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Two new *Grouvellina* species from Eastern Madagascar (Coleoptera: Carabidae: Rhysodini)

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Abstract. *Grouvellina bulirschi* sp. n. and *G. janaki* sp. n. from Eastern Madagascar are described and illustrated. The new species are compared with the morphologically most similar congeners and their relationships are hypothesized.

INTRODUCTION

The genus *Grouvellina* R. T. Bell & J. R. Bell, 1978 is the only genus of Rhysodini known from Madagascar and comprises fourteen species. They are known exclusively from Madagascar. Two other species (*Rhysodes canaliculatus* Castelnau, 1836 and *Rhysodes planifrons* Fairmaire, 1893), described from Madagascar and from Mayotte (Comoro Islands) respectively, were supposed by R. T. Bell & J. R. Bell (1978, 1979) as possible members of this genus, but the types of mentioned species were not located and the original descriptions are not detailed enough. The purpose of recent paper is to describe the new species belonging to the genus *Grouvellina*.

MATERIAL AND METHODS

This paper is based on study of type material of the new species described below and few representatives of related species. Listed below, with abbreviations used in the text, there are the names of collectors and institutions from which additional material was borrowed and/or in which the type material of the new species is deposited:

cBU collection of Petr Bulirsch, Praha (Czech Republic);
cHO collection of Oldřich Hovorka, Dobříš (Czech Republic);
cMRAC collection of Musée Royal de l'Afrique Centrale, Tervueren (Belgium);
cNMP collection of National Museum, Praha (Czech Republic).

Measurements were made with an MBS-10 stereoscopic microscope, at magnifications of 8x, 16x and 32x. Measurements of body parts and corresponding abbreviations used in the text are as follows:

EL elytral length - length of left elytron measured along sutura from basal border to apex;
EW elytral width - maximal width of both elytra combined;
HL length of head - measured from apex of clypeus to posterior margin of temporal lobe;
HW width of head - maximal width of head (including eyes);
PL pronotal length - length of pronotum measured along mid-line;
PW pronotal width - maximal width of pronotum;
TL total length - length measured from the apex of left mandible (mandibles closed) to the apex of left elytron.

The morphological terms used in this study are adopted from R. T. Bell & J. R. Bell (1978, 1979).

Supplementation to incomplete (or missing) data on locality labels is in square brackets.

All type specimens of newly described species are provided with one red printed label: "*name of species* sp. nov., HOLOTYPE, ALLOTYPE or PARATYPE, det. O. Hovorka, 2007".

DESCRIPTIONS

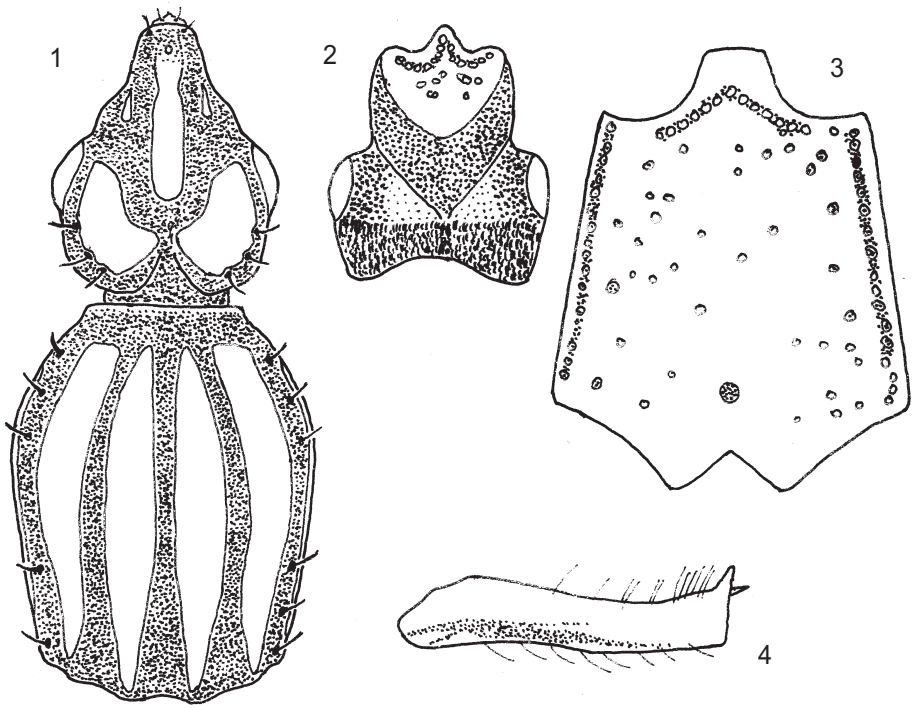
Grouvellina bulirschi sp. n.

(Figs 1-4)

Type material. Holotype (♂) labelled: "E Madagascar 19.-23.xii. 1998, 30 km ESE of Betroka, 1600 m [a.s.l.], Vohitrosa forest, 2 km NEE of ▲ 1825m [a.s.l.], J. Janák lgt. " (cHO). Allotype (♀): the same data as holotype (cHO). Paratypes: (5 ♂♂, 3 ♀♀), labelled: "E Madagascar 19.-23.12.1998, 30 km SEE of Betroka, 1600m [a.s.l.], Vohitrosa forest, 2 km NEE of ▲ 1825m [a.s.l.], P. Bulirsch lgt." (cBU, cMRAC); (1 ♀), labelled "E Madagascar 25.-28.xii.1998, 32 km ESE of Betroka, 1650-1700 m [a.s.l.], Vohitrosa forest, 0.5 km S of ▲ 1798m [a.s.l.], J. Janák lgt. " (cHO); (1 ♀), the same data as holotype (cNMP).

Description. Habitus - the new species is relatively large, habitually very similar to its congeners. Body colour (including appendices) dark brown to black, only tarsomeres lighter brown and palpomeres red-brown to yellow-brown. Body narrow, elongated. TL 6.5-8.3 mm (average 7.4 mm; N=11). Head longer than wide, HL:HW 1.15-1.20. Pronotum markedly longer than wide, PL:PW 1.30. Elytrae elongate, EL:EW 2.3-2.4, widest near the midlength.

Head (Fig. 1) with large eyes. Antennae with tufts of minor setae on antennomeres V-X. Antennomere XI longer than wide, apical stilet prominent, 0.25 as long as antennomere. Antennomere I dorsally extensively pollinose, antennomere II with two (sometimes confluent) transverse pollinose bands, antennomeres III-X with apical but no basal band of pollinosity. Frontal, antennal and postclypeal grooves deep. Orbital groove complete. Median lobe long, narrow, parallel-sided, its tip rounded. Parafrontal bosses small, but distinct. Temporal lobe 1.3 times longer than wide, shallowly sinuate anterior to obtuse median angles, latter



Figs 1-4. *Grouvellina bulirschi* sp. n. 1- head and pronotum, dorsal view; 2- head, ventral view; 3- metasternum; 4- posterior tibia of male.

narrowly separated. Three to four temporal setae present, posterior one tends to be inserted on margin of pilosity or almost without contact with pilosity. Occiput and frontal pit with rufous to yellow-red pilosity. Mentum pollinose only laterally, most of its surface glabrous, postmentum contrastingly pollinose (Fig. 2); two to three pairs of postlabial setae present. Labrum with one pair of large setae; second (medial) pair is strongly reduced in size and often seemingly connected, growing from the common pit in the middle of labrum, or missing.

Pronotum (Fig. 1) elongate, its sides slightly convex, widest point approximately in the middle, slightly narrowed at the base, more strongly at apex. Lateral pronotal margin not sinuate anterior to hind angle, with 5-6 lateral setae (in one specimen with 8 setae). Pronotal carinae moderately wide, wider than the grooves, convex; both pairs straight, inner ones (sub)pointed on both sides, outer carinae obtuse or transversely cut at apex. Precoxal carina present but slight, short, about 0.3 as long as distance to anterior margin of prosternum. Prosternal process with deep medial pit between coxal cavities and terminally with deep and large, slightly transverse pollinose fovea.

Elytral striae broad, broader than interstriae, coarsely punctured, pollinose; inner elytral striae formed in anterior half by partly discontinuous row of punctures only. Elytral intervals narrow, subcarinate; inner ones in anterior half connected between sparse punctures by narrow,

smooth, not pollinose stripes. Humeral tubercle moderately prominent. Elytral stria I with 2-5 setae near apex, elytral stria II with 3-6 setae in apical third, elytral stria IV with 7-9 setae, elytral stria VII with 7-9 setae in apical quarter, apical tubercle with 2 setae. Metasternum (Fig. 3) with lateral pollinose strips and large punctures, punctuation becomes sparse towards middle; anteriorly with transverse pollinose strip, posteriorly with deep medial pit.

Anterior femur without ventral tooth, male without proximal tooth on anterior tibia. Femora of all pairs in both sexes sinuate ventrally. Hind calcar of male (Fig. 4) relatively small, its tip blunt.

Differential diagnosis. The newly described species is characterized by unique set of characters and differs from all its congeners. The variability in number of setae on labrum is strange character - the number of these setae is a very important morphological character in this genus (R. T. Bell & J. R. Bell, 1979: 409). There is a distinct tendency to reduction in *G. bulirschi* sp. n. - if the inner pair of setae is present, than they are very small and indistinct. This fact made relationships with rest of species somewhat obscure. In the known species of *Grouvellina* with reduced number of setae on labrum the lateral (not the inner) setae are lost.

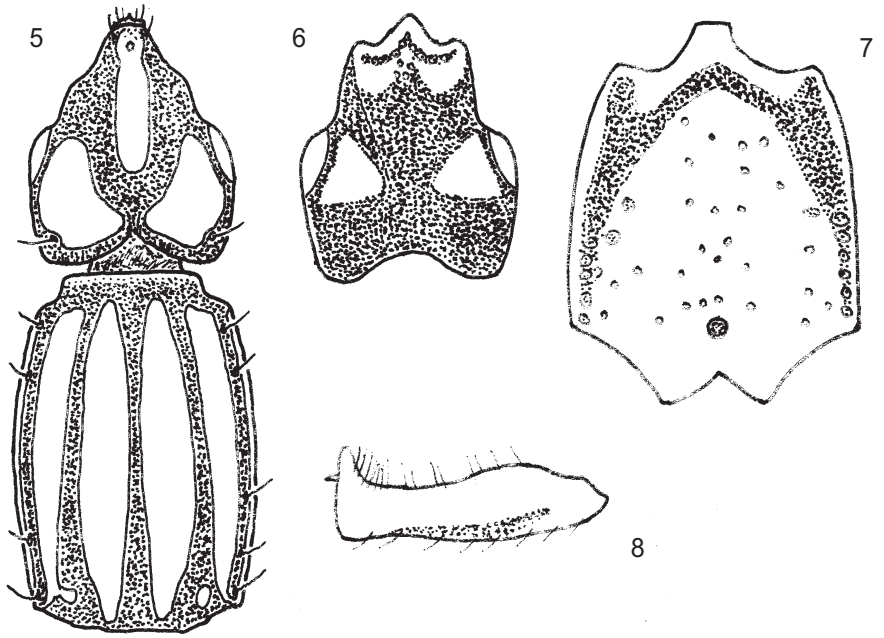
G. bulirschi sp. n. differs from *G. cinerea* R. T. Bell & J. R. Bell, 1979, *G. dentipes* R. T. Bell & J. R. Bell, 1979 and *G. grouvellei* (Fairmaire, 1895) by not pollinose outer pronotal carina, from *G. cuneata* R. T. Bell & J. R. Bell, 1979, *G. gigas* R. T. Bell & J. R. Bell, 1979, *G. hova* R. T. Bell & J. R. Bell, 1979, *G. montana* R. T. Bell & J. R. Bell, 1979 and *G. tubericeps* (Fairmaire, 1868) by absence of ventral tooth on anterior femur and by absence of proximal tooth on male's anterior tibia. The presence of precoxal carina in *G. bulirschi* sp. n. clearly separates this species from *G. descarpentriesi* R. T. Bell & J. R. Bell, 1979, *G. divergens* R. T. Bell & J. R. Bell, 1979 and *G. ranavalona* R. T. Bell & J. R. Bell, 1979. The main differences from the species *G. cooperi* R. T. Bell & J. R. Bell, 1979 and *G. edentata* R. T. Bell & J. R. Bell, 1979 (with four setae on labrum) are as follows: presence of parafrontal boss (x *cooperi*) and body size, shape of median lobe, chaetotaxy, proportions of pronotum etc. (x *edentata*). The species *G. radama* R. T. Bell & J. R. Bell, 1979 (with two setae on labrum) differs from *G. bulirschi* sp. n. by more extensive pollinosity on antennomeres, by shape and proportions of pronotum, by narrow pronotal carinae, by differences in chaetotaxy etc. This species seems to be most similar to the *G. bulirschi* sp. n.

Name derivation. The species is named in honour of Petr Bulirsch (Prague), who collected part of the type series.

Grouvellina janaki sp. n.

(Figs 5-8)

Type material. Holotype (♂) labelled: "E Madagascar 19.-23.xii.1998, 30 km ESE of Betroka, 1600 m [a.s.l.], Vohitrosa forest, 2 km NEE of ▲ 1825m [a.s.l.], J. Janák lgt. " (cHO).



Figs 5-8. *Grouvellina janaki* sp. n. 5- head and pronotum, dorsal view; 6- head, ventral view; 7- metasternum; 8- posterior tibia of male.

Description. Habitus - the new species is small, dark brown. Femora are brown to red-brown, tarsomeres and palpomeres reddish. Body narrow, elongated. TL 5.5 mm. Head longer than wide, HL:HW 1.10. Pronotum markedly longer than wide, PL:PW 1.37. Elytra elongate, EL: EW 2.41, widest slightly anteriad the midlength.

Head as on Fig. 5. Antennae with tufts of minor setae on antennomeres V-X. Antennomere XI longer than wide, apical stilet sharp, distinct, but relatively small, 0.20 as long as antennomere. Antennomere I dorsally extensively pollinose, antennomere II with two transverse pollinose bands, antennomeres III-IV with apical but no basal band of pollinosity, antennomeres V-X with basal but not apical transverse pollinose band, which is on terminal antennomeres reduced to transverse row of pollinose spots. Frontal groove deep. Orbital groove very narrow, but complete. Median lobe long, nearly parallel-sided, its tip rounded. Parafrontal bosses absent, supraantennal area entirely pollinose. Temporal lobe 1.3 times longer than wide, shallowly sinuate anterior to obtuse median angles, latter narrowly separated. One posterior temporal seta present. Occiput and frontal pit with rufous to yellow-red pilosity. Postmentum and central part of mentum pollinose (Fig. 6). Labrum with two pairs of etae.

Pronotum (Fig. 5) elongate, nearly parallel-sided, its widest point approximately in the middle, slightly narrowed at the base, more strongly at apex. Lateral pronotal margin not

sinuate anterior to hind angle, with 4-5 lateral setae. Pronotal carinae wide, much wider than the grooves, subconvex; inner pair straight and rounded on both sides, outer carinae obtuse or transversely cut at apex, narrowed towards base, extreme tips divergent. Basal impression with glabrous flat boss without pollinosity, connected on left side with outer carina. Precoxal carina absent. Prosternal process with deep medial pit between coxal cavities and terminally with deep and large, slightly transverse pollinose fovea.

Elytral striae narrow, coarsely punctured, pollinose. Elytral intervals relatively wide, inner ones almost flat, outer intervals convex; inner intervals in anterior half connected between sparse punctures by narrow, smooth, not pollinose stripes. Humeral tubercle moderately prominent. Elytral stria I without setae, elytral stria II with 2 setae in apical quarter, elytral stria IV with 4-5 setae, elytral stria VII with 4 setae in apical third, apical tubercle with 2 setae. Metasternum (Fig. 7) with lateral pollinose strips and large, sparse punctures; anteriorly with transverse pollinose strip, posteriorly with deep medial pit.

Anterior femur with ventral tooth, male with proximal tooth on anterior tibia. Middle and hind femora ventrally only slightly sinuate. Hind calcar of male (Fig. 8) relatively large, its tip blunt.

Differential diagnosis. The new species share several important characters (complete and glabrous outer pronotal carina, femur of anterior leg with ventral tooth and male with proximal tooth on anterior tibia, complete orbital groove, head without parafrontal boss and absence of precoxal carina) with *G. hova* R. T. Bell & J. R. Bell, 1979, which is probably its nearest relative. *G. janaki* sp. n. differs from *G. hova* mainly by antennal pollinosity on antennomeres V-X basal, by reduced number of temporal, pronotal marginal and elytral setae, by the presence of lateral pollinosity on metasternum, by much smaller body size, by proportionally much longer head and pronotum etc.

Name derivation. The species is named in honour of Jiří Janák (Rtyně nad Bílinou), who collected the type specimen.

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