Notes on *Macrocyphonistes kolbeanus* Ohaus and *Rhizoplatys auriculatus* (Burmeister), with comments on their melittophilous habits (Coleoptera: Melolonthidae: Dynastinae: Phileurini).

by

ARTHUR V. EVANS\(^1\) and ANNETTE NEL

Department of Entomology, University of Pretoria, Pretoria 0002

*Macrocyphonistes kolbeanus* Ohaus and *Rhizoplatys auriculatus* (Burmeister) are reported feeding on the brood of honey bees. The monotypic genus *Macrocyphonistes* is recorded from southern Africa for the first time and transferred from the Oryctini to Phileurini because of its modified mouthparts. The mouthpart modifications of both species are compared to those of another melittophile scarabaeid, *Oplostomus fuliginosus* (Olivier) (Cetoniinae).

**INTRODUCTION**

Crisp (1939) reported *Rhizoplatys mucronatus trituberculatus* (Burmeister) to cause extensive damage to the combs and foundation of several bee hives in Mozambique. The beetles were observed entering the hive at dusk, being occasionally overcome by the bees, but once inside they proceeded to feed without interference.

**DIAGNOSIS OF THE SPECIES**

*Macrocyphonistes kolbeanus* Ohaus, Figs 1, 3, 5–8

Diagnosis: 37.0–43.0 mm long. Dorsal surface rufopiceous to piceous, opaque. Ventral surface rufobrunneous. Mentum broad, with apical margin entire and obscuring basal segments of labial palpi (Fig. 5); external margin of mandibles angulate, apex angulate with internal spiniform process (Fig. 6); maxillae well-developed (Fig. 7), galea sharply bidentate apically with 2 short teeth subbasally; antennae 10-segmented, club longer than pedicel in both sexes; clypeus triangular; frons in male with short, transverse horn bituberculate apically (Fig. 1), in female weakly bituberculate (Fig. 3); pronotum in male strongly declivous anteriorly, with 2 distinct medial processes (Fig. 1), in female simple (Fig. 3); pronotum margined; elytra opaque, irregularly punctate; protarsi in

\(^1\)Present address: Dept. of Entomology, Natural History Museum, Los Angeles, CA 90007, USA
male thickened, with inner claws enlarged and simple apically, in female normal, with claws equal, slender; meso- and metatibiae briefly carinate subbasally, singly spinose medially, apices bidentate; male genitalia with parameres as in Fig. 8.

Remarks: Two of the Kosi Bay specimens had been collected inside the brood chamber of a honey bee hive, feeding on the brood and destroying the combs and foundation (M. Johannsmeier, personal communication). The remaining material was collected in a pan trap of soapy water near the entrance to the hive. A single male was collected at Cape Vidal flying at dusk; however, black-light traps run on three consecutive nights at this locality failed to attract additional specimens.

The above data represent the first records of this species from Mozambique and South Africa. Ohaus (1910) had described this species from a male and female collected in TANZANIA: Lindi [1000' S, 3941' E], and Ferreira (1965) and Endrödi (1975) redescribed and figured it from the same specimens.

*Rhizoplatys auriculatus* (Burmeister), Figs 2, 4, 9-12

Diagnosis: 26.0–36.0 mm long. Dorsal surface piceous, somewhat shining. Ventral surface rufobrunneus. Mentum broad, with apical margin entire and obscuring basal segments of labial palpi (Fig. 9); external margin of mandibles angulate, apex
obliquely truncate with internal spiniform process (Fig. 10); maxillae well-developed, galea distinctly bidentate apically, with 2 or 3 short teeth subbasally (Fig. 11); antennae 10-segmented, club shorter than pedicel in both sexes; clypeus triangular; frons in male with short, cylindrical horn (Fig. 2); in female tuberculate (Fig. 4); pronotum with complete marginal sulcus, the disc in male deeply or shallowly hollowed, with a strong tubercle on either side (Fig. 2), in female with or without 2 weak tubercles (Fig. 4); pronotum with complete marginal sulcus; elytra somewhat shining, punctostriate; protarsi in male thickened, with inner claws enlarged and incised apically, in female normal, claws equal, slender; meso- and metatibiae each with 2 pairs of spines, apices bidentate; male genitalia with parameres as in Fig. 12.


Remarks: this species was collected with M. kolbeanus inside the brood chamber of a honey bee hive and in a bee pirate trap (M. Johannsmeier, personal communication).

Rhizoplatys auriculatus has been recorded from Ethiopia to South Africa but is absent in western Africa (Endrödi 1985).

DISCUSSION

Macrocyphonistes Ohaus was compared to Pseudocyphonistes Péringuey (a synonym of Cyphonistes Burmeister [Endrödi 1975]) and Phileurus Latreille by Ohaus (1910) and was placed in the Oryctini by Arrow (1937), Ferreira (1965), and Endrödi (1975, 1985). However, the broad mentum, which covers the basal segments of the labial palpi, and the dentition of the galea (see below) clearly places this genus with the Phileurini. Macrocyphonistes is therefore here transferred from Oryctini to Phileurini. This necessitates an addition to the key to the Afrotropical Phileurini of Endrödi (1985), where Macrocyphonistes keys out to Rhizoplatys Westwood. This key is modified as follows:

7(10) Transverse carinae of hind tibiae spinose, outer angle and middle of apical margin dentiformly produced. Anterior tibiae tridentate.
8(9) Outer margin of mandible angulate.
8a Meso- and metatibiae each with single medial spine. Apex of mandible strongly angulate. Antennal club longer than pedicel. Male frons with short, transverse horn bituberculate apically, female frons weakly bituberculate. Enlarged inner protarsal claw of male simple apically. 37-43 mm ........................................ Macrocyphonistes Ohaus
8b Meso- and metatibiae each with a pair of medial spines. Apex of mandible obliquely truncate. Antennal club slightly shorter than pedicel. Male frons with a cylindrical horn or tubercle, female frons with single tubercle. Enlarged inner claw of male incised apically. 20-35 mm ........................................ Rizoplatys Westwood

MOUTHPARTS OF THE CREMASTOCHEILINI AND PHILEURINI

The majority of Cremastocheilini (Cetoniinae) is believed to be myrmecophilous or termitophilous though some species are apparently floricolous, and others are strictly associated with bees and wasps, e.g. Oplostomus fuliginosus (Olivier) which has been reported feeding on the brood of honey bees (Johannsmeier 1980). This species is also known to feed on the brood of paper wasps. Skaife (1979) recorded another cremastocheilin, Brachymacroma emarginicollos (Boheman), feeding on aphids. Several other non-cremastocheilin cetoniine species are commonly found in bee hives in southern
Africa, including *Diplognatha gagates* (Forster), *Pachnoda rufa* (DeGeer), and *P. sinuata* (Fabricius), but none of these has been reported to feed on bee brood.

The mouthparts of *Oplostomus* and other cremastocheilines are greatly modified, presumably for a predaceous way of life: the mentum is greatly enlarged, covering the insertions of the labial palpi (Fig. 13), and the galea is apically sharply acute (Fig. 14). These modifications are also seen in the Phileurini, particularly in species of *Rhizoplatys*, which also have a deep, external lateral impression on the stipes, into which the maxillary palpi can retract. In *Macrocyclonistes, Rhizoplatys, and Syriques* Prell the apical teeth of the galea are coplanar, as opposed to phytophagous species of other genera where the teeth lie in two separate planes.

The predaceous habits of other phileurines have been recorded by Carne (1957), who reported members of the Australian phileurine genus *Cryptodus* Macleay as inquilines in the nests of ants and termites and that specimens of *C. tasmanianus* Westwood were actually feeding on ant larvae.

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REFERENCES


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