

Pseudocentropilum fascicaudale n. sp.
(Ephemeroptera, Baetidae) from Greece

Ryszard Sowa

Jagiellonian University, Department of Hydrobiology, Institute of Environmental Biology, ul. Oleandry 2a, 30-063 Kraków, Poland

Manuscript submitted May 15, 1984, accepted July 17, 1984

Abstract — Winged forms (excepting the female subimago), nymph, and egg of the new species *Pseudocentropilum fascicaudale* n. sp. from the island of Rhodes are described and illustrated. They differ from the nominal species *P. motasi* Bogoescu (Bogoescu 1947, Keffermüller, Sowa 1984) above all in the form of the hind wing (females) and of gills (nymphs), and in the sculpture of the egg chorion. *P. fascicaudale* n. sp. differ also in the same characters from the related European species of *Centropilum* Eaton sensu lato.

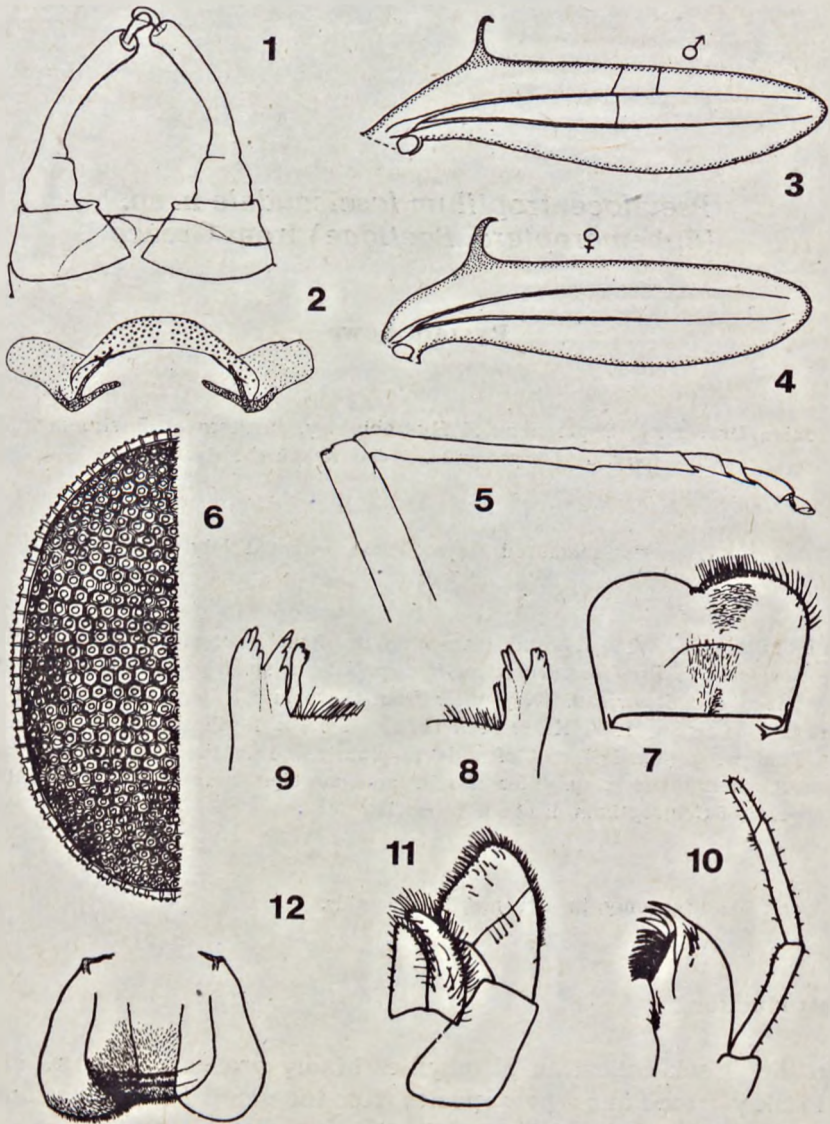
Key words: taxonomy, insects, mayflies, baetids.

1. Introduction

In the Greek collection of mayflies kindly presented by Dr. Hans Malicky from Lunz a new species from the genus *Pseudocentropilum* Bogoescu was revealed. New findings about this poorly known genus of mayfly are discussed in the work of Keffermüller and Sowa (1984).

2. Description of the *Pseudocentropilum fascicaudale* n. sp. (alcohol 75%)

Imago ♂. Length: body 6.8—7.5 mm, cerci 12.5—13.0 mm. Turbinate eyes moderately high, widened, upper surface highly elongated, almost



Figs 1—12. *Pseudocentropilum fascicaudale* n. sp., imago male (1—3, 5), imago female (4), egg (6), and nymph (7—12): 1 — forceps; 2 — penial plate (greater enlargement), 3—4 — hind wings; 5 — hind leg; 6 — sculpture of chorion on half-egg; 7 — labrum, 8—9 — fragments of mandibles; 10 — maxilla; 11 — labium; 12 — hypopharynx

symmetrically oval. Hind wing with a shape intermediate between *pulchrum* and *nanum* groups of the genus *Centropilum* (fig. 3). In the hind leg the first segment of the tarsus is a little shorter than the sum of lengths of the remaining segments (fig. 5). Length ratio of forceps segm-

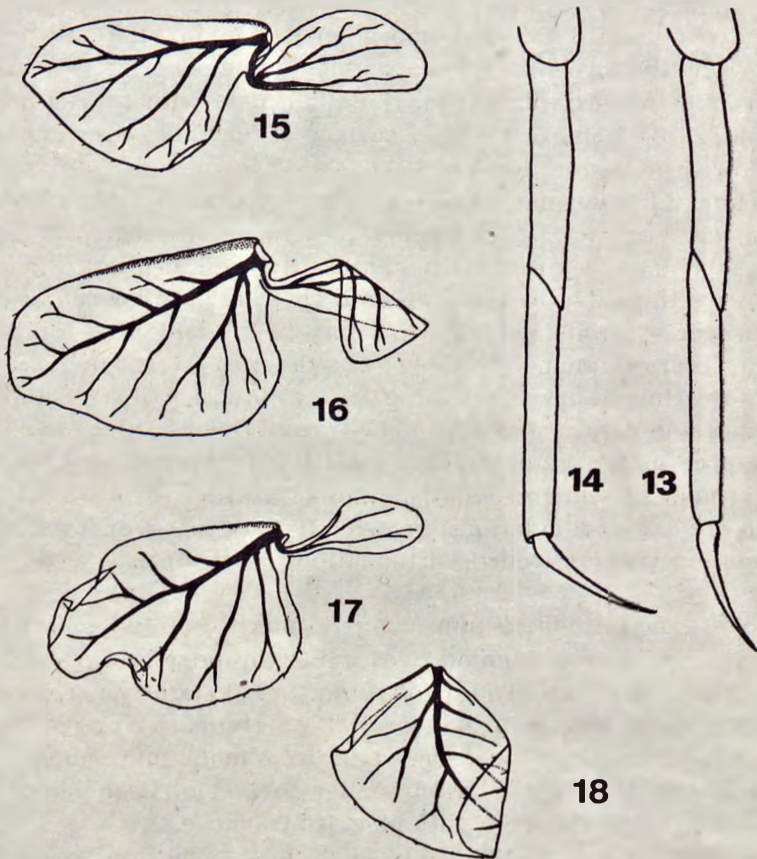
ents (including basal segment) = 7 : 5 : 14 : 25 (holotype). Basal segment of forceps narrows to the end, more on the inner side; its posterior margin is slightly turned back at its inner angle. The last, "cucumber" segment narrowed at the base (fig. 1). Penial plate with curved posterior margin (fig. 2). Pigmentation: upper surface of turbinate eyes ochraceous with yellowish margin; lateral wall of eye, in lower half, darkened with brown. Thorax brown, mesonotum darkest. Abdomen yellowish-brown, lighter on the ventral side. Segments 1—6 (7) semitransparent, the last three segments have a rusty shade. Anterior margin of tergites narrowly dark brown with pale brown spot along their sides. Similar colour design, made of a pair of points and a pair of dots, in the middle of tergites and sternites. Anterior femur yellow-brown, the rest of the leg brownish, with darker articulations. Remaining legs yellowish-grey, the three last segments of the tarsus and the claw grey-brown. Wings yellowish, stigmatic area milky, veins brown. Basal segment of forceps brownish-yellow, remaining segments whitish, in places with brown coating. Cerci yellowish-grey, at articulations brown; at base of every second and subsequently of every fourth articulation dark. Ends of cerci whitish.

Imago ♀. Length: body 7 mm, wing 7.5 mm, cerci 12.4 mm. Distance between the bases of compound eyes equal to about the breadth of an eye seen from above the head. Hind wing (fig. 4) slightly narrower than those of the male, similar to wings of *C. pulchrum* Eaton. The hind leg length ratio of segment 1 of tarsus to remaining segments, as in imago male (16 : 19). Pigmentation similar to that of imago male, more rusty, the tergites of abdomen with blackish tracheae.

Egg. Dimensions: 157—183 × 133—139 μm. Exochorion thin, covered with reticular sculpture, in whose meshes there are single small adhesive elements (fig. 6). On one side of the egg there are about 40 adhesive elements on the long axis and about 25 elements on the short one.

Subimago ♂. Turbinate eyes lighter than those of imago male. Thorax beige, brown spots present on the pronotum. Abdomen yellowish-grey, darker on the dorsal side, with anterior margin of tergites brown. Wings brownish. Legs yellowish, more brownish towards the end. Cerci grey-yellowish, with traits of dark annulation at the base.

Nymph. Length: body about 7 mm, cerci 2.1 mm. Mouthparts: Labrum widened towards the end. Anterior margin with fairly wide incision (fig. 7). Incisors of mandibles divided almost to half their length (figs 8, 9). Segment 3 of palpus maxillaris slightly shorter and narrower than segment 2 (fig. 10). Segment 3 of palpus labialis with the inner margin concave, the posterior margin more or less straight and with the inner angle rounded (fig. 11). Hypopharynx with median lingua much wider than lateral parapsides, with a small median protuberance at the apex (fig. 12). Claws of legs with very small denticles and about half of tarsus length



Figs 13—18. *Pseudocentroptilum fascicaudale* n. sp., nymph: 13 — foreleg; 14 — middle leg; 15 — first gill; 16 — third gill; 17 — fifth gill; 18 — seventh gill

(ratio: 17 : 35, 18 : 35, 17 : 35) (figs 13, 14). Gills 7 pairs in number (lack of pairs 2 and 6 in the material) rounded at the apex, asymmetric: outer margin almost straight, inner one convex, only in pair 7 are the relations reversed. Pairs 1—5 (6 ?) are double, upper lamella not large (figs 15—17). Subanal plates, on the inner margin, have 8 large teeth, separated from each other by small denticles. Cerci on the outer margin are provided with relatively short spines, reaching in midlength of the tail about half the length of the segment and diminishing progressively towards the tail end. Pigmentation: thorax light, its dorsal sclerites with dark margins. Abdominal tergites 2 and 6 almost wholly dark with light spots, tergites 3 and 5 much paler than 2 and 6, the rest almost entirely light. Parallel to the anterior margin of tergites there is a strong darkening, interrupted in the middle and not reaching the lateral margins. At the inner side of the gills base lies a dark spot, darkest on the middle seg-

ents. Legs light, with darkened claw, especially at the base. Tails light, to over half their length with articulations darkly annulated in the middle part of tails every fourth segment and in lateral tails obliquely.

Biology unknown.

Material: holotype imago ♂, paratypes 8 imago males, 1 imago female, 1 subimago male, 1 nymph female, damaged, determined on the basis of extracted eggs, Rhodes, 5 km north of Laerma, 1 km west of Kallithie, 4—5. 05. 1975 and 10. 05. 1975. Leg. Dr. H a n s M a l i c k y. The whole material is in the collection of the author.

Etymology: the name was given owing to the tail pigmentation.

3. Relationships

At present only the nominal species of the genus *Pseudocentropitulum Bogoescu* is known from the winged and nymphal stage (Bogoescu 1947, Keffermüller, Sowa 1984). The new species differ from the nominal one in the following combination of characters: the form of the hind wings (females), annulation of cerci (winged forms), form of gills (nymphs), and appearance of the egg chorion. The same characters also distinguish the new species from the related European species of the genus *Centropitulum Eaton*, sensu lato.

The new species differ from *Centropitulum liturum* (Pictet, 1843—45) in the coloration of thorax and eyes.

Acknowledgment

The author is deeply indebted to Docent M. Keffermüller for her help in preparing this work.

4. Polish summary

Pseudocentropitulum fascicaudale n. sp. (Ephemeroptera, Baetidae) z Grecji

Opisano i zilustrowano postacie skrzydlate (ryc. 1—5) (z wyjątkiem samicy subimago), larwę (ryc. 7—18) i jajo (ryc. 6) nowego gatunku jętki *Pseudocentropitulum fascicaudale* n. sp. z greckiej wyspy Rodos. Od nominalnego gatunku *P. motasi* Bogoescu (Bogoescu 1947, Keffermüller, Sowa 1984) nowy gatunek odróżnia się przede wszystkim kształtem tylnego skrzydła (samice), kształtem skrzelotchawek (larwy) oraz wyglądem chorionu jaja. Tymi samymi cechami *P. fascicaudale* n. sp. odróżnia się także od spokrewnionych z nim europejskich gatunków rodzaju *Centropitulum Eaton*, sensu lato.

5. References

- Bogoescu C. D., 1947. Un genre nouveau d'éphéméroptère en Roumanie. Bull. Sect. Sci. Acad. Roum., 29, 9, 602—604.
- Keffermüller M., R. Sowa, 1984. Survey of Central European Species of the Genus *Centroptilum* Eaton and *Pseudocentroptilum* Bogoescu (Ephemeroptera, Baetidae). Pol. Pismo Entomol., 54, 2, 309—340.