Insect Collecting on Lanai

BY R. L. USINGER

(Presented at the meeting of December 5, 1935)

The small island of Lanai, privately owned for many years, has remained but little known or explored entomologically due to the difficulties encountered in gaining access to it. First collected by the Rev. Thomas Blackburn for the brief period of one week in 1878, it has since been studied more carefully by Perkins during the winter of 1893-1894 and later, 1894 and 1896, for a period totalling four months, and by Giffard who made two trips for the purpose of collecting, one in 1907 and the other in 1917. Except for a certain amount of attention devoted by Illingworth and others to the economic pests of the pineapple fields this completes the collecting done on this island.

It was my privilege, in company with Mr. F. R. Fosberg of the University of Hawaii, to spend a week's time in collecting on Lanai. During this time Mr. George C. Munro and Mr. and Mrs. James Munro extended every possible courtesy to us. Their hospitality and genuine interest contributed in no small measure to the success of the trip and were greatly appreciated.

Considerable consternation was expressed by Mr. Giffard[1] at the condition of the native forest in 1907 and its danger of annihilation due to the depredations of goats, sheep, and cattle. It is true that lower parts of the mountains have suffered considerably on this score but, in general, the forest is much more extensive and in much better condition both in the high parts of the mountains, 2000 to 3400 ft., and in the upper portions of the valleys than at any time previously during the present century. This is largely due to the untiring efforts of Mr. George C. Munro, an ardent naturalist who, since 1910, has constantly been striving to protect and build up the native forest. This work has been carried on not only for aesthetic and biological reasons but also for the very practical purpose of insuring and protecting the water supply as well

[1] Giffard, W. M., Presidential Address on Insects of Lanai: Proc. Haw. Ent. Soc., I, pp. 176-184, 1908.

as for resistance to the very active wind erosion which, in some places, was literally blowing the island to sea. A rigorous campaign against the goats and sheep has been waged since about 1912 with the result that none of these animals were seen although I visited all of the principal regions of the Island which were of any interest entomologically. In addition the cattle have been fenced off so that the Island now supports several thriving patches of lowland dry forest on the northwest end of the plateau in the general vicinity of Kanepuu, Kapukaloa, and Keoneheehee. Forests of this type must once have been typical of the lowlands of all the islands but are now practically non-existent except on Lanai and Hawaii where dry forests of a slightly different type occur. Botanically these regions represent one of the most interesting elements of the entire Hawaiian flora but, unfortunately for the entomologist, the ants have wiped out what once may have been a considerable endemic insect fauna. At present the insect fauna of this region is dominated by ants, cockroaches of several species, and *Siphanta acuta* (Walk.). Other widespread or introduced species included several anobiids, psocids, the large carpenter bee, the sphingid moth *Herse cingulata* (Fabr.), *Coleotichus blackburniae* White, *Hyalopeplus pellucidus* (Stål), etc.

The dryness of the upland forest along the main ridge of the Island described by Perkins[1] was further substantiated by the very low yearly rainfall figures given by Wentworth[2] for the region. Evidently conditions have either changed considerably since Perkins' time or else we visited the island during a particularly wet season because the forest was found to be rather dense, quite wet, and often moss-covered, appearing quite typical of middle forest areas of any of the islands except for the absence of really high trees. Much of the actual moisture present condenses on the trees from the dense fog blown across from the northeast. This fog drip, as one discovers by camping overnight in the region, is a very important factor, amounting to an almost continuous dripping at times.

No attempt will be made to list all of the insects collected because many such captures were simply duplications of previous records. In general insects were as abundant as they are else-

[1] Perkins, R. C. L., Fauna Haw. Intro., p. xx, 1913.
[2] Wentworth, C. K., Geology of Lanai, B. P. Bishop Mus. Publ., Bull. 24, 1925.

where under similar conditions. The best trees for collecting were *Coprosma pubens, Metrosideros polymorpha, Straussia,* and *Gouldia terminalis* on the ridges, fern fronds and *Pipturus albidus* in the valleys and a low *Euphorbia* on the dry hillsides. The apparent absence of the previously reported *Plagithmysus* and *Metrarga* (this latter usually occurring in Ieie vines where a diligent search was made for it) was offset by the abundance of *Proterhinus* and nitidulid beetles and *Nysius* bugs. A new species of *Dictyophorodelphax* was taken on *Euphorbia.* It is closely related to the Oahu and Maui species and is found on the same host. *Reduviolus nubigenus* Kirk. was found commonly on Lehua along the ridge from Lanaihale to Haalelepaakai, the type locality being the latter station. The series of specimens taken exhibits striking sexual dimorphism, the males in every case having a ground color of mottled or spotted dark gray while the females are decidedly lighter with a ferrugineous ground color. The rather rare cymoid bug, *Sephora criniger* (White), was common on the broad green fronds of *Sadleria* and other ferns particularly along the stream bed in Kaiholena Gulch.

In conclusion it might be suggested that those interested in particular groups which require special methods of collecting will doubtless find a well-nigh virgin field here while others will find pleasure in rediscovering species which the early collectors predicted would soon be lost. Certainly Lanai, in its present state of preservation, offers a fertile and little explored field for insect collecting.