

PROCEEDINGS
OF THE
Hawaiian Entomological Society

VOL. XI, No. 3

FOR THE YEAR 1942

AUGUST, 1943

JANUARY 12, 1942

The 433rd meeting was held at the H.S.P.A. Experiment Station on Monday, January 12, at 2:00 p.m., with Vice-president O. H. Swezey in the chair.

Members Present: Messrs. Fullaway, Illingworth, Oakley, Pemberton, Rosa, Swezey, Van Zwaluwenburg and Williams.

Visitor: Charles D. Hyslop.

The minutes of the preceding meeting were read and approved as corrected.

Mr. R. G. Oakley introduced Mr. Charles D. Hyslop and nominated him for membership in the Society. Following the rules, Mr. Hyslop will be voted upon at the next meeting.

PAPER

Mr. Swezey presented a paper entitled "Host Plant Records of Some Kauai Lepidoptera". He briefly discussed this paper.

NOTES AND EXHIBITIONS

Listroderes obliquus Klug.—Dr. Williams presented the following, for Mr. A. C. Browne who was absent: On Nov. 28, 1941 the vegetable weevil was taken in the Libby, McNeill & Libby camp gardens at Maunaloa, Molokai, where it was feeding on Chinese and head cabbage. No larvae were found. As no heavy rains had yet come, it may possibly be that these adults were those which might have been aestivating during the late spring and summer months.

Ceratitis capitata Wied.—Mr. Pemberton reported rearing 305 Mediterranean fruit flies from a single, ripe breadfruit picked from a tree in Manoa Valley on August 4, 1941. This is of interest since breadfruit is rarely found infested with the larvae of this fly. At the time the fruit was picked it was ripe but not soft. Many growth cracks had formed on the surface into which the fruit fly eggs had been inserted. The variety of breadfruit in this case is an uncom-

mon one, the fruit being unusually large and the skin cracks readily before the fruit is fully ripe. No other fly species developed in this particular fruit.

FEBRUARY 9, 1942

The 434th meeting was held at the H.S.P.A. Experiment Station on Monday, February 9, at 1:30 p.m., with Vice-president O. H. Swezey in the chair.

Members Present: Messrs. Fullaway, Hadden, Ilingworth, Krauss, Marlowe, McBride, Pemberton, Rosa, Swezey, Van Zwaluwenburg and Williams.

Visitor: Joe Budge.

The minutes of the preceding meeting were read and approved. Mr. C. D. Hyslop, nominated at the previous meeting, was elected to active membership.

NOTES AND EXHIBITIONS

Stictocephala festina (Say)—Mr. Fullaway spoke of finding eggs of this tree hopper on *Crotalaria*, parasitized by the mymarid *Gonatocerus ornatus* Gahan.

New pest of water lily—Mr. Fullaway reported the breeding of the moth *Nymphula* sp. from *Nymphaea* water lilies. This is a new immigrant to Hawaii.

Ilburnia ipomoeicola (Kirk.)—Mr. Fullaway reported for Mr. Au the collecting of what is probably this delphacid on leafy cabbage. Sweet potato, the regular host of this leafhopper, was present in the same place.

Hylemyia cilicrura (Rondani)—Mr. Pemberton exhibited a specimen of this anthomyid fly reared from the stem of a young cucumber seedling on Feb. 4.

Trichogramma apparently *minutum* Riley—Mr. Pemberton exhibited a specimen of this parasite and the empty egg of the Lima bean pod borer, *Maruca testulalis* (Geyer) from which this parasite had emerged on Feb. 6.

MARCH 9, 1942

The 435th meeting was held at the H.S.P.A. Experiment Station on Monday, March 9, at 2:30 p.m. with President E. C. Zimmerman in the chair.

Members Present: Messrs. Callaghan, Carter, Fullaway, Hyslop, Oakley, Pemberton, Rosa, Sakimura, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

Visitors: Chas. A. Ely and George S. Mansfield.

The minutes of the previous meeting were read and approved.

The executive committee, which met just before the general meeting, reported the following appointments: J. S. Rosa, librarian; F. X. Williams, curator of collections; editorial board, O. H. Swezey, editor, E. C. Zimmerman and R. H. Van Zwaluwenburg, sub-editors.

NOTES AND EXHIBITIONS

Lyphia angusta (Luc.)—Mr. Swezey reported that he had received from Dr. F. E. Blaisdell this name for two beetles which had been sent him for determination. They are the unknown tenebrionids which Mr. Swezey exhibited at the November 1941 meeting, having been collected at light October 28, 1941 by Mr. A. C. Browne at his residence on Kalawahine Drive. Dr. Blaisdell had no specimens to compare with, but thought from the literature that the species is as above. It was described from Algeria in 1849 as *Hypophloeus angustus*. No other locality record was found. Mr. Sakimura stated that he had collected specimens of this same beetle in wind traps in pineapple fields in the Kunia, Oahu, region, Feb. 15, 1942.

Iridomyrmex humilis Mayr — Mr. Fullaway discussed the spread of the Argentine ant from Ft. Shafter into adjoining territory.

President Zimmerman gave an interesting survey of his trip to the mainland of the United States this past summer and winter.

APRIL 13, 1942

The 436th meeting was held at the H.S.P.A. Experiment Station on Monday, April 13, at 2: 30 p.m., with President E. C. Zimmerman in the chair.

Members Present: Messrs. Callaghan, Fullaway, Krauss, McBride, Oakley, Pemberton, Rosa, Schmidt, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

The minutes of the preceding meeting were read and approved as corrected.

NOTES AND EXHIBITIONS

Draeculacephala minerva Ball—Mr. Swezey called to attention that the large green jassid which has been known in Hawaii since 1913 under the name *Draeculacephala mollipes* (Say), as determined by Van Duzee, had been studied by Mr. P. W. Oman at the U.S. National Museum, and determined as *minerva* Ball. Dr. Ball described *minerva* on material from California which had been

included in *mollipes* var. *minor* by him previously, and as *D. minor* by Van Duzee. Ball's description of *D. minerva* is in The Florida Entomologist, XI, p. 36, 1927, where he gives a key to the North American species of *Draeculacephala*. He states that *minerva* "appears to be a distinct species confined to the southwestern United States and Mexico". Its range includes many places in California south from Chico, Arizona, southern Utah and south in Mexico to Vera Cruz. He considered *mollipes* to be an eastern species. No doubt *minerva* in Hawaii has come as an immigrant from California. It first appeared in 1913 in swampy regions of Honolulu.

Micromyzus formosanus (Tak.)—Mr. Fullaway presented the following: Last month on a visit to the Chun Hoon vegetable gardens in the vicinity of Schofield Barracks, I observed an aphid infestation on onion plants which was remarkable inasmuch as it was extraordinarily heavy. I collected a few specimens and on examination later I was able to identify them as *Fullawayella formosana* Takahashi, a species first recorded from Oahu on chives and onion in 1941 (Rpt. Hawaii Agr. Expt. Sta., 1940, p. 44), but which Mr. Au informs me he had taken before that date. I have also turned up an old slide preparation of this aphid, undated. It has been found on lilies in Bermuda (Rev. Appl. Ent. A, p. 525), and has also been found in California.

The insect is described and figured by Takahashi (Aphidae of Formosa, pt. 1, p. 29, 1921), and is so well characterized, I believe it is unmistakable. Takahashi's continued use of the generic name *Fullawayella* is not understood, but he may have followed Baker's classification which in the subtribe Pentalonina inaccurately states that *Macrosiphum kirkaldyi* (*Idiopterus nephrolepidis*), the genotype of *Fullawayella*, has the media twice branched. In my original description and figure, the media is plainly only once branched. In *F. formosana*, however, the media is twice branched. Essig (Pan Pac. Ent., XI, 4, pp. 156-162, 1935; XII, 2, p. 72, 1936) discusses this nomenclatorial problem, introducing some new elements which I am not able to evaluate adequately at present, but the important point for me is that he refers this onion aphid to van der Goot's genus *Micromyzus*. I was going to suggest that a new genus be erected for it, for the reasons stated above. Halter (Plant Lice or Aphididae of Illinois; Bull. Nat. Hist. Surv., XVIV, pp. 121-447) places *violae* Pergande in *Idiopterus*, since *violae* and *nephrolepidis* are considered identical. Essig places them all in *Micromyzus* van der Goot.

Tachys muscens Blkb. on Canton Island—Mr. Van Zwaluwenburg exhibited two specimens of small carabid beetles collected by R. R. Danner in March and June 1941 in the hotel kitchen on Canton Island. One has been identified by E. C. Zimmerman as *Tachys muscens* Blackburn, a species hitherto known only from the

Hawaiian Islands. The other specimen, also a *Tachys*, differs, according to Mr. Zimmerman, from all other species recorded from Hawaii. Both are immigrants, probably originally from Central or South America.

MAY 11, 1942

The 437th meeting was held at the H.S.P.A. Experiment Station on Monday, May 11, at 2:00 p.m., with President Zimmerman in the chair.

Members Present: Messrs. Callaghan, Fullaway, Holdaway, Illingworth, Krauss, Look, Oakley, Pemberton, Rosa, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

Visitor: T. Nishida.

The minutes of the preceding meeting were read and approved.

PAPERS

Mr. Van Zwaluwenburg presented the following papers: "New Species and New Records of Elaterid Beetles from the Pacific—II", and "The Insects of Canton Island". There was a brief discussion of the latter paper.

NOTES AND EXHIBITIONS

Eucelatoria armigera (Coq.)—Mr. C. E. Pemberton exhibited specimens of a tachinid fly taken April 29 in a field of potatoes at the Waialua Agricultural Company. The species was previously reared (1941) by Dr. F. X. Williams from a lepidopterous larva in a tomato imported from the mainland; identification is by Dr. Williams. Mr. Van Zwaluwenburg added that the species is recorded from California, Florida, Puerto Rico and Mexico. The fly is a new addition to the tachinid fauna of the Islands.

Baeus californicus Pierce—Mr. J. S. Rosa spoke of the longevity of this scelionid wasp, imported from California in 1939 as an enemy of the black widow spider. With indifferent care several females in the laboratory lived for 129 days; previous records both here and on the mainland gave a maximum length of life of only 2 or 3 weeks. All the specimens were females.

Aphiochaeta scalaris Loew—Mr. Noel Krauss reported the rearing of this phorid fly from mouldy hams being stored by the Army in Honolulu, in April. Infested portions were trimmed off, and the hams were then recured.

Bagworm from Queensland—Mr. E. C. Zimmerman exhibited a very large bagworm (Psychidae) from Queensland, from the collection donated to the Bishop Museum by Dr. J. F. Illingworth.

The meeting then transferred to the vegetable garden on the Station grounds, where an interesting session was held observing various insect pests, particularly the green cicadellid leafhopper, *Empoasca solana* De Long, which was causing severe damage to lettuce as well as damaging beans and other plants.

JUNE 8, 1942

The 438th meeting was held at the H.S.P.A. Experiment Station on Monday, June 8, at 2:00 p.m., with President Zimmerman in the chair.

Members Present: Messrs. Callaghan, Fullaway, Holdaway, Look, Krauss, McBride, Oakley, Pemberton, Rosa, Sakimura, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

Visitors: George S. Stains and Takiyuki Nishida.

The minutes of the preceding meeting were read and approved.

Mr. E. C. Zimmerman proposed the name of Sir Guy A. K. Marshall of the Imperial Bureau of Entomology, as honorary member of the Society. Dr. Marshall was duly elected, and the secretary was instructed to transmit to him a letter announcing his election.

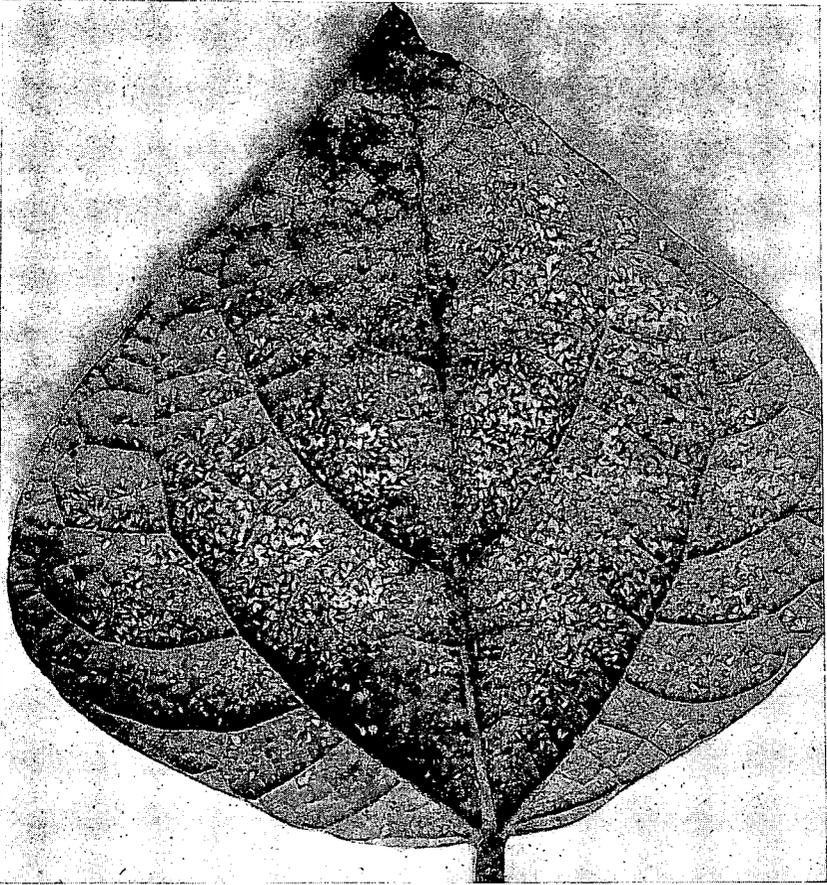
Mr. R. G. Oakley proposed Mr. George S. Stains for active membership. In accordance with the Society's rules, his name will be voted upon at the next meeting.

NOTES AND EXHIBITIONS

Vegetable pests—Mr. Fullaway spoke of some insect pests: *Trialeurodes vaporariorum* (Westw.) on beans, *Aphis brassicae* Linnaeus on celery, the broad mite, *Tarsonemus latus* Banks on Swiss chard, webworm on amaranth spinach, etc.

Leucopoeila albofasciata Reut.—Dr. F. G. Holdaway referred to a report in a recent issue of a local paper to the effect that beet crops had been a failure through an unknown cause. He reported that following failure of a planting of beets at the University he had demonstrated that the cause was a mirid bug, *Leucopoeila albofasciata*; he and his staff are continuing work on this bug.

Trialeurodes vaporariorum (Westw.)—Dr. Holdaway reported that during March, April and May a whitefly, identified by Mr. Swezey as this species, was devastating in its attack on pole beans in the Maile-Waianae section of Oahu. It was impossible to find a square centimeter of the under surface of heavily infested leaves free from either nymphs or adults. Infestation led to large quantities of sticky excretion on the under surface of the leaves and later a browning of the attacked foliage, so that they appeared scorched. This is the second year this insect has been abundant in this region,



Trialeurodes vaporariorum on under surface of leaflet of green bean, at Lualualei, Oahu.

but during recent months infestation has been more severe than it was before. Preliminary trials showed pyrethrum and thiocyanate products to be the most satisfactory. Good control is now being secured with a dust containing 1 percent of thiocyanate lethane 440 and 1/10th of 1 percent pyrethrins. A photo of a heavily infested leaf was exhibited.

Eucelatoria armigera (Coq.)—Mr. E. C. Zimmerman reported rearing this newly discovered tachinid from *Plusia chalcites* (Esp.) larvae on *Spathoglottis*. Mr. Pemberton said that he had failed to obtain this fly from a large number of field-collected corn ear-

worms, *Heliothis*, collected at Waipio, although this is one of the fly's recorded hosts.

Iridomyrmex humilis Mayr—Mr. Pemberton mentioned the huge numbers of Argentine ant seen at Ft. Shafter; no other ant species were seen there.

Anagrus frequens Perkins—Mr. Swezey reported on the abundance of this egg-parasite of the corn leafhopper, *Peregrinus maidis* (Ashm.), on a small planting of Guam corn at the pathology plot of the H.S.P.A. Experiment Station, May 18, 1942. The exit holes were found so abundant that a count was made of those in a single leaf from which most of the parasites had already issued. There were over a thousand of these exit holes, mostly in the midrib of the corn leaf where thousands of leafhopper eggs had been deposited. About 50 more parasites issued in the next few days. There were about 50 *Cyrtorhinus mundulus* (Bredd.) eggs in the same midrib, and the young "redbugs" hatched later. Some of them were observed to catch and feed on small leafhopper nymphs. This was the heaviest infestation by the corn leafhopper which he had ever seen, and was probably accounted for by the fact that a considerable patch of corn had ripened and dried up in the vicinity when this smaller patch of corn was in its younger growth. The leafhoppers probably had migrated and concentrated on the fewer plants.

Thecla agra Hewitson—Mr. Swezey reported a new host for this one of the lantana butterflies. He had reared four specimens from larvae collected on a weed, *Hyptis pectinata* (Labiatae), which he had not previously seen. It was growing by the Punahou wall near the Nehoa gate. The plant is in the mint family as determined by Mr. E. L. Caum, and has been found in only a few places in Honolulu. This butterfly was previously recorded as bred by Mr. Swezey from basil, another member of the mint family, but it chiefly feeds on lantana flowers. Mr. Caum found the caterpillars on the *Hyptis* weed while examining it for determination.

Campsomeris and *Tiphia*—Mr. K. Sakimura reported as follows: Wind traps have been operated since November 1941 on the periphery of pineapple fields at Kunia, Oahu. Interesting information was obtained on the seasonal flight of *Campsomeris marginella modesta* (Sm.)* (*Scolia manilae* Ashm.) and *Tiphia segregata* Crwfd. *Campsomeris* was very abundant during November and was still at a high level through February, but became very scarce in March and since then. *Tiphia*, on the other hand, was not caught until the early part of May when it suddenly appeared in large numbers. The number of *Tiphia* caught indicated that this parasite is better established in this area than had been supposed. There are data indicating that this parasite probably prefers to operate on *Adoretus* rather than on *Anomala* grubs.

* Betrem, Treubia, IX, Suppl. p. 136, 1928.

JULY 13, 1942

The 439th meeting was held at the H.S.P.A. Experiment Station on Monday, July 13, at 2:00 p.m., with President Zimmerman in the chair.

Members Present: Messrs. Carter, Fullaway, Holdaway, Look, Pemberton, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

Visitors: R. L. Doult and Takiyuki Nishida.

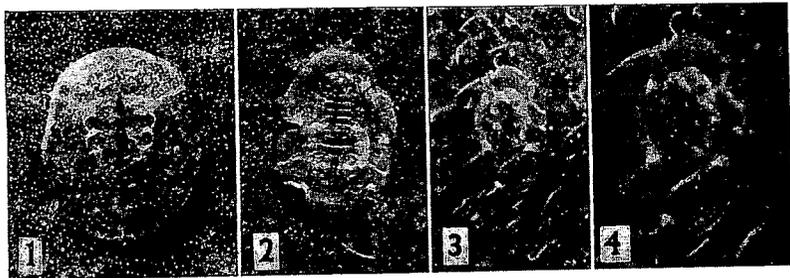
The minutes of the preceding meeting were read and approved.

Mr. George S. Stains, nominated for membership at the preceding meeting, was unanimously elected to active membership in the Society.

NOTES AND EXHIBITIONS

Lema trilineata californica Schaeffer—Mr. Swezey reported for Mr. A. C. Browne that he had found this chrysomelid beetle on poha (*Physalis peruviana* Linn.) in his garden in the Makiki district on July 12. Mr. Van Zwaluwenburg remarked that a planting of the introduced *Physalis mollis* Nutt. in the Station garden at Makiki was recently severely damaged by adults and larvae of this beetle, some of the plants having been killed outright.

Dialeurodes kirkaldyi (Kotinsky)—Mr. Swezey reported having found a heavy infestation of this aleurodid on star jasmine (*Jasminum multiflorum*) on the campus of the University, April 12, 1941, which at the time he thought to be an unknown species new to Hawaii, and so reported at the April 14 meeting of the Society. The reason for deeming it new was the form of the pupa, having notches on its margin different in character to any description he had been able to find. In June of this year he had obtained more material from the same infested plants, and while making examination in search of good specimens for mounting had discovered the



Dialeurodes kirkaldyi. 1. Pupa of normal form as grown on a smooth-leaved jasmine. 2, 3, 4. Pupae with notched margin as produced when growth takes place on a hairy-leaved jasmine. Highly enlarged.

cause of the notched margins of the pupae. This species of jasmine has very hairy leaves, and it was demonstrated that in the growth of the young aleurodids the expansion of the margin in coming into contact with a large hair, would fail to over-ride it or break it off, but instead, grew or expanded past the hair on each side, resulting in the hair standing in a notch as shown in the accompanying photograph by Mr. W. Twigg-Smith. This is to be compared with the photograph of a normal-shaped *kirkaldyi* grown on a smooth-leaved jasmine.

Cremastus flavo-orbitalis (Cam.)—Mr. Swezey reported that in a pound of infested string bean pods from Waipio, Oahu, collected in June, 11 *Maruca testulalis* (Geyer) caterpillars had issued. Four of them were preserved as larvae, four as pupae. The other three proved to be parasitized by this ichneumonid, the parasite larva issuing and forming its cocoon inside the cocoon already made by the caterpillar. This is 27 percent parasitism. Three *C. flavo-orbitalis* issued from the parasite cocoons July 11.

Cryptorhynchus mangiferae (Fab.)—Mr. Swezey reported on the prevalence of the mango weevil this year. He had kept records on the examination of mango seeds from fruits eaten from a Thrum mango tree from June 8 to July 10.

45 seeds had weevil larvae
51 seeds had weevil pupae
31 seeds had weevil adults
4 seeds were uninfested

131

This is a 97 percent infestation. Some of the seeds had two weevils each.

Thrips hawaiiensis (Morgan)—Dr. Walter Carter spoke of having sprayed for this thrips on orchids with tartar emetic with good results.

Cavariella capreae (Fab.)—Mr. Fullaway reported the occurrence of this aphid on carrot tops at Kohala, Hawaii. This is a new record for the species in these islands.

Murgantia histrionica (Hahn)—Dr. F. G. Holdaway reported that the harlequin cabbage bug had been taken at Waialua, Oahu, in June. This represents a marked spread from its former known distribution on this island. Since it was recorded in the Ewa-Waianae section a few years ago, a former student assistant observed it at Wahiawa. It has apparently now moved on from Wahiawa to Waialua.

Fungus parasitic on Pycnoderes quadrimaculatus Guerin—Mr. Wm. C. Look reported as follows: The species of parasitic fungus found on the bean capsid, and recorded in the Proceedings of the

Society (XI, 1, p. 7, 1941), has been identified by Dr. Wm. H. Weston of Harvard University as *Entomophthora sphaerosperma* Fresenius.

Johnston Island Insects—On behalf of Mr. Browne, Mr. Swezey exhibited the following insects collected by Mr. Browne on Johnston Island, June 5:

From burrows of moaning birds:

- 1 *Musca domestica* Linn.
- 5 *Dermestes cadaverinus* Fab.
- 1 *Atherigona excisa* (Thoms.) (?)

On *Lepturus* grass:

- 7 *Laphygma exempta* (Walk.) caterpillars

On *Tribulus*:

- Aphis medicaginis* Koch (?) Heavy infestation of wingless aphids.

Change of name of the rice borer.—Mr. Van Zwaluwenburg called attention to the following: According to J. Vinson of the Department of Agriculture, Mauritius (Bull. Ent. Res., vol. 33, 1, p. 40, April 1942) the pyralid rice borer of Hawaii, China, the Philippines and Japan, *Chilo simplex* Butler 1880, should be known as *Chilo suppressalis* Walker 1863. What has hitherto been known as *C. simplex* in India and Ceylon is really *C. zonellus* Swinhoe.

AUGUST 10, 1942

The 440th meeting was held at the H.S.P.A. Experiment Station on Monday, August 10, at 2: 35 p.m., with President Zimmerman in the chair.

Members Present: Messrs. Browne, Fullaway, Holdaway, Look, Pemberton, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

Visitor: Takiyuki Nishida.

The minutes of the preceding meeting were read and approved.

Mr. E. C. Zimmerman nominated Mr. Takiyuki Nishida for active membership in the Society. Following the Society's rules, Mr. Nishida will be voted upon at the next meeting.

NOTE

Synonymy of Synaspidia Timb.—Mr. D. T. Fullaway stated that the encyrtid wasp *Synaspidia pretiosa* Timberlake, the geno-

type of *Synaspidia*, has been found upon comparison of type material by Gahan (Proc. U.S. Nat. Mus., vol. 92, no. 3137, p. 49, 1942) to be a synonym of *Euryrhopalus schwarzi* Howard, the genotype of *Euryrhopalus*.

SEPTEMBER 14, 1942

The 441st meeting was held at the H.S.P.A. Experiment Station on Monday, September 14, at 2:00 p.m., with President Zimmerman in the chair.

Members Present: Messrs. Fullaway, Holdaway, Krauss, Look, Marlowe, McBride, Nishida, Pemberton, Rosa, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

Visitor: Richard Faxon.

The minutes of the preceding meeting were read and approved.

Mr. E. C. Zimmerman nominated Mr. Richard Faxon for membership in the Society; according to rule, voting will take place at the next meeting. Mr. Takiyuki Nishida, nominated at the August meeting, was unanimously elected to active membership.

PAPER

Mr. Zimmerman presented a paper entitled: "The Genus *Pholidoforus* Wollaston (Coleoptera, Curculionidae)."

NOTES AND EXHIBITIONS

Listroderes obliquus Klug—Mr. Swezey exhibited a specimen of the vegetable weevil collected in a wind trap in a pineapple field by Mr. K. Sakimura at Kunia, Oahu, November 25, 1941. It is apparently the first record of this weevil on Oahu.

Murgantia histrionica (Hahn)—Mr. D. T. Fullaway reported the taking of the harlequin cabbage bug in August by Mr. S. Au at Koloa, Kauai; this is the first record of this bug from any island of the archipelago outside of Oahu.

OCTOBER 12, 1942

The 442nd meeting was held at the H.S.P.A. Experiment Station, on Monday, October 12, at 2:00 p.m., with President Zimmerman in the chair.

Members Present: Messrs. Faxon, Fullaway, Holdaway, Hyslop, Look, Nishida, McBride, Pemberton, Rosa, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

The minutes of the preceding meeting were read and approved as corrected.

Mr. Richard Faxon, nominated at the August meeting, was unanimously elected to active membership.

PAPER

Mr. O. H. Swezey presented a paper entitled: "A New Immigrant Lygaeid Bug in Hawaii."

NOTES AND EXHIBITIONS

Frankliniella near *occidentalis* (Perg.)—Mr. T. Nishida presented the following notes: This thrips, identified by K. Sakimura as near, and probably, *F. occidentalis*, was first collected from bush Lima bean flowers (*Phaseolus limensis*) at Poamoho, Oahu, on August 22, 1942. Infestation on 50 blossoms ranged from 0-15 thrips per blossom. Dr. F. G. Holdaway and Mr. C. E. Pemberton observed a large number of this thrips attacking the leaves and terminal buds of the bush bean (*Phaseolus vulgaris* var. *humilis*) and the flowers of the bush Lima bean, at Waiialua, Oahu, on September 22. K. Sakimura, September 24, reported this thrips in the flowers of the Lima bean, bush green bean, okra (*Hibiscus esculentus*), tomato (*Lycopersicon esculentum*) and eggplant (*Solanum melongena*) at the University of Hawaii farm, Manoa Valley, Honolulu. It has been reported to occur also on the leaves of tomato. At Waiialua the thrips are now moving into the blossoms of the bush bean.

Apparently the Poamoho record on Lima beans is the first record of the occurrence of this species in Hawaii. However, judging from its range of host plants, distribution and abundance, it is apparent that the species is well established on the island of Oahu.

Greenhouse whitefly on green beans—Dr. F. G. Holdaway reported that he had received from Dr. Muesebeck of the U.S. National Museum, identification made by Miss Louise M. Russell of the whitefly from green beans. This is the species referred to in recent meetings as being present in devastating numbers on green beans since the early months of the year in the Waianae section of Oahu, and provisionally identified as "greenhouse whitefly".

Whiteflies on green beans in the field at Lualualei, Oahu, and in a greenhouse on the University campus, Honolulu, are the greenhouse whitefly, *Trialeurodes vaporariorum* (Westwood).

For many years a whitefly has been observed on pikaki (*Jasminum sambuc*) at Lualualei and at times has been abundant. This species has been identified by Miss Russell as *Dialeurodes kirkaldyi* (Kotinsky). In view of the fact that the species on beans is not identical with that on pikaki, an hypothesis which had been

advanced that the whiteflies had spread from pikaki to beans is not tenable.

Laboratory notes on Aedes albopictus (Skuse)—Mr. Van Zwaluwenburg reported the following observations on this day mosquito. The suggested use against mosquitoes of chemicals which reduce surface tension prompted him and Mr. T. Nishimura of the chemistry department, H.S.P.A. Experiment Station, to test such materials in water exposed to mosquitoes in the pathology greenhouse. Both "vatsol" (O.T.) (a sulfonated ester of bicarboxylic acid) and "2-7-R" (a sulfonated naphthalene) were used. Five per cent solutions of each were added on May 13 to distilled water at the rate of 2 cc. per 1000 cc. of water. The 2-7-R remained effective for at least four months, but the vatsol effectively prevented egg laying for only about three weeks. Failure to deposit eggs appeared due to the female *Aedes* becoming caught on the surface of the water. Larvae and unhatched eggs were first seen in the vatsol beaker on June 8, whereupon the container was covered with cloth and kept covered during the rest of the experiment.

The vatsol solution, although it permitted egg laying after some three weeks, continued for a longer time to have a marked effect upon both larvae and pupae. This effectiveness decreased progressively, or perhaps individual mosquitoes reacted differently: at first most of the larvae died; later, a few pupae developed but later succumbed; eventually a few individuals managed to attain the adult stage. The affected pupae, on rising to the surface to breathe, were unable to maintain an upright position; instead, they capsized, swam about in erratic circles, and finally died.

Dr. F. E. Hance states that vatsol breaks down rapidly in an alkaline medium, being effective only some two hours at a pH of 9.4. Starting with distilled water of unknown hydrogen-ion concentration, repeated additions of tap water were made to replace evaporation; on August 29 the culture was found to have a pH of 8.6, identical with that of the tap water used.

It soon became evident that development of the surviving larvae was abnormally slow. This was shown to be a matter of inadequate nutrition, for platings by Mr. J. P. Martin revealed a comparatively low population of microorganisms in the culture, despite the presence of cut cane roots since the start of the experiment. This is not believed due to any bactericidal or fungicidal property of the vatsol. A few mosquitoes became adult during the latter weeks of the experiment, the last to issue being a female on September 21, 105 days after the larvae were first seen.

Corn carworm attacking chick pea—Mr. Van Zwaluwenburg exhibited pods of chick pea, or garbanzo (*Cicer arietinum* Linn.), which had been attacked by larvae of *Heliothis armigera* (Hübner). The larvae gnaw through the mature or nearly mature pod

and consume the pea within. A relatively high percentage of loss was thus caused in October among plantings of two varieties of garbanzo in the Makiki Station garden. Herrera (Las Plagas de la Agricultura, p. 448, 1904) mentions damage by this insect to garbanzos in Europe.

Pycnoderes quadrimaculatus Guerin—Mr. D. T. Fullaway reported the bean capsid bug as having been found on sweet potatoes. He also exhibited a slide mount of a handsome eulophid wasp, a parasite on a leaf-mining fly in bean leaves.

NOVEMBER 9, 1942

The 443rd meeting was held at the H.S.P.A. Experiment Station on Monday, November 9, at 2:00 p.m., with President Zimmerman in the chair.

Members Present: Messrs. Fullaway, Holdaway, Illingworth, Ito, Krauss, Look, Nishida, Sakimura, Schmidt, Swezey, Williams and Zimmerman.

Visitor: Darrel Bath.

The minutes of the preceding meeting were read and approved.

NOTES AND EXHIBITIONS

Hyperdasysella a new name for *Hyperdasys*—Mr. Swezey called to attention that Mr. Busck had recently informed him that Mr. T. Bainbrige Fletcher had given the name *Hyperdasysella* for *Hyperdasys* Walsm., the latter being preoccupied. This is a Hawaiian genus of four species of moths. Mr. Fletcher's record of the new name is in Ent. Rec. 52, p. 18, 1940.

Phyllocoptes destructor Keifer—Dr. Carl T. Schmidt submitted the following note: Dr. M. B. Linford turned some specimens of *Solanum nodiflorum* over to me recently, showing a characteristic bronzing of the leaves. These proved to be infested with an eriophyid mite suspected of being *Phyllocoptes destructor*. The mite specimens were sent to Dr. Keifer who verified the determination and made the following comment: "This mite showed up in California two years ago and has since proved to be the worst tomato pest that we have. We have noticed it to a limited extent on black nightshade (*Solanum nigrum*) and on petunias. In fact, it does some damage to petunias. Your record here of *Solanum nodiflorum* is a distinct addition to the host list. Judging from the number of mites on *S. nodiflorum*, *destructor* seems to like it very much. Undoubtedly, there are quite a number of solanaceous hosts besides those we know at the present time. I am inclined to believe that tomato was

not the original host since it attacks that plant with such violence that both plant and mite are rather quickly destroyed." Since that time I have seen additional specimens of an eriophyid mite on tomato where the leaves show bronzing, that are probably this same species, but the determination still remains to be verified.

Kauai insect records—Mr. Noel Krauss presented a list of insects collected on Kauai during October 1942: *Empoasca solana* De Long, bean leafhopper, Waimea, Oct. 23 on castor bean leaves, and at Half Way bridge, Lihue-Kalaheo, Oct. 26; *Pycnoderes quadrimaculatus* Guer., bean capsid, Lawai-kai, Oct. 19 on sweet potato; *Epitrix parvula* (Fab.), tobacco flea beetle, Anahola, Oct. 26 on eggplant leaves; *Anthonomus eugenii* Cano, pepper weevil, Hanapepe, Oct. 28 on *Capsicum* sp.; *Hermetia illucens* (Linn.), a soldier fly, Lihue, Oct. 16; *Volucella pusilla* Macq., a syrphid fly, Waimea, Oct. 23.

Trialeurodes vaporariorum (Westw.) — Mr. D. T. Fullaway said that bean growers at Waianae, Oahu, had observed flights of this white fly on still evenings.

Murgantia histrionica (Hahn)—Mr. T. Nishida stated that a single adult of the harlequin cabbage bug was collected on cabbage at the University farm, Manoa Valley, Honolulu, on October 21, 1942. On Oct. 31, 15 nymphs and 4 adults were observed on cauliflower at the same locality.

BOOK REVIEW

Mr. Swezey presented a review of the new textbook "College Entomology", by E. O. Essig.

DECEMBER 14, 1942

The 444th meeting was held at the H.S.P.A. Experiment Station on Monday, December 14, at 1:50 p.m., with President Zimmerman in the chair.

Members Present: Miss Amy Suehiro, Messrs. Carter, Faxon, Fullaway, Holdaway, Illingworth, Ito, Krauss, Marlowe, McBride, Pemberton, Rosa, Sakimura, Stains, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

Visitor: T. C. Russell.

Reading of the minutes of the preceding meeting was dispensed with. The treasurer's report was read and approved, subject to audit. The chair appointed Mr. Van Zwaluwenburg as auditor.

This being the annual meeting, a slate of officers to serve during the coming year was presented by the executive committee. There

being no further nominations from the floor, the slate was accepted and the following officers unanimously elected:

President.....Dr. F. G. Holdaway
 Vice president.....D. T. Fullaway
 Secretary-treasurer.....Dr. F. X. Williams
 Additional members of executive committee.....
Noel Krauss and Dr. Carl T. Schmidt

PAPERS

On behalf of Dr. R. L. Usinger, Dr. Williams presented a paper entitled: "A New Species of *Campylomma* from the Hawaiian Islands (Hemiptera, Miridae)."

Dr. Williams presented a paper entitled: "Biological Studies in Hawaiian Water-Loving Insects, part III, C, Tipulidae and Psychodidae."

Mr. Zimmerman presented two papers as follows: "Immigrant Species of *Drosophila* in Hawaii" and "On the Establishment of the Order Trichoptera in Hawaii."

NOTES AND EXHIBITIONS

Nymphula obliteralis (Walker)—Mr. Swezey reported having reared four specimens of this moth from larvae brought in by Dr. H. L. Lyon who had collected 40 of them in their cases from the leaves of a small water lily plant in an aquarium at his home in Honolulu, December 3. The moths matured December 7-10. Dr. Lyon had also collected 13 of the moths from the leaves of the plants in the aquarium on December 9 and 11. This moth was reared from water lilies earlier in the year by Mr. Fullaway and Dr. Williams, which was its first appearance in Honolulu. The moth was described from Florida and Texas, and occurs as far west as California. A considerable account is given of its habits in Illinois by Hart (Bull. Ill. State Lab. of Nat. Hist., IV, p. 176, pl. II, figs. 7-12, 1895). Specimens are to be sent to the U.S. National Museum for verification of Mr. Swezey's determination of the species.

Backyard insect census—Mr. Swezey reported that since reading Dr. F. E. Lutz' book "A Lot of Insects", in which he reported having found 1402 kinds of insects at his suburban home lot in New Jersey, he had listed the kinds of insects found in his backyard and house at Lanihuli Drive, Honolulu. It is rather meager compared with Dr. Lutz' list. Mr. Swezey's list by orders comprised the following: Hymenoptera 43; Diptera 39; Coleoptera 58; Lepidoptera 39; Hemiptera 36; Orthoptera 10; Dermaptera 3; Blattoidea 6; miscellaneous 18. A total of 252 species.

Anthonomus eugenii Cano—Mr. Pemberton reported observing many of this pepper weevil feeding on the flowers of a tomato-like plant, *Lycopersicum peruvianum*.

Rhopalosiphum pseudobrassicæ (Davis) — Mr. Pemberton reported the appearance of this aphid in great quantity on Chinese cabbage at Kipapa, Oahu, during November. Infestation was so heavy that an extensive planting of this vegetable suffered considerable loss.

Insects of rice and "haole koa" seeds—Mr. Sakimura presented the following on the species of insects living in stored rice and in recently collected seeds of *Leucaena glauca* Benth. Four pounds of rice and one pound of *Leucaena* seeds, both from a local source, were examined and all the specimens determined by Mr. Swezey.

Rice

<i>Oryzaephilus surinamensis</i> (Linn.).....	108
<i>Ephestia cautella</i> Walker (?).....	63
Parasites: <i>Habrobracon juglandis</i> (Ashm.).....	9
<i>Holepyris hawaiiensis</i> (Ashm.) (?).....	2
<i>Microbracon</i> sp.	1
<i>Cathartus advena</i> (Waltl).....	30
Undetermined mite	5
<i>Sitophilus oryzae</i> (Linn.).....	1

Haole koa seeds

<i>Bruchus pruininus</i> Horn.....	178
Parasite: <i>Lariophagus texanus</i> Crawfd.....	409
<i>Sitophilus oryzae</i> (Linn.).....	4
Parasite: <i>Chaetospila elegans</i> West.....	3
Undetermined mite	2

President E. C. Zimmerman presented the Society with a fine gavel made of two kinds of wood: the head of the gavel being *Acacia koa*, a native Hawaiian tree, and the handle being monkey-pod (*Samanea saman*), a much-planted introduced tree. Thus the gavel symbolizes the part-native, part-immigrant nature of the Hawaiian insect fauna.

The newly elected president took the chair, and the retiring president, Mr. Zimmerman, presented the annual address entitled: "An Introduction to the Origin and Development of the Hawaiian Insect Fauna".* As this interesting and extremely fitting address was of considerable length, the speaker dealt with only a few of its more important points, which he further clarified by means of charts.

* The Presidential Address has been withdrawn for publication by Bishop Museum. [Ed.].