

Description of the female of *Strongylaspis granigera* Bates, 1884 (Coleoptera, Cerambycidae, Prioninae)

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Abstract

The female of *Strongylaspis granigera* Bates, 1884 is described for the first time including photographs of the three specimens collected in the Reserva Biológica Alberto Manuel Brenes, San Ramón, Costa Rica. A key based on morphological features is proposed for the known females of this genus.

Additional key words: Cerambycidae, Costa Rica, Prioninae, Reserva Biológica Alberto Manuel Brenes, *Strongylaspis*, Taxonomy.

Resumen

Descripción de la hembra de *Strongylaspis granigera* Bates, 1884 (Coleoptera, Cerambycidae, Prioninae)

Se describe por primera vez la hembra de la especie *Strongylaspis granigera* Bates, 1884 y se incluyen las fotografías de los tres ejemplares recolectados en la Reserva Biológica Alberto Manuel Brenes, San Ramón, Costa Rica. Se propone una clave para el reconocimiento morfológico de las hembras conocidas de este género.

Palabras clave adicionales: Cerambycidae, Costa Rica, Prioninae, Reserva Biológica Alberto Manuel Brenes, *Strongylaspis*, Taxonomía.

Introduction

The family Cerambycidae (Coleoptera) includes numerous species of which more than 2000 have been cited in Costa Rica. They play an important role in forest ecology because they accomplish the first step in the decomposition of dead trees. On the other hand quite species of Cerambycidae can be considered pests of some fruit or forest trees in particular circumstances.

Bates (1884) described *Strongylaspis granigera* based on a single male from Panama: “*Subcylindricus, rufescenti-fuscus; capite grosse confluentem punctato; thorace magis quadrato (antice minus angustato), dorso inaequali callis duobus nitidis, hic illic ruguloso et passim discrete nitide granulato; elytris passim aequaliter discrete et sat eleganter granulatis, nudis; antennis art.*

1^o-3^m grossissime scabrosis, 3^o recto quam 4^{us}-5^m conjuncti breviori”; “*Long. 11 lin. ♂*”; “*Hab. PANAMA (Boucard)*”; “*One example*”. The holotype, deposited in The Natural History Museum in London, remained as the only known specimen of this species.

Lameere (1903), that also only knew the holotype, adds details omitted by Bates (*op.cit.*), and compared it with *S. corticaria* (Erichson, 1848): “*les antennes plus courtes, n’atteignant que le tiers postérieur des élytres*” and “*les tarses antérieurs moins élargis*”.

We took advantage of the opportunity to make the correction of the species-group names, to agree in gender with the generic name (see key). “*Aspis*” (ἄσπις) is a substantive singular of the feminine gender that means shield. Lameere (*op.cit.*) made the necessary corrections, assigning feminine termination for the species-group names, but

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subsequently, nearly all authors continued to use masculine termination for some species. As result, there are names with masculine and feminine grammatical gender in *Strongylaspis* (see, for example, Monné, 2006).

The objectives of this work were: 1) to describe, for the first time, the female of *Strongylaspis granigera* Bates 1884, by studying the morphology of three specimens, taking into account that up to now this species was only known by the male holotype, and 2) to elaborate a key to distinguish the females of the different species of the genus *Strongylaspis*, that can allow their correct identification.

Material and methods

Recently, three females of *S. granigera* were collected in Costa Rica (Reserva Biológica Alberto Manuel Brenes), what allowed to complete the description and to enlarge the geographical distribution of the species. According to Toledo and Esteban Durán (2008), the Reserva Biológica Alberto Manuel Brenes is a wild protected area created on 1 June 1975, as the San Ramón Forest Reserve. The reserve is administrated by the UCR and MINAE (Ministerio de Ambiente y Energía) of Costa Rica. The reserve covers 7,800 ha, and 90% of it corresponds to the San Lorencito River Basin. The area is limited to the North by Arenal-Monteverde and the Cloud Forest Reserve; to the East and South with primary and secondary forest, and to the West with the forest of Cedral in the locality of Miramar (Salazar Rodriguez, 2006).

The specimens were attracted to the station lights with two kinds of lamps: one was mercury vapour (400 watts) at 4 m high, and there were two further mercury vapour (125 watts) lamps placed against a vertical white sheet.

Results

Strongylaspis granigera Bates, 1884

Strongylaspis graniger Bates, 1884: 233; Monné, 1995: 3 (cat.); Monné and Santos-Silva, 2003: 33, 35; Monné and Hovore, 2005: 15 (cat.); 2006: 14; Monné, 2006: 61 (cat.).

Strongylaspis (Strongylaspis) granigera; Lameere, 1903: 31; 1913: 9 (cat.); 1919: 25.

Strongylaspis granigera; Blackwelder, 1946: 552 (cat.); Chemsak *et al.*, 1992: 16 (cat.); Monné and Giesbert, 1994: 7 (cat.).

Female (Figures 1, 2, 3). Integument dark-brown; apical one-third and inner and outer margin of the mandible, edge of the pronotum, of the elytra, and parts of the legs blackish.

Dorsal surface of the head rugose-punctate, with the background microsculptured; coronal suture well marked, surpassing clearly the posterior edge of the eyes; pilosity moderately long and scattered. Labrum excavated longitudinally in the central region; pilosity long and abundant, shorter and more conspicuous in the apical margin. Eyes large; distance between the upper lobes from 0.6 to 0.7 times the length of the scape; distance between the inferior lobes equal to approximately the length of the scape. Length of the mandibles from 0.65 to 0.75 times the length of the scape; dorsal and latero-outer surface rugose-punctate, with long and abundant hairs; inner margin and apex smooth and glabrous; apex bifid; inner margin with a large and rounded tooth near the inner apical tooth; outer margin clearly narrowed after the middle, close to the beginning of the api-



Figure 1. *Strongylaspis granigera* Bates, 1884; female, total length (including mandibles), 35.3 mm; 26-IV-2006, Reserva Biológica Alberto Manuel Brenes, San Ramón, COSTA RICA (light trap), José Esteban Durán col. (Museu de Zoologia de São Paulo).



Figure 2. *Strongylaspis granigera* Bates, 1884; female, total length (including mandibles), 34.0 mm; 28-IV-2007, Reserva Biológica Alberto Manuel Brenes, San Ramón, COSTA RICA (light trap), Marco A. Zumbado col. (Colección José Esteban Durán, INIA, Madrid).



Figure 3. *Strongylaspis granigera* Bates, 1884; female, total length (including mandibles), 38.7 mm; 21-IV-2006, Reserva Biológica Alberto Manuel Brenes, San Ramón, COSTA RICA (light trap), José Esteban Durán col. (Colección José Esteban Durán INIA, Madrid).

cal smooth area. Antennae just surpassing the middle of the elytra; scape coarse, confluent punctate, mainly at basal half; antennomere III 1.2 times longer than the scape; dorsal surface of antennomere III coarse and moderately abundant punctate; ventral surface of antennomere III striated at apical one-third; antennomeres completely striated from the VII.

Pronotum with two prominent and shining callosities; disc rugose-punctate; lateral with shining and very clear granules; all surface microsculptured; lateral margins clearly crenulated; anterior angles prominent and slightly bifurcated; lateral angles with large spine pointed upward and back, placed near the posterior angles; posterior angles rounded; pilosity short and decumbent at central area and close to the posterior angles (sometimes very scattered in the last one), and long and scattered hairs at lateral. Scutellum not notably tumid; granules small and abundant. Elytral surface microsculptured, with small and abundant granules throughout, mainly in the circum-scutellar region; sutural apex with small spine. Proepisterna not notably nar-

rowed. Metasternum and metepisterna with pilosity moderately long and very abundant. Ventral surface of femurs with punctures barely coarse and scattered. Tibiae coarse, abundant, anastomosed and shallow punctate.

Dimensions in mm (♀)

Total length (including mandibles), 34.0-38.7. Prothorax: length, 5.4-5.5; anterior width, 6.0-6.3; posterior width (between the apices of the lateral spines), 9.2-9.5. Humeral width, 9.7-10.9. Elytral length, 24.9-28.7.

Material examined

COSTA RICA, *Alajuela*: Reserva Biológica Alberto Manuel Brenes (840 m), Fig. 3, ♀, 21.IV.2006, J. Esteban Durán col. (Colección José Esteban Durán: INIA); Fig. 1, ♀, 26.IV.2006, J. Esteban Durán col. (Museu de

Zoologia, Universidade de São Paulo, São Paulo, Brazil: MZSP); Fig. 2, ♀, 28.IV.2007, Marco A. Zumbado col. (Colección José Esteban Durán: INIA).

Discussion

To facilitate the recognition of the females of *Strongylaspis granigera*, we recorded the main differences in comparison with the females of other species that share the same or close geographical distribution.

The females of *Strongylaspis granigera* differ from the females of *S. corticaria* (Erichson, 1848) (described from Guiana and recorded from the United States to Guiana): antennae shorter, just surpassing the middle of the elytra; pronotum more strongly sculptured; scutellum less elevated (in lateral view, barely higher than the elytra); elytra with small and abundant granules throughout. In the females of *S. corticaria* the antennae is longer, reaching or almost reaching the posterior one-third of the elytra, the pronotum is clearly less sculptured, the scutellum is clearly elevated (in lateral view, evidently higher than the elytra), and the elytra, at most, have granules at basal one-third. From the females of *S. championi* Bates, 1884 (described from Guatemala and recorded also to Mexico and Costa Rica) differ, mainly, by the pronotal surface glabrous. In the females of *S. championi* the pronotum has long and abundant hairs, mainly at lateral. From the females of *S. bullata* Bates, 1872 (described from Nicaragua and recorded also to Mexico) by the granules of the scutellum that are small and abundant, and by the sculpture of the elytra. In the females of *S. bullata* the granules of the scutellum are somewhat large and not notably abundant, and the elytra have granules only at basal one-third. Finally, differ from the females of *S. dohrni* Lameere, 1903 (described from Mexico, and known only by the holotype) by the proepisterna not notably narrowed, by the pronotum glabrous, and by the elytra with sutural spine. In the female of *S. dohrni* the proepisterna are notably narrowed, the pronotum is pilose, and the elytra are unarmed at sutural angle.

As seen above, Bates (1884) described *Strongylaspis granigera* from Panama without detailed locality. The specimen originally belonged to Boucard's Collection. Boucard (1894) wrote an account of this extensive travels through the United States, Mexico, Central America, Colombia, Chile and other countries. However, we did not find any reference to his presence in Panama. Besides,

Boucard (*op.cit.*: 158) wrote: "I also made acquaintance of many dealers in objects of natural history, Bell, Wallace, and several others in New York, Akhurst, in Brooklyn, Alexander in Hoboken; and I made some valuable purchases in birds skins and insects in their stores. I secured some rare species of birds from Ecuador and British Guiana; also some very rare Coleoptera from Columbia". Like this, it is possible that Boucard was not the collector of the holotype of *Strongylaspis granigera*.

According to this, we propose in the Annex a key for the taxonomy of the females of *Strongylaspis*.

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Annex. Key to the females of *Strongylaspis*

(Unknown females: *S. aurea* Monné and Santos-Silva, 2003; *S. macrotomoides* Tippmann, 1953; *S. sericea* Zajciw, 1970).

1. Pronotum with pilosity long and abundant..... 2
Pronotum with other kind of pilosity 5
- 2(1). Pubescence form irregular spots on the elytra 3
Elytral pubescence, when present, does not form spots on the elytra..... 4
- 3(2). Antennomeres III-V with long, abundant hairs;
elytral pubescence very distinct. Colombia..... *S. sericans* Tippmann, 1953
Antennomeres III-V glabrous or with some hairs very short. Colombia *S. hirticollis* Tippmann, 1953
- 4(2). Distance between the upper ocular lobes
smaller than the width of a lobe. Bolivia *S. boliviana* Monné and Santos-Silva, 2003
Distance between the upper ocular lobes larger than
the width of a lobe. Mexico, Guatemala, Costa Rica *S. championi* Bates, 1884
- 5(1). Proepisterna notably narrowed. Mexico *S. dohrni* Lameere, 1903
Proepisterna not notably narrowed 6
- 6(5). Elytra with conspicuous granules throughout surface..... 7
Elytra, at most, with clear granules only at basal half 8

- 7(6). Elytra clearly pubescent; femurs with abundant pilosity. Brazil..... *S. fryi* Lameere, 1912
 Elytra glabrous; femurs with scattered hairs. Panama, Costa Rica..... *S. granigera* Bates, 1884
- 8(7). Elytral color clearly contrasting with that
 of the pronotum. Brazil *S. migueli* Monné and Santos-Silva, 2003
 Elytral color equal or very similar to that of the pronotum 9
- 9(8). Elytra rugose 10
 Elytra not rugose..... 11
- 10(9). Antennomere III shorter than the scape.
 Ecuador (Galapagos Islands) *S. kraepelini parvula* Linsley and Chemsak, 1966
 Antennomere III as long as the scape.
 Ecuador (Continent and Galapagos Islands)..... *S. kraepelini kraepelini* Lameere, 1903
- 11(9). Callosities of the pronotum smooth and shining, and stand out
 sharply in contrast with the background. Mexico, Nicaragua..... *S. bullata* Bates, 1872
 Callosities of the pronotum, in general, not stand out sharply
 in contrast with the background 12
- 12(11). Scutellum with longitudinal well marked furrow; granules
 relatively large and not notably abundant. Brazil, Paraguay, Argentina..... *S. batesi* Lameere, 1903
 Scutellum not longitudinally sulcated, or with furrow indicated;
 granules small and abundant 13
- 13(12). Elytral carinas prominent; sculpture of the apical half formed
 by coarse, shallow and confluent punctures. Scutellum barely
 convex. Brazil *S. christiana*e Monné and Santos-Silva, 2003
 Elytral carinas indicated or only one carina well marked;
 sculpture of the apical half formed by granules very small
 and scattered. Scutellum strongly convex. United States to
 Panama, Venezuela, Brazil, Guiana, Cuba, Jamaica, and Dominica *S. corticaria* (Erichson, 1848)