

## Research article

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# A new genus and new species of Telephanini (Coleoptera: Silvanidae) from Gabon

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**Abstract.** A new genus and new species of Telephanini LeConte, 1861 are described based on specimens recently collected by an Italian expedition to Gabon. *Bolianus giannae* gen. et sp. nov. is characterized in particular by the presence of a longitudinal median groove along the head.

**Key words.** Africa, Silvanidae, *Bolianus giannae*, taxonomy

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## Introduction

In their diagnosis of Telephanini (Coleoptera, Silvanidae), Thomas & Nearn (2008) list nine genera within the tribe. *Aplatamus* Grouvelle, 1912, *Euplatamus* Sharp, 1899 and *Australophanus* Thomas & Nearn, 2008 are restricted to the New World, *Indophanus* Pal, 1981 was only found in India, and species of *Megapsammoecus* Karner, 1995 were recorded from India and China, respectively. For Africa, Madagascar and the Reunion Islands, members of three genera were recorded: *Psammoecus* Latreille, 1829, *Telephanus* Erichson, 1846 (Madagascar, Reunion) and *Psammaechidius* Fairmaire, 1882 (Madagascar). *Cryptamorpha desjardinsi* (Guérin-Méneville, 1844) is a cosmopolitan species (Thomas & Nearn 2008); no other members, however, of *Cryptamorpha* Wollaston, 1854 have been recorded from Africa; therefore, we don't consider *Cryptamorpha* to be native to Africa.

A sample of beetles recently collected in Gabon by Silvano Biondi and Maurizio Pavesi contained a remarkable new species of Telephanini, representing a new genus that is described here.

## Material and Methods

The specimens were collected during expeditions to the National Park of Ivindo, Gabon, organized by the Museo di Storia Naturale del Salento, Calimera, Italy in collaboration with CENAREST (Centre National de la Recherche Scientifique et Technologique, Gabon). The park is located in the northeastern

part of Gabon at an altitude of about 500 m. The material was collected at light, close to the Ipassa Research Station, in a somewhat degraded forest location (but surrounded by well-preserved primary forest) in the northern part of the park. Durante (2012) provides more detailed information on the locality and ecological circumstances.

For dissection of genitalia, the method described by Karner (2012) was used. One male paratype was dissected for examination of mouthparts and coxal cavities. For photography, the dissected body parts were temporarily embedded in glycerol gelatin to enable precise orientation. After study, structures were embedded in dimethylhydantoin formaldehyde resin (Steedman 1958) on cellulose acetate labels and attached to the pins of the respective specimens.

Observations and measurements were made with an Olympus SZX16 stereo microscope. Macro photographs were taken with a Canon EOS 650D digital camera and an MP-E 65 mm macro objective. Higher magnifications were obtained with Mitutoyo M Plan 10× and 20× apochromatic microscope objectives mounted on Asahi Takumar 200 mm and Carl Zeiss MC Sonnar 135 mm telephoto lenses in varying combinations. Photographs of genitalia were taken with a Canon EOS 650D digital camera attached to an Olympus CH microscope. Images and image layers were processed with Zerene Stacker (Version 1.04 Build T201311272225), Adobe Lightroom 5.7 and GIMP (Version 2.8.0) software.

## Results

### *Taxonomy*

Class Hexapoda Blainville, 1816  
Order Coleoptera Linnaeus, 1758  
Family Silvanidae Kirby, 1837  
Subfamily Brontinae Erichson, 1845  
Tribe Telephanini LeConte, 1861

*Bolianus* gen. nov.

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### Type species

*Bolianus giannae* sp. nov.

### Differential diagnosis

Within the Telephanini, *Bolianus* gen. nov. is closely related to *Psammaechidius* Fairmaire, 1882, but differs by the distinct median frontal groove, large eyes, short and moderately curved temples, maximum width of pronotum near middle, and the tuberculate lateral margins of the pronotum.

### Etymology

The peculiar median groove along the head prompted us to derive the generic name from the ‘Bolians’, a fictitious species from the universe of the science fiction series ‘Star Trek’, characterized by a vertical suture running along the midline of head and face.

### Description

The genus shares the characteristics of Brontinae: Telephanini as described by Thomas & Nearn (2008), plus: apical maxillary palpomere securiform (Fig. 7); apical labial palpomere large, rounded (Fig. 8); antennal scape elongate; frons with two lateral lines and one median line; eyes large; temples evenly curved, narrowed immediately behind eyes; maximum pronotal width near middle; lateral margins

of pronotum tuberculate; anterior coxal cavities closed (Fig. 9); anterior and middle coxae separated narrowly (Fig. 10); scutellum with transverse carina; elytra with 10 rows of punctures; scutellary striole present; 2<sup>nd</sup> and 3<sup>rd</sup> tarsomeres with single ventral lobe (Fig. 11); abdominal ventrites simple (Fig. 12); aedeagus inverted, parameres well developed.

*Bolianus giannae* sp. nov.

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Figs 1–14

**Diagnosis**

As for genus.

**Etymology**

The species is dedicated by Gianfranco Salvato to his wife, Gianna Polo.

**Material examined**

**Holotype**

GABON: ♂, Ipassa-Makokou, 0°30'43" N, 12°48'13" E, 500 m, 25 Nov. 2013, leg. M. Pavesi (Museo di Storia Naturale di Venezia, Venice, Italy).



**Fig. 1.** *Bolianus giannae* gen. et sp. nov., holotype, habitus. Scale bar = 2.0 mm.



**Figs 2–4.** *Bolianus giannae* gen. et sp. nov., holotype. 2. Head and pronotum. 3. Right antenna. 4. Detail of head. Scale bars: 2–3 = 1.0 mm, 4 = 0.5 mm.

**Paratypes** (3♂♂, 3♀♀)

GABON: 3♂♂, 2♀♀, same data as holotype (1♂ [dissected] and 1♀ in coll. Museo di Storia Naturale di Milano, Milan, Italy; 1♂ in coll. Museo di Storia Naturale del Salento, Calimera, Italy; 1♀ in coll. Gianfranco Salvato; 1♂ in coll. Michael Karner, later in coll. Forschungsinstitut Senckenberg, Frankfurt, Germany); 1♀, same locality as holotype, 16 Feb.–1 Mar. 2012, leg S. Biondi (in coll. Silvano Biondi, Vicenza, Italy).

**Description of holotype**

**BODY** (Fig. 1). Castaneous, elongate oval, total length from apical margin of clypeus to apex of elytra 4.55 mm. Elytra darkened near base, with dark transverse maculae near middle. Antennae light castaneous, apical  $\frac{2}{3}$  of 6<sup>th</sup> antennomere darkened, 7<sup>th</sup>–10<sup>th</sup> antennomeres blackish brown, 11<sup>th</sup> antennomere yellowish brown. Legs brown.

**HEAD** (Figs 2–3). Eyes prominent, rounded, eye length from anterior to posterior margin 0.30 mm, eye distance across vertex 0.64 mm. Temples well defined and moderately curved, angle between temple and longitudinal axis of head 64°; head width across eyes 0.97 mm, length from apical margin of clypeus to imaginary line between hind margins of eyes 0.68 mm. Punctures on vertex 0.5 times as large as an eye facet diameter, spaces between punctures irregular, between 0.5 and about 1.5 times their diameter, somewhat irregular. Pubescence composed of semierect setae about 0.25 times as long as eye length, directed anteriorly. Microsculpture shallow, reticulate. Lateral frontal lines deep, straight, slightly converging anteriorly, almost attaining posterior margins of eyes. Central frontal line deep, anterior end not attaining frontoclypeal suture, posterior end attaining basal ridge of head. Additional impressions running close to dorsal margins of eyes from anterior fifth of eyes to basis of head. Antennae long, slender, attaining almost middle of elytra, length 2.75 mm; antennomere proportions, starting from scape, as follows: 3.1 : 1.0 : 1.3 : 1.6 : 1.7 : 1.6 : 1.5 : 1.4 : 1.4 : 1.4 : 2.6 (Fig. 3).

**PRONOTUM** (Fig. 2). Widest near middle, about 1.1 times as wide as head; moderately wider than long; maximum width 1.10 mm, length 1.00 mm. Area near posterior margin slightly depressed. Lateral margins with minute tubercles, which are slightly larger near anterior and posterior angles. Anterior part of lateral margin almost straight, slightly diverging towards middle, slightly sinuate from middle to base. Punctures on pronotal disk larger than on vertex, slightly smaller than an eye facet, somewhat irregular with distances between punctures ranging from 0.5 times to 2 times their diameter. Pubescence composed of semierect setae about 0.3 times as long as eye length, directed anteromedial. Microsculpture shallow, reticulate.

**LEGS**. Simple, slender; 2<sup>nd</sup> and 3<sup>rd</sup> tarsomeres lobed and with dense pubescence on soles.

**ELYTRA**. Oval, 1.68 times as long as pronotum, widest just in front of middle, length along suture including scutellum 2.84 mm, combined maximum width 1.68 mm. Rows of punctures on elytral disk about  $\frac{2}{3}$  as wide as interstices; pubescence composed of long, semierect setae; striae as long as interstitial setae; interstitial setae predominantly in single rows, in several, irregularly distributed places also in double rows; 10<sup>th</sup> stria with 7 distinctly enlarged, deep punctures. Microsculpture absent.

**ABDOMEN**. Abdominal ventrites simple.

**AEDEAGUS** (Figs 13–14). Parameres of holotype wide, parallel-sided, almost three times as long as wide; median lobe slender, lancet-shaped. Fig. 14C shows the parameres of a male paratype that were temporarily flattened under a cover slip to exhibit their shape in perpendicular view.

### Variation

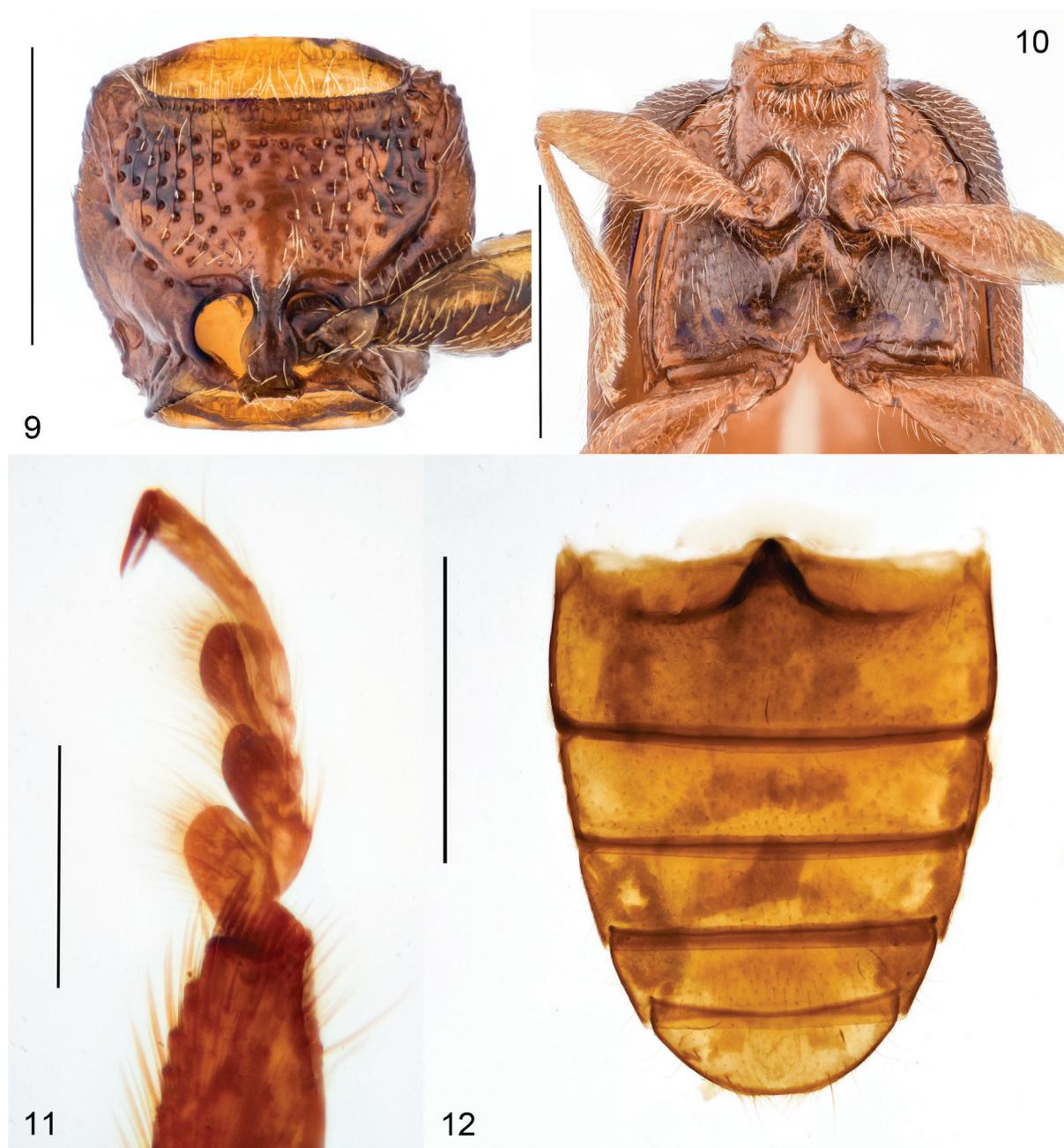
The paratypes vary in body length from 4.65 to 5.10 mm. Elytra of females slightly more rounded than those of males, widest behind middle.



**Figs 5–8.** *Bolianus giannae* gen. et sp. nov., paratype. **5.** Ventral view of head (left mandible, maxillae and labium removed). **6.** Left mandible, ventral view. **7.** Left maxilla, ventral view. **8.** Labium, ventral view. Scale bars: 5 = 0.5 mm, 6–8 = 0.2 mm.

## Discussion

The new genus is very closely related to *Psammaechidius* Fairmaire, 1869, but can easily be distinguished from all other genera of Telephanini by the presence of three frontal lines. It differs from *Psammaechidius* (Fig. 15) also by the character states given in the differential diagnosis.



**Figs 9–12.** *Bolianus giannae* gen. et sp. nov., paratype. **9.** Pronotum, ventral view (right anterior leg removed). **10.** Meso- and metathorax, ventral view. **11.** Right anterior tarsus. **12.** Abdominal ventrites. Scale bars: 9–10, 12 = 1.0 mm, 11 = 0.2 mm.

Thomas & Nearn (2008) provide a key to the genera of Telephanini. *Bolianus* could easily be placed in that key by inserting a couplet '0' before couplet 1 as follows:

0 Frons with median groove .....*Bolianus*  
– Frons without median groove .....1

Since the remaining key given by Thomas & Nearn (2008) remains unchanged, it is not reproduced here to avoid redundancy.



**Fig. 13.** *Bolianus giannae* gen. et sp. nov., holotype, aedeagus. **A.** Ventral view. **B.** Lateral view. **C.** Dorsal view. Scale bars = 0.5 mm.



**Fig. 14.** *Bolianus giannae* gen. et sp. nov. **A–B.** Holotype, detail of aedeagus. **A.** Parameres, ventral view. **B.** Median lobe, dorsal view. — **C.** Paratype, parameres, ventral view. Scale bars = 0.2 mm.



**Fig. 15.** *Psammaechidius spinicollis* Fairmaire, 1862, specimen from Fampanambo, Madagascar, Sep. 1959, leg. Vadon (coll. Michael Karner), head and pronotum. Scale bar = 1.0 mm.

## Acknowledgements

Our gratitude goes to Maurizio Pavesi, who collected the largest part of the type series and proposed the study of this species to Gianfranco Salvato, and to Silvano Biondi, who entrusted an additional specimen to us. We also wish to thank Antonio Durante (Museo di Storia Naturale del Salento) for providing information on the area where the material was collected. Furthermore, we thank Michael C. Thomas (Gainesville, Florida) for constructively criticizing our manuscript.

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