Records of Immigrant Insects for the Year 1941

BY THE EDITOR

In this issue of the Proceedings, the following immigrant species are recorded for Hawaii. Those marked with an asterisk were observed for the first time at the date mentioned in 1941. The others were previously observed or known but not yet identified, or wrongly identified. For details of records, etc., refer in the text to the pages as given.

PROCEEDINGS

OF THE

Hawaiian Entomological Society

VOL. XI, No. 2 FOR THE YEAR 1941 JULY, 1942

JANUARY 13, 1941

The 421st meeting was held at the H.S.P.A. Experiment Station, on Monday, January 13, at 2:30 p.m. with President Zimmerman in the chair.

Members Present: Miss Bernice Harper, Miss Ethel Lucas, Messrs. Bianchi, Brown, Bryan, Callaghan, Fullaway, Illingworth, Krauss, Look, Mason, McBride, Pemberton, Oakley, Rosa, Sakimura, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

Visitor: August Busck.

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

Dr. G. D. Hale Carpenter was elected as a corresponding member.

The Secretary read a note of appreciation and thanks from Dr. L. O. Howard for his election as Honorary member of the Society. A letter from the Zoological Society of London asking for funds to aid in publishing the Zoological Record was read. It was moved, seconded and passed that the Secretary-Treasurer send the Zoological Society of London $25.00 for this purpose.

The secretary-treasurer read the financial statement of the Society, for the year ending December 5, 1940. The president appointed Mr. R. H. Van Zwaluwenburg to audit the financial statement.

The matter of publishing the Index to Proceedings Hawaiian Entomological Society, Vol. X was brought up by Mr. Otto Swezey. The secretary thought there would be sufficient funds for this. A discussion re publishing the index for volumes I-X followed and it was voted that a meeting of the Editorial Committee be called to consider the matter.

PAPER

Dr. J. F. Illingworth presented a paper entitled: "An Outbreak of Cockroaches, *Nauphoeta cinerea* (Olivier), in Honolulu".

NOTES AND EXHIBITIONS

Adoretus sinicus Burm.—Dr. Illingworth exhibited old leaves of a Cycad plant growing in his yard at Kaimuki. Since the Cycad is

a favorite food plant of the oriental rose beetle, the perfect foliage is a good indication of the scarcity of this pest during the past season. Leaves from the same plant, shown at our meeting May 6, 1937, were badly damaged, being only a network of fibers from end to end. Subsequent to that time the imported Bufo have become very abundant, and breed in an open fish pond in the yard.

Anomala orientalis (Waterhouse).—Mr. Sakimura reported that the pineapple fields in the area south of Wahiawa and Schofield Barracks have been recently surveyed for *Anomala* distribution. The extent of infestation in the pineapple fields was found to be much larger than that expected, and the whole area was generally infested. Kupehau, Kunia, Robinson, Kipapa, Pine Spur, Waipio, Waiawa are all within the infested area. *Anomala* grubs could not be found at Sanitarium Flat and Leilehua. The boundary of known distribution is now within a mile, at the shortest, from Wahiawa or Wheeler Field. Severe injuries on pineapple plant are now noticeable only at Kunia and Robinson. A brief survey disclosed that the grubs were not found in a pineapple field at Red Hill which is the nearest pineapple field from Honolulu and is far out from the boundary of the present known distribution within the sugar cane fields.

Listroderes obliquus (Gyll.)—Mr. Zimmerman reported that in January a package containing Hawaiian artifacts was sent to Bishop Museum from Kamuela, Hawaii, and in the excelsior packing there was found a series of the vegetable weevil. Nine living specimens and numbers of mashed specimens were removed from the excelsior in the small package received. It may have been that the weevils had had access to and had hidden in the excelsior before it was used as packing. The weevil is apparently common at Kamuela. This interception indicates how easily the weevil may be transported to new areas although it is not in company with any of its food plants. This insect was first described from the southern end of South America and has spread widely and rapidly in recent years. It has found its way to many favorable localities in North and South America and is in Australia and South Africa. Mr. Swezey found it in Hawaii for the first time in 1926 on the island of Hawaii.

Melophagus ovinus (Linn.) — Mr. Van Zwaluwenburg mentioned recent correspondence with Dr. J. C. Bequaert of the Harvard Medical School concerning the presence of this hippoboscid parasite of sheep in Hawaii. According to Dr. Bequaert the records from the island of Hawaii are the only ones so far from Oceania, although the species is known from Australia, Tasmania and New Zealand. The earliest record from Hawaii is by Muir (P.H.E.S., vii, 4) from a specimen taken on a bag of forest seeds collected "in a strip of forest adjacent to a sheep run in Honohina [Hawaii]" in December 1926. On October 4, 1931 Swezey and

Williams (P.H.E.S., viii, 188) collected a specimen in the saddle room at Keanakolu, at an elevation of 5250 feet. If the first record is from a point farthest inland in the Honohina district (there is now no way of determining the exact location) the two localities are not less than six miles apart, and possibly considerably more. It would seem reasonably certain that the insect is established on wild or domesticated sheep on the eastern slopes of Mauna Kea, since it was collected some five years apart. In the absence of other records it is impossible to define the extent of its range on Hawaii, and it is suggested that collectors having access to the uplands of that island gather further information as to its distribution and prevalence.

FEBRUARY 10, 1941

The 422nd meeting was held at the H.S.P.A. Experiment Station, on Monday, February 10, 1941, at 2:30 p.m. with President Zimmerman in the chair.

Members Present: Miss Ethel Lucas, Messrs. Bianchi, Bryan, Fullaway, Illingworth, Look, McPhail, Pemberton, Rosa, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

Visitor: August Busck.

The minutes of the preceding meeting were read and approved.

Mr. R. H. Van Zwaluwenburg stated that he had audited and found correct the report of the treasurer for the year ending December 5, 1940.

PAPER PRESENTED

Mr. August Busck presented and discussed a paper entitled: "On the Making of Genitalia Slides of Lepidoptera."

NOTES AND EXHIBITIONS

Pectinophora gossypiella (Saund.).—Mr. Swezey exhibited specimens of the pink bollworm moth which he had reared from the seeds of *Thespesia populnea.* He had collected 30 capsules from trees at Kokokahi, by the shore of Kaneohe Bay, January 25, 1941. From these 30 capsules 8 pink bollworm moths have already issued. There also issued one parasite (*Pristomerus hawaiiensis*) and one *Opogona aurisquamosa.* Mr. Swezey had never before found this moth so abundant in *Thespesia* capsules.

Cycloptilum bimaculatum (Shiraki). — Mr. C. E. Pemberton stated that specimens of this wingless "bush cricket" were sent to Mr. C. F. W. Muesebeck, In Charge, Division of Insect Identification, U.S. Bureau of Entomology and Plant Quarantine, for identification. In a letter dated January 14, 1941, Mr. Muesebeck states that A. B. Gurney had identified the cricket as above. It was originally described from Formosa. A number of specimens of this

cricket were collected on Alewa Heights, Honolulu, and exhibited at a previous meeting of this Society. To date it has not been found elsewhere in Hawaii.

New host of Dioctes chilonis Cushman.—Mr. Van Zwaluwenburg exhibited an adult ichneumonid wasp identified as this species by Dr. Williams, bred from a cocoon found in a tunnel of the sweet potato moth borer, *Omphisa anastomosalis* Guenee, and presumably parasitic on that pyralid. The cocoon was collected February 4 in Field 81, Ewa Plantation Company; the wasp issued on February 10. *Dioctes chilonis* was introduced by F. C. Hadden from China in 1928 as a parasite of the rice borer, *Chilo simplex* (Butler), on which it is established on Oahu and Kauai. Miss Lucas mentioned that she also had bred *Dioctes* from *Omphisa.*

Ampulex compressa (Fab.).—Dr. F. X. Williams spoke of the longevity of one of these wasps caught in a garden in Noumea, New Caledonia, on October 31, 1940. Designated as wasp No. 3, she parasitized several dozen *Periplaneta* cockroaches, and died on February 10, 1941, a life of 102 days in captivity.

MARCH 10, 1941

The 423rd meeting was held at the H.S.P.A. Experiment Station, on Monday, March 10, 1941, at 2:30 p.m. with President Zimmerman in the chair.

Members Present: Miss Bernice Harper, Miss Ethel Lucas, Messrs. Bianchi, Bryan, Callaghan, Fullaway, Goolsby, Holdaway, Illingworth, Krauss, Oakley, Pemberton, Rosa, Schmidt, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

Visitor: Mr. William J. Clench.

The minutes of the preceding meeting were read and approved. Out of respect for the late Mr. E. M. Ehrhorn, the president asked that the members stand for sixty seconds.

Mr. Otto Swezey presented resolutions, as follows:

Edward Macfarlane Ehrhorn

Whereas in the death of Mr. Edward Macfarlane Ehrhorn on February 10, 1941, the Hawaiian Entomological Society has suffered the loss of one of its most devoted and oldest members, therefore

Be it resolved, that the Hawaiian Entomological Society hereby records its grievous loss and expresses appreciation of his keen interest and participation in the affairs of the Society, of which he served as its President in 1911, 1915, Vice-President in 1935; and

as a member of the Executive Committee for the years 1919, 1930, 1931, 1932 and 1933; and to which he contributed papers and numerous notes on entomological observations for printing in the Proceedings of the Society, and

Be it further resolved, that a biographical sketch be prepared for printing in the Proceedings of the Hawaiian Entomological Society, and

Be it further resolved, that a copy of these resolutions be sent with expression of deep sympathy to the bereaved family.

President Zimmerman then appointed Mr. O. H. Swezey, as chairman, with D. T. Fullaway and F. X. Williams as a committee to write a biography of Mr. Ehrhorn.

BIOGRAPHICAL SKETCH

Edward Macfarlane Ehrhorn
(1862-1941)

The death of the veteran entomologist and plant quarantine inspector, Edward Macfarlane Ehrhorn, occurred February 10, 1941, at the Queen's Hospital in Honolulu, after a short illness. At his death, Mr. Ehrhorn was 79 years of age. During the last 31 of these years his residence had been in Honolulu.

Most of Mr. Ehrhorn's earlier life was spent in California. He was born in San Francisco, January 24, 1862. During his childhood years, he was sent to Germany, where he was educated in German schools, 1871-1878, later studying a year at Grenchen, Switzerland and at Brighton College, England. He studied entomology at Stanford University, California, after which he was deputy quarantine officer for the California State Board of Agriculture for 1891, and county entomologist and horticulture commissioner for Santa Clara County, California, 1892-1904. From 1904 to 1909 he was first deputy state commissioner of horticulture and horticultural quarantine officer at San Francisco, California. At this time he was very active as a collector and made many field excursions in California, extended at times into the Southwest and Mexico. His close association with and great friendship for Dr. L. O. Howard, Chief of the Federal Bureau of Entomology, led to his appointment to the Gypsy Moth Commission.

Mr. Ehrhorn came to Honolulu in 1909 as superintendent of entomology at the Territorial Board of Agriculture and Forestry, after the death of Mr. Alexander Craw, who had organized the plant quarantine service in 1904. When the plant inspection was organized as a separate division in 1916, Mr. Ehrhorn was placed in charge of it, a position which he held until being retired in 1926, after which he served in advisory capacity as Consulting Entomologist.

Edward Macfarlane Ehrhorn

Mr. Ehrhorn was elected to active membership in the Hawaiian Entomological Society, November 4, 1909; therefore, was one of the very few who remained of the early members. He was president of the Society during the years 1911, 1915, and vice-president in 1935. Numerous notes and exhibitions were contributed at the monthly meetings of the society; several papers were presented, which are listed at the end. His special interests were the mealybugs, scale insects, ants, and termites. After his retirement as chief plant inspector in 1926, several years were devoted to termite control work in Honolulu, particularly in connection with several downtown business blocks.

Aside from entomology, Mr. Ehrhorn was keenly interested in botany and horticulture. At his home grounds in Manoa Valley are numerous examples of his success in hybridizing cannas, cactus and crotons. Many other novelties in ornamental plants are also present.

Other scientific societies of which he was a member are: American Association for the Advancement of Science, American Association of Economic Entomologists, Entomological Society of America, Pacific Coast Entomological Society, California Academy of Natural Sciences, Hawaiian Academy of Science, Hawaiian Botanical Society.

The University of Hawaii conferred upon Mr. Ehrhorn the honorary degree, Master of Science, in 1932, at which time he was lecturer in horticulture at the University.

Mr. Ehrhorn was a member of the Fraternal Orders: Elks, Masons, Shriners.

He married Miss Jane Jones in 1927, who survives him. He also has two brothers and two sisters living in California.

Papers by Mr. Ehrhorn in the Proceedings of the Hawaiian Entomological Society:

1912 A few Notes on Coccidae, II, pp. 147-150, Pl. 5.

1912 Gall-making Coccidae, II, p. 179.

1913 Notes on the large House Spider, Heteropoda regia, II, p. 196.

1913 Suggestions for the Future Growth of the Hawaiian Entomological Society (Annual Address), II, pp. 203-205.

1914 Pseudococcus Species found on Sugar Cane in Hawaii, III, pp. 1-3.

1916 Contributions to the Knowledge of the Dactylopiinae of Hawaii (Annual Address), III, pp. 231-247.

O. H. Swezey
F. X. Williams
D. T. Fullaway.

The subject of Biological Abstracts having been brought up and discussed Dr. Carl Schmidt made a motion, "that the president appoint a member of the Society to supply biological abstracts of each paper appearing in the proceedings of the Hawaiian Entomological Society." The motion was seconded by Mr. C. E. Pemberton, and passed. The president then appointed Mr. E. H. Bryan for this task.

PAPERS PRESENTED

On behalf of Mr. W. S. Fisher, U.S. Dept. of Agriculture, Mr. R. H. Van Zwaluwenburg presented a paper entitled "A New Species of Trixagus from the Hawaiian Islands" (Coleoptera: Trixagidae). On behalf of Dr. Schedl, Mr. O. H. Swezey presented a paper on Hawaiian Scolytidae and Platypodidae, which will be published along with Mr. Swezey's paper "Notes on Food-Plant Relations of Scolytidae and Platypodidae in the Hawaiian Islands." (See Proc. Haw. Ent. Soc., XI: 109-117, 1941.)

NOTES AND EXHIBITIONS

Dioctes chilonis Cushman.—Mr. Bianchi stated that in a collection made from four sweet potato vines grown at Ewa Plantation he had found seven cocoons of the ichneumonid *Dioctes chilonis* and only six unparasitized larvae of *Omphisa anastomosalis,* the sweet potato stem borer. This indicates that the paucity of records hitherto available has not truly pictured the importance of *Dioctes* as a factor in the control of this serious pest.

Cerambycobius cushmani Crawf.—Mr. Bianchi stated that he had recently bred this parasite from larvae of the sweet potato weevil, *Euscepes postfasciatus,* collected at Ewa and Waipahu on this island. This constitutes a new record for *Cerambycobius,* which is found to attack *Euscepes* larvae of a very wide range of development but unfortunately seems able to reach only larvae boring in the aerial branches of the host plant, attacking there only those larvae which may be near the surface or exposed by breaks in the tissues of the plant. Probably for this reason the importance of *Cerambycobius* as a check on *Euscepes* appears to be small, the percentage of parasitism among several large collections from Oahu Sugar Plantation not exceeding 5%.

Dendrothripoides impomeae Bagnall.—Mr. Bianchi stated that this thrips, of which he had previously found only a single specimen on grass at Kailua, Oahu, (See Page 38, Proc. Haw. Ent. Soc. Vol. XI, No. 1, 1941) is now quite common on sweet potatoes at Ewa Plantation. The eggs are laid, in the usual terebrantian manner, just under the epidermis of the soft, new shoots of the plant and both young and adult thrips are far more common in these areas than in the drier and tougher parts of the plant. Contrary to reports from other countries, no visible damage is done to the host plant by *Dendrothripoides* populations of the moderate density so far

observed in Hawaii and there is even some indication that the thrips may be beneficially predatorial on the eggs of the sweet potato leaf miner, *Bedellia orchilella.* The point, however, needs further elucidation.

Puliciphora sp.—Mr. Bryan exhibited two slides of this phorid which had been submitted to him by the Hawaii Agricultural Experiment Station. Professor C. T. Brues had identified the flies as males of *Puliciphora* sp., stating that species of this genus were so poorly known that he could not attempt to attach a specific name. The specimens had been bred at the experiment station from the larvae of *Lycophotia margaritosa,* collected on Maui by T. Yoshida, Jan. 14, 1940. Dr. Brues thought that these flies were not parasitic, but that they had attacked the caterpillars after they were dead, that being the habit in this genus.

Dr. Carter reported injury to mango flowers at Kapaa, Kauai by *Elimaea punctifera* (Walker) and *Holochlora japonica* (Brunn.). The latter species is apparently a new record for that island. Specimens were received from Mr. Bernard Pratt on January 3, 1941. Specimens were exhibited.

Mr. D. T. Fullaway exhibited and discussed *Megamelus davisi,* a recent leafhopper (Delphacidae), immigrant to these Islands, having been taken on Nymphea water lilies, at Aiea, Oahu.

Mr. R. H. Van Zwaluwenburg said that the salt-water strider at Canton Island had recently been determined by Dr. R. Usinger, as *Halobates micans* Esch.

Mr. C. E. Pemberton exhibited an attractive species of encyrtid wasp, possibly a new species, which he found on the laboratory window.*

Mr. E. C. Zimmerman introduced Mr. W. J. Clench, head of the Department of Malacology Museum of Comparative Zoology, Harvard University.

APRIL 14, 1941

The 424th meeting was held at the H.S.P.A. Experiment Station, on Monday, April 14, 1941 at 2:30 p.m., with President Zimmerman in the chair.

Members Present: Miss Ethel Lucas, Messrs. Carter, Fullaway, Holdaway, Look, Mason, McBride, Pemberton, Rosa, Schmidt, Swezey, Van Zwaluwenburg, Williams and Zimmerman.

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

Mr. O. H. Swezey reported for the publication committee that the material for the 1940 Proceedings had been assembled and that it would make a small number.

* Later on, specimens of the same insect were found on windows at the Pineapple Research Institute. Some specimens were sent to Mr. Harold Compere for determination, who found them to be of an undescribed species of *Metaphycus,* or a closely related genus.

PAPER PRESENTED

Dr. Carl T. Schmidt presented a paper entitled, "Ear Worm Control in Sweet Corn", and discussed it briefly.

NOTES AND EXHIBITIONS

New Aleurodid in Hawaii—Mr. Swezey exhibited leaves of the star jasmine badly infested by an aleurodid which appeared new to him; also a slide mount of the insect. It is distinctly different from *Aleyrodes kirkaldyi* Kotinsky which was described from Hawaii in 1907 as occurring on a species of jasmine. (Board of Agriculture and Forestry of Hawaii, Ent. Bull. 2, p. 95, Pl. I, figs. 2a-d, 1907). Mr. Swezey found a considerable infestation by this aleurodid on the University of Hawaii campus, April 12, 1941.

Volucella pusilla Macquart.—Mr. Swezey reported on rearing this syrphid fly from rotten panini (*Opuntia*), brought in by Mr. Tom McGuire from Waianae, Oahu, March 4, 1941. Mr. McGuire thought that the cactus was dying out from insect attacks. Maggots of this fly were the only insect forms found in the material, and one fly was reared. This fly has been reared previously from rotten branches of night blooming cereus, presumably where the maggots were secondary to some other injury.

Euhyposmocoma asplenii Meyrick. — This name is found in Fletcher's "List of Generic Names used for Microlepidoptera", published as Indian Entomological Memoir, XI, *asplenii* being designated as genotype of Swezey's genus *Euhyposmocoma.* Mr. Swezey reported that he had made an exhaustive search in literature for *asplenii,* without finding any record of why Meyrick had substituted the name *asplenii* for *ekaha,* which was designated by Swezey as the type when he erected the genus *Euhyposmocoma* (Proc. Haw. Ent. Soc., II, p. 277, 1913). Mr. Zimmerman had recently received an explanation from Mr. Fletcher, to whom he had written for a possible solution of the difficulty. Mr. Fletcher had been able to trace the name *asplenii* Meyrick to a list which he had copied from Meyrick's manuscript "List of Genonyms", where he had given *asplenii* as type of the genus *Euhyposmocoma.* Fletcher states that it is obvious that Meyrick considered *"ekaha"* as a barbarous and nonclassical name and so renamed the species *asplenii,* but this was in an unpublished manuscript. Hence where Fletcher had used it in his "List", it was merely a *nomen nudum,* and he states that *ekaha* therefore stands as the genotype of *Euhyposmocoma.*

Dr. F. G. Holdaway exhibited specimens of *Nysius nemorivagus* White which has been recorded attacking Chinese cabbage and cucumbers in the Kilauea Volcano district of Hawaii (4,000 ft.) during Oct. 1939, Feb., April and May 1940 and on Chinese cabbage May 1940, Kona, Hawaii. At Kilauea it also attacked hard-skinned squash. At Kona adults were found in numbers around roots of *Solanum nodiflorum* in Chinese cabbage fields. Only once

before has this lygaeid been recorded attacking an economic plant in Hawaii. In June 1933 Dr. M. B. Linford found it attacking the terminal shoots of Irish potato plants on Parker Ranch, Hawaii, (5,850 ft.) and causing severe wilting.

On behalf of Mr. Noel Krauss, Mr. D. T. Fullaway recorded that the fruit fly *Rhagoletis cingulata* Loew., was reared in quarantine from cherries imported from the northwest. The fruitfly larvae were so identified by Mr. Greene of the United States National Museum.

Mr. E. C. Zimmerman spoke of Mr. O. H. Swezey's very useful paper: "Observations on Insect Pests in Samoa which are not yet known to occur in Hawaii" and which has just been published in the Hawaiian Planters' Record (XLV, No. 1, 1941).

MAY 12, 1941

The 425th meeting was held at the H.S.P.A. Experiment Station, on Monday, May 12, 1941, at 2:30 p.m., with President Zimmerman in the chair.

Members present: Misses Bernice Harper and Ethel Lucas; Messrs. Browne, Bryan, Holdaway, Illingworth, Keck, Look, Oakley, Pemberton, Swezey, Van Zwaluwenburg and Zimmerman.

The minutes of the previous meeting were read and approved.

Dr. Holdaway, for the committee on common names, reported that the revision of the list of common names is now complete to date. After discussion it was suggested that the list be mimeographed and placed in the hands of entomologists, county agents and others in the Territory who can make use of it.

The name of Mr. Franklin Shuey was proposed for membership.

It was moved by Mr. Swezey, seconded and passed, that the President be given credentials from the Society for presentation when he attends the June meetings of the American Association for the Advancement of Science, and affiliated societies, at Pasadena, California.

After discussion it was moved by Mr. Bryan, seconded and passed, that the President present at the next meeting information with a view to the possible affiliation of this Society with the Pacific Coast Branch of the American Association for the Advancement of Science.

Mr. Zimmerman made a plea for a more general use of author names in notes and papers presented for publication in the Proceedings, and pointed out the confusion often arising from abbreviation of author names. A motion supporting his remarks was moved by Mr. Bryan, seconded by Mr. Pemberton, and passed unanimously.

NOTES AND EXHIBITIONS

Honeybee pollen.—Mr. Keck exhibited a jar containing six and one-half pounds of pollen, taken by means of a pollen trap, from ten colonies of honeybees over a period of five days. Not only is there a possible sale for pollen to mainland beekeepers to tide colonies over winter shortages, but there is, in addition, the possibility of substituting pollen in poultry feeds locally for wheat middlings as a source of protein. Prof. C. M. Bice of the University of Hawaii is using the pollen in a feeding experiment with young chicks. Analysis of the local pollen shows 19.3 per cent protein and 22 per cent fiber. Mr. Keck stated that in California as much as 40 pounds per season can be trapped from a single colony.

Hawaiian Oechalia.—Mr. Swezey exhibited a collection of 12 species of bugs of the genus *Oechalia* which were returned by Mr. R. L. Usinger who had recently completed an extensive paper on this genus of bugs.

Hierodula patellifera (Serville).—Mr. Swezey exhibited a specimen of this mantis which was collected Jan. 2, 1941 at Hanapepe, Kauai by Mr. F. Tom, a student at the University of Hawaii. It is the second specimen of this species which he had seen, the first having been collected at Waimea, Kauai in April 1924.

Blow flies attacking young calves.—Dr. Holdaway exhibited specimens of the following:

1. Adults of *Chrysomyia megacephala* (Fab.) and *Lucilia sericata* (Meigen) reared from "fly-struck" calves up to two weeks old, with larvae of both these species.
2. Adults of *Chrysomyia megacephala* and *Chrysomyia rufifacies* (Macquart) collected on and breeding in a dead calf with larvae of *C. rufifacies.*
3. Adults of *Cryptolucilia caesarion* (Meigen) and *Chrysomyia megacephala* reared from wet cow dung.

Dr. Holdaway stated that during November and December 1940 a number of calves had died on Kauai as a result of "fly-strike." One large ranch lost ten calves representing 25 per cent of the calves born to that time before it was realized what the cause was. An additional 24 calves were blown, making a total of 34 calves struck, or 46 per cent of the calves born. One small ranch reported that *all* calves of 11 born during the year died, apparently as a result of fly attack. In general the calves were attacked soon after birth and during the first two months of life. While both *Lucilia sericata* and *Chrysomyia megacephala* reared from "fly-struck" calves, the latter is apparently the more important. It is the most abundant fly breeding in carcasses. One specimen of *C. megacephala* was reared from wet cow dung. The majority of the green flies reared from cow dung were *Cryptolucilia caesarion. C. megacephala* has been recorded as attacking sheep in Hawaii but has not previously been recorded as causing the death of new-born calves.

Pinnaspis buxi on Pandanus.—Mr. Browne presented the following note: While on Molokai early in April my attention was called to lauhala in the Pukoo area because the local residents complained that the leaves were stained and unfit for weaving. Examination showed a very heavy infestation of *Pinnaspis buxi* (Bouché). Local weavers who derive a considerable portion of their income from the trees, as well as social workers on Molokai, are much concerned about possible control measures. Steps have been taken to secure and release the predatory coccinellid *Telsimia nitida* Chapin.

JUNE 9, 1941

The 426th meeting was held at the H.S.P.A. Experiment Station on Monday, June 9, 1941, at 2:30 p.m. In the absence of both president and vice president, Ashley C. Browne was asked to preside.

Members present: Miss Bernice Harper, Messrs. Browne, Bryan, Carter, Keck, Pemberton, Rosa and Van Zwaluwenburg.

The minutes of the previous meeting were read and approved. Mr. Franklin Shuey was unanimously elected to active membership.

A letter was read from Dr. J. Murray Luck, secretary of the Pacific Division of the American Association for the Advancement of Science, giving further details concerning association with the Pacific Division and affiliation with the national organization. After some discussion it was moved, seconded and carried that the Society withhold action on this matter until arrangements can be made to investigate affiliation with the national organization of the A.A.A.S.

PAPERS PRESENTED

On behalf of Mr. Zimmerman, the following paper was presented: "A New Scydmaenid from Hawaii (Coleoptera)".

Also presented for Mr. Zimmerman was his paper entitled: "A New Phanerostethus from New Caledonia (Coleoptera: Curculionidae)".

NOTES AND EXHIBITIONS

Orb web spider preying on Scolia.—Dr. Carter exhibited three adult *Scolia manilae* Ashmead taken in the web of *Argiope avara* Thorell in a pineapple field at Wahiawa, March 25. Each wasp was tightly rolled in a silk web, and although alive when found, was utterly helpless. Mr. Pemberton commented on the reduced numbers of this spider of recent years due to the ichneumonid parasite of spider eggs, *Tromatobia rufopectus* (Cresson).

Colobicus parilis Pascoe—Mr. Van Zwaluwenburg reported the emergence on June 3 of this colydiid beetle from sweet potatoes brought into the laboratory on May 2. Colydiids vary in habit from

true parasites to scavengers; it is not known if this beetle was predaceous upon the numerous *Euscepes* larvae infesting the sweet potatoes, or if it fed upon the decaying vegetable matter present.

Another parasite of the sweet potato stem borer.—Mr. Van Zwaluwenburg reported rearing the native braconid, *Chelonus blackburni* Cameron, from a pupa found in the tunnel of *Omphisa anastomosalis* Guenee, in Field 61, Oahu Sugar Co., on May 20. This is a hitherto unrecorded enemy of this pyralid pest.

JULY 14, 1941

The 427th meeting was held at the H.S.P.A. Experiment Station, Monday July 14, 1941 at 2: 30 p.m. In the absence of both president and vice-president Mr. O. C. McBride was asked to preside.

Members present: Messrs. Keck, Oakley, Pemberton, Rosa, Van Zwaluwenburg and Williams.

Visitor: Douglas Worcester.

The minutes of the previous meeting were read and approved.

PAPERS PRESENTED

Mr. Van Zwaluwenburg discussed, and presented, by title, a paper concerning a new species of Subprotelater (Eucnemidae) taken by F. X. Williams in New Caledonia in 1940.

On behalf of Prof. C. T. Brues, F. X. Williams presented a paper entitled "Rediscovery of *Leucospis antiqua* Walker in New Caledonia". The insect involved is a large chalcid that greatly resembles at first sight an eumenid wasp occurring in the same region.

Mr. R. G. Oakley discussed the status of parasitization of the rice borer *Chilo simplex* at Waipahu, Oahu.

Mr. C. B. Keck discussed the feeding of bee pollen to chickens, as a possible substitute for wheat middlings.

AUGUST 11, 1941

The 428th meeting was held at the H.S.P.A. Experiment Station, Monday August 11, 1941 at 2: 30 p.m. In the absence of both president and vice-president Mr. E. H. Bryan, Jr., was asked to preside.

Members present: Miss B. E. Harper, Messrs. Bryan, Carter, Keck, McBride, Rosa, Van Zwaluwenburg and Williams.

Visitor: Douglas Worcester.

The minutes of the previous meeting were read and approved.

NOTES AND EXHIBITIONS

Dr. Walter Carter spoke of his experiments with the pineapple mealybug *Pseudococcus brevipes*. He induced these insects to insert their beaks in plain agar. Thus, for the first time insect feeding tracks were produced outside plant tissues. The mealybug ejects saliva, that congealing around the stylets, forms a very slender cylinder, plainly visible under the microscope. Dr. Carter also showed photographs of these feeding tracks.

Mr. E. H. Bryan, Jr., exhibited some leeches taken in the Hawaiian Islands and sent to Professor J. Percy Moore of the University of Pennsylvania for determination. These determinations were: *Glossiphonia weberi* and *Barbronia weberi* subspecies *formosana*. Both these fresh water species are also common in the orient.

SEPTEMBER 8, 1941

The 429th meeting of the Hawaiian Entomological Society was held at the H.S.P.A. Experiment Station, on Monday, September 8, 1941 at 2:30 p.m., Mr. O. H. Swezey presiding.

Members present: Miss Bernice Harper, Messrs. Keck, Marlowe, Pemberton, Rosa, Sakimura, Swezey and Williams.

The minutes of the previous meeting were read and approved.

The Secretary reported that the Executive Committee had approved the bill of $480.38 for printing "Proceedings," Vol. XI, No. 1.

Mr. O. H. Swezey kindly took over the unfinished data of indexing Proceedings of the Hawaiian Entomological Society, Vol. X, from Mr. E. H. Bryan, Jr., whose added duties prevent his completion of it.

NOTES AND EXHIBITIONS

Liposcelis divinatorius Mull.—Mr. Pemberton exhibited a half pound of polished rice which was gradually being reduced to powder by this insect. The rice had been kept in a glass jar with a tight cloth cover for 4½ months and had been sterilized with heat prior to being placed in the jar. The psocids had evidently gained entrance to the jar after the rice had been placed in it and had multiplied tremendously. Many hundreds could be seen in and over the hollowed kernels of rice. Prior to sterilization the rice had been injured by the rice weevil *Calandra oryzae* L.

Ampulex compressa (Fabr.).—Dr. F. X. Williams reported finding this wasp—imported Nov. 1940 from Noumea, New Caledonia—common on a chicken shed at the University of Hawaii poultry farm, on August 22, 1941. Adult wasps had been liberated there on March 4 and May 2, 1941. Previously, on July 23 to Sept. 4, 1941 he had noticed a male *Ampulex* on the trunk of a "Yellow

Shower" (Cassia) at upper Keeaumoku St., some distance from any point of liberation. The wasp is probably established here.

Tiphia segregata Crawford.—Dr. F. X. Williams reported on his findings re this wasp at Kailua, in late August. The insect was first observed early in August 1941 at Kailua by Messrs. Pemberton and Van Zwaluwenburg. The *Tiphia segregata* parasitized only *Anomala* spp. Introduced into the Hawaiian Islands in 1917, it was found years later parasitizing only *Anomala orientalis* in the cane fields of Oahu Sugar Plantation. However, at Kailua, Oahu, where *Anomala* has never been found, but where *Adoretus sinicus* Burm. abounds, the wasp was found parasitizing larvae of *Adoretus* in precisely the same manner as it parasitizes *Anomala.* Between 40 and 30 *Adoretus* grubs were collected in the Kailua vegetable gardens and of these 2 showed a *Tiphia* egg glued near the apex of the abdomen. Two *Tiphia* wasps confined with *Adoretus* grubs lost no time in parasitizing them.

Mr. C. E. Pemberton said this was the first record of *Tiphia* here outside the *Anomala* area and he suggested the adaptation of *Tiphia segregata* to *Adoretus* grubs might constitute a biological race of this wasp.

Mr. Pemberton also remarked that years ago large numbers of *Tiphia lucida* Crawford, an *Adoretus* parasite, were imported from the Philippines and liberated on Oahu. The wasp has never been found here.

Meligethes aeneus (Fab.).—Mr. Swezey exhibited a specimen of this nitidulid beetle collected by him at Springfield, Oregon, July 22, 1941, where it was very abundant on flowers of *Sonchus,* dandelion and other weeds and garden plants. This species is peculiar in that the elytra completely cover the abdomen. It is an European species, where it is known as the rape flower beetle and considered a pest. The specimen was identified by comparison with a specimen in the Giffard collection of California beetles labelled *Meligethes brassicae,* which in the Leng catalog is synonymized with *aeneus.* The specimen exhibited was the more remarkable in that during a tour of two months on the mainland, it was the only insect specimen collected.

Pasadena Entomological Meetings. — Mr. Swezey gave an account of his attendance at the meetings of the Pacific Slope Branch of the American Association of Economic Entomologists at Pasadena, California, June 18-20. The attendance was unusually large, about 300 being registered, though there were not that many present at any one time. There were sessions for three days, and one evening was taken up with a symposium on "Relationships between Systematic and Economic Entomology", which was about the most interesting of the sessions. There were 57 papers on the complete program, many of them having to do with modern insecticides and the results of experiments in their use to control orchard

pests. He met many old acquaintances at the meetings, but the majority in attendance were a younger generation of entomologists who displayed great enthusiasm in their own respective lines of research. A banquet was held one evening at which 150 participated. After the close of the meeting, Mr. Swezey visited a number of entomologists at their respective offices, laboratories or homes: Messrs. Pierce and Comstock at the Los Angeles Museum; Timberlake and Compere at Citrus Experiment Station, Riverside; Hermes, McLeod, Essig, Light and Linsley at Berkeley; Mackie at Sacramento; Usinger, Eckert, and Stewart at Davis; Armitage and Ting at Plant Quarantine Dept., San Francisco; Smyth at Glen Ellen, Calif.; Reeves at Salt Lake City; Erhard at Field Museum, Chicago.

OCTOBER 13, 1941

The 430th meeting of the Hawaiian Entomological Society was held at the H.S.P.A. Experiment Station, on Monday, October 13, 1941 at 2:30 p.m., Vice-President O. H. Swezey presiding.

Members Present: Messrs. Browne, Holdaway, Ito, Keck, Krauss, Look, Marlowe, Oakley, Pemberton, Rosa, Swezey, Van Zwaluwenburg and Williams.

Visitor: T. Nishida.

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

Mr. O. H. Swezey stated that the Hawaiian Sugar Planters' Association had paid for printing the Proceedings, Vol. XI, No. 1. It was moved by Mr. C. B. Keck and seconded by Mr. R. H. Van Zwaluwenburg that the Society extend its thanks to the Hawaiian Sugar Planters' Association. Passed.

Mr. O. H. Swezey said that he had finished indexing Volume X of the Proceedings and that it was now in press.

PAPERS PRESENTED

Mr. K. Ito presented a paper entitled: "Seasonal Trend in the Development of the Sex Forms of the Fire Ant, *Solenopsis geminata* Fab. var. *rufa* Jerdon, in the pineapple fields of Oahu." Mr. Ito briefly discussed this paper.

Mr. R. H. Van Zwaluwenburg presented a paper entitled: "Notes on the Temporary Establishment of Insect and Plant Species on Canton Island".*

NOTES AND EXHIBITIONS

Ctenolepisma urbana Slabaugh.—Dr. F. G. Holdaway reported that Miss Eder Lindsay had recently examined the common silver-

* Published in The Hawaiian Planters' Record, vol. XLVI, No. 2, 1942.

fish infesting University buildings and had identified it as *Ctenolepisma urbana* Slabaugh, which was described in Entomological News, p. 95, Pl. III, 1940. The name *Lepisma saccharina* which had been tentatively used in the list of common names of insects in Hawaii has therefore been changed to *Ctenolepisma urbana* Slabaugh.

Agromyzid leafminer in Scaevola from Canton Island.—Mr. Van Zwaluwenburg exhibited an agromyzid fly bred from leafmines in *Scaevola frutescens* (Miller) Krause on Canton Island. This fly is not yet identified, but may be the same species (also unidentified) which Mr. Swezey found associated with leafmines in *Scaevola* in Guam and in Samoa. From *Scaevola* mines Mr. Van Zwaluwenburg also bred a female parasite determined by C. E. Pemberton as an eulophid. This is the first insect parasite known from Canton with the exception of the two recently introduced species, *Evania appendigaster* (L.) and the scelionid *Telenomus nawaii* Ashmead, both of which are now established there.

Proterhinus tantali Perkins.—Mr. Swezey reported on collecting 13 of this beetle on *Euphorbia* Sept. 28, 1941, at the place on Mt. Tantalus, and from the same clump of bushes from which he had collected the original lot of specimens April 22, 1934. This was the last species of *Proterhinus* described by Dr. Perkins. It has not yet been recorded from any other place than the original locality. Other species of *Proterhinus* attached to *Euphorbia* are: *bridwelli* Perkins on Maui; *bryani* Perkins on Nihoa; *euops* Perkins, Mt. Kaala; *euphorbiae* Perkins, Mt. Kaala, Kukuiala Val. and Lanihuli; *impressiscutis* Perkins, Mt. Kaala; *impressiscutis* var. *nudior* Perkins, Hauula, Kahauiki, Lanihuli and Kuliouou; *obscurus* var. *chryseis* Perkins, Koolau Mts. from Kuliouou to Kahana. This is a total of 6 species and 2 varieties.

NOVEMBER 10, 1941

The 431st meeting of the Hawaiian Entomological Society was held at the H.S.P.A. Experiment Station, on Monday, November 10, 1941, at 2:30 p.m., Vice-President O. H. Swezey presiding.

Members present: Messrs. Browne, Carter, Fullaway, Illingworth, Pemberton, Rosa, Swezey and Williams.

PAPERS PRESENTED

Mr. A. C. Browne presented a paper entitled: "Insects taken at Light at Kalawahine Place, Honolulu."

Mr. O. H. Swezey presented papers entitled: "An Immigrant Tenebrionid Beetle new to Hawaii"; "Corrections in Use of the Name *Oechalia grisea* (Burm.) (Hem.)"; and "Some Corrections

in the Use of Names for the Species of *Nysius* in Hawaii. (Hem.)".

On behalf of Dr. R. L. Usinger, Mr. O. H. Swezey presented a paper entitled: "A New Species of *Oechalia* from Oahu (Hemiptera: Pentatomidae)."

NOTES AND EXHIBITIONS

Dr. J. F. Illingworth stated that he found *Musca domestica* more numerous this season in Kaimuki than before.

Dr. Walter Carter exhibited a photograph of two weeks exposure made with radio-active material of the feeding tracks of a mealybug. The radio-active phosphorus collected not in intestinal tract but in the mycetom area of the insect.

Mr. C. E. Pemberton exhibited *Sessinia livida* (Fab.) sent him by an army doctor from the South Pacific with the statement that the insect was capable of blistering if brushed off one's arm for example; the beetle is rather widespread in Polynesia to Fiji.

Mr. Pemberton also mentioned the interception in Honolulu on a bomber plane from the Pacific coast, of a living *Anopheles* sp. mosquito, and of two living *Diabrotica soror* beetles.

Mr. D. T. Fullaway spoke of his recent work on the mainland, chiefly in Michigan, on parasites of *Megamelus davisi* the leafhopper now occurring on *Nymphea* water lilies on Oahu.

DECEMBER 22, 1941

The 432nd meeting of the Hawaiian Entomological Society was held at the H.S.P.A. Experiment Station on Monday, December 22, at 2: 30 p.m., Vice-President O. H. Swezey presiding.

Members present: Messrs. Fullaway, Holdaway, Illingworth, Keck, Krauss, McBride, McPhail, Marlowe, Pemberton, Rosa, Sakimura, Swezey, Van Zwaluwenburg and Williams.

Mr. Swezey moved that in view of the short time at our disposal the reading of the minutes be dispensed with, save the treasurer's report.

The treasurer presented the financial report for the year ending December 3, 1941. It was moved, seconded and passed that this report be accepted subject to audit. Mr. Swezey appointed Mr. Fullaway as auditor.

The following officers were elected for 1942:

President.....E. C. Zimmerman
Vice-President.....O. H. Swezey
Secretary-Treasurer.....Dr. F. X. Williams
Additional members of Executive
Committee.....D. T. Fullaway
Dr. F. G. Holdaway

PAPERS PRESENTED

Dr. F. G. Holdaway presented a paper entitled: "Insects associated with freshly threshed dry beans".

On behalf of Dr. C. T. Brues, Mr. O. H. Swezey presented a paper entitled, "A Species of Phoridae bred in Hawaii from the Immigrant African Land Snail (*Achatina fulica*)".

Mr. O. H. Swezey presented a paper entitled: "Notes on food habits of Lepidoptera in Samoa".

Mr. D. T. Fullaway presented a paper entitled: "A list of Parasitic Hymenoptera collected by F. X. Williams in New Caledonia." Dr. F. X. Williams presented a paper entitled: "Ampulex Compressa (Fabr.) A Cockroach-Hunting Wasp Introduced from New Caledonia into Hawaii".

NOTES AND EXHIBITIONS

Mr. R. H. Van Zwaluwenburg mentioned the recovery on the Island of Maui, of *Baeus californicus* Pierce, hymenopterous egg parasite of the Black Widow spider, introduced from California.

Waterlily leafhopper egg-parasite.—Mr. Fullaway reported that the egg parasite of the waterlily leafhopper introduced from Michigan during the past summer, has become established here. Recoveries were made from leafhopper material collected from a Waikiki lily pond early this month. In the meantime, information has been received in regard to the identity of the species of *Megamelus* infesting our waterlilies. Mr. Oman, of the U.S. Bureau of Entomology and Plant Quarantine, has compared examples from here with typical material of *M. davisi* and states he is convinced they are different species—that our bug is identical with specimens in the national collection taken in Florida—possibly *M. angulatus,* or an undescribed species.

Anagrus frequens Perkins.—Mr. Swezey reported rearing this mymarid abundantly from eggs of the corn leafhopper (*Peregrinus maidis* (Ashm.)) in leaves of teosinte at the Experiment Station, H.S.P.A. grounds Nov. 25, 1941. Count was made of the leafhoppers hatching from a half dozen leaves, which was 136, and from the same leaves 113 parasites issued, a parasitism of 45%. This demonstrates that this egg-parasite still persists, although not particularly noticed of recent years. Slide mounts were exhibited.

Pachyneuron allograptae Ashm.—Mr. Swezey reported having reared this syrphid parasite from two syrphid puparia found on leaves of teosinte at the Experiment Station, H.S.P.A. grounds, Nov. 25, 1941. Ten parasites issued from one puparium, and 15 from the other one, a 100% parasitism.

Ephestia kuhniella Zeller.—Mr. Swezey exhibited a specimen of the Mediterranean flour moth which had emerged from a pupa found in a tin of "vacuum-packed" walnut halves from California, Dec. 3, 1941. A pair was taken from the same tin on Dec. 5.