

**A new species of the genus *Brachypelus* (Coleoptera: Carabidae: Scaritinae: Clivinini) from Madagascar. Part 3**

Petr BULIRSCH<sup>1</sup> & Jiří JANÁK<sup>2</sup>

<sup>1</sup>Milánská 461, CZ-109 00 Praha 111, Czech Republic  
e-mail: p.bulirsch@seznam.cz

<sup>2</sup>Rtyně nad Bílinou, č. 4, CZ-417 62, Czech Republic  
e-mail: jiri.janak@heineken.com

**Taxonomy, description, faunistics, key, Coleoptera, Carabidae, Scaritinae, *Brachypelus*, Madagascar**

**Abstract.** A new species of the genus *Brachypelus* Putzeys, 1866 from the north-eastern part of Madagascar is described, illustrated and compared to the similar species. Species of the genus with rounded humeri are keyed and second finding of *B. vonickai* Bulirsch, Janák & Moravec, 2005, known in a single type, is given.

#### INTRODUCTION

This paper concurs with papers of Basilewsky (1973, 1976), Bulirsch et al. (2005) and Bulirsch & Moravec (2009), where known species of the apterous clivinine genus *Brachypelus* Putzeys, 1866 were described or revised. Species of this genus are endemic to Madagascar and can be collected mostly by sifting the forest litter in wet indigenous forests.

#### MATERIAL AND METHODS

The new species described here has been compared to the types of all to date known species of the genus, either loaned from diverse museums or placed in the collection of the first author. The methods of measurement of total length and proportions of different parts of body follow Bulirsch et al. (2005). Length of body is quoted with accuracy 0.05 mm; length of median lobe of aedeagus with accuracy 0.01 mm. All studied specimens of the known species and the type of the new species were used for the measurements. Male genitalia (aedeagus) of the new species was embedded in Euparal. Habitus images were taken with a Canon EOS 700D camera in combination with a Canon MP-E65 1-5x macro lens. Images of aedeagus and parameres were made using an above mentioned camera mounted on a Motic BA 410E-T compound microscope in transmitted light. Resulting images were focus stacked using Zerene Stacker and then postprocessed in Paint.Net, Paint, XnView and Live Photogallery.

The following abbreviations are used to indicate the depository of specimens:

NHMW Naturhistorisches Museum, Wien, Austria;

NMPC National Museum, Praha, Czech Republic;

PBPC Petr Bulirsch, private collection, Praha, Czech Republic.

Further abbreviations used: BSP: basal (prescutellar) setiferous puncture(s); DSP: dorsal setiferous puncture(s); SP: setiferous puncture(s); HT: holotype; / (a forward slash): indicates the end of a line on locality labels; //: indicates the end of a label and the beginning of the next one.

## RESULTS

### Genus *Brachypelus* Putzeys, 1866

A very rare and endemic clivinini genus with 15 known species occurs in mostly very limited areas in the eastern part of Madagascar. This genus was established by Putzeys (1866) for a single species, Alluaud (1935) described its second species, Basilewsky (1976) next three, another nine Bulirsch et al. (2005) or Bulirsch & Moravec (2009), and finally, Kavanaugh & Rainio (2016) established the last to date known species.

#### *Brachypelus mangabe* sp. nov. (Figs. 1-6)

**Type material.** Holotype (♂): Madagascar, Nosy M[angabe] / 15.4966 49.7643 / 106 m, 1.xii.2018, / MD11, V. Grebennikov [leg.], (NMPC, temporary in PBPC).

**Description.** Habitus as in Fig. 1; length of body 4.30 mm. Surface dark piceous, antennae and mouthparts rusty brown, legs dark rusty brown; underside piceous.

Head (Fig. 2). Smooth, convex, with very fine micropunctures. Anterior margin of clypeus slightly emarginated, distinctly bordered, lateral lobes protruded anteriorly, slightly separated from convex supraantennal plates. Transversal furrow distinct, moderately impressed; facial furrows deep, barely divergent posteriorly; very broad with reticulated bottom. Eyes broad, almost 1.5 times as broad as width of antennomere 2. Antennae moniliform, with outer antennomeres nearly globose. Labrum 7-setose.

Pronotum. Slightly transversal, moderately vaulted from lateral view; 1.21 times as wide as long, 1.61 times as wide as head, smooth, without microsculpture except irregularly, very narrowly reticulated area along lateral margin, with fine micropunctures. Lateral channel moderately broad and entire; sides in anterior half directly, in posterior half barely convexly attenuated anteriorly; maximum width behind second third of pronotal length, above posterior SP; posterior angles rather narrowly rounded, anterior ones rather sharp, distinctly protruding anteriorly. Anterior transverse impression medially indistinct, median line strongly impressed and broad, distinct towards base.

Elytra. Convex, outline ovate, maximum width distinctly before middle; 1.54 times as long as wide, 1.11 times as wide as pronotum, 2.06 times as long as pronotum; base nearly rectilinear to stria 3, then moderately strongly sloping; humeri moderately rounded; humeral margin continuous, without humeral denticles. BSP distinct, superficially connected with striae 1-2. Base narrowly reticulated, all intervals and apex shiny, without reticulation. Lateral channel wide, continuous, at base extended to stria 3. Elytral striae deeply impressed, moderately deeply, irregularly punctate, not weakened apically, abruptly diminish on apical inclination. Interval 3 with one DSP in posterior fourth, in stria 3. Intervals moderately



Figs. 1-6. *Brachypelus mangabe* sp. nov. (HT). 1- Habitus (real length 4.30 mm); 2- head; 3- aedeagus, right lateral view; 4- parameres; 5- apex of aedeagus from dorso-apical view; 6- basal sclerite of median lobe.

strongly convex in its whole length, postero-lateral part of apical inclination smooth.

Protibia. Relatively narrow from lateral view.

Ventral part. Ventral segments not reticulated, last visible segment smooth. Epipleura of elytra and proepisterna shining, not reticulated, latter with few transverse irregular wrinkles along lateral margin.

Aedeagus. As in Figs. 3-6; 0.90 mm long; median lobe in lateral view narrow, strongly curved in apical third; lower margin in subapical part slightly bulging (as in Fig. 3). Basal sclerite as in Fig. 6, narrow, 0.20 mm long. Apex from dorso-apical view as in Fig. 5, narrow, long, transversally cut, with narrowly rounded edges. Parameres as in Fig. 4, larger one 1-setose (seta broken).

**Differential diagnosis.** *B. mangabe* sp. nov. belongs to a small group containing another three species which are easily recognizable from all other taxa by having the humeri completely rounded, without humeral teeth. According to Bulirsch et al. (2005) and Bulirsch & Moravec (2009) the new species can be distinguished from similarly small *B. microphthalmus* Basilewsky, 1976, by the eyes being much broader; by the elytra being a bit longer, having the base more sloping to more rounded humeri, the striae much deeper apically and the elytral intervals much more vaulted apically (in *B. microphthalmus* are the intervals almost flat latero-apically). Both remaining species, *B. obesus* Putzeys, 1866 and

*B. janaki* Bulirsch & Moravec, 2009, have the body much larger (about 6-7 mm); the former one has moreover the head with only six labial setae and without the transverse furrow whereas the latter has numerous DSP in the intervals 3, 5 and 7.

**Name derivation.** In accordance with the origin of the type specimen, Nosy (= Island) Mangabe in Antongil Bay in NE part of Madagascar.

***Brachypelus vonickai* Bulirsch, Janák & Moravec, 2005**

**New material examined:** (8 specimens): S-Madagascar, Col / de Manangotry b. / Ft. Dauphin, lg. Franz, (NHMW, PBPC).

**Comment.** Described in a single male. It is second finding of this species near its type locality.

KEY TO SPECIES OF GENUS *BRACHYPELUS*  
(species with rounded humeri without humeral tooth)

Bulirsch et al. (2005) published a key to all *Brachypelus* species known in that time, later were established another two species: of them *B. janaki* Bulirsch & Moravec, 2009 has rounded humeri whereas *B. ranomafanae* Kavanaugh & Rainio, 2016 has a distinct humeral teeth. The known species with rounded humeri are keyed below.

- 1(8) Elytra with broadly rounded humeri.
- 2(5) Large species, body length 6.0-7.4 mm.
- 3(4) Labrum 6-setose, eyes very wide, about twice wider than antennomere 2. Head with very superficial to indistinct transverse clypeal furrow, elytra with apically slightly vaulted intervals, with one DSP in interval 3. .... *B. obesus* Putzeys, 1866
- 4(3) Labrum 7-setose, eyes wide, almost 1.5 times as broad as antennomere 2, head with distinct transverse clypeal furrow, elytra with apically strongly vaulted intervals, with 5-12 DSP in intervals 3, 5, 7. .... *B. janaki* Bulirsch & Moravec, 2009
- 5(2) Smaller species, body length 4.3-4.9 mm. Labrum 7-setose.
- 6(7) Eyes narrow, a bit narrower than width of antennomere 2. Elytral striae disappearing apicad, intervals almost flat in apical half of elytra. Body length 4.5-4.9 mm. .... *B. microphthalmus* Basilewsky, 1976
- 7(6) Eyes wide, almost 1.5 times as broad as width of antennomere 2. Elytral striae not weakened apicad, intervals convex apically. Body length 4.3 mm. .... *B. mangabe* sp. nov.
- 8(1) Elytra with distinct humeral teeth. .... remaining species

ACKNOWLEDGEMENTS. Our hearty thanks are due to Vasily Grebennikov (Ottawa, Canada) who made available the type specimen (research permit 249/18-MEEF/SG/DGF/DSAP/SCB.Re) and to Harald Schillhammer (NHMW) for loan of material and donation of some specimens.

REFERENCES

ALLUAUD CH. 1935: Carabidae recueillis à Madagascar par MM. A. Seyrig et G. Olsoufieff de 1933 à 1935. *Afra*, 10: 1-31.

BASILEWSKY P. 1973: *Insectes Coléoptères. Carabidae, Scaritinae, I. Faune de Madagascar*. Paris: Muséum national d'Histoire naturelle, 322 pp.

BASILEWSKY P. 1976: *Insectes Coléoptères. Carabidae, Scaritinae, III. Supplement a la systematique. Faune de Madagascar*. Paris: Muséum national d'Histoire Naturelle, 41: 163-220.

BULIRSCH P., JANÁK J. & MORAVEC P. 2006: New species and findings of Scaritinae (Coleoptera: Carabidae) from Madagascar. *Studies and Reports of District Museum Prague-East, Taxonomical Series* 1(1-2): 1-35.

- BULIRSCH P. & MORAVEC P. 2009: New species and findings of Scaritinae (Coleoptera: Carabidae) from Madagascar. Part 2. *Studies and Reports of District Museum Prague-East, Taxonomical series* 5(1-2): 27-36.
- KAVANAUGH D. & RAINIO J. 2016: Twenty-six new species of predaceous ground beetles (Coleoptera: Adephaga: Carabidae) from Ranomafana National Park, Madagascar. *Proceedings of the California Academy of Sciences (Series 4)* 63: 201-268.
- PUTZEYS M. J. 1866: Révision générale des Clivinides. *Annales de la Société Entomologique de Belgique, Bruxelles* 10: 3-342.

*Received: 31.5.2019*

*Accepted: 20.6.2019*

*Printed: 5.10.2019*

