N O T E

Host Record for Dilophotopsis Concolor Crassa (Viereck) (Hymenoptera: Mutillidae)[1]

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Since the establishment of the genus *Dilophotopsis* by Schuster (1958, Ent. Am. 37: 1-130), the natural history of this genus has remained unknown. *Dilophotopsis* species occur in the western and central U.S. (Schuster 1958; Ferguson 1967, Brigham Young Univ. Sci. Bull., Bio. Ser. 8: 1-26). Adult males of *Dilophotopsis* are nocturnal and traditionally have been collected with light traps. Females of *Dilophotopsis* are unknown but are presumed to be active at night also. It is not known where these mutillids reside during the day. Males may reside in the leaf litter at the base of bushes during the day, as is the case with other nocturnal mutillid species (e.g., *Odontophotopsis* species) (Ferguson 1963, Pan-Pacific Ent. 39: 65-66).

Dilophotopsis species are presumed to be parasitoids as are other mutillids. However, little has been reported for host records of other nocturnal species of mutillids. Of the approximately 192 nocturnal mutillids species, hosts are known for only 10 species. The known hosts include several different families of solitary aculeate Hymenoptera such as Crabronidae, Sphecidae, Apidae, Megachilidae, Sapgyidae, Pompilidae and Vespidae (Eumeninae) (Krombein, 1979, *In* Catalog of Hymenoptera in America North of Mexico. Smithsonian Institution Press, Washington, DC, 2735 pp). One seemingly aberrant species, *Odontophotopsis eubule* (Cameron), was reared from an ootheca of *Arenivaga genitalis* Caudell (Blatteria). *Evaniella neomexicana* (Ashmead) (Hymenoptera: Evaniidae) also emerged from the same ootheca. However, it remains unclear whether the mutillid's host was the cockroach or the ensign wasp (Mickel 1974, Ann. Entomolo. Soc. Am. 67: 461-471).

In a study of Mutillidae from the southwestern U.S., four specimens of *Dilophotopsis concolor crassa* Viereck were found that had been reared from their host cocoon. The host cocoon and data were still associated with the specimens. The four mutillids had been reared from the cocoons of a *Tachysphex* species (Hymenoptera: Crabronidae) by R. C. Newton in Shoshone, ID on 4 June 1955. Only one mutillid

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emerged from each crabronid cocoon. The *Tachysphex* cocoons contained silken cocoons, which is consistent with the mode of pupation known in other mutillid species that pupate within their host's cocoons. This represents the first host record for the genus *Dilophotopsis* and for the species *D. concolor crassa.*

Tachysphex species (Hymenoptera: Crabronidae) are ground-nesting wasps. They usually construct shallow, multicellular nests that are provisioned with one to several prey (Bohart and Menke 1976, Sphecid Wasps of the World: a Generic Revision. University of California Press, Los Angeles. 695 pp.; Krombein 1979). *Tachysphex* are known to have several hymenopteran parasitoids, including *Hedychridium fletcheri* Bodenstein (Chrysididae) parasitic on *T. similis* Rohwer, and two nocturnal mutillid species, *Sphaeropthalma orestes* (Fox) parasitic on *T. tenuipunctus* Fox, and *S. nanula* (Dalla Torre) parasitic on an undetermined species of *Tachysphex* (Bohart and Menke 1976, Krombein 1979).

The four voucher specimens of both the mutillids and crabronid cocoons are deposited in the United States Entomological Collection, Department of Entomology, U.S. National Museum of Natural History, Washington, DC.

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