

## ***Platycloeon*, a New Genus of Baetidae (Ephemeroptera) from East Africa**

M.T. GILLIES and J. WUILLOT

M.T. GILLIES and J. WUILLOT: *Platycloeon*, a New Genus of Baetidae (Ephemeroptera) from East Africa.

Aquatic Insects, Vol. 19 (1997), No. 3, pp. 185–189.

The new genus *Platycloeon* is described for two East African species of Baetidae. It is characterised by the flattened facies of the nymph, the pronotum being wider than the head or than other segments of the thorax. Species included are *P. cooperi* sp.n. and *P. erepens* comb. n.

Keywords: Ephemeroptera, Baetidae, *Platycloeon*, East Africa.

M.T. GILLIES, Whitfeld, Hamsey, Lewes, E. Sussex, BN8 5TD, England.  
J. WUILLOT, Girond 0176, Mariac, France.

### INTRODUCTION

Under the name *Afroptilum erepens*, Gillies (1990) described a Baetid nymph from Tanzania with the unusual habit of crawling up vertical rockfaces or into the splash zone of waterfalls. Although not emphasised in the original description, the accompanying figure showed the pronotum of the nymph to be broader than any other part of the body.

We recently received 3 nymphs, collected by Professor S.D. Cooper from Kakamega Forest in Kenya, which have similar flattening of the pronotum but in a much more marked degree. These nymphs are otherwise reminiscent of *A. erepens* but lack the ratchet-like spines on the median filament so characteristic of that species. The two differ from other species of *Afroptilum* in a number of apomorphic characters, and the new genus *Platycloeon* is proposed for them here.

### DESCRIPTIONS

#### *Platycloeon* gen. nov.

*Adult*. Fore wing with single marginal intercalaries in most interspaces. Hind wing in known species small with broad, beaked costal spur, 2 longitudinal veins. Male forceps with 3 segments.

*Nymph*. Body flattened. Labrum twice to 2.5 times as broad as anteroposterior dimension; right mandible with divided canines, setal tuft present on both sides;

maxillary palp short with 2 segments; apical segment of labial palps cap-shaped, glossae/paraglossae subequal. Pronotum excavated medianally, 3–4 times as broad as long and broader than any other segment of the body. Femora flattened, tibiae lacking line of fine setae along anterior surface, tibial seam not discernible on any leg, tarsal claws in single or double row. Gills 7, asymmetrical. Cerci sparsely haired, median filament  $1/2$ – $2/3$  length of cerci.

Type species. *Platycloeon erepens* (Gillies) comb. n.

*Platycloeon cooperi* sp. n.

*Adult.* Not known.

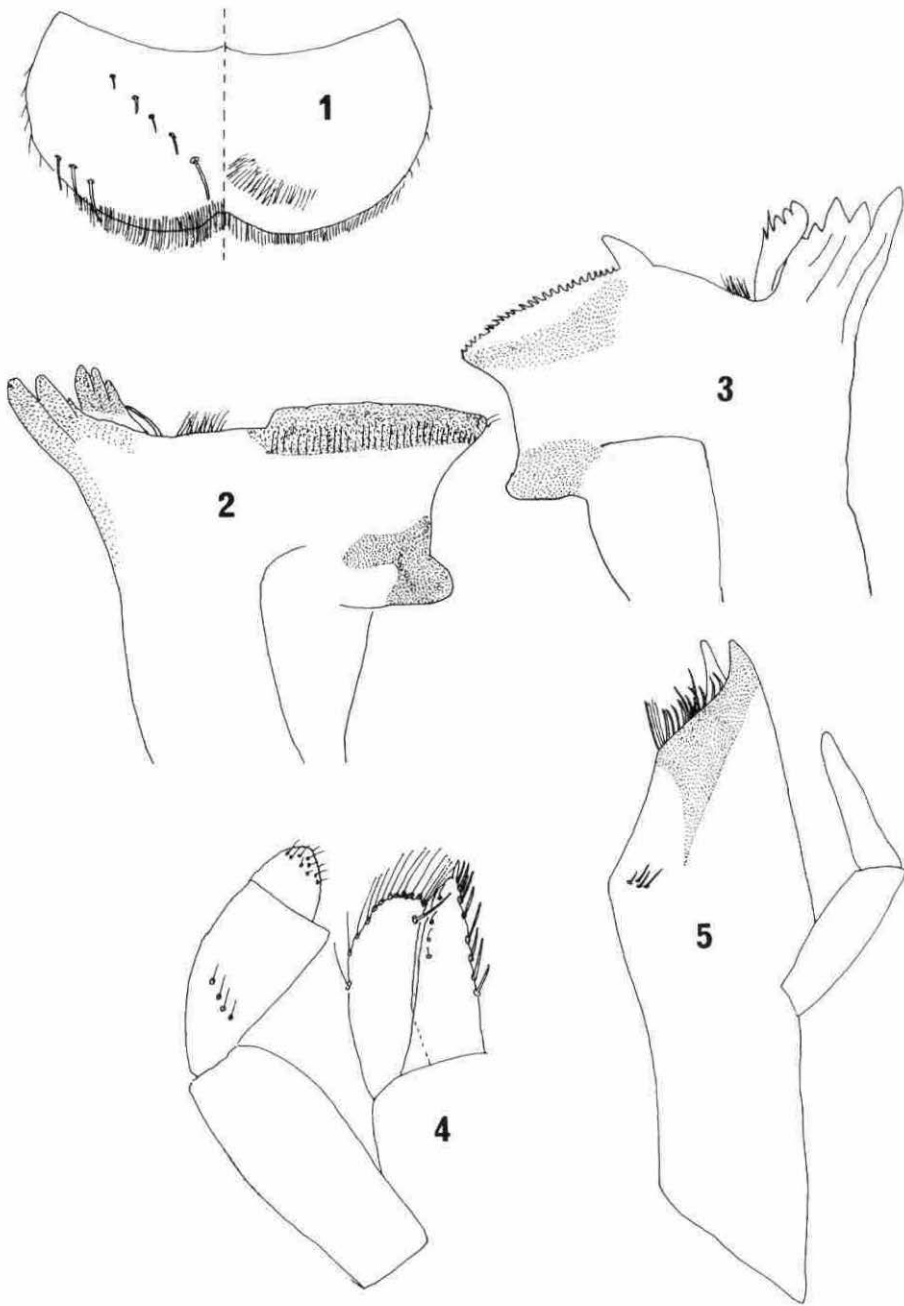
*Nymph.* Body strongly flattened. Mouthparts (Figs. 1–5): labrum 1.8 – 2.3 × as broad as long, anterior margin with double row of fine hairs; left mandible with fused canines, tuft of fine setae at base of prosthema, right mandible with canines partially divided, prosthema a slender process, pointed at tip; apical segment of labial palp cap-like. Pronotum (Fig. 6) in median area deeply emarginate, with broad flanges at lateral margins that extend beyond the thorax and are produced backwards at the posterior margins. Posterior margin of femur sparsely fringed with stout hairs, upper surface with scattered flattened setae; tarsal claw with a single row of 4–7 teeth. Gills (Fig. 8) present on abdominal segments I–VII, on I narrow, remainder broad and asymmetrical. Small median spurs present on terga I–III or IV; posterior margins of tergites with broad, sharp teeth. Cerci lightly feathered on inner margin; terminal filament  $2/3$  length of cerci, no ratchet-like spines on ventral surface.

Material: KENYA, *Holotype nymph* (on slide), Kakamega Forest, Isinza stream, 8.i.90, S.D. Cooper, *paratypes*, 2 nymphs, same provenance.  
Type deposited in Natural History Museum, London.

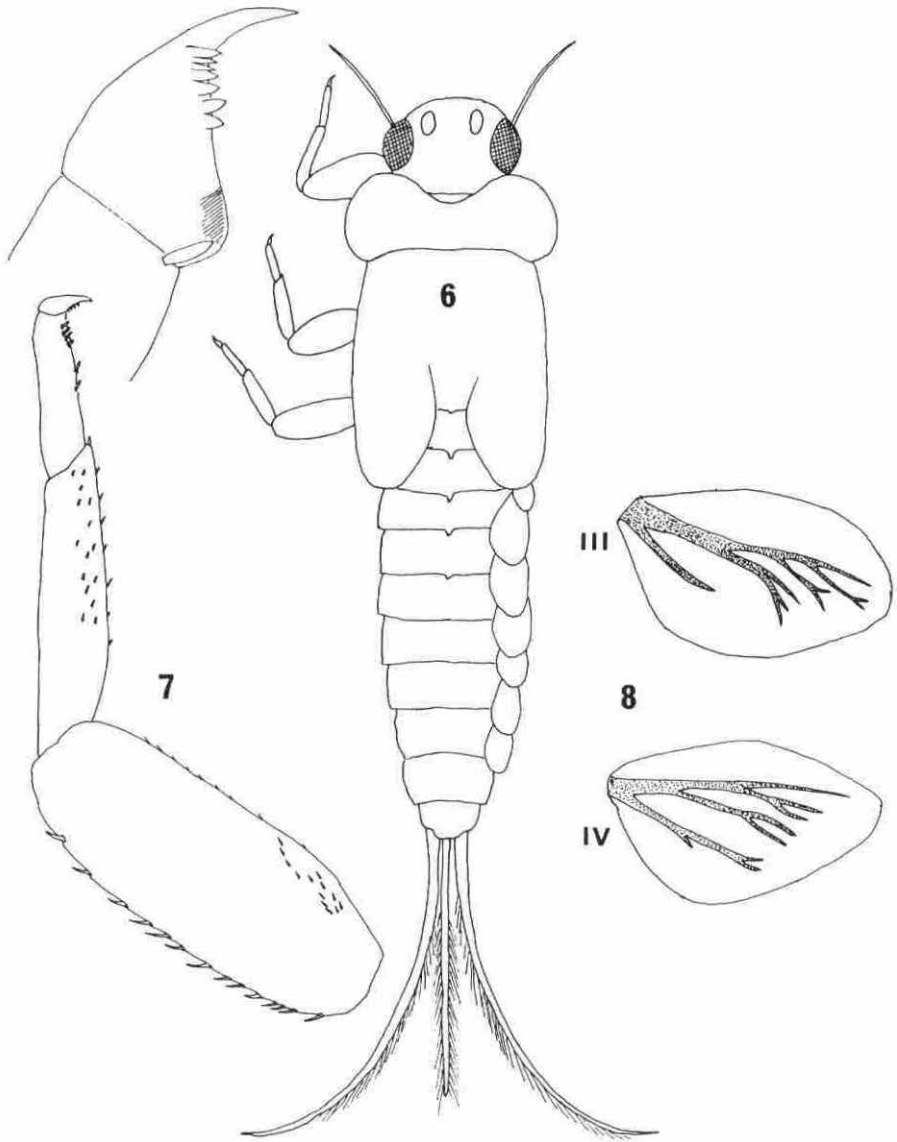
This species differs from *P. erepens* in the wider pronotum and the posterior extension of the lateral flanges, in the single row of tarsal claws, the absence of median tergal spurs on abdominal segments V–VIII, the longer terminal filament and the absence of ratchet-like spines on the ventral surface of the latter. The hairs on the posterior margin of the femora are also much sparser in *P. cooperi* than in *P. erepens*.

#### DISCUSSION

*Platycloeon* differs from all known Baetid genera in the great width of the pronotum which, in *P. cooperi*, has lateral flanges reminiscent of the Heptageniidae. The pronotum in *Platybaetis* Müller-Liebenau, a member of the *Baetis* group of genera, is much less broad (2× as wide as long, Müller-Liebenau, 1980), and is



Figs. 1-5. *Platycloeon cooperi*, mouthparts. 1: Labrum; 2, 3: Right, left mandibles; 4: Labium. 5: Maxilla.



Figs. 6-8. *Platycloeon cooperi*. 6: Nymph, dorsal; 7: Fore femur; 8: Gills.

narrower than the head capsule. While the development of the pronotum in *Platycloeon* and the width of the labrum are highly characteristic, it shares the plesiomorphic condition of the rest of the mouthparts with *Afroptilum*.

In the only species of which the adult is known, *P. erepens*, the wing venation is close to that of *Afroptilum*. With single marginal intercalaries in the adult wing

and a setal tuft at the base of the prostheca of the right mandible, *Platycloeon* is a typical member of the subfamily Cloeoninae, Kazlauskas (1972). *P. erepens* has the further characteristic of this group of a double row of teeth on the tarsal claws, although this has been lost in nymphs of *P. cooperi*. The genus is yet another example of the radiation of the Cloeoninae that has taken place in Africa since the break-up of Gondwanaland (Edmunds, 1972; Gillies, 1990).

It is always fascinating to watch the nymphs of *P. erepens*. At Amani, its type locality in Tanzania, they attach themselves to the moss-like vegetation in the few millimetres of water that trickle down vertical rock faces beside the main river. The whole site is kept wet by spray from the adjacent falls, and they can be seen shifting position across its surface as they search out new sites for grazing. They can also be netted from the borders of fast flowing streams where they presumably anchor themselves at the water line. Nothing is known of the behaviour of nymphs of *P. cooperi*, but its greatly flattened structure suggests it should also be sought on rocks close to the interface between water and air.

#### ACKNOWLEDGEMENTS

We are greatly indebted to Professor Scott D. Cooper of the University of California, Santa Barbara, for presenting us with his material from Kenya.

#### REFERENCES

- EDMUNDS, G.F. (1972): Biogeography and Evolution of Ephemeroptera. – *Annu. Rev. Entomol.* 17: 21–42.
- GILLIES, M.T. (1990): A revision of the African species of *Centroptilum* Eaton (Baetidae, Ephemeroptera). – *Aquatic Insects* 12: 97–128.
- KAZLAUSKAS, R.S. (1972): Neues über das System der Eintagsfliegen der Familie Baetidae (Ephemeroptera). – *Proc. XIIIth Internat. Congr. Entomology, Moscow, 2nd-9th August, 1968*, 3: 337–338.
- MÜLLER-LIEBENAU, I. (1980): *Jubabaetis* gen.n. and *Platybaetis* gen. n., two new genera of the family Baetidae from the Oriental Region, pp. 103–114, In FLANNAGAN, J.F. and MARSHALL, K.E., eds. *Advances in Ephemeroptera Biology*, Plenum Press, New York.