PROCEEDINGS OF THE HAWAIIAN ENTOMOLOGICAL SOCIETY FOR 1958
Suggestions for Manuscripts

Manuscripts should be typewritten on one side of standard-size white bond paper, double or triple spaced, with ample margins. The sheets should not be fastened together; they should be mailed flat. Pages should be numbered consecutively. Inserts should be typed on separate pages and placed in the manuscript in the proper sequence.

Footnotes should be numbered consecutively and inserted in the manuscript immediately below the citation, separated from the text by lines. They should be used only where necessary.

All names and references should be checked for accuracy, including diacritical marks. Authors' names must be spelled out when first mentioned.

Illustrations should be planned to fit the type page, 4 1/2 x 7 inches. They should be drawn to allow for at least one-third reduction. Each should be labeled on the back with the author's name and title of the paper, as well as the number of the figure referred to in the text. Where size or magnification is important, some indication of scale should be given. They should be numbered consecutively, using capital letters to indicate parts of a composite figure. Printed letters are available from the Secretary. Legends should be typed on a separate sheet of paper and identified by the figure number.

Tables and graphs should be used only where necessary and omitted if essentially the same information is given in the paper. Graphs and figures should be drawn in India ink on white paper, tracing cloth, or light blue cross-hatched paper.

Proofs should be corrected as soon as received and returned to the editor with the abstract on forms provided. Additional costs to the Society for correction of authors' changes in proofs may be charged to 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. The Secretary should be consulted on this point.

Examination of articles in this issue will help in conforming to the style of presentation desired.
The 625th meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA, at 2:00 P.M. on Monday, January 13, 1958, with President Tuthill presiding.


Visitors: Mr. Ed Littooy and Mr. P. A. Mourikis.

Dr. Pemberton delivered an informative talk on the meetings of the Entomology Section of the Ninth Pacific Science Congress, held in Bangkok during November of 1957. Dr. Gressitt gave an excellent Kodachrome-illustrated account of his recent collecting trip through the New Hebrides, Solomon Islands, New Guinea, British Borneo, and Thailand.

**Notes and Exhibitions**

**Entomological Projects at the B. P. Bishop Museum:** Dr. Gressitt presented the following information:

"Dr. Larry W. Quate will join the museum staff in February and will work on the museum's project on 'South Pacific Insects of Public Health Importance'. Also working on this project will be Mr. T. C. Maa of Taiwan who will be on a three-year field fellowship. Mr. Maa will proceed shortly to Malaya, Thailand, and British Borneo. Dr. John Smart of Cambridge University has already spent about five months in New Guinea on this project, and will soon leave for Australia. Between March
and July of this year the museum will send Dr. Fred M. Snyder of the Army Chemical Warfare Laboratory to the Bonin Islands, and Dr. Elizabeth Marks of the University of Queensland to New Guinea. Dr. Quate will also be doing field work this year.

"On the 'Zoogeography of Pacific Insects' project, Mr. Brandt has moved from the upper Fly River to the south side of the Owen Stanley Mountains. The museum hopes to send another person into the field on this grant during 1958.

"Mr. Noel Krauss has just returned from several weeks of collecting in the Gilbert Islands for the 'Insects of Micronesia' project. Seven issues of the INSECTS OF MICRONESIA series have come off the press during the past few months."

**Cyclamen mite damaging Emex:** Mr. Davis reported severe damage to potted *Emex spinosa* Campd. plants by the cyclamen mite, *Steneotarsonemus pallidus* (Banks). The plants were on propagating benches near the Board of Agriculture and Forestry insectary, and were being used for breeding *Apion antiquum* Gyllenhal and *A. neofallax* Warner. The mites were identified by Dr. Boyle who stated that *Emex* is a new Hawaiian host record for the cyclamen mite.

**Halictus** (*Chloralictus*) sp.: Mr. Beardsley reported that additional specimens of this newly established immigrant bee ("Proceedings" 16(3):337, 1958) have been collected recently in the vicinity of Ewa, Oahu. Mr. P. H. Timberlake has written that specimens sent him from Honolulu appear to belong to an unnamed species close to a species which he has in manuscript from Riverside, California, and that the closest described species is *H. nevadensis* Crawford.

**National Science Foundation grant for "Insects of Hawaii":** Dr. Tuthill reported that a three-year National Science Foundation grant has been made to the University of Hawaii for continuation of work on the INSECTS OF HAWAII series. Volumes 7 and 8, Macrolepidoptera and Pyraloidea respectively, by E. C. Zimmerman, are now in the hands of the printers.

Dr. Joyce presented notes on the following rodent parasites:

**Polyplax spinulosa** (Burmeister): A massive infestation of this louse was discovered recently on a rat, *Rattus rattus* (L.), which was found dead near a warfarin bait station in Honolulu. A total of 2171 adult and nymphal lice were removed from the rat, first by searching and brushing and then by the dissolving technique. Such large populations rarely occur on normal healthy wild rats, as natural control factors seem to keep the lice in check. This particular rat was a young individual which apparently had injured a leg sometime prior to its death.

1 Throughout this publication "Proceedings" refers to PROCEEDINGS OF THE HAWAIIAN ENTOMOLOGICAL SOCIETY.
Moniliformis moniliformis (Bremser): A number of specimens of this acanthocephalan worm (see Faust, E. C.; Animal Agents and Vectors of Disease p. 438, 1955) were taken from the small intestine of the rat mentioned in the previous note. About fifty per cent of the rats taken in recent months in the Fort Armstrong area of Honolulu have been found parasitized by this worm. The species is also reported to be an occasional parasite of man, and is of entomological interest in that cockroaches and some beetles serve as intermediate hosts in which the eggs hatch and the larval worms develop.

Listrophorus sp.: A number of specimens of a very small fur mite of the family Listrophoridae (see Baker, E. W. & G. W. Wharton; An Introduction to Acarology pp. 376–378, 1952) have been collected in Honolulu during the past several years from the mouse, Mus musculus L. The first collection was made on August 14, 1953. The determination was made by E. W. Baker at the U. S. National Museum. This genus has not previously been reported from the Hawaiian Islands. However, there are two slide-mounted specimens in the HSPA collection taken from M. musculus at Honokaa, Hawaii, November 20, 1922, by C. E. Pemberton, which were determined as Listrophorus by H. E. Ewing.

February 10, 1958

The 626th meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA, at 2:00 P.M. on Monday, February 10, 1958, with President-elect Nishida presiding.


Visitors: Dr. William Cantelo, Mr. Garth Lukins, Mr. Harold Toba, and Mr. Ernest Yoshioka.

Dr. William Cantelo and Mr. P. A. Mourikis were nominated for membership in the Society.

The Society voted to contribute fifty dollars to help support the Hawaii Science Fair which is to be held during April.

Mr. Krauss gave an interesting account of his work and travel during the past eighteen months. While searching for enemies of the giant African snail, lantana, and other pests for the Territorial Board of Agriculture and Forestry, Mr. Krauss visited Florida, Cuba, Europe, North Africa, South and Central Africa, India, Philippine Islands, and Guam.
Pseudococcus brevipes (Cockerell): Mr. McGee reported that mealybugs which he had found feeding on the roots of a clover, Melilotus indica All., at Haleiwa, Oahu, during June, 1957 had been identified as this species by Mr. Beardsley. This constitutes a new host record of the pineapple mealybug in Hawaii. When discovered, the mealybugs were being tended by the ant Pheidole megacephala (Fabricius).

Dermacentor albipictus (Packard): Mr. Fullaway reported that an engorged specimen of this tick had been removed from a horse which was brought into the Territory from the mainland United States early this month. This is the second time within a year that a horse has arrived here bearing ticks of this species (see "Proceedings" 16 (3): 322–323, 1958).

Lantana insects on Maui: Mr. Krauss reported that during January he had found caterpillars of the noctuid moth Catabena esula Druce feeding on Lantana in the Hana and Kaupo areas of Maui. This is the first record of the establishment of this purposely introduced lantana enemy on Maui. Mr. Krauss also observed the work of caterpillars of the pyralid moth Syngamia haemorrhoidalis Gueneé on lantana on Maui.

Aphonopelma clarum Chamberlin: Mr. Look stated that the large theraphosid spider which was intercepted in Honolulu by a Territorial plant quarantine inspector during October, and was exhibited at the meeting of November 18, 1957 ("Proceedings" 16 (3): 336), had been identified as this species by Dr. W. J. Gertsch.

Salmacia longipulvilli (Tothill): Dr. Gressitt called attention to a paper by Paul H. Arnaud, Jr. titled “The occurrence of Salmacia longipulvilli in the Hawaiian Islands (Diptera: Larvaeoridae)” (Ent. News 68 (10): 259–263, 1957). This fly has not been reported here previously. Dr. Arnaud records it from Maui and Hawaii, but specimens in the HSPA collection indicate that it occurs also on Oahu. One specimen was reared by Swezey from a pupa of Agrotis ipsilon (Hufnagel).

Sipalinus sp.: Mr. Chilson exhibited a specimen of this large curculionid weevil which was intercepted recently at the Honolulu Airport in baggage from Japan.

March 10, 1958

The 627th meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA, at 2:00 P.M. on Monday, March 10, 1958, with President Tuthill in the chair.

Visitors: Mr. Garth Lukins and Mr. Rodolfo Ela.

Mr. Harold Toba and Mr. Garth Lukins were nominated for membership in the Society. Dr. William Cantello and Mr. P. A. Mourikis were elected to membership.

Dr. W. C. Mitchell gave an interesting account, illustrated by Kodachrome slides, of the current program of research which is being conducted at the U.S.D.A. Fruit Fly Laboratories in Hawaii.

**Notes and Exhibitions**

**Biological control projects of the Board of Agriculture and Forestry:** Mr. Thistle announced that the Territorial Board of Agriculture and Forestry recently has undertaken two major biological control projects. These are: (1) the search for enemies of the snail *Lymnaea ollula* (Gould), which is the intermediate host for the liver fluke of cattle in Hawaii; and (2) the search for additional enemies of gorse, *Ulex europaeus* L., a serious rangeland weed pest. Mr. N. L. H. Krauss is now in the Orient searching for *Lymnaea* enemies, and Mr. C. J. Davis will soon depart for Europe and North Africa where he will search for gorse enemies. Secondary projects, to be carried on concurrently with the above, will be the search for enemies of the weed pests *Rhodomyrtus tomentosa* (Ait.) Hassk. and *Melastoma malabathricum* L. by Mr. Krauss, and for enemies of *Emex* spp. by Mr. Davis.

**American Mosquito Control Association meetings:** Dr. Joyce reported that he had returned recently from Washington, D. C., where he attended the meetings of the American Mosquito Control Association. Dr. J. M. Hirst, a member of our Society, is the current president of the Association.

**Anacamptodes fragilariia** (Grossbeck): Mr. Fullaway reported that Mr. Krauss had collected caterpillars of this geometrid moth at Hana, Maui, during February, 1958; on leaves of Java plum, *Eugenia cumini* (L.) Druce. This is a new host record for the moth.

**Hyalopeplus pellucidus** (Stål): Mr. Ota reported that he and Dr. Nishida recently had found this mirid plentiful on mango foliage at Poamoho, Oahu. Whether these bugs were feeding on mango leaves was not determined.

**Anthenus flavipes** LeConte: Mr. Clagg reported that a severe infestation of this dermestid beetle had been found in curled cattle hair used
for mattress stuffing which was being stored in a warehouse at the Pearl Harbor Naval Supply Center. One hundred thirty-eight bales of hair totaling about 7,000 pounds were infested with beetles at a rate of about 25 adults per pound. There were also many beetles flying about the warehouse. Infested bales were first sprayed with a 2% chlordane emulsion, and then placed in a heat treatment room at 140 degrees F. for 4 hours to destroy all stages of the beetle. The inside of the warehouse was treated with a 10% DDT dust.

**Toxorynchites splendens** (Weidemann): Dr. Hardy stated that an adult specimen of this predaceous mosquito had been captured recently at the Dole Street Laboratory of the USDA. The species appears to be established here, but it is not commonly seen.

**Elytroteinus subtruncatus** (Fairmaire): Mr. Rosa exhibited specimens of this weevil which he had reared from tubers of the bird-of-paradise plant, *Strelitzia reginae* Banks. Some of the infested plants were in a dying condition, apparently due to the feeding of the weevil grubs. This constitutes a new host record for the weevil.

**Telea polyphemus** (Cramer): Mr. Rosa exhibited a specimen of this large saturniid moth which had been brought in alive to the Experiment Station, HSPA during February by two boys. The boys stated that the moth had emerged from a cocoon which was attached to furnishings shipped here from California. According to Essig (Insects of Western North America pp. 670–671, 1926) this species ranges throughout the United States and the larvae feed on the foliage of a number of deciduous trees, including apple, peach, prune, and plum.

**Eidoleon** sp.: Miss Suehiro exhibited specimens of an endemic myrmeleontid from the Bishop Museum collection. These are noteworthy in that they were collected several years ago at Puu Kapele, Kauai, by Mr. E. H. Bryan, Jr., and constitute the first and only record of antlions from that island.

**Plusia (Autographa) biloba** (Stephens): Mr. Beardsley exhibited a specimen of this noctuid moth which was taken in a light trap at Waipio, Oahu, during February. The moth has been present in the Territory for many years, but is very seldom collected here.

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**April 14, 1958**

The 628th meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA, at 2:00 P.M. on Monday, April 14, 1958, with President-elect Nishida presiding.

Visitors: Mr. Shinsaku Kimoto and Dr. Larry W. Quate.

Mr. Rudolfo Ela, Mr. Kimoto, and Dr. Quate were nominated for membership in the Society. Mr. Lukins and Mr. Toba were elected to membership.

Through the courtesy of Mr. Maehler and the USDA Plant Quarantine Service an interesting colored motion picture entitled “The Hidden Menace” was shown which depicted the various activities of the Quarantine Service.

Notes and Exhibitions

Dr. Hardy presented the following five notes:

Amygdalops tomasseti Lamb: This anthomyzid fly (Trans. Linn. Soc. London 16:559, 1914) was reported by Wirth (“Proceedings” 13 (1) :21, 1947) as “Mumetopia sp.”, and later was determined by Sabrosky as “Ischnomyia? prob. n. sp.” (Hardy, “Proceedings” 14 (3) :447, 1952). Miss M. S. Adachi recently suggested that our species was probably the same as that which Lamb had described from the Seychelle Islands, and C. F. Sabrosky has confirmed this identification.

Scaptomyza (Parascaptomyza) pallida Zetterstedt: According to W. Hackman of Helsingfors, Finland, this name (Dipt. Scand. 6:2571, 1847) is the correct one for the drosophilid fly which has been referred to in the Hawaiian literature as Scaptomyza graminum (Fallen). The latter species is a leaf miner and apparently does not occur in Hawaii. S. pallida is a scavenger and is common in the lowlands throughout the islands. The species is widespread throughout Europe, Asia, North America, and North Africa, and probably occurs throughout the Pacific.

Phytobia (Amauromyza) maculosa (Malloch): Larvae of this leaf-mining agromyzid fly were found infesting leaves of fireweed, Erechites hieracifolia (L.) Raf., at Hilo, Hawaii, November 9, 1957, by Dr. Nishida. This is a new host and a new island record for the species.

Eumerus marginatus Grimshaw: Ginger roots infested with this syrphid fly were sent in from Hilo, Hawaii, during April, 1958, by the extension agent, Mr. Y. Nakagawa. The roots were in a rotting condition and there was no evidence that the syrphid larvae actually had been boring in healthy tissue. Only pupae and one emerged adult were present in the
sample submitted. There is some possibility that this fly may be economic importance as some *Eumerus* are important bulb infestors in other areas (e.g.: *E. tuberculatus* Rondani is the lesser bulb fly of the U.S.). In the past *E. marginatus* has been reared from lily bulbs and ginger roots on Oahu, but rots were present in all cases and the species may be strictly a scavenger.

**Scatopse fuscipes** Meigen: On April 3, 1958, Mr. Jonathan Kajiwara brought in a large grass tassel which was covered with great masses of the adult of this scavenger fly. The massing of the adults of this species, which were clustered together by the thousands in this case, has not been reported previously here.

**Orchidophilus** spp.: In a recent letter to Dr. Gressitt, Dr. H. Bytinski-Salz, Chief Entomologist, Ministry of Agriculture, Israel, stated that every year his department receives several shipments of insect-infested plants from Hawaii. Most of the living insects are scales, but last year *Vanda* cuttings with tips heavily infested by curculionid or scolytid borers were intercepted. The borers are presumed to have been *Orchidophilus* weevils, of which there are two species in Hawaii.

**Luring fruit flies in the South Pacific:** In the light of remarks by Dr. Mitchell at the previous meeting concerning fruit fly lures, Dr. Gressit gave notes on the results of his work with the same lures and traps during a trip through the New Hebrides, Solomons, Bismarks, New Guinea, Borneo, Thailand, and Luzon in the Philippines. The five lures used were methyl eugenol, anisyl acetone, angelica seed oil, “no. 21486”, and a mixture. The “no. 21486”, a Mediterranean fruit fly lure, was negative at every locality. The others all were negative in the New Hebrides, but all were positive for one or more species of *Dacus* in the Solomons, on New Britain, and at Wewak, New Guinea. At Hollandia and Biak only anisyl acetone was positive, but the environments tried were poor. Near Sandakan, Borneo, only anisyl acetone was positive, and in Thailand only anisyl acetone and methyl eugenol were positive. It was thought that some of the wicks, used for so long without replenishment, had dissipated, but at the last locality tried, Clark Field on Luzon, all four proved positive, showing them to be still effective.

**Carpophilus marginellus** Motschulsky: Mr. Ford exhibited specimens of this nitidulid beetle which has not been reported previously from the Territory. The species has been present here for at least nine years, but, due to its resemblance to the four other species of *Carpophilus* known here, had escaped earlier detection. *C. marginellus* is reported to be nearly cosmopolitan in distribution (Hinton, H. E., *Beetles Associated with Stored Products* vol. 1, p. 84, 1945) and has been reported injuring stored rice in the U. S. and infesting a flour mill in England.
Heliothrips haemorrhoidalis (Bouché): Mr. Maehler reported that he had found this thrips heavily infesting the leaves of a sand-box tree, Hura crepitans L., in the vicinity of Fort Ruger, Honolulu, during March. This is a new host record for the thrips.

Celerio wilsoni perkinsi (Swezey): Mr. Beardsley exhibited an adult of this rare endemic sphingid moth which he had reared from a caterpillar found feeding on Straussia on Mt. Tantalus, Oahu, during February. The mature caterpillar was exhibited at the Society's February meeting.

Spodoptera mauritia (Boisduval): Mr. Beardsley reported collecting an adult female of this armyworm moth at light at Kanakakai, Molokai, on March 25. This is the first record of S. mauritia on Molokai.

Anacamptodes fragilaria (Grossbeck): Mr. Beardsley exhibited a specimen of what appears to be a melanistic form of this immigrant geometrid moth. Several such specimens have been taken in HSPA light traps on Oahu during the past year.

Vanessa cardui (L.): Mr. Kim reported seeing hundreds of this nymphalid butterfly feeding at flower heads of Verbesina encelioides (Cav.) Benth., a common wild composit, on March 14, 1958, in the vicinity of Camp Erdman, Mokuleia, Oahu. An ichneumonid parasite, Pterocormus rufiventris (Brullé), was reared from a larva of this butterfly found feeding on Malva parviflora L. at Waianae, Oahu, during March.

May 12, 1958

The 629th meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA., at 2:00 P.M. on Monday, May 12, 1958, with President Tuthill presiding.

Members present: Balock, Beardsley, Burditt, Chock, Chong, Ford, Gressitt, Haramoto, Hardy, Holloway, Hoyt, Isenburg, Joyce, Kajiwara, Kamasaki, Kimoto, Look, Maeda, Maehler, Mitchell, Mourikis, Nakata, Namba, Nishida, Ota, Pemberton, Quate, Rosa, Sherman, Steiner, Suehiro, Thistle, Toba, Tuthill, Woolford, and Yoshimoto.

Mr. Rudolfo Ela, Mr. Shinsaku Kimoto, and Dr. Larry W. Quate were elected to membership in the Society.

The Society, as an affiliate of the Hawaiian Academy of Science, approved a "Resolution Concerning Future Organization of Annual Hawaiian Science Fairs and Other Inter-Society Efforts on Behalf of Science Education" which had been previously adopted by the 1957 Science Fair Executive Committee and approved by the Affiliation Committee, Hawaiian Academy of Science. Dr. Mitchell was elected to serve as the Society's representative on the Science Education Committee of the Hawaiian Academy of Science, as set forth in the resolution.
Dr. Charles P. Hoyt, entomologist for the South Pacific Commission, gave an interesting account of his work in the current program of research for the control of the coconut rhinoceros beetle, *Oryctes rhinoceros* (L.), as well as other phases of his entomological work for the South Pacific Commission.

**NOTES AND EXHIBITIONS**

**New chrysomelid beetle on Kwajalein:** Dr. Gressitt reported that during a recent trip to the Marshall Islands he collected specimens of the chrysomelid *Pagria signata* (Motschulsky) at Kwajalein. This is the first record of *P. signata* from the Marshall Islands. The species has been known previously from Asia, Japan, the Ryukyu Is., and Guam (Ins. Micronesia 17 (1) : 12, 1955). It is reported to feed on beans.

**Bishop Museum Entomology Department activities:** Dr. Gressitt reported that Dr. H. E. Milliron stopped here earlier this month en route to Mindanao and Palawan Islands in the Philippines where he will collect insects for the Bishop Museum. Dr. Snyder has written from the Bonin Islands that he has taken two subfamilies of muscid flies new to Micronesia. Dr. Marks has written from New Guinea that she has collected about one hundred species of mosquitoes, many with immature stages, and including a genus new to New Guinea.

**Popillia lewisi Arrow:** Mr. Ford exhibited specimens of this scarabaeid beetle, a close relative of the notorious Japanese beetle, and reported that on two occasions recently these insects have been intercepted alive by federal plant quarantine officers at Honolulu Airport on aircraft from Okinawa. Twelve beetles were found on an aircraft which arrived on May 7, and three more on another flight which arrived on May 10.

**Geococcus coffeae** Green: Mr. Beardsley called attention to a recent redescription and figure of this widespread root-inhabiting mealybug in a paper on African mealybugs by the British coccidologist J. D. Williams (Bull. British Mus. (Nat. Hist.), Ent. 6 (8) :205-236, 1958). Williams points out that Green confused this species with his own *G. radicum*, but that the two are distinct. *G. coffeae* has not been reported from Hawaii, but when the available Hawaiian *Geococcus* specimens were examined all were found to fit Williams’ concept of that species. This material included specimens from Oahu collected from 1921 to 1956 on roots of croton, oleander, and *Indigofera anil* L.; and from Hilo, Hawaii, collected from the roots of coffee seedlings during June, 1957. Dr. Harold Morrison has written that all Hawaiian *Geococcus* specimens in the U. S.
National Coccid Collection in Washington, D. C., appear to be *G. coffeae*. D. T. Fullaway, in a paper on *Geococcus radicatum* Green in Hawaii ("Proceedings" 2(3):108-109, 1910), mentions the presence of a pair of curved, dorsal, preanal spines on specimens which he studied. According to Williams, these structures are present in *G. coffeae* but not in *G. radicatum*. This suggests that *G. coffeae* has been present in Hawaii for many years, and that records of *G. radicatum* should be considered questionable.

**Ectemnius (Oreocrabro) mandibularis** (Smith): Mr. Beardsley exhibited a series of specimens of this endemic crabronid wasp which he collected on Molokai during April. The wasps were taken inside the Molokai airport terminal building where they were present in numbers, mostly dead or dying, around the base of a large picture window. Numerous wasps, presumably of the same species, were also flying about foliage around the exterior of the building. All but one of the specimens collected were females. Dr. Yoshimoto called attention to the fact that the endemic Hawaiian crabronids recently have been placed in the genus *Ectemnius* Dahlbom by the European hymenopterist Leclercq (Monographie Systematique, Phylogenetique et Zoogeographique des Hymenopteres Crabronies, University of Liege, 1954).

June 9, 1958

The 630th meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA, at 2:00 P.M. on Monday, June 9, 1958, with President Tuthill in the chair.


Visitors: Mr. Y. Elikewela of Ceylon; Mr. Alan May of Queensland, Australia; and Messrs. T. Dano, Harahap, A. Nasution, Nazar, Soedarono, Widarmoko, and Wimbarjono, all of the Republic of Indonesia.

Dr. J. L. Gressitt was elected to represent the Society at the Colloquium on Zoological Nomenclature which is to be held in London during July of this year, prior to the opening of the Fifteenth International Congress of Zoology.

Mr. Alan May of the Queensland Department of Agriculture and Stock gave a most informative talk on entomological problems and insect control work in Queensland, Australia.
Scyphophorus acupunctatus Gyllenhal: Mr. Bianchi exhibited an adult specimen of this large weevil which he had reared from and Agave plant growing on the seaward side of Diamond Head, Oahu. Only one larva was found in the spindle of the plant and the growing point had not been destroyed, but many leaves had been injured and made unsightly by the feeding of the insect. This is the first report of the weevil in several years, and it shows remarkable persistence of the species in spite of the scarcity of its host plant.

Pseudaletia unipuncta (Haworth): Mr. Bianchi stated that on May 21, 1958, he had been called to observe an extensive infestation of this army-worm on the Kahua Ranch, in the Kohala District of Hawaii. At the time only full-grown or nearly full-grow catepillars were found, together with numerous pupae and some moths. The only host plant involved was kikuyu grass. The manager of the ranch informed him that something over 500 acres of paddock were presently devastated by the pest, and that during January a much smaller acreage had been similarly affected at the same time that another small infestation had appeared on the Kukaiau Ranch, forty miles away on the Hamakua Coast. Excepting two tachinid larvae which were attached to the remains of a caterpillar, no parasites or predators were seen during a two hour search. Discreet nuclei of polyhedrosis disease were numerous and widespread throughout the infested area, however, and had obviously caused heavy mortality among the caterpillars. Other armyworms, which might be expected in abundance at this time because of the weedy condition of the cane fields which has resulted from the recent sugar strike, have not been reported by any plantation.

Crossopalpus insularis (Melander): Miss Adachi reported that recently she had found a specimen of this empidid fly in the Bernice P. Bishop Museum which had been collected at Tutuila, Samoa, July 14, 1953, by C. P. Hoyt. The fly was described from specimens collected on Oahu (“Proceedings” 14 (3):419-420, 1952), and this is the first record of its occurrence outside of Hawaii.

Typhoon damage to Jaluit Atoll: Dr. Gressitt reported that at the end of May he had spent a week on Jaluit Atoll in the Marshall Islands, with a team that included five other specialists and a Trust Territory government official, studying the effects of Typhoon Ophelia which struck there on January 7, 1958. Colored slides were shown which illustrated the severe damage inflicted by the typhoon. Some islets had had the vegetation largely eliminated, with most of the soil washed away or covered with coral rubble. Other islets were much less severely damaged.
Possibly no species of insects were exterminated from the atoll as a whole, but on some islets rather few species were found, and repopulation by certain species must follow revegetation. Soil insects, grasshoppers, scale insects, and some fragile forms seem to have suffered most severely. Culex mosquitoes were plentiful, and leafhoppers and some moths were breeding in large numbers on new growth, suggesting that their natural enemies suffered more than they did.

*Kunzeana kunzei* (Gillette): Mr. Beardsley reported that he had found this immigrant cicadellid leafhopper at Mapulehu, Molokai, on June 5th. This is a new island record for the species which previously has been known in Hawaii only from Oahu. Adults and nymphs were plentiful on the foliage of *Acacia farnesiana* (L.) Willd., and numerous adults but no nymphs were found on foliage of *Leucaena glauca* (L.) Benth. The latter is a new host record for the leafhopper.

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**July 14, 1958**

The 631st meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA, at 2:00 P.M. on Monday, July 14, 1958, with President-elect Nishida in the chair.

Members present: Balock, Beardsley, Bess, Bianchi, Boyle, Burditt, Christenson, Clagg, Chock, Chong, Haramoto, Hardy, Hirst, Holloway, Joyce, Kajiwara, Kamasaki, Keiser, Kim, Look, Macdougall, Maehler, McGee, McMahan, Mourikis, Namba, Nishida, Ota, Pemberton, Quate, D. Rainwater, H. I. Rainwater, Sherman, Steiner, Suehiro, Tamashiro, Toba, Thistle, Wilton, Woolford and Yoshimoto.

Visitors: Mr. I. Cohen, Mr. V. Elikewela, Mr. John Fenn, Mr. E. T. Kawamoto, Mr. Stanley T. Lee, Mr. G. Matsuoaka, Dr. A. R. Mead, Mr. and Mrs. A. J. Michelmore, Mr. D. J. Nadel, and Mr. C. M. Wheeler.

The Secretary read a letter addressed to the Society announcing the Eleventh International Congress of Entomology which is to be held in Vienna, from August 17 to August 25, 1960. The letter requested interested persons to contact the secretary of the Congress, Vienna I., Burgring 7, as soon as possible, and was signed by Dr. Max Beier, Secretary-General.

The Secretary read a second letter from Dr. H. M. Armitage, addressed to Dr. Walter Carter, concerning the Harry Scott Smith Memorial Fund to Advance the Science of Biological Control. Dr. Armitage requested that the proposed memorial fund be brought to the attention of the Society.
Mr. Alan Thistle showed a very interesting motion picture on the giant African snail and its enemies in Hawaii which had been prepared by the Territorial Board of Agriculture and Forestry.

**NOTES AND EXHIBITIONS**

**Hermetia illucens** (L.): Mr. Balock reported that Mr. Robert Iversen of the Pacific Oceanic Fisheries Investigations laboratory had found this stratiomyid fly breeding in covered ten-gallon earthenware crocks containing stomachs and gonads of tuna enclosed in muslin sacks and preserved in a solution of approximately 10% formaldehyde. Large numbers of live and dead larvae, pupae, and some dead adults of the fly were found in crocks in which tuna remains were not completely submerged, but where the muslin and contents were, nevertheless, moist and apparently impregnated with the preservative.

**Pseudaletia unipuncta** (Haworth): Mr. Bianchi referred again to the infestation of *Pseudaletia* which he had spoken of at the last meeting, stating that he had visited Kahua Ranch a second time on June 23. At the time of this visit the area devastated had not increased, although the pasture originally damaged did not show signs of recovery. Caterpillars had disappeared completely from some areas and had become generally scarce, while pupae and adult moths had increased somewhat, but not, to judge from casual observation, to the number that might have been reasonably expected at the height of the infestation. The polyhedrosis disease, abundant in May, had apparently run its course and was not in evidence, but two parasites, the ichneumonid *Pterocormus laetus* (Brullé) and the tachinid *Eucelatoria armigera* (Coquillet), were now found where none had been seen before. The first of these could be found in dozens, which is unprecedented abundance for the species; and the second in hundreds, which was not uncommon abundance in the days when *Eucelatoria* was one of the principal parasites of *Spodoptera exempta* (Walker) in the cane fields.

No other parasites were seen out of a long list of them which are known to parasitize *S. exempta*, *S. mauritia* Boisduval, and other relatives of *Pseudaletia*. This observation led Mr. Bianchi to suggest that it might be advisable to introduce *Apanteles militaris* (Walsh) into Hawaii. This braconid is known to exercise a strong control over the pest in Tennessee and other areas of the Mainland, and might have the same effect here. There is a record of the introduction of *A. militaris* from Mexico in 1924 (Williams, F. X.; *Insects and Other Invertebrates of Hawaiian Sugar Cane Fields* p. 375, 1931), but there is strong reason to believe that the insect was not, in fact, *A. militaris*, and that the introduction of the true *A. militaris* should be attempted.
Dr. Joyce presented the following notes:

**Anisopus** sp.: A single specimen of a fly of this genus was taken in a light trap at the Public Health Service Quarantine Station near Pier 1 in Honolulu, on May 21, 1958. The family Anisopidae, of which this genus is the type, has been previously unrepresented in the Hawaiian fauna. Flies of this group are closely related to the Tipulidae, but differ in that ocelli are present and the V-shaped mesonotal suture is lacking. The specimen taken had distinctly mottled wings, and, although damaged, was readily placed in the genus *Anisopus* by the characteristic wing venation. Larvae of the Anisopidae are usually found in wet decaying organic matter such as cow dung, fermenting potatoes, decaying roots and fermenting sap in tree holes.

**Lygus elius** (Van Duzee): The pale legume bug was first discovered in Hawaii in July of 1947 ("Proceedings" 13 (2): 212, 1948) when it was found to be abundant in the Iriquois Point area at Pearl Harbor. Little has been heard of this species in Hawaii since that time. A specimen was taken in a light trap at the P.H.S. quarantine station in Honolulu on June 20, 1958, which indicates that the species is still present and has extended its range.

**Batocera lineata** Chevrolat: A dead specimen of this conspicuous cerambycid beetle was picked up on June 3, 1958, in front of the Public Health Quarantine area at the Honolulu Airport. It is assumed that the beetle must have come from one of the recent aircraft arrivals from Japan since the species is common in that country.

**Dermacentor variabilis** (Say): Two lots of the American dog tick were referred to me by Dr. Willers, Territorial Veterinarian, for identification. The ticks were taken from dogs detained at the Animal Quarantine Station. One dog was imported from Greenwich, Connecticut on June 17, 1958, and the other from New Jersey on June 27, 1958. Both male and female ticks, some of which were fully engorged, were recovered. This tick is not known to be established in Hawaii but is common in the United States east of the Rocky Mountains, and ranges from Alaska to Mexico. It is a vector of Rocky Mountain spotted fever, tularemia, anaplasmosis, and may cause tick paralysis. It is important that such infestations be detected and controlled while dogs are being held in quarantine to help prevent this tick from becoming established here.

**Ceroplastes cirripediformis** Comstock: A note concerning the identity of this coccid was presented by Mr. Maehler for Mr. Chilson. This species was first reported in Hawaii by Sherman in 1953 ("Proceedings" 15 (2): 271, 1954), on the basis of a tentative identification by Dr. Harold Morrison. Later, Dr. Hardy stated that he had information indicating that *C.*
cistudiformis Townsend and Cockerell was the correct name for this insect ("Proceedings" 15 (3):379, 1955). The Plant Quarantine Division interception records of this scale show that in 1953 Dr. Morrison was tentatively calling it C. cistudiformis. However, since 1954 he has been using the phrase "I think is Ceroplastes cirripediformis Comst.". It would seem therefore, that C. cirripediformis should be used in future references to Hawaiian specimens. In addition to the previously reported hosts; Duranta repens ("Proceedings" 15 (3):386, 1955), Schinus terebinthifolius ("Proceedings" 16 (1): 3, 1956), and Passiflora; scales have been collected on Argyreia nervosa (Burm.) Bojer by K. L. Maehler in June, 1958; on Philodendron by J. H. Gayden, Oct. 14, 1956; on Pimenta officinalis Lindl. by L. M. Chilson, July 8, 1956; and in Kailua, Oahu on Passiflora by Chilson on July 1, 1958. This last record is a new locality for the scale which has been known previously in Hawaii only from the vicinity of Honolulu.

New names for two Hawaiian Ichneumonidae: Dr. Pemberton reported that in Dr. Henry Townes' treatment of the Ichneumonidae of Micronesia (Insects of Micronesia 19 (2): 35-87, 1958) the following two name changes which apply to Hawaiian ichneumonids should be noted: on page 42, Echthromorpha fuscator (Fabricius) is given the new status of Echthromorpha agrestoria fuscator (Fabricius); and on p. 66, Zaleptopygus (Cremastus) flavo-orbitalis (Cameron) is given the new combination Trathala flavo-orbitalis (Cameron).

Cottony-cushion scale and Rodolia beetles in the Marshall Islands: Mr. Beardsley reported that infestations of the cottony-cusion scale, Icerya purchasi Maskell, had been discovered recently at two new localities in the Marshall Islands, and on Wake Island. This insect was first found in the Marshalls at Eniwetok in July, 1957 by L. D. Tuthill ("Proceedings" 16 (3):333, 1958). In June of this year it was found infesting Casuaria trees at Kwajalein, and at Uliga, Majuro Atoll, by Mr. R. P. Owen, entomologist for the Trust Territory. Mr. Owen has attempted to eradicate the pest at Majuro, but the infestation at Kwajalein was deemed too extensive to warrant an attempt at eradication. Icerya purchasi was collected for the first time at Wake Island in November, 1957, by Mr. Krauss. The scales were determined by Mr. Beardsley.

At Kwajalein Mr. Owen found two species of Rodolia beetles present. These were R. pumila Weise, which he found feeding on Icerya aegyptiaca (Douglas), and R. breviuscula Weise, which was feeding on I. purchasi. The beetles were determined by Dr. E. A. Chapin. R. pumila was first introduced into Kwajalein in 1949 to combat I. aegyptiaca. There are no recorded introductions of R. breviuscula into Kwajalein. However, the species reported to have been introduced into Guam and Majuro from India in 1948, which was tentatively identified as R. fumida Mulsant (see "Proceedings" 15 (3):397, 1955), was actually R. breviuscula accord-
ing to Dr. Chapin. Presumably, *R. breviuscula* was either accidentally or purposely introduced to Kwajalein from Guam or Majuro. This is the first record of the establishment of *R. breviuscula* in Micronesia.

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**August 11, 1958**

The 682nd meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA, at 2:00 P.M. on Monday, August 11, 1958, with President Tuthill in the chair.


Visitors: Dr. George W. Byers, Mrs. H. A. Woolford, and Miss Carole J. Worthington.

Miss Carol Worthington was nominated to membership in the Society. Dr. George W. Byers of the Entomology Department of the University of Kansas gave an interesting account of the entomologists and current entomological research at that institution.

**Notes and Exhibition**

*Cheiracanthium diversum* Koch: Mr. Bianchi exhibited a specimen of this spider which had been sent to him from a business address in downtown Honolulu, with word that it had bitten a woman on Chun Hun Lane while she was hanging garments on a clothes line. The woman was bitten on the right hand at the base of the thumb on July 30th, and had been attended at the City Emergency Clinic immediately, but the pain had not subsided overnight and had required further medical attention the next day.

**Bishop Museum Entomology Department activities:** Dr. Quate reported on the whereabouts of various entomologists now working on projects of the Bishop Museum Entomology Department. These include Dr. Elizabeth Marks, who recently completed a trip to New Guinea where she concerned herself principally with the collection of mosquitoes; Mr. Boris Malkin, who has been in New Caledonia and is now in the New Hebrides; Dr. H. E. Milliron, who has been on Palawan and is now on Mindanao in the Philippines; and Mr. T. C. Maa, who has been in Sarawak. Dr. Gressit has completed his work in London, where he at-
tended the Fifteenth International Congress of Zoology, and is now in Paris. He will be in Europe until the end of this month and will then proceed to Calcutta and Bangkok.

**Trapping air-borne insects:** Dr. Yoshimoto exhibited an experimental insect trap the design of which is based on the principal of the windsock. This trap was exposed on the roof of the Bishop Museum for twelve consecutive days during late July and early August. Specimens captured in the trap during that period were examined and determined as follows: *Camponotus maculatus* Forel (16 specimens); unidentified ants (3 specimens); scolytid beetle (1 specimen); elytra of scolytid beetles (2 specimens); *Geotomus pygmaeus* (Dallas) (1 specimen); lygaeid bug, probably *Nysius* sp. (1 specimen).

Mr. Chilson presented the following two notes:

**Diaspidid scales from Mondo japonicum (L.) Farw.:** The paper by G. F. Ferris ("Proceedings" 16(2):212, 1957) in which he described *Pinnaspis caricis* from Mondo appears to be the first report of an insect attacking that host in Hawaii. On September 26, 1955, only a month after the initial collection of *P. caricis* in Honolulu, Inspectors E. H. Davidson and H. Sekomoto found specimens of this scale on *Mondo japonicum* in Hilo, Hawaii. In addition, they collected *Parlatoria proteus* (Curtis) and *Chrysomphalus dictyospermi* (Morgan) from the same host material. All the scales were determined by Dr. Harold Morrison. This constitutes a new host record for the latter two scales, and a new island record for all three.

**New ant records for Palmyra Island:** Mr. Krauss' paper on the insects and other fauna of Palmyra ("Proceedings" 15(1):217-220, 1953) lists only one species of Formicidae, determined as *Pheidole* sp. To this may be added *Tetramorium guineense* (Fabricius) and *Paratrechina longicornis* (Latreille). *Pheidole megacephala* (Fabricius) was also taken, this no doubt being the species found by Krauss. These ants were collected by E. J. Ford on some sprouted coconuts brought to Honolulu from Palmyra on April 13, 1957.

The following notes were presented by Mr. Beardsley.

**Ripersiella sp.:** During June of this year specimens of a hypogeic mealybug belonging to this genus were collected on the roots of *Peperomia leptostachyia* Hooker and Arnott at about 500 feet elevation along the Wiliwilinui Ridge Road, Oahu, and from the same host at about 2,000 feet elevation on the Palikea Trail in the Waianae Mts., Oahu. These are the first records of a mealybug of this genus in the Territory. However, the species may be the same as *Radicoccus hawaiensis* Hambleton, which is known only from a single collection from *Coleus* roots, Manoa
Valley, Oahu, 1918. Dr. Harold Morrison has compared the Ripersiella specimens with the two specimens of R. hawaiiensis in the U.S. National Coccid Collection and found them very similar except for the presence of eyes in my specimens. Since the eyes are very small and difficult to see in my most strongly stained specimens, it is possible that they would not be discernible in poorly stained or faded specimens. The presence or absence of eyes is used by Hambleton (Rev. de Entomologia 17 (fasc. 1–2):1–77, 1946) to separate the genera Ripersiella and Radicoccus.

Ceroplastes cirripediformis Comstock: This immigrant coccid recently has spread into the Marshall Islands where it was collected by L. D. Tuthill at Eniwetok during July, 1957, on Pseuderanthemum; and by R. P. Owen at Kwajalein in June of this year, on Coccolobis. The species was described from North America.

Plagiolepis alluaudi Emery: Attention was called to a paper by M. R. Smith (Jour. New York Ent. Soc. 65:195–199, 1957) in which the ant P. mactavishi W. M. Wheeler is reduced to a synonym of this species. This ant occurs in Hawaii and has previously appeared in our literature as P. mactavishi.

September 8, 1958

The 633rd meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA, 2:00 P.M. on Monday, September 8, 1958, with President-elect Nishida in the chair.

Members present: Balock, Beardsley, Bess, Bianchi, Burditt, Chilson, Chong, Davis, Ford, Fullaway, Hardy, Holloway, Joyce, Kajiwara, Kamasaki, Keck, Kimoto, Lukins, Maehler, McMahan, S. Mitchell, Mourikis, Nakata, Namba, Nishida, Ota, Pemberton, Quate, Sherman, Steiner, Suehiro, Tamashiro, Thistle, Wilton and Yoshimoto.

Visitors: Dr. George D. Butler, Mr. Bernard B. Sugerman, and Miss Carole J. Worthington.

Dr. Butler, Mr. Sugerman, and Mr. Teichi Yamada of the USDA Fruit Fly Laboratory on Maui were nominated for membership in the Society. Miss Carole Worthington was elected to membership.

By a vote of the members present it was decided that the Society would become a dues-paying member of the Conservation Council for Hawaii. Dr. Nishida appointed Drs. D. E. Hardy and C. E. Pemberton to serve as the Society’s representatives on the Conservation Council.

Mr. C. J. Davis of the Territorial Board of Agriculture and Forestry gave a very interesting account, illustrated with Kodachrome slides, of his recent trip through England, Portugal, Spain, and North Africa in search of enemies of Hawaiian rangeland weed pests, principally gorse.
Palorus foveicollis Blair: Mr. Ford reported that specimens of this tenebrionid beetle (see Kulzer, H.; Ins. Micronesia 17(3):219, 1957) from Oahu had been identified for him by Mr. T. J. Spilman of the U. S. National Museum. The species had been determined previously by Dr. E. A. Chapin as "genus near Palorus sp." ("Proceedings" 13(3):323, 1949). It was first collected in Hawaii in a light trap at Iroquois Point, Oahu, in November 1947. Additional specimens were collected at Barber's Point, Oahu, during 1949, and from light traps at Ewa and Waipio, Oahu, during 1957. The known distribution includes Ceylon, Philippines, Guam, and Hawaii. It has also been taken in grain from Trinidad, and Mobile, Alabama, according to U.S.N.M. records.

Acinopterus angulatus Lawson: Mr. Beardsley reported that a single female specimen of a cicadellid leafhopper which he has tentatively identified as this species (Kansas Univ. Science Bull. 14(4):119–120, 1922) was taken in an HSPA light trap at Ewa, Oahu, on August 25, 1958. This species is known from California, Southwestern U.S., Mexico, Central America, and the West Indies. Severin (Hilgardia 17(5):197–211, 1947) found this leafhopper to be a vector of aster-yellows virus in experimental studies in California. Delong and Severin (Hilgardia 17(5):212–215, 1947) discuss the taxonomy, distribution, and host plants of this species, and conclude that the preferred host plants in California are legumes. These authors cite collection record from alfalfa (Medicago sativa L.), Spanish clover (Lotus americanus Vell.), and wild licorice (Glycyrrhiza lepidota L.).

Phenacoccus gossypii Townsend & Cockerell: Mr. Beardsley reported collecting this immigrant mealybug on Sophora chrysophylla (Salisbury) Seemann and on Myoporum sandwicense (A. de Candolle) Gray at Pohakuola, Hawaii, during August of this year. This constitutes a new island record and two new host records for the species.

Spodoptera mauritia (Boisduval): Mr. Tamashiro reported that he had collected egg masses of this noctuid moth at Waihee, Maui, late in August of this year. No adults were found, but larvae reared from the egg masses were positively identified as S. mauritia. This is a new island record for the species.

False spider mites in Hawaii: Mr. Chilson called attention to a recent revision of the mite family Tenuipalpidae, or false spider mites, by A. E. Pritchard and E. W. Baker (Univ. Calif. Pubs. in Ent. 14(3):175–274, 1958). Five species of this family previously have been reported from Hawaii. Pritchard and Baker add two new records to our fauna, and make changes in nomenclature which affect several of the previously
recorded names. Following is a list of the species now known to occur in Hawaii. (1) *Brevipalpus lilium* Baker. Pritchard and Baker list this species from Oregon, Washington, California, Florida, and Hawaii, on a number of hosts. This is a new record for the Territory. (2) *Brevipalpus californicus* (Banks). This is a widespread species which has been reported from many hosts. It was first recorded in Hawaii by Boyle ("Proceedings" 16 (2) :196, 1957) as *B. australis* Tucker, considered to be a synonym of *B. californicus* by Pritchard and Baker. (3) *Brevipalpus obovatus* Donnadieu. This is a pest species of wide distribution. *Tenuipalpus inornatus* Banks, *Brevipalpus inornatus* (Banks), and *Tenuipalpus bioculatus* McGregor are among the synonyms listed by Pritchard and Baker. It was first recorded from the Territory (as *B. bioculatus*) by McGregor ("Proceedings" 9 (3) :337, 1937). (4) *Brevipalpus phoenicus* (Geijskes). Previously recorded Hawaiian host records of this species are papaya, *Passiflora*, and puncture vine ("Proceedings" 16 (1) :19). Plant Quarantine Division inspectors have taken it on orange, lemon, and *Bryophyllum* sp. on Oahu, and on *Arundina bambusifolia* Lindl. at Hilo. These collections were determined by E. W. Baker. (5) *Dolichotetranychus vandergooti* (Oudemans). This species is listed from the Canal Zone, Siam, Java, Philippine Islands, and Hawaii, on *Dendrobium* and *Arundina*. The record, which is a new one for Hawaii, appears to be based on a collection of mites from *Arundina bambusifolia* at Hilo, February 9, 1953, which were determined at that time as "Dolichotetranychus sp." by Baker. (6) *Dolichotetranychus floridanus* (Banks). This mite, known to have been present here since 1908, has appeared previously in our literature as *Stigmaeus floridanus* Banks ("Proceedings" 5 (1) :32, 1922). The species is also known from Florida, some West Indian and Central American areas, the Philippines, Java, and Japan. Pineapple is the only known host. (7) *Tenuipalpus pacificus* Baker. This species was first recorded from Hawaii on the basis of specimens identified by Dr. Baker ("Proceedings" 15 (3) :377, 1955), but the Hawaiian record is not cited in the Pritchard and Baker paper.

October 13, 1958

The 634th meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA, at 2:00 P.M. on Monday, October 13, 1958, with President-elect Nishida presiding.


Visitor: Mr. Earnest Yoshioka.
Dr. Butler, Mr. Bernard Sugerman, and Mr. Teichi Yamada were elected to membership in the Society.

**Notes and Exhibitions**

*Tefflus zanzibaricus alluaudi* Stenberg: Mr. Thistle exhibited a living adult specimen of this large carabid beetle which was recovered near Halekou Road in Kaneohe, Oahu, during September of this year. This species is predaceous upon snails, and was released during 1952–53 to combat the giant African snail. This is the first live recovery of *T. zanzibaricus* since 1953.

**Fruit fly host records:** Dr. Burditt presented the following information concerning new and unusual fruit fly host records:

"Two new host records for the Oriental fruit fly, *Dacus dorsalis* Hendel, were reported by Mr. Nakagawa from Hawaii during July. Twenty-four green sapote (*Calocarpum viride* Pittier) fruits collected at the Kona Experiment Station in June yielded 159 fly pupae from which emerged 1 Oriental fruit fly, 73 Mediterranean fruit flies, and 13 *Opius oophilus* Fullaway. Seventy-three fruits of acerola or Barbados cherry (*Malpighia punicifolia* L.) collected at Opihikau, Hawaii, produced 83 puparia from which 57 Oriental fruit flies and 5 *O. oophilus* emerged. Mr. Chilson has reported that acerola cherries offered to the public at the Kaneohe Fair on Oahu during August were found infested with *D. dorsalis* larvae by Mr. G. Pearsoll of the USDA Plant Quarantine Division.

"High field infestation of bell peppers on Maui by Mediterranean fruit fly, *Ceratitis capitata* (Wiedemann), has been reported by Mr. Yamada. Ninety picked fruits (¼ ripe to ripe) produced 179 flies; 90 ripe ground fruits yielded 23 flies; and 9 green culls (cracked and bruised) produced 19 flies. Although listed as an occasional host by Back and Pemberton (*USDA Bull. 536:25–26, 1918*) no *C. capitata* have been reared from 6,067 fruits field-collected on Maui since 1949, nor on Oahu from 5,994 fruits collected between 1949 and 1953. However, most of these collections came from areas well apart from detectable medfly infestations. The current high infestation is believed to be associated with heavy build-up in peaches and the termination of the peach crop. Tomatoes, normally infested by the melon fly and occasionally by the Oriental fruit fly, were also found infested by the Mediterranean fruit fly following the loquat season with its high population build-up. Collections at Kula, Maui in April produced 92 *C. capitata* from 1,300 ripe fruits. A later collection of 1,000 mature-green fruits yielded only one fly."

*Frankliniella sulphurea* Schmutz: Dr. Carter reported for Mr. Sakimura that a thrips which he had identified as this species was the cause of several complaints of annoyance by residents of the Aliamanu and
Ainakoa sections of Honolulu, the persons complaining having been bitten by the thrips. Mr. C. J. Davis reported that the same species of thrips (determined by Mr. Bianchi) was found by him to be the cause of a complaint of a resident of Nanakuli, Oahu. Both Mr. Sakimura and Mr. Davis found that large populations of this thrips had developed in the flowers of certain wild plants, particularly *Leucaena glauca*, and that the thrips apparently had migrated into adjacent residential areas when drought conditions which prevailed during the latter part of September caused the wild hosts to dry up. Mr. Bianchi stated that he has been bitten by thrips on many occasions, and that Herms refers to thrips attacking man in the United States and elsewhere in his book *Medical Entomology*.

**Heliothis virescens** (Fabricius): Mr. Davis reported that he had reared this noctuid moth from the fruit of *Passiflora foetida* L. collected near Waipahu, Oahu on September 16th. This is a new Territorial host record for the species.

**Insect parasites of birds**: Mr. Fullaway stated that Dr. Gootch, Territorial Veterinarian, had recently found specimens of the stick-tight flea, *Echidnophaga gallinacea* (Westwood), infesting a nene goose at Pohakuloa, Hawaii. Dr. Gootch also collected specimens of a mallophagan louse (*Myrsidea* sp.?) on a stork in the Honolulu Zoo.

**Pycnoscelus surinamensis** (L.): Mr. Bianchi read a letter from Dr. Louis M. Roth, entomologist with the Research and Engineering Command, U.S. Army, Natick, Mass., in which Dr. Roth stated that specimens of this cockroach sent to him from Hawaii some months ago had all turned out to be of the minor or short-winged race. This information gives rise to the question of whether both minor and major races of the species are present in Hawaii.

**Hedylepta accepta** (Butler): Mr. Bianchi stated that he had recently observed in a cane field near Mountain View, Hawaii, a paralyzed larva of the sugar cane leafroller stuck to a cane leaf by means of a few threads and bearing exteriorly and ventrally near the anterior prolegs, five small, transluscent eggs. This find is not in accordance with the habits of any known parasite of *Omiodes*, and it may indicate the presence in the Territory of an unrecorded parasite, or the unrecorded habit of some facultative parasite which normally attacks some other host.

**Hylaeus stevensi** Crawford: Mr. Beardsley exhibited a female specimen of this hylaeid bee (*Canad. Ent. 45:155, 1913*) which he had collected on legume flowers at Ewa, Oahu, on Sept. 30th. A male specimen collected at the same locality on Sept. 22nd was sent to Mr. P. H. Timberlake at the University of California, Riverside, who identified it as this species.
This is a North American bee known from North Dakota to Idaho, Utah, Colorado, and California. Mr. Timberlake stated that he has taken the species occasionally at Riverside. It appears to be a newly established immigrant here.

The following notes were submitted by Mr. Chilson:

**Diploptera punctata** (Eschscholtz). Dr. A. B. Gurney has informed us that *Diploptera dytiscoides* (Serville), the name by which our cypress cockroach has been long been known, has been reduced to a synonym of this species by K. Princis (*Opuscula Entomologica* 15:162, 1950).

**Araecerus levipennis** Jordan. This anthribid beetle was found by E. B. Lee in *Leucaena glauca* pods mailed from Molokai on June 17, 1958. This is a new island record.

**Dialeurodes kirkaldyi** (Kotinsky). Mr. G. Sadoyama collected this aleyrodid on *Plumeria acuminata* Alt., on January 10, 1958. Specimens were determined by Miss L. M. Russell. This is a new host record for the whitefly in the Territory.

**Ceroplastes cirripediformis** Comstock: The ornamental border plant known as "shoo-fly", *Alternanthera amoena* (Lem.) Voss, is a new Hawaiian host for this scale. It was collected on that plant by J. Gayden on September 25, 1958, at Foster Village, Oahu.

**New mite records**: Two species of mites belonging to the predaceous family Cheyletidae which are new to the Territory were collected recently on Oahu. *Cheletophyes hawaiiensis* Baker (*Proc. U. S. Nat. Mus.* 99:289, 1949) was described from specimens collected on Oahu, but has not been recorded previously in these "Proceedings". Mr. Chilson collected this species from *Morinda citrifolia* L. on May 6, 1958. *Cheletogenes ornatus* (Canestrini & Franzago), which was redescribed by Baker in 1949 (*ibid.* 305–306), was collected on *Ficus* sp. on October 30, 1957. Both lots of mites were determined by Dr. Baker.

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**November 10, 1958**

The 635th meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA, at 2:00 P.M. on Monday, November 10, 1958, with President-elect Nishida in the chair.

Visitors: Professor Hisuo Aruga and Mr. Moon Soon Im.
Mr. Sidney H. Blunt of Birmingham, England was nominated for membership in the Society.
Dr. Martin Sherman introduced the speaker of the afternoon, Professor Hisuo Aruga of the Faculty of Agriculture, Tokyo University. Professor Aruga delivered an informative talk concerning his studies in the fields of silkworm genetics and virus diseases of the silkworm.

Note and Exhibitions

**Hypena jussalis** Walker: Mr. Fullaway exhibited a specimen of this noctuid moth, the larvae of which feed on the foliage of lantana. The species was introduced into the Territory from Southern Rhodesia in June, 1957 by the Territorial Board of Agriculture and Forestry, and is now well established on Oahu and Hawaii.

**Apion antiquum** Gyllenhal: Adults of this weevil, the larvae of which bore in the stems of *Emex* spp., were also exhibited by Mr. Fullaway. The species was introduced from Durban, South Africa, and released on the Island of Hawaii in June, 1957. It is now reported to be established on the Parker Ranch by Mr. Harold Baybrook who has propagated the species in large numbers in a special *Emex* nursery.

The following notes were presented for Mr. Bianchi:

**Thrips (Isoneurothrips) orientalis** (Bagnall): Attention was called to the fact that the presence of this thrips (Ann. Mag. Nat. Hist. Ser. 8, vol. 15:593, 1915) in the Territory has not been previously recorded, although it has been mentioned in our meetings several times. The species was first found by Mr. Beardsley at Kaimuki, Honolulu, on January 12, 1956. At that time it was strikingly abundant on star jasmine flowers in several sections of the city, and it has remained common since then, although not as abundant as at first. The species was described from Sarawak, and is known in India and the Indo-Malayan region.

**Tachypompilus analis** (Fabricius): Two *Heteropoda* spiders parasitized by this psammocharid wasp were recently found by Mr. Bianchi at Lihue Plantation, Kauai, in a pan of Warfarin-rolled oats exposed as rat bait in a cane field. Oats so exposed are often rendered useless by a thick overlay of soil particles and small pebbles. This situation has always been suspected to result from the activity of the wasp, which is very often found near the bait pans. The find of the spiders provides hitherto unavailable evidence which corroborates the suspicion.

**Anthrax distigma** Wiedemann: This bombyliid fly was observed at Makua Beach, Waianae District, during the last week of September. Hitherto the species has been reported only from Honolulu.
The 636th meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA, at 2:00 P.M. on Monday, December 15, 1958, with President-elect Nishida presiding.


The following officers were elected for 1959:

- **President** Toshiyuki Nishida
- **President-elect** C. R. Joyce
- **Secretary** W. C. Mitchell
- **Treasurer** J. W. Balock
- **Advisor** C. E. Pemberton

After some discussion, the members present voted to adopt amendments to the Constitution and By-Laws of the Society which would allow the creation of a standing Program Committee.

Drs. Walter Carter and D. E. Hardy presented interesting accounts of the sessions which each had attended at the Sixth Annual Meeting of the Entomological Society of America, held in Salt Lake City, December 1 to 4, 1958.

### Note and Exhibitions

**Sepedon macropus** Walker: Mr. Fullaway exhibited specimens of this sciomyzid fly and presented the following note for Mr. Q. C. Chock. Two lots of *Sepedon* larvae were secured in October by the Board of Agriculture and Forestry from Dr. Clifford O. Berg, Assistant Professor of Limnology, Cornell University, for trial against the liverfluke snail, *Lymnaea ollula* Gould. The fly was originally obtained by Dr. Berg from Nicaragua. In the Board's insectary the predaceous *Sepedon* larvae readily attacked and consumed young *Lymnaea* snails, and third and fourth instar fly larvae also attacked full-grown snails. From a total of 25 adult flies reared from the larvae received from Dr. Berg, a local generation of more than 100 flies was obtained. The life cycle of the fly required approximately 22 days. Propagation of this fly is being continued and a small field release has already been made on Oahu.

**Brachydeutera hebes** Cresson: Mr. Davis exhibited adults and puparia of this ephydrid fly the larvae of which he found attacking and killing local populations of the liverfluke snail, *Lymnaea ollula* Gould. In pre-
liminary laboratory observations three out of 12 snails were killed by maggots of this fly. When one snail under attack was placed in a beaker of water six maggots were observed to leave it and float to the surface. In further laboratory studies in which a control of 10 adult *Lymnaea* was maintained, three additional snails were consumed over a period of three days. At the end of that time all the maggots had pupated. The duration of the pupal stage was seven days, and one hundred per cent emergence was obtained. No mortality was observed in the control snails. The larvae of *B. hebes* are said by Williams ("PROCEEDINGS" 10 (1) :99–99, 1938) to be preponderately scavengers in habit.

**Hypena jussalis** Walker: Mr. Davis reported that Mr. Stephen Au had found this noctuid moth, which was purposely introduced to combat lantana, established on the Island of Kauai. Mr. Au first noted *Hypena* activity on lantana at Lawai Valley on October 15th, and on November 7th noted that population was "exploding" in that area. Mr. Davis reported also that this moth had been found established on Maui at Haiku on November 13th. It was previously reported established on Oahu and Hawaii.

**Changes in the names of Hawaiian Sarcophagidae:** Dr. Hardy reported that in a recent publication on Micronesian Sarcophagidae (Ins. Micronesia 12 (2) :15–49, 1958) H. de Souza Lopes has introduced new names for several species of flesh flies which occur in Hawaii. These changes are listed below.

*Phytosarcophaga* gressitti Hall and Bohart is corrected to *Phytosarcophaga* by Souza Lopes, p. 21.

*Sarcophaga peregrina* (Robineau-Desvoidy) is corrected to *Boettcherisca*, p. 29.

*Sarcophaga orientaloides* Senior-White placed in *Seniorwhitea*, p. 16

*Sarcophaga knabi* Parker placed in *Parasarcophaga*, p. 36.

*Sarcophaga dux* Thomson is placed as a synonym of *Parasarcophaga* (*Liosarcophaga*) *misera* (Walker), p. 41.

*Sarcophaga argyrostroma* (Robineau-Desvoidy) which was placed in the genus *Probellieria* by Dodge ("PROCEEDINGS" 14 (3) :478, 1952) is now placed in *Parasarcophaga* (*Thomsonia*), p. 45.

*Sarcophaga ruficornis* (Fabricius) is placed in *Parasarcophaga* (*Jantia*), p. 48.

**Scadra** sp.: Dr. Hardy reported that the unknown reduviid bug from Honolulu which he had exhibited at the October meeting had been identified by Dr. R. L. Usinger as *Scadra* sp., possibly *rufidens* Stål. A second specimen of what appears to be the same bug which was collected at Wahiawa, Oahu during September, by Mr. E. J. Ford, was exhibited to the membership.
Macrosiphum pisi (Harris): Dr. Hardy reported that this aphid (Palmer, M.S. APHIDS OF THE ROCKY MOUNTAIN REGION, Thomas Say Foundation, p. 320, 1952) was recently found infesting alfalfa at Ewa and Mokuleia, Oahu. This is the first record of the establishment of this aphid in the Territory. The species is a well known pest of legumes in North America and Europe. Specimens were identified by Miss Louise M. Russell of the U. S. Department of Agriculture.

Vedalia beetles sent to Kwajalein: Mr. Clagg reported that he had recently sent a shipment of about 150 adults of the Vedalia, *Rodolia cardinalis* (Mulsant), to the Naval Air Station at Kwajalein in the Marshall Islands in order to combat the cottony cushion scale, *Icerya purchasi* Maskell, which recently became established there. The beetles were reared and furnished by Mr. Beardsley.

Atrichopogon jacobsoni (de Meijere): Dr. Joyce reported that he had collected specimens of this biting ceratopogonid midge (Tijdschrift voor Ent. 50:212–213, 1907) in a light trap at Fort Armstrong, Honolulu during August of this year. This constitutes a new insect record for the Territory.

Episimus sp.: Mr. Beardsley exhibited specimens of this olethreutid moth which had been bred from catepillars found feeding on webbed-together leaves of Christmas berry (*Schinus terebinthifolius* Raddi) at Mapulehu, Molokai. The moths have also been plentiful in light trap catches from several localities on Oahu during the past several months. The establishment of this moth in the Territory has not been recorded previously in these “PROCEEDINGS”, but records of the Territorial Board of Agriculture and Forestry indicated that it has been established for more than a year on the Islands of Oahu, Maui, Hawaii, and Kauai. The species was purposely introduced into the islands from Brazil in 1954 to help combat Christmas berry.
New Immigrant Records for the Year 1958

Species marked with an asterisk were reported from the Hawaiian Islands for the first time during 1958 on the dates recorded in the text. Those not so marked were observed here earlier but have only now been identified. Species marked with a dagger are considered doubtfully established as these records are based on single specimens.

**CHANCE IMMIGRANTS**

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<tr>
<td><em>Episimus</em> sp. (Lepidoptera: Olethreutidae)</td>
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**BENEFICIAL SPECIES PURPOSELY INTRODUCED**

†Tefflus zanzibaricus alluaudi Stenberg (Coleoptera: Carabidae)          | 22   |
*Hypena jussalis* Walker (Lepidoptera: Noctuidae)                       | 25   |
*Apion antiquum* Gyllenhal (Coleoptera: Curculionidae)                  | 25   |
*Episimus* sp. (Lepidoptera: Olethreutidae)                             | 28   |
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