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***Anaphes* (Hymenoptera: Mymaridae) Reared from the Eggs of a Shore Fly (Diptera: Ephydriidae)**

R. W. Thier
Kent State University

Richard S. Zack
Kent State University

B. A. Foote
Kent State University

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ENTOMOLOGICAL NOTES

A POSSIBLE CASE OF SPATIAL ISOLATION IN BRINE FLIES OF THE GENUS *EPHYDRA* (DIPTERA: EPHYDRIDAE)

During the summer of 1975, adults and larvae of *Ephydra riparia* Fallen and *E. cinerea* Jones were encountered in the many brine pools occurring on the property of the Morton Salt Company at Rittman, Wayne County, Ohio (Scheiring and Foote, 1973). Larvae of both species have been reported to be salt tolerant (Bayly, 1972). *E. riparia* larvae can survive in salinities up to 80°/oo (Sutcliffe, 1960), and the larvae of *cinerea* have been encountered by Nemenz (1960) in the Great Salt Lake of Utah at a salinity of 300°/oo.

At the Rittman site, brine pools of differing salinity are found. In pools which are formed from leakage from underground pipes, the salinity ranged from 12-18°/oo. In addition to these small pools there is one large pool into which sludge from the salt plant is pumped. The salinity of this pool ranged from 32-35°/oo. Although the salinity tolerance range of *riparia* seemingly would include the water of the large sludge pool, larvae and adults of this species were rarely found in or around this pool. At the same time, larvae and adults of *cinerea* were rarely found in the numerous small pools having lower salinities, although they were extremely abundant in the sludge pool. This spatial isolation was found even though the distance, about 100 meters, between the pools of differing salinities, could have been easily traversed by adults of either species. Thus, by restricting itself to pools of lower salinity, *riparia* may be ecologically isolated from the more salt-tolerant *cinerea*.

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LITERATURE CITED

- Bayly, I. A. E. 1972. Salinity tolerance and osmotic behavior of animals in athalassic saline and marine hypersaline waters. *Annu. Rev. Ecol. Syst.* 3:233-268.
 Nemenz, H. 1960. On the osmotic regulation of the larvae of *Ephydra cinerea*. *J. Ins. Physiol.* 4:38-44.
 Scheiring, J. F., and B. A. Foote. 1973. Habitat distribution of the shore flies of northeastern Ohio (Diptera: Ephydridae). *Ohio J. Sci.* 73:152-156.
 Sutcliffe, D. W. 1960. Osmotic regulation in the larvae of some euryhaline Diptera. *Nature* 187:331-332.

Richard S. Zack, R. W. Thier, and B. A. Foote
 Department of Biological Sciences
 Kent State University
 Kent, Ohio 44240.

ANAPHES (HYMENOPTERA: MYMARIDAE) REARED FROM THE EGGS OF A SHORE FLY (DIPTERA: EPHYDRIDAE)

Members of the family Mymaridae are obligate parasitoids of insect eggs, and some species attack the eggs of aquatic insects. Only one account of egg parasitism by the mymarid genus *Anaphes* on Diptera has been disclosed in the literature. Bakkendorf (1971) bred *Anaphes autumnalis* Foerster from an egg of *Tipula autumnalis* Loew.

From late August through September, 1975, adults of a species of *Anaphes* were repeatedly reared from eggs of *Parydra* sp., probably *P. quadrituberculata* Loew (Diptera: Ephydriidae). Observations were made from eggs collected along a drainage ditch in Portage Co., Ohio.

The ephydrid eggs had been deposited on reeds, stones, and other objects which protruded above the mud shores bordering the ditch. The eggs were covered with a white to slightly green granulose coating composed of diatoms. The female applied this protective coating by defecating over the eggs following oviposition. The eggs measured approximately 0.84 mm by 0.24 mm and were deposited conterminously in clutches of 1 to 15, with 4 to 5 being the mean clutch size. Eggs normally hatched in 2 to 3 days with *Parydra* larvae escaping the egg chorion via a small apical opening. Adult wasps emerged from parasitized eggs through an enlarged circular opening made in the dorsal surface of the egg apex.

Adult wasps emerged on five separate dates from *Parydra* sp. eggs collected 22 August 1975 and 12 September 1975. Assuming that the eggs had been parasitized shortly before we collected them, the larval-pupal development of *Anaphes* sp. required 7 to 15 days, with 11.4 days being the mean development period.

These rearings represent the second record of the genus *Anaphes* parasitizing the eggs of Diptera. The rearings also represent a subordinal host extension from Nematocera, family Tipulidae, to Cyclorrhapha, family Ephydriidae.

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LITERATURE CITED

Bakkendorf, O. 1971. Description of *Oligosita tominici* n.sp. (Hym., Trichogrammatidae) and notes on the hosts of *Anagrus atomus* (L.) and *Anaphes autumnalis* Foerster (Hym. Mymaridae). Entomophaga 16:363-366.

R. W. Thier, Richard S. Zack, and B. A. Foote
Department of Biological Sciences
Kent State University
Kent, Ohio 44240

A NEW PREY RECORD FOR *CERCERIS FUMIPENNIS* SAY (HYMENOPTERA: SPHECIDAE: CERCERINI)

The sphecid wasp tribe Cercerini is comprised of the genera *Cerceris* and *Eucerceris*, the former being widely distributed and the latter restricted to North America. All species of *Eucerceris* for which prey records have been determined utilize snout beetles or weevils (Curculionidae) to feed the young. In North America, known prey records for *Cerceris* include members of the beetle families Buprestidae, Tenebrionidae, Chrysomelidae, Bruchidae, and Curculionidae. Some European members of the genus have been reported to provision the nests with other hymenopterans (e.g. solitary bees of the families Halictidae and Andrenidae) in addition to beetles.

An adult female of the solitary wasp, *Cerceris fumipennis* Say was collected in the Rose Lake Wildlife Experiment Station area in Clinton County, Michigan on 15 July 1973, as she flew along a sandy road. At the time of collection she was carrying an adult male of the buprestid, *Buprestis maculativentris* Say. To the author's knowledge, this is