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***Sphaenognathus (Chiasognathinus) xerophilus* sp.n. from Peru (Coleoptera: Lucanidae)**

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Abstract

Sphaenognathus (Chiasognathinus) xerophilus sp.n. (Coleoptera: Lucanidae) from Peru is described and illustrated. The new species is compared to the closely allied *S. (C.) gaujoni* (OBERTHÜR) and *S. (C.) peruvianus* (WATERHOUSE).

Key words: Coleoptera, Lucanidae, *Sphaenognathus*, new species, Peru.

Introduction

The lucanid genus *Sphaenognathus* BUQUET, 1838 is distributed in South America. All the known species live in the Andes, between 2,000 and 3,500 m.

Due to the great individual variability in this genus many described species are regarded as synonyms and therefore the number of valid species deviates greatly according to the opinions of different authors: MAES (1992): 38; CHALUMEAU & BROCHIER (1995): 26; KRAJČÍK (2001, 2003): 27; BABA (2005): 31. One new species was described by BROCHIER & CHALUMEAU (2000).

CHALUMEAU & BROCHIER (1995) consider *Chiasognathinus* DIDIER as a valid genus with three subgenera: *Chiasognathinus* s.str., *Sphaenognathinus* CHALUMEAU & BROCHIER, 1995, and *Chiasornithodus* CHALUMEAU & BROCHIER, 1995. On the contrary, according to the results of the cladistic analysis of MOLINO-OLMEDO (2003), *Chiasognathinus* should be considered as a simple subgenus of *Sphaenognathus*, and in this paper we follow the opinion of the latter.

During the study of the entomological material collected in Peru by the second author, a series of specimens of an undescribed *Sphaenognathus* was found. The new species belongs to the subgenus *Chiasognathinus* DIDIER & SÉGUY, 1953 and is closely related to *S. (C.) gaujoni* (OBERTHÜR, 1885) and *S. (C.) peruvianus* (WATERHOUSE, 1869). It is described below.

The type material is housed in the following Institutions and collections:

IRSNB	Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium
LBC	Luca Bartolozzi Collection, Florence, Italy
MNHN	Muséum National d'Histoire Naturelle, Paris, France
MSNG	Museo Civico di Storia Naturale, Genoa, Italy
MUSM	Museo de Historia Natural, Universidad Mayor de San Marco, Lima, Peru
MZUF	Museo di Storia Naturale, Sezione di Zoologia "La Specola", University of Florence, Italy
NHM	Natural History Museum, London, United Kingdom
NHMB	Naturhistorisches Museum, Basel, Switzerland
NMNH	National Museum of Natural History, Washington D.C., USA
NMW	Naturhistorisches Museum Wien, Austria
QCAZ	Pontificia Universidad Católica del Ecuador, Quito, Ecuador
ZMHB	Museum der Naturkunde der Humboldt-Universität, Berlin, Germany



Fig. 1: Habitus of *Sphaenognathus* (*Chiasognathinus*) *xerophilus* sp.n. (male).



Fig. 2: Habitus of *Sphaenognathus (Chiasognathinus) xerophilus* sp.n. (female).

***Sphaenognathus (Chiasognathinus) xerophilus* sp.n.**

TYPE LOCALITY: Peru, Huancabamba district, Huancabamba (2,860 m).

TYPE MATERIAL: **Holotype** ♂ (QCAZ): "Peru, Huancabamba district, Huancabamba (2860 m), 2.I.2005, G. Onore legit". **Paratypes** (IRSNB, LBC, MNHN, MSNG, MZUF, NHM, NHMB, NMNH, NMW, QCAZ, ZMHB): 56 ♂♂, 34 ♀♀, same label data as holotype.

DESCRIPTION. Measurements (mm). Males: total length: 23.2–35.1; mandibles: 2.5–6.9; elytral width: 9.5–14.7. Females: total length: 24.1–29.3; mandibles: 1.8–2.5; elytral width: 12.0–15.1.

Male (Fig. 1). Body elongate, convex; elytra reddish brown, opaque; pronotum, scutellum and head black, with blue or green lustre, covered by long yellowish pubescence; all femora and protibiae black; meso- and metatibiae yellow; tarsi dark brown. Head transverse, narrower at base than in front; anterior margin straight and slightly elevated; anterior angles very strong and acute, directed forwards; canthi straight and subparallel; eyes divided in two parts by the canthi, the upper part smaller than the lower. Head surface punctate and hairy. Mandibles 1.5–2.0 times longer than head, slightly curved downwards, laterally straight or weakly curved inwards; apex sharply pointed and curved inwards; dorsal surface with a large triangular basal tooth directed inwards; a thin carina from the basal tooth to the apex; inner edge hairy and serrate, with a series of small teeth; ventral surface flat, with a strong and acute basal tooth directed downwards. Mandibular surface punctate in large males, rugose in small ones. Antenna with 10 joints; scape about as long as the remaining articles together; club with five lamellate segments. Pronotum transverse, about as long as mandibles, strongly convex; anterior margin bisinuate, sides convex with slightly serrate margins, base almost straight or slightly convex; anterior, lateral and posterior angles rounded; surface strongly hairy, covered by long yellowish erected pubescence, except on disc, which is punctate and shiny. Scutellum large, hairy. Elytra convex, slightly longer than head, mandibles and prothorax together; humeri rounded; surface finely vermiculated, completely covered by very minute punctations; golden pubescence only at base and on humeri. Legs long and slender; pro- and mesotibiae slightly curved inwards; metatibiae almost straight. Protibiae with large apical fork and 1–4 small obtuse teeth on outer margin, finely serrate at ventral inner edge; mesotibiae with spine (less evident in small males) in distal third of outer margin; metatibiae without distinct spines; all femora hairy; tibiae with scattered yellowish pubescence; tarsi long and slender, claws strong. Mentum transverse, deeply hollowed in the middle of anterior margin. Ventral surface strongly hairy, with long dense yellowish erected pubescence, shorter and adpressed on last abdominal segments.

Female (Fig. 2). Similar to male in body shape and colour, elytra slightly darker. Differs from male in the following characters: anterior angles of head rounded; triangular elevated area in front; mandibles about as long as head, laterally expanded at base, then regularly rounded, their inner margin straight, their dorsal outer margin carinate; legs shorter; protibiae much shorter and enlarged, with stronger lateral teeth; meso- and metatibiae straight; mesotibial tooth stronger; metatibial tooth present, even if not as long and acute as the mesotibial one.

ETYMOLOGY: Named in reference to the arid habitat where the new species has been collected.

Remarks

Sphaenognathus xerophilus sp.n. belongs to the subgenus *Chiasognathinus*. It is closely related with the two known species of this subgenus: *S. (C.) peruvianus* and *S. (C.) gaujoni* (BARTOLOZZI et al. 1992). The colour of the elytra of the new species is the same as in *S. (C.) peruvianus*, but the colour is more similar to *S. (C.) gaujoni* on head, pronotum and legs. The

new taxon distinctly differs from the two other species of the subgenus in the male mandibular shape: the mandibles of *S. (C.) xerophilus* sp.n. are not strongly compressed laterally, have no distal tooth on the upper surface as in *S. (C.) peruvianus*, and no distal tooth on the ventral surface as in *S. (C.) gaujoni*; instead, they have a basal dorsal tooth which is much larger, triangular and directed inwards, not upwards as in the two other species; in some aspects, the mandibles of the new species are similar to those of *Sphaenognathus kolbei* KRIESCHE, 1917.

Sphaenognathus xerophilus sp.n. has been collected in a very dry mountain area, covered by short vegetation: small bushes, ferns and graminaceous grass. The larvae of the species live in the ground, as already reported for other species of *Sphaenognathus* (BARTOLOZZI & ONORE 1993).

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