

**A New Genus and Species of Baetidae from Sri Lanka (Ceylon):  
*Indocloeon primum* gen.n., sp.n. (Insecta, Ephemeroptera)**

by

I. MÜLLER-LIEBENAU

ABSTRACT

The nymph of a new genus and species, *Indocloeon primum* gen.n., sp.n. from Sri Lanka is described, distinguishing characteristics are illustrated. This new genus is most closely related to *Cloeon* Leach and *Centroptilum* Eaton. *Indocloeon* gen.n. possesses a unique combination of morphological characters and two derived characters.

INTRODUCTION

Only a few genera of the family Baetidae were previously known from Sri Lanka: *Baetis*, *Cloeon* and *Procloeon* (Hubbard & Peters, 1978). Although the male imago is not known the new genus is described; according to the morphological characters of the nymph it is not possible to place this species in any known genus.

The material studied was collected by Dr. C. F. Stahrmühlner and Dr. G. Weninger, Vienna, and Dr. H. H. Costa, Kelaniya, during the Austrian-Ceylonese Hydrobiological Mission 1970 of the 1st Zoological Institute, University of Vienna (Austria) and the Department of Zoology, Vidyalkankara University of Ceylon, Kelaniya.

DESCRIPTION

Genus **Indocloeon** gen. n.

Mature nymph. — Antennae: nearly as long as body. Right mandible (Fig. 1h): "brush" between canini and molar area. Maxillary palpus (Fig. 1e): slender, two segmented, reaching far beyond galea-lacinia and with inner, apical indentation. Labial palpus (Fig. 1b): inner, apical lobe of second segment pointed. Paraglossa

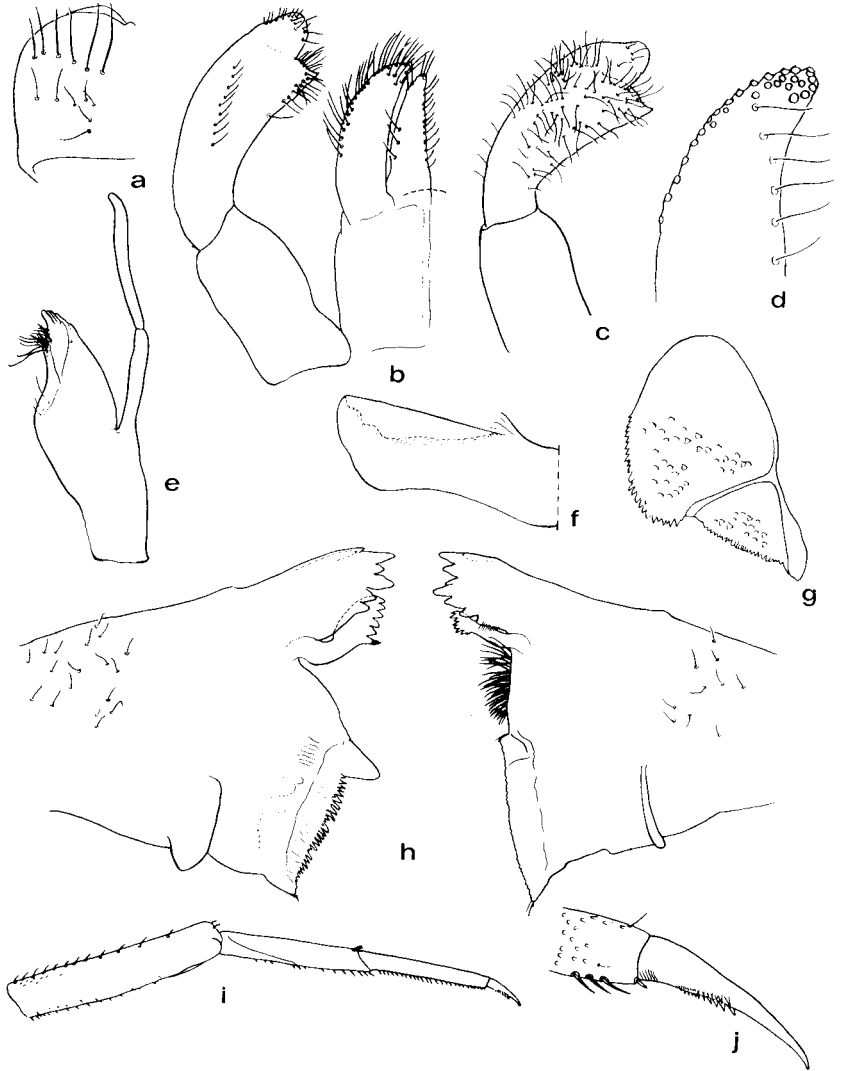


Fig. 1. *Indocloeon primum* gen.n., sp.n., nymph; a) left half of labrum; b) left half of labium, dorsal; c) left labial palpus, ventral; d) apical part of paraglossa, ventral; e) maxilla; f) left half of metatergum (no hind wing pads); g) paraproct; h) left and right mandible; i) 1st leg; j) claw.

(Fig. 1d): longitudinal row of 6 long, fine setae near inner margin. Legs (Fig. 1i): slender, segments nearly parallel sided; outer margin of femur with strong setae, tibia with only two apical setae, setae absent on tarsus. Claws (Fig. 1j): elongate, pointed, with two rows of denticles. Terminal filament: half as long as body, cerci

ca. three times longer than terminal filament. Terga (Fig. 3): surface with irregular transverse rows of rounded scales; posterior margin of terga with long spines — fused at base and pointed at apex. Gills: first pair present or absent. Hind wing pads: present or absent.

Type species: — *Indocloeon primum*, sp.n.

***Indocloeon primum*, sp.n. (Figs. 1-3)**

Mature nymph. — Coloration (Fig. 2): Color uniformly light brown, no distinct color pattern on dorsal side of abdomen except a longitudinal light patch on both sides, decreasing from front to hind segments; caudal filament a little lighter than abdomen. Body length: 4.8-5.3 mm. Terminal filament half as long as body, cerci about three times longer than terminal filament, very thin towards apex. Terminal filament with swimming bristles on both sides; swimming bristles on inner margin of cerci reaching as far as length of terminal filament. — Antennae: nearly same

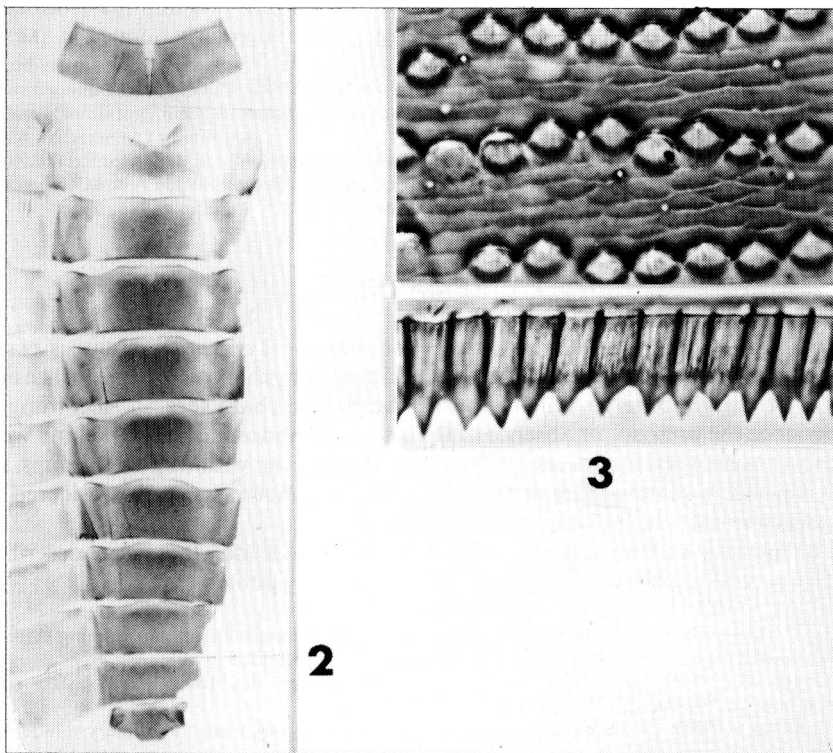


Fig. 2. *Indocloeon primum* gen.n., sp.n., nymph: color pattern of pronotum and abdomen.

Fig. 3. *Indocloeon primum* gen.n., sp.n., nymph: surface and posterior margin of terga.

length as body, first segment of flagellum twice as long as broad. Labrum (Fig. 1a) on each half with 6-7 submarginal dorsal bristles with nearly even distance between each other. Right mandible (Fig. 1h) with "brush" between canini and molar area. — Maxillary palpus: (Fig. 1e) slender, two segmented, reaching far beyond galea-lacinia (this is a good character for rough identification at lower magnification) and with an inner apical indentation. Second and third segment of labial palpus together longer than 1st segment (Fig. 1b, c): inner apical lobe of second segment pointed; ventral surface of second and third segment with long and fine setae. Paraglossa (Fig. 1d): about 6 long, fine setae in a row along inner margin on ventral surface. Legs (Fig. 1i): slender, segments nearly parallel sided; outer margin of femur with strong setae, tibia with only two apical setae, outer marginal setae absent on tarsus. All three leg segments covered with scales as on terga (Fig. 3). Claws (Fig. 1j): elongate, pointed, with two rows of denticles. Hind wing pads absent (Fig. 1f). Seven pairs of single gills present; gills oblong, those of first segment shorter, the rest longer than one segment. Surface of terga (Fig. 3) with rounded scales; scales arranged in transverse, broken wavy rows; posterior margin of terga with long spines, which are melted into one another from base to approximately three quarters of their length and triangularly pointed at apex.

Holotype: — Mature nymph; slide preparation. Sri Lanka, FC 18/a, Maskeliya, Gartmore-Estate-Dola, 30.11.1970 leg. Starmühlner. Paratypes: 50 nymphs in alcohol, 2 slide preparations; detailed locality information is presented below.

Holotype and 16 paratypes (in alcohol and 1 slide preparation) are deposited at the Zool. Staatssammlung, München. The remaining paratypes are deposited at Florida A & M University, Laboratory of Aquatic Entomology, Tallahassee, Florida, U.S.A.

## REMARKS

*Indocloeon* is most closely related to *Procloeon* — *Centroptilum* but is easily distinguished from these and all other baetid genera by the structure of surface and posterior margin of terga which appear to be derived characters. — According to experience the presence or absence of the 1st pair of abdominal gills and hind wing pads varies between the species of the genus *Baetis*, even within species groups. As this is possible in other genera too, both these characters are not considered as generic characters of the new genus *Indocloeon*.

The nymphs were all collected on sandy surfaces at 6 sites; these were described by Costa & Starmühlner as follows (1972; only partly quoted here):

FC 3: 10.11.1970: HOLA-DOLA, torrent coming from the Sinharaja-Forest and running through tea-plantations in cascades, no shadow, alt. 700 m (Region of Deniyaya)

FC 16: 28.11.1970: MOCHA-DOLA, torrent running through the Adam's Peak-Estate (tea-plantations), no shadow, alt. 1300 m (Region of Maskeliya)

FC 17: 29.11.1970: GARTMORE-ESTATE-DOLA, small torrent coming from the primary rain-forest; beyond the collecting-Place is a waterfall falling more than 100 m into the valley of the Gartmore-Estate, partially shady; alt. 1850 (Region of Maskeliya)

FC 18: 30.11.1970: GARTMORE-ESTATE-DOLA, below the waterfall after FC 17, in the Gartmore-Estate-valley, torrent running through tea-plantations, no shadow; alt. 1500 m (Region of Maskeliya)

FC 20: 1.12.1970: MASKELIYA-DOLA, on the north flank of the Adam's peak, torrent running in a

deep gorge trough tea-plantations and forest, shady; alt. 1200 (Region of Maskeliya)

FC 21: 2.12.1970: Hakgala-Dola, a small torrent in the Hakgala gardens near Nuwara Eliya, coming through a dense forest; shady; alt. 2000 m (Region of Nuwara Eliya)

FC 24: 7.12.1970: Belihul-Oya, near the rest-house, no shadow; alt. 650 m (Region of Belihuloya)

#### ACKNOWLEDGMENT

I am very indebted to Dr. F. Starmühlner, Zool. Inst., University Vienna, Austria, who has kindly provided me with this material for studying.

#### REFERENCES

COSTA, H. H. & F. STARMÜHLNER (1972): Results of the Austrian-Ceylonese Hydrobiological Mission 1970 of the 1st Zoological Institute of the University of Vienna (Austria) and the Department of Zoology of the Vidyalkara University of Ceylon, Kelaniya. Part. I. — Preliminary Report: Introduction and Description of the Stations. — *Bull. Fish. Res. Stn., Sri Lanka (Ceylon)* 23 (1 & 2): 43-76.

HUBBARD, M. D. & W. L. PETERS (1978): A Catalogue of the Ephemeroptera of the Indian Subregion. - *Oriental Insects, Suppl. No. 9*: 1-43.

Address of the Author:

Dr. Ingrid MÜLLER-LIEBENAU  
Max-Planck-Institut für Limnologie  
Abt. Allgemeine Limnologie  
D-2320 Plön  
Federal Republic of Germany