

The Pselaphinae (Coleoptera, Staphylinidae) of New Caledonia and Loyalty Islands. III. *Kieneriella*, a new genus of the tribe Brachyglutini

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<http://zoobank.org/419C1640-610F-4CAA-819A-E67FEC924274>

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Abstract

Received 3 March 2016

Accepted 20 April 2016

Published 11 May 2016

Academic editor:

Alexey Solodovnikov

A new genus of the tribe Brachyglutini (Pselaphinae: Goniaceritae), *Kieneriella* **gen. n.**, is described based on a new species *K. novaecaledoniae* **sp. n.** from New Caledonia. The strongly elongate maxillary palpi of *Kieneriella* is an unusual character state found in other genera of the tribe. The new taxon is compared with allied relatives, and its major diagnostic features are illustrated.

Key Words

Taxonomy
rove beetles
Pselaphinae
new species
Oceania
biodiversity

Introduction

The tribe Brachyglutini Raffray of the pselaphine supertribe Goniaceritae Reitter (Newton and Thayer 1995) currently holds 1510 extant species classified in four tribes and 116 genera worldwide (Chandler 2001; Newton unpublished database). This tribe is represented by 28 genera in Australia (Chandler 2001), eight genera in New Zealand (Nomura and Leschen 2006), and six genera in Oceania (Park 1952). In New Caledonia, Brachyglutini are so far represented by four genera with ten species (Hlaváč et al. 2006), but this number of species is likely to increase as a result of studies of a large numbers of undetermined specimens from this region (Hlaváč pers. obs.).

Recently when visiting the Muséum d'histoire naturelle, Geneva, the senior author found a peculiar pselaphine with greatly elongate maxillary palpi from the New Caledonia. Further examination of this material

revealed that it represents a new genus and species of Brachyglutini, which is described in the present paper. This work is the third of a series of papers (1–2 see Hlaváč et al. 2006; Hlaváč 2009) focusing on the pselaphine fauna of New Caledonia.

Material and methods

Material studied in this paper is housed in the Muséum d'histoire naturelle de Genève, Switzerland (MHNG).

Disarticulated and dissected parts were preserved in Euparal on plastic slides that were placed on the same pin with the specimen. The habitus image was taken using a Canon 7D camera in conjunction with a Canon MP-E 65mm f/2.8 1-5X Macro Lens and a Canon MT-24EX Macro Twin Lite Flash. Images of the morphological details were made using a Canon G9 camera mounted on

an Olympus CX31 microscope. Zerene Stacker (version 1.04) was used for image stacking. All images were modified and grouped in Adobe Photoshop CS5 Extended. The collecting data of the material are quoted verbatim.

The following abbreviations are applied: AL—length of the abdomen along the midline; AW—maximum width of the abdomen; EL—length of the elytra along the suture; EW—maximum width of the elytra; HL—length of the head from the anterior clypeal margin to the occipital constriction; HW—width of the head across eyes; PL—length of the pronotum along the midline; PW—maximal width of the pronotum. The length of the body is a combination of HL + PL + EL + AL. Terminology for morphological structures follows Chandler (2001) with the exception that the term ‘ventrite’ replaces ‘sternite’, except prosternum.

Taxonomy

Kieneriella Yin & Hlaváč, gen. n.

<http://zoobank.org/F79344A7-2F25-4DBF-8782-23F7E9AB6DE5>

Figs 1–3

Type species. *Kieneriella novaecaledoniae* sp. n., here designated.

Diagnosis. Head with large nude vertexal foveae and small frontal fovea; antennal club loosely formed by two apical antennomeres; median gular ridge prominent and broad. Pronotum globular, with setose median and lateral antebasal foveae, lacking transverse antebasal sulcus connecting these foveae. Each elytron with two large basal foveae, lacking discal stria. Tergite IV (first visible tergite) with two basolateral foveae in transverse basal sulcus; sternite IV (second visible sternite) with deep basolateral sulci.

Description. Length 2.72 mm. Head with large, nude vertexal foveae (Fig. 1B, *vf*); lacking frontal rostrum, with small frontal fovea (Fig. 1B, *ff*); antennal tubercles moderately prominent; lateral margins lacking postantennal notches; with eleven antennomeres, antennal club weakly formed by two apical antennomeres (Fig. 1A); ocular-mandibular carinae (Fig. 3B, *omc*) present; gular plate (Fig. 1C, *gp*) large, with well-defined gular suture (Fig. 1C, *gs*) demarcating ventrally ‘neck region’ from anterior part of head, median gular ridge (Fig. 1C, *mgr*) prominent and large, edges of gular ridge divergent, merging medially anterior to fused gular tentorial pits (Fig. 1C, *gtp*); maxillary palpus (Fig. 3C) greatly elongate, with short palpomere I, II elongate, more than twice as long as of III, palpomere III briefly pedunculate at base, semi-triangular, IV about twice as long as III, slightly curved through entire length, with long palpal cone.

Pronotum globular (Fig. 1B), disc strongly convex, finely punctate; with setose median and lateral antebasal foveae (Fig. 1B, *maf*, *laf*), lacking antebasal sulcus connecting foveae; paranotal sulci slightly curved, extending from base to half of pronotal length.

Each elytron with two large basal foveae (Fig. 3F, *bef*), with indistinct subbasal fovea (Fig. 3F, *sef*); sutural striae (Fig. 3F, *ss*) entire and deep, lacking discal striae, subhumeral foveae, and marginal striae.

Prosternum with large, setose procoxal foveae widely separated. Mesoventrite (Fig. 2A) lacking median fovea, with lateral mesoventral and lateral mesocoxal foveae (Fig. 2A, *lmsf*, *lmc*); metaventrite with lateral foveae (Fig. 2A, *lmtf*) moving medially and close, metaventral process broadly emarginate at middle, with two distinct lateral projections.

Abdomen (Fig. 2B–D) with tergite IV (first visible tergite) about as long as V; tergite IV with basal sulcus (Fig. 2C, *bs*) covered by elytra in natural position (Fig. 1A), with two basolateral foveae (Fig. 2C, *bef*); tergites IV–VII each with adjacent paratergites. Sternite IV (second visible sternite) with deep basolateral sulci (Fig. 2D, *bis*), with mediobasal and basolateral foveae in sulci (Fig. 2D, *mbf*, *bef*).

Legs with tarsomeres II and III subequal in length.

Male with spinose protibia (Fig. 3E). Aedeagus (Fig. 3G–3H) with almost symmetric median lobe except dextrally oriented apical hook, and pair of broad, flattened, and nearly symmetric parameres (Fig. 3I, detached from median lobe). Female with simple protibiae.

Comparative notes. The short dorsal margin of the mesotrochanters (Fig. 3D), barely visible short abdominal sternite III, and separated metacoxae (Fig. 2D) place *Kieneriella* in the subtribe Brachyglutina (Goniaceritae: Brachyglutini), near the *Rybxaxis* group of genera whose median gular ridge is well-defined, prominent, and large (Chandler 2001: 292). At present, four genera and ten species of Goniaceritae are known from New Caledonia: *Anasopsis* Raffray (3 spp.), *Baraxina* Raffray (1 sp.), *Eupines* King (5 spp.), and *Physoplectus* Reitter (1 sp.) (Hlaváč et al. 2006). *Kieneriella* is morphologically similar to the only New Caledonian member of the *Rybxaxis* group, *Baraxina*, by the same foveal pattern of the head and pronotum, more or less elongate maxillary palpi, and similar length of the abdominal segments. *Kieneriella* can be readily separated from *Baraxina* by the maxillary palpi with much more elongate and slender palpomeres II and IV, and basally pedunculate and semi-triangular palpomeres III, presence of two basal elytral foveae, deep sutural striae of the elytra, and fused gular tentorial pits. *Baraxina* also have relatively elongate palpomeres II and IV, but they are more robust and less extended than in *Kieneriella*. Also, in *Baraxina*, the palpomeres III are roundly triangular, three basal foveae are present on each elytron, the sutural striae on the elytra are indistinct, and the gular tentorial pits are well-separated.

The strongly extended maxillary palpi is an unusual character state for Brachyglutini. A similar condition can be found only in a limited number of genera, e.g. *Triomicrus* Sharp, and an undescribed genus near *Triomicrus* from Sri Lanka (preserved in MHNG). *Kieneriella* can be separated from *Triomicrus* by the unmodified male

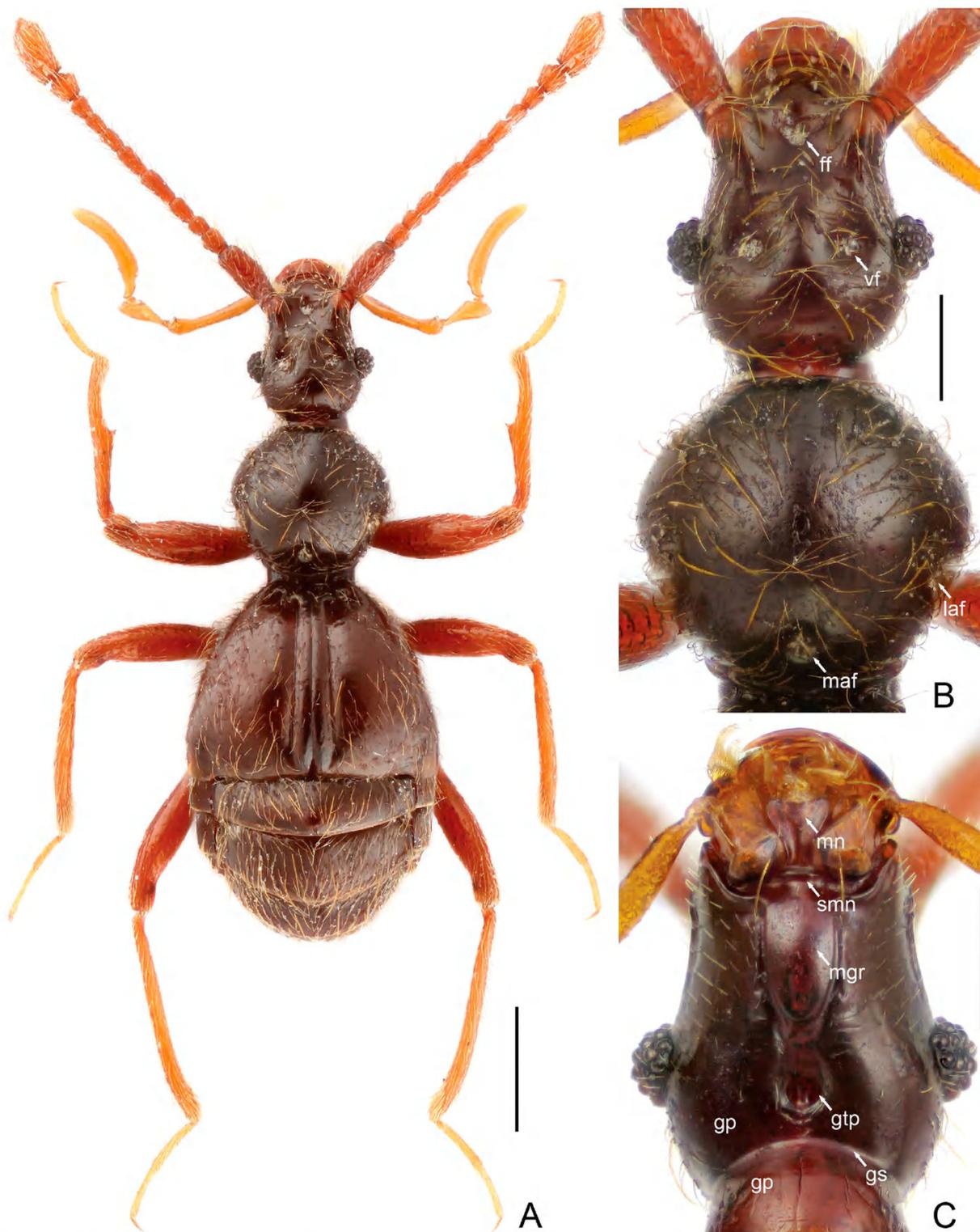


Figure 1. Diagnostic features of *Kieneriella novaecaledoniae*, male. **A.** Dorsal habitus; **B.** Head dorsum and pronotum; **C.** Head venter. Abbreviations: laf—lateral antebasal foveae; ff—frontal fovea; gp—gular plate; gtp—gular tentorial pits; gs—gular suture; maf—median antebasal fovea; mgr—median gular ridge; mn—mentum; smn—submentum; vf—vertexal foveae. Scales: **A** = 0.5 mm; **B, C** = 0.2 mm.

antennomeres XI and sternite VII, much more constricted pronotal and elytral bases, lack of discal striae on the elytra, relatively shorter tergite IV, and structures of the aedeagus.

Etymology. The generic name is dedicated to the Swiss entomologist Severino Kiener (1955–1998), who collected the holotype during his 1986 trip to New Caledonia (Maggi 2003). The gender of *Kieneriella* is feminine.

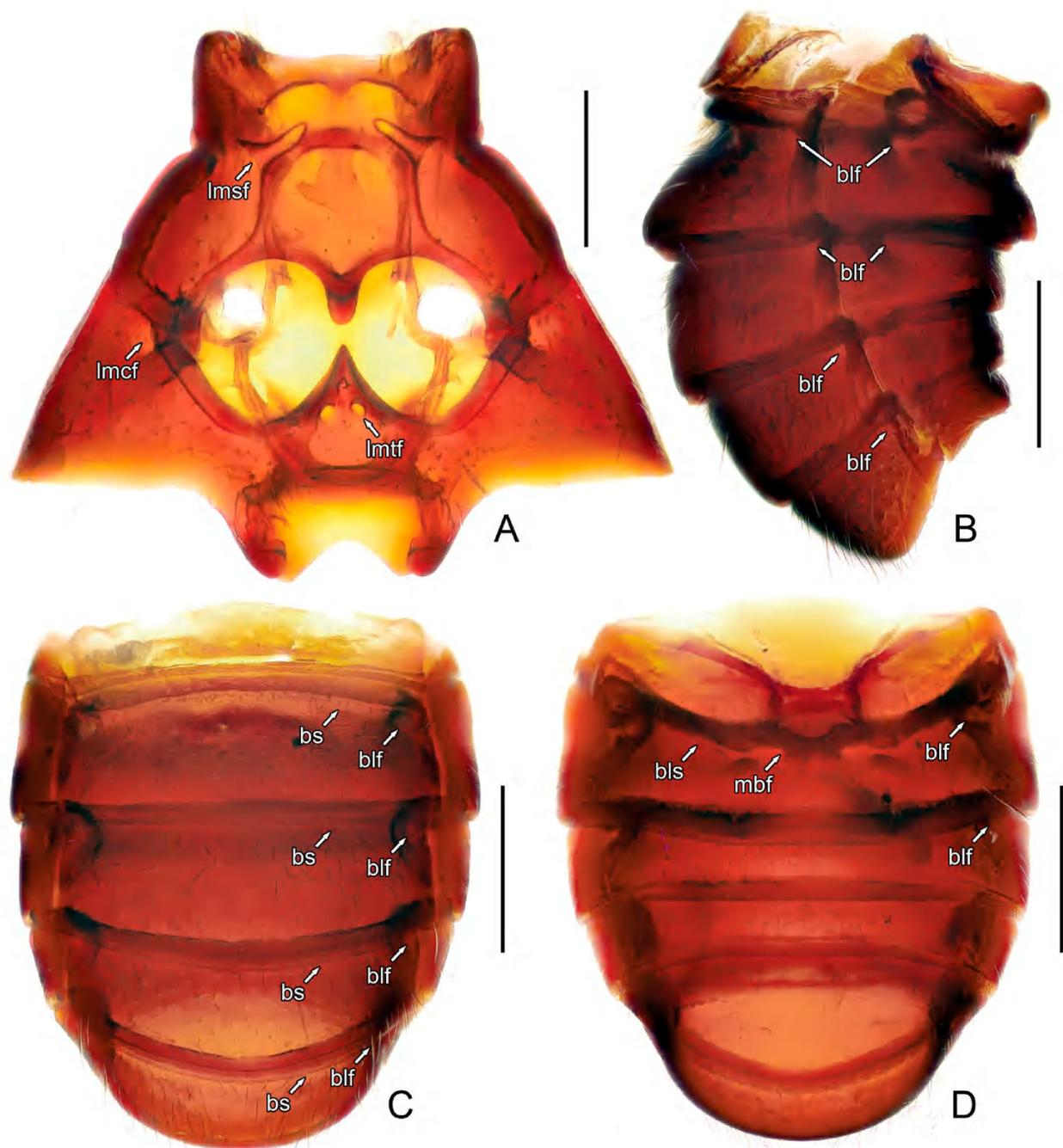


Figure 2. Diagnostic features of *Kieneriella novaecaledoniae*, male. **A.** Meso- and metaventrite; **B.** Abdomen, in lateral view; **C.** Same, in dorsal view; **D.** Same, in ventral view. Abbreviations: blf—basolateral foveae; bls—basolateral sulci; bs—basal sulcus; lmcf—lateral mesocoxal foveae; lmsf—lateral mesoventral foveae; lmtf—lateral metaventral foveae; mbf—mediobasal foveae. Scales: **A** = 0.2 mm; **B–D** = 0.3 mm.

***Kieneriella novaecaledoniae* Yin & Hlaváč, sp. n.**

<http://zoobank.org/CA431E15-399E-40F8-9D0F-93A78085981A>

Figs 1–3

Type material. Holotype ♂ (head and pronotum lost after photography and measurement, other body parts completely disarticulated and preserved in Euparal slides): ‘Nouvelle Calédonie, Touaourou côte sud, 16–18.xi.1986, leg. S. Kiener (hand written) / HOLOTYPE

(red) ♂, *Kieneriella novaecaledoniae* sp. n., det. Yin & Hlaváč, 2016 (hand written) / MHNG ENTO 00008971 (accession number, printed)’ (MHNG). According to Kiener’s 1986 unpublished locality list preserved in MHNG, this specimen was collected from ‘Regenwald Bodenstreu (= Rainforest floor litter)’ (Cuccodoro pers. comm.).

Diagnosis. Same as that of the genus, plus the protibia with an acute denticle at the middle of the mesal margin,

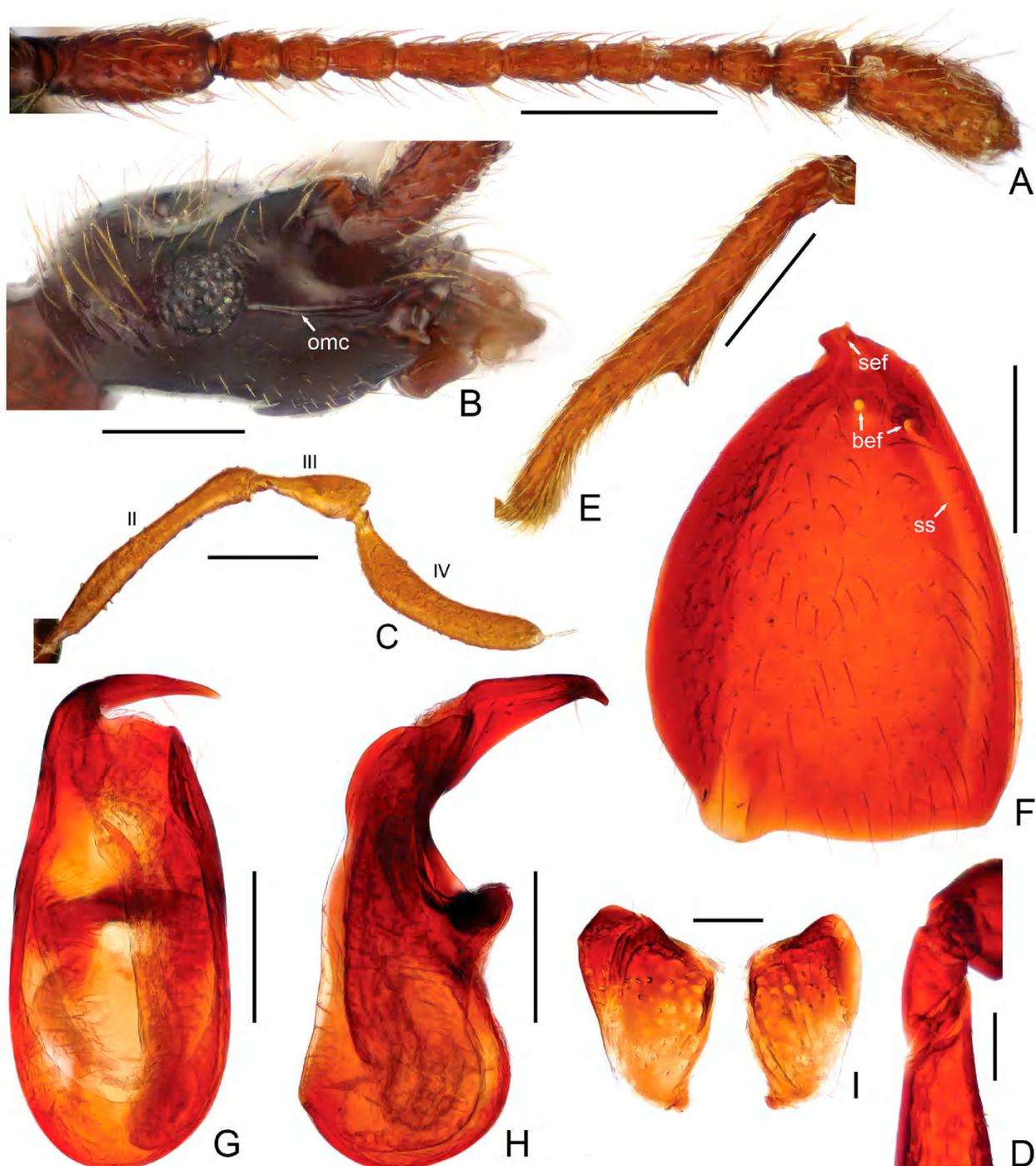


Figure 3. Diagnostic features of *Kieneriella novaecaledoniae*, male. **A.** Antenna; **B.** Head, in lateral view; **C.** Maxillary palpus; **D.** Mesotrochanter; **E.** Protibia; **F.** Left elytron; **G.** Aedeagus, in dorsal view; **H.** Same, in lateral view; **I.** Aedeagal parameres, in ventral view. Abbreviations: bef—basal elytral foveae; omc—ocular-mandibular carinae; sef—subhumeral foveae; ss—sutural striae. Scales: **A, F** = 0.3 mm; **B, C, E, G, H** = 0.2 mm; **D, I** = 0.1 mm.

aedeagus with the median lobe being strongly curved toward left at the apex, and flattened parameres.

Description. Male (Fig. 1A). Length 2.72 mm. Head (Fig. 1B) distinctly longer than wide, HL 0.60 mm, HW 0.51 mm; dorsal surface finely punctate, sparsely covered with relatively long suberect setae; vertex moderately raised at middle, with distinct nude vertexal foveae (Fig.

1B, *vf*) situated at level of middle of eyes; frons distinctly extended, with small frontal fovea (Fig. 1B, *ff*) between moderately prominent antennal tubercles; clypeus short, with round anterior margin; eyes prominent, each composed of about 25 facets; ocular-mandibular carinae (Fig. 3B, *omc*) extending from anterior margins of eyes to clypeal apex; lateral areas of ventral part of head sparsely

covered with short setae; gular area (Fig. 1C) with two small tentorial pits in shared oval opening, edges of gular ridge extending from anterior margin of tentorial pits opening toward mouthparts, with single macroseta at end of each edge. Maxillary palpus (Fig. 3C) greatly elongate, length of palpomeres II–IV: 0.48 mm, 0.20 mm, 0.41 mm, respectively; palpomere I small, II briefly narrowed at base and slightly broadened at apex, III briefly pedunculate at base, with broadened apical half, IV with narrowed base, evenly curved laterally throughout entire length, with long palpal cone. Antenna (Fig. 3A) with enlarged scape and antennomere XI, antennal club weakly formed by two apical antennomeres. Pronotum transversely globular, PL 0.60 mm, PW 0.65 mm, disc finely punctate and sparsely setose. Elytra (Fig. 3F) with broad posterior margin and strongly constricted base, much wider than long, EL 0.77 mm, EW 1.0 mm; lacking metathoracic wings. Thorax (Fig. 2A) short and transverse; metaventral process emarginate at middle, with two distinct obtuse projections. Legs simple, except protibia (Fig. 3E) with one acute spine at middle of mesal margin. Abdomen (Fig. 2B–D) with long pubescence on dorsal surface, slightly wider than long, AL 0.75 mm, AW 0.79 mm; tergites IV–VI of similar length, VII slightly shorter; sternite IV with pair of submedian projections. Length of aedeagus (Fig. 3G–H) 0.66 mm, median lobe almost symmetric, dextrally oriented apical hook sharp, acute, with one preapical macroseta; pair of parameres (Fig. 3I, detached from median lobe) broad and flattened, nearly symmetric; endophallus composed of single thin, elongate sclerite.

Female. Unknown.

Distribution. New Caledonia: southern Grande Terre.

Etymology. The specific epithet is derived from the type locality of the new species, i.e., New Caledonia.

Kieneriella species

Material examined. 1 ♀: ‘New Caledonia, Mt. Koghi, 500–600m, 14.XI.1997. I. Löbl, prim. forest, litter / MHNG ENTO 00008972 (accession number, printed)’ (MHNG).

Comments. This specimen is very similar to *K. novae-caledoniae* sp. n. but without an associated male it is not possible to determine whether they are conspecific or not. This female confirms that the spinose protibiae is a male sexual character of the genus, the protibiae of the females are simple and unmodified.

Acknowledgements

Alfred Newton (Field Museum, Chicago, USA) provided exact number of the species of Brachyglutini from his unpublished staphylinid database. Giulio Cuccodoro (MHNG) provided a large loan of unstudied pselaphine material to the senior author including the new taxon described in this paper. Christopher Carlton (Louisiana State Arthropod Museum, USA) and Giulio Cuccodoro read a previous version of the manuscript and provided helpful comments. The senior author was supported by a grant of the National Natural Science Foundation of China (No. 31501874), and a grant of the Science and Technology Commission of Shanghai Municipality (No. 15YF1408700), the junior author was supported by grant CIGA No. 20154312 of the Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences. The open access fee was covered by the Museum für Naturkunde Berlin.

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Yin, Zi-Wei and Hlavac, Peter. 2016. "The Pselaphinae (Coleoptera, Staphylinidae) of New Caledonia and Loyalty Islands. III. Kieneriella, a new genus of the tribe Brachyglutini." *Deutsche entomologische Zeitschrift* 63(1), 149–154. <https://doi.org/10.3897/dez.63.8344>.

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