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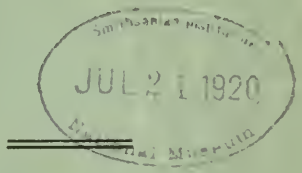
FOR THE YEAR 1919



HONOLULU, HAWAII

PRICE 50 CENTS

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Volume I of the Proceedings, for 1905-07 (in five numbers), contains 210 pages, 4 plates, and 5 text figures.

Volume II, 1908-12 (in five numbers), contains 311 pages, 7 plates, 5 cuts and 1 portrait.

Volume III, 1913-1917 (in five numbers), contains 500 pages, 8 plates and 6 cuts.

Volume IV, No. 1, 1918, contains 233 pages, 4 plates and 6 cuts.

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specimens of this beetle bred from larvae found in *Platydesma campanulata* near Glenwood, Hawaii, March 2nd, 1919. They are strongly marked with yellow, and apparently an undescribed species.

Megatrioza palmicola.—Mr. Crawford reported that on examination of Psyllid adults and nymphs from palm from Glenwood, Hawaii, handed him by Mr. Swezey, he considered them identical with or a variation of the species on palm on Oahu. The nymphs of the Hawaii form have the marginal hairs or projections much enlarged.

Psyllids from Punaluu.—Mr. Bridwell exhibited two species of Psyllids from Punaluu, both apparently new.

JUNE 5th, 1919.

The 165th meeting of the Society was held in the usual place Vice-President Crawford in the chair. Other members present: Messrs. Bridwell, Fullaway, Pemberton, Rosa, Swezey and Timberlake. Professor H. E. Gregory, Acting Director of the Bishop Museum, was present as a visitor.

Minutes of previous meeting were read and approved.

Mr. Swezey presented a letter from the Director of the Experiment Station, H. S. P. A., extending to the Society the privilege of making the experiment station building its headquarters as well as a depository for its library and collections.

PAPER.

The Insect Fauna of the Hawaiian Bunch Grasses (Eragrostis variabilis and Allies).

BY JOHN COLBURN BRIDWELL.

There are several species of *Eragrostis* in the Hawaiian Islands which are closely allied and have similar habitus, occurring usually in the bare wind-swept pali faces, sometimes in rather moist localities, sometimes in regions which re-

ceive only occasional showers. They are also not infrequently found in the forests where the slopes are abrupt and in some instances these grasses are to be found growing at only a few feet above sea level. All the species when growing in the wind-swept regions have long drooping leaves and rather short stout stems. They are always in bunches or tussocks, often a foot across.

These grasses appear to have attracted but little attention from the early entomologists. Blackburn found one species of *Corylophus*, which he recorded as occurring on grasses which probably occurred in bunch grass.

Mr. O. H. Swezey first found an endemic insect connected with bunch grass in 1906, which Kirkaldy described as *Kelisia swezeyi* without indication of the host plant and without recognizing its endemic nature. Ten years later a second species of *Kelisia* was found by Mr. Swezey in June, 1916, and described as *Kelisia enoloa* by Mr. Muir. Since that time much attention has been devoted to collections upon *Eragrostis* by Swezey, Timberlake, Fullaway, Giffard and the writer. These investigations have shown that the bunch grasses have a peculiar fauna of their own with several clearly endemic species, and that the tussocks furnish shelter for several other insects. This fauna has been best worked on Oahu but a few species have been studied elsewhere. It is noticeable that many of the species found in bunch grass also affect the sand-binding grass, *Sporobolus virginicus*.

Our present knowledge of the entomology of the bunch grasses may be summarized as follows:

Coleoptera.

COCCINELLIDAE.

Diomus discedens (Sharp).

This species was originally found by Blackburn and described by Dr. Sharp as a *Scymnus* but indicated as probably forming another genus. Mr. Timberlake, who has studied the species, permits me to use his unpublished reference of this

species to *Diomus*. It seems to be particularly attached to the bunch grasses and has been repeatedly taken there, but is also found in Bermuda grass.

ELATERIDAE.

At least two species of endemic Elateridae have been found in bunch grass. Several specimens of one were found in bunch grass in Iao Valley, Maui, and two specimens of another on the Manoa Ridge, Oahu (Bridwell).

CORYLOPHIDAE.

Gronevus rotundus (Sharp).

This little blackish beetle was found commonly on Manoa Ridge, June, 1919 (Bridwell). The intestinal canal of specimens examined microscopically were stuffed with fungus spores.

This species, described by Dr. Sharp as a *Corylophus* and later transferred by Matthews to his genus *Corylophodes*, appears to belong to Casey's genus *Gronevus*.

Another species which I have not seen was taken at roots of grass at the Nuuanu Pali by Blackburn and described as *Corylophus suturalis* Sharp. This has been referred to *Corylophodes* by Matthews. This may also belong to *Gronevus*.

Homoptera.

DELPHACIDAE.

Kelisia swezeyi Kirkaldy.

In Kalihi, Nuuanu and Manoa Valleys in the Koolau Mts., Mt. Kaala in the Waianae Mts., on *Eragrostis*. Also on the similar sedge *Gahnia*, Kaumuohona and Palolo Crater in the Koolau Mts. Apparently prefers the moister portions of the mountains.

Kelisia emoloa Muir.

Kulionou, Wailupe, Waialae, Palolo, Manoa. Seems to prefer the dry ends of the lateral ridges.

Kelisia eragrosticola Muir.

Iao Valley, Maui (Giffard, Fullaway, Bridwell). Kalihi Valley, Oahu (Timberlake and Bridwell).

Kelisia sporoboricola Kirkland.

Taken on *Eragrostis atropioides* at an elevation of 7500 ft. on Haleakala, Maui (Bridwell). This has otherwise been found on Oahu, Maui and Hawaii near sea level on *Sporobolus virginicus.*

CICADELLIDAE.

Three undetermined species of *Nesosteles* have been taken. One is abundant everywhere on Oahu where the bunch grass grows. One was taken in Iao Valley, Maui, and another on *E. atropioides* on Haleakala, Maui (Bridwell).

Messrs. Giffard and Fullaway found a Cicadellid on *Eragrostis* on Diamond Head, supposedly immigrant. The genus and species have not been determined but it certainly is not any of the described genera known from the Islands. The recent discovery by Mr. Giffard of this species in the mountains of Hawaii probably indicates that it is endemic.

COCCIDAE.

The bunch grasses are commonly infested with mealy bugs supposed to be *Trionymus insularis* Ehrhorn. Whether other species occur is unknown, but the diverse species of mealy bug parasites found suggests the desirability of a further investigation of the Coccidae.

A species of *Pseudococcus* has also been taken on Diamond Head which has received a manuscript name by Mr. Ehrhorn.

Heteroptera.

LYGAEIDAE.

A species, *Nesocymus* sp., has been found abundant at the Nuuanu Pali.

Two specimens of a different but closely related Lygaeid

were found on the Manoa Ridge (Bridwell). Later the same species was found by Mr. Timberlake along the Bowman trail on the ridge Ewa of Kalihi. It has also been taken at sea level at Barber's Point and Makapuu Point (Bridwell) on *Sporobolus virginicus*.

Hymenoptera.

DRYINIDAE.

The *Nesosteles* found on Oahu is very commonly parasitized by an undescribed species of *Gonatopus*.

Kelisia swezeyi is occasionally attacked by *Pseudogonatopus perkinsi* (Ashmead).

ENCYRTIDAE.

The genus *Nauthoencyrtus* has been recently found to be represented by several wingless Hawaiian species attached to mealy bugs on *Eragrostis*. Mr. Timberlake has worked up the species.

FORMICIDAE.

Several species of ants frequent the bunches.

Thysanura.

Mr. Timberlake took a large species *(Machilis)* on the Waianae side of Mt. Kaala in bunch grass.

Corrodentia.

Several undetermined *Psocidae* are found in bunch grass on Oahu.

Orthoptera.

BLATTIDAE.

Polyzosteria soror Brunner, is very common in the bunch grass on dry ends of the lateral ridges on Oahu.

Thysanoptera.

An single individual of a peculiar thrips was found on the

Manoa Ridge (Bridwell). Several individuals of another species were found near sea level near Makapuu Point (Bridwell).

Lepidoptera.

NOCTUIDAE.

Cirphis pyrrhias (Meyrick) and **C. amblycasis** (Meyrick).

Swezey has found the larvae of these moths in the tussocks and other species of Noctuids also are not uncommon.

A number of the moths feeding in vegetable debris utilize the decaying leaves and stems in the tussocks.

DISCUSSION.

Prof. Gregory responded to an invitation to address the Society, centering his remarks on the theme, "What Does the Hawaiian Entomological Society Wish the Bishop Museum to Do to Promote Entomology?" At the conclusion of Prof. Gregory's address, Mr. Swezey replied for the Society, and after some discussion it was moved and duly seconded and carried that the Society hold a special meeting on June 17th to discuss the subject and formulate a reply to Prof. Gregory's question.

NOTES AND EXHIBITIONS.

Jassid on Amarantus.—Mr. Bridwell reported finding this Jassid at Waianae. He believes it to be a species of *Empoasca* different from any of the described species in the United States. There is, however, a green species doing damage to sugar beets in California, with which he has not been able to compare it.

Rhyncogonus sp.—Mr. Bridwell reported finding at Waianae the wing covers of a species of *Rhyncogonus* different from any previously described.

Corixa sp.—Mr. Bridwell reported finding at Waianae a species of *Corixa* swimming in pools formed by the splash of the waves on the coast.

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PARADISE OF THE PACIFIC, HONOLULU