

POLYMORPHISM IN THE TURBINATE EYES OF AN AFRICAN *CLOEON*
(EPHEMEROPTERA: BAETIDAE)

BY M. T. GILLIES

The detailed studies of Müller-Liebenau, 1970, *Gewässer u. Abwässer* 48/49: 58, have shown that populations of *Baetis melanonyx* Pict. vary strikingly in the form of the turbinate eyes of the male imago. In eastern Europe these are tall, cylindrical and with fewer ommatidia, and they were described by Bogoescu, 1933, as a distinct species under the name, *B. kulin-drophthalmus*. In western Europe the eyes are shorter, "normal" in shape and with a greater number of ommatidia. In southern Europe intermediates occur.

A similar form of polymorphism occurs in the African Baetid, *Cloeon cylindroculum* (Kim.). Described from Malawi by Kimmins, 1955, *Ann. Mag. nat. Hist.* (12) 8: 865; this distinctive mayfly was subsequently recorded from Lake Victoria (Kimmins, 1960, *Bull. Br. Mus. nat. hist., Entom.* 9: 341). It is now known to have a wide distribution ranging from Senegambia in the west to Malawi in the south-east. Kimmins characterised the male of the species as having tall, cylindrical turbinate eyes, the ratio of height to width being 1.5 : 1. However, examination of material in the British Museum, together with specimens I have collected in Tanzania and West Africa shows that specimens with "normal" eyes, the ratio of height to width being about 1 : 1, are not uncommon. Of 11 males from Lake Victoria, examined in the collection of the British Museum, all except one have tall eyes. On the other hand, 5 out of 7 males from Tanzania, coming from the coastal belt, the inland region of Upare and the southern end of Lake Victoria, have broad eyes. Similarly, all males examined so far from The Gambia have broad eyes.

In other characters, both types of male are identical. A study currently in progress has shown that the nymph of *C. cylindroculum* is easily separable from other common African species of *Cloeon* and shows little variation. Moreover, specimens from localities in East Africa, where tall-eyed forms predominate, are identical with nymphs from The Gambia, from which broad-eyed forms have emerged. Thus, although I have not been able to associate a particular nymphal skin with a tall-eyed male, it seems almost certain that both forms belong to the same species.

These findings suggest that the kind of polymorphism described by Müller-Liebenau is not confined to the genus *Baetis*. Another African *Cloeon*, *C. areolatum* Nav., also has cylindrical eyes in the male. It will be interesting to discover whether the turbinate eyes of this Baetid mayfly vary in a similar way.

Whitfield, Hamsey, Lewes, Sussex.
February 24th, 1979.

PRIVATE LIBRARY
OF WILLIAM L. PETERS

October 22nd, 1979, vol. 114 (1978)