

COMMENTARY ON THE GENUS *ICHTHYBOTUS*
(EPHEMERIDAE) AND THE MISPLACED *I. DODECUS*
DUBEY*

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ABSTRACT. The recent description of certain mayflies from the Northwest Himalaya as a new species of *Ichthybotus* is shown to be untenable on the basis of known morphology. *Ichthybotus dodecus* Dubey is therefore designated as a taxon inquirenda. The genus *Ichthybotus* must continue to be regarded as dispecific and endemic to New Zealand.

Eaton (1889) established the genus *Ichthybotus* for the New Zealand species *I. hudsoni* (McLachlan) which had originally been considered in the genus *Ephemerella*. Tillyard (1923) added one additional species (*I. bicolor*) from New Zealand to this genus. Phillips (1930, 1931) in his studies of New Zealand Ephemeroptera presented a thorough taxonomic treatment of these species. The genus has traditionally been included in the family Ephemeridae and the superfamily Ephemeroidea (e.g. Edmunds *et al.*, 1963; Edmunds, 1972), although Demoulin (1957) had proposed a separate family, Ichthybotidae, for *Ichthybotus*. The species of *Ichthybotus* are the only Ephemeridae, and in fact are the only Ephemeroidea known from the Australian Region.

Dubey (1971) described the species, *Ichthybotus dodecus*, from four specimens of fully winged mayflies taken from the Pir Panjal Range of the Northwest Himalaya. In my account of Asiatic Ephemeridae (McCafferty, 1973), I did not treat this material nor recognize the genus *Ichthybotus* as occurring in Asia since I had only first seen reference to it in the very late stages of processing my paper. After further consideration since that time, however, I feel discussion is merited because of the rather far reaching zoogeographic and systematic implications that Dubey's paper may inappropriately invoke.

I. dodecus is erroneously placed and cannot be considered in the genus *Ichthybotus*, the family Ephemeridae, or the superfamily Ephemeroidea. Fore wing venational characterization which is of prime diagnostic value in distinguishing the Ephemeroidea from other superfamilies of Ephemeroptera is not found in *I. dodecus*. MP_2 and CuA are not strongly divergent from MP_1 basally as is the case with all Ephemeroidea. Even though it appears that *I. dodecus*

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was based on subimagos rather than imagos (a setal fringe is apparent on the wings), it can be seen that it possesses few generic character states in common with those of *Ichthybotus*. The shape of both the male and female head (as illustrated by Dubey) are much more developed ventrally than in any Ephemeridae that I have examined. The shape of the thorax and proportionality of leg segments are different than those of true *Ichthybotus*. The female of *I. dodecus* does not possess a well developed median terminal filament (as reported by Dubey); whereas, true female *Ichthybotus* possess a well developed median terminal filament. The structure that Dubey describes and figures as the female ovipositor is not to be found in *Ichthybotus* that I have examined. Only two character states may have been associated with those found in *Ichthybotus*: the four-segmented male forceps and the dissimilar tarsal claws in the male fore legs. These character states, however, are not exclusive to *Ichthybotus*, but rather are widespread in many groups of distantly related Ephemeroptera.

Although it has been shown that *I. dodecus* cannot be considered as a true member of the genus *Ichthybotus*, and that a generic recombination is appropriate, a formal nomenclatural change is not proposed at this time. Nevertheless, *I. dodecus* Dubey is designated as a taxon inquirinda. It therefore remains for a specialist to determine the validity of the species and the correct systematic disposition. *Ichthybotus* must continue to be considered dispecific and restricted in distribution to New Zealand.

REFERENCES

- DEMOULIN, G. 1957. Remarques critiques sur la position systématique des *Ichthybotus* Eaton, Epheméroptères de Nouvelle-Zélande. *Bull. Ann. Soc. Roy. Ent. Belge* 93 : 335-337.
- DUBEY, O.P. 1971. Torrenticole insects of the Himalaya VI. Descriptions of nine new species of Ephemerida from the Northwest Himalaya. *Oriental Ins.* 5 : 521-548.
- EATON, A. E. 1899. An annotated list of the Ephemeridae of New Zealand. *Trans. Ent. Soc. London* 1899 : 285-293.
- EDMUNDS, G. F., Jr. 1972. Biogeography and evolution of Ephemeroptera. *Ann. Rev. Ent.* 17 : 21-42.
- EDMUNDS, G. F., Jr. R. K. ALLEN and W. L. PETERS, 1963. An annotated key to the nymphs of the families and subfamilies of mayflies (Ephemeroptera). *Univ. Utah Biol. Ser.* 13 : 1-49.
- MCCAFFERTY, W.P. 1973. Systematic and zoogeographic aspects of Asiatic Ephemeridae (Ephemeroptera). *Oriental Ins.* 7 (1) : 49-67.
- PHILLIPS, J.S. 1930. A revision of the New Zealand Ephemeroptera. Part. I. *Trans. New Zealand Inst.* 61 : 271-334.
- PHILLIPS, J.S. 1931. Studies of New Zealand mayfly nymphs. *Trans. Ent. Soc. London* 79 : 399-422.
- TILLYARD, R. J. 1923. Description of two new species of mayflies from New Zealand. *Trans. New Zealand Inst.* 54.