

Observations on the Oviposition Of a Species of *Baetis* (Ephemeroptera)

ON JULY 17, 1956, the author was collecting mayfly nymphs in Pine Creek, Wildcat Den State Park, near Montpelier, Iowa. The stream was extremely low, normally having a steady flow over many rapids areas, followed by deeper and slower "flats." At this time, the "flats" were reduced to small, but continuous, pools and the rapids to small trickles over the bed of limestone rocks. The day was cool, overcast and without wind.



One of the first stones in the rapids area which was overturned had the characteristic inhabitants of mayfly nymphs (*Isonychia* sp., *Stenonema* spp. and *Baetis* sp.), caddis fly larvae and crustaceans; in addition, there was a single female imago-adult-of *Baetis* in the act of oviposition—the laying of eggs. This behavior of actually entering the water has been noted as a unique behavior for the genus, *Baetis*. The rock from which this female was taken was completely submerged; the specimen was on the bottom of the rock—that is, between the rock and the gravel-sand bottom.

In a few minutes another totally submerged rock was found to have a specimen of *Baetis* attached. She too, was

apparently ovipositing. Certainly, both specimens would have met immediate death by drowning following oviposition.

Lastly, one more female was found, this time on the side of a rather large rock. Some time was spent in observing her actions. The wings, very crumpled, were pushed to the right side of the abdomen; slowly she moved forward, the basal one-third of her abdomen touching the surface of the rock. As she proceeded, the abdomen was moved laterally, first towards one side, then towards the other. After this had been observed for a sufficient length of time, the specimen was placed in alcohol with the others.

An exact determination of the species has been impossible as yet, since no males were found in the immediate vicinity. Judging by the general coloration of the body, and by the venation and form of the hind wing, these specimens may likely be *Baetis frivulus* McDunnough. This determination has received some further substantiation by the fact that many specimens of *B. frivulus* were collected in the Quad-City region that summer.

Thus, in summary, this report has substantiated the characteristic method of oviposition of the genus, and perhaps for the species *B. frivulus*. In addition, it was found that during ovipositing, this baetid has a decided preference for the lower surface of stones, next to the substrata, rather than for the exposed surfaces, where other recorded instances of oviposition have been observed.

— Thomas B. Thew

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