

P R O C E E D I N G S
of the **H A W A I I A N**
ENTOMOLOGICAL
SOCIETY *for* **1969**

VOL. XX, No. 3
August, 1970

Suggestions for Manuscripts

Manuscripts should be typewritten on one side of 8-1/2 × 11 white bond paper. Double space all text including tables. Margin should be a minimum of 1 inch. One original and 1 copy should be sent to the editor.

Pages should be numbered consecutively as well as footnotes, figures and tables. Place footnotes at the bottom of the manuscript page on which they appear with a dividing line. Place tables appearing in the manuscript separately at the back of the manuscript with a circled notation in the margin of the manuscript as to approximately where you wish them to appear.

Illustrations should be planned to fit the type page of 4-1/2 × 7 inches. The originals should be drawn to allow at least 1/2 reduction. It is preferred that original art work be reduced for reshooting by a line drawing velox process as supplied by a graphic arts plant to a size approximating 9 inches × 14 inches for submission to the editor. Photographs and graphs should be at least 8 × 10 inches. Original art work, however, is acceptable. Graphs and figures should be drawn in India ink on white paper, tracing cloth or light blue cross-hatched paper. Submit a 2nd copy of all art work.

Proofs should be corrected as soon as received and returned to the editor with the abstract on the forms provided. Additional costs to the Society for correction of authors' changes in proofs may be charged to the authors. An order for reprints should be placed when proofs are returned.

Fifty gratis copies of reprints will be supplied by the Society to authors under certain circumstances.

Examination of articles in this issue will help in conforming to the style of presentation desired. Many helpful hints are found in *Style Manual for Biological Journals* prepared by the Committee on Forms and Style of the Conference of Biological Editors available from the American Institute of Biological Sciences, 3900 Wisconsin Avenue N. W., Washington, D. C., 20016.

PROCEEDINGS
of the
Hawaiian Entomological Society

VOL. XX, No. 3

FOR THE YEAR 1969

AUGUST, 1970

JANUARY

The 757th meeting of the Hawaiian Entomological Society was called to order by President LaPlante at 2:00 PM, 13 January 1969, in Agee Hall, HSPA Experiment Station.

Members present: Beardsley, Bess, Bianchi, Chambers, Chong, Davis, Delfinado, Drake, Funasaki, Gressitt, Haramoto, Hardy, Harris, Joyce, Kajiwara, Kormilev, Look, Mitchell, Morrill, Miyahara, Nakao, Nakata, Olson, Ota, Pemberton, Shiroma, Steffan, Sherman, Van Zwaluwenburg, Yanamura, and Yoshioka.

Visitors present: Mr. Hiroshi Shima, Dr. Vincent Chang, Mr. O. B. Hitchcock, Mr. P. W. Vanderlaan, and Dr. John H. Lilly.

Nomination of new members: Mr. Hiroshi Shima was nominated for membership into the society.

Reports of Officers and Committees:

Treasurer's Annual Report: Dr. Haramoto gave the report for the period January 1, 1968 to December 31, 1968.

Editorial Committee: 1968 Editor Dr. A. A. LaPlante reported that the index for Volume 19 is due anytime.

Election of new members: Dr. Vincent Chang and Mr. Joel Rodriguez-Velez were unanimously elected to membership.

New Business:

Committees for 1969: On recommendation of the executive committee (Dr. A. A. LaPlante, Dr. F. Haramoto, Dr. W. C. Mitchell, Mr. F. Bianchi, and Mr. E. Harris) the following committees were appointed by President LaPlante.

Editorial Committee:

Editor: Dr. Minoru Tamashiro
Members: Dr. John Beardsley
Dr. Derrell Chambers
Dr. Asher Ota

Finance Committee: Put in straight vertical line

Business manager: Mr. George Funasaki
Members: Dr. Frank Haramoto
Mr. Jonathan Kajiwara

Dr. Minoru Tamashiro

Program Committee:

Co-chairman: Dr. Henry Bess
Mr. Cliff Davis

Membership Committee:

Chairman: Dr. Toshiyuki Nishida
Members: Mr. Sun Hin Au
Mr. Stanley Higa
Dr. Wallace Steffan
Dr. Roy Cunningham

I. S. S. E. C.

(Inter-Society Science Education Council)

Co-chairman: Mr. Irving Keiser
Mr. Lester Hale

Committee on Common Names:

Chairman: Mr. Cliff Davis
Members: Dr. John Beardsley
Miss Mabel Chong
Mr. George Funasaki
Dr. Frank Haramoto
Dr. Albert LaPlante
Dr. Wallace Mitchell
Dr. Wallace Steffan

Constitutional Committee:

Chairman: Mr. Frank Olson
Members: Mr. Ed Shiroma
Mr. Fred Bianchi

Auditors:

Dr. Martin Sherman
Dr. Derrell Chambers

Old Business:

Ad Hoc Committee Recommendations: President LaPlante introduced the committee report and the secretary read the 6 recommendations to the Society. (Mimeograph copies have now been sent to Society members). The first recommendation (after some discussion) was accepted by the Society with amendment as follows: Establish a membership committee of five members. Their duties shall be to approve or deny applications for membership and to recruit members on behalf of the Society. They shall report their actions to the Society each month. After considerable discussion, the Society voted to table the 5 remaining recommendations of the Ad Hoc Committee.

Papers Submitted: The following paper was submitted:

“Studies in the Plagithmysines, Endemic Hawaiian Cerambycidae (Coleopt.)” by J. L. Gressitt & C. J. Davis

NOTES AND EXHIBITIONS

Iridomyrmex humilis Mayr.: The Argentine ant, *I. humilis* Mayr., was collected 27 December 1968 from the State Fish and Game Reserve at Pohakuloa, Hawaii at an elevation of 1970 m. This is the first report of the Argentine ant in that area although some were found at 1970 m elevation in the campground area of Hosmers Grove on the slopes of Haleakala.

Xylosandrus compactus Eichoff: Ilama, *Annona diversifolia*, seeds were collected by Dr. R. A. Hamilton from the ground and from trees at Poamoho Experiment Station on 15 October 1968. Approximately one month later, beetles identified by Dr. Hardy as the Black Twig Borer, *Xylosandrus compactus*, were found feeding on the seeds. This is the first known record of the beetle damaging ilama seed in Hawaii.

Nezara viridula (L.): Male and female specimens of the Southern green stink bug *N. viridula* (L.) were collected 30 December 1968 and 9 January 1969 by Mr. A. Fat Lee (State Dept. of Fish and Game) on watercress at an elevation of 1939 m at Pohakuloa, Hawaii. This is the second highest elevation the insect has been recorded in Hawaii. *Nezara* and *Nysius nemorivagus* were observed injuring watercress on 27 December 1968. The male stink bug was parasitized by *Trichopoda pennipes*. Notes presented by Dr. W. C. Mitchell.

Tachinaephagus zealandicus Ashmead: Five specimens of a new immigrant encyrtid wasp believed to be *T. zealandicus* Ashmead were taken in an ultra-violet light trap operated at the University of Hawaii during late December 1968 and early January 1969. *T. zealandicus* was described from Australia, but is also known from Java. The species has been reared from the puparia of various muscid, calliphorid and sarcophagid flies in Australia and New Zealand. Most of the host records appear under the names *T. australiensis* Girault, but *Australencyrtus giraulti* Johnston and Tiegs, and *Stentoterys fulvoventralis* Dodd, all of which are synonyms of *T. zealandicus* according to Gahan (1938 Proc. Ent. Soc. Wash. 40: 210).

T. zealandicus was introduced from California in 1968 by the state Dept. of agriculture to combat muscid flies but was liberated only on Hawaii. This is the first record of its establishment in the state. Most Encyrtidae do not come to light and are rarely seen in light trap catches. It is of interest that *Exoristobia philippinensis* Ashmead, the only encyrtid common in light trap catches here, also is a parasite of muscoid Diptera pupae.

Metaphycus portoricensis (Dozier): Specimens of *M. portoricensis* (Dozier), previously unreported, were reared from the pit scale, *Asterolecanium pustulans* (Cockerell) collected at Barbers' Point, Oahu in April 1965. The identity of this parasite, suggested by Mr. H. Compere at Riverside, California, was confirmed by Beardsley through comparison with the holotype in the National Museum while in Washington D. C. during 1966. The species was described from Puerto Rico (Dozier, 1926. Proc. Ent. Soc.

Wash. 28(5): 100) and appears to be an accidental immigrant to Hawaii. Notes presented by Dr. J. Beardsley.

Aspidiotus destructor Signoret: Heavy infestations of the coconut scale *A. destructor* Signoret (Identified by Dr. Beardsley) were found on mountain apple foliage at Halawa Heights on 5 January and on foliage of approximately 25 Chinese banana trees on a farm at Pearl City on 10 January. Very light infestations were noted on banana fruits on the same farm. This scale was previously found mostly on coconut leaves on Oahu although its host list includes over 275 different kinds of plants recorded from other tropical and sub-tropical areas of the world. It is notable that larvae and adults of 2 species of coccinellid beetles, *Telsimia nitida* and *Lindorus lophanthae* were common on the infested banana foliage.

Trichogramma semifumatum (Perkins): Mr. E. Yoshioka reported that from a total of 38 *Hypena strigata* eggs that were collected in the field at Puuwaawaa Ranch, North Kona (elevation 545 m), 12 were parasitized (31.5%) by the egg parasite, *T. semifumatum* (Perkins). Parasites emerged from 7 of the parasitized eggs. These eggs yielded on average of 2 parasites per egg. Insectary-produced *Hypena* eggs were exposed in the field (elevation 14 m) for 2 days resulting in 61.5% parasitism by *Trichogramma* and 75% of the parasitized eggs gave emergences averaging 1.8 parasite per egg. *Hypena* was purposely introduced into Hawaii in 1957 to control *Lantana Camara*, a major weed pest in many of our pasture lands.

Trichogramma semifumatum: Mr. Nobuo Miyahira reported the following record of field parasitism of *Hypena strigata* eggs by *Trichogramma semifumatum* on Maui from eggs collected 3-12 December 1968.

Kula:	37 out of 51 eggs (72.5%)
Ulupalakua:	23 out of 38 eggs (60.5%)
Kihei:	0 out of 13 eggs (0)
Total	60 out of 102 eggs (58.8%)

Average number of parasites per egg: 2.2 with a range of 1 to 3.

Program: Mr. Fred Bianchi the 1968 President addressed the Society. He gave an interesting talk on his recent field trip to New Guinea and neighboring islands to collect parasites of the sugar cane borer.

President LaPlante read a letter from Mr. R. H. Nelson, Executive Secretary ESA, informing the Hawaiian Entomological that it was accepted as an affiliate of the Entomological Society of America. The Hawaiian Entomological Society list of 1969 officers will be published in an early issue of the Bulletin.

FEBRUARY

The 758th meeting of the Hawaiian Entomological Society was called to order by President LaPlante at 2:10 PM on Wednesday, 12 February 1969 in Agee Hall, HSPA Experiment Station.

Members present: Au, Beardsley, Bess, Bianchi, Chambers, Chang, Chong, Delfinado, Drake, Fluker, Gressitt, Haramoto, Hardy, Holway, Joyce, LaPlante, Mitchell, Morrill, Nakata, Olson, Ota, Pemberton, Shima, Sugerman, Takei, Tamashiro, Van Zwaluwenburg and Yoshimoto.

Visitors present: Hans J. O. Breitner, Samuel C. Dews, Romeo L. Dizon, Lee Goff, Francis Howarth, Byung Hoon Lee, J. P. Martin, Harold D. Newson and Travis Richardson.

Nomination of new members: The following nominees, Mr. Travis Richardson, Mr. Francis Howarth, and Mr. Lee Goff, will be referred to the membership committee headed by Dr. Nishida in line with the recently adopted change in the by-laws.

Election of new members: Mr. Hiroshi Shima was unanimously elected to membership in the society.

Reports of Officers and Committees: Editor's Report: Editor, Dr. Tamashiro circulated the first copy of the 1967 Proceedings and the index received from the printers and also commended the excellent job done by Dr. LaPlante.

Old Business: The auditor's report was postponed until the next meeting.

The second recommendation proposed by the members of the Ad-Hoc Committee which was tabled at the January meeting, that is, "establish a class of membership to be designated as Associate Member. The annual dues shall be \$2.00. An Associate Member shall be given all the rights and privileges of a Full Member except he will not receive the Proceedings," was unanimously rejected by the Society. Mr. Morrill's motion to refer this recommendation to the Constitutional Committee was seconded and carried unanimously. It was suggested that points raised in a discussion such as limiting associate membership to bona fide registered students, out-of-state members, spouses of full members, and denying voting privileges be considered. The remaining four recommendations were tabled for consideration at a future meeting.

New Business: President LaPlante read a letter of appreciation from Mrs. John Christensen for the Society's contribution to the memorial fund which will help establish an annual award in zoology and entomology.

Dr. Tamashiro moved that the Society purchase a book not to exceed \$15 to be awarded to the best entomological exhibit at the 12th Annual Hawaiian Science Fair to be held at the Honolulu International Center April 10-13, 1969. It was seconded and carried unanimously.

A motion to continue membership in the Conservation Council for

Hawaii and pay the \$5.00 dues was seconded and carried unanimously.

It was moved and seconded that the President write a letter of condolence to Mr. E. Harris whose father passed away.

Dr. Carl Yoshimoto who is leaving Bishop Museum at the end of February to undertake a new position with the Dept. of Fisheries and Forestry with headquarters at the Entomology Research Institute, Central Experimental Farm, Ottawa, Canada, extended his appreciation and aloha to members of the society.

NOTES AND EXHIBITIONS

Mr. Morrill exhibited a Smithsonian publication on Bibliography of Termites, second supplement. Dr. Gressitt called attention to a paper on "Polymorphism in males of the sugarcane leafhopper, *Perkinsiella saccharicida*" by Osborn, A.W. which appeared in Ann. Ent. Soc. Amer. 62(1): 247. Pacific Insects Monograph 18: 1-674, 1 map, on "Bibliography of New Guinea Entomology" by Gressitt, J. L & J. J. H. Szent-Ivany published in Oct. 1968 was circulated by Dr. Gressitt.

Aspidiotus destructor Signoret: During January while in Fiji the writer observed the excellent control exerted by the lady beetle, *Cryptognatha nodiceps* Marshall on the coconut scale, *A. destructor*. 150 lady beetles were shipped back to Hawaii and subsequently released in the Honolulu International Airport area. *C. nodiceps* was introduced here in 1936 but was never recovered. However, with the recent discovery of *A. destructor* widespread on Oahu, this lady beetle may now find conditions more favorable. Note presented by Mr. S. H. Au.

Paraleyrodes perseae (Quaintance): Specimens of this whitefly, a newly discovered immigrant in Hawaii, were exhibited on *Plumeria* leaves. Whitefly infested *Plumeria* leaves collected in the Moiliili District early in January by Beardsley were submitted to Miss Louise M. Russell, USDA, Washington who made the determination. The *Plumeria* leaves (Singapore variety) were also infested with *Dialeurodes kirkaldyi* (Kotinsky) which has not been reported previously from *Plumeria* in Hawaii, an aphid (*Aphis gossypii* Glover) and several species of scale insects. *Paraleyrodes perseae*, according to Miss Russell is common in Florida where it has been taken on *Persea*, *Citrus*, *Cinnamomum* and *Anthurium*. It is not known to be injurious, however, it also occurs elsewhere in the southeastern U. S. and in Venezuela.

Pison punctifrons Shuckard: This sphecid wasp of the subfamily Trypoxyloninae, is apparently a previously unreported immigrant which has been present in Hawaii for several years. While rearranging and identifying Hymenoptera in the University of Hawaii collection, two specimens of this species were found. These were identified by comparison with named specimens, determined by K. V. Krombein, in the Bishop Museum. The specimens were both collected at Ewa, Oahu, by J. W. Beardsley; one

in March 1960, the other in August 1961. This species probably was not recognized earlier because it superficially resembles other species of *Pison* which occur here. *P. punctifrons* is the fifth species of this genus known to occur in the state. All are immigrants. Apparently all species of this genus prey on small spiders.

P. punctifrons is widespread in Southeast Asia, the Philippines and Micronesia. (See Krombein, 1949, Proc. Haw. Ent. Soc. 13(3): 401). Krombein states that the species may construct either free clay cells, or partition holes in timber and provisions the cells with small spiders.

Bestiola mira Nikol'skaya: The parasitic wasp of the family Aphelinidae was reared from an armored scale insect, *Odonaspis greeni* (Cockerell) infesting a small bamboo in Honolulu. This is a new record for the state. Specimens were determined by Dr. Carl Yoshimoto. The species was described from specimens reared from *Odonaspis secreta* (Cockerell) collected on the coast of the Black Sea, USSR. (Nicol'skaya. 1963. Entom. Obozr. 42: 188). It is also known from Japan. Notes presented by Dr. J. W. Beardsley.

Aphids: Dr. Mitchell read the following request for Mr. Stanley Higa, who asked members of the society to be on the look out for the following aphids and report them and their location to the Department of Entomology, University of Hawaii, c/o Stanley Higa:

Aphis middletonii Thomas, Erigeron root Aphid

Macrosiphum euphorbiae (Thomas), potato aphid

Myzua circumflexus, Lily aphid

These are aphids that have been recorded on papaya but are not known to transmit the papaya mosaic disease. Tests will be conducted to confirm the fact that they are non-vectors of papaya mosaic.

Program: Mr. Fred Bianchi presented an interesting series of excellent colored slides of insect pests of sugarcane and slides of various localities in New Guinea where he worked searching for parasites of the sugarcane borer.

MARCH

The 759th meeting of the Hawaiian Entomological Society was called to order by President LaPlante at 2:00 PM on 11 March 1969 in Agee Hall, HSPA Experiment Station.

Members present: Beardsley, Bess, Bianchi, Chang, Chong, Fluker, Gressit, Haramoto, Harris, Joyce, LaPlante, Look, Morrill, Nakao, Nishida, Olson, Ota, Shiroma, Yanamura.

Visitors present: LaVar Krantz

Election of new members: Mr. Travis Richardson, Mr. Francis Howarth, and Mr. Lee Goff were unanimously elected to membership in the Society.

Old Business: Report of the Auditing Committee: On 30 January 1969 Dr. M. Sherman and Dr. D. L. Chambers audited the books of the Hawaiian Entomological Society and found them to be correct. Dr. F. Haramoto, treasurer of the society is to be commended for the accurate picture of the Society's finances as portrayed in his records.

Ad Hoc Committee Recommendations: President LaPlante presented the last four Ad Hoc Committee recommendations to the Society for their consideration. Dr. Beardsley moved that the recommendations be tabled until the next meeting because of the poor attendance at the meeting.

New Business: President LaPlante announced that there will be a workshop sponsored by the Cooperative Insect Report Committee entitled: Hawaii Cooperative Economic Insect Survey and Detection Workshop, 29-30 April.

NOTES AND EXHIBITIONS

Empoasca stevensi Young. During January a number of *Plumeria* trees on the U. H. Campus, Honolulu, were found to be moderately infested with a small green leafhopper. Leaves of infested trees appeared to be afflicted with symptoms of "hopper burn", ie: leaves turned yellow, later brown on edges, and eventually fell. Trees later became partly to completely defoliated.

Leafhoppers from affected leaves appeared very similar to the common bean leafhopper, known here as *Empoasca solana* DeLong. However, there are no records in our literature of this species attacking *Plumeria*.

Specimens were submitted to Insect Identification Section, USDA, Beltsville, Maryland. These were determined by Dr. J. P. Kramer as *E. stevensi*. In his letter, Dr. Reece Sailer, Chief of Insect Identification section, states that *E. stevensi* is a member of the "solana complex" and closely related to *solana*.

The question of whether the common *Empoasca* in Hawaii on beans, *Amaranthus*, etc., is actually identical to the species on *Plumeria*, or whether more than one species of the *solana* complex is present here, remains unanswered (but see p. 437).

Anysis alcocki (Ashmead). This pteromalid parasite of scale insects, purposely introduced from the Philippine Islands has previously been reported attacking the barnacle scale, *Ceroplastes cirripediformis* Comstock. During January both sexes of the parasite were reared from hemispherical scale, *Saissetia coffeae* Walker, on *Asiystatia*, and males only were reared from *Asterolecanium bambusae* (Boisduval) (Family Asterolecaniidae) on bamboo, in Honolulu. These are new host records for this parasite in Hawaii.

Trichopoda (?) eggs on Rhopalid bug. During February several adults of the rhopalid bug, *Jadera haematoloma* were observed bearing eggs, presumably of the stink bug parasite, *Trichopoda*, on their dorsal surfaces.

Several were captured and held in the laboratory, but no *Trichopoda* larvae emerged from them. Notes presented by Dr. J. W. Beardslley.

Cheumatopsyche analis Banks. A specimen of this caddis fly was taken on the island of Molokai 9 March 1969. It was attracted to lights at the Molokai hotel near Kaunakakai. This is apparently a new island record for this recent immigrant Trichoptera. Note presented by Dr. C. R. Joyce.

New Publication: Dr. Gressitt exhibited a new publication by Thornton & Wong: The Peripsocid Fauna (Psocoptera) of the Oriental Region and the Pacific. Pacific Insects Monograph 19. 158 pages. (Lists 12 species from Hawaii, of which 4 are new species).

Calendra cariosa (Olivier): This curculionid of American origin has been common on *Cyperus rotundus* L. and other sedges on Oahu since 1966 (Proceedings Haw. Ent. Soc. 16(2): 190, 1957). A female found wandering over the ground of Field H 12 Grove Farm Company, Kauai, on March 5, constitutes the first record of the species for any of the outer islands. Note presented by Mr. F. Bianchi.

Schistocerca vaga Scudder, an adult female was captured on wild vegetation at Kaunakakai, Molokai on 7 March 1969. Sightings of other adults were reported. This is the second report of *S. vaga* on a neighbor island. It was discovered on Kauai in July 1966. Note presented for Mr. Miyahira by Mr. Nakao.

Lachnus tujafilinus (De Guercio): Several specimens of this aphid were taken in quarantine on Cypress seedlings from Hilo destined for California on 26 July 1968 by Inspector Ralph Iwamoto. This constitutes a new record for the Big Island. This aphid was previously recorded only from Oahu.

Carulaspis giffardi (Adachi & Fullaway): A heavily infested branchlet from the island of Maui was intercepted in quarantine at Hilo by Inspector Ralph Iwamoto on November 15, 1968. This is a new locality record for this scale which was previously reported only from Oahu and Hawaii and also a new insect record for Maui. Determination was confirmed by S. Nakahara of Seattle.

Scadra rufidens Stal: A specimen of this reduviid was submitted for identification by inspector E. Uyeda of Hilo on December 29, 1968. This constitutes a new record for the Big Island. *S. rufidens* has been reported from Oahu and Kauai.

Program: Program Co-chairman Dr. H. A. Bess reported that Dr. R. T. Cunningham could not attend the last meeting and address the Society because of illness in his family. In his stead Dr. Vincent Chang gave an interesting talk with slide illustrations on his work dealing with the mechanism of aphid transmission of plant diseases.

APRIL

The 760th meeting of the Hawaiian Entomological Society was called to order by President LaPlante at 2:00 PM on 18 April 1969 in Agee Hall, HSPA Experiment Station.

Members present: Au, Barrett, Beardsley, Bess, Bianchi, Bryan, Davis, Delfinado, Goff, Gressitt, Haramoto, Hardy, Joyce, Kajiwara, Kormilev, Krauss, LaPlante, Look Mitchell, Morrill, Nakata, Olson, Ota, Pemberton, Sakimura, Shiroma, Sugerman and Yanamura.

Visitors present: Mr. J. W. Balock, Dr. Ray H. Beal, and Dr. Ronald Young.

Nomination of new members: Dr. Haramoto nominated the following for membership in the society: Mrs. Eileen D'Araujo of Bishop Museum; Mrs. Esther Schneider, Mrs. Doris Miyashita, Mr. Richard Kobayashi, and Mr. Norio Tanaka of the USDA Fruitfly Laboratory; Mr. Barry Brennan, Mr. Paul Schaefer, Mr. James Hiramoto, Mr. Dick Tsuda, and Mr. Kenneth Murai, graduate students at the University of Hawaii; Mr. George Kitaguchi of the State Dept. of Health, *Aedes aegypti* project; Mr. John P. Murphy in charge of the *Drosophila* project at the University of Hawaii.

Reports of Officers and Committees: In absence of the chairman of the 12th Hawaiian Science Fair Committee, President LaPlante reported that the society awarded a book, "Living Insects of the World" to Miss Joyce Nakamura of the University Laboratory School for her meritorious exhibit on "A study of the effect of temperature and humidity on egg hatch of the southern green stink bug" in the Senior Division. In addition, Miss Kathryn Ellis and Miss Amy Kami of Waiakea Intermediate School received congratulatory letters for their presentation on "Effect of fumes on behavior and web formation" which was selected as the top exhibit in the Intermediate Division.

New Business: In February 1968 when the Amy Suehiro Memorial Fund was set-up by Bishop Museum, the consensus of opinion of the contributors, many of whom were from the society, was to publish the card catalogue of Hawaiian insects which was started by Mr. Bryan in 1919 and later compiled by the late Amy Suehiro. Dr. Beardsley who examined the card files recently expressed the usefulness and desirability of publishing an annotated checklist, with distribution, host information, and cross-references to earlier names which appear in the literature, of the Hawaiian insect fauna to include all native and introduced species. However, considerable work will be involved in up-dating the present catalogue phylogenetically and in making necessary corrections. Dr. Beardsley made a motion to establish a committee in the society to complete the compilation and the publication of this checklist. It was seconded by Mr. Bianchi and motion carried unanimously.

NOTES AND EXHIBITIONS

Dr. Maciej Mroczkowski, of the Institute of Zoology, The Polish Academy of Sciences, Warszawa, Poland, has produced an extensive paper entitled "Distribution of the Dermestidae (Coleoptera) of the World with a Catalogue of all known species." It was published by the Academy as *Annales Zoologici* XXVI (3): 15-191, 12 maps, 15 November 1968. It gives a comprehensive discussion, with maps, of the distribution of these beetles by geographic regions, then by particular genera, and a concise catalogue of all known species, including cross-reference to synonyms. There are 27 pages of bibliography, and an alphabetical index to subfamilies, genera and subgenera, and their synonymical names.

Checking this extensive work against the dermestid portion of the card catalogue of Hawaiian insects compiled by the late Amy Suehiro, we find the two in close agreement. The fact is made clear that there is a small, very specialized endemic group of 20 species in three endemic genera: *Labrocerus* (17 species), *Eocerus* (1 species), and *Argocerus* (2 species), described by Sharp and Blackburn, 1885 and 1908. Concerning these Dr. Mroczkowski writes: "Considering the fairly small morphological differences between *Labrocerus* Sharp, *Eocerus* Sharp, and *Argocerus* Sharp, it seems justified to treat them all as subgenera of a single genus." [*Labrocerus*.] All of the other species reported from Hawaii have wide distribution. Note presented by Dr. E. H. Bryan, Jr.

Empoasca species in Hawaii: At the March meeting Dr. Beardsley reported receiving the determination of *Empoasca stevensi* Young for a leafhopper specimen collected on *Plumeria* leaves in Honolulu. Since then a second lot of *Empoasca* specimens, these from *Amaranthus spinosus*, were submitted to Dr. Kramer and have been identified as *E. solana* De Long. It therefore appears that at least two *Empoasca* species are present in Hawaii. Previously, only *E. solana* had been reported here.

E. stevensi was described by Young (*Jour. Ag. Univ. Puerto Rico* 37(2): 155, 1953) from specimens collected at Orlando, Florida, on papaya. It is very similar to *solana* but can be separated by characters of the male genitalia. Young (loc cit) gives figures of the genitalia of these species and other related forms and a key or separating the species of this complex. *E. stevensi* specimens appear to be slightly smaller, on the average, than those of *E. solana*.

Paraleyrodes perseae (Quaintance). This recently discovered immigrant whitefly was first reported at the February meeting, when it was found infesting *Plumeria* in the Moilili District of Honolulu. During April a light infestation was noted on an undetermined species of Citrus in the same area. This is a new host record for Hawaii. Notes presented by Dr. J. W. Beardsley.

Goeldichironomus holoprasinus (Goeldi). This chironomid was

first noticed by Dr. Beardsley in light trap material collected at the U. H. campus in March 1969 and since has been found breeding in abundance in an assortment of aquatic situations: moats, ponds, temporary water receptacles. It is common in Honolulu and has been reared from fish ponds on windward Oahu. This species, first described from Brazil, has been recorded from south and west United States. Determination was made by Dr. W. W. Wirth, U. S. National Museum.

Iridomyrmex humilis (Mayr). Specimens of Argentine ants were collected approximately 1/2 mile into the native forest at Waikamoi, Maui, 4000 ft. elevation. Notes presented by Dr. D. E. Hardy.

Phlegetonia delatrix (Guenee). This noctuid moth caused severe damage to terminals of ohia-lehua (*Metrosideros collina* subsp. *polymorpha*) in the Hilo area of Hawaii during late February 1969. This is a new host record. The other two known hosts for this species are mountain apple and Java plum. In March 1969, a few specimens of this noctuid were found damaging Java plum foliage at Pukoo, Molokai. This is a new island record. Other islands where it occurs are Kauai, Oahu, Maui, and Hawaii.

Plautia stali Scott. All stages of this stink bug were observed on strawberry guava at Koko Head and on common guava at Waimanalo and Kaneohe on 8 April 1969. Egg clusters were noted on leaves, stems and fruits. Adults and nymphs were feeding on fruits. This is the first report of all stages of this stink bug appearing in significant numbers on guava.

Lispa leucospila (Wiedemann). Several adults of this muscid fly were collected in April 1968 from a lawn at Hickam AFB, Honolulu by W. Takabayashi, AF Foreman of Entomological Services. This fly is recorded from Anglo-Egyptian Sudan and the Ethiopian Region of Africa and is not known to occur on the mainland U. S. This is a new state record. Determination was made by Dr. R. Gagne, USDA (U. S. National Museum). Notes presented for Mr. Funasaki by Mr. Au.

Tetrastichus chrysopae (Crawford). Fourteen specimens of this parasite were reared from the introduced lacewing, *Chrysopa lanata* Banks. The parasitized *C. lanata* cocoon was collected 13 April 1969, on the Bishop Museum grounds. This is a new parasite in Hawaii.

Corythuca morrilli Osborn and Drake. This tingid was found in considerable numbers on Hairy Merremma, *Operculina aegyptia* (L.), growing on the lower reaches of the University of Hawaii Manoa campus, 12 April 1969. This is a new host. Specimens in the Bishop Museum indicate that this tingid may also be found on *Mysporum* and *Pipturus*, also new host records. Note presented for Mr. Drake by Miss Nakata.

Oncocephalus pacificus Kirkaldy. This reduviid is new in Hawaii. It has been reported from Guam and other Pacific islands. The first specimen collected came from the Kaimana Beach Hotel in Waikiki in Sept. 1968. A second specimen was later captured in Wahiawa in October

1968. No additional material has been captured to date. Note presented for Mr. Gagne and Mr. Drake by Miss Nakata.

Program: Dr. Ray Beal presented an interesting series of colored slides and spoke on the work of the Wood Products Insects Laboratory of the South Forest Experiment Station, Gulfport, Mississippi. H discussed the status of the Formosan subterranean termites, *Coptotermes formosanus*, in the Mississippi-Louisiana areas.

MAY

The 761st meeting of the Hawaiian Entomological Society was called to order by President LaPlante at 2:00 PM on 12 May 1969 in Agee Hall, HSPA Experiment Station.

Members present: Balock, Beardsley, Bess, Chang, Chambers, Chong, Davis, D'Araujo, Drake, Fluker, Funasaki, Fujii, Goff, Gressitt, Hale, Haramoto, Hardy, Harris, Holway, Howarth, Joyce, Kajiwara, Kormilev, LaPlante, Look, Morrill, Nakata, Olson, Ota, Ozaki, Pemberton, Sakimura, Schneider, Shima, Shiroma, Sugarman, Tamashiro, Van Zwaluwenburg.

Visitors present: Dr. Brian Hocking, chairman Dept. of Entomology, University of Alberta, Canada; Miss Susan Leach and Mr. Sotaro Uehara, Entomology, State Dept. of Agriculture and Dr. P. van Royen.

Nomination of new members: Dr. J. Beardsley nominated Miss Susan Leach for membership in the society. It was moved by Dr. Haramoto and seconded by Dr. Beardsley that Mr. Jack Balock be elected to honorary membership into the society. The motion was carried unanimously.

Election of new members: The following people were elected unanimously into the society: Mrs. Eileen D'Araujo, Mrs. Esther Schneider, Mrs. Doris Miyashita, Mr. Richard Kobayashi, Mr. Norio Tanaka, Mr. Barry Brennan, Mr. Paul Schaefer, Mr. Mames Hiramoto, Mr. Dick Tsuda, Mr. Kenneth Murai, Mr. George Kitaguchi, and Mr. John P. Murphy.

Old Business: President LaPlante appointed the Amy Suehiro Memorial Committee to complete compilation and publication of the Card Catalogue of Hawaiian Insects compiled by the late Amy Suehiro.

Chairman: Dr. J. Beardsley

Members:	Mr. E. H. Bryan	Dr. D. E. Hardy
	Mr. C. J. Davis	Dr. C. R. Joyce
	Dr. J. L. Gessitt	Dr. W. C. Mitchell

New Business: Mr. Frank Olson suggested that discussions should begin first between interested entomologists themselves and between entomologists and the governor's office to set-up a Hawaii State Pest Control Committee to meet and decide on a course of action when a new insect pest is introduced into the state.

Announcements: The society wishes to congratulate the steering committee (Mr. F. Olson, Mr. C. J. Davis, Mr. G. Funasaki, Dr. W. C. Mitchell, and Dr. A. A. LaPlante) who organized the Cooperative Economic Insect Survey and Detection Workshop which met in Agee Hall HSPA Experiment Station on April 29-30, 1969.

The society wishes to congratulate Dr. J. L. Gressitt for his appointment as chairman of a new committee for the preservation of scientific areas by Governor John A. Burns.

NOTES AND EXHIBITIONS

Dr. J. L. Gressitt exhibited a new publication known as Pacific Insects Monograph 21, Fulgoridae (Homoptera) from New Caledonia and the Loyalty Islands edited by R. Y. Fennah and published by the Entomology Department, Bernice P. Bishop Museum. The publication contains 116 pages and 586 figures. Note presented by Dr. J. L. Gressitt.

Homalotylus sp., new state record. Mr. Dick Tsuda recently brought in two parasitized larvae of the common orange and black lady beetle *Coelophora inaequalis* (Fabricius). These larvae produced respectively seven and nine adults of an unidentified species of *Homalotylus* belonging to the *flaminus* (Dalman) species group. This species is quite distinct from the *Homalotylus* sp. reported last October. The latter was reared from *Lindorus* and *Telsimia* larvae associated with infestations of the coconut scale, *Aspidiotus destructor* (Signoret).

Coelophora larvae prey mainly on aphids, whiteflies, and soft scales. This beetle is considered one of our most valuable aphid predators (See "Insects and Other Invertebrates of Hawaiian Sugar Cane Fields" by F. X. Williams, 1931, p. 182). The establishment of this hyperparasite is, therefore, regrettable. Notes presented by Dr. J. W. Beardsley.

Cupedid beetle: On 16 March 1969, a single adult specimen belonging to the Family Cupedidae, commonly called the reticulated beetle, was collected in the quarry at the University of Hawaii campus. This family has not been previously recorded from our state. Moreover it represents the first record for the Coleoptera suborder Archostemata in Hawaii. There are 22 described species of cupedids in the world which are placed in 5 genera. Members of this family are known to occur in North America, Brazil, Argentina, Chile, Japan, Korea, Eastern Siberia, Philippines, Madagascar, S. Africa, Queensland, and New South Wales. Fossil cupedids occur in Permian deposits in Russia indicating a wider distribution in previous geologic times, and they constitute the oldest remains of beetles belonging to a family surviving today.

At the time of capture, the beetle was apparently resting on bracket fungi growing on a dead log. The larvae are wood-borers, living under bark or about logs or frame structures which are moist. Adults commonly

occur together with the larvae and are known to be attracted to chlorox, which apparently acts as a sex attractant for the males. Since only a single specimen has been taken thus far, it is not known if the beetle is established in Hawaii. The specimen was sent to the U. S. National Museum for Species determination. Note presented by Mr. Jack Fujii.

Program: Mr. Sam Fluker presented an interesting, illustrated talk on his work with sugar cane insects.

JUNE

The 762nd meeting of the Hawaiian Entomological Society was called to order by President LaPlante at 2:00 PM on 9 June 1969 in Agee Hall, HSPA Experiment Station.

Members present: Balock, Beardsley, Bess, D'Araujo, Drake, Fujii, Goff, Hale, Haramoto, Harris, Joyce, Kajiwara, LaPlante, Leech, Morrill, Murai, Middleton, Nakata, Ota, Richardson, Shiroma, Sugerman, Takei, Tsuda, Yanamura, Van Zwalenburg.

Nomination of new members: Mr. William J. Schroeder, a new member of the USDA fruit flies laboratory staff, was nominated for membership into the society.

Election of new members: After a move by Dr. Beardsley and a second by Mr. Yanamura, Miss Susan Leech was elected unanimously into the society.

NOTES AND EXHIBITIONS

A new comprehensive publication covering all pests of sugarcane was exhibited by Dr. Ota. The publication is entitled "Pests of Sugarcane" written by a team of authors including J. R. Williams, J. R. Metchalfe, R. W. Montgomery, and R. Mathes. The book deals with the economic damage of insects and rodents, their biology, and control. It is well illustrated and has 568 pages.

Trogoderma inclusum, a new state record: Thirty larvae of the dermestid beetle, *Trogoderma inclusum* LeConte were taken from a trogotrap in Shigetomi's Feed Store at 1827 S. Beretania Street, Honolulu, Oahu on 12 February 1969 during a routine survey for khapra beetle, *Trogoderma granarium* by F. J. Olson (PPC) and S. F. Wong (Entomology Branch). Determination was made by Cary J. Hansel of the Entomology Research Division.

According to the Beal, (Ann. Ent. Soc. Amer. 49: 559) *T. inclusum* is often found in grain storage, dried milk factories, and a wide range of other dried protein processing plants. In California, it has been found infesting a beehive.

Beal further points out that "Two apparently distinct species were sy-

nonymized by Arrow (1915) under the name *versicolor*. One form occurs on the continent of Europe, the other in North America and the British Isles. The name *versicolor* (Creutzer) should be applied to the European form and *inclusum* LeConte to the American and British form." Note presented for Mr. Olson by Mr. Yanamura.

Program: Dr. L. D. Hale presented an interesting, illustrated talk on "The Biology and Population Dynamics of Cottony-cushiony Scale."

JULY

The 763rd meeting of the Hawaiian Entomological Society was called to order by President LaPlante at 2:00 PM on 15 July 1969 in Agee Hall, HSPA Experiment Station.

Members present: Balock, Beardsley, Bess, Chambers, Chong, Davis, D'Araujo, Delfinado, Drake, Funasaki, Goff, Hale, Haramoto, Hardy, Harris, Hiramoto, Howarth, Kajiwara, Keenan, LaPlante, Look, Miyashita, Morrill, Nakata, Navvab, Nishida, Olson, Pemberton, Schaefer, Schneider, Schroeder, Sherman, Shima, Shiroma, Steffan, Strandtmann, Sugerman, Tamashiro, Woolford, Van Zwalenburg.

Visitors present: Carol Higa, Yusof Azaldin, Mohamed Salleh Haron, Abdul Aziz Dollah, and John R. Leeper.

Election of new members: Mr. William J. Schroeder was unanimously elected to membership in the Society.

Reports of Officers and Committees: Constitutional Committee report: Mr. F. J. Olson read to the Society for their consideration the revised Constitution and By-Laws formulated by the Constitutional Committee. A copy of the revised Constitution and By-Laws was to be mailed to each member of the Society before the next regular meeting. President LaPlante read to the body the Constitution and By-Laws now in effect for their consideration along with the revised Constitution and By-Laws presented to the body by Mr. Olson.

Announcements: Dr. M. Sherman, chairman of the Pacific Branch meetings to be held in Hawaii, 23-25 June 1970 reported on the progress and the plans for the meeting. He reported that a chairman of each of the needed committees had been selected and that Society members will be contacted and asked to render help as needed in the weeks ahead. The national entomological meetings are scheduled to be held in Hawaii in 1975, and the experience we gain next year may be useful in organizing the national meeting in 1975.

Dr. M. Tamashiro reported to the Society the activities and accomplishments of former University of Hawaii students now residing on the mainland. Most are doing well in graduate school for advance degrees. He reported, also, that the Hawaii delegation at the Pacific Branch Meeting in Yakima, Washington was the largest ever in attendance at the Pacific

Branch Meeting.

Dr. Chambers talked to the Society about program emphasis and employment outlook in the USDA. He reported that the primary emphasis in research at the fruit fly lab is biological control using attractant or radiation sterilization methods. Research using chemicals is being curtailed and will become more and more the responsibility of private industry. Recently 9 chlorinated hydrocarbon insecticides were withdrawn from the approved list of chemicals used by USDA employees and cooperators. The insecticides involved were as follows: DDT, dieldrin, endrin, aldrin, chlordane, toxaphene, lindane, heptachlor, and BHC. Their use is banned except for experimental purposes. Alternate methods of control and the use of nonpersistent insecticides is being encouraged.

Dr. Chambers reported that the USDA employment outlook is rather dim. A ceiling has been placed on the hiring of personnel and it is hoped that there will be some easing of this limitation in the months ahead.

Mr. C. Davis announced the retirement of Miss Mabel Chong on July 31, 1969.

NOTES AND EXHIBITIONS

Batocera davidis Deyrolle, A cerambycid beetle: Two large adults were found alive during the week ending 4 July 1969 in a warehouse near Sand Island, Honolulu, Oahu by warehouse employees. The larger of the two measures 2-1/2 inches long by 3/4 inches wide. This species is known to occur in South China, Tonkin (Vietnam), and Formosa. In Canton, S. China, specimens have been taken from pride of India (*Melia azedarach*). Determination by R. M. Young, Bishop Museum, Honolulu, Oahu. Note presented by Mr. C. J. Davis.

Tinostoma smaragditi (Meyrick): The third known specimen to the "Green Sphinx of Kauai" *Tinostoma smaragditi* (Meyrick) was captured at Kalalau Lookout, Kokee, Kauai, on 7 June 1969 by Mr. Gordon Kireto, an employee of the Missile Tracking Station. Mr. Kireto has generously donated this fine specimen to the State Department of Agriculture collection. Note presented by Miss. M. chong.

Program: Mr. Paul Schaeffer gave an interesting illustrated talk on the Bionomics of the American Cockroach.

AUGUST

The 764th meeting of the Hawaiian Entomological Society was called to order by President LaPlante at 2:00 PM on 11 August 1969 in Agee Hall, HSPA Experiment Station.

Members present: Balock, Beardsley, Bess, Chambers, Chong, Drake, Funasaki, Haramoto, Harris, Higa, Holway, Keenan, Kajiwara, LaPlante,

Morrill, Nakata, Namba, Navvab, Nishida, Olson, Schroeder, Sherman, Shima, Shiroma, Steffan, Sugerman, Woolford, Yanamura, Van Zwaluwenberg.

Reports of Officers and Committees: Mr. Frank Olson of the Constitutional Committee reported that the Society should pay a fee of \$10.00 to become registered in the state as a non-profit cooperation. At present, all members would be equally liable if the Society were sued.

Honorary membership: Miss Mabel Chong was nominated to honorary membership in the Society by Mr. George Funasaki.

New Business: It was moved and seconded that the new revised constitution and by-laws be adopted in its entirety. During discussion of the motion, Dr. Haramoto made the following suggestions:

1. The Editorial Committee should serve for 3 years encompassing the period of one complete volume of the Society's Proceedings and shall be appointed in July.
2. That student membership be eliminated.
3. A nominating committee of 5 members shall be named by the Executive Committee at the September meeting of each year. At least two members of this committee shall not be members of the Executive Committee. The duty of the nominating committee will be to present a slate of candidates for each office of the Society at the October meeting of each year at which time nominations can be made from the floor provided consent of the nominee has been previously obtained. Announcement of balloting will be made at the September meetings.

These suggestions were adopted by the majority of the members present at the last Society meeting and the motion was tabled.

NOTES AND EXHIBITIONS

Gillettea taraxaci Ashmead: This Cynipid gall wasp was recently reared by Mr. N. Miyahira from galls on stems of false dandelion, *Hypochoeris radicata*, collected at 3030 m elevation on Mt. Haleakala, Maui, 22 May 1969. The wasps were determined by Dr. B. D. Burks, USNM, Washington. A specimen collected at 1818 m on Mauna Loa, Hawaii, June 1966 by J. W. Beardsley proved to be the same species. This is the first true gall-forming Cynipid (subfamily Cynipinae) known to have become established in Hawaii. The species was known previously from North America (Minnesota, Iowa, Illinois, New York, and Ontario).

Melipotis indomita (Walker): This new immigrant noctuid moth was first collected June 8, 1969, on a building in the Manoa area of Honolulu, by J. W. Beardsley. Determination was made by E. L. Todd, USNM. It has since been found to be common in waste areas near Honolulu Airport and elsewhere in drier parts of Oahu. The larvae feed on Kiawe (*Prosopis pallida*) foliage. They appear to hide beneath bark, etc., during the day

and feed mostly at night. Adults have also been collected at light at Lihue, Kauai by Mr. D. Sagawa. The species is apparently native to tropical America. Note presented by Dr. J. W. Beardsley.

Melipotis indomita (Walker): On 7 August 1969 two adults of the noctuid moth, *Melipotis indomita* were collected in a rural area of dense kiawe growth two miles northwest of Kaunakakai, Molokai by F. J. Olson, PPC, and Nobuo Miyahira, State Entomology Branch, Dept. of Agriculture, Maui. This is a new island record.

Program: Mr. Ernest J. Harris gave an interesting illustrated talk on "Travel in North Africa Associated with Mediterranean fruit fly control."

SEPTEMBER

The 765th meeting of the Hawaiian Entomological Society was called to order by President LaPlante at 2:00 PM on 8 September 1969 in Agee Hall, HSPA Experiment Station.

Members present: Balock, Beardsley, Bess, Chang, Cunningham, Davis, Drake, D'Araujo, Funasaki, Fujimoto, Gressitt, Haramoto, Hardy, Harris, Jackson, Keenan, Khong, LaPlante, Leach, Look, Morrill, Miyashita, Nakata, Naruba, Olson, Pemberton, Schneider, Schroeder, Shima, Shiroma, Steffan, Sugerman, Sakimura, Tsuda, Yanamura, Yu, Woolford, Van Zwaluwenburg.

Visitors present: Dr. Mallory Boush from the University of Wisconsin (Madison); Mr. John R. Leeper and Miss Eugenia C. Manoto, University of Hawaii, Dept. of Entomology.

Nomination of new members: Dr. F. Haramoto nominated Mr. Edwin Raros, Mr. John Leeper, and Mr. Banpot Napompeth to membership in the Society.

Constitutional Committee report: Mr. Frank Olson read to the Society the proposed amendments to the new revised Constitution and By-laws for its consideration.

Honorary Membership: Miss Mabel Chong was unanimously elected to honorary membership in the Society.

Business Managers report: Mr. G. Funasaki reported that since the Society was founded in 1904 it has not been registered in the state as a non-profit organization with the Department of Regulatory Agencies. Registration with the State of Hawaii will cost \$15.00 and will protect the Society members from liability and permit application for postal and other benefits associated with the non-profit status.

Old Business: President LaPlante presented to the Society for their consideration the tabled motion on acceptance of the new revised Constitution and By-laws with the amendments recommended by the Ad Hoc Committee chaired by Dr. Haramoto. A majority of the members present voted to accept the amended revised Constitution and By-laws which will

be printed in the next issue of the proceedings of the Society.

New Business: After a brief discussion it was moved by Mr. F. Olson and seconded by Dr. Bess that the Society become officially registered as a non-profit organization in the State of Hawaii.

Announcements: Mr. H. Ron Hurov reported that he is engaged in a 4-month study of the use of pesticides in Hawaii to develop factual information on which recommendations may be made on the use of pesticides.

NOTES AND EXHIBITIONS

Melipotis indomita (Walker). A specimen of noctuid moth collected on 8 June at the University of Hawaii Manoa Campus and submitted to the USDA Systematic Entomology Laboratory was determined by Dr. E. L. Todd as *M. indomita* in a letter received by Dr. Beardsley on 12 August. In view of the fact that what appeared to be the same species was being referred to locally as "*M. ochrodes* (Guenee)", a request was made to have Dr. Todd clarify the identity of the *Melipotis* sp. (or spp.) recently established in Hawaii. Dr. Todd responded with photographs and descriptive information concerning the two closely related species of *Melipotis* in question. With the aid of this information it has been determined that all the locally collected *Melipotis* specimens in collections of the State Department of Agriculture and the University of Hawaii are *M. indomita*.

The original determination of *M. ochrodes* was made by Dr. Todd on the basis of unmounted specimens from a light trap at Hickam field which were submitted by Mr. Shiroma of the USDA Plant Quarantine Division. Dr. Todd has not yet rechecked these specimens. However, in his letter he noted that until recently the collections of the two species at the USNM were mixed. Unless evidence to the contrary is obtained, it appears very likely that species of *Melipotis* now established in Hawaii should be known as *M. indomita*, and *M. ochrodes* reported previously to be present is probably not established in the islands.

Opius sp.: During 1961 the State Department of Agriculture imported and liberate two small *Opius* species from Brazil as potential enemies of the agromyzid blotch miner *Phytobia maculosa* (Malloch). The species were determined by CFW Muesebeck as "*Opius* sp. near *ocinidis* Ashmead" and "*Opius* sp." (Krauss, 1962. "Proceedings" 18(1): 131). Recently Mr. Dick Tsuda reared a small orange-yellow *Opius* from *P. maculosa* larvae in leaves of a composit weed which appears to be identical with the specimens identified as "*Opius* sp." from Brazil. A second specimen, collected "sweeping" by J. W. Beardsley at Ewa, Oahu in August 1964 also appears to be this species. This appears to be the first recorded recovery of this parasite in Hawaii. Identification made by J. W. Beardsley. Notes presented by Dr. J. W. Beardsley.

Haplothrips gowdeyi (Franklin) heavily infested flowers of a potted

indoor African violet (*Saintpaulia ionantha*), killing every flower shortly after its opening. Also *Hercinothrips femoralis* (Reuter) heavily infested leaves of a potted indoor gloxinia (*Sinningia speciosa*), causing extensive shiny feeding scars and necrotic blotches, and eventually drying of whole leaf. Both incidence recently occurred in a home in Honolulu. No similar local observation has been on record. Note presented by Mr. K. Sakimura.

Recent publications: Tomich, Mammals in Hawaii, Bishop Museum Spec. Publ. 57; and Berger, The breeding season of the Hawaii 'Amakihi, Bishop Mus. Occ. Pap. 24(1) were shown by Dr. J. L. Gressitt.

Reiembance of a seed to a butterfly in New Guinea: The seeds of the cucurbit vine *Necalsomitra trif oliolata* (F. Mueller) Hutchinson have broad thin wings and in slowly descending from the forest canopy in New Guinea lowland rainforest, can be confused by the entomologist with a conspicuous New Guinea group of amathusiine (morphonid) nymphaloid butterflies which likewise are often white to semi-transparent and occur in the same environment. The flight of these butterflies is slow and graceful, accentuating the resemblance. The butterflies probably belong to the genus *Morphotaenaris*, or *Taenaris*. Note presented by Dr. J. L. Gressitt.

Eriophyes gardeniella Keifer (Gardenia budmite): This determination was recently received for numerous specimens of eriophyiids intercepted on gardenia by Dr. Harold Shirakawa on 23 March 1962. The mites were found infesting petioles of two gardenia flowers from Honolulu destined for San Francisco. This constitutes a new record for the State. *E. gardeniella* was described in 1964 by H. H. Keifer from specimens taken from petiole bases of *Gardenia jasminoides* intercepted in quarantine at San Diego from Mexico City. (Eriophyiid Studies B-12, H. H. Keifer, p. 12, June 11, 1964). Determination was made by H. H. Keifer.

Aphis spiraecola Patch: This determination was also received recently for specimens of aphids submitted for identification by S. Matayoshi of Hilo. The aphids were taken from young apple leaves in Kona, Hawaii on December 8, 1965. This constitutes a new host and locality record for the State. *A. spiraecola* was first reported by Dr. Beardsley from the island of Maui on *Osteomeles anthyllidifolia* (Proc. Vol. 19(2): 143, Sept. 1966) and citrus leaves (Proc. Vol. 19(3): 332, June 1967). Determination was made by L. M. Russell. Notes presented by Mr. E. S. Shiroma.

Program: Dr. Roy T. Cunningham gave a very interesting talk on the "Ecological and Physiological Investigations Pertinent to the Development of Fruit Fly Eradication Programs".

OCTOBER

The 766th meeting of the Hawaiian Entomological Society was called to order by President LaPlante at 2:00 PM on 13 October 1969 in Agee Hall, HSPA Experiment Station.

Members present: Anwar, Bess, Chang, Delfinado, Drake, Funasaki, Goff, Gressitt, Haramoto, Hardy, Kajiwara, LaPlante, Middleton, Morrill, Nakao, Nakata, Namba, Navvab, Nishida, Ota, Pemberton, Steffan, Woolford.

Visitors present: Dr. S. Ramalingam, University of Malaya, Kuala Lumpur; Dr. Norman E. Gary, University of California, Davis; Mr. Steven L. Montgomery, Graduate student, University of Hawaii.

Election of New Members: Mr. Edwin Raros, Mr. John Leeper, and Mr. Banpot Napompeth were unanimously elected to membership in the Society.

Reports of Officers and Committees: President LaPlante reported for the Finance Committee, headed by Mr. Funasaki, that a petition for charter for incorporation for non-profit status of the society has been received and will be submitted to the State with a copy of the Revised Constitution and By-Laws.

Nominating Committee: President LaPlante presented the following slate of candidates for officers of the Society to serve during 1970 who were nominated by a committee composed of Harry Nakao as Chairman, Setsuko Nakata, Mercedes Delfinado, Stanley Higa, and John Murphy:

President-elect

1. Dr. Derrell L. Chambers, Investigations Leader Hawaiian Fruit Fly Investigations USDA, ARS
2. Patrick Nakagawa
Chief, Mosquito Control Branch
State Dept. of Health

Secretary

1. Frank Olson, Supervisor
Plant Pest Control Division, Hawaii
USDA, ARS
2. Dr. Mercedes Delfinado
Associate Entomologist
University of Hawaii

Treasurer

1. George Funasaki
Survey Entomologist
State Dept. of Agriculture
2. Dr. Frank Haramoto
Associate Entomologist
University of Hawaii

Advisor

1. Dr. Asher Ota
Associate Entomologist
Hawaiian Sugar Planters' Assn.
2. Dr. Ryoji Namba

Entomologist
University of Hawaii

It was moved and seconded that the nominations be closed and motion carried unanimously. Mr. Nakao certified that each candidate consented to the nomination. Election of officers will be by mail ballot and results will be announced at the December meeting.

New Business: To legally execute the petition for charter for incorporation for a non-profit status dated 7 October 1969, Mr. Funasaki moved that the Revised Constitution and By-Laws be accepted. Motion was seconded and carried unanimously.

After some discussion, Dr. J. L. Gressitt made a motion as follows to be delivered in the form of a letter to the Governor: The Hawaiian Entomological Society strongly opposes the introduction of the axis deer from Lanai to the Big Island on the basis of its threat to the native environment. We wish to request indefinite delay of such transfer in view of the serious damage done to the native environment on Molokai and Lanai by the axis deer. It was seconded by Mr. Morrill and motion carried unanimously.

Following a report from Dr. D. E. Hardy of his recent observations of construction of a road leading into the native forest on the Big Island, Mr. Morrill moved that the Hawaiian Entomological Society ask the Governor to take immediate steps to halt and prevent the destruction of the State Forest Reserve on the Northeast slopes of Mauna Kea above Laupahoehoe. This destruction is of serious concern to biologists, conservationists, botanists, and the people of the State of Hawaii. Motion was seconded and carried unanimously.

NOTES AND EXHIBITIONS

Caenodes nigropunctata. According to Dr. William L. Peters of Florida A & M University the mayfly previously known as *Caenis nigropunctata* is now placed in the genus *Caenodes*. Note presented by Dr. D. E. Hardy.

A brief note on honors bestowed upon Mr. R. H. van Zwaluwenburg in the Massachusetts Alumnus bulletin was read by President LaPlante.

Program: Dr. Ryoji Namba who spent a year's sabbatical leave teaching at Teheran University presented colored slides and gave an interesting talk on entomological activities and general impressions of Iran.

NOVEMBER

The 767th meeting of the Hawaiian Entomological Society was called to order by President LaPlante at 2:00 PM on 10 November 1969 in Agee Hall, HSPA Experiment Station.

Members present: Beardsley, Bess, Bianchi, Chambers, Chang,

Delfinado, Drake, Haramoto, Hardy, Howarth, LaPlante, Mitchell, Nakata, Ota, Pemberton, Schneider, Schroeder, Shiroma, Sugerman, Tamashiro.

Visitors present: Mr. Vernon W. Olney, Professor Pietro Genduso, Mr. Po-Yung Lai, Mr. Richard Bovard, Mr. Fred E. Green and Dr. Norman E. Gary

Old business: President LaPlante read a letter from the Governor in response to the Society's opposition to the introduction of the axis deer from Lanai to the Big Island. The Governor has delayed this transfer in order to allow further review and study. In the meantime it was suggested that the Hawaiian Entomological Society combine efforts with the botanical and conservation groups to provide additional data and photographs of the extensive damage already done by the axis deer on the east end of Molo-kai.

New business: In connection with the forthcoming meeting of the Pacific Branch of the Entomological Society of America to be held in Honolulu in June 1970, Dr. Wallace Mitchell suggested that the various agencies write a page or two on the history of entomology giving highlights of activities which would be mimeographed and distributed to members during registration. This matter was left open for discussion at the next meeting when Dr. Mitchell will list some 15 agencies concerned with entomological activities here in the islands.

Since the majority of the members present favored a dinner meeting for December, President LaPlante will appoint an ad hoc committee to look into this possibility.

NOTES AND EXHIBITIONS

Rhytidoporus indentatus Uhler—A new state record. Mr. George Buxton, Bureau of Entomology, California Department of Agriculture, Sacramento, recently collected several specimens of this cydnid bug in light trap catches received from Hilo, Hawaii. Identification was made by R. C. Froeschner at the U. S. National Museum. The specimens were taken from several lots of light trap material from Hilo, beginning 6 October 1969.

R. indentatus was known previously only from southern Florida and the West Indies. The general appearance of the species is much like the only other cydnid known to occur in Hawaii, *Geotomus pygmaeus* (Dallas), but it is slightly larger, with less strongly developed punctation on the dorsal surfaces.

Announcements: Dr. Tamashiro announced the death of Dr. E. A. Steinhaus, insect pathologist, University of California, several weeks ago.

Program: Dr. Norman E. Gary, on sabbatical leave from the University of California, Davis, gave a most interesting presentation of his research on mating behavior of the honey bee.

DECEMBER

The 768th and First Annual Dinner meeting of the Hawaiian Entomological Society was called to order by President LaPlante on 8 December 1969 at 7:45 PM in the Robert Louis Stevenson Room of the Princess Kaiulani Hotel.

Members present: Beardsley, Bess, Bianchi, Chambers, Chong, Clagg, Delfinado, Funasaki, Fujimoto, Gressitt, Haramoto, Hardy, Harris, Howarth, Jackson, Joyce, Kobayashi, LaPlante, Wallace and Shizuko Mitchell, Morrill, Nakao, Navvab, Namba, Ohinata, Olson, Ota, Paros, Sakimura, Schneider, Schroeder, Shiroma, Sugarman, Tamashiro, Tsuda.

Visitors present: Mrs. Lynn Beardsly, Mrs. Ozeal O. Bess, Mrs. Carolyn Chambers, Mrs. Dorothy H. Clagg, Mr. Romy Delfinado, Mrs. Agnes Hardy, Mrs. May Haramoto, Mrs. Bettye Harris, Mrs. Bette Jackson, Mrs. Janet LaPlante and daughter, Mrs. Josephine Morrill, Mrs. Nancy Howarth, Mrs. Dorothy Joyce, Mrs. Ruth K. Ota, Mrs. Jane Shiroma. Mrs. Elaine Tamashiro.

Reports of Officers and Committees: Dr. F. H. Haramoto presented the report of the Treasurer for the period from 1 January 1969 to 8 December 1969.

Editorial report: Dr. Tamashiro reported that the proofs for the Proceedings are being checked and the publisher promised that the Proceedings will be ready 10 days after receipt of the proofs.

Amy Suehiro Memorial Committee: Dr. Beardsley reported that the card index started by Mr. Bryan and continued by Amy Suehiro is being prepared in the form of a check list by Mr. Bryan, Dr. Gressitt, Dr. Joyce, Dr. Hardy, Dr. Mitchell, and Dr. Beardsley. Dr. Beardsley requests help from other members of the society in working up the check list for the coleoptera and lepidoptera. The check list is expected to be ready for publication next year.

Announcement of election results for the 1970 Slate of Officers for the Hawaiian Entomological Society:

President — elect—Dr. Derrell L. Chambers, Investigations Leader, Hawaiian Fruit Flies Investigations, USDA, ARS

Treasurer—Dr. Frank H. Haramoto, Associate Professor of Entomology, University of Hawaii.

Secretary—Mr. Frank J. Olson, Supervisor, Plant Pest Control Division, USDA, ARS

Advisor—Dr. Ryoji Namba, Professor of Entomology, University of Hawaii

Presentation of Papers:

Recent Studies on the Abundance of the Oriental and Mediterranean Fruit Flies and the Status of Their Parasites by H. A. Bess and F. H. Haramoto.

Aspidiotus destructor Signoret, An Armored Scale Pest New to the Hawaiian Islands by J. Beardsley.

A new Plagithmysine Beetle from Sandal Wood, Col., Cerambycidae by J. L. Gressitt and C. J. Davis.

Recent Introduction for Biological Control in Hawaii, Series XIV by C. J. Davis.

NOTES AND EXHIBITIONS

Pollenia rudis Fab. This calliphorid parasite of earthworms was first seen on Oahu in 1955 (Proc. Haw. Ent. Soc.; XVI: 14) and at Kamuela, Hawaii, on 29 April 1968 (Proc. Haw. Ent. Soc. XX: 274). It has recently become excessively abundant on the Big Island and on 4 December was observed in large numbers by F. A. Bianchi in a private home at Hawi, in a concrete powder magazine at Pahala, and in the hunters' registration station at Pohakuloa. The first two localities are about 182 m and the third about 1515 m. above sea level. The only obvious feature common to the three was that cattle were grazing or had grazed nearby.

An account of the biology of this fly by D. Keilin can be found on pp. 182-183, vol. XIII, Proc. Ent. Soc. Washington, 1911. Note presented by Mr. F. A. Bianchi.

Pollenia rudis: The cluster fly *Pollenia rudis* Fab. was found to be extremely abundant in the Pohakuloa area of the Big Island. They enter buildings about 4:00 PM in the afternoon and become a nuisance. The cause of their great abundance is not known. Note presented by Mr. B. B. Sugerman.

Sepedon sauteri Hendel: First report for the island of Hawaii. This species was previously known to be established on Oahu, Maui and Kauai. Adults were found, fairly numerous, in vegetation in a marsh at the bottom of a small crater near Kulani Puu, Hawaii, at an elevation of 1934 m. This spot is in native *Metrosideros-Cibotium* forest, very isolated and a long distance from any other aquatic situation suitable for snail breeding. Most of the release sites on this Island were on the Hamakua Coast.

Lonchaea polita Say and **L. striatifrons** Malloch. Both are nearctic species which have not previously been recorded from Hawaii. These have been reared from rotting vegetation of various kinds but we do not know for certain whether they breed as scavengers or predators. Many of this group in other parts of the world are known to be predators on other insects. Both species are probably established on all of the main Islands. *L. polita* has been collected on Oahu, Maui, and Hawaii and *strictifrons* on Maui, Lanai, Molokai, and Hawaii. Determinations were made by Dr. Elmo Hardy of the University of Hawaii and confirmed by G. Morse of East Germany.

Lamprolonchaea metatarsata Kertész: The species which has

been treated in the Hawaiian literature as *Lamprolonchaea aurea* Macquart is *L. metatarsata*. This has been identified by Dr. J. F. McAlpine, Canada Department of Agriculture. Notes presented by Dr. D. E. Hardy.

Aphis nerii Boyer de Fonscolombe: A light infestation was found on 100 feet of oleander hedge at Poipu, Kauai in early November by D. Sugawa. This is a new island record for the oleander aphid. It was first found in the State on oleander at the Campbell Industrial Park, Ewa, Oahu by Drs. Beardsley, Mitchell and Mr. Ganesalingam in February 1965.

Euconocephalus nasutus (Thunberg): After 2 months of reports of loud stridulations in Kapaa, Lihue, Koloa and Kalaheo, an adult male of this long horn grasshopper was finally captured at Kalaheo, Kauai; a new island record. It was previously reported only from Oahu.

Coccinella 7-puntata var. **bruchii** Mulsant: Larvae, pupae and adults were abundant on cucumber infested with melon aphids at Halawa, Oahu. Larvae and pupae were also abundant on amaranth and other weeds in the cucumber field. This is the first report of the recovery of this coccinellid. It was introduced from Naha, Okinawa in June 1958 to aid in the control of aphids.

Melipotis indomita (Walker): Several adults were caught in September at Waihee, Maui. Subsequently, in October, numerous larvae were found under barks of older kiawe trees at Keawakapu, Maui. This is a new island record. This insect was previously recorded from Oahu, Kauai and Molokai. Notes presented by Mr. H. Nakao.

President LaPlante extended thanks and congratulations to the committees and members of the Society who helped to implement the Society's programs in 1969. Special thanks was extended to the Ad Hoc Committee for their efforts in improving the Society.

President LaPlante turned over the gavel of the Society to Mr. A. W. Morrill, Jr., our president for 1970.

Dr. A. A. LaPlante gave the Presidential Address entitled—Food Fiber and Economics of Entomology. He gave the Society some vice and virtue comments on the impact of DDT on economic entomology.

Financial Report of the Treasurer
January 1, 1969 to December 8, 1969

Expenditures:

Printing and Distribution of Proceedings	
20(1), Reprints and Index 19	\$3369.87
Science Fair Award	10.35
Postage and Stationery Supplies	173.14
Conservation Council for Hawaii (Dues)	5.00
Misc. Items (Fees)	23.51
Total.....	\$3581.87

Balance on Hand:

Territorial Savings and Loan Association	\$4205.01
Cash on hand	35.25
Total.....	<u>\$4240.26</u>

New Immigrant Records for the Year 1969

Species marked with an asterisk were reported from the Hawaiian Islands for the first time during 1969 on the dates recorded in the text. Those marked with a dagger are considered doubtfully established as the records are based on single collections.

CHANCE IMMIGRANTS

	Page
Metaphycus portoricensis (Dozier).....	479
Paraleyrodes perseae (Quaintance).....	482
Pison punctifrons Shuckard.....	482
Bestiola mira Nikol'skaya.....	483
Goeldichironomus holoprasinus (Goeldi).....	487
Lispa leucospila (Wiedemann).....	488
Tetrasticus chrysopae (Crawford).....	488
Oncocephalus pacificus Kirkaldy.....	488
Homalotylus sp.....	490
Trogoderma inclusum LeConte.....	491
Batocera davidis Deyrolle.....	493
Gillettea taraxaci Ashmead.....	494
Melipotis indomita (Walker).....	495
Eriophyes gardeniella Keifer.....	497
Rhytidoporus indentatus Uhler.....	500
Lonchaea polita Say.....	502
Lonchaea striatifrons Malloch.....	502

BENEFICIAL INSECTS PURPOSELY INTRODUCED

	Page
Opilus melanagromyzae Fischer.....	523

OFFICERS FOR 1969

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<i>President-elect</i>	A. W. Morrill, Jr.
<i>Secretary</i>	E. J. Harris
<i>Treasurer</i>	F. H. Haramoto
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	A. K. Ota
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<i>Science Fair and ISSEC Committee</i>	I. Keiser, L. Hale <i>Co-Chairmen</i>

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