



New species and records of *Liposcelis* Motschulsky (Psocoptera: Liposcelididae) from Hawaii with first description of the male of *Liposcelis bostrychophila* Badonnel

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Abstract

Sampling of arthropods in ground and woody vegetation habitats in highland areas on the islands of Hawaii and Maui revealed six species of psocids of the genus *Liposcelis*. Three are new and are here described. *L. maunakea* sp. n. and *L. volcanorum* sp. n. are closely related and form a small species complex together with *L. nasus* Sommerman and *L. deltachi* Sommerman from southwestern United States and northern Mexico. A key to the species of this complex is included. The third new species, *L. kipukae* sp. n., is a member of group II-C with only 5 ommatidia in the eye. A key to the known species of group II-C with fewer than 7 ommatidia in the eye is included. First Hawaiian records are presented for *L. bostrychophila* Badonnel, *L. deltachi*, and *L. rufa* Broadhead. The first known males of *L. bostrychophila* are reported and described. This species is very widespread, but generally parthenogenetic.

Key words: Psocoptera, Liposcelididae, *Liposcelis*, Hawaii, new species, new state records

Introduction

The psocids of the genus *Liposcelis* are easily overlooked, except when one of these minute insects is found crawling across a desk top or across the page of a book, or when a previously unopened box of cereal is found to be swarming with these insects. Approximately 120 species are known, and the genus is found on nearly all continental regions, but very little is known of its occurrence in the islands of the Pacific Basin.

Zimmerman (1948) recorded what he believed to be a single species of *Liposcelis* from Hawaii. He noted that it was domestic in the sense of being found in human buildings (warehouses, stores, kitchens, etc), about a millimeter or somewhat more in length, and grayish white or pale yellow in color. He assigned to it the name *L. divinatorius* (Müller, 1776). Thornton (1981) accepted Zimmerman's identification of the pale domestic species. Subsequently, this name, corrected to *L. divinatoria*, has been declared a nomen dubium (Lienhard, 1990). Thus, we do not know the name of the domestic species of *Liposcelis* in Hawaii, nor if only one species is represented. Thornton (1981) also recorded a second Hawaiian species with a dark band across the abdomen, but did not identify it. At present, then, we know that the genus *Liposcelis* is represented in Hawaii by more than one species, but none have been identified to species.

The present paper reports six species of *Liposcelis* from two highland areas of Hawaii, one on the island of Hawaii and one on the island of Maui. Three of the species are new, and three represent new records for Hawaii. Two of these, *L. bostrychophila* Badonnel (1931) and *L. rufa* Broadhead (1950), are widespread species known from both domestic and outdoor biotopes. The other one, *L. deltachi* Sommerman (1957), was