

JUBABAETIS GEN. N. AND PLATYBAETIS GEN. N., TWO NEW GENERA OF  
THE FAMILY BAETIDAE FROM THE ORIENTAL REGION

Ingrid Müller-Liebenau

Max-Planck-Institut für Limnologie  
Abteilung Allgemeine Limnologie  
August-Thienemann-Str. 2, D-2320 Plön

ABSTRACT

Nymphs of two new genera are described in detail. *Jubabaetis* gen.n. collected by M.L. Pescador from the Philippines represents a more or less isolated genus within the family. *Platybaetis* gen.n. seems to be closely related to *Pseudocloeon* and is represented by three species. One species is found in Dr. Pescador's Philippine material. The second species was described in the nymphal stage by Ueno in 1955 from Nepal as "*Baetis* sp. 2". The third species is contained in a collection of baetid nymphs from Malaysia (Coll. Bishop, not yet published). Thus, this second new genus seems to be widespread but restricted to the oriental region.

The two new genera of Baetidae, *Jubabaetis* gen.n. and *Platybaetis* gen.n. discussed herein are contained in a small collection made by Dr. M.L. Pescador on the island of North Luzon (Philippines).

*Jubabaetis* Müller-Liebenau gen.n.

Type species: *Jubabaetis pescadori* Müller-Liebenau sp.n.

Mature nymph: Mouthparts and antennae covered by prolonged front margin of head. Front margin of prolongation with a dense row of posteriorly curled, completely unpigmented, fine bristles (hair-line and much finer than shown in Fig. 1b and c). Abdominal terga I - IX each with conspicuous, caudally directed, median hook near hind margin. Terminal filament reduced to 1 segment.

Imago ♂ and ♀ not known.

Etymology: The name is derived from the Latin word *juba* = mane of hair.

*Jubabaetis pescadori* Müller-Liebenau sp.n.

Material: 2 nymphs. Philippines: Mountain Prov., Sumigar stream, Sumigar Banaue, 3.X.1967, leg. M.L. Pescador.

Description: For morphological details see Fig. 1 - 4.

Body length: 11 mm, Cerci 14 mm, with very fine bristles at inner margin, terminal filament reduced to 1 segment. - Head: with shield-like prolongation on front margin entirely covering mouth parts including labrum. - Antennae inserted beneath "shield". - Abdomen: Terga I - IX each with a caudally directed hook. Longitudinal row of tube-like bristles similar to those on metatergum extending from anteromedial margin of each segment to median hook. Upper surface and hind margin of terga as in Fig. 3. - Legs: with dense row of long, fine bristles on outer margin of all three segments; all bristles very finely feathered (Fig. 4). Inner margin of tarsus apically with two conspicuous bristles of different lengths. - Gills: on segments 1 - 7; rounded posteriorly, with weak, smooth margin.

Holotype: 1 dissected nymph on three slide preparations. - Philippines: Mountain Prov., Sumigar stream, Sumigar Banaue, 3.X.1967, leg. M.L. Pescador; det. I. Müller-Liebenau 1980, Zool. Staatsinstitut und Zool. Mus., Abt. Entomol., Hamburg.

Paratype: 1 partly dissected nymph in alcohol, same locality as Holotype. Coll. M.L. Pescador.

I take pleasure in dedicating the new taxon to the collector.

*Platybaetis* Müller-Liebenau gen.n.

Type species: *Platybaetis edmundsi* Müller-Liebenau sp.n.

---

Figure 1. Nymph of *Jubabaetis pescadori* sp.n. a) nymph; b) anterolateral view of head; c) ventral view of head; d) metathorax with small hind wing pads; e) caudally directed median hooks of three abdominal segments; f) part of ventral surface of tibia; g) part of dorsal surface of tibia; h) gill; i) leg; j) tarsus and claw; k) paraproct; m) base of cerci.

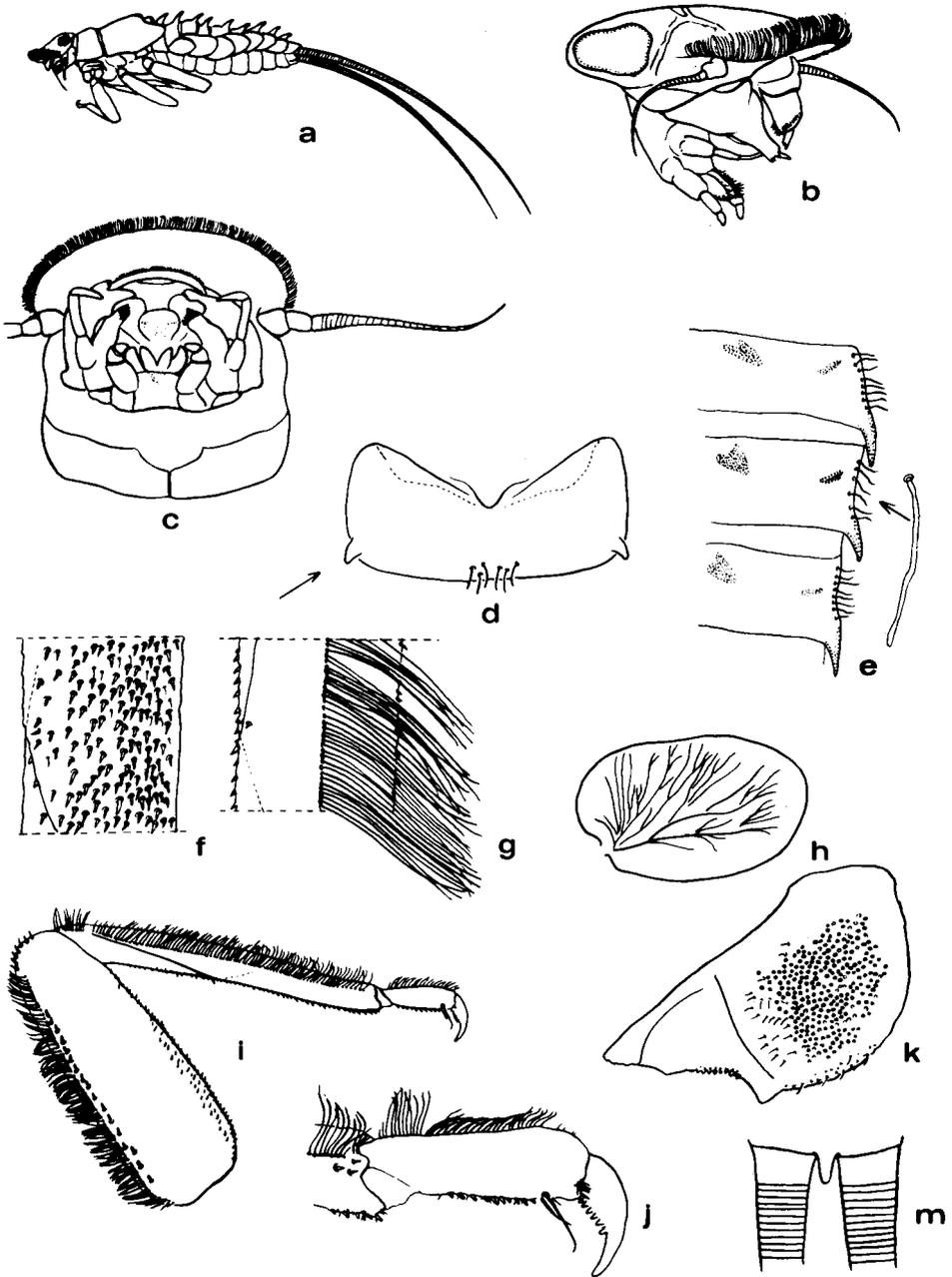


Figure 1

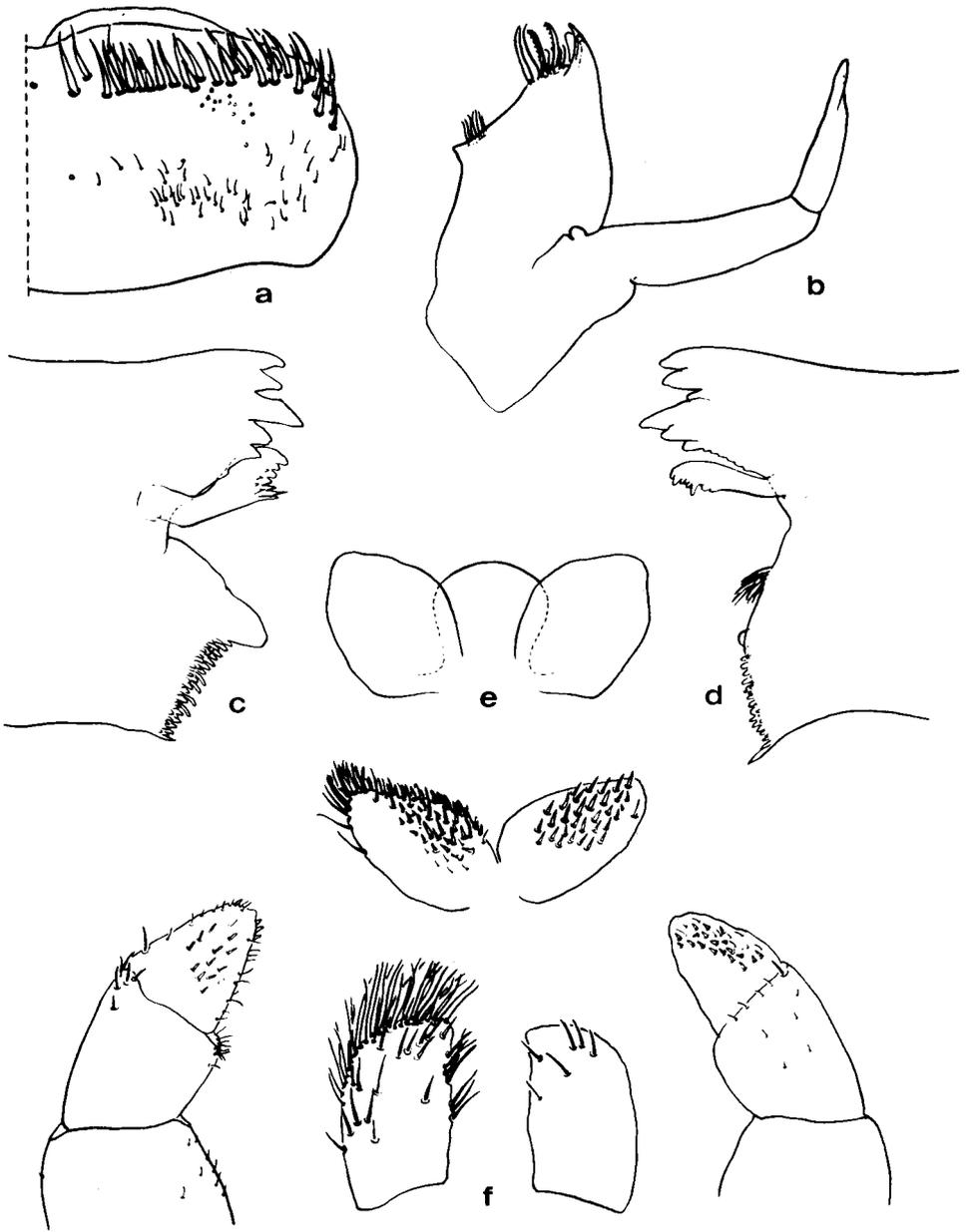


Figure 2. Nymph of *Jubabaetis pescadori* sp.n. a) right half of labrum; b) maxilla; c) canini and molar area of left mandible; d) canini and molar of right mandible; e) hypopharynx; f) dissected parts of labium, left dorsal, right ventral.

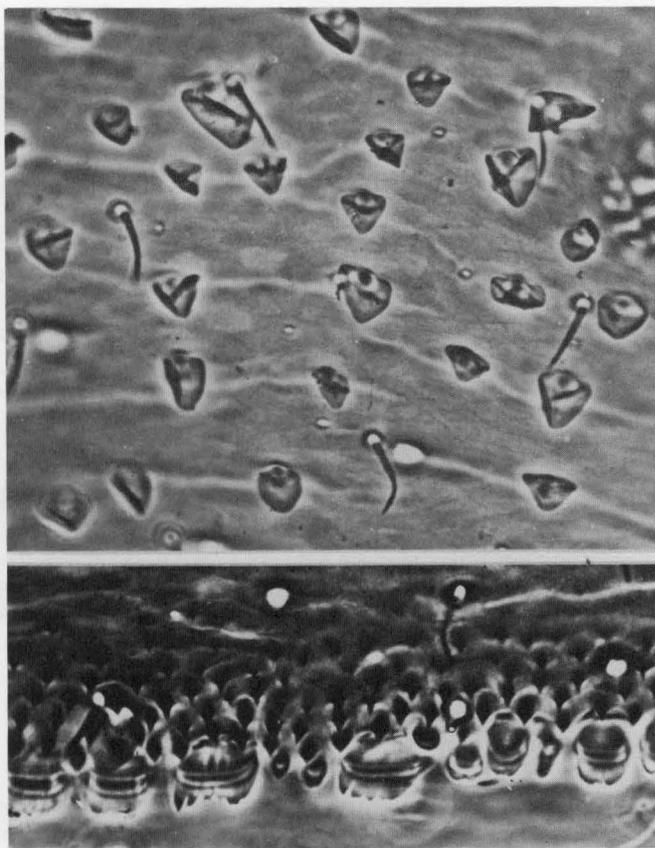


Figure 3. Surface and hind margin of nymphal tergum of *Jubabaetis pescadori* sp.n.

Mature nymph: Head barely wider than long, nearly quadrangularly shaped, nearly as wide as pronotum. - Antennae comparatively thick and short, a little longer than head capsule. Scape a little broader than long, pedicel cylindrical, considerably longer than broad, first segment of flagellum also cylindrical, about twice as long as broad. - Labrum very small compared to head capsule, about twice as wide as long, ventrally directed. - Maxillary palpus with three segments, not distinct in all specimens. - Glossae and Paraglossae stout, about twice as long as broad, glossa only a little narrower than paraglossa. Glossae near apex with two large clavate spines. - Pronotum about twice as wide as long, nearly as broad as head capsule, rounded laterally and on outer hind margin. - Head wing pads very small or lacking. - Caudal filaments fringed only on inner side. Terminal filament reduced to a few segments

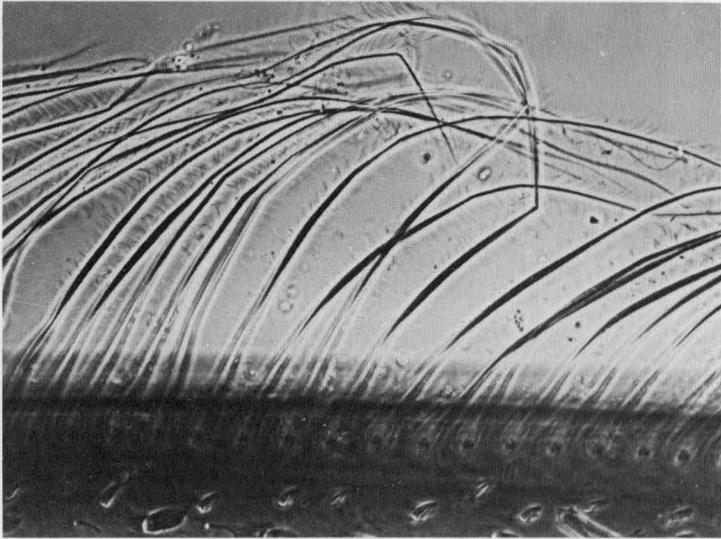


Figure 4. Nymph of *Jubabaetis pescadori* sp.n. section of outer margin of femur with feathered bristles.

only (from 1 segment up to 6 or 7; 1 segment in the species mentioned from Malaysia). - Paraprocts smooth at inner margin, without teeth. - Legs: relatively short, front leg shorter than mid- and hind-leg, tarsal segment and claw outwardly directed due to a considerable twisting along longitudinal seam on tibia. Dense row of long bristles along outer margin of femur, similar row on tibia and tarsus. Tarsus with a single long bristle near inner margin near apex. Claws with about 7 teeth. Body somewhat flattened, with gills somewhat projected laterally. Gills smooth, without teeth, only a few fine bristles, mostly on hind margin; with distinctly branched trachea.

---

Figure 5. Nymph of *Platybaetis edmundsi* sp.n. a) dorsal view of head; b) labrum; c) canini and molar area of left and right mandible, note mandibles of subsequent instar within worn down older pair just before moulting; d) base of antenna; e) dissected parts of labium left dorsal, right ventral; f) hypopharynx.

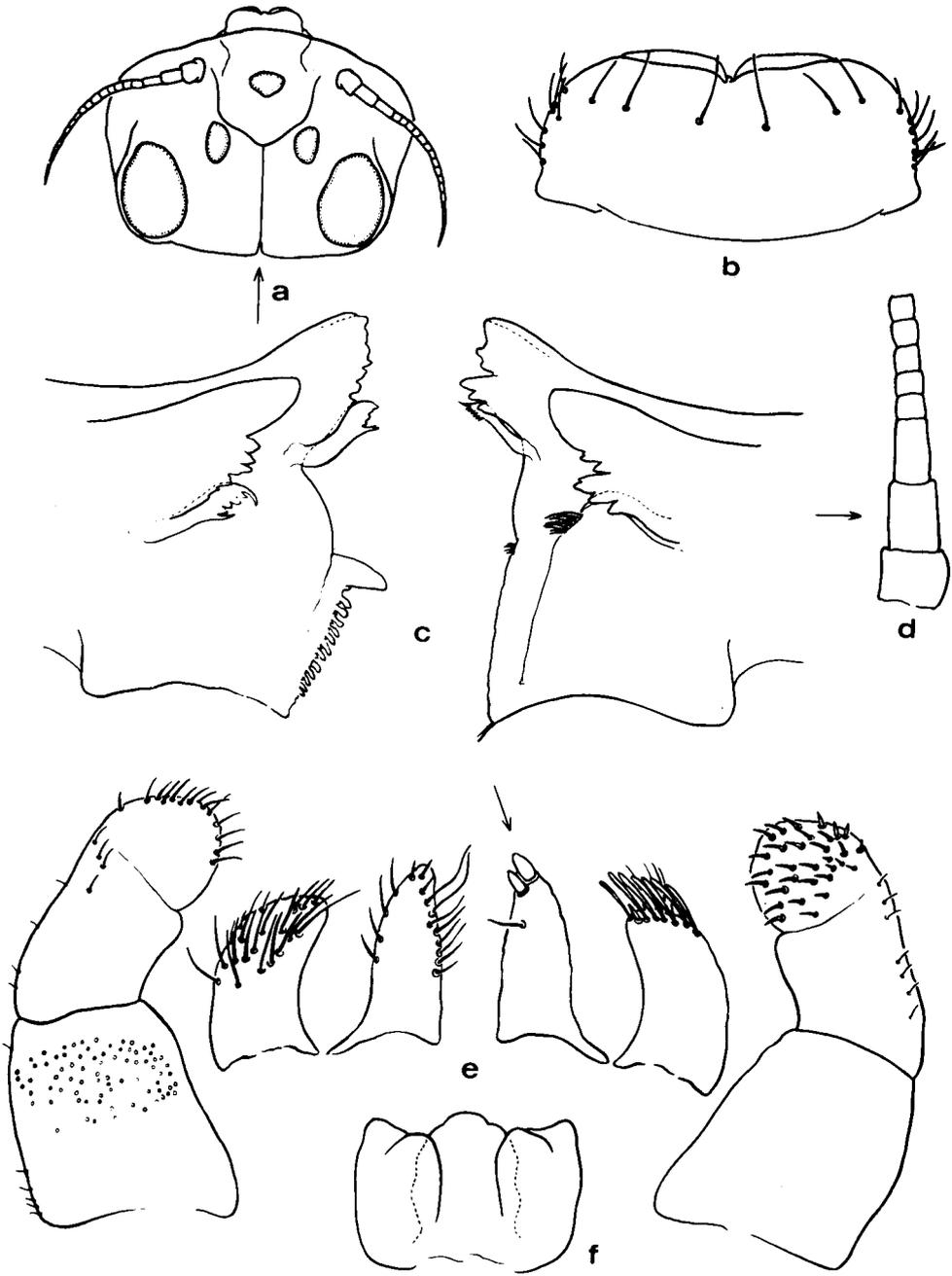


Figure 5

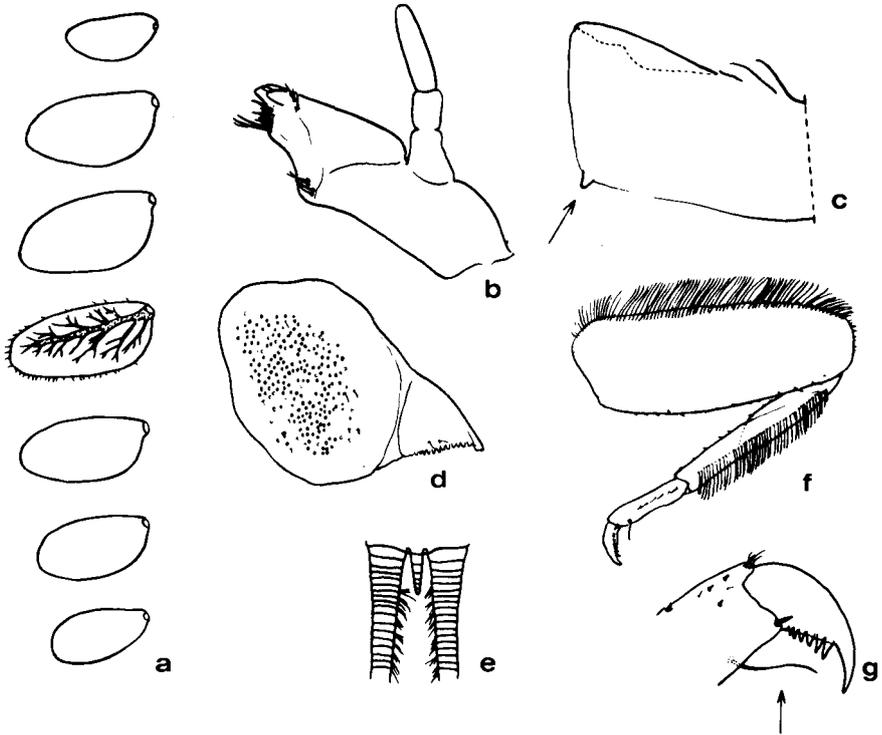


Figure 6. Nymph of *Platybaetis edmundsi* sp.n. a) gills I to VII, all gills tracheated as shown in gill IV; b) maxilla; c) left half of metathorax with small hind wing pad; d) paraproct; e) base of cerci; f) leg; g) apex of tarsus with claw.

Imago ♂ and ♀ not known.

Etymology: The name is derived from the Greek word platy = flat, wide.

*Platybaetis edmundsi* Müller-Liebenau sp.n.

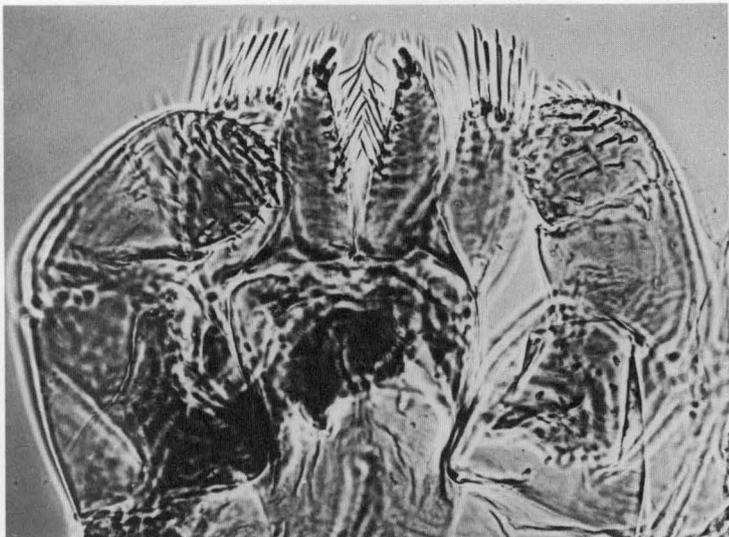


Figure 7. Nymph of *Platybaetis edmundsi* sp.n. labium (note large clavate spines near apex of glossae).

Material: 14 nymphs. Philippines: Mountain Prov., Sumigar stream, Sumigar Banaue, 3.X.1967, leg. M.L. Pescador.

Description: For morphological details see Fig. 5-9.

Body length: mature nymph 11.5 mm, Cerci 9.8 mm, terminal filament reduced to 5 segments. - Head: nearly quadrangularly shaped with a clear incision in the middle of hind margin; labrum small.

I would like to name the new species of the genus *Platybaetis* after the well respected mayfly worker Dr. G.F. Edmunds Jr. and will call it *Platybaetis edmundsi*.

Holotype: 1 nearly mature nymph in alcohol. - Philippines: Mountain Prov., Sumigar stream, Sumigar Banaue, 3.X.1967, leg. M.L. Pescador, det. I. Müller-Liebenau 1980. - Zool. Staatsinstitut und Zool. Mus., Abt. Entomol., Hamburg. - Paratypes: 11 nymphs of different sizes in the collection of Dr. M.L. Pescador; 2 slide preparations in my collection. All of same locality as Holotype.

Dr. Pescador gave me the following information on the collecting site: small, swift flowing, rock-bottom mountain stream at an approximate altitude between 1,600 m - 2,200 m above sea level.

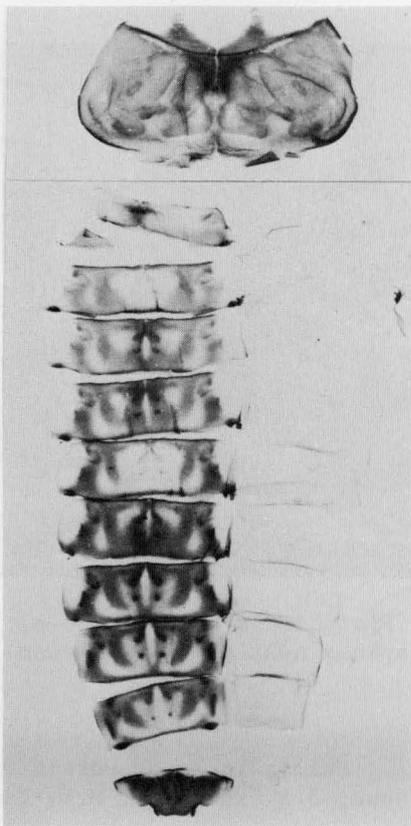


Figure 8. Nymph of *Platybaetis edmundsi* sp.n., pronotum and abdomen (pronotum at higher magnification).

The nymphs were found in cracks of submerged logs on debris trapped between rocks. No records of water temperature during time of collection are available. The whole Mountain Province is the coldest region of the Philippines with an annual average of ca. 18°C air temperature.

Two more species of this new genus are known. One was described from Nepal in a paper by Ueno (1955: 305/306) dealing with the results of a Japanese scientific expedition to the Himalayas in 1952-1953. Ueno gave a detailed description of a nymph, which he left unnamed and referred to as "*Baetis* sp. 2". - In honour of the aforementioned author the species is named *Platybaetis uenoi* sp.n.

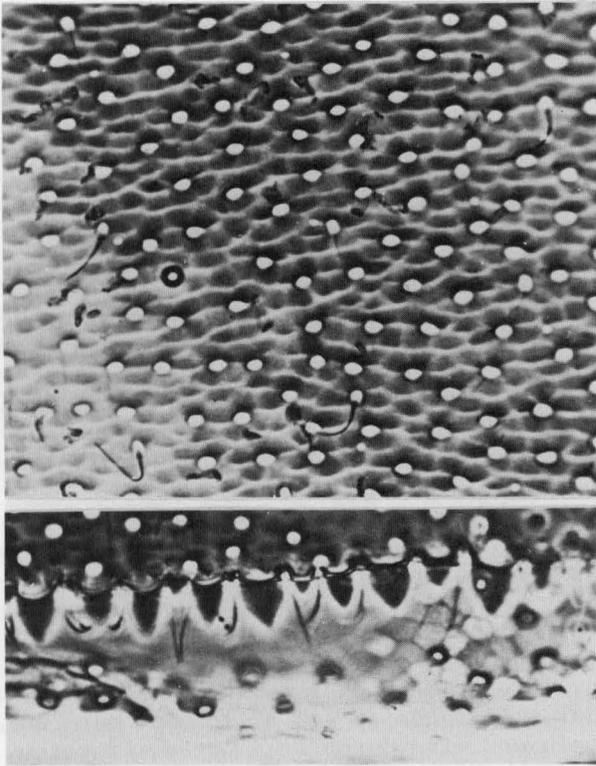


Figure 9. Surface and hind margin of nymphal tergum of *Platybaetis edmundsi* sp.n.

The third species which was collected by Dr. J.E. Bishop in the Gombak river, Malaysia, will be treated in a later paper.

#### DISCUSSION

It is my opinion, that the three known species of this new genus do not fit into the genus *Pseudocloeon* or into any other related group (e.g. within the genus *Baetis*). As is well known, baetid species whose nymphs more or less resemble the genus *Pseudocloeon* established by Klapalek in 1905 are for many reasons very problematic with regard to generic integration. Therefore I think it is convenient to establish a new genus for these three species according to a few remarkable characters common to them.

## ACKNOWLEDGMENTS

I am very thankful to Dr. M.L. Pescador, Florida A&M University, who generously gave me his material from the Philippines for study. I also want to express my thanks to Dr. G.F. Edmunds Jr., University of Utah, for helpful comments.

## RESUME

Les larves de deux nouveaux genres sont traitées en détail. La *Jubabaetis* gen.n. recueilli par M.L. Pescador aux Philippines, représente un genre plus ou moins isolé appartenant à la famille. Le *Platybaetis* gen.n. semble être apparenté de près au *Pseudocloeon* et est représenté par trois espèces. La première espèce se trouve dans le matériel glané aux Philippines par M. Pescador. La seconde a été décrite en 1955 par Ueno (du Népal) à son stade larvaire comme "*Baetis* sp. 2". La troisième espèce fait partie d'une collection de larves de baetidés de la Malésie (collection Bishop, inédite). Ainsi, ce genre nouveau semble être répandu mais limité à la région orientale.

## ZUSAMMENFASSUNG

Nymphen zweier neuer Gattungen werden in dieser Arbeit im Detail beschrieben. *Jubabaetis* gen.n., von M.L. Pescador auf den Philippinen gesammelt, stellt eine mehr oder weniger isolierte Gattung innerhalb der Familie dar. *Platybaetis* gen.n. scheint mit *Pseudocloeon* eng verwandt zu sein und wird durch drei Arten vertreten. Eine Art kommt in Dr. Pescadors philippinischem Material vor. Die zweite Art wurde im Nymphenstadium 1955 von Ueno aus Nepal als "*Baetis* sp. 2" dargestellt. Die dritte Art ist in einer Sammlung von Baetidennymphen von Malaysia enthalten. (Sammlung Bishop, noch nicht veröffentlicht). So hat es den Anschein, daß diese zweite, neue Gattung weitverbreitet aber auf den Orient beschränkt ist.

## REFERENCES

- Klapalek, F. 1905. Plecopteren und Ephemeriden aus Java, gesammelt von Prof. K. Kraepelin 1904. *Mitt. Naturhist. Mus. Hamburg* 22: 103-107.
- Ueno, M. 1955. Mayfly nymphs. In: *Fauna and Flora of Nepal Himalaya. - Scientific Results of the Japanese Expedition to Nepal Himalaya 1952-1953.* 1: 301-316.