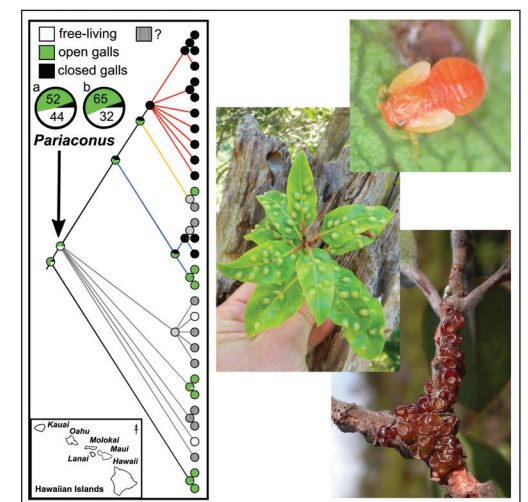


A remarkable radiation of jumping plant lice, or psyllids, in the Hawaiian Islands reveals complex patterns of variation indicative of dynamic evolutionary processes. These small, herbivorous insects have diversified on a single, highly variable host plant by partitioning the host plant phenospace. They appear to have done this by partitioning the host ecologically, making different gall types on different plant parts, and by fine scale temporal and spatial partitioning. The genus, *Pariaconus*, is redescribed and 25 new species are described, taking the total number of species in the radiation to 36 named taxa with more species likely still to be discovered. The host plant, *Metrosideros polymorpha*, is one of the most widespread and iconic species in the native Hawaiian flora, known locally as 'ohia' or 'ohia lehua'. Yet, despite being both widespread and abundant, this plant species is known to be vulnerable to a variety of ecologically devastating processes, e.g. a fungal pathogen causing "rapid ohia death", which could precipitate local extinction in many of the rarer *Pariaconus* species. *Pariaconus* provides a superb model system for understanding evolution in herbivorous insects. The 36 species are distributed throughout the Hawaiian Islands and provide many natural replicates for testing hypotheses of plant-insect interaction, host manipulation during galling, parallel evolution, and sympatric speciation.

MAKING THE MOST OF YOUR HOST: THE *METROSIDEROS*-FEEDING PSYLLIDS (HEMIPTERA, PSYLLOIDEA) OF THE HAWAIIAN ISLANDS

BY
DIANA M. PERCY



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