

**Notes on the Host Plants of the Species of *Proterhinus* in the
Kokee Region of Kauai.**

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In August, 1925, while spending a few weeks' vacation at Kokee, Kauai, the time was chiefly spent studying the insect faunas of the various native trees that were the prominent ones making up the forest of the region. The Kokee region is a plateau of about 3,700 feet elevation with numerous valleys that are the tributaries of the Waimea, above the canyon. It is a fine forest region having many kinds of native trees and many of them of more than the ordinary size. Numerous trails and a road to the intake of an irrigation ditch make it conveniently accessible so that it is a remarkably favorable place to make special studies in entomology. Within easy distance may be reached forests of the dry ridges towards the Na Pali coast, or in the other direction the wet forests of the Alakai Swamp towards the center of the island.

In pursuing studies of the insect faunas of the different trees, the bark beetles of the genus *Proterhinus* came in for a good share of attention. In many cases, large series of these beetles were collected from particular trees, and evidence obtained of their special habits and food-plants. Some, too, were collected from several different trees, indicating more general habits. In collecting these beetles, of course, some of them were collected in situ under bark or in the dead twigs where their larvae had fed. Others were collected by beating among dead twigs and branches. In doing this the beating was done on only one kind of tree at a time so as to avoid the possibility of getting the beetles mixed. Many of the trees were situated sufficiently isolated so that this could be readily done. Even then, there is no doubt but what beetles may sometimes get blown around, or have crawled onto different trees than their regular host trees. Records of individuals or a few specimens beaten from trees can not be of so much value in determining host relations as is the taking of a series of specimens from beneath bark, etc., especially when the larvae are also found in situ.

Some of this collection of *Proterhinus* were readily made out by comparison with the Bishop Museum collection of *Proterhinus*, but the whole lot was sent to Dr. R. C. L. Perkins in England for verification and for determination of the other and more difficult species of the lot. One new species was found, but only a single specimen of it was taken, beaten off *Campylotheca*. It is remarkable in having an enormously enlarged scape to the antenna. Some host records from a collection made in August, 1921, are also included.

Herewith the trees are listed with the species of *Proterhinus* taken from each:

TETRAPLASANDRA WAIMEAE. Ohe kikoola.

Proterhinus gigas Perkins.

A series of 14 specimens of this large species was collected from beneath bark of a large fallen tree. This was originally collected on *Cheirodendron* by Dr. Perkins. It is a tree of the same family, Araliaceae.

STRAUSSIA MARINIANA. Kopiko.

Proterhinus anthracias Perkins.

A series of 43 specimens was collected from beneath the bark of a large tree that had been felled by a roadside. The beetles were numerous as were also the larvae feeding in and beneath the bark. A series of 46 specimens was similarly collected in August, 1921.

Proterhinus maculifer Perkins.

Two or three specimens. A series of 15 specimens were collected from dead twigs, August, 1921.

Proterhinus amaurodes Perkins.

One bad specimen. This species was originally collected from *Straussia* by Dr. Perkins.

WIKSTROEMIA FURCATA. Akia.

Proterhinus wikstroemiae Perkins.

A series of 13 specimens beaten from isolated small trees having numerous dead twigs.

SYZYGIUM SANDWICENSE. Ohia ha.

Proterhinus binotatus Perkins.

A series of 28 specimens obtained by climbing an isolated, much-branched tree of medium size, and beating among the numerous dead twigs and small branches.

ACACIA KOA. Koa.

Proterhinus dubiosus Perkins.

A series of 10 specimens beaten from dead twigs and branches. Five specimens were similarly obtained in August, 1921.

COPROSMA WAIMEAE. Olena.

Proterhinus angustiformis Perkins.

A series of 26 specimens obtained by beating.

Proterhinus basalis Sharp.

One specimen. Probably an accidental occurrence.

Proterhinus antiquus Perkins.

One specimen. Probably accidental.

ALYXIA OLIVAEFORMIS. Maile.

Proterhinus angustiformis Perkins.

A series of 23 specimens beaten from dense clumps of maile that were as much isolated as possible. Of course from the nature of this plant it depends for support on some other tree, and complete isolation is not possible.

Proterhinus amaurodes Perkins.

Two or three specimens. Probably accidental.

Proterhinus eulepis Perkins.

A few specimens.

GOULDIA ELONGATA. Manono.

Proterhinus basalis Sharp.

Nine specimens beaten from isolated small trees.

Proterhinus maculifer Perkins.

A few specimens. Probably accidental.

Proterhinus serricornis Perkins.

A specimen not quite like the cotype.

Proterhinus angustiformis Perkins var?

One specimen. Probably accidental.

SCAEVOLA CHAMISSONIANA. Naupaka.

Proterhinus basalis Sharp.

Seven specimens taken by beating. (Difficult specimens seem to connect this with *dubiosus*). A series of 25 specimens were taken similarly in August, 1921.

Proterhinus amaurodes Perkins.

Proterhinus maculifer Perkins.

One of the former and 2 of the latter. Probably accidental as these species belong to *Straussia*.

PIPTURUS ALBIDUS. Mamake.

Proterhinus eugonias Perkins.

Two specimens obtained by beating.

Proterhinus nigricans Sharp.

A few specimens obtained by beating. Four were similarly obtained in August, 1921.

Proterhinus deceptor Perkins.

A few specimens obtained by beating.

ELAEOCARPUS BIFIDUS. Kalia.

Proterhinus eugonias Perkins.

Four specimens obtained by beating.

OSMANTHUS SANDWICENSIS. Pua.

Proterhinus eugonias Perkins.

Two specimens obtained by beating.

CYRTANDRA

Proterhinus eugonias Perkins.

One specimen. Probably accidental.

MYOPORUM SANDWICENSE. Naieo.

Proterhinus difficilis Perkins

A small series beaten from dead branches of a few completely isolated trees.

ANTIDESMA PLATYPHYLLUM. Hame.

Proterhinus dubiosus Perkins.

Four specimens obtained by beating.

Proterhinus difficilis Perkins.

One specimen, agrees pretty well with cotype.

Proterhinus sp.

One female of *obscurus* group (probably would have been placed with *deceptor* in the "Fauna Hawaiiensis").

Proterhinus dubiosus Perkins.

A few specimens taken by beating.

CAMPYLOTHECA COSMOIDES. Poolanui.

Proterhinus serricornis Perkins var.

One large male.

Proterhinus eulepis Perkins?

One specimen in bad condition.

Proterhinus miricornis Perkins.

One specimen. Has greatly enlarged scape of antenna.

SUTTONIA SANDWICENSIS. Kolea laulii.

Proterhinus dubiosus Perkins.

Four specimens taken by beating.

Proterhinus basalis Sharp.

One specimen.

Proterhinus angustiformis Perkins var.

One specimen, same as on Gouldia.

LOBELIA

Proterhinus gigas Perkins.

One small male.

Proterhinus eulepis Perkins.

One male. Both of these species were in a dead hollow stem.
Accidental.

BOBEA MANNII. Ahakea.

Proterhinus eugonias Perkins.

Several specimens taken by beating.

Proterhinus serricornis Perkins?

One specimen.

SIDEROXYLON SANDWICENSE. Aulu.

Proterhinus eugonias Perkins.

One specimen, probably accidental. One specimen obtained
in August, 1921.

CRYPTORCARYA MANNII.

Proterhinus eugonias Perkins.

Proterhinus dubiosus Perkins.

One of each species, probably accidental.

CIBOTIUM CHAMISSOI. Hapu.

Proterhinus setulosus Perkins.

Four specimens, taken from the inside of dead stems of
fern fronds.

LIST OF PROTERHINUS SPECIES WITH TREES FROM WHICH
COLLECTED

The first tree mentioned could perhaps be considered proper
host, except in some cases that are probably more or less
polyphagous.

Proterhinus gigas Perkins. *Tetraplasandra.

*Cheirodendron, Lobelia.

Proterhinus anthracias Perkins. *Straussia.

Proterhinus eugonias Perkins. *Elaeocarpus, *Bobeia, Osmanthus,
Sideroxylon, Cryptocarya, Pip-
turus, Cyrtandra.

*The trees designated with an asterisk may be considered as true hosts,
as more or less of a series of the beetles was collected from them. Those
collected on the other trees listed may have been only stragglers.

- Proterhinus basalis* Sharp. *Gouldia, *Scaevola, Suttonia,
Coprosma.
- Proterhinus dubiosus* Perkins. *Koa, Campylothea, Antidesma,
Suttonia, Cryptocarya.
- Proterhinus difficilis* Perkins. Antidesma.
- Proterhinus eulepis* Perkins. Alyxia, Campylothea (?) Lobelia.
- Proterhinus amaurodes* Perkins. *Straussia, Alyxia, Scaevola.
- Proterhinus nigricans* Sharp. *Pipturus.
- Proterhinus binotatus* Perkins. *Ohia ha.
- Proterhinus setulosus* Perkins. *Cibotium.
- Proterhinus antiquus* Perkins. Coprosma.
- Proterhinus wikstroemiae* Perkins. *Wikstroemia.
- Proterhinus serricornis* Perkins. Gouldia, Bobea (?).
- Proterhinus serricornis* Perkins var. Campylothea.
- Proterhinus angustiformis* Perkins. *Coprosma, *Alyxia.
- Proterhinus angustiformis* ? var. Gouldia, Suttonia.
- Proterhinus maculifer* Perkins. *Straussia, Gouldia, Scaevola.
- Proterhinus obscurus*. Antidesma.
- Proterhinus deceptor* Perkins. *Myoporum, Pipturus.
- Proterhinus miricornis* Perkins. Campylothea.

With these notes as a basis, further collecting and study in the region is desirable to more accurately determine true host relations, and to eliminate so far as possible the factor of accidental captures, stragglers, etc. As seen from the above list of 19 species and 2 varieties, the host trees of 13 of the species listed have been quite definitely determined. The other species of the list were collected in such small numbers (often single specimens) that they should be considered as merely stragglers on the trees from which they were collected.