

## A new species of *Epigomphus* from Mexico (Odonata: Gomphidae)

by

JEAN BELLE

**ABSTRACT.** — *Epigomphus paulsoni* new species (♂ holotype: Stream 27.2 mi N. of Ocozocoautla, Chiapas, Mexico) is described, and its affinities and variations are discussed.

### INTRODUCTION AND ACKNOWLEDGEMENT

During his field work in Mexico, Dr. Dennis R. Paulson (Seattle) collected five males of a form of *Epigomphus* which he determined as an undescribed one. Shortly after my description of *Epigomphus clavatus* from Guatemala (Belle, 1980), Dr. Paulson sent to me four of these males for studying and reporting, and for this privilege I herewith wish to thank him very much. The present species is associated with its discoverer.

*Epigomphus paulsoni* spec. nov. (figures 1-12)

**Material.** — Mexico: Veracruz, stream at Coyame (1300'), 1.VII.1965, 2 ♂ (paratypes), Dennis & Mary Lynn Paulson leg.; Chiapas, stream 27.2 mi N. of Ocozocoautla (2000'), 21.VII.1965, 2 ♂ (holotype and paratype), Dennis R. Paulson leg. The holotype is deposited in the Florida State Collection of Arthropods, Gainesville, Florida. Two paratypes (one from Veracruz and one from Chiapas) are in the collection Paulson, Seattle, Washington; one paratype is in the author's collection.

**Description.** — Male (holotype). Total length 52 mm; abdomen 40 mm (including caudal appendages); hind wing 34 mm; costal edge of pterostigma in fore wing 3.8 mm.

Pale colours greenish white, becoming brown-yellow on abdominal segments 3 to 7.

Face blackish brown but labrum with a large, pale basal spot on either side, and facial lobes of postclypeus pale. Base of mandibles pale externally. Genae pale. Superior surface of frons largely pale, dark brown on middle line and at base. Vertex and occiput dark brown. Superior surface of occiput with a large pit at either side; posterior surface of occiput with a tubercle at each lateral extremity and scantily provided with hairs. Rear of head dark brown above, becoming paler below. Labium and adjacent mouth parts pale.

Prothorax brown, the hind collar darker, the middle lobe pale on either side and with a pale, mid-dorsal twin-spot.

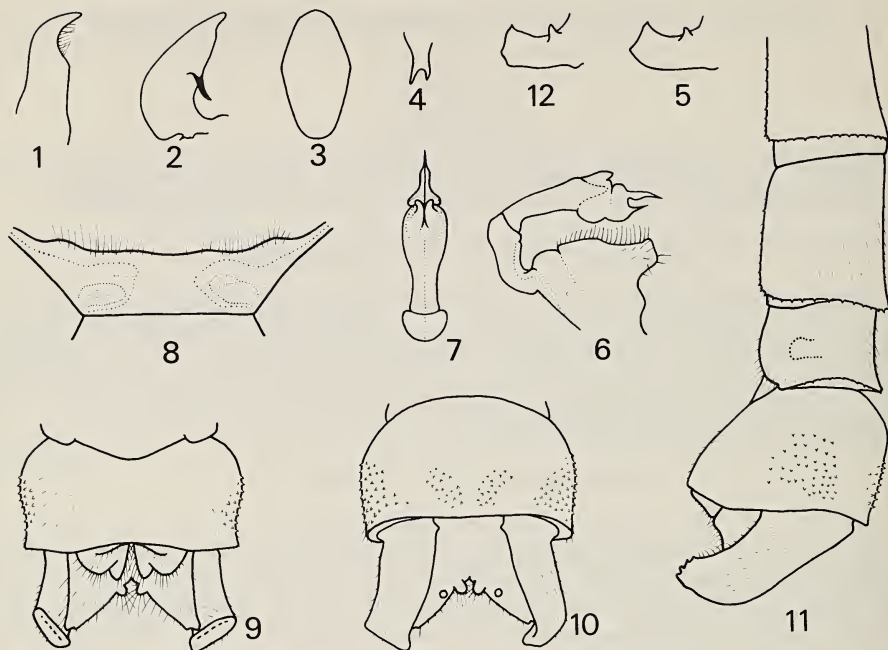
Pterothorax dark brown with pale stripes. Its colour pattern resembling that of *E. clavatus* but metepimeron with a well-defined, longitudinal pale band through centre part. Meta-postepimeron pale.

Femora brown, becoming darker towards knee. Inner side of first pair of femora pale. Tibiae, tarsi and claws blackish brown. Spines on outer row of third tibiae and first two joints of tarsi modified. No lamina tibialis on first pair of tibiae.

Abdomen predominantly dark brown. Sides of segments 1 and 2 largely pale. Segment 2 with mid-dorsal, longitudinal pale stripe. Sides of segments 3 to 6 with pale basal spots, those on 3 elongated and reaching to near apex of segment, those on 4 to 6 reaching to transverse scar. Segment 7 pale in anterior three-fourths. Dorsum of segment 10 with a double median group of about 20 spinules. Sides of segment 10 with a group of similar, more numerous spinules. Caudal appendages about as long as segment 10, in dorsal view almost parallel-sided, each one curved downward at tip and terminating in a crenulate apex. Inferior appendage three-fourths as long as superior appendages, widely bifid in its apical half, each branch with an internal tubercle at base, a small, acute, internal superior tooth at a point two-fifths the way along the branch, and a stout superior tooth at apex.

Wings very slightly tinged brown. Venation blackish brown, including frontal margin of costa.





Figs. 1-12. *Epigomphus paulsoni* spec. nov., paratype male from Veracruz (figs. 1-7) and holotype male (figs. 8-12): 1, right anterior hamule, right lateral view; 2, penis guard, right lateral view; 3, the same, frontal view; 4, right lateral process of penis guard, caudal view (larger scale); 5, left branch of inferior caudal appendage, right lateral view; 6, penis, right lateral view; 7, apex of penis, ventral view; 8, occiput, dorsal view; 9, tenth abdominal segment and caudal appendages, ventral view; 10, the same, dorsal view; 11, apical segments of abdomen and caudal appendages, left lateral view; 12, left branch of inferior caudal appendage, right lateral view.

Pterostigma dark brown, without brace vein. Basal subcostal cross-vein present. Antenodal and postnodal cross-veins of first series 12:18-17:12/12:12-12:13 in fore and hind wings, respectively. Second primary antenodal cross-vein the seventh in left fore wing, the sixth in other wings. Intermedian cross-veins 6-6/3-3 in fore and hind wings, respectively. Discoidal-, sub-, and supratrangles free from cross-veins. Three (right fore wing) and two (other wings) cubito-anal cross-veins in addition to inner side of subtriangle. Trigonal interspaces starting with two rows of cells from triangle outwards, the ones in hind wings starting with an extra initial cell at hind angle of triangle. Hind wings with five paranal cells, three (left) and four (right) postanal cells, and three rows of cells posterior to Cu2 but in left hind wing with one extra cell and right hind wing with three extra cells for a fourth row.

Discussion. — In the coloring, *Epigomphus paulsoni* is almost identical with the forms having a complete pale (second) antehumeral stripe close to the humeral suture, viz. *E. subobtusus* Selys, 1878, *E. armatus* Ris, 1918, *E. crepidus* Kennedy, 1936, and *E. clavatus*. But it differs rather markedly from these four species in respect of the structure of the male inferior caudal appendage. In shape, this appendage much resembles that of *E. quadracies* Calvert, 1903. The latter species, however, has the apex of the male superior caudal appendages bifid, and only a pale, superior, antehumeral spot close to the humeral suture.

There are some striking differences between the males from Veracruz and the ones from Chiapas:



(1) The males from Veracruz have the pale antero-superior band of the frons medially not interrupted by brown, the vertex brown-yellow between each lateral ocellus and the eye border, and the superior surface of the occiput with a small, brown-yellow median spot. Besides, one of the males from Veracruz differs from the other males in having the metepimeron largely pale, its colour design identical with that of the male of *E. crepidus* as figured by Kennedy (1936), and in having the pale basal lateral spots on the abdominal segments 3 to 5 reaching to the apex of the segment, those on segment reaching to half way the length of the segment.

(2) The males from Veracruz have the dorsum of the tenth abdominal segment with a double group of 30-40 spinules; each group has 20-30 spinules in the males from Chiapas. The dorsal surface of the tenth abdominal segment of the males from Veracruz is slightly swollen on the place of each group of spinules; there is no trace of such an elevation in the males from Chiapas.

(3) The males from Veracruz have the tip of the branches of the inferior caudal appendage more or less truncated; the tip is more or less round in the males from Chiapas.

The number of modified spines on the third tibiae of the males varies from 8 to 13.

The number of cubito-anal cross-veins in addition to the inner side of the subtriangle in the fore wings is two (17%) or three (87%), in the hind wings two (67%) or three (33%).

The description and figure of the female of *E. hylaeus* Ris, 1918 as given by St. Quentin (1973) agree so well with the female holotype of *E. gracilis* Belle, 1970, that the identity of these two species seems to be reasonably certain. The former has priority, so that the latter becomes a junior synonym of *E. hylaeus*. This means, that, with the description of *E. paulsoni*, the number of species of *Epigomphus* is brought up to 17. This figure, however, can be by no means regarded as final, as other workers have shown me specimens of *Epigomphus* which belong to at least two undescribed Central-American species. In this connection it may be of some interest what Dr. Paulson wrote to me (letter dated 6.VI.1980) about the Central-American Gomphidae in general: "I am sure there are lots more undescribed gomphids from that part of the world. I found that in Costa Rica many members of this family flew only during the early part of the rainy season, when they were locally common, and I never saw the adults at any other time. So collectors in the tropics may miss the majority of the gomphid species unless they are there just at the right time of the year." And in a former letter (dated 13.IV.1980) he communicated about *Epigomphus* in Central-America: "This genus is hard to find; after 15 months in Costa Rica I found only five of the seven species known from the country."

#### REFERENCES

- Belle, J., 1970. Studies on South American Gomphidae (Odonata) with special reference to the species from Surinam. — *Stud. Fauna Suriname* 11: 1-158; pls. 1-21.
- , 1980. A new species of *Epigomphus* from Guatemala (Odonata: Gomphidae). — *Ent. Ber., Amst.* 40: 136-138.
- Calvert, P. P., 1903. On some American Gomphinae (Odonata). — *Ent. News* 14: 183-192; pl. 8.
- Kennedy, C. H., 1936. *Epigomphus crepidus* a new dragonfly (Odonata: Gomphidae) from Nayarit, Mexico with notes on the genus. — *Ann. ent. Soc. Am.* 29: 126-135.
- Ris, F., 1918. Libellen (Odonata) aus der Region der amerikanischen Kordillieren von Costarica bis Catamarca. — *Arch. Naturg.* 82: 1-197; 2 tabs.
- Selys Longchamps, E. de, 1878. Quatrièmes additions au synopsis des Gomphines. — *Bull. Acad. r. Belg.* (2) 46: 408-471, 658-698 (3-106 sep.).
- St. Quentin, D., 1973. Die Gomphidenfauna Südamerikas (Ordn.: Odonata). — *Annln naturh. Mus. Wien* 77: 335-363.

Onder de Beumkes 35, 6883 HC Velp, the Netherlands.

---

INTERNATIONAAL SYMPOSIUM: INSEKTENBESTRIJDING VAN MORGEN, 14-15 september 1981, Wageningen.

Dit symposium wordt georganiseerd ter gelegenheid van de 65e verjaardag van Prof. dr. J. de Wilde, hoogleraar in het dierkundig deel der Plantenziektenkunde aan de Landbouwhogeschool te Wageningen. Het wetenschappelijk programma is als volgt: