

EPIGOMPHUS CORNICULATUS, A NEW DRAGONFLY FROM COSTA RICA (ODONATA: GOMPHIDAE)

by

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ABSTRACT

Belle, J., 1989. *Epigomphus corniculatus*, a new dragonfly from Costa Rica (Odonata: Gomphidae). — Tijdschrift voor Entomologie 132: 158-160, figs. 1-6. [ISSN 0040-7496]. Published 3 July 1989.

Epigomphus corniculatus is described from Costa Rica. The nearest relative of this species is *E. armatus* Ris.

Key words. — *Epigomphus*; taxonomy; Costa Rica.

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INTRODUCTION

During his field work in Costa Rica, Mr Carlos Esquivel of the Universidad Nacional at Heredia (Costa Rica) collected a male and two females of an undescribed species of *Epigomphus*. He kindly placed this material at my disposal, for description and reporting, and for this privilege I herewith wish to thank him very much.

The nearest relative is *Epigomphus armatus* Ris, 1918. Ris' figure 93 is somewhat misleading. It shows the male inferior anal appendage in an oblique ventral view from the rear. In a strictly ventral (or dorsal) view the posterior margin of the inferior appendage is widely V-shaped with stout branches (fig. 1). The male of the new taxon is readily distinguished by the very widely U-shaped posterior margin of the inferior appendage (fig. 2) while the corresponding female differs in having the postocellar tubercles produced backward to a pair of well-developed "horns" (fig. 4).

All figures have been drawn with the camera lucida by the author. The details were added by freehand.

Epigomphus corniculatus spec. nov. (figs. 2-6)

Material. — Prov. Limón: Suretka, 23 April 1988, 1 ♂ 1 ♀ (in cop.; holotype and allotype, respectively), 1 ♀ (somewhat teneral; paratype). All three specimens preserved dry in clear plastic envelopes. The holotype and allotype are deposited in the Florida State Collection of Arthropods (FSCA), Gainesville. The paratype is in the Museo de Insectos, Universidad de Costa Rica, San José.

Description of the male holotype (abdomen broken between segments 2-4).

Measurements. Total length 54 mm; abdomen (incl. app.) 41.5 mm; hind wing 34 mm; costal edge of pterostigma of fore wing 3.3 mm.

Head. Dark brown with pale markings as follows. Genae green; labrum with a symmetric pair of large, round, grey-green lateral spots; postclypeus with grey-green facial lobes; superior surface of frons with an anterior grey band that is narrowly interrupted in middle; vertex yellowish brown between each lateral ocellus and compound eye. Dorsal surface of occiput with two shallow transversely elongated concavities occupying each of its lateral two-fifths, and there is a development of an occipital ridge which, however, is not fringed with hairs.

Prothorax. Dark brown, the middle lobe green-yellow on sides and on middorsum.

Pterothorax. Dark brown with pale (= greyish green) markings. Pale mesothoracic "half collar" interrupted in middle and not connected with first pale antehumeral stripe. Second pale antehumeral stripe narrow but complete. Pale mesepimeral and metepisternal stripes well-developed. Posterior to the dark metapleural stripe the metepimeron is pale except for an obscure brown area on center line. Pectus pale.

Legs. Femora brown, the third pair blackish at knees, the first and second pair blackish on outer sides. Tibiae, tarsi and claws blackish brown. Antero-inferior row of spines on third tibiae consisting of 10-11 modified spines, that of first and se-

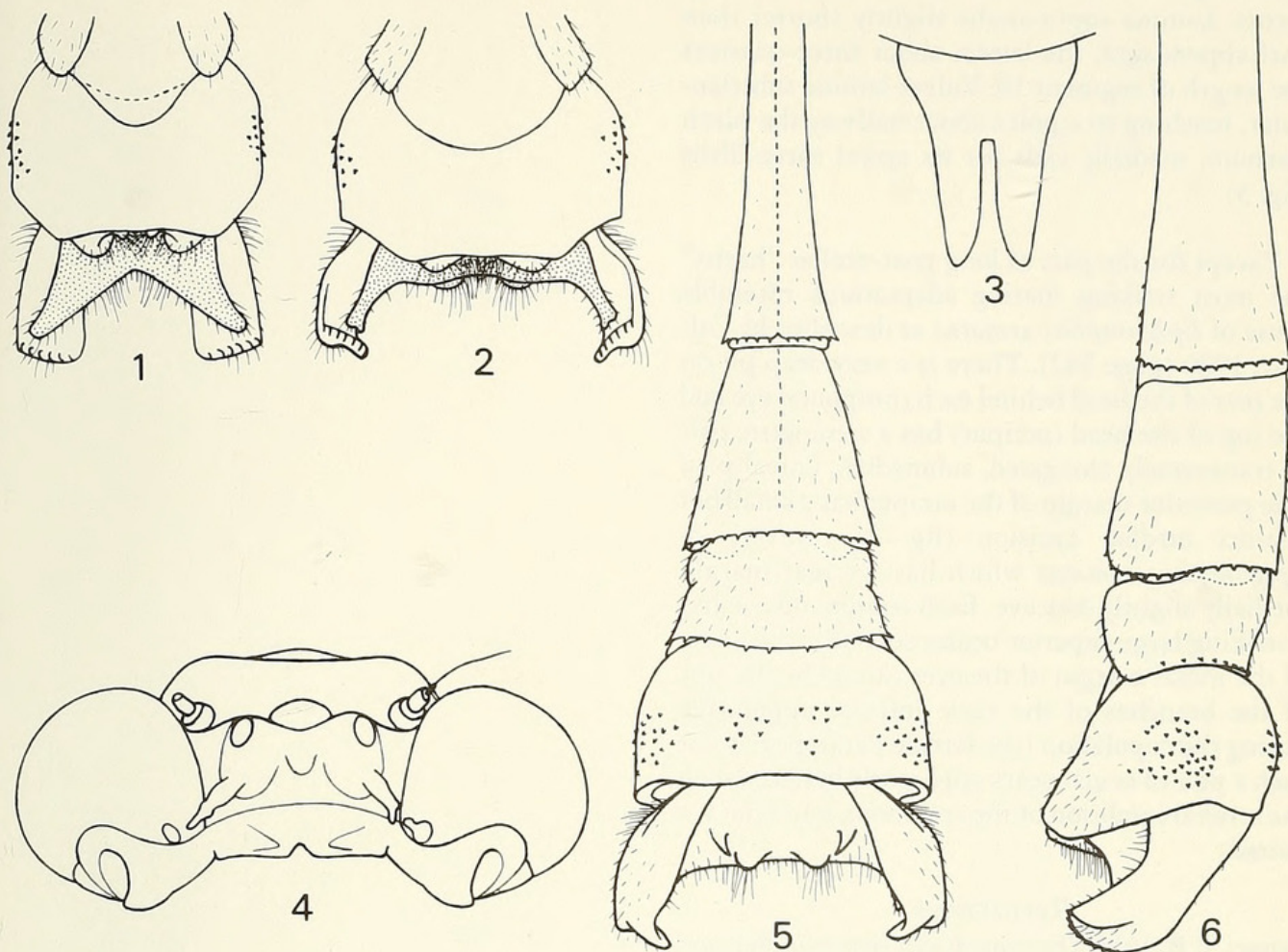


Fig. 1. *Epigomphus armatus* Ris, 1918. Tenth abdominal segment and anal appendages of male, ventral view. — Figs 2-6. *Epigomphus corniculatus* spec. nov.: 2, tenth abdominal segment and anal appendages of male holotype, ventral view; 3, vulvar lamina of female allotype, ventral view; 4, head of female allotype, dorsal view; 5, apical abdominal segments and anal appendages of male holotype, dorsal view; 6, the same, left profile view.

cond joints of third tarsi also with modified spines.

Abdomen. Dark brown with pale (= green-yellow) markings on segments 1 to 8 as follows. Segments 1 and 2 pale on lateral sides and with a pale middorsal stripe. Segments 3 to 6 with a pale basal spot on each lateral side. Segments 3 and 4 with a pale basal middorsal stripe. Segments 5 and 6 with a small pale basal middorsal spot, the one on segment 6 much smaller than that on segment 5. Segment 7 pale on basal two-thirds portion. Segment 8 with a small pale basal spot on each lateral side. Abdomen narrow on segments 3 to 6, becoming wider successively on apex of segment 7 and on segments 8 to 10, being on segment 10 five times as wide as on base of segment 7 (fig. 5). Superior appendages somewhat longer than inferior appendage, widely distended but not enough to give a dorsal view of the inferior appendage. Apex of each superior appendage rounded and crenulated, the outer margin angled. Inferior appendage

with two widely separated slender branches, each branch with a bifid apex, the mesal tooth small (fig. 2). Dorsal surface of inferior appendage with a posterior pair of submedian humps and more basally with a pair of stout acute teeth.

Description of the female allotype (left hind wing broken off, left anal appendage broken away).

Measurements. Total length 57 mm; abdomen (incl. app.) 43 mm; hind wing 39 mm; costal edge of pterostigma of fore wing 4.0 mm.

Coloration resembling that of male holotype but pale colour on superior surface of frons consisting of two widely separated anterior spots. Dark colour of vertex and top of head reddish brown. Dark colour of prothorax brown. Spines on outer row of third femora widely spaced and in length about half the diameter of femur. Abdominal segment 8 without pale basal side spots. Abdominal segment 7 pale for slightly more than its basal half. Abdomen

becoming successively narrower on apical segments. Lamina supra-analis slightly shorter than anal appendages, the latter about three-quarters the length of segment 10. Vulvar lamina subtriangular, reaching to a point about halfway the ninth sternum, medially cleft for its apical three-fifths (fig. 3).

Except for the pair of long post-ocellar "horns" the most striking mating adaptations resemble those of *Epigomphus armatus* as described by Calvert, 1920 (page 342). There is a very deep pit on the rear of the head behind each compound eye and the top of the head (occiput) has a symmetric pair of transversely elongated, submedian, dorsal pits. The posterior margin of the occiput has a small but distinct median excision (fig. 4) contrary to *Epigomphus armatus* which has the rear margin medially slightly concave. Each compound eye has a striking large superior ocular scar near the angle of the mesal margin of the eyes caused by the tips of the branches of the male inferior appendage during the copulation (the female paratype has not such a pair of ocular scars apparently because, seen the teneral condition of the specimen, it has not yet paired).

REFERENCES

- Calvert, P. P., 1920. The Costa Rican species of *Epigomphus* and their mutual mating adaptations (Odonata). — Transactions of the American Entomological Society 46: 323-354, pls 13-15.
- Ris, F., 1918. Libellen (Odonata) aus der Region der amerikanischen Kordillieren von Costarica bis Catamarca. — Archiv für Naturgeschichte 82 (9): 1-197, tabs 1, 2.

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