

**A NOTE ON THE BEHAVIOUR OF *BYADERA HYALINA* SELYS
IN THE RAIN (ZYGOPTERA: EUPHAEIDAE)**

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The behaviour of adults closely before and during rainfall at Shillong, India, is brought for the first time on record for an euphaeid dragonfly. The behaviour and wing posture during the rain are in agreement with the observations on European *Calopterygidae*. The wing posture during cloudy weather, however, is different from that in *Calopteryx*. An annotated review is given of the literature on the euphaeid behaviour, and it is stressed that, contrary to *B. indica* (Sel.), *B. hyalina* is an essentially arboreal species.

INTRODUCTION

Dragonflies, in general, are sun-loving insects, although some species are noted by their crepuscular behaviour, being active at dusk or after sunset (cf. e.g. INAGAKI, 1973). As a rule, no odonate species are on wings in rainy days, and little is known on their whereabouts during bad weather conditions (for the zygopterans cf. e.g. HEYMER, 1973; CRUMPTON, 1975). It seems worthwhile, therefore, to briefly record our observations on *Bayadera hyalina*, made at Shillong, India. The more so, since the literature on the euphaeid behaviour is still rather sparse.

OBSERVATIONS

On April 20, 1975, at 9.30 a.m., two adult males and six adult females were observed sitting at various intervals on an unused, horizontal electric wire. They were perching with the abdomens held at an angle to the wire, the wings folded

nearly vertically over the abdomen. It was about to rain, but on the spot there was still some bright sunlight. Now and then, an individual would take a short flight in pursuit of a prey, returning almost immediately to the same perching site.

After about 10 minutes, clouds covered the whole sky, and as soon as a few raindrops started falling, all dragonflies changed their sitting posture and bent their abdomens downwards, the wings now being in a horizontal position. No individual could be seen chasing prey any more; they seemed reluctant to take to flight in the rain.

Slowly the intensity of the rain increased and, at a certain moment, the insects were no longer sitting on the wire, but hanging with their abdomens vertically. No other movement could now be observed except that, now and then, one of the forelegs wiped the water off the forehead and eyes, and drops of water could be seen trickling down their suspended abdomens.

DISCUSSION

To our knowledge, only a few workers have so far dealt with the behaviour of the adult euphaeid dragonflies, viz. FRASER (1934, *Bayadera indica* [Sel.]), LIEFTINCK (1936, *Euphaea variegata* Ramb., *Dysphaea dimidiata* Sel., with photographs; – 1948, *D. dimidiata*; – 1959, *D. dimidiata*, with figures), BUCHHOLTZ (1955, *Epallage fatime* [Charp.]), BILEK (1967, *E. fatime*), and HEYMER (1975, *E. fatime*, extensive treatment of larval and adult behaviour, with numerous figures and photographs). The behaviour under unfavourable weather conditions, however, has never been described.

The behaviour of some European representatives of the allied *Calopterygidae* has been dealt with *in extenso* by HEYMER (1973), who has noticed, in some *Calopteryx* species, that "when there is rainfall, they suspend themselves vertically beneath leaves, and when the sky is cloudy they adopt a specific wing posture". Our observations on wing posture and the vertical suspension of *Bayadera hyalina* during the rainfall are in perfect agreement with Heymer's description and with his figure 14. The wing posture during the cloudy weather, however, in *B. hyalina* was quite different from that in *Calopteryx haemorrhoidalis* (Vander Lind.), recorded and illustrated by Heymer in his figure 15.

Finally, it should be noted that *B. hyalina* is an essentially arboreal species, individuals of both sexes perching, in bright weather, high up on trees. *B. indica* (Sel.), on the other hand, according to FRASER (1934) perches "on prominent rocks or twigs projecting from the water in mid-stream".

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