

# A REVIEW OF THE GENUS *PROMELIBOEOUS* OBENBERGER WITH COMMENTS ON ITS RELATIONSHIPS (COLEOPTERA, BUPRESTIDAE, AGRILINAE)<sup>1</sup>

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## SUMMARY

A review of the genus *Promeliboeus* OBENBERGER with comments on its relationships (Coleoptera, Buprestidae, Agrilinae).

The genus *Promeliboeus* OBENBERGER is reviewed to include two new species, *P. colossus* and *P. namaquensis*. *P. strandi major* OBENBERGER is reduced to junior synonymy of *P. strandi* OBENBERGER. The apparent relationship between *Promeliboeus*, *Anodontora* OBENBERGER, *Pseudoclema* THERY and *Lepidoclema* BELLAMY & HOLM is discussed with a cladogram and phylogenetic commentary presented. *Cylindromorphus transvaalensis* KERREMANS is transferred to *Pseudoclema* and becomes the senior synonym to *Pseudoclema transvaalensis* (OBENBERGER). A lectotype is designated for *Promeliboeus strandi major*.

**Key words:** Coleoptera, Buprestidae, Agrilinae, *Promeliboeus*, taxonomic review, phylogeny, Southern African subregion.

## INTRODUCTION

The African component of the large agriline tribe Coroebini BEDEL has recently been diagnosed in a key to separate all 50 genera currently defined (BELLAMY, 1988a, 1988b). However, several of the included genera have not been recently reviewed and are in need of revisionary study. This paper attempts to clarify the species composition of one of these genera, *Promeliboeus* OBENBERGER, while offering brief commentary and a cladogram towards its supposed relationships to three other taxa from the southern African subregion.

As noted above, the genera discussed herein can be separated as in the key from BELLAMY (1988a). Type material and other specimens were studied and are currently deposited in the following collections, with the abbreviations used in the text. Label data is presented with a slash (/) to separate data from sequential labels. Parentheses enclose my notations for handwritten (h) or printed (p) label data.

- BMNH British Museum (Natural History), London, Great Britain.
- CLBC Author's research collection.
- MNHN Muséum National d'Histoire Naturelle, Paris, France.
- MRAC Musée Royal de l'Afrique Centrale, Tervuren, Belgium.
- NMPC National Museum, Prague, Czechoslovakia.
- SAMS South African Museum, Cape Town, South Africa.
- SANC National Collection of Insects, Pretoria, South Africa.
- TMSA Transvaal Museum, Pretoria, South Africa.

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GEN. **PROMELIBOEUS** OBENBERGER, 1924

*Promeliboeus* OBENBERGER, 1924a: 28; THÉRY 1925: 226; 1934: 791; 1945: 159; BELLAMY 1985: 423.

Type-species: *Promeliboeus strandi* OBENBERGER (from original monotypy).

*Promeliboeus* was well defined both at the time of the original description (OBENBERGER 1924a) and in the subsequent revision (OBENBERGER 1945) and thus, is not redescribed herein. Adults of two species, *P. strandi* OBENBERGER and *P. namaquensis*, n. sp., were collected feeding on the petals of several species of yellow-flowered Asteraceae. The flower feeding habit is rare within the African Coroebini and was only observed in species of three other genera: *Discoderoides* THÉRY, *Meliboeus* DEYROLLE and *Kamosia* KERREMANS.

**Key to the species of *Promeliboeus***

1. – Longer than 10,0 mm; head convex, strongly produced between eyes ... (Worcester)
  - ..... *P. colossus*, n. sp.
  - Shorter than 7,0 mm; head more or less truncate, only feebly produced between eyes
    - ..... 2
2. – Lateral margins of pronotum parallel ... (Natal) . . . *P. parallelicollis* OBENBERGER
  - Lateral margins of pronotum narrowing from apex to base . . . . . 3
3. – Size, 3,7 - 3,8 mm long; pronotum nitid, lateral margin sinuate; lateroposterior angle of metacoxal plate entire (Fig. 3) ... (Eastern Cape) . . . . *P. braunsi* OBENBERGER
  - Size longer than 4,0 mm; pronotum matte, rugose, lateral margin straight; lateroposterior angle of metacoxal plate emarginate (e.g. Fig. 2) . . . . . 4
4. – Third antennomere shorter than either second or fourth (Fig. 6) ... (Southwestern Cape, mountains) . . . . . *P. strandi* OBENBERGER
  - Antennomeres 2, 3 and 4 subequal in length (Fig. 9) ... (Namaqualand) . . . . .
    - ..... *P. namaquensis*, n. sp.

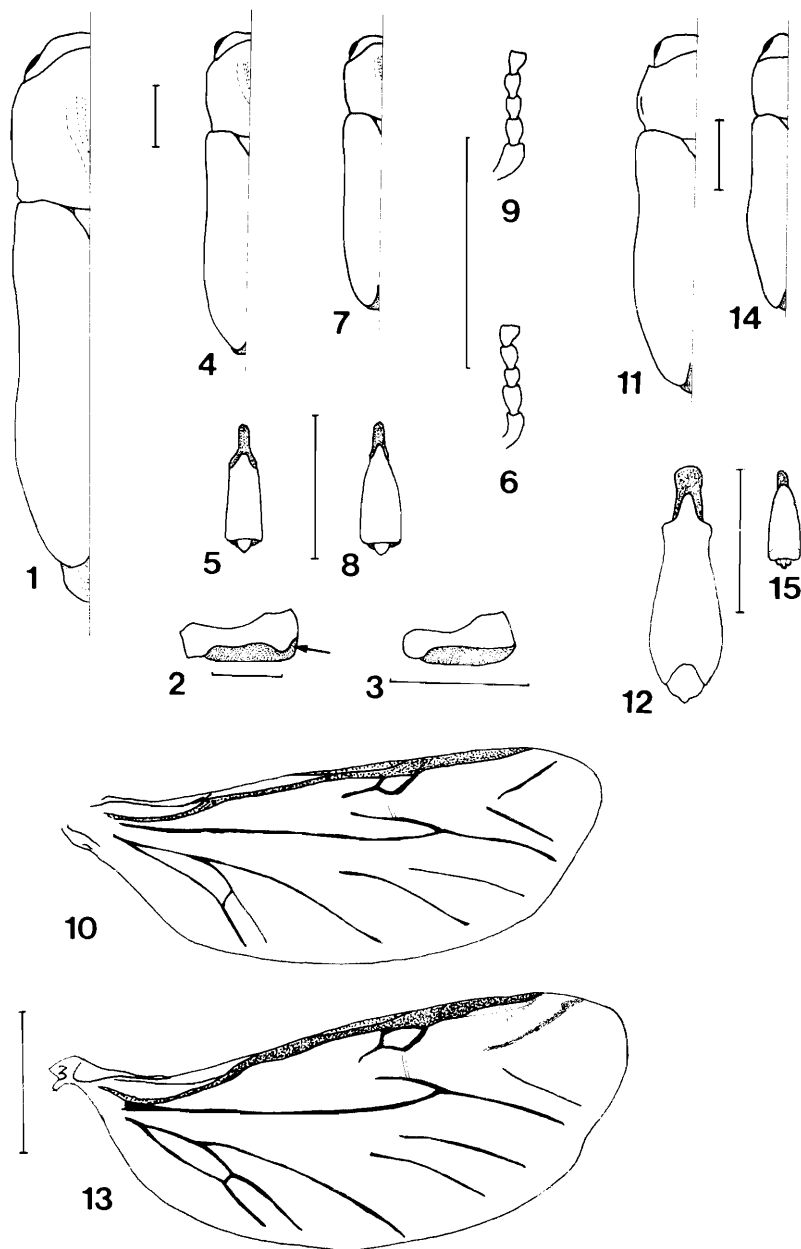
***Promeliboeus strandi* OBENBERGER (Figs. 4, 5, 6, 10)**

*Promeliboeus strandi* OBENBERGER, 1924a: 28; 1931a: 187; 1934: 791; 1945: 160.

*Promeliboeus strandi major* OBENBERGER, 1931a: 187; 1934: 791; 1945: 160. **syn. nov.**

An examination of the type material (NMPC 23585, 23586, SAMS 1404) of these subspecies, along with many additional specimens (CLBC, NCPS, TMSA) reveals that the differences between them are minor and not so complex as indicated in OBENBERGER's (1945) key to the species. Therefore, I propose that *P. strandi major* be reduced to junior synonymy.

Lectotype (here designated) of *P. strandi major* (SAMS) (righthand specimen of two mounted on a card, further identified with an arrow placed beneath): (SOUTH AFRICA: Cape Prov.) Ceres Div., Matroosberg, 3500 ft, Lightfoot, Nov. 1917 (p)/ (red label) TYPUS (p)/ *Promeliboeus strandi* ssp. major m. Type (h) det. Dr. OBENBERGER (p)/ (green label) SAM Type Acc. no. (p) 1404 (h)/ (red label) LECTOTYPE (p) *Promeliboeus strandi major* Obenb. det. (h) C. L. BELLAMY (p) 1985 (h). Paralectotypes: 1 (SAMS): mounted to left of lectotype, same label data; 1 (NMPC): same label data except, (orange label) Mus. Nat. Prague Inv. (p) 23586 (h)/ (yellow label) PARALECTOTYPE (p) *Promeliboeus strandi major* Obenb. det. (h) C. L. BELLAMY (p) 1985 (h).



Figs. 1-15: *Promeliboeus colossus* n. sp.: left dorsal view (1) and metacoxal plate (2). *P. braunsi* OBENBERGER, metacoxal plate (3). *P. strandi* OBENBERGER: left dorsal view (4); male genitalia, dorsal view (5); antenna (6). *P. namaquensis* n. sp.: left dorsal view (7); male genitalia (8). antenna (9). *P. strandi* OBENBERGER, metathoracic wing (10). *Anodontodora capicola* OBENBERGER: left dorsal view (11); male genitalia (12); metathoracic wing (13). *Pseudoclema transvaalensis* (KERREMANS): left dorsal view (14); male genitalia (15).

**Promeliboeus colossus** n. sp. (Figs. 1, 2)

Holotype female. Size, 10.3 × 2.8 mm; subcylindrical, elongate; subnitid black, with faint bluish or purplish reflection; surface rugose with moderate covering of short recurved setae.

Head produced, strongly convex between eyes; frontovertex feebly bilobed; inner margin of eyes diverging dorsally; eyes large; supra-antennal grooves arcuate, medially confluent with frontoclypeal depression; antennal cavities large, separated by their own width; frontoclypeus roundly emarginate distally; labrum moderately setose on either side; genal tooth obtuse. Antennae: Antennomeres 2 - 4 subequal, 5 subserrate, longer than wide, 6 - 10 serrate, wider than long, 11 oblong.

Pronotum 1.1x long as wide, widest before apex; apical margin strongly convex medially; basal margin bisinuate, prescutellar lobe subtruncate; laterobasal angles subrectangulate; lateral margins sinuate; disc laterally convex, with shallow wide longitudinal medial depression; surface irregularly transversely striolate. Scutellum triangular, length subequal to width, basal margin feebly concave.

Elytra narrower than pronotum, widest past humeri; humeri moderately elevated, oblique, slight round depression centrad to each; lateral margins straight, narrowing slightly from widest point to before middle, then broadly arcuate before narrowing to separately rounded apices; disc slightly flattened; suture elevated, impunctate from just before basal 1/4 to before apex; pygidium extending beyond elytral apices for more than half its length, lateroapically lobed, apical margin arcuate, premarginal area with concentric arcuate striae, disc flattened, setose.

Underside. Prosternum with mentonnière compressed, feebly bilobed, separated from disc by arcuate transverse groove, process laterally carinate, angulate lateral lobes extending beyond procoxae; metacoxal plate emarginate lateroapically; suture between abdominal sternites 1 and 2 only feebly indicated laterally, lateroapical angles of 2 - 4 rectangulate, apical margin of 5 broadly arcuate.

Legs: (first pair entirely missing) femora narrowly fusiform; tibiae with single apical spine. tarsomeres 1 - 4 each shorter distally, with small pulvilli, 5 narrow, elongate, claws bifid, outer portion slightly longer.

Material examined. Holotype, female (BMNH): (SOUTH AFRICA) Cape Province, Worcester, January 1929/ S. Africa, R. E. Turner, Brit. Mus., 1929 - 96.

*P. colossus* is almost twice as large as any other species. Furthermore, the convexly produced head is a character state unique to this species.

**Promeliboeus namaquensis** n. sp. (Figs. 7, 8, 9)

Holotype male. Size, 4.8 × 1.3 mm; subcylindrical, elongate; subnitid black with faint cupreous reflection, surface rugose with moderate covering of short recurved setae; otherwise as in *P. colossus* except by the head truncately produced between eyes; mentonnière more strongly bilobed; genitalia as shown figure 8.

Female paratypes. Size, 4.5 - 5.3 × 1.2 - 1.4 mm; otherwise as in male.

Material examined. Holotype, male (TMSA): SOUTH AFRICA: Cape Prov., Eselsfontein, 460 m, S29.42, E17.43, 16/17.IX.1984, C. L. BELLAMY; 2 female paratypes (CLBC, TMSA), same data.

The species is named for Namaqualand, the region of the northwest Cape province where the type series was collected. This species comes nearest to *P. strandi* and can be separated by the differences in the basal antennomeres as noted in the key, the proportions and male genitalia.

**GEN. ANODONTODORA** OBENBERGER, 1931

*Anodontodora* OBENBERGER, 1931a: 189; 1934: 787; BELLAMY 1985: 423.

Type-species: *Discoderes capicola* OBENBERGER (from original designation).

The species of *Anodontodora* were originally described by OBENBERGER

(1922) based on his definition of *Discoderes* but not that of CHEVROLAT (1837). OBENBERGER subsequently (1931a) realized that his two species were not congeneric with the type-species, *D. salzmanni* (SOLIER), and erected this genus for them. After my first examination of *A. aurulans* and *A. capicola*, I was not sure of their relationship. OBENBERGER (1931a) commented briefly on a relationship with *Meliboeus* DEYROLLE and the Australian *Paracephala* SAUNDERS. OBENBERGER further stated (1931b) that *Anodontodora* showed a relationship to species of the Australian genus *Paracephala* and was thus derived from a lineage that dated to before the Gondwanic separation.

Upon further study of the key diagnostic character states of the entire African coroebine fauna, I find that even though *Anodontodora* does show some degree of external similarity to both *Paradorella* and *Nastella* KERREMANS, the subcylindrical body form (Fig. 11), metathoracic wing venation (Fig. 13) and the male genitalia (Fig. 12) with completely fused parameres point to a much closer relationship with *Promeliboeus*, *Pseudoclema* THÉRY and *Lepidoclema* BELLAMY and HOLM.

#### GEN. *PSEUDOCLEMA* THÉRY, 1938

*Pseudoclema* THÉRY, 1938: 275; BELLAMY 1985: 423.

Type-species: *Clema transvaalensis* OBENBERGER (from original designation).

*Pseudoclema* is well defined and is composed of two species from southern Africa. The strong superficial resemblance of these two species to a four-species group of *Paracephala* from Australia (see BELLAMY, 1988c) still requires an explanation of convergence or actual relationship.

#### *Pseudoclema transvaalensis* (KERREMANS), comb. nov. (Figs. 14, 15)

*Cylindromorphus transvaalensis* KERREMANS, 1911: 92.

*Cylindromorphus transvaalensis* (sic), OBENBERGER 1934: 928.

*Paracylindromorphus transvaalensis*, THÉRY 1954: 32.

*Clema transvaalensis* OBENBERGER, 1924b: 157; 1934: 791. *syn. nov.*

*Pseudoclema transvaalensis* (OBENBERGER), THÉRY 1938: 275; COBOS 1954: 4.

An examination of the type of *Cylindromorphus transvaalensis* KERREMANS (TMSA, type 60) and study of its description (1911) show it to be conspecific with the widely distributed *Pseudoclema transvaalensis* (OBENBERGER). OBENBERGER (1924b) described *Clema transvaalensis* and later, THÉRY (1938) erected the genus *Pseudoclema* for that species. OBENBERGER (1928) did not include KERREMANS' species in his work on the African *Cylindromorphus*, but did list it in his catalogue (1934). THÉRY (1954) transferred *Cylindromorphus transvaalensis* to *Paracylindromorphus* and redescribed the species from a female specimen from the KERREMANS collection (MRAC). Further comments in THÉRY's (1954) work are confusing and suggest that further study is needed to resolve the identity of the material that was studied under the name of *C. transvaalensis* KERREMANS.

#### PHYLOGENY OF THE *PROMELIBOEU*S GROUP

This grouping of the four coroebine genera discussed herein is defined partly as they were separated in the recent key (BELLAMY 1988a). The following list of characters and each apomorphic state is used to construct the cladogram (Fig. 16).

1. EYE SIZE. The character state of reduced eye size is synapomorphic within the African tribal members. A similar, yet unrelated, character state of small flattened eyes occurs within taxa of the *Meliboeus* generic group (e.g. *Kamosiella* BELLAMY).

2. PARAMERES. A second synapomorphy is present within the *Promeliboeus* group, that being the degree of fusion of the parameres of the male genital appara-

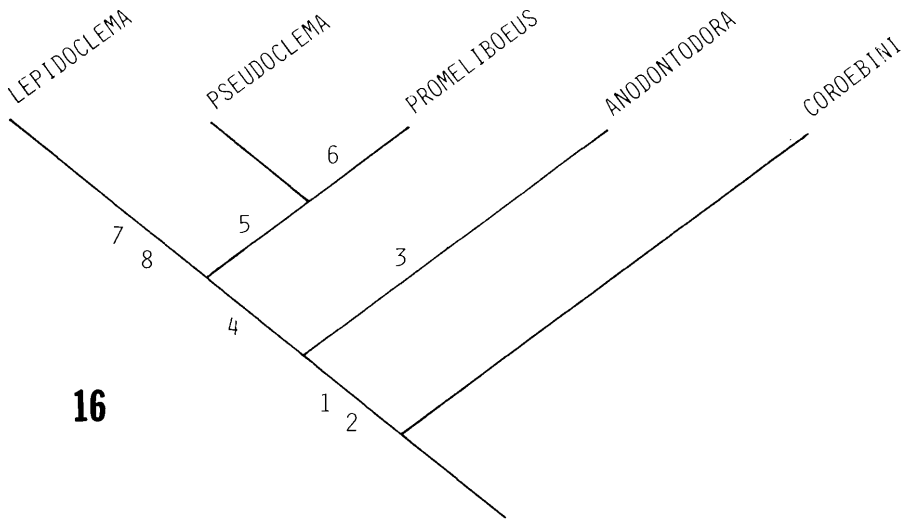


Fig. 16: Phylogenetic relationship of the *Promeliboeus* OBENBERGER group.

tus. The fusion in this character state is nearly complete and forms a flattened tube which surrounds the median lobe.

3. METATARSI. An elongate first metatarsomere is autapomorphic within this group. This character state is synapomorphic within the Agrilini.

4. PRONOTAL PROPORTIONS. A pronotal proportion with length greater than width is synapomorphic within the Coroebini.

5. MENTONNIÈRE. The presence of the lobate anterior prosternal margin is synapomorphic within the Coroebini.

6. GENAL LOBE. An angulate genal lobe is presumed autapomorphic in the logical progression of a transformation series from no lobe to a small rounded lobe to a more elongate angulate lobe.

7. PUBESCENCE. The squamose setal covering of *Lepidoclema* is autapomorphic from the transformation series of no setae to bristle-like setae to squamose setae.

8. TARSOMERE 5. The reduction of the proportion of the length and the size of the claws in *Lepidoclema* is autapomorphic.

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