

A new genus and species in the subtribe Axinidiina from South Africa (Coleoptera: Carabidae)

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Abstract. A new genus and species of the promecognathine subtribe Axinidiina Basilewsky, 1963 is described. The new species is figured including its male genitalia and is differentiated from the nearest species. A key of axinidiine genera published by Baehr & Schüle (2014) is refined and completed. New findings of the known species are listed.

INTRODUCTION

The genera and the species of the subtribe Axinidiina were recently studied, redescribed and keyed by Basilewsky (1963) and especially by Baehr & Schüle (2014). According to the latter authors the subtribe comprises 17 taxa in four genera which are distributed exclusively in the Republic of South Africa. The first author recently collected in Eastern Cape three specimens which clearly belong to a new genus and species described below.

MATERIAL AND METHODS

The study of dry-mounted specimens, including measurements and examination of microsculpture, was done at a magnification up to 98×. Aedeagi were fixed in Euparal and placed on the same pin below the beetle.

Measurements: total length of the body is measured from the anterior margin of closed mandibles to the apex of the elytra, length of the body from the anterior margin of the labrum to the apex of the elytra; length of the pronotum along its midline; width of the pronotum at widest point; length of the elytra from its base to its apex along the suture; width of the elytra at its widest point. Length of body is given with 0.05 mm accuracy; other measurements including ratios and means are rounded to two decimal places. Label locality data are quoted verbatim.

Macrophotographs were taken by the second author using a Nikon D2X or D800 digital camera, applied to a Nikon Labophot II binocular optical microscope or a Nikon SMZ 1000 stereomicroscope, with diaphragmed lenses.

For comparison, most of known taxa from the subtribe, either placed in TMSA or in the first author's collection were studied. The terms and methods mentioned in Baehr & Schüle (2014) are followed as closely as possible.

The following abbreviations are used to indicate the depository of specimens:

PBPC Petr Bulirsch, private collection, Praha, Czech Republic;

PMFI Paolo Magrini, private collection, Firenze, Italy;

PSHG Peter Schüle, private collection, Herrenngen, Germany;

TMSA Ditsong (= former Transvaal) Museum, Pretoria, South Africa.

Other abbreviations:

SP: setiferous puncture(s); BSP: basal (prescutellar) setiferous puncture(s); DSP: dorsal setiferous puncture(s); HT: holotype(s); PT: paratype(s).

RESULTS

Subtribe Axinidiina Basilesky, 1963

Genus *Neoaxinidium* gen. nov.

Type species: *Neoaxinidium martinbaehri* sp. nov.

Diagnosis. Head with ultimate maxillary palpomeres glabrous; frontal sulci short, very broad and superficial; mandibles distinctly incurved towards apex, both with blunt inner tooth just above basis and moreover left one with another large and very sharp, right with small and blunt inner tooth in about its midlength; eyes small and flat, genae distinct, elongate, distinctly longer than eyes. Antennae sparsely pilose from third, densely from fifth antennomeres outwards. Pronotum with lateral margin almost reaching apical border; pronotal base not margined, its median part slightly produced posteriorly; lateral margin with 3-5 lateral SP. Elytra shiny, without distinct DSP; base with BSP without next basal punctures and setae; series of umbilical punctures consisting of about 18 punctures, sparser but not interrupted in middle; apex of protibiae barely produced laterad.

Differential diagnosis. The new genus and new species is unique within the subtribe by the combination of the following characters: the left mandible has in the inner middle a distinct tooth; the eyes are strongly reduced and flattened, being much shorter than the genae; and the elytra have no DSP. Since the new genus is monotypic, the following key to genera can be used to clearly distinguish the new species as well.

Name derivation. The generic name is composed of the prefix Neo- (= new) and *Axinidium*, the name of the typical genus of the tribe. Gender neuter.

Neoaxinidium martinbaehri sp. nov.

(Figs. 1-6)

Type locality. South Africa, Eastern Cape, Amatola Mts., Hogsback State Forest, ca 1300 m a.s.l.

Type material. Holotype (♂): South Africa, Eastern Cape / Hogsback State Forest, Contour / track env., 32°35.2'S 26°56.6'E / 10.i.2015, P. Bulirsch lgt., (TMSA). Paratypes (2 ♂♂): first with the same data as HT, second with the same data except: 1300 m, 1-2.xi.2019, (PBPC).

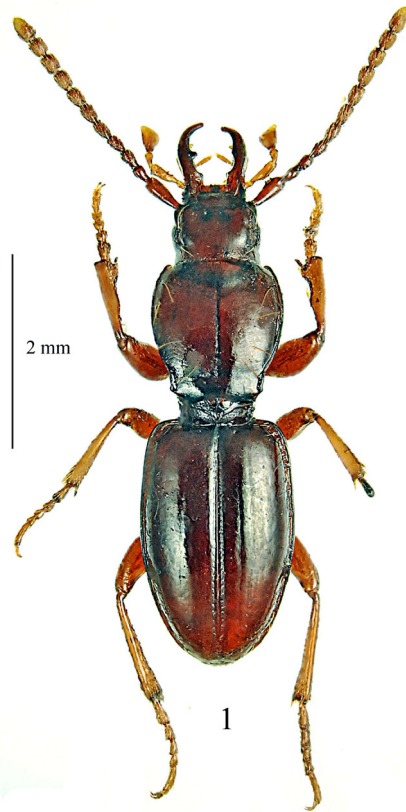


Fig. 1. *Neoxinidium* gen. nov. *martinbaehri* sp. nov. Habitus of HT.

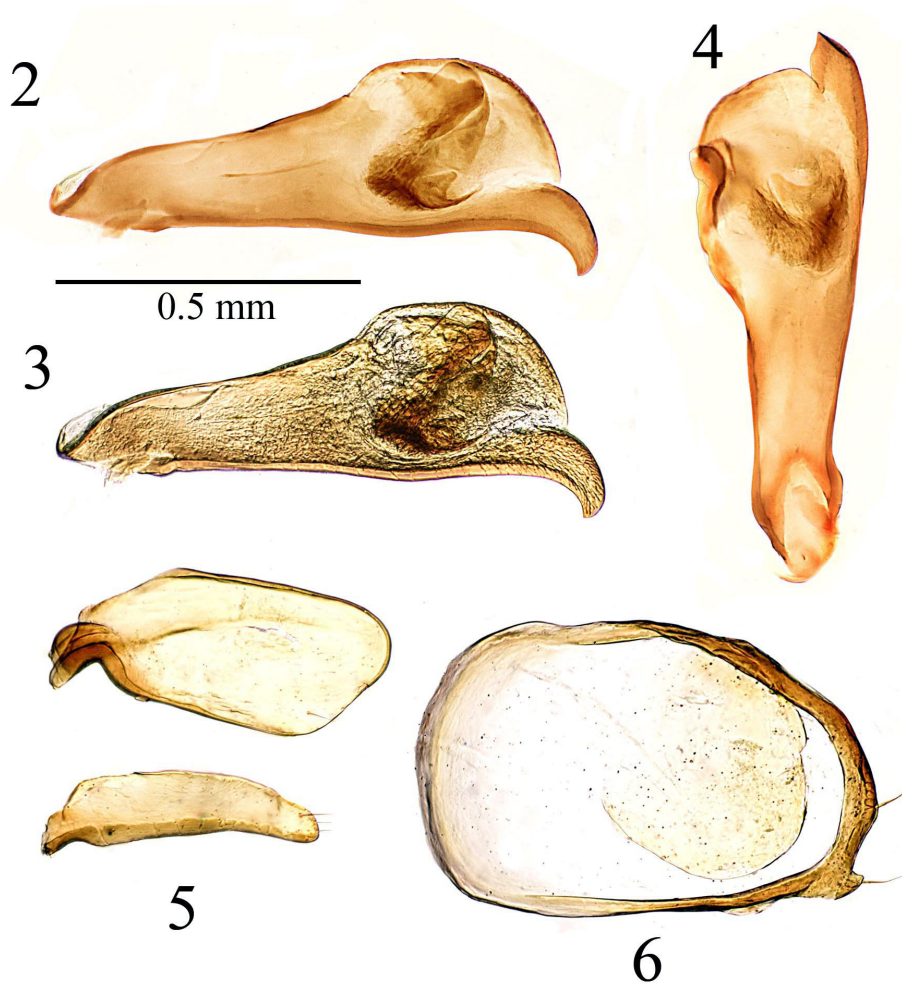
Description. Measurements. Total length: 5.60-6.20 mm (HT 5.60 mm, n=3); body length: 5.05-5.55 (HT 5.05 mm); width: 1.57-1.75 mm (HT 1.57 mm). Ratios. Length / width of pronotum: 1.05-1.09 (HT 1.05); length / width of elytra: 1.66-1.70 (HT 1.66). Coloration. Upper body light fuliginous, elytral apex, mouth parts, antennae, and legs light ferruginous.

Head (Fig. 1). Comparatively wide, though considerably narrower than pronotum. Eyes small, strongly flattened, barely protruding laterad, genae elongate apicad, distinctly longer than eyes. Preorbital plates rounded, projecting barely less than eyes. Labrum in middle with rather deep and broad excision, on either side with one elongate SP, in middle with four setae. Mandibles very elongate, median margin evenly curved, both mandibles with inner teeth as described in genus diagnosis; outer margin distinctly and rather broadly concave above base. Terminal palpomeres of maxillary palpi triangular, glabrous, slightly longer than wide at apex. Antennae moderately

long, median antennomeres considerably longer than wide. Clypeal suture finely, irregularly impressed throughout. Frontal sulci very broad and superficial, just reaching anterior borders of eyes. Frons without impression in middle. Surface impunctate, shiny, without distinct microreticulation.

Prothorax (Fig.1). Moderately wide, dorsal surface convex, in lateral view depressed medio-basally. Lateral margins almost regularly rounded from rather sharp anterior angles to posterior sixth, then deeply, broadly concave before posterior SP, then irregularly, very slightly converging to slightly obtuse posterior angles. Base unbordered, medially almost straight, slightly produced posteriorly, laterally abruptly oblique to posterior angles. Marginal sulcus rather narrow throughout. Median line moderately shallow, impressed from indistinct anterior transverse line almost to base. Lateral margin with 3-5 lateral SP: one anterior located below anterior angles, 0-2 post-anterior SP (in HT two on left side and one on right, in one PT one on each side and in second PT none) in about anterior fourth, one middle SP below midlength and one posterior SP above basal angle. Surface impunctate, shiny, without distinct microreticulation.

Elytra (Fig.1). Rather long, slightly oviform, wide at base; base almost truncate, humeri distinctly projecting. Lateral margin below humeri very slightly convex and slightly



Figs. 2-6. *Neoaxinidium* gen. nov. *martinbaehri* sp. nov. (HT): 2- median lobe of aedeagus in lateral view (on perspex); 3- median lobe of aedeagus in lateral view (in euparal on vinyl acetate); 4- median lobe of aedeagus in ventral view (on perspex); 5- parameres; 6- urite IX.

broadened up to about midlength then regularly, barely convex to narrowly rounded apex. Dorsal surface convex, in lateral view depressed on disc. Marginal sulcus comparatively wide especially in humeral area, slightly narrowed apically. Stria 1 very near to suture, narrow, deep and distinctly punctured, diminish at apex, other striae (except stria 3 on disc) almost not perceptible; third interval without distinct DSP. Suture between striae 1 rather deeply embedded from base up to apex. Marginal series consisting of about 18 irregular, medially not interrupted SP. Surface of disc without distinct microreticulation. Base with deep, isolated BSP and narrow strip of fine reticulation.

Male genitalia (Figs. 2-6). Aedeagus compact, strongly widened apically before short, narrowly bent down apex; internal sac with sclerite as in Figs. 2-4; parameres as in Fig. 5; large, broader paramere without (or with one atypical) setae, narrower with about three very short setae at apex. Urite IX as in Fig. 6, peculiar, with two short setae.

Female. Unknown.

Name derivation. Named in commemoration of our late colleague and friend Martin Baehr, a worldwide known specialist in Carabidae and co-author of the revision of this subtribe who first studied the types and assumed its new genus status.

Distribution. Known only from one locality in the Amatola Mts. in Eastern Cape Province, Republic of South Africa.

Collecting circumstances. All three specimens were collected by sifting of leaf litter in the indigenous evergreen forest.

NEW FINDINGS OF THE AXINIDIINA

Baehr & Schüle (2014) listed to date known species of the subtribe and its distribution. Most of 17 known species have been known either by the single HT or in a short type series. Recently the first author collected (except three specimens described above) a few specimens of already known species. All these specimens cited below were collected by sifting of indigenous forest or rarely fynbos litter.

Axinidium africanum Sturm, 1843

New material examined: (1 spec.): South Africa, Western Cape / Kogelberg NR, nr. Platbos for[est] / 34°20.0'S 18°55.8'E / 16.x.2013, P. Bulirsch lgt. // *Axinidium / africanum / Sturm / det. M. Baehr, 2017, (PBPC)*; (1 spec.): South Africa, Western Cape / Jonkershoek NR, indig. forest / patch 33°58.5'S 18°57.0'E / 27.x.2013, P. Bulirsch lgt. // *Axinidium / africanum [handwritten by M. Baehr], (PBPC)*; (1 ♂): South Africa, Western Cape / fynbos N of Wemmershoek dam / 33°49.4-5'S 1°6.7-9'E, 400-500 m / 12.x.2017, P. Bulirsch lgt., (PBPC).

Comment. Two specimens have been identified by M. Baehr, the remaining one by the first author using the key in Baehr & Schüle (2014). The status of this species was defined by Baehr & Schüle (2014). Most previous authors including Péringuey (1896) and Basilewsky (1963) placed to this species more specimens which were later described as separate species.

Paraxinidium andreaei Basilewsky, 1963

Type locality. Basilewsky (1963, p. 314): Cape Province, Sederberg, moitié Nord, 1400-4500 ft.

New material examined: (2 spec.): South Africa, Western Cape, 1050 m / Cederberg Mts., Devilskloof / 32°27.3'S 29°31.7'E, 1050 m / 5.x.2017, P. Bulirsch lgt., (PBPC).

Comment. Identified by the first author by comparison with types in TMSA. This is the first cited finding since the description of this species which is endemic to the Cederberg Mts.

***Metaxinidium* sp. near *excisicolle* Baehr & Schüle, 2014**

Type locality of *M. excisicolle*. Baehr & Schüle (2014, p. 73): S. Afr. S. Natal, Weza / Bangeni forest / 30.38S 29.39E. The single female HT is in the TMSA.

New material examined: (20 spec.): South Africa, KwaZulu-Natal / Maloti-Drakensberg Park / Lotheni NR, indig. forest patch / 29°26.3' S 29°31.7'E, 1570 m / 14.i.2019, P. Bulirsch lgt., (PBPC, TMSA, PMFI, PSHG).

Comment. Some specimens of this series have been studied by Peter Schüle, the remaining ones by the first author using the key in Baehr & Schüle (2014). These specimens slightly differ from the description of this species. For the final decision about its specific status is necessary to study the HT of *M. excisicolle* (TMSA); above mentioned specimens probably belong to a new, sibling species.

KEY TO THE GENERA OF THE SUBTRIBE AXINIDIINA

(adapted key published by Baehr & Schüle (2014))

- 1(2) Left mandible in inner midlength with large and sharp tooth. Base of pronotum unbordered; elytra with BSP, without DSP; last article of maxillary palpi glabrous; eyes reduced. *Neoaxinidium* gen. nov.
- 2(1) Left mandible in inner midlength without tooth. At least three distinct DSP.
- 3(4) Base of pronotum usually margined; antennomeres 1-4 glabrous; umbilical series consisting of no more than 13 SP. 5
- 4(3) Base of pronotum not margined; at most antennomeres 1-3 glabrous; umbilical series consisting of at least 15 SP. BSP distinct. 7
- 5(6) Apical angles of pronotum distinctly removed from apex, apex produced medially; process of genae large, triangular or quadrangular; umbilical series distinctly interrupted in middle. BSP lacking, last article of maxillary palpi glabrous. *Axinidium* Sturm, 1843
- 6(5) Apical angles of pronotum not removed from apex, apex not produced medially; process of genae very small, depressed dorso-ventrad; umbilical series not distinctly interrupted in middle. BSP distinct, last article of maxillary palpi densely pilose. *Holaxinidium* Basilewsky, 1963
- 7(8) Antennomeres 1-3 glabrous; mandibles slightly curved in apical third. Last article of maxillary palpi not densely pilose. *Paraxinidium* Basilewsky, 1963
- 8(7) Antennomere 1 glabrous; mandibles markedly curved in apical third. Last article of maxillary palpi densely pilose *Metaxinidium* Basilewsky, 1963

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