caption 140. is easily reached which has to be altered as following:

140 Aedeagus narrower, lateral margin near apex faintly concave (Fig. 1; B97 fig. 170g). Punctuation of elytra less coarse and dense, on the average 3 or less punctures present pro interval. e. SA, Vic, ACT, NSW, QLD, c. NT, s. WA ..... 140a.

– Aedeagus wider, lateral margin near apex convex (**B97** fig. 186g). Punctuation of elytra coarser and denser, on the average 4 punctures present pro interval. ♀ unknown. n. WA .... *grossepunctatus* Baehr

140a. Pronotum narrower and more convex, ratio w/l<1.51, usually less, with narrower lateral margins; elytra more convex, with c. 3 punctures present pro interval; aedeagus less widened in middle, left paramere slightly shorter (**B97** fig. 170g). e. SA, Vic, ACT, NSW, c. and s. QLD, c. NT, s. WA .... *rubiginosus* Newman

- Pronotum wider and less convex, ratio w/l>1.54, with wider lateral margins; elytra more depressed, with c. 2 punctures present pro interval; aedeagus wider in middle, left paramere slightly longer (Fig. 1). ne. QLD..... .....*parrotti*, spec. nov.

Remarks

Very few species of the *rubiginosus*-group in the sense of Baehr (1997, 2002) have been recorded so far from tropical north-eastern Queensland, and those species usually were discovered in open sclerophyll forest that in northern Queensland is mainly dominated by a number of bark shedding *Eucalyptus* species which are the shelter of most pseudomorphine species in Australia. The discovery of the new species in a rain forest grown river valley thus seems surprising, because very few pseudomorphine species thus far were recorded from rain forest, and certainly no one of the genus *Adelotopus* nor even of the *rubiginosus*-group. This group of presently 25 described species (Baehr 1997, 2002) is mainly distributed in the drier parts of Australia and has its highest species diversity in semiarid southern Australia. Therefore, I guess that even in the mentioned rain forest covered type locality of *A. parrotti* the specimens were collected rather from eucalypts growing in patches of open forest in the Mulgrave River Valley, or along the rivers course, than actually in rain forest.

The new species most probably is next related to the widespread *A. rubiginosus* Newman, which species is distributed mainly in drier areas of the Southeast and Interior of Australia. Despite of the large number of specimens examined in the revision, no one specimen of *A. rubiginosus* was ever recorded from north-eastern Queensland. Thus, *A. rubiginosus* and *A. parrotti* seem to inhabit different ranges and to exclude one another.

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