ON THE OCCURRENCE OF THE COMMENSAL ASELLOTE *CAECIJAERA HORVATHI* MENZIES, 1951, IN HAWAII

BY

WILLIAM J. COOKE

Department of Zoology, University of Hawaii, Honolulu, Hawaii, U.S.A.

Menzies (1951a) first described *Caecijaera horvathi* from wooden test blocks submerged in Los Angeles Harbor. At that time he commented on the probable association of this asellote with the boring isopod "*Limnoria* sp." (later identified as *L. tripunctata* Menzies, 1951b). Kussakin (1962) described three other species of this genus from boreal waters of the USSR. Since that time no other records or ecological information have been published. Specimens identified as *C. horvathi* were first collected in Hawaii on March 13, 1975 from an untreated Douglas fir (*Pseudotsuga taxifolia*) test block submerged for six months at 1 meter depth below the pier at Makai Range, Makapuu, Oahu (21°19.3'N 157°40.3'W). The surface of the test block was heavily infested by *Limnoria tripunctata* and all of the *Caecijaera* specimens were collected from the *Limnoria* tunnels. This test site is on the southeast, windward side of the island, and is characterised by clean, low nutrient, open-ocean water, and a very sparse fouling community. A total of 114 *C. horvathi* specimens have been collected throughout the year from several successive test blocks at this site. No other specimens have been collected at seven other test sites in Pearl Harbor and Kaneohe Bay maintained by the Marine Environmental Management Office, Naval Ocean Systems Center.

A comparison of the local material with the original description showed slight differences in the following features. The anterior projection of the expanded basal article of the first antenna reaches forward to, or just beyond the articulation of the second and third articles in this material (fig. 1a) while reaching only half the length of the second article in the California material. The Hawaiian specimens also lack setae on the posterior margin of the basal article of the second antenna, although these are shown for the California specimens. The inner edge of the second article of the seventh pereiopod is shown as serrate in Menzies' figure, while this article is relatively smooth in Hawaiian specimens. The largest difference is in the apex of the male first pleopod, which is shown as having a short knob-like projection on the lateral edge of the distal end. In the Hawaiian material, this projection was usually long and sometimes slightly curved (fig. 1b). Only the five shortest male specimens, all shorter than 0.9 mm, had the short terminal projections, similar to those shown in Menzies' original figure. All males greater than 1 mm had the enlongated projections. Since the maximum size recorded in the Hawaiian specimens was 1.8 mm, not significantly larger than Menzies' specimens, it does not seem likely that Menzies had only young males, but that the difference in the pleopods is real between the two populations. These differences are still slight compared to the differences between *C. horvathi*, and the Siberian species *C. mirabilis, C. derjugini,* and *C. borealis.*

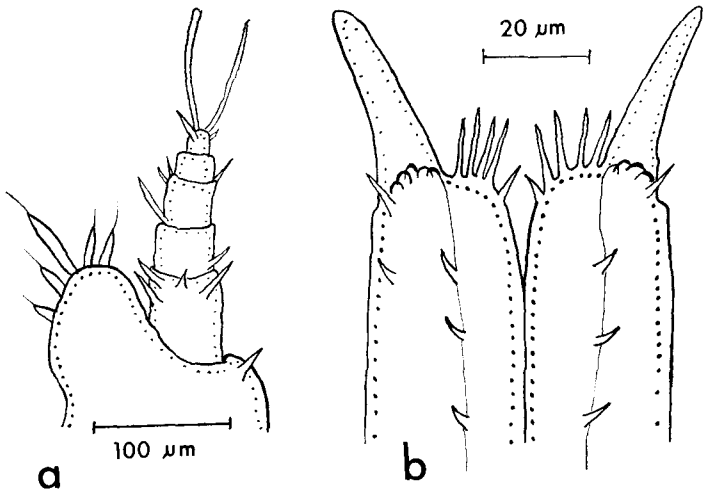

Fig. 1. *Caecijaera horvathi* Menzies from Hawaii. a, first antenna showing basal segment extending to articulation of second and third segments; b, distal portion of fused male first pleopods showing long projections.

Males and females were evenly represented in the collections (54 males, 57 females, and 3 juveniles). Reproductive females were found in all collections, and usually carried five to seven embryos, with ten being the most ever observed. Females with very early and very late stage embryos were found together in collections throughout the year. As the test blocks are submerged for six months, and significant *Limnoria* infestation requires at least three months at this site, it seems likely that Hawaiian *C. horvathi* can complete a life cycle in somewhat under three months.

The failure to find *C. horvathi* at the other, more polluted, sites where *Limnoria tripunctata* is found suggests that the requirements for *C. horvathi* may be more restrictive than for *Limnoria tripunctata*. *C. horvathi* in Hawaii could also be merely a recent, transient introduction from California. The slight but constant differences perhaps due to founder effect argues against this explanation however. More data would be needed to investigate these speculations.

More collections of boring communities from normal, unstressed environments are clearly needed. Investigators of boring communities with large *Limnoria* populations are encouraged to examine their samples for *Caecijaera*.

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