Rediscovery of the introduced mayfly *Caenis nigropunctata* (Ephemeroptera: Caenidae) in Waimanalo Stream, O'ahu

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The aquatic insect fauna of the Hawaiian Archipelago is represented by taxa derived from groups that typically exploit marine littoral environments (such as *Brachiptra* in the families Ephydridae, Canacidae, and Chironomidae) or are derived from ancestral stock that had the ability to disperse over considerable distances, such as the Odonata (Howarth & Potterhaus, 1991). Other groups well-represented in continental settings are absent: no native Ephemeroptera, Plecoptera, or Trichoptera are found in the Hawaiian Islands. Taxa in these orders characterize tropical forests and high-altitude mountainous areas (600-1,000 m) that limit their ability to disperse over the great distances required for mid-ocean colonization.

This paper details the rediscovery of the introduced mayfly, *Caenis nigropunctata* (Klapalek) in Hawai'i. Voucher specimens are deposited in Bishop Museum (BFHM).

**Ephemeroptera: Caenidae**

*Caenis nigropunctata* (Klapalek) Rediscovery

Larvae observed and collected in September 1997 and again September 1999 in pool habitat on silt-covered basaltic cobble substrate in lower Waimanalo Stream, O'ahu.

The specimens described here represent the rediscovery of the introduced aquatic insect order Ephemeroptera in the Hawaiian Islands. *Caenis nigropunctata* apparently was an accidental introduction. The first specimens found of this species were recorded in 1954 in Honolulu. By 1948 they were recorded from Pearl City to Makua Valley and in Kailua on the windward side of O'ahu where adults were reported to be abundant near lights (Zimmerman, 1957). Since that time, no published records or museum specimens were located confirming the occurrence of *C. nigropunctata* in Hawai'i. The Bishop Museum collection contains a single specimen, an adult from the Kailua area collected in 1948. Some previous publications regarding *C. nigropunctata* in Hawai'i used the generic name *Caenodes* for this species; however, Malascher (1993) now places the species in the genus *Caenis*. *Caenis nigropunctata* is a tropical species from the southern hemispheric; its range includes Java, Sumatra, Bali, the Philippines, and China (Zimmerman, 1957). Dudgeon (1999). Caenids are small, typically less than 10 mm in length. Many caenids possess

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