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## Studies of Madagascan Ptiliidae (Coleoptera) 4: The genus *Bambara* including eight new species and the first account of blindness and aptery in the genus

MICHAEL DARBY

*The Old Malthouse, Sutton Mandeville, Salisbury, Wilts., SP35LZ, UK. [drm.darby@gmail.com](mailto:drm.darby@gmail.com)*

### Abstract

This is the fourth report detailing Ptiliidae collected from forest litter by the Moravian Museum (Brno, Czech Republic) expeditions to Madagascar 2010–2013. Eight new species are described and figured: *B. edwardi* sp. n.; *B. lanquidula* sp. n.; *B. merina* sp. n.; *B. opaca* sp. n.; *B. problematica* sp. n.; *B. secubita* sp. n.; *B. thomasi* sp. n. and *B. verecunda* sp. n., and new data recorded for *B. dybasi* Johnson. Problems concerning the genital morphology and species determination of the parthenogenetic members of the genus are discussed in relation to the findings, and the first blind and apterous species reported.

A key to the known species from the island is provided.

**Key words:** taxonomy, Ptiliidae, *Bambara*, new species, aptery, blindness, key, Madagascar

### Introduction

This article continues the study of the Ptiliidae collected in Madagascar by Dr Petr Baňář of the Moravian Museum (Brno, Czech Republic) and his students. The work, which is ongoing, was started as part of the long-term research project ‘Étude à long terme de la biodiversité des groupes choisis d’insectes (Coléoptères, Hétéroptères, Lépidoptères et Homoptères) dans les localités préalablement sélectionnées en considération de la recherche et la protection de la biodiversité dans les aires protégées de Madagascar’ in co-operation with the Department of Entomology of the University of Antananarivo, initiated by Miloš Trýzna (Czech Republic) in 2007. All the Ptiliidae collected have since been passed to the Natural History Museum (BMNH) in London.

Details of sites, materials, methods, and terminology are given in the first three reports (Darby 2013, Darby, 2014a; Darby, 2014b).

### Materials and methods

A total of 3,108 specimens was examined in alcohol, all collected by Winkler extraction from siftings of forest leaf litter. Subsequent sorting was carried out under a Leica M165C stereomicroscope, and more detailed studies under an Olympus BH2 compound microscope and a Phenom scanning electron microscope. Images and measurements were made using the inbuilt software and cameras of the Phenom, a Leica DFC450 digital camera and associated software attached to the stereo microscope, and a Canon EOS 1100D digital camera with associated software attached to the Olympus microscope. The images were prepared for publication using Corel Paint Shop Pro software great care being taken not to distort the shape or appearance of specimens. All specimens selected for detailed study were subsequently mounted on cards and dissected specimens in Euparal on acrylic sheet pinned with the dry mounted specimens. All the remaining specimens have been preserved in 75% alcohol and will be deposited with the mounted and dissected specimens in the Natural History Museum, London, in the author's collection and in the collections of participating museums.

Most of the terms used are those generally adopted for Ptiliidae. The terms ‘mesoventrum’ and ‘metaventrum’, and their derivatives, however, follow Lawrence (1999) for the misapplied terms ‘mesosternum’ and ‘metasternum’. The terminology used in the species descriptions is taken from the chapter on beetle morphology in Duff (2012).

**Etymology.** Named after my younger son who has been very helpful to me in the field.

**Diagnosis.** The form of the spermatheca which will quickly separate this species.

**Type data:** Holotype: ♀, Ambohitantely S.R., ABT/Sept/2011/01, sifting forest litter under *Pandanus*, S.18°11'45.1" E.47°17'13.4", 1604 m, 1.ix.2011, L.S.Rahanitriniaina (BMNH). Paratypes: 4 exs [4] (some fragmentary) same data as holotype.

### ***Bambara verecunda* sp. n**

(Figs. 6, 14, 23, 31, 49a–b, 53–56)

Habitus Fig 6. Length +/- 743µ. Colour brown, pronotum darker than elytra. Distance across forehead 230µ min, 233µ max, 231µ mean. Head showing absence of eyes Fig. 52. Mentum and submentum Fig. 14. Pronotum length 225µ min, 231µ max, 228µ mean; width 399µ min, 401µ max, 400µ mean; ratio length/breadth 1.76. Detached elytron length 447µ min, 475µ max, 457µ mean; width 260µ min, 268µ max, 263µ mean; ratio length/width 1.74, Fig 23. Ratio elytra length/ pronotum length 2.00. Metanotum and abdominal tergites Fig. 53. Mesoventer Fig. 55. Metacoxal plates Fig. 56.

*Male:* aedeagus Figs. 49a–b.

*Female:* spermatheca Fig. 31.

**Etymology.** From the Latin *verecundus* meaning modest, shy, diffident, and referring to the species unassuming appearance and apparent range restriction presumably resulting from blindness and aptery.

**Diagnosis.** The form of the spermatheca which will quickly it from all other species. The shape of the elytra which are widest at the humeral angle (viewed detached) will also separate it from all other Madagascan species except *lanquidula* from which it may be distinguished by its darker colour and smaller size. Additionally *verecunda* is the only *Bambara* described to date lacking both wings and eyes (but possibly a polymorphic species, see above).

**Type data:** Holotype: ♀, Andasibe N.P. border, ASB/Nov 2011/01, sifting leaf litter, 29.xi.2011, L.S.Rahanitriniaina (BMNH). Paratypes: 8 exs [14] (some fragmentary), same data as holotype.

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