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Antennoluprops bremeri, gen. nov., spec. nov. from Madagascar, with remarkable male antennal and tibial morphology

(Insecta, Coleoptera, Tenebrionidae, Lupropini)

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Antennoluprops, gen. nov. (type species *Antennoluprops bremeri*, spec. nov.) from Madagascar is described. It can be recognized by a distinctly modified, periscope-like antennomere 5 in males and by sexualdimorphic tibiae. It is related to the genus *Enicmosoma* Gebien, 1922 because of the 10-segmented antenna with a 2-segmented club. A second species, known only by the female holotype, transferred from *Anaedus* Blanchard, 1845 is included: *Antennoluprops andohahelae* (Ferrer, 1998) comb. nov.

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Introduction

During a recent visit in the Coleoptera collections of the Zoologische Staatssammlung in Munich I found among unidentified material a single specimen of a small tenebrionid, which, according to the labels, has been sifted in degraded forests in northern Madagascar. This specimen was immediately conspicuous because of a very remarkable and unusual morphology of the antenna with a dilatated and modified antennomere 5. After a closer examination, it turned out to represent a new genus, *Antennoluprops*, gen. nov., of the tribe Lupropini Ardoin, 1958 within the subfamily Lagriinae Latreille, 1825, being described herein. *Anaedus andahahelae* Ferrer, 1998, unfortunately known only by a single female, is transferred as a second species to *Antennoluprops*, gen. nov.

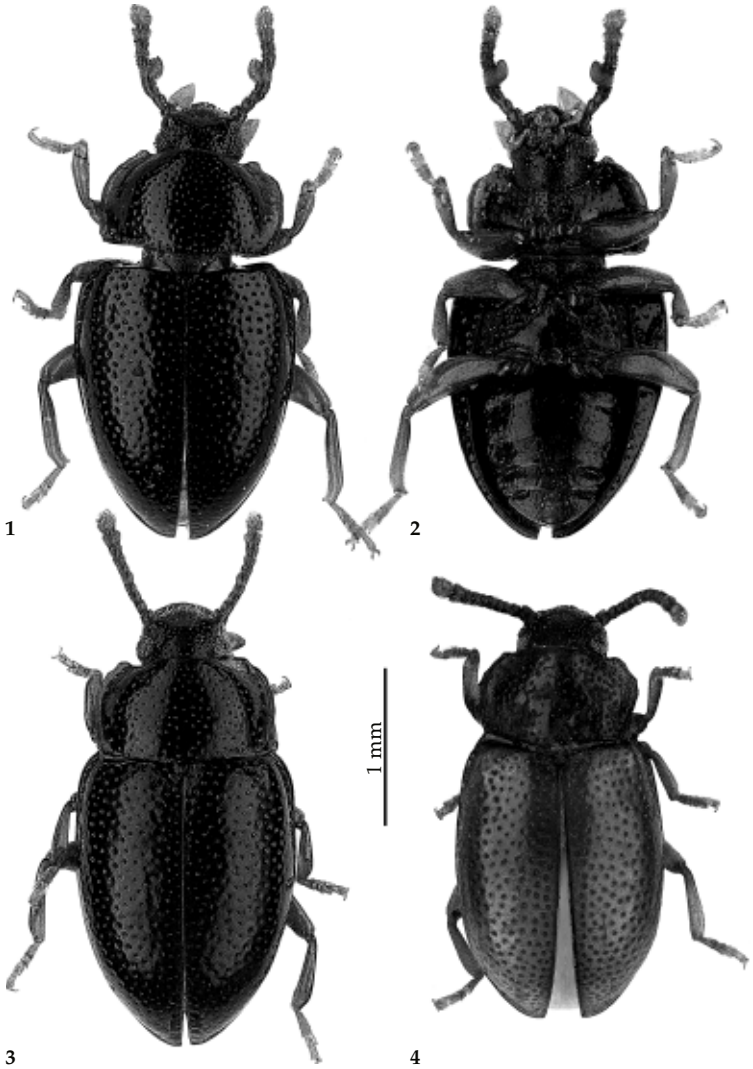
Besides this taxon, the tenebrionid tribe Lupropini is represented on Madagascar by the genera *Coxelinus* Fairmaire, 1869 (endemic, 7 species on Madagascar, see Ardoin 1956), *Enicmosoma* Gebien, 1922 (widespread, 9 species on Madagascar, see Ardoin 1958), *Luprops* Hope, 1833 (widespread, 2 species on Madagascar), and *Microcalcar* Pic, 1925 (endemic, 2 species on Madagascar). The new genus *Antennoluprops*, gen. nov. is more closely related to the genus *Enicmosoma*, mainly because of the 10-segmented antenna with a 2-segmented club. Also the genus *Terametus* Motschulsky, 1869 from the Cape Province in South Africa seems to be a close relative, which was redescribed recently by Schawaller (2007). It possesses, however, a 11-segmented antenna with a 3-segmented club.

Material and methods

MZUF Museo Zoologico “La Specola” Firenze
SMNS Staatliches Museum für Naturkunde Stuttgart
ZSM Zoologische Staatssammlung München

The photographs were prepared by using a Leica DFC 320 digital camera on a Leica MZ16 APO microscope, subsequently processed by Auto-Montage (Synchroscopy) software.

* Contributions to Tenebrionidae no. 62. – For no. 61 see: African Entomology **15**: 2007.



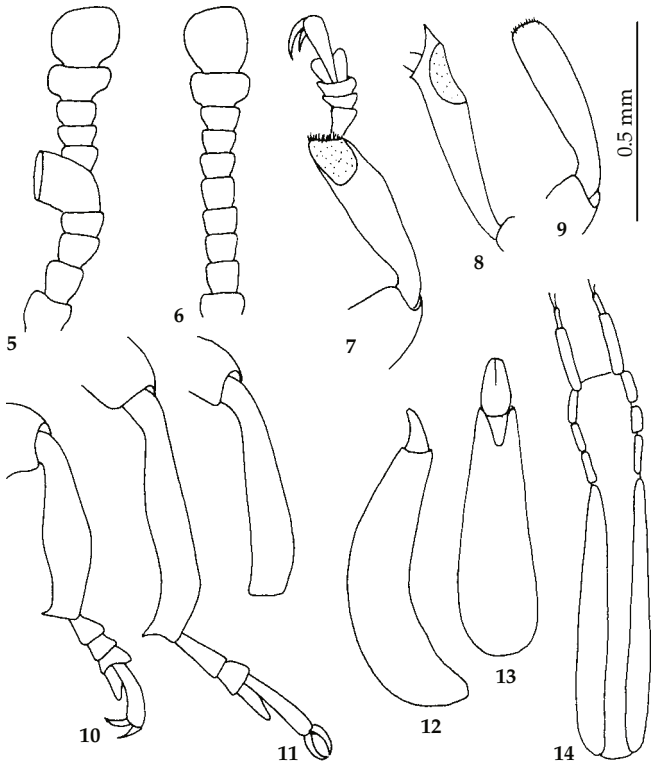
Figs 1-3. *Antennoluprops bremeri*, gen. nov., spec. nov. **1.** ♂ holotype from dorsal. **2.** ♂ holotype from ventral. **3.** ♀ paratype from dorsal.
Fig. 4. *Antennoluprops andohahelae* (Ferrer, 1998), comb. nov., ♀ holotype from dorsal.

Antennoluprops, gen. nov.

Type species: *Antennoluprops bremeri*, spec. nov. by present designation.

Etymology. Combination of *Luprops*, the nominate genus of Lupropini and "antenna" because of the remarkable antennal morphology in males.

Diagnosis. Body length 2.5-2.8 mm. Eyes oval in lateral view but not prominent, not narrowed by genae; antenna consists of 10 short and thick antennomeres, in males antennomere 5 dilated at the medial side and thus periscope-like (Fig. 5), in both sexes antennomere 3 not prolonged, terminal 2 antennomeres forming an indistinct club. Lateral margin of pronotum unbordered but slightly sinuated, surface convex, lateral parts flattened. Scutellum visible. Wings present. Elytral surface with irregular punctation without rows or striae. Legs distinctly sexually dimorphic: in males anterior tibia with distinct excavation at the tip, medial and posterior tibiae medially sinuated and with an internal hook at the tip, in females all tibia simple and not modified.



Figs 5-14. *Antennoluprops bremeri*, gen. nov., spec. nov. **5.** Right ♂ antenna from dorsal. **6.** Right ♀ antenna from dorsal. **7.** Right ♂ anterior leg from dorsal. **8.** Left ♂ anterior tibia from external. **9.** Right ♀ anterior tibia from dorsal. **10.** Right ♂ middle leg from dorsal. **11.** Right ♂ posterior leg from dorsal. **12.** Right ♀ posterior tibia from dorsal. **13.** Aedeagus. **14.** Ovipositor.

Remarks. Gebien (1921) has compiled a key to the species of the African genera of "Heterotarsinae", but still without the genus *Enicmosoma* Gebien, 1922, being described one year later. This genus was revised by Ardoin (1958). *Antennoluprops*, gen. nov. and *Enicmosoma* (occuring on Madagascar and elsewhere in Africa) share the 10-segmented antenna with a 2-segmented club, considered herein as a synapomorphic character. However, the antennomeres are usually longer in most species of *Enicmosoma* (except in the monotypic subgenus *Enicmonota* Ardoin, 1958) and show no sexualdimorphic modifications. Additionally, the eyes in *Enicmosoma* are round and prominent or even conical, the pronotal disc is convex until the lateral margin and not flattened at the sides, and the legs are not modified in males.

Other genera of the Lupropini (for example *Anaedus* Blanchard, 1845 and *Luprops* Hope, 1833) probably belong to a different evolutionary line because of the kidney-like eyes, longer shape of the antennomeres with distal grooves of sensillae, antenna filiform and 11-segmented without any club, tibiae with short spurs, longer tarsi, etc. It should be mentioned here, that in *Anaedus spinicornis* Kaszab, 1973 from Nepal, the same (!) antennomere 5 in males is also modified, namely with a spine-like prolongation.

Antennoluprops bremeri, spec. nov.

Figs 1-3, 5–14

Types. Holotype: ♂, N Madagascar, 5 km E Andapa Lembonibona, 800-1000 m, sifted in degraded forest, 2.III.1996, leg. J. Janák & P. Moravec (ZSM). – Paratypes: 2♂♂, E Madagascar, Moramanga, Andasibe, Anevoka, Maromiza Forest, 950-1150 m, 27.XI.-16.XII.2006, leg. J. Berg & D. Bartsch (SMNS); 1♀, NE Madagascar, Toamasina, Station Ecologique Mandraka, 20 km W Moramanga, 1200 m, 2.XI.2001, leg. R. Schuh (SMNS).

Etymology. Named in honor of Prof. Dr. H. J. Bremer (Wellingholzhausen, Germany), who recognized this taxon from his collection already 1999 as new.

Description

Body length 2.7-2.8 mm. Dorsal and ventral side dark ferrugineous without metallic shine; pronotal lateral margin and all appendages lighter; dorsal and ventral surface punctured, punctures without microsetae, surface between punctures shining (Figs 1-3). Head with slightly denser punctation than on pronotum, genae somewhat swollen but not dilated, between genae with weak transverse impression, anterior margin of clypeus straight and without excavation or other modifications; eyes oval in lateral view but not prominent, not narrowed by genae, consisting of about 28 ommatidia; maxillary palps with large triangular terminal segment; antenna consists of 10 short and thick antennomeres, shape of the antennomeres in both sexes see Figs 5-6, in males antennomere 5 dilated at the medial side and thus periscope-like (Fig. 5), in both sexes antennomere 3 not prolonged, terminal 2 antennomeres forming an indistinct club, all antennomeres with similar acute setae but without denser concentrations of other sensillae. Pronotum widest in the middle, anterior and posterior margin unbordered, lateral margin unbordered but slightly sinuated, anterior and posterior corners marked but not acute, surface convex, lateral parts flattened, surface with irregular punctation, punctures of similar size as on head and on elytra, before basal margin with a distinct transverse row of punctures, propleura with larger but sparser punctation, prosternal process short, metasternal punctation laterally larger than medially. Scutellum visible. Wings present. Elytra widest near the base, lateral margin to be seen in dorsal view on its total length, surface with irregular punctation without rows or striae, epipleures with similar punctation, surface of propleures somewhat uneven. Ventrites laterally with larger punctation than medially, surface somewhat uneven, terminal visible ventrite unbordered, membranes between ventrites not visible. Legs distinctly sexually dimorphic: in males anterior tibia with distinct excavation at the tip (Figs 7-8), medial and posterior tibiae medially sinuated and with an internal hook at the tip (Figs 10-11), in females all tibiae simple and not modified (Figs 9, 12); in both sexes tibiae without external keels, tibial spurs not visible, all tarsomeres short. Aedeagus (Fig. 13) with thick and long basal piece and small unmodified joint parameres. Ovipositor (Fig. 14) with coxite lobe 4 long and digitate, gonostyles short and attached apically, joint coxites shorter than paraproct.

Antennoluprops andohahelae (Ferrer, 1998), comb. nov.

Fig. 4

Re-examined type material. Holotype: ♂, SE Madagascar, NW Fort Dauphin, Andohahela Reserve, 600 m, 25.V.1991, leg. S. Taiti, L. Bartolozzi & C. Raharimina (MZUF).

Remarks. Ferrer (1998) described *Anaedus andohahelae* based upon a single female, which surely does not belong to the genus *Anaedus* mainly because of completely different antennae and other characters (see diagnosis of *Antennoluprops*, gen. nov.). Although males of this taxon are as yet lacking and thus the male antennal peculiarities are unknown, it very probably represents a second species of *Antennoluprops* and is formally transferred herein from *Anaedus* to *Antennoluprops*. Besides a slightly smaller size (body length 2.5 mm), the differences in the shape and punctation of pronotum and elytra (compare Figs 3-4) are considered as species-specific, compared with the female of *Antennoluprops bremeri*, spec. nov. The type localities of both species are situated widely disjunct (N, NE and SE Madagascar, respectively).

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