



Masnerosema is a new junior synonym of *Acanopsilus* (Hymenoptera: Diapriidae: Pantolytini)

Masnerosema – новый младший синоним *Acanopsilus* (Hymenoptera: Diapriidae: Pantolytini)

V.G. Chemyreva

В.Г. Чемырева

Vasilisa G. Chemyreva , Zoological Institute, Russian Academy of Sciences, 1 Universitetskaya Emb., St Petersburg 199034, Russia. E-mail: diapriidas.vas@gmail.com

Abstract. The monotypic African genus *Masnerosema* Sundholm, 1970 is revised. This generic name is recognised as synonymous to *Acanopsilus* Kieffer, 1908. The new combination *Acanopsilus africanus* (Sundholm, 1970), **comb. nov.** is established. The male of *A. africanus* is described for the first time. New data on the distribution and detailed illustrations of the species, and an updated diagnosis of the tribe Pantolytini are provided.

Резюме. Монотипический африканский род *Masnerosema* Sundholm, 1970 ревизован, это название признано младшим субъективным синонимом *Acanopsilus* Kieffer, 1908. Установлена новая комбинация *Acanopsilus africanus* (Sundholm, 1970), **comb. nov.** Впервые описан самец *A. africanus*. Приведены новые данные о распространении и детальные иллюстрации этого вида, а также уточненный диагноз трибы Pantolytini.

Key words: taxonomy, Africa, Pantolytini, Belytinae, Diapriidae, *Masnerosema*, *Acanopsilus*, synonymy, new combination, new records

Ключевые слова: систематика, Африка, Pantolytini, Belytinae, Diapriidae, *Masnerosema*, *Acanopsilus*, синонимия, новая комбинация, новые находки

ZooBank Article LSID: 577C16D6-402E-4487-A749-450F585DDC09

Introduction

The genus *Masnerosema* Sundholm, 1970, with the type species *Masnerosema africanum* Sundholm, 1970, was described based on a single female from Tsitsikamma Forest in the Cape Province of South Africa (Sundholm, 1970). Sundholm placed the new genus in the subfamily Belytinae and distinguished it from the other Belytinae genera based on the 14-segmented antenna, shape of mandibles, and wing venation (i.e., forewing without basal

vein, hindwing without basal cell). Moreover, he indicated a close relation of *Masnerosema* to the genus *Acanosema* Kieffer, 1908, based on "...the same shape of the mandibles, a similarly raised rim at the apex of the scape, and the antennae of the female are 14-segmented as in some *Acanosema*". However, the subsequent taxonomic revision by Macek (1990) showed that Sundholm misinterpreted the genus *Acanosema*, and the morphological features mentioned by him for *Acanosema* mostly agree with those of *Acanopsilus* Kieffer, 1908.

Since Sundholm's paper (1970), *Masnerosema africanum* has not been mentioned in the literature, so the purpose of this study is to clarify the taxonomy of the genus *Masnerosema* and provide new data on the distribution of this species.

Material and methods

This study is based on material from the Iziko South African Museum, Cape Town, Republic of South Africa (SAMC) and the Zoological Institute of the Russian Academy of Sciences, St Petersburg, Russia (ZISP). Specimens of *Masnerosema africanum* were collected with Malaise traps (abbreviated as MT in the section on the material examined) and by sweeping. Morphological terminology and abbreviations follow Masner & García (2002), Yoder (2004), (Yoder et al., 2010), and Chemyreva & Kolyada (2021). Measurements follow Yoder (2004). The *occipital pit* is a deep, small hole situated medially slightly above the occipital carina (Fig. 1C, blue arrow); the *belytoid line* is a carina on lateral sides of sternites (Fig. 1E–F). For analysis of these two diagnostic characters, more than 300 species from 35 genera of the subfamily

Belytinae were examined, including species of the genera *Aclista* Förster, 1856, *Pantolyta* Foerster, 1856, and *Therinopsilus* Kieffer, 1909, that were used for illustrations in this article. New regional and country records are asterisked (*).

The original photographs were obtained using a combination of an Olympus SZX10 stereomicroscope and an Olympus OM-D digital camera. The final images were stacked composites generated using Helicon Focus 7.7.4 Pro. All images were post-processed for contrast and brightness using Adobe Photoshop CC.

Taxonomy

Order Hymenoptera

Family Diapriidae

Subfamily Belytinae

Tribe Pantolytini

Diagnosis. Mandibles curved and widely overcrossed to straight (beak-like). Head elongate and nasiform, i.e. with antennal shelf strongly prominent to distinctly transverse, with weakly prom-

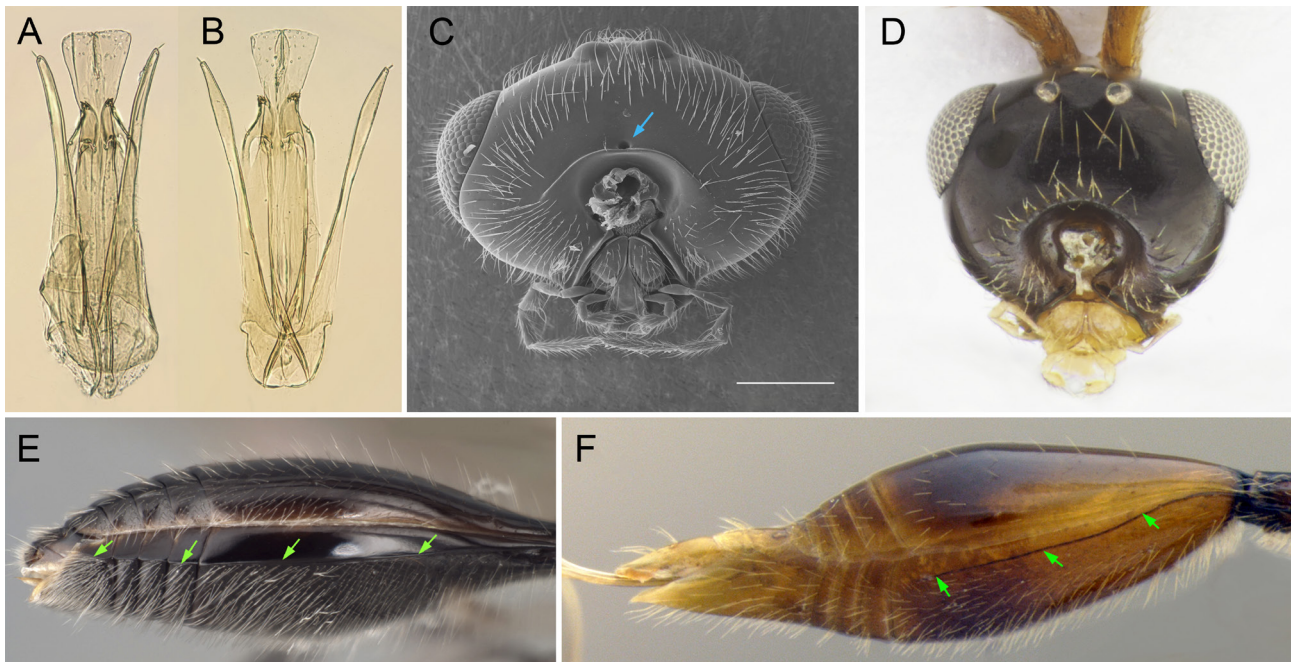


Fig. 1. Diapriidae morphology. **A, B**, male genitalia of *Acanopsilus africanus* (Sundholm, 1970), **comb. nov.** (**A**) and *A. heterocerus* (Haliday, 1857) (**B**); **C, D**, head of *Aclista* sp. (**C**) and *Pantolyta* sp. (**D**), posterior view; **E, F**, metasoma of *Therinopsilus* sp. (**E**) and *Pantolyta* sp. (**F**), lateral view. Blue arrow – occipital pit; green arrows – belytoid line, complete (**E**) and incomplete (**F**). Scale bar: 0.2 mm. Photos by Victor Kolyada (**C**) and Matt Yoder (**E**).

inent antennal shelf. Clypeus weakly transverse to higher than wide. Number of antennomeres, female/male: 15/14, 14/14, 13/14, or 12/14. Occipital pit always absent (Fig. 1D). Mesosoma slightly to distinctly higher than wide. Scutellum without posterior scutellar pits or groove along posterior margin. Median keel of metascutellum low, never transforming to spine. Mesopleural pit always absent. Epicnemial bridge present or absent. Radial cell closed or open; radial and postmarginal veins distinct to completely absent. Petiole weakly transverse to almost three times as long as wide, smooth to sculptured, sometimes swollen medially. S2 with or without protuberance at base; belytoid line incomplete (Fig. 1F). Female T7–T8 and S6 distinctly compressed and elongated. Ovipositor long, distinctly longer than T2. Pubescence of body scanty, except species of the genus *Psilomma* Förster, 1856.

Genus *Acanopsilus* Kieffer, 1908

Acanopsilus Kieffer, 1908: 426. Type species: *Acanopsilus clavatus* Kieffer, 1908.

Masnerosema Sundholm, 1970: 312; **syn. nov.** Type species: *Masnerosema africanum* Sundholm, 1970.

Diagnosis. Mandibles nearly symmetrical, slightly overcrossing at tips. Antenna of both sexes 14-segmented. Eye bare to pubescent. Pronotal shoulders distinct; pronotal pit (pit below pronotal shoulder) with tuft of setae. Propodeum with median keel raised into high ridge anteriorly. All femora slender. Radial cell absent (Fig. 2), radialis looking as trace or absent. Petiolus subcylindrical. Metasoma slender, fusiform, tapering to sharp point apically. Hypopygium sharply pointed posteriorly and slightly curved downwards. Base of S2 simple or slightly swollen, with dense tuft of setae. Ovipositor longer than T2, with stiletoid valvulae. Male genitalia slender; digitus fused with other parts of volsellae; paramerae long, stiletoid (Fig. 1A–B).

Remarks. The genus *Acanopsilus* was diagnosed in detail by Macek (1990), and additional comments on the taxonomy of the genus were given by Chemyreva & Kolyada (2021). Sundholm (1970) distinguished the genus *Masnerosema* by two crucial characteristics of the wing venation: the absence of the basal vein in the forewing and the absence of the basal cell in the hind wing (Fig. 2A–B). Although most taxa of the tribe Pantoly-



Fig. 2. Wings of *Acanopsilus* spp. **A**, *Acanopsilus africanus* (Sundholm, 1970), **comb. nov.**, female (SAM-HYM-P0102996); **B**, *A. africanus*, male (SAM-HYM-P0103007); **C**, *A. heterocerus* (Haliday, 1857), female. Scale bars: 0.5 mm.

tini possess these characters, the basal vein and basal cell tend to disappear in other species of the genus *Acanopsilus* (Chemyreva & Kolyada, 2021). Moreover, the males of *A. africanus* described in this paper have the basal vein that appears as a barely visible line. Thus, the diagnostic features suggested by Sundholm are found to be insufficient to support *Masnerosema* as a separate genus, and I consider *Masnerosema* to be a junior synonym of the genus *Acanopsilus*.

Acanopsilus africanus (Sundholm, 1970), **comb. nov.**

Masnerosema africanum Sundholm, 1970: 312.

Type material examined. *Holotype*, female, **Republic of South Africa**, "Cape Province, Tzitzikama Forest, Stormsrivierpiek. On meadow at forest near small stream. 13.I.1951" (SAMC).

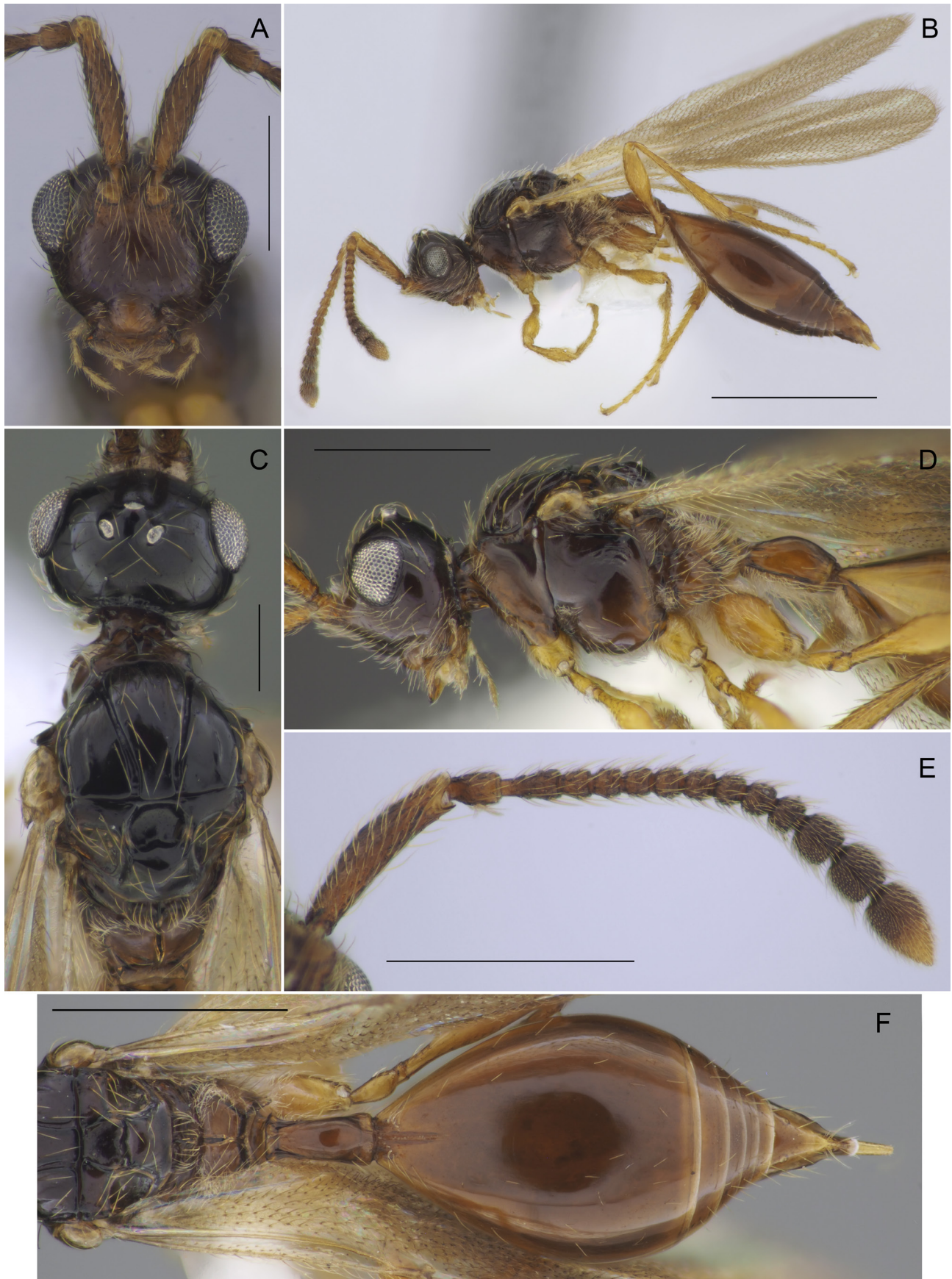


Fig. 3. *Acanopsilus africanus* (Sundholm, 1970), **comb. nov.**, female (SAM-HYM-P0103009). **A**, face; **B**, habitus, lateral view; **C**, head and mesosoma, dorsal view; **D**, head and mesosoma, lateral view; **E**, antenna, lateral view; **F**, metasoma, dorsal view. Scale bars: 0.2 mm (A, C), 1.0 mm (B), 0.5 mm (D–F).

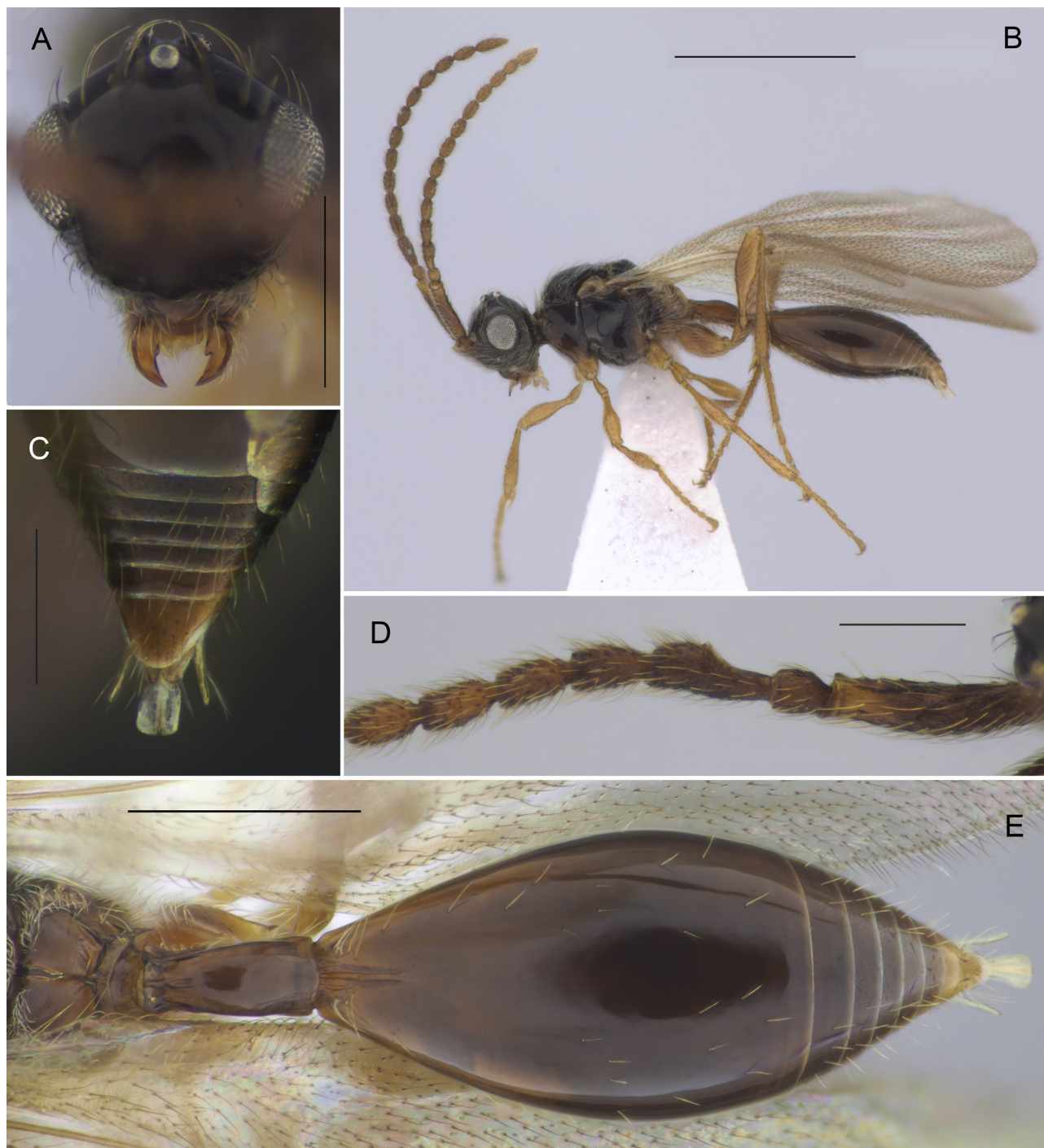


Fig. 4. *Acanopsilus africanus* (Sundholm, 1970), **comb. nov.**, male (SAM-HYM-P0103008). **A**, head, frontal view; **B**, habitus, lateral view; **C**, apical part of metasoma, ventral view; **D**, basal part of antenna, dorsal view; **E**, metasoma, dorsal view. Scale bars: 0.2 mm (A, C, D), 1.0 mm (B), 0.3 mm (E).

Additional material examined. ***Gabon**, *Ogooue-Maritime Prov.*, Réserve des Monts Doudou, 24.3 km 304° NW Doussala, 2°13.35'S 10°24.35'E, 370 m a.s.l., coastal lowland rainforest, "GA00-S64", sweeping, 8.III.2000, S. van Noort leg., 1 female (SAM-HYM-P0023069) (SAMC). ***Tanzania**, *Kilimanjaro Prov.*: Mkomazi Game Reserve, foot of Mt. Maji Kununua, 3°53'S 37°49'E, "ex Winkler bag leaf litter from *Combretum* thicket at base of valley", 12.V.1996, H.G. Robertson leg., 1 female (SAM-HYM-P018785) (SAMC); Mkomazi Game Reserve, summit of Ibaya hill, 3°58'S 37°48'E, pitfalls, 27.I.1996, A. Russell-Smith leg., 1 female (SAM-HYM-P019723) (SAMC). **Republic of South Africa**, **Kwazulu-Natal Prov.*: Royal Natal National Park, Rainbow Gorge, 28°45.4'S 29°56.3'E, MT, 22.IX–17.XI.2006, M. Mostovski leg., 2 females, 1 male (ZISP), 2 females, 1 male (SAM-HYM-P0102996 – SAM-HYM-P0102998) (SAMC); Pietermaritzburg, Hilton, 29°32.28'S 30°18.20'E, 1133 m a.s.l., MT, 28.X–12.XI.2003, 4–23.X.2004, 31.XII.2005, M. Mostovski leg., 4 females (ZISP); Pietermaritzburg, Karkloof, 29°19.1'S 30°15.5'E, 1325 m a.s.l., MT, 27.VI–25.VII.2005, 22.XII.2005–18.III.2006, M. Mostovski leg., 5 females, 2 males (ZISP), 6 females, 3 males (SAM-HYM-P0102999 – SAM-HYM-P0103008) (SAMC); Louwsberg, Sanyati Farm, 27°34'S 31°17.9'E, 1090 m a.s.l., MT, 19–31.III.2005, 1–24.III.2006, M. Mostovski leg., 2 females (SAM-HYM-P0103009, SAM-HYM-P0103010) (SAMC); Cathedral Peak, Rainbow Gorge, 28°57.60'S 29°13.61'E, MT, 14.XII.2005–29.I.2006, 29.V–21.IX.2006, M. Mostovski leg., 3 females (ZISP); *Cape Prov.*, Tsitsikamma National Park, MT, 23.X.1994–1.I.1995, J. Allen leg., 1 female (SAM-HYM-P0103011) (SAMC).

Diagnosis. Eye bare. Epicnemial pit and post-mesocoxal depression densely pubescent. Forewing with basal vein absent and costal cell narrow. Hindwing with weak traces of basal and median veins (Fig. 2A). Petiole subcylindrical, about 2.0–2.5 times as long as wide, smooth, bare dorsally and laterally, swollen medially, widened posteriorly. Base of T2 with single median groove (sometimes additionally with very short lateral grooves) and pubescence laterally. S2 of female not swollen at base. Antenna in female submoniliform, with slightly pronounced 3-segmented clava: A11 and A12 weakly transverse, A4–A10 and A13 as long as wide. Antenna in male submoniliform, A3 emarginated, with carina extending from base to 0.6–0.7 of segment length, A4–A13 about twice as long as wide (Fig. 4B–D).

Description of male. Body length 2.1–2.8 mm; fore wing 0.95–1.00 times as long as body; anten-

na 0.7–0.8 times as long as body. Coloration of head and mesosoma dark brown to black; metasoma dark brown to reddish brown; antenna brown; legs and tegula yellowish brown.

Head in dorsal view 0.78 times as long as wide, as wide as mesosoma, with prominent antennal shelf. Occipital flange narrow, setose and sculptured. Malar space 0.7 times as long as maximum diameter of eye. Labrum semicircular, without distinct middle groove (Fig. 4A). Mandibles curved and symmetrical.

Pronotum with short epomia located on pronotal shoulders only; pronotal pit deep, densely pubescent inside (Fig. 3C–D). Mesoscutum 0.78–0.67 times as long as wide, convex. Anterior scutellar pit deep, large, rounded. Each axillar depression with several small verrucate tubercles. Scutellum convex, widened posteriorly, smooth. Mesopleuron smooth, shining, with slight wrinkles in upper part; epicnemial and subalar bridges absent, epicnemial pit deep (Fig. 3D). Metanotum narrow, bare laterally; metascutellum pubescent, with three longitudinal keels (median keel most prominent). Propodeum pubescent laterally, smooth and bare dorsally between plicae; median propodeal keel simple, raised anteriorly; lateral side of propodeum with only one keel located below plica, upper and lower posterior propodeal projections absent. Venation as in Fig. 2B; basal vein indistinct.

Petiole posteriorly with fine longitudinal striation to almost smooth and with three longitudinal keels anteriorly, 2.0–2.3 times as long as wide medially; ventrally, densely pubescent, with two verrucate tubercles anteriorly. T2 0.18–0.22 times as long as T2; T3–T7 short, micropunctured, with several setae laterally; T8 subtriangular (Fig. 4E). S2 entirely with scattered pubescence, with short striation at base and denser pubescence posterior to striation; S3–S5 short, smooth, with scattered setae (Fig. 4C).

Distribution. *Gabon, *Tanzania, Republic of South Africa.

Acknowledgements

I am very grateful to Dr Simon van Noort (SAMC) and Dr Mike Mostovski (Tel Aviv University, Israel) for the material on which this investigation is based. I thank Victor Kolyada (Moscow) for the SEM photo-

graph of the head of *Aclista* sp. (Fig. 1C), Matt Yoder (University of Illinois, USA) for the photograph of the metasoma of *Therinopsilus* sp. (Fig. 1E), and Dr Simon van Noort and Dr Jan Macek (National Museum, Prague, Czech Republic) for reviewing the paper. This study was supported by the Russian state research project No. 122031100272-3.

References

- Chemyreva V.G. & Kolyada V.A.** 2021. Review of the subtribe Psilommina (Hymenoptera: Diapriidae, Belytinae) from Russian fauna. *Far Eastern Entomologist*, **436**: 1–34. <https://doi.org/10.25221/fee.436.1>
- Johnson N.F.** 1992. Catalog of world species of Proctotrupoidea, exclusive of Platygastridae (Hymenoptera). *Memoirs of the American Entomological Institute*, **52**: 1–825.
- Kieffer J.-J.** 1908. Proctotrypidæ (suite). In: **André E.** (Ed.). *Species des Hyménoptères d'Europe et d'Algérie*, **10**: 289–448. Paris: Hermann & Fils.
- Macek J.** 1990. Revision of European Psilommina (Hymenoptera, Diapriidae) 1. Psilomma and Acanosema complex. *Acta entomologica Musei nationalis Pragae*, **43**: 335–360.
- Masner L. & García R.J.L.** 2002. The genera of Diapriinae (Hymenoptera: Diapriidae) in the new world. *Bulletin of the American Museum of Natural History*, **268**: 1–138. [https://doi.org/10.1206/0003-0090\(2002\)268<0001:TGODHD>2.0.CO;2](https://doi.org/10.1206/0003-0090(2002)268<0001:TGODHD>2.0.CO;2)
- Sundholm A.** 1970. Hymenoptera: Proctotrupoidea. *South African animal Life*, **14**: 306–401.
- Yoder M.J.** 2004. Revision of the North American species of the genus Entomacis (Hymenoptera: Diapriidae). *The Canadian Entomologist*, **136**(3): 323–405. <https://doi.org/10.4039/n03-061>
- Yoder M.J., Mikó I., Seltmann K.C., Bertone M.A. & Deans A.R.** 2010. A gross anatomy ontology for Hymenoptera. *PLoS ONE*, **5**(12): e15991. <https://doi.org/10.1371/journal.pone.0015991>

Received 31 July 2023 / Accepted 8 November 2023. Editorial responsibility: A.I. Khalaim & D.A. Gapon