Odonatologica 28(1): 79-82 *March 1, 1999*

SHORT COMMUNICATIONS

PHYLLOGOMPHOIDES ANNECTENS (SELYS): DESCRIPTION OF THE LAST INSTAR WITH A KEY TO THE SOUTH AMERICAN SPECIES (ANISOPTERA: GOMPHIDAE)

J.M. COSTA, T.C. SANTOS & A.M. TELLES
Departamento de Entmologia, Museu Nacional, Universidade Federal do Rio de Janeiro, Quinta da Boa Vista, BR-20942-040 Rio de Janeiro, Rio de Janeiro, Brazil
e-mail: jcosta@unisys.com.br

Received June 18, 1998 / Revised and Accepted August 10, 1998

Description and illustrations are presented, based on material reared in the laboratory. A key to the immature forms of the South American *Phyllogomphoides* is provided.

INTRODUCTION

The genus *Phyllogomphoides* Belle, 1970, is composed of 45 species in the Neotropical Region (BELLE, 1970, 1982, 1984, 1991, 1992, 1993, 1994; GARRISON, 1991; NEEDHAM, 1904, 1911, 1940, 1941, 1944; NOVELO, 1993; RAMIREZ, 1996; RODRIGUES CAPITULO, 1992), 29 of these in South America.

P. annectens is known only in Brazil (BELLE, 1970). N.D. Santos and J.M. Costa collected one example in its last instar, in the Reserva de Tinguá, Rio de Janeiro on 10-VIII-1973, which was reared in Santos' laboratory and which emerged on 25-IX-1973, and is described herein.

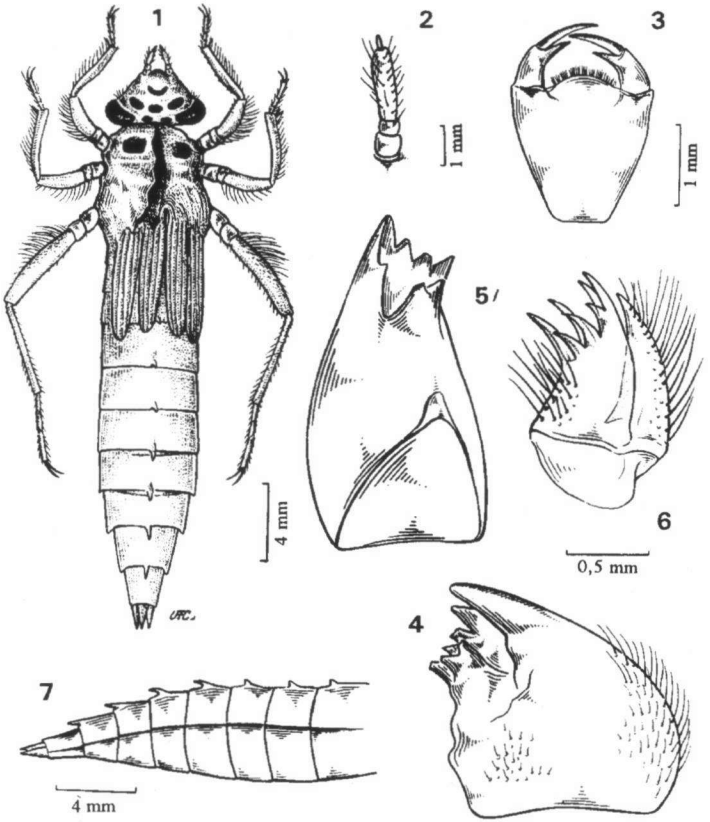
In 1992, this example was loaned to Belle, and was identified by him as *Phyllogomphoides annectens.*

NOVELO-GUTIERREZ (1993) defines the existence of two main lineages in *Phyllogomphoides*, one South American, the other Middle American, each characterized by larval morphology. *P. annectens* is part of the South American lineage and it is included in the group *annectens* described by BELLE (1982).

DESCRIPTION

M a t e r i a l. – 1 exuviae (reared and preserved in alcohol 70%), Rio de Janeiro, Reserva de Tinguá, 10-VIII-1973, N.D. Santos and J.M. Costa leg.; in collection of Museu Nacional, Rio de Janeiro.

H e a d. – Wider than long, with three whitish ocelli. Antennae 4-jointed (Fig. 2), the third the longest and longer than wide, slightly flat; the fourth the smallest; proportion of antennomeres: 0.3, 0.2, 0.9, 0.15. All antennomeres covered with long thin setae. Posterior margin of head slightly concave (Fig. 1). Frons and vertex without setae, these present on lateral and posterior border of labrum. Labium light brown, articulation of postmentum and prementum reaching anterior margin of the mesocoxae. Prementum smooth (Fig. 3), slightly triangular. Ligula convex, with a row of robust, medium truncated scale-like setae, all of the same size. Palpal



Figs 1-7. *Phyllogomphoides annectens* (Selys, 1809), structural features of the ultimate larval instar: (1) ultimate instar, general aspect; – (2) antenna; – (3) prementum, dorsal view; – (4) right mandible; – (5) left mandible; – (6) maxilla; – (7) abdomen, lateral view.

lobe with end-hook strongly pointed and slightly curved inward and with internal margin smooth; external lateral margin smooth (Fig. 3). Mandibles biramous (Figs 4, 5), external branch of right mandible with five cuspids, the external twice the size of the internals; internal branch with two strong cuspids, of the same size (Fig. 4). Left mandible with four cuspids on external branch, the internal with two small cuspids (Fig. 5). Maxillae with seven long incurved hooks on the laciniae (Fig. 6); galeae with long setae.

T h o r a x. – Pronotum slightly square with two spiracles at the posterior margin. Wing cases parallel, reaching base of abdominal segment four (Fig. 1). Profemur and mesofemur short and flattened laterally and thicker than the tibiae, apical part of anterior and middle tibiae with one spine (Fig. 1). Hind legs flattened laterally. Tarsal formula 2-2-3.

A b d o m e n. – Elongated, without setae (Fig. 1). Tergites 3-9 with dorsal hooks, gradually increasing in size rearward (Fig. 7), those on 7-9 slightly overlapping the next segment; segment 10 as long as 9; segments 7-9 with lateral spines, largest on 9, all straight. Caudal appendages all the same size, apical parts acutely pointed and dark brown in color.

M e a s u r e m e n t s (in mm). – Total length 30.0; – abdomen 23.0; – abdomen maximum width 4.0; – width of head across eyes 5.0; – hind femur 4.0; – prementum width 3.5, length 4.5.

BIOLOGY. – The larva was collected from a small sandy creek that runs through Reserva de Tinguá, in the Atlantic forest, in grass and secondary vegetation. The place where the larva was collected had no vegetation covering. The larva was fed with Culicidae larvae. Emergence happened 15 days after its capture.

KEY TO KNOWN IMMATURE FORMS OF *PHYLLOGOMPHOIDES* OF SOUTH AMERICA

1 Abdominal dorsal hooks present on segments 2-9 2
1' Abdominal dorsal hooks present on segments 3-9; anterior and middle tibiae with spines; labial palpus with inner margin smooth; total length 30 mm ..... ***annectens***
2 Palpal lobe with end hook as long as moveable hook; both curved inward 3
2' Palpal lobe with end hook smaller than moveable hook 4
3 Abdominal segment 10 slightly longer than 9; spine of segment 9 slightly divergent; total length 44 mm ..... ***major***
3' Abdominal segment 10 as long as 9; spine of segment 9 convergent; total length 37.5 mm ..... ***fulliginosus***
4 Palpal lobe with a single tooth; total length 27 mm; abdomen 18 mm ..... ***andromeda***
4' Palpal lobe with two teeth 5
5 Palpal lobe end hook with two small teeth of the same size; abdominal segment 10 as long as 9; total length 28 mm ..... ***undulatus***
5' Palpal lobe end hook with second tooth smaller than first; abdominal segment 10 longer than 9; total length 35 mm ..... ***cristatus***

ACKNOWLEDGEMENTS

We wish to thank Dr J. BELLE, who identified the emerged specimen. We would like to thank L.A. ALVES COSTA for the drawings that illustrate this article. This research was supported by CNPq and FUJB.

REFERENCES

BELLE, J., 1970. Studies on South American Gomphidae (Odonata) with special reference to the species from Surinam. *Stud. Fauna Suriname* 11: 1-158.

BELLE, J., 1982. Some new and interesting South American species of Phyllogomphoides in the Museum of Zoology, University of Michigan, Ann Arbor, Michigan (Insecta: Odonata: Gomphidae). *Occ. Pap. Mus. Zool. Univ. Mich.* 701: 1-14.

BELLE, J., 1984. A synopsis of the South American species of the Phyllogomphoides, with a key and descriptions of three new taxa (Odonata, Gomphidae). *Tijdschr. Ent.* 127: 79-100.

BELLE, J., 1991. The ultimate instar larvae of the Central American species of Progomphus Selys, with a description of P. belyshevi spec. nov. from Mexico (Anisoptera: Gomphidae). *Odonatologica* 20(1): 9-27.

BELLE, J., 1992. Studies on ultimate instar larvae of neotropical Gomphidae with the description of Tibiagomphus gen. nov. (Anisoptera). *Odonatologica* 21(1): 1-24.

BELLE, J., 1993. Annotated checklist and bibliography of the immature stages of neotropical Gomphidae, published up to September 1993 (Anisoptera). *Odonatologica* 22(4): 399-429.

BELLE, J., 1994. On five species of Phyllogomphoides Belle, 1970, from Brazil with the descriptions of three new taxa (Odonata: Gomphidae). *Zool. Meded., Leiden* 68: 74-85.

GARRISON, R.W., 1991. A synonymic list of the New World Odonata. *Argia* 3(2): 1-30.

NEEDHAM, J.G., 1904. New dragon-fly nymphs in the United States National Museum. *Proc. U.S. nat. Mus.* 27: 685-720.

NEEDHAM, J.G., 1911. Notes on some nymphs of gomphinae (Order Odonata) of the Hagen Collection. *Ent. News* 22: 392-396.

NEEDHAM, J.G., 1940. Studies on neotropical gomphine dragonflies (Odonata). *Trans. Am. ent. Soc.* 65: 363-394.

NEEDHAM, J.G., 1941. Life history studies on Progomphus and its nearest allies (Odonata: Aeschnidae). *Trans. Am. ent. Soc.* 67: 221-245.

NEEDHAM, J.G., 1944. Further studies on neotropical gomphine dragonflies (Odonata). *Trans Am. ent. Soc.* 69: 171-224.

NOVELO-GUTIERREZ, R., 1993. Four new larvae of Phyllogomphoides Belle from Mexico (Anisoptera: Gomphidae). *Odonatologica* 22(1): 17-26.

RAMIREZ, A., 1996. Six new dragonfly larvae of the family Gomphidae in Costa Rica, with a key to the Central American genera (Anisoptera). *Odonatologica* 25(2): 143-156.

RODRIGUES CAPITULO, A., 1992. Phyllogomphoides joaquini spec. nov., a new Gomphoidini from Argentina (Anisoptera: Gomphidae). *Odonatologica* 21(2): 241-245.