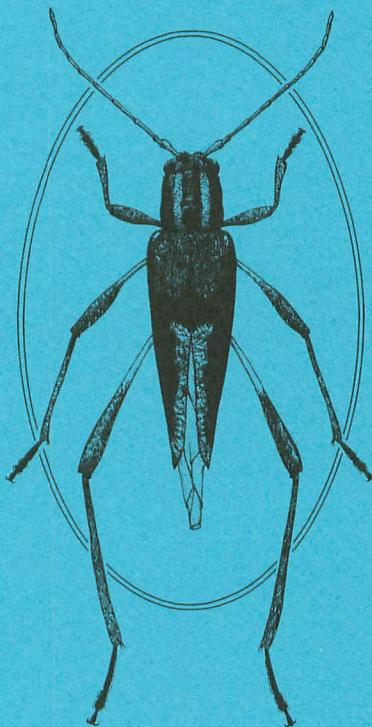


PROCEEDINGS
of the
**HAWAIIAN
ENTOMOLOGICAL
SOCIETY**



This Issue Dedicated to
Dr. J. Linsley Gressitt

Information for Contributors

Manuscripts for publication, proof, and other editorial matters should be addressed to:

Editor: Hawaiian Entomological Society
c/o Department of Entomology
University of Hawaii
3050 Maile Way, Honolulu, Hawaii 96822

Manuscripts should not exceed 40 typewritten pages, including illustrations (approximately 20 printed pages). Longer manuscripts may be rejected on the basis of length, or be subject to additional page charges.

Typing — Manuscripts must be typewritten on one side of white bond paper, 8½ x 11 inches. Double space all text, including tables, footnotes, and reference lists. Margins should be a minimum of one inch. Underscore only where italics are intended in body of text, not in headings. Geographical names, authors names, and names of plants and animals should be spelled out in full. Except for the first time they are used, scientific names of organisms may be abbreviated by using the first letter of the generic name plus the full specific name.

Submit original typescript and one copy. Pages should be numbered consecutively. Place footnotes at the bottom of the manuscript page on which they appear, with a dividing line.

Place tables separately, not more than one table per manuscript page, at end of manuscript. Make a circled notation in margin of manuscript at approximate location where placement of a table is desired. Use only horizontal lines in tables.

Illustrations — Illustrations should be planned to fit the type page of 4½ x 7 inches, with appropriate space allowed for captions. Number all figures consecutively with Arabic numerals. If figures are to be subdivided, use capital letters (A, B, C, etc.) to designate subdivisions. Where possible, figures should be grouped compactly into page-size plates. Photographic prints should be cropped to eliminate unnecessary margins. All figures should be securely mounted on stiff posterboard with identifying information (author, title of paper, and figure number(s)) placed on the back.

If possible, do not submit original drawings, but reduce photographically and submit prints (glossy or matte) no larger than 9 x 14. *The Editor cannot be held responsible for lost art work.* Two copies of all illustrative material should be submitted.

Figure captions should be typewritten, double-spaced, on a separate page, headed "Captions for Figures" and placed in the manuscript following the list of references. Do not attach figure captions to illustrations.

References — Citations in the text should be by author and date. Beginning on a separate page at the end of the text, list references cited alphabetically by author. List titles of articles as well as journal citations. See article in this issue for proper style in listing references.

Examination of articles in this issue will help in conforming to the style of presentation desired. The editorial style of the PROCEEDINGS essentially follows the *Council of Biology Editors Style Manual* (Fourth Edition, A.I.B.S., 1978).

Manuscripts which fail to adhere to the above standards, although they may be otherwise acceptable, will be rejected or returned to authors for correction.

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Abstract — An abstract not longer than 3% of the paper should accompany each regular article following the title page. It eliminates the need for a summary.

Page Charges — Papers by members of the Society will be charged at the rate of \$18.00 per printed page for the first 10 pages. Additional pages will be \$25.00 per page. The page charge for non-members will be \$25.00 per page for all pages. Member authors who are retired or not affiliated with an institution may request to have page charges waived.

Acceptance of papers will be based solely on their scientific merit, without regard to the author's financial support.

Original art for cover by Art Kodani

PROCEEDINGS of the Hawaiian Entomological Society¹

VOL. 24, NO'S 2 & 3 FOR THE YEARS 1980 & 1981 OCTOBER 15, 1983

The following minutes, notes and exhibitions were recorded by the Secretary on the months indicated during the calendar year, 1980. (Editor).

JANUARY

The 889th meeting of the Hawaiian Entomological Society was called to order by President Frank Howarth at 2:00 p.m., January 9, 1980 in the Conference Room, Bishop Museum.

Members Present: Arakaki, Bianchi, F. Chang, Evenhuis, Goff, Gressitt, Hardy, Ikeda, Joyce, Look, Megens, Montgomery, Nagamine, Pinter, Radovsky, Sakimura, Samuelson, Sembel, Sengbusch, Steffan, Sugerman, Tenorio.

Visitors: J.E.M.H. van Bronswijk, A. Fleming, W. Gagné, Agnes Hardy, P. Kores, J.L. Medler, W. Pang.

Unfinished Business: J. Ikeda introduced A. Fleming and W. Pang of Holiday Mart Travel who answered questions on the group travel plans for the 16th International Congress of Entomology to be held in Kyoto, Japan. It was noted that the Hawaii departure date would be moved up to August 1, 1980.

F. Howarth announced that thank you letters for the annual dinner door prize donations were signed by F. Chang and mailed to Kini Popo Creations and Orchid Pacifica.

Announcement: Dr. David Bonnet passed away recently. The society voted to send a letter of condolence to Mrs. Florence Bonnet, 1108 Koohoo Place, Kailua, Oahu, Hawaii 96734.

Program: Dr. J.E.M.H. van Bronswijk currently of the Bishop Museum gave a talk on "Scientific housekeeping or the management of allergenic house dust".

NOTES AND EXHIBITIONS

Mites from Kahoolawe I. soil and litter: Examination of soil litter samples from Kahoolawe I., have revealed 3 species of predatory Actinidiida not previously reported from that island. All specimens were recovered from a sample of Kiawe litter mixed with grass (*Heteropogon* sp.) in the Smuggler's Cove area (elev. approx. 9 m). *Eupodes hawaiiensis* Strandtmann & Goff, 1978, (Eupodidae) was originally described from specimens collected on the island of Hawaii in the Kilauea Forest Reserve, Hawaii Volcanoes National Park and from the upper edge of Waipio

¹*Cover:* The longicorn beetle figured is a striking example of the plagithmysines, a group that radiated in the Hawaiian Islands, with some 140 species presently known. It seemed appropriate to have a new plagithmysine logo for the Society in time for this issue. It also seemed appropriate to select a Gressitt-described species, and such is the case. Figured is *Plagithmysus* (s. str.) *rebeccaiae*, a species named for one of Dr. Gressitt's daughters, Mrs. Rebecca Lau of Haiku, Maui. Becky and her father reared the type-series from *Pittosporum* branches collected on Kahana Ridge, West Maui, in 1972. The illustration was prepared by Mr. Arthur Kodani of Bishop Museum. — G.A. Samuelson.

Valley. All collections were above 1200 m and the present record represents a considerable extension downward in altitudinal distribution as well as reduction of humidity. *Hemicheyletia bakeri* (Ehara, 1962) (Cheyletidae) was previously reported from grasses in California, and Chile. This is the first record of this mite in Hawaii. *Spinibdella bifurcata* Atyeo, 1960 (Bdellidae) was originally described from material taken under a rock in Oaxaca, Mexico. This is the first record of this species in the Hawaiian Islands. Examination of additional specimens in the Bishop Museum have shown that this species is also present on the island of Hawaii in the Hawaii Volcanoes National Park area. Also present in these collections from the island of Hawaii were specimens of *Spinibdella cronini* (Baker & Balock, 1944) originally described from California in association with lichens on a tree. The specimens from Hawaii were from *Metrosideros* duff in Hawaii Volcanoes National Park at an elevation of 1233 m. M. Lee Goff.

Ornithocheyletia leiothrix Fain and **Neocheyletiella media** Fain: Examination of Acari taken from specimens of *Leiothrix lutea* in Hawaii Volcanoes National Park have resulted in the recognition of 2 species of Cheyletiellidae: *Ornithocheyletia leiothrix* Fain, 1972, and *Neocheyletiella media* Fain, 1972. Both of these species were previously reported only from China from the subspecies *L. lutea lutea*. The subspecies of *L. lutea* present in Hawaii has not been determined to date, but the presence of these 2 parasites strongly suggests that the subspecies present in Hawaii is *L. lutea lutea*. Neither mite has been reported from other subspecies of *L. lutea*. *Ornithocheyletia leiothrix* was recovered from the sides of the hosts, under the wings, while *Neocheyletiella media* was present at the throat, neck and occasionally in the upper breast feathers. M. Lee Goff.

Dermatophagoides evansi Fain: Examination of slide material in the collection of the Bishop Museum resulted in the discovery of 10 specimens (6♂, 4♀) of *Dermatophagoides evansi* et al., 1967, (Pyroglyphidae) from the nest of the house sparrow, *Passer domesticus*, collected on the grounds of the Bishop Museum in 1970 by Wayne Gagné. This mite has apparently not been reported in the literature as present in Hawaii. It is commonly associated with bird nests in North America according to Wharton (1976), but is not commonly associated with *P. domesticus* nests in Europe. In Europe this species is replaced by another pyroglyphid species, *Hirstia chelidonis* Hull, 1931. This situation gives a possible North American origin for some *P. domesticus* introduced into Hawaii although Berger (1972) indicates only an importation from New Zealand. Other published records for *D. evansi* include specimens from house dust in Iran, USSR, US, England and France. Specimens were also recovered from a moth in the US. There are unpublished records of this species from a Hazel Mouse, *Muscardinus avellanarius*, in Germany. J.E.M.H. van Bronswijk and M. Lee Goff.

FEBRUARY

The 890th meeting of the Hawaiian Entomology Society was called to order by President Frank Howarth at 2:00 p.m., February 11, 1980 in the Conference Room of the Bishop Museum.

Members present: Gressitt, Haramoto, Hardy, Howarth, Joyce, Kaneshiro, Kunishi, Lauret, Look, Marsden, Medler, Megens, Montgomery, Pinter, Samuelson, Saul, Yoshioka.

Visitors: D. Miyahana, R. Greenfield.

Membership Committee: The following were nominated and elected to membership in the Society: Dr. J. Medler, Dr. Wayne Gagné, N. Su, and Eric Jang.

Old Business: James Ikeda gave an additional report regarding travel arrangements to the 16th International Congress of Entomology in Kyoto. Departure will be on August 1, 1980. In addition to the current stay in Japan an alternate plan allowing for a 9 day stay in Japan was proposed as well as some price changes on the extended tours.

New Business: Franklin Chang announced that the Science Fair Committee will be judging the entomological exhibits at the fair. Since the \$25 U.S. Saving Bond has been phased out, the Society voted to provide the winning student with a book on Entomology.

The Society has an excess number of some of the back issues of the Proceedings as well as several boxes of excess exchange publications stored at the Bishop Museum. The Finance Committee will look into arranging for better storage facilities and for eventual sale of these items.

Fred Bianchi reported on the alarming spread of banana poka which threatens portions of our islands' forests. He helped prepare a resolution which was introduced into the State legislature by Representative Jack Larsen as HR 101 and concurrent HR 134. A motion for the President to prepare and submit a general statement supporting a study of the problem and recommending a search for potential biocontrol agents for banana poka was made and passed.

The President read a letter from Dr. John Stimson of the Dept. of Zoology, University of Hawaii, inviting members to participate in the fifth annual Albert L. Tester Symposium to be held on the 10th and 11th of April, 1980 at the Dept. of Zoology, University of Hawaii, Manoa Campus.

Program: "Entomology in Nigeria" was the title of a talk presented by Dr. John T. Medler, Honorary Associate, Bishop Museum.

MARCH

The 891st meeting of the Hawaiian Entomological Society was called to order by President Frank Howarth at 2:00 p.m., March 10, 1980, in the Conference Room of the Bishop Museum.

Members present: Bianchi, Eschle, Evenhuis, Gagné, Gressitt, Haramoto, Hardy, Higa, Howarth, Joyce, Kaneshiro, Look, Loschiavo, Medler, Megens, Mitchell, Montgomery, G. Nishida, Papp, Radovsky, Samuelson, Saul, Steffan, Tanimoto, Teramoto.

Visitors: A. La Rosa, D. Miyahana, J. Patton, T. Watanabe.

Treasurer's Report: Dr. Kaneshiro introduced and read the 1979 financial statement as prepared by outgoing Treasurer, Barry Brennan. Dr. Kaneshiro moved to accept the report as read. Motion was approved unanimously.

Membership Committee: Devaiah Muruvanda was nominated and elected to membership in the Society.

Old Business: President Howarth read a letter written to the chairman of the Water, Land Use Development, and Hawaiian Homes Committee, State House of Representatives, supporting study of the banana poka problem and recommending a search for biocontrol agents.

New Business: President Howarth read a letter written to James Packer, Managing Editor of the Bulletin of the Entomological Society of America, updating information on the Hawaiian Entomological Society for publication in the Affiliate Society section.

Mr. Steve Montgomery brought attention to House Bill No. 2842 which changes the language in the bill establishing the Animal Species Advisory Commission, allowing the various agencies the *option* to consult the committee. Montgomery moved that the Society support the commission as it is currently designed, advising on any matter regarding the introduction of exotic species to Hawaii. Dr. Frank Radovsky fully supported the stand of not changing the language establishing the Animal Species Advisory Commission. The motion was passed unanimously.

Announcements: Dr. Howarth announced that copies of the minutes of the meetings of the Society are available for perusal by interested parties.

Dr. Sam Loschiavo, President-Elect of the Entomological Society of Canada, invited Hawaiian Entomol. Soc. members to the 1980 Entomol. Soc. of Canada meetings to be held in Banff. He also reminded us that the 1982 ESC meetings will be held jointly with the Entomological Society of America in Toronto, Canada.

Program: Mr. Fred Bianchi introduced the speaker, Ms. Anne La Rosa, Master's candidate in the Dept. of Botany of the Univ. of Hawaii. She spoke on "The bio-ecology of banana poka in the Hawaiian Islands."

NOTES AND EXHIBITIONS

Stenotus binotatus (Fabricius): A second specimen of this exotic plant bug (Heteroptera: Miridae), det. by W. Gagné, has been collected in Hawaii. The male specimen bears the following data: Hawaii I., Mauna Kea, summit cone, 13,790', 2.IX.1979, S.L. Montgomery. The specimen is damaged but mature and presumably was dead when collected. It would appear to have been blown to the summit as there are no suitable grass hosts in the vicinity. This might indicate that this species is successfully established. *S. binotatus* can be readily distinguished from the *Stenotus* sp. feeding on fountain grass on Hawaii I. by the presence of a pair of black spots on the pronotum which are lacking in *Stenotus* sp. This Nearctic species was first reported in the State in 1972 (Proc. Hawaiian Entomol. Soc. 21:18) W.C. Gagné.

A brachypterous *Nysius* sp. from the summit of Mauna Kea: In the summer of 1977, I collected nymphs of an unknown Lygaeid under rocks near the summit of Mauna Kea. On 2 September, 1979, I was able to return with S.L. Montgomery and Mr. & Mrs. W.P. Mull. We captured a series of nymphs and adults of a remarkable new flightless orsilline lygaeid on Puu Wekiu, the summit cone of Mauna Kea, at 4200 m (13,790 feet). The species has been tentatively identified as a highly specialized *Nysius* sp. by Dr. W.C. Gagné of the Bishop Museum.

All stages were found under rocks on the undisturbed cinders and hiding among the cinders down to the permafrost which occurred about 10 cm below the surface. We failed to find the species wherever the surface had been disturbed by the activities associated with the construction of the Astronomical Observatories.

The species is a predator/scavenger on the moribund and frozen insects which are blown up the mountain by the wind. I collected one adult which was feeding on a moribund *Coccinella septempunctata brucki* Mulsant. Its proboscis was inserted into the suture between the elytron and the pronotum and was attached so strongly that it did not let go when I attempted to capture the bug in my aspirator. Mr. W.P. Mull kept a few specimens alive in a vial and found they fed readily on freshly killed *Drosophila*.

Other scavenging arthropods found living in this environment were a large locosid wolf spider, and 2 species of small black sheet web spiders, one of them probably *Erigone* sp., which is perhaps also obligatory to this habitat. The other spider remains unidentified.

Aeolian ecosystems, i.e. those where the main energy source is allochthonous, wind-borne organic debris, are now recognized as characteristic of high mountains and high latitudes (see Swan, 1963. *Science* 140:77-78) and recently on unvegetated lava flows near Kilauea Volcano on Hawaii Island (Howarth, 1979. *Pacific Insects* 20:133-144). However, the discovery of obligatory aeolian species on the summit of the relatively young Mauna Kea is of considerable zoogeographic interest, and worthy of study before this habitat is further altered by the accelerated construction of the new observatories. **F.G. Howarth.**

APRIL

The 892nd meeting of the Hawaiian Entomological Society was called to order by President F. Howarth at 2 p.m., April 14th, 1980 in the Bishop Museum Conference Room.

Members present: Beardsley, Bianchi, Chang, Conant, Culliney, Eschle, Gagné, Goff, Hadi, Haramoto, Hardy, Howarth, Joyce, Kaneshiro, Loo, Mau, Samuelson, Saul, Uchida, Yoshioka.

Visitors: D. Gerling, D. Morihara.

Membership Committee: Stan Higa nominated John Patton and Frank Haramoto nominated Dennis Morihara to membership in the Society. Both were unanimously elected.

Ken Kaneshiro reported on institutional membership for Waimea Arboretum and Botanical Garden (= Waimea Falls Park), and Environmental Labs/Duke Power Company of North Carolina. It was moved, seconded and passed that the Society send membership information to both institutions and suggest that they subscribe to the Journal. W.C. Gagné suggested that the Membership Committee study a category for institutional membership to the Society with an annual membership fee of about \$50. The suggestion was passed.

Editorial Committee: Dr. C.R. Joyce announced that HES Journal 23(2) including 13 manuscripts is off the press and will be distributed shortly.

Science Fair Committee: F. Chang reported that the HES award for the outstanding entomological experiment went to Lance Kawamura of Kapaa Intermediate and High School, Kapaa, Kauai. His project was entitled "Can detergents control armyworms?" For his efforts Kawamura received the book entitled "An introduction to the study of insects" by D.J. Borror and D.M. DeLong.

Old Business: Dr. Howarth read a letter to the State Legislature supporting the current language and organization of the State of Hawaii Animal Species Advisory Committee.

F. Bianchi reported that the bill concerning biocontrol for Banana Poka was well received but was killed by the House of Representatives Finance Committee.

New Business: The date of the August 1980 meeting of the Society will be changed to Monday August 18th due to a conflict with the International Congress in Kyoto.

Announcements: Dan Gerling requested that he be notified when members observe territorial flights of carpenter bees. He would appreciate this information as he is currently gathering data on such habits of these bees.

Dr. Beardsley announced the recent passing away of Irv Newell, a long time member of the Society, in California.

Presentation of papers: Dr. D.E. Hardy submitted a paper for publication in the Proceedings entitled "Clarification of Status of *Strumeta persignata* Hering (Diptera: Tephritidae)".

Program: Dr. Wayne Gagné presented an interesting talk on the "Entomology of intensified subsistence agriculture in the New Guinea Highlands".

NOTES AND EXHIBITIONS

Insects of Hawaii, Vol. 13: Dr. D.E. Hardy exhibited a copy of Insects of Hawaii, Vol. 13, Diptera: Cyclorrhapha III by D.E. Hardy and M.D. Delfinado. It is now available from the University Press of Hawaii, Honolulu, 1980.

Hydrellia tritici Coquillett.² A large series of specimens collected on the island of Hawaii by Steve Montgomery September 8, 1978 at Bird Park, Kilauea, elev. 3950 ft. and on the Mauna Loa trail at 13,000 ft. elev. were determined as *H. tritici* by Dr. Wayne N. Mathis, U.S. National Museum. This species, previously known from Australia and New Zealand, represents a potential pest mostly of grasses. The larvae are leaf miners and in Australia have been reared from wheat, *Poa annua* L., *P. trivialis* L. and *Lolium* sp.; also from Mercury Bay Weed, *Dichondra repens* Forst. (Convolvulaceae). It is reported as extremely common throughout the grasslands of Australia and New Zealand.

Key to Species of *Hydrellia* in Hawaii

1. Antennae and palpi black; lunule (crescent shaped area above bases of antennae marked off by ptilinal suture) polished black; genae brown pollinose; only one or two pairs of dorsocentral bristles 2
Palpi clear yellow, third antennal segment yellow, tinged with brown; face, including lunule and genae silvery white pollinose; three pairs of dorsocentrals, one presutural and two postsuturals *hawaiiensis* Cresson
2. Only one pair of dorsocentrals, situated at or near the suture; face gray pollinose to the lunule; small species, wing 1.4 mm, body 1.25 mm *williamsi* Cresson
Two pairs dorsocentrals, one just behind suture and one just in front of a line drawn between supraalars; upper 2/5 of face subshining black; mesonotum with a large velvety black mark on each side in front of wing base; larger species, wing 2.25 mm, body 2.0 mm *tritici* Coquillett

D. Elmo Hardy.

Stomorhina discolor (Fabricius): One specimen of a previously unrecorded species of calliphorid (subfamily Rhininae) was collected at Hakupu, Niue, Oahu, 10-17-78 (H. Nakao). It has been determined as *Stomorhina discolor* (Fab.), a predaceous species occurring widely throughout the Oriental region. No other specimens have been taken indicating that the species has not become established in Hawaii. **D. Elmo Hardy.**

Odontomyia ochropæ Thomson: This Stratiomyidae previously reported as *O. regisgeorgii* Macquart was corrected to *O. ochropæ* Thomson (Proc. Hawaiian Entomol. Soc. XXIV(1):15). It has been collected only on Oahu (Waihole, Ewa, and Pearl City). It is a Philippine species, previously known only from Luzon, and is an aquatic species breeding in swamps, taro, and watercress fields. **D. Elmo Hardy.**

²This note on *H. tritici* was submitted by Dr. Hardy April 14, 1980. However, its first appearance in Hawaii was recorded in print by W.N. Mathis & Willis W. Wirth, Proc. Hawaiian Entomol. Soc. 23(3):371-373. 1981.

Eidoleon wilsoni (McLachlan): On January 28, 1980 a live myrmeleontid larva was collected on a greenhouse screen at Ocean View Estates, Kau at approximately 610 meters elevation by Mr. Harry McKee and turned over to the author.

The antlion measured 10 mm long and was playing "possum" when transferred to a petri dish. A third instar cutworm, found in the vicinity of the greenhouse was placed in the dish and was fed upon while I searched for additional antlion larvae. About $\frac{1}{4}$ of the cutworm's body fluid was sucked.

The antlion is now in its 65th day of captivity and has increased its length by one mm. It has been sustained on second and third instar lepidopterous caterpillars. This makes the third myrmeleontid larva collected on Mr. McKee's greenhouse in Kau. The first "doodlebug" measured 13 mm long and was reported and exhibited at the 1977 March meeting of the Hawaiian Entomol. Soc. (Vol. 23(2):163 of the Proceedings).

Until the Kau antlion can be reared to an adult it can only be tentatively placed as *E. wilsoni*. Perkins (1913:C.L.XXIII) in Fauna Hawaiensis reports finding a solitary larva beneath a stone on the edge of a stream in Iao Valley and suspected it belonged to *E. perjurus perjurus* (Walker) (=*Formicaleo perjurus* (Walker)), a species occurring on Oahu, Lanai and Maui. Zimmerman in Insects of Hawaii Vol. 6:159 suggests, however, that this observation be accepted with caution. C.J. Davis.

Lynxacarus radovskyi Tenorio: In 1974, I described a new species of fur mite, *Lynxacarus radovskyi*, parasitizing the domestic cat on Kauai and Oahu. The species was subsequently reported from the island of Hawaii by Jack Fujii (Proc. Hawaiian Entomol. Soc. 24(1):1). This was very interesting in two ways: (1) it was the second case of a listrophoroid mite being described from an introduced mammalian host in Hawaii, the first case being that of *Listrophorus musculus* (now *Afrolistrophorus musculus*) described by Wilson & Lawrence (1967) from the House Mouse; and (2) *L. radovskyi* is only the second species in the entire family, Listrophoroidea, known to parasitize a member of the cat family (*L. morlani* on *Lynx rufus*, the Bobcat) and the first species known from the domestic cat.

Since its description, this mite has been reported in Puerto Rico (Fox 1977), Australia (Bowman & Domrow 1968) and Fiji (Munro & Munro 1979). In Fiji, mites were apparently responsible for a pruritic skin condition on their cat hosts, with circular lesions and marked loss of hair. In Australia, heavily infested cats showed no pruritis, but presented a salt-and-pepper appearance, and a lusterless coat that was patchy and easily depilated. Cats on Kauai observed by Robin Rice had external symptoms largely involving mangy patches and generally scruffy appearance.

In January 1980, I identified specimens of *L. radovskyi* sent to me by Mr. Robert Gerrish, National Veterinary Services Laboratories, Ames, Iowa. The mites had been submitted to him for identification by an animal clinic in Miami, Florida. The parasites had been taken from a cat at the clinic severely infested with mites and described as being covered with "a powdery white material . . . [that] looked like very fine dandruff." The cat was admitted with a history of anorexia (loss of appetite), listlessness, coughing, bad teeth and dehydration. The cat died within two days of admission. This is the first reported occurrence of *L. radovskyi* in North America.

It is now apparent that the cat fur mite is probably very widely distributed. Whether this is a recent phenomenon or whether the mite has been present but undetected for a long time is not known. However, it is evident that the mite can cause significant pathological conditions in cats of concern to cat-owners and to the small animal veterinary practice. JoAnn Tenorio.

Veigaia uncata Farrier & V. **planicola** (Berlese): Samples of soil and litter from the Kilauea Forest Reserve collected in connection with the IBP in 1970 have yielded specimens of 2 species of Veigaiidae (Acari: Gamasida) not previously reported from Hawaii. Both species are predatory forms associated with soils having a high amount of organic matter present. *Veigaia uncata* Farrier, 1957, was originally described from specimens associated with orchids in the Canal Zone of Panama and in Guatemala. This species has also been reported from pine litter in North Carolina. The other species, *Veigaia planicola* (Berlese, 1892) was originally described from mosses and has previously been reported only from Italy and Sicily (Farrier, 1957). M. Lee Goff.

Cheyletus malaccensis (Oudemans): Examination of mites from an Amakihi nest, *Loxops virens*, collected by Andrew Berger on Mauna Kea, Hawaii, has revealed the presence of a species of Cheyletidae (Acari: Actinedida), *Cheyletus malaccensis* (Oudemans, 1903), not previously reported from the state. This is a widespread predatory species frequently associated with birds either as nest dwellers or as a predator of other mites on the body of the bird itself. M. Lee Goff.

Cheyletus nr. eruditus (Schrank): Specimens of another Cheyletidae, *Cheyletus* nr. *eruditus*, were recovered from the nest of an Iiwi, *Vestiaria coccinea*, collected in Kokee State Park, Kauai, 19.IV.1969. *Cheyletus eruditus* (Schrank, 1781) is a widespread predator of other acari and is frequently associated with rodents. *C. eruditus* has been previously noted on *Rattus rattus* in the Kilauea Forest Reserve, Hawaii. The present specimens are of interest due to the appearance of one individual which appears to have taken a blood meal. This also is the first record of this species associated with an endemic bird in Hawaii. Baker (1949) notes the association of *C. eruditus* with house sparrows, *Passer domesticus*, in New York. M. Lee Goff.

Eupodes hawaiiensis Strandtmann & Goff: A sample of litter collected in a bog at 3000' elevation at Keahikauo, Maui by Paul Kores on 6.IV.1980, has yielded specimens of *Eupodes hawaiiensis* Strandtmann & Goff, 1978 (Acari: Actinedida: Eupodidae). This is the first record of this species from the island of Maui. This species was originally described from material taken in a bird nest in Kilauea Forest Reserve and from a bog in the Kohala Mts., on the island of Hawaii. It has subsequently been reported from the island of Kahoolawe by Goff (1980). M. Lee Goff.

MAY

The 893rd meeting of the Hawaiian Entomological Society was called to order by President F.G. Howarth at 2 p.m., May 12, 1980 in the Bishop Museum Conference Room.

Members present: Arakaki, Conant, Gagné, Goff, Gressitt, Haramoto, Hardy, Howarth, Joyce, Kaneshiro, Krauss, Montgomery, Nishida, Riotte, Samuelson, Saul, Steffan, Tenorio, Yoshioka.

Visitors: Galloway.

Membership Committee: Dr. Kaneshiro requested information on the whereabouts of James Mowry. In regard to institutional membership, since there is no precedent in the HES record, Waimea Arboretum and Botanical Garden has designated an employee, Keith Wooliams, for membership. His membership was approved by unanimous vote of the members present.

New Business: A letter from Lance Kawamura, the recipient of the HES Science Fair award was read. President Howarth reported that the information about our Society for the Directory of Information Resources in the United States has been updated and forwarded to the National Referral Center, Science and Technology

Division. He also announced the finalization of the Committee assignments for the Society for 1980 and distributed same.

Dr. Gressitt requested that the Society continue its gift subscription to the Wau Ecology Institute. This was approved.

Wayne Gagné reported that the Haleakala fencing project has stopped because of a lack of money. The society gave Gagné approval to write a resolution with HES endorsement to support the fencing and removal of goats from the Haleakala National Park.

Announcements: Howarth announced that James Ikeda, a member and former President of HES, has suffered a heart attack. The Society gave approval for the Secretary to send flowers. Dr. Steffan announced that Dr. J.N. Belkin, a renowned mosquito specialist, recently passed away.

Program: G. Allan Samuelson and Gordon Nishida of the Bishop Museum presented an interesting report of the 1979 Kelton Entomological Expedition to the South Pacific.

NOTES AND EXHIBITIONS

Hydrellia tritici Coquillett: Dr. Hardy reported that specimens of *Hydrellia tritici* were collected sweeping over onions at Kula, Maui, April 24, 1980 by W.C. Mitchell. This constitutes a new island record. **D. Elmo Hardy**.

Tramea abdominalis (Rambur): Professor Minter J. Westfall Jr. of the University of Florida, Gainesville, has confirmed my tentative determination of the libellulid dragonfly, *Tramea abdominalis* (Rambur). This is a new State record. According to Needham and Westfall (1955, Dragonflies of North America, Univ. of Calif. Press, p. 595) *T. abdominalis* is a Neotropical species which ranges from Brazil north to the Antilles, Florida and Bermuda. It is easily separated from our other introduced *Tramea*, *T. lacerata*, by the much narrower crossband of dark color at the base of the hindwing. This band reaches about the level of the anal crossing in *T. abdominalis* and to the distal angle of the triangle in *T. lacerata*. This is the new dragonfly reported as *Tramea* sp. (Proc. Hawaiian Entomol. Soc. Vol. XXIII(3):313) by Dr. J.W. Beardsley at the February 1978 meeting of the Society. The first specimen, a male, was collected by University of Hawaii entomology student, D. Cravalho at Waiahole, Oahu, 20.Feb.1977. I have collected 3 specimens, all on Oahu: female, Barbers Point Beach Park, 19.XL.1977; male, Kalihi Vall., 120 m, 22.V.1978; male, Moanalua Vall., 130 m, 19.I.1980. **F.G. Howarth**.

JUNE

The 894th meeting of the Hawaiian Entomological Society was called to order by President-elect Ron Mau at 2 p.m., June 9, 1980, in the Bishop Museum Conference Room.

Members present: Arakaki, Beardsley, Bryan, Jr., Evenhuis, Goff, Gressitt, Haramoto, Hadi, Hardy, Higa, Joyce, Mau, Medler, Megens, Myles, Nishida, Sakimura, Samuelson, Saul, Swift, Tenorio, Tsuda, Yoshida.

Visitors present: D'Araujo, Fujimoto, Leber, Spencer, Taylor.

Common Names Committee: Stan Higa announced that the Common Names of Insects and Related Organisms (1979 revision) is completed and being distributed. He noted that members should be aware of the correction insert inside of the front cover.

Announcements: Dick Tsuda reported that the back files of the HES Proceedings have been moved from the Museum to the University of Hawaii Entomology Department.

Program: Dr. Robert W. Taylor, Acting Chief Curator, Australian National Insect Collection, spoke on "Application of modern technology in descriptive taxonomy".

NOTES AND EXHIBITIONS

Agraulis vanillae (L.): The passion vine butterfly, *Agraulis vanillae* (L.) adults were observed on the Big Island for the first time on May 18, 1980 behind the King Kamehameha Hotel in Kona by Lew Nakamura and Margaret McAlister, UHH College of Agriculture students. On June 1, 1980 three adult specimens of *A. vanillae* were collected in the same above area by Lew Nakamura and Clare Okumoto. Adults were alighting on lantana and *Passiflora foetida* L. vines. One mature larvae was captured while feeding on *P. foetida* vine.

A. vanillae was first collected on Oahu on Jan. 14, 1977 (Proc. Hawaiian, Etnomol. Soc. 23(2):1) and has been subsequently collected on Maui on Feb. 23, 1978 (HCEPR, Mar. 3, 1978), Kauai on June 1, 1980 (HCEPR, June 16, 1978), Lanai on Dec. 14, 1978 (HCEPR, Dec. 29, 1978) and Molokai on Dec. 27, 1979 (HCEPR, Feb. 1, 1980). **Jack Fujii.**

JULY

The 895th meeting of the Hawaiian Entomological Society was called to order by President Frank Howard at 2:10 p.m., on July 14th, 1980 in the Bishop Museum Conference Room.

Members present: Arita, Chang, Culliney, Furumizo, Gagné, Goff, Haramoto, Hardy, Higa, Howarth, Jang, Joyce, Kanegawa, Lai, Look, Mau, Radovsky, Saul, Shroyer, Su, Uchida, Yates, Yoshioka.

Visitors present: Bishop, Young, Tan, Kariel, Woodhead.

Treasurer's Report: L. Arita reported for Kaneshiro that the Society has: in various savings accounts — \$6,871.74, in undeposited funds — \$163.95, in 27 outstanding subscription requests — \$285.93, in invoice to HES publication dept. for page charges for Vol. 23(2) — \$1,702.00. This gives a total balance of \$9,023.62.

Old Business: The Haleakala goat eradication resolution was completed, mailed, and acknowledged by our congressional delegation and the State Lt. Governor.

The President of the Society received a letter from the Director of the Hawaiian Science and Engineering Fair acknowledging our support and seeking suggestions to reorganize the awards ceremony at the conclusion of the fair.

New Business: President Howarth read a letter from Janet and Martha Usinger requesting permission to reproduce R.L. Usinger's papers that appeared in the 1930-70 Proceedings. Members present approved permission pending clarification of the intent of the memorial.

Endangered species: The Society members present approved the preparation of a resolution allowing the liaison committee chairman to prepare a favorable statement supporting the protection of the tree snail genus *Achatinella*. The President will review the resolution prior to submission.

Donation to the Society: Kanryo Sakimura donated \$77.00 to the Society to defray printing costs. The Society expressed sincere thanks for this generous donation by the Honorary member.

Program: Mr. Tim G. Myles of the Entomology Department of the University of Hawaii gave a talk on "The molecular basis of termite society: a report of two years efforts in that direction".

NOTES AND EXHIBITIONS

Perkins Key: Anita Manning, registrar, B.P. Bishop Museum, presented the following notice of interest to Society members. Photocopies of the handwritten "Key to Numbers and Localities of Mr. Perkins Hawaiian Insects" from the British Museum (Natural History), Department of Entomology Library, are now available in the Bishop Museum Library. The lists cover 1892-1894, 1900-1901. Locality numbers go as high as 906. These lists differ in some respects from the typewritten list currently in circulation among Hawaiian Entomologists. The Bishop Museum library welcomes users but please call before your visit as regular public hours have not been re-established following the renovations and moving. **Anita Manning.**

New records of Ereyetid nasal mites from birds in Hawaii: Examination of nasal mites in the collection of Bishop Museum revealed 2 species of nasal mites from birds collected on the islands of Hawaii and Oahu. Both were of the family Ereyetidae subfamily Speleognathiinae. Identifications were made by Dr. Alex Fain, Institute for Tropical Medicine, Antwerp, Belgium. *Boydala (Coboydaia) nigra* Fain, 1955, was collected from specimens of the House Sparrow, *Passer domesticus*, collected in Honolulu, Oahu, and Honokaa, Hawaii. This species was originally described from *Serinus sulphuratus shelleyi* collected in Ruanda-Urundi, Central Africa, and has subsequently been recovered from nasal passages of birds, including *P. domesticus*, in United States and Belgium (Fain, 1963). This record is of interest with respect to the earlier record given by van Bronswijk & Goff at the Jan. 1980 meeting of HES concerning the recovery of *Dermatophagoides evansi* Fain et al., 1967, (Pyroglyphidae), from nests of *P. domesticus* in Hawaii. This species is commonly associated with *P. domesticus* in the United States, but not elsewhere.

The second species collected was *Ophthalmognathus tenorioae* Fain and Goff, 1981, collected from the Black-crowned Night Heron, *Nycticorax nycticorax hoactli*, taken in Honolulu. This species was also reported from *N. nycticorax* collected in Ruanda-Urundi as *Trispeleognathus (Neospeleognathus) schoutedeni* Fain, 1955, by Fain (1956). Reexamination of these specimens by Fain has shown that they are, in fact, *O. tenorioae* (Fain & Goff, 1981). **M. Lee Goff.**

Brachydeutera argentata (Walker): This ephydrid fly, *Brachydeutera argentata* (Walker), is a new immigrant to the state of Hawaii. Four specimens were collected on Kahoolawe, May 1980, by Steve Montgomery. This species is widespread over the U.S., southern Palaearctic region, including Japan and the Bonin and Ryukyu Islands, also the Canary Islands and the Mediterranean countries.

These flies are associated with quiet pools or puddles. The larvae are aquatic feeding primarily as scavengers on decaying plant material. The adults spend most of their time resting on the water surface and are accomplished water skaters. The identification was confirmed by Dr. Wayne N. Mathis, U.S. National Museum. **D. Elmo Hardy.**

Telostylinus lineolatus (Wiedemann): This neriid is recorded for the first time from the island of Kauai. A series was collected at Kipu Ranch, June 27, '80 (Robin Rice), and one female specimen was collected at Lawai, Kauai, May 1980 (G.Y. Daida). *T. lineolatus* was previously known in Hawaii from only one female specimen collected Nov. 1978, Foster Gardens, Honolulu but has not been reported as a new state immigrant. **D. Elmo Hardy.**

New island record: The recent accidental immigrant Spiraling Whitefly, *Aleurodicus dispersus* Russell, was collected for the first time from the island of Kauai, on banana and ti at a residence in Wailua houselots by D. Melendez on June 27, 1980.

Subsequent to this, a Hawaii Department of Agriculture delineation survey indicated about one-third of 100 homesites inspected in this subdivision to be infested with the whitefly, primarily on guava, banana, bird of paradise and mango. In addition to this discovery, a sporadic but widespread infestation, covering about 35 to 40 acres of houselots and a playground, was discovered in Kekaha. Upon its discovery, a shipment of the purposely introduced coccinellid, *Nephaspis amnicola* Wingo, was made to the Garden Island to aid in the control of this new pest. Concurrent with the Kauai discovery, the spiraling whitefly was also reported to have spread to Wailuku, Maui, from Kahului where it was first discovered in June 1979. The whitefly is now recorded from Oahu (where it was originally discovered in September 1978), Maui, and Kauai. S. Higa.

Release of a new whitefly predator, *Delphastus pussillus* (LeConte): This coccinellid was introduced from St. Augustine, Trinidad, on April 16, 1980, by Exploratory Entomologist, R. Burkhart. Following laboratory studies in the Department of Agriculture quarantine facility, initial field releases of this well-documented whitefly predator were made in Makiki and Downtown Honolulu on June 26, 1980. S. Higa.

Heterotoma meriopterus (Scopoli): This plant bug, *H. meriopterus* (Heteroptera: Miridae) is new to the state of Hawaii (det. W. Gagné). The species is native to S. Europe, N. Africa (Carvalho, *Catalogue of the Miridae of the World*, Part III:74) and is adventive in eastern N. America (Knight, *Can. Entomol.* 49:250, 1917). Adults and nymphs were collected near Kokee, Kauai in June, 1980 on various plant species, primarily exotic ornamentals, by W.C. Gagné. This black, pale-legged bug is particularly distinctive because of the enlarged and flattened second antennal segment which bears black scales. Wagner and Weber (*Faune de France*, 67 *Heteropteres Miridae*: 307, 1964) state that it is partially zoophagous and sapsucking. The species was initially brought to my attention by Mr. F. Bianchi who collected a specimen (since lost) on *Passiflora manicata* at Kokee, probably in April, 1979. W.C. Gagné.

Stenotus binotatus (Fabricius): I am able to provide further confirmation of the successful establishment of this grass-feeding bug (Heteroptera: Miridae) on the island of Hawaii. I found adults and nymphs in abundance on grasses, especially *Dactylis glomeratus*, on Mauna Kea at Ahumoa in June, 1980. Prior to this note the species was known from 2 specimens collected about a decade apart on Mauna Kea, as reported by me at the March, 1980 meeting of the Society. *S. binotatus* is considered to be a minor pest of forage grasses in NE N. America. W.C. Gagné.

Hydrellia tritici Coquillett: This ephydrid fly was found on June 24, 1980 in great numbers around grasses, especially lawns, at Kokee, Kauai by W.C. Gagné and myself. Twenty swings of a sweep net yielded about 200 flies. Although this fly already has been reported from Maui, two specimens were obtained earlier, on Oct. 7, 1978 at a light in Polipoli State Park at 6,000'. The first host records were obtained on Haleakala Ranch, Maui at 6,000' near Puu Niauniau on June 16, 1980. The larvae and pupae were found in and reared from the leaf blades of the grass, *Holcus lanatus*. The earliest record for the Big Island is from Kapapala Forest Reserve, Kau District at 4,000' on June 11, 1979. S.L. Montgomery.

AUGUST

The 896th meeting of the Hawaiian Entomological Society was called to order by President Frank Howarth at 2:05 p.m., on August 18, 1980 in the Bishop Museum Conference Room.

Members present: Arakaki, Bianchi, Evenhuis, Gagné, Goff, Howarth, Kaneshiro, Look, Megens, Saul, Sherman.

Visitors present: Rössler, Wood, Tan.

Old Business: Wayne Gagné, for the Liaison Committee, reported on responses received to date on the Society's goat resolution for Haleakala National Park. Responses have been received from Lt. Gov. King, Park Superintendent Huntzinger, Senators Inouye and Matsunaga, and Herbst of the National Park Service.

Wayne Gagné read a draft of the resolution supporting the listing of all of the species of the tree snail genus *Achatinella* as endangered by the U.S. Fish and Wildlife Service. Since a quorum was not present further discussion and action was tabled.

Kaneshiro recommended that the Society send an acknowledgment letter to K. Sakimura for his recent donation to the Society.

Announcements: Steven Saul announced that Dr. Yoram Rössler would present a seminar entitled "Biocontrol of citrus pests in Israel" on 25 August, 1980, at the University of Hawaii.

Program: Dr. Tan Keng Hong of the School of Biological Sciences, University of Sains Malasia presented a talk on "Sub-lethal action of pyrethroid insecticides: Anti-feeding and irritancy effects".

NOTES AND EXHIBITIONS

Thysanoptera from Kahoolawe Island: A long series of *Haplothrips gowdeyi* (Franklin) was collected from flowers of *Waltheria americana* L. by Dr. Wayne Gagné on the island of Kahoolawe during April 26, 1980. On the night of the same date, Gagné also collected one female of *Dichaetothrips brevicornis* (Bagnall) by sweeping low vegetation. These are the first records of Thysanoptera from Kahoolawe. F.A. Bianchi.

Meteorus laphygmae Viereck: F.A. Bianchi exhibited two adults of this braconid and the cocoons from which they had emerged at Kokee, Kauai, elevation 4,000', on July 10. The cocoons were found attached to leaves of *Passiflora manicata* Pers. which were being fed upon by caterpillars of *Agraulis vanillae* L., some of which were dissected and found to contain fully developed larvae of the braconid.

Although *Meteorus laphygmae* is known to parasitize several other native and introduced Lepidoptera in our islands, this is the first record of its association with the adventive *Agraulis vanillae*. The record supports the argument that it would be useless to bring other heliconids into the state in the hope that they could control the proliferation of *Passiflora mollissima* (H.B.K.) in our forests. F.A. Bianchi.

Polistes infuscatus ecuadorius Richards: F.A. Bianchi exhibited a series of this vespid which he collected in 1979 in Ecuador and had determined by Dr. Henry Townes, of the American Entomological Institute. The species is being propagated artificially in the sugar cane fields of Ingenio San Carlos, a large plantation about forty miles S.E. of Guayaquil, and is proving effective in the control of a complex of armyworms and cutworms which periodically devastate the fields. Nests of the vespid are abundant under bridges and other structures remote from sugarcane and usually beyond the flight range of the species. To increase the number of wasps and their capability where the caterpillar complex does economic damage, small table-like artifacts of crude construction are placed in grid formation within the cane fields and wasp nests are brought from distant sources and hung under the tables. These nests not only produce new wasps from eggs that are brought in them, but attract and harbor stray individuals which are already in the fields. In consequence of this double action,

the population of wasps and their activity increases markedly, wherever the tables are set up, and the population of the caterpillars is quickly reduced or eliminated.

Formerly Ingenio San Carlos used insecticides applied by air to control its periodic infestations of armyworms and cutworms, but the plantation has informed Bianchi that the use of insecticides is being made unnecessary at present by the expanded use of *Polistes*. F.A. Bianchi.

Anthrax koshunensis Matsumura: Specimens from the Hawaiian Islands previously recorded as *Anthrax distigma* Wiedemann (Diptera: Bombyliidae) have been misidentified. A note by N.L. Evenhuis on September 17, 1979 changed *A. distigma* to *Anthrax* sp. (Proc. Hawaiian Entomol. Soc. XXIV(1):16 and 22). Comparisons of Hawaiian specimens with the type of *Anthrax koshunensis* Matsumura (type locality — Taiwan) in the Sapporo Univ. Collection, show them to actually belong to this species. The type of *A. distigma* (type locality — Java) in the Leiden museum was also compared with Hawaiian specimens and proved to be different. N.L. Evenhuis.

Mites from Nihoa Island: Collections of mites were made on the island of Nihoa by Sheila Conant during July, 1980. These collections were from *Pritchardia remota* and consisted of 4 species of free-living mites, all predatory. Three species were in the family Cheyletidae and 1 in Phytoseiidae.

CHEYLETIDAE:

Hemicheyletia bakeri (Ehara, 1962) 3♀, 4 nymphs. This species was originally described from leaf mold in California and has subsequently been reported from Africa, Chile and was listed by Garrett & Haramoto (1967) from house dust on Oahu.

Hemicheyletia wellsi (Baker, 1949) 4♀. This species was originally described from specimens collected off an orange shipped from the Azores to Philadelphia. Subsequently this species has been reported from a number of South and Central American countries as well as Okinawa. Garrett & Haramoto (1967) record this species from *Leucaena glauca* on Oahu.

Hemicheyletia sp. nr. *bakeri* 1♀. This species is similar to *H. bakeri* in all respects except the length of solenidion omega I which is 69 um for this species and 34 um for *H. bakeri*.

PHYTOSEIIDAE:

Amblyseius largoensis (Muma, 1955) 6 ♀. This species has been reported from Maui, Hawaii, and Laysan in the Hawaiian Islands.

All of the above records are new for Nihoa Island and are the first records of these mites being associated with *Pritchardia remota*. M. Lee Goff.

Ectoparasites from *Rattus exulans* on Kure Atoll: Six specimens of *Rattus exulans* were trapped on Kure Atoll by Craig Sengbusch, U.S. Navy, EPMU 6, Pearl Harbor, on 31 July, 1980. These specimens were processed for ectoparasites at Bishop Museum. Subsequent examination of these ectoparasites revealed 4 species, 3 of which had previously been reported from *R. exulans* from Kure and 1 representing a new island record. The sucking louse, *Hoplopleura pacifica* Ewing, 1924, and 2 Gamasida, *Laelaps echidninus* Berlese, 1887, and *Laelaps nuttalli* Hirst, 1915 (Laelapidae) were the 3 previously reported species. The fur mite, *Radfordia ensifera* (Poppe, 1896) (Actinedida: Myobiidae) has not previously been reported from Kure although it has been reported from Oahu, Hawaii and Midway Is. Mitchell (1964) reported this species from *Rattus exulans*, *R. rattus* and *R. norvegicus* on Oahu,

Radovsky et al. (1979) from *R. exulans* and *R. rattus* on Hawaii, and Goff (1975) from *R. rattus* (in error ex *Mus musculus*) from Midway Is. M. Lee Goff.

Records from soil samples, Kure Atoll: Examination of soil samples from Kure, taken at the same time as the *R. exulans* specimens, revealed a species of predatory mite of the family Stigmaeidae, *Ledermuelleria segnis* (Koch, 1836). This is a widespread species having been reported from Europe and North America. This is the first record of this genus and species from the Hawaiian Islands, and the second record of the family from the Hawaiian Islands. Garrett & Haramoto (1967) in their catalogue reported *Agistemus terminalis* (Quayle, 1912) from Monterey Pine, cypress and jasminum on Hawaii, Maui & Oahu Is. M. Lee Goff.

Agraulis vanillae (L.): A single adult specimen of the passion vine butterfly, *Agraulis vanillae* (L.), was collected in Hilo at Kukau Street on July 16, 1980 by Lloyd Shimoda. This is the first collection of *A. vanillae* in the Hilo area. The butterfly was collected in Kona earlier in June, 1980. Jack K. Fujii.

SEPTEMBER

The 897th meeting of the Hawaiian Entomological Society was called to order by President F.H. Howarth at 2 p.m., on September 8th, 1980 in the Bishop Museum Conference Room.

Members present: Arakaki, Beardsley, Chang, Culliney, Gagné, Goff, Haramoto, Hardy, Howarth, Higa, Joyce, Kaneshiro, Look, Mau, Megens, Montgomery, Nishida, Ota, Pinter, Radovsky, Samuelson, Saul, Sembel, Sherman, Steffan, Tanimoto, Tenorio, Yoshioka.

Visitors: Liquido.

Membership Committee: Leroy Williamson was unanimously elected to membership in the Society.

Old Business: Howarth reported that the Society has received favorable responses relating to the incremental fencing of Haleakala National Park and the subsequent eradication of goats. Gagné stated that Senator Matsunaga is supporting a bill in the Senate supporting the National Park Service in the fencing/eradication program.

Howarth announced that he and Gagné prepared and sent a letter supporting the U.S. Fish and Wildlife proposal to list all species of Oahu tree snail genus *Achatinella* as endangered. This had been authorized at the July meeting of the Society. The letter was then read. This touched off a lengthy discussion concerning the contents of the letter. Questions were raised as to the impact of *Euglandina rosea* on *Achatinella*. The role of the Society on issues relating to conservation was questioned. It was suggested that the HES might be regarded as "just another environmental group" if it commented too freely on controversial matters. Radovsky countered that the Society should take a stand on issues in our field of expertise to the extent that a consensus of the membership can be demonstrated. Samuelson made a motion to support the letter as read. After a second, Radovsky made a motion to withdraw the motion. The motion to withdraw was passed with a vote of 18 to 0, with 9 abstentions.

New Business: Mau reported that Dr. Haramoto will chair the Nominating Committee, with Nishida, Samuelson, Kaneshiro, and Mau as members.

Announcements: For the dinner committee Howarth announced for Lauret that plans were under way for the annual dinner meeting. Members should be prepared to decide on the site, cost, and date, at the next monthly meeting.

Hardy and Higa announced that *Euglandina* sp. had been released in Samoa.

Montgomery: U.S. Fish and Wildlife Service is sponsoring a workshop at the Ala Moana Americana on September 29th and 30th, 1980. He also announced the annual Forestry Conference at the Prince Kuhio Hotel.

Howarth: Two requests for live specimens for genetics study were received: the false German cockroach, *Blattella lituricollis*, and a Collembola, *Willowsia jacobsoni*. A volunteer able to provide these would be appreciated.

Presentation of papers: The *Forcipomyia ingrami* (Diptera: Ceratopogonidae) complex in Hawaii by Willis W. Wirth (Systematic Entomology Lab., U.S. National Museum, Washington, D.C.) and F.G. Howarth (Dept. of Entomology, B.P. Bishop Museum, Honolulu, Hawaii).

Program: The program consisted of observations and comments from HES members who attended the recent 16th International Congress of Entomology in Kyoto, Japan.

NOTES AND EXHIBITIONS

Brachycyrtus nawaii (Ashmead): A single specimen of this ichneumonid wasp emerged from a pupa of *Chrysopa comanche* collected from *Aleurodicus dispersus* Russell infested hau, *Hibiscus tiliaceus* at Kulouou, Oahu on August 28, 1979 by L.M. Nakahara. Subsequently, two additional specimens emerged from pupae of *Chrysopa* sp. prob. *comanche* collected from *A. dispersus* infested false kamani, *Terminalia catappa*, near downtown Honolulu on May 28, 1980 by D.K. Kosaka. Collaboration with U.H. Entomologist, J.W. Beardsley, revealed two additional specimens he had collected from light trap sources from Hickam Air Force Base in October 1976 and January 1978.

This wasp has apparently not been recorded from Hawaii previously. Its identification as *B. nawaii* was made by P.M. Marsh, USDA, Systematic Entomology Laboratory. It is a Palearctic species with distribution in Japan and the Philippines where it has been reared from the cocoon of a *Chrysopa* sp. S.Y. Higa.

Cheiloneurus sp.: A small series of adult encyrtid wasps emerged from the pupae of the brown lacewing, *Sympetobius barberi* collected from Port Jackson fig at Waikiki, Oahu on August 31, 1979 by L.M. Nakahara. Subsequently, over one dozen specimens of this same species were observed emerging from *Chrysopa* sp. pupae collected from *Aleurodicus dispersus* infested false kamani, *Terminalia catappa*, near downtown Honolulu on June 6, 1980 by D.K. Kosaka. Identification was made by J.W. Beardsley, University of Hawaii and constitutes a new state record. Evidently, this is an Asian-Pacific species since specimens of it compared favorably with specimens of a *Cheiloneurus* sp. collected earlier by the identifier from Koror, Palau. S.Y. Higa.

Brachydeutera argentata (Walker): A large series of adults of this ephydrid fly was collected from a light trap at Barbers Point, Oahu on July 11, 1980 by D.H. Oi. This represents a new island record. The insect was previously reported as new to the state by Dr. D.E. Hardy (see July 14, 1980 notes to the Society) based on 4 specimens collected on Kahoolawe, May 1980, by Steve Montgomery. S.Y. Higa.

Acari records from Kure Atoll: Further examination of mites collected from soil samples from Kure Atoll has revealed the presence of 6 additional species of Acari.

GAMASIDA

Fam. Ascidae — *Asca pineta* DeLeon, 1967, 2 ♀. New record for Kure. This species has been previously recovered from Hawaii Island in Hawaii Volcanoes

Naitonal Park from *Metrosideros* litter.

Fam. Rhodacaridae — *Rhodacarus* sp. 1 ♀, 2 Nym. New record for this genus from Kure. No species identification available at this time.

Fam. Uropodidae 3 ♀. First record of this family from Kure; generic and specific identification of specimens pending.

ACTINEDA

Fam. Cheyletidae — *Hemicheyletia bakeri* (Ehara, 1962). New record for Kure Atoll. Previously reported from Oahu and Nihoa in Hawaii.

Fam. Cunaxidae — *Cunaxia inermis* (Tragardh, 1905). This appears to be the first record of this family for the Hawaiian Islands, although representatives are present in collections of both Bishop Museum and Univ. of Hawaii. I have been unable to locate any published records for this family.

Fam. Tenuipalpidae — *Brevipalpus obovatus* Donnadiue, 1875. Previously reported from *Ipomoea* sp. on Kure Atoll by Butler & Usinger (1963).

Fam. Stigmaeidae — *Ledermuelleria segnis* (Koch, 1836). I have previously reported this species from Kure Atoll. M. Lee Goff.

Brevipalpus phoenicis (Geijskes, 1939): A sample of Hawaiian mistletoe, *Korthalsella complanata* (Fam. Loranthaceae), was collected from a koa tree, *Acacia koa*, on Aiea Ridge Trail at an elevation of 493 m, on 10 Aug. 1980 by Paul Kores. Examination of this sample revealed numerous individuals of *Brevipalpus phoenicis* (Geijskes, 1939) (Acari: Actineda, Tenuipalpidae) among the minute paired leaves and flowers present at the joints of the stems. This constitutes a new host record for this species of tenuipalpid mite. M. Lee Goff.

Neocunaxoides andrei (Baker & Hoffmann, 1948): Specimens of this mite (Acari: Actineda, Cunaxidae) were recovered from 2 localities in Hawaii Volcanoes National Park. 3 ♀ were recovered from a litter sample taken 9.XII.1972 in the vicinity of Tree Mold area, elevation 1233 m, by J. Jacobi. 1 ♀ from Kipuka Nene, elev. 900 m, on 16.VII.1973 by T. Parman. Dominant vegetation in both areas was *Metrosideros*. This is the first record of this species from Hawaiian Islands. M. Lee Goff.

Bruchophagus mellipes Gahan: During July of last year Dr. David Marsden brought me for determination a series of chalcid wasps which he had reared from seeds of a *Sesbania* sp. (Leguminosae) from the Univ. of Hawaii Experimental Farm at Waimanalo, Oahu. The collection included specimens of three species; two species of *Eupelmus* (Eupelmidae) and one Eurytomid which was unknown to me. Subsequently I sent specimens to Dr. Carl Yoshimoto at the Canada Department of Agriculture, Ottawa. Dr. Yoshimoto has identified the Eurytomid as *Bruchophagus mellipes* Gahan (1919, Proc. U.S.N.M. 56:513). This species is known from India where it is a pest in seeds of *Sesbania* spp. It is a new record for Hawaii. The *Eupelmus* species associated with *B. mellipes* were determined as *E. cushmani* Crawford and *E. eustichus* Perkins. J.W. Beardsley.

Gnathaphanus upolensis Csiki: In a letter to me dated July 4, 1980, Dr. George Ball, of the University of Alberta, Edmonton, Canada, has provided a correction and complete determination for an immigrant carabid beetle which was first reported in Hawaii in 1975. Dr. Ball stated that specimens which he determined previously as *Selenophorus* sp., and reported by me under that name (Proc. Hawaii. Entomol. Soc. 22(3):404) are in fact *Gnathaphanus upolensis* Csiki. He stated further that this species is distributed widely in southeast Asia, Indonesia, New Guinea, Australia, New Caledonia, Samoa and the Philippines. *G. upolensis* has been fairly common in

light trap material which I have examined from the Hickam AFB — Honolulu International Airport area of Oahu since it was first discovered. It has not been collected elsewhere in the state, to my knowledge. **J.W. Beardsley.**

Marava arachidis (Yersin): On February 8, 1977 Mr. Robin Rice collected an earwig at Ewa, Oahu (under a board associated with roaches) which I had not seen before. I tentatively identified the specimen as *Prolabia arachidis* (Yersin) using keys in Zimmerman 1948, Insects of Hawaii Vol. 2. Subsequently the specimen was sent by Dr. Howarth to Dr. A. Brindle at the Manchester Museum, Manchester, England, who confirmed it as Yersin's *arachidis*, now placed in the genus *Marava*. This earwig apparently is very rare in Hawaii. Zimmerman states that it was first collected in Hawaii in 1914 by Swezey but expressed doubt that it was definitely established here. **J.W. Beardsley.**

Euconocephalus nasutus (Thunburg): Last year a representative of the U.S. Fish and Wildlife Service brought in for identification a specimen of a tettigoniid grasshopper which had been collected on Nihoa Island (Leeward Hawaiian Islands) on August 5, 1978 "from regurgitated material of gray-backed tern". The specimen was a female of *Euconocephalus nasutus*, a species which had not previously been reported on Nihoa Island, although known to be present on Lisianski I., further west in the Leeward group. **J.W. Beardsley.**

Brachydeutera spp.: Dr. Hardy presented differentiating characters for the two species of Hawaiian *Brachydeutera* Loew (Ephydidae).

B. hebes Cresson

Larger species, wing 4.5 mm.

Wings distinctly tinged with brown. Last section of vein $M_{1,2}$ distinct.

Facial carina bluntly rounded, especially on lower half. Epistomal margin and clypeus dark brown pollinose, also abdomen dark brown pollinose except for lateral margins of terga.

On all main islands:

B. argentata (Walker)

Smaller species, wing 3.0-3.25 mm.

Wings hyaline, last section of $M_{1,2}$ colorless.

Facial carina sharp. Epistomal margin and clypeus silvery gray and abdomen broadly gray on sides and with a gray sheen at apices of terga.

Recorded only from Kahoolawe and Oahu. **D.E. Hardy.**

OCTOBER

The 898th meeting of the Hawaiian Entomological Society was called to order by President-elect Ron Mau at 2 p.m., on October 20, 1980, in the Bishop Museum Conference Room.

Members present: Gagné, Goff, Haramoto, Hardy, Higa, Joyce, Kaneshiro, Lai, Look, Mau, Megens, Montgomery, Muruvanda, Nakahara, Ota, Samuelson, Saul, Shroyer, Tamashiro, Tenorio, Yoshioka.

Visitors: Peter Kenmore of IRRI.

Finance Committee: Treasurer Ken Kaneshiro reported that he anticipates a balance of approximately \$9,000 when the current HES Proceedings page charges are received.

Nominating Committee: Frank Haramoto, chairman, presented a slate of 1981 candidates for offices as follows:

President-elect: Lee Goff, Bishop Museum
Lawrence Pinter, U.S.N. Fac. Mgt.
Secretary: James Eschle, Rainbow Exterminators
Stephen Saul, Univ. of H., Entomol.
Treasurer: Kenneth Kaneshiro, Univ. of H. Entomol.
Kenneth Murai, Dept. of Ag. State of HI.
Advisor: Wallace Mitchell, Univ. of H., Entomol.
Wallace Steffan, Bishop Museum

The slate was accepted by the Society.

New Business: Al Samuelson reported for Tom Lauret on the status of arrangements for the annual dinner meeting. It was moved, seconded and passed that it be held at the Flamingo Chuckwagon on December 8th, 1980. The cost will be \$10.00 per person.

The Society voted approval of a motion that HES pay the page charges for the presidential address, up to 8 pages. It was reported that the Editor incurs a number of miscellaneous expenses in producing the Proceedings. The members present voted their approval for the HES to reimburse the Editor for expenses when appropriate receipts are submitted to the Treasurer.

Announcements: Steve Montgomery announced that the Conservation Council of Hawaii is sponsoring a panel discussion titled: "Millions of Whiteflies and Three Fruit Flies: Control methods and their environmental impact". The discussion will be at the McCully-Moiliili Library on Oct. 22nd. The panel includes Hampton Carson, Stan Higa, Ed Shiroma and Leroy Williamson.

P. Lai announced that KITV will air a 5 segment series on whiteflies as part of the evening news during the week of Oct. 19th.

Presentation of Papers: Lee Goff: "A new species of *Hemicheyletia* (Acari: Cheyletidae) from Kure Atoll, Northwestern Hawaiian Islands", Dept. of Entomology, Bishop Museum, Honolulu, HI.

Lorna Arita (reported by Ken Kaneshiro): "Reproductive and sexual maturity of the Mediterranean Fruit Fly, *Ceratitis capitata* (Wiedemann).

Program: Dr. Donald A. Shroyer, Pacific Biomedical Research Unit, Univ. of Hawaii, gave a talk on "Hereditary transmission of arborviruses in mosquitoes: Japanese encephalitis and San Angelo viruses".

NOTES AND EXHIBITIONS

Sardia pluto (Kirkaldy): A delphacid planthopper, *S. pluto*, was recorded as a new immigrant species in Hawaii during 1976 and was found in light trap material (1979, Proc. Hawaiian Entomol. Soc. Vol. XXIII(1):21). No host information is available for this insect in Hawaii. During August — September 1980 adults and nymphs of this delphacid were observed and collected from purple nutsedge *Cyperus rotundus* L. among sweet potato plantings at the University of Hawaii Experiment Station, Waimanalo, Oahu. Sweeps made among nutsedge in neighboring corn plants also yielded several adults and nymphs of *S. pluto*. This appears to be the first record of any known host in the world. D.A. Muruvanda and J.W. Beardsley.

Acari records from soil and litter on Kauai: Collections were recently made of soil and litter material on the Island of Kauai. Examination of these samples has revealed several new state and island records.

GAMASIDA

Fam. Polyaspididae: *Trachytes* sp. 5 specimens (1 ♂, 4 nymphs) from Ohia litter along the "Power line trail". First record of this family from Hawaiian Islands.

Fam. Podocinidae: *Podocinum sagax* (Berlese) from mosses collected in cane fields behind Kapaa. This is the first record of this species from Kauai. Previously reported from Hawaii I. from mosses associated with a fumerole as well as other litter samples.

Fam. Veigaiidae: *Veigia uncata* (Farrier, 1957) from Ohia litter and mosses collected along "Power line trail" and in cane fields behind Kapaa. This is the first record of this species from Kauai, although it has previously been reported from Ohia litter on Hawaii I.

Fam. Ascidae: *Cheiroleius serratus* (Halbert) from mosses collected in Hanakapiai Stream. This is the first record of this species in Hawaiian Islands. Specimens were identified by Dr. JoAnn M. Tenorio, Bishop Museum.

ACTINEDIDA

Fam. Stigmaeidae: *Ledermuelleria* sp. nr. *segnis* (Koch) and *Ledermuelleria* sp. nr. *parviseta* Chaudhri, 1965, were collected from samples of mosses and algae in Hanakapiai Stream. This is the first record of this family from Kauai. There is only one other record of a stigmaeid associated with an aquatic habitat. This was *Ledermuelleria frigida* Habeeb, reported by Gerson in 1972. Aside from the departure in habitat, *L. frigida* and several other species were reported to feed on mosses, a departure from the predatory pattern associated with other Stigmaeidae. The presence of chlorophyll in the gut of both species recovered on Kauai indicate a similar feeding pattern for both these species.

Fam. Pachygnathidae: *Bimichaelia* sp. Several individuals were recovered from Ohia litter collected along the "Power line trail". This is a common group of soil-dwelling mites with a cosmopolitan distribution. This is, however, the first record of this family in the Hawaiian Islands. This species was also present in soil samples collected on Kure Atoll during July 1980 by LCDR C.H. Sengbusch. The species is morphologically similar to *Bimichaelia australica* Womersley, 1944, but some differences do occur. M. Lee Goff.

Silvicola (Silvicola) sp. near *fenestralis* (Scopoli): The family Anisopodidae is reported for the first time from the island of Hawaii. One female specimen was collected at Ahumoa, Mauna Kea, Hawaii, 7000', June 9, 1980, on *Myoporum* slime flux (Val Giddings). The specimen was determined by F.C. Thompson (Systematic Entomology Lab., USDA) as *Silvicola fenestralis* (Scop.), a species common over the Nearctic and Palaearctic Regions. Dr. K.Y. Kaneshiro collected males of this fly on Hualalai, Hawaii, 4600', July 29, 1980 and the genitalia do not fit *fenestralis*. D. Elmo Hardy.

Editors note re *Silvicola* above: The editor reported an *Anisopus* sp. from a mosquito light trap at Honolulu Harbor, Oahu. (Note, Joyce, Proc. Hawaiian Entomol. Soc. XVII(1):15). It mistakenly got into print in the family Anisopodidae instead of Anisopodidae and should be thus corrected. *Anisopus* is now considered a synonym of *Silvicola*. The single specimen from Honolulu in 1958 would seem to indicate that the species never became established on Oahu. C.R. Joyce.

NOVEMBER

The 899th meeting of the Hawaiian Entomological Society was called to order by President Francis G. Howarth at 2:06 p.m., on November 10, 1980 in the Bishop Museum Conference Room.

Members present: Arakaki, Beardsley, Bianchi, Brennan, Culliney, Evenhuis, Furumizo, Gagné, Goff, Haramoto, Hardy, Howarth, Joyce, Kaneshiro, Lauret, Look, Megens, Montgomery, Radovsky, Samuelson, Saul, Tenorio.

Visitors: Gary P. Buelow, Lynne Robin, Richard B. Loomis.

Old Business: Tom Lauret reported on the finalized plans for the annual dinner meeting on December 8th at the Flamingo Chuckwagon.

The Society's response to the Tri-fly Eradication Assessment to the Hawaii Department of Agriculture was discussed. In view of the December 1st deadline, Dr. Beardsley moved that the President prepare a letter indicating that the Assessment is being reviewed but that no formal opinion can be rendered until there is a consensus from the HES. It was amended to include a copy of the HES letter sent on 10 April, 1979. The amended motion was passed.

Announcements: Neal Evenhuis announced that a new journal of entomology has appeared in print. It is called *Colemania*, with the monographs entitled *Ayyaria*.

Presentation of Papers: Dr. John W. Beardsley Jr. presented. "A key to late instar larvae of Hawaiian Noctuidae (Lepidoptera)". The illustrated key treats larvae of 39 species of Hawaiian Noctuidae.

Program: Dr. Richard B. Loomis of the Department of Biology, California State University, Long Beach, spoke on "Some aspects of Trombiculoid biology".

NOTES AND EXHIBITIONS

Cryptotermes brevis (Walker): Several alates of the common drywood termite, *Cryptotermes brevis* were collected at East Island, French Frigate Shoals in the Leeward Hawaiian Islands, during June 1979 by Mr. George Balazs of the Hawaii Institute of Marine Biology. This is a new island record. J.W. Beardsley.

Elasmus spp.: Determinations for two species of the genus *Elasmus* (Chalcidoidea: Elasmidae) were received from Dr. Carl Yoshimoto, Canada Department of Agriculture, Ottawa, in a letter dated May 16, 1979. Both species had been previously reported by me as *Elasmus* sp. *Elasmus albizziae* Burks was so reported at the November 1976 meeting of the Society (Proc. Hawaiian Entomol. Soc. 23(1):22), and *E. atratus* Howard at the March 1978 meeting (Vol. 23(3):316). *E. albizziae* appears to be definitely established on Oahu as I have collected a total of seven specimens from several localities. *E. atratus* is still known here from only the original two specimens collected in a light trap operated at Hickam Air Force Base.

In his letter, Dr. Yoshimoto stated that "Burks (1965) (Biol. Soc. Wash. 76:206) believes that this species (*E. albizziae*) was introduced into the United States from the Oriental Region". The distribution for *E. albizziae* listed in Krombein et al., Cat. of Hymenoptera in N. America N. of Mexico, 1979, Vol. 1, p. 1021 is "N.J., to Va., w. to Kans." The host is listed as *Homadula anisocentra* (Meyrick), a moth not known to occur in Hawaii. The Hymenoptera Catalog lists the distribution of *E. atratus* as "Mass., Conn., D.C., Ohio, Wis., Oreg." The host listed are several species of Braconidae and Ichneumonidae which attack lepidopterous larvae; apparently it is a hyperparasite. J.W. Beardsley.

New Acari records on Kauai: Examination of Acari collected on the Island of Kauai has revealed the presence of a number of families and species not previously

reported from that island. Acari were all collected from soil samples collected during the period 24-26 Sept., 1980.

GAMASIDA

- Fam. Ascidae: *Protogamasellus* sp. nr. *massula* from mosses under Hau tree behind Kapaa in forest reserve area. First record from Kauai.
- Cheiroseius* sp. from mosses under Hau tree in forest reserve area behind Kapaa.
- Fam. Paraholaspidae: *Gamasholaspis gamasoides* (Berlese, 1904) from Ohia litter and mosses along trail to Alakai Swamp. This is the first record of this species from Kauai. Previously reported from the island of Hawaii.
- Holaspulus tenuipes* Berlese, 1904 from Ohia litter and mosses along trail to Alakai Swamp. Previously reported from the island of Hawaii. First record from Kauai.
- Fam. Oligogamasidae: *Gamasiphis* sp. This genus was previously reported from Hawaii in the family Rhodacaridae. This is the first record of this genus from Kauai.
- Fam. Phytoseiidae: *Amblyseius mauiensis* Prasad, 1968. This species was originally described from Maui and this is the first record from Kauai.
- Fam. Parasitidae: Unidentified species from Ohia litter and mosses along trail to Alakai Swamp. This species is quite large when compared to other species of Parasitidae recorded from the Hawaiian Islands. This is the first record of this family from Kauai.
- Fam. Uropodidae: An unidentified species from leaf litter collected under a Hau tree in the forest reserve area behind Kapaa. First record of this family from Kauai.
- Fam. Diplogyniidae: An unidentified species from Ohia litter collected along the Power Line Trail. This is the first record of this family from Kauai although the family is known to be present on Oahu.

ACTINEDIDA

- Fam. Cunaxidae: *Neocunaxoides andrei* (Baker & Hoffmann, 1948) from leaf litter in forest reserve area behind Kapaa. First record for this family from Kauai.
- Fam. Penthaloididae: *Penthalodes ovalis* (Duges, 1834) from mosses on stream bank along Hanakapiai Stream. New record for Kauai. This species was previously reported from the island of Hawaii.
- Stereotydeus* sp. from mosses growing on tree in forest reserve area behind Kapaa. This is the first record of this genus in Hawaii.
- Fam. Ragididae: *Coccragidia* n. sp. nr. *capitata* from mosses growing on tree in forest reserve area behind Kapaa. First record of this family and genus from Kauai.
- Fam. Eupodidae: *Eupodes hawaiiensis* Strandtmann & Goff, 1978, from Ohia litter on ground and in a tree hole 2 m above ground along trail to Alakai Swamp. This is the first record of this family, genus and species from Kauai, although this species appears to be widely distributed through the Hawaiian Islands. Also from Power Line Trail, Ohia litter.
- Eupodes* n. sp., from Ohia litter on ground and in tree hole 2 m above surface along Alakai Swamp Trail.

Fam. Bdellidae: *Cyta latirostris* (Hermann, 1804) from mosses growing on trees in forest reserve area behind Kapaa. This is the first record of this genus and species from the Hawaiian Islands and the first record of the family from Kauai.

Fam. Tydeidae: *Tydeus* sp. from litter in tree hole 2 m above surface of ground along Alakai Swamp Trail. This is the first record of this family and genus from Kauai.

Paratriophydeus sp. from litter collected on Power Line Trail by P. Conant. This is the first record of this genus in the Hawaiian Islands.

Fam. Oehserchestidae: *Oehserches tes arboriger* (Theron, 1974) from litter collected along Power Line Trail by P. Conant. This is the first record of this family, genus and species from the Hawaiian Islands. This species was originally described from South Africa. M. Lee Goff.

Drosophila (Sophophora) suzukii (Matsumura): a few specimens of this species were collected on October 7, 1980 on Mt. Kaala, Oahu (4000' elevation). This is a new state record. Subsequently large numbers of adults have been observed and collected on Wiliwili Ridge above Waialae Iki and the species appears to be well established on Oahu. Patrick Conant also collected a few specimens at Alakai and Kanaele Swamps on Kauai. The distribution of this species ranges from India, China, Korea, Japan and now Hawaii. K.Y. Kaneshiro.

DECEMBER

The 900th meeting of the Hawaiian Entomological Society, the annual dinner meeting, was held on December 8, 1980 at 6:30 p.m. at the Flamingo Chuckwagon Restaurant. 58 members and guests attended the buffet banquet. President Howarth suspended the regular order of business and introduced the newly elected officers for the year 1980 as follows:

President	Ent. Dept. U. of H.	Ronald Mau
President-elect	Bishop Museum	Lee Goff
Secretary	Ent. Dept. U. of H.	Stephen Saul
Treasurer	Ent. Dept. U. of H.	Kenneth Kaneshiro
Advisor (Pas. P.)	Bishop Museum	Frank Howarth
Advisor	Ent. Dept. U. of H.	Wallace Mitchell

Dr. Wallace Mitchel served as master of ceremonies for the program which followed. An excellent movie film, "Insect World of Dr. Lee", displaying some of the fine photography of this Taiwanese Entomologist was shown. The film was made available through the Taiwan Cultural Exchange of the East-West Center. Dr. Howarth's presidential address was entitled "Biological Control: Panacea or Pandora's Box". Tom Lauret, as chairman of the Dinner Arrangements Committee, was commended for putting together such a fine program. Other introductions and the awarding of door prizes concluded the meeting.

MINUTES, NOTES, AND EXHIBITIONS FOR THE YEAR 1981

The following minutes, notes and exhibitions were recorded by the Secretary on the months indicated during the calendar year 1981 (Editor).

JANUARY

The 901st meeting of the Hawaiian Entomological Society was called to order by President Ronald Mau at 2:04 p.m., January 12, 1981, in the Conference Room of the Bishop Museum.

Members present: Beardsley, Bianchi, Bryan, Chang, Gagné, Goff, Gressitt, Haramoto, Hardy, Higa, Howarth, Joyce, Kaneshiro, Kunishi, Lai, Look, Megens, Montgomery, Radovsky, Samuelson, Saul, Steffan, Stein, Swift, Tanimoto, Tenorio.

Visitors: Gettman, Hayashi, Kariel, Onaga, Rashid.

Membership Committee: Tae Soo Chon, Stuart Hayashi, Rachel Kariel, Deborra Sanders, and Abdul Rahman Rashid were nominated and elected to membership in the Society.

New Business: A resolution was presented honoring Dr. D. Elmo Hardy for his many services and accomplishments in the field of Entomology in Hawaii and throughout the world. He was nominated and elected unanimously to honorary membership in the Society.

Presentation of Papers: Dr. J.W. Beardsley presented a paper "On the Taxonomy of the Genus *Pseudopsylla* Froggatt, with a redescription of the Type Species (Homoptera: Coccoidea)".

Program: Reports on the National Meetings of the ESA were made by: Frank Radovsky on the restructuring of the publications of the ESA; Franklin Chang on pheromone research on ticks; Po-yung Lai on medfly parasites and aerial application of pesticides; and Ron Mau on leaf miner studies.

NOTES AND EXHIBITIONS

Diadiplosis koebeliae (Felt): Specimens of this cecidomyiid were reared from *Nipaecoccus vastator* (Felt) infesting *Jatropha hastata* collected by J. Stein at Kailua on April 29, 1980. The flies have also been recovered at the Honolulu International Airport, Kamalii Park (downtown Honolulu), and at the University of Hawaii Manoa Campus. On May 15, 1980, Dr. R.J. Gagné identified the specimens as *Diadiplosis koebeliae* which establishes this species as a new state record. It has now become established on Oahu on both sides of the Koolau Mountain Range. This fly was originally imported from Australia to California as a predator of *Pseudococcus gahani* by Harold Compere in March of 1928.

During our survey, the following parasites and predators were reared from *N. vastator* colonies infesting jatropha: Diptera — *Diadiplosis koebeliae* (Felt), *Gitonides perspicax* Knab; Hymenoptera — *Achrysooprophagus rex* Girault, *Anagyrus dactylopii* (Howard); Coleoptera — *Cryptolaemus montrouzieri* Mulsant, *Diomus notescens* (Blackburn), *Hyperaspis silvestrii* Weise, *Lindorus lophanthiae* (Blaisdell), *Scymnus lividigaster* (Mulsant), *Scymnus bilucernarius* (Mulsant), and *Scymnus uncinatus* Sicard. J.D. Stein and K. Onaga.

Psilogramma menephron (Cramer): The large gray sphingid moth, *Psilogramma menephron* (Cramer), was reported for the first time in Hawaii on the basis of adults reared from two larvae collected at Salt Lake, Oahu in November 1977 on African olive (Higa. Proc. Hawaiian Entomol. Soc. XXIII(3):310). Until recently very few additional specimens had been collected here. During the past several months *P. menephron* appears to have become somewhat more common in the Honolulu area, and some additional larval hosts can now be recorded. During November 1980 Mr. Kelvin Kanegawa collected four larvae of *P. menephron* in the Makiki area of Honolulu feeding on pink tecoma (*Tabebuia pentaphylla* (L.) Hemsl.), a new host record. Another larva was collected on *Catalpa longissima* Jacq. in the Manoa area during November. Earlier, an adult was reared from a larva found feeding on *Jasminum* sp. in Manoa. Larval frass and a crushed larva were found beneath African tulip trees (*Spathodea campanulata* Beauv.) in the Moiliili area indicating that this plant, which has been recorded as a host of *P. menephron* in other areas, is also being utilized by that species here. The known hosts of *P. menephron* belong to the plant families Oleaceae and Bignoniaceae.

A penultimate stage larva of *P. menephron* was collected by G. Ching in Manoa Valley, February 22, 1977, on an unknown host. The specimen had remained unidentified until an additional penultimate stage larva was collected by Mr. Kanegawa, and reared out. Mr. Ching's collection predates the earliest previous record of *P. menephron* in Hawaii by more than six months. J.W. Beardsley.

Platydemus manokwari Beauchamp: This land planarian was first noted in large numbers in the backyard of a house in Tamuning, Guam in July of 1978. During the latter part of 1979, several people from Northern Guam informed us that, since they noticed this flatworm, the giant African snail has disappeared from their yards. In May, 1980, some of the worms were field collected and kept in a container with giant African snails. Two days after such confinement, the worms disappeared from the container, however. Upon dissection of the snails, the worms were found feeding inside them.

During the early part of the rainy season in 1980 (July, August and September) this planarian was noticed all over the island, except in the southwestern portion, from Nimitz Hill through Agat, and it has reduced the population of the giant African snail to a great extent. Recently, J. Winsor of James Cook University of North Queensland, identified this land planarian as *Platydemus manokwari* Beauchamp, 1962. R. Muniappan.

Baileyothrips arizonensis (Morgan): A good series of this thrips was collected by S.L. Montgomery from flowers of the endemic *Euphorbia scottsbergii* var. *kalaelona* at Barbers Point, Oahu, on November 13, 1980. The find constitutes a new genus and species record for the state. The species was previously known only in Arizona and California, where its principal host plant appears to be *Euphorbia albomarginata*, the so-called rattlesnake weed. The Hawaiian host plant is now a scarce plant, but it was probably more abundant on Barbers Point during World War II (1939-1945), when *Baileyothrips* was presumably brought from the continent by heavy military traffic which overran Barbers Point during many months. *Baileyothrips arizonensis* (Morgan) (Thysanoptera, Thripidae) is the only species in its genus (Kono & O'Neil 1964, Calif. Dept. of Agriculture, Occas. Papers No. 6) and is characterized in the male by a peculiar gland situated between the second and third abdominal sterna. This gland is clearly visible in all the males of Montgomery's collection. F.A. Bianchi.

FEBRUARY

The 902nd meeting of the Hawaiian Entomological Society was called to order by President Ronald Mau at 2:00 p.m., February 9, 1981 at the Manoa Library meeting room.

Members present: Arita, Bess, Beardsley, Bianchi, Brennan, Chang, Chon, Chong, Culliney, Eschle, Evenhuis, Gagné, Haramoto, Hardy, Henderson, Howarth, Joyce, Kaneshiro, Kunishi, Look, Mau, Medler, Megens, Mitchell, Nakahara, G. Nishida, T. Nishida, Ota, Saul, C. Sengbusch, H. Sengbusch, Shroyer, Stein, Su, Swift, Takara, Tenorio, Vargas, Williamson.

Visitors: Ebisu, Gettman, Glanstein, Hodges, T. Kaneshiro, Miyamoto, Wallace.

Report of Officers and Committees: Mau reported for the Executive Committee that the monthly meetings of the Society will be held at the Manoa Library for a trial period of 3 months. The financial audit and review of the general fiscal condition was discussed. The possibility of constitutional amendments concerning membership classes was suggested. The finalized list of officers and committees for the year 1981 was circulated. It was proposed that prior notice be given of important issues to be considered at upcoming meetings so that members will be more able to cast their vote pro or con.

Announcements: President Mau reported that arrangements had been made to move the Society's books from the Bishop Museum to the University of Hawaii in late February. He also reported that the Liaison Committee's draft of the Society's reply to the proposed Tri-fly program will be circulated with the March Meeting notices.

Program: Dr. Leroy Williamson, Director of Tropical Fruit and Vegetable Research Lab., USDA, ARS, Honolulu, Hi., presented a program on his work in East Africa on the tsetse fly.

NOTES AND EXHIBITIONS

Conchaspis angraeci Cockerell: Dr. Beardsley exhibited twigs of *Pittosporum* sp. heavily infested with a scale insect which he determined as *Conchaspis angraeci* Cockerell. The infested plant material was submitted through the University of Hawaii Plant Disease Clinic during November, 1980 but was not examined until recently. The scales were submitted by a Mrs. I. Suny from an address in the Waialae-Kahala district of Honolulu. Originally described from Jamaica, *C. angraeci* is known also from Central America, South America, various West Indian islands and Florida. This is the first record of its occurrence in Hawaii.

Conchaspis angraeci is a member of the small Coccid family Conchaspidae Green which contains about 23 described species worldwide. In addition to tropical America, Conchaspid scales are known from Africa, Madagascar and Ceylon. Conchaspid scales resemble the true armored scales (Diaspididae) in that they construct an external scale covering secreted silk-like waxy filaments. Unlike diaspidids, conchaspids do not incorporate larval exuviae into the scale covering. All stages of conchaspids possess small, well-formed legs, unlike diaspidids where the females are legless, except for first stage larvae. The posterior abdominal segments are modified into a sclerotized "pseudopygidium" which probably is used to form the scale covering. The family Conchaspidae was monographed by Raymond Mamet in 1954 (Trans. Royal Entomol. Soc. London 105:189-239. J.W. Beardsley).

Class Arachnida, Order Schizomida: For Mr. Grant Uchida, Dr. Beardsley exhibited a specimen of an arachnid belonging to the Order Shizomida Petrunkevitch. This is the second known collection of this small order, an unidentified genus and

species, in Hawaii. The first record of a Schizomida appeared in a note by Howarth and Montgomery (Proc. Hawaiian Entomol. Soc. 24(1):8). This specimen was collected by Mr. Uchida in the Kaimuki area of Honolulu on February 1, 1980 in an abandoned termite gallery. Schizomidans are small, eyeless arachnids with large pedipalps. The first pair of legs are modified into slender, antenna-like organs and abdomen is distinctly segmented with a short, slender tail-like telson at the posterior end. The group is believed to be most closely related to the Order Uropygi, or whip-scorpions and is classified with that order by some workers. According to Savory (1977, Arachnida, 2nd Edition pp. 138-142) representatives of the Schizomida are widely distributed in the tropics and are "among the Arachnida that are able to survive accidental importations . . ." The order contains a single family, the Schizomidae or Tartaridae, which contains only three genera. **G. Uchida and J.W. Beardsley.**

Pericyma cruegeri Butler: Dr. Beardsley exhibited a specimen of the noctuid moth *Pericyma cruegeri*, reared from a larva collected on the University of Hawaii at Manoa campus. The larva was found crawling on a walkway beneath a royal poinciana tree (*Delonix regia*) on January 13, 1981. Subsequently seven additional larvae were collected by beating foliage of this host in the same area. *P. cruegeri* has been reported only once previously in Hawaii when it was reared from larvae collected on royal poinciana in January 1971 at Koloa, Kauai (Funasaki 1972. Proc. Hawaiian Entomol. Soc. 21:142). This is the first known collection from Oahu. The species is known also from Borneo, Australia and Guam. On Guam, Dr. R. Muniappan has reported that *P. cruegeri* has caused serious defoliation of ornamental royal poinciana trees. **J.W. Beardsley.**

MARCH

The 903rd meeting of the Hawaiian Entomological Society was called to order by President Ronald Mau at 2:04 p.m., March 9, 1981 at the Manoa Library meeting room.

Members present: Arita, Balock, Bianchi, Brennan, Bryan, V. Chang, Culliney, Eschle, Evenhuis, Gagné, Goff, Haramoto, Hardy, Harris, Henderson, Howarth, Joyce, Kanegawa, Kaneshiro, Kobayashi, Kunishi, Mau, Megens, Mitchell, Montgomery, Nakahara, Ohinata, Ozaki, Saul, Shiroma, Simon, Swift, Takara, Tsuda, Vargas, Williamson, Wong, Yoshida, Yudin.

Visitors: Gettman, Glanstein, Litsinger, Poramarcom.

Membership Committee: Dr. Forrest Howard of the Univ. of Florida, Kelsey Onaga, Lee Yudin, and Chris Simon were nominated and elected to membership in the Society.

Science Fair Committee: L. Arita announced that a certificate would be presented by the Society to the winner of the best entomological exhibit at the Science Fair. A motion was made and approved to award a \$25.00 certificate.

Unfinished Business: Tri-fly response: A motion was made and approved that the Society respond to a letter from Charles K. Yasuda, Head, Div. of Plant Industry, DOA. This letter reported on a review of the final report on the development of a tri-fly eradication assessment of the tri-fly eradication program in Hawaii, KFR 276-80, dated July 1980. A draft resolution response prepared by the Liaison Committee was read and discussed at length. This committee then met separately to incorporate some proposed changes while the meeting continued. At the close of the meeting the revised Tri-fly response was read to the Society by the Liaison Committee. The revised report was approved by the members present with one dissenting vote.

New Business: K. Kaneshiro read a proposed House Bill 1808 introduced in the State Legislature to create a Center for Hawaiian Biological Research. This Bill would appropriate funds to establish a center for biological research to coordinate projects involving the unique biological features of the Hawaiian Islands. Such a center would serve to enhance Hawaii's leadership role in the Pacific area. A motion was made and approved to send a letter of support to the appropriate people.

Program: Dr. Litsinger presented a program on rice pest management in the Philippines.

NOTES AND EXHIBITIONS

Loxosceles rufescens (Dufour) bites: On 6 March 1981, I received a call from Preventive Medicine Unit #6 at Pearl Harbor indicating that a spider bite patient was being treated at Tripler Army Medical Center. From the treating physician I learned that a young male had been admitted for treatment of a spider bite on the distal tip of his index finger. A discussion of the patient's observations and the developing symptoms revealed that the bite was probably due to *Loxosceles rufescens*. This is the third *L. rufescens* bite to victims from windward Oahu.

To the best of my knowledge, the first confirmed *L. rufescens* bite occurred on February 1977 at Lanikai. The victim, a middle aged lady was bitten on the heel. The symptoms were typical of those described in medical literature. Most significant was the very long length of time needed for healing. The open lesion remained for over a month, and the scar tissue was slow in developing. On inspection of the site immature *L. rufescens* were found in a pile of dry old boards less than 10' from where the lady claimed she had been bitten during a luncheon.

In September 1980, a second bite was reported from Kailua, less than one mile from the site of the previous bite. This bite was located on the upper chest below the left shoulder of a middle aged lady. The symptoms were unremarkable and followed closely those previously reported. One noteworthy feature was the development of a secondary lesion slightly below the primary lesion. This is not an unusual occurrence in *Loxosceles* bites and is attributed to a 'flow factor' which is responsible for spreading the lesion forming causes if proper care is not administered. This unusual bite location came about when the lady was carrying fire wood during a picnic. The spider was seen and killed but not collected. Upon inspecting the stack of wood I found *L. rufescens* nesting beneath the loosened bark of dried Kiawe logs. As with the February 1977 case, this information was placed on file with the Poison Information Center at Kapiolani Hospital.

This most recent case occurred in Kaneohe in an environment very much like the previous cases. The victim was cleaning his backyard and had been moving stacks of dry cardboard and old paper sacks. He felt the bite and saw the spider which was impaled on his finger and partially crushed. As usual, the specimen was not collected, however, the physician relayed the information offered by the victim whose description included color, size and significant morphological features of this spider. Based on the descriptive information and the early symptoms of the wound, the spider could well be *L. rufescens*. The only unusual factor was the very high blood pressure of the patient. However, the treating physician noted that the patient has a history of hypertension. It should also be noted that the physician is experienced in diagnosing and treating venomous arthropod bites and stings and indicated surprise at this 'recluse-type spider bite', since he was under the impression that the recluse species did occur in Hawaii. I informed him that the island species was in the same genus as *L. reclusa* Gertsch and Mulaik, but with less toxic venom. I provided him with relevant literature on prior case histories and treatment for *rufescens* bites. **L. Pinter.**

APRIL

The 904th meeting of the Hawaiian Entomological Society was called to order by acting Chairman Lee Goff at 2:03 p.m., April 13, 1981 at the Manoa Library meeting room.

Members present: Arakaki, Arita, Beardsley, Bianchi, Brennan, Gagné, Gettman, Goff, Gressitt, Haramoto, Hardy, Henderson, Heu, Higa, Howarth, Joyce, Kaneshiro, Krauss, Kunishi, Lai, Look, Megens, Mitchell, Miyake, Montgomery, Nakahara, Ota, Saul, Simon, Swift, Vargas, Wong, Yoshida, Yudin.

Visitors: Peter A. Maddison, James Litsinger.

Science Fair Committee: L. Arita reported that the \$25 award and certificate of merit was made to Neal H. Luna and Galen T. Nakamura of Iao Intermediate School of Maui for a project entitled "Controlling the Spiraling Whitefly".

Membership Committee: Upon recommendation of the Committee, Allan Gettman, Karen Pratt, and Jill Glanstein were nominated and unanimously elected to membership in the Society.

Unfinished Business: The Society letter to the State Legislature supporting the Center for Hawaiian Biological Research was read.

New Business: Wayne Gagné was appointed liaison officer to the National Office Staff of the Entomological Society of America. An announcement was made of the ESA meeting in San Diego, Nov. 29, 1981. The possibility of holding the 1984 Pacific Branch Meeting in Hawaii was discussed and referred to the Executive Committee.

Program: Dr. Peter A. Maddison of the DSIR, New Zealand presented a talk on "Pests of the South Pacific".

NOTES AND EXHIBITIONS

Tetranychus newcaledonicus Andre: This spider mite (Acari: Tetranychidae) was found infesting leaves of the Bun long variety of taro at Waiakea Experiment Station, Waiakea, Hawaii. This constitutes a new host record for this mite. W.C. Mitchell.

Aleurothrixus floccosus (Maskell): On March 7, 1981, a trace infestation of *A. floccosus* (Homoptera: Aleyrodidae), the woolly whitefly, was observed on Surinam cherry (*Eugenia uniflora*) leaves at Halawa Heights, Oahu by Wayne Kobayashi. Specimens were identified by Steve Nakahara, USDA, APHIS, PP&Q in Beltsville, Maryland. This is a new State record. *A. floccosus* derives its common name from the numerous grayish-white, thread-like filaments that are secreted by the immature stages resembling tufts of wool. This pest occurs in the mainland U.S. (Florida, Texas, and California), Cuba, West Indies, Mexico, Central and South America, Southern Europe and Africa. Primary hosts appear to be citrus and guava. Mound and Halsey (Whitefly of the World, 1978) and Steve Nakahara list a total of 59 species of plants in 43 genera and 32 families as hosts. Mound and Halsey also list various parasites and a thrips as attacking this pest. In Hawaii infestations are trace to moderate, thus far, on citrus and guava and is well established on Oahu (Kaneohe, Kailua, Hawaii Kai, McCully, Pawaa, Nuuanu, Moanalua, Foster Village, and Halawa Heights). No locally established parasites have been recovered from samples, thus far. A few coccinellids have been found associated with this pest, but their effectiveness is unknown at this time. L.M. Nakahara.

Dasineura mangiferae Felt: Infested mango flower buds were first collected in Hilo, Hawaii on January 4, 1981 by Ernest Yoshioka. Adult midges were reared from the sample and were subsequently identified as *D. mangiferae* (Diptera: Cecido-

myiidae) by Dr. Raymond Gagne, of the Systematic Entomology Laboratory, USDA, Beltsville, Maryland. This is a new State record. This species was originally described from India but is believed to occur elsewhere. Maggots of the mango blossom midge feed within the flower buds causing the bud to abort, preventing fruit set. The pest is well established in the State having been recorded from Pawaia, Oahu on February 5th by Larry Nakahara; from Kahului, Maui on February 6th by Nobuo Myahira; and from Wailua, Kauai on February 9th by Donald Sugawa. Preliminary surveys on Oahu showed infestations to range from 72 to 100 percent of the sampled flower buds. Because mango fruit set is normally variable, the extent of damage by this new midge is unknown. L.M. Nakahara.

Conchaspis angraeci Cockerell: Surveys were made during March and April 1981 on the Angraecum scale, *C. angraeci* (Homoptera: Conchaspidae), that was recently reported as a new State record by Dr. John Beardsley. Infestations (trace to heavy) were found in about 25 acres in the residential Kahala District of Honolulu on *Pittosporum tobira* plants. One 15' hedge planting showed moderate terminal die-back. A survey was also conducted by Lorna Nekoba and Larry Nakahara in Foster Botanical Garden on April 9, 1981, following the scale's discovery at that location by Wilmer Snell. Infestations were found on *Pittosporum arborescens* (heavy to severe), *Lebronnecia kokiooides* (heavy to severe), *Codiaeum variegatum* (heavy to severe), *Epidendrum schlechterianum* (moderate to heavy), *Hibiscus* sp. (moderate), *Eulophia* sp., *Panax* sp., and *Dendrobium* sp. are believed to be new host records. Damage was observed on the croton and *Epidendrum*. No parasitized scales were observed. L.M. Nakahara.

Mites from Kure Atoll: Examination of mites collected on Kure Atoll by C.H. Sengbusch in Nov. 1980 has revealed several species and genera not previously reported from that locality.

Gamasida:

Family Ascidae: 3 ♀ were collected of *Protogamasellus* sp. nr. *massula*. This species was also collected on the island of Hawaii. Species determination has not yet been made. Collection was from leaf litter.

Asca quinquesetosa Wharton, 1941. This species was originally described by Wharton from material taken from a booby nest on Clipperton Island and subsequently collected from leaf litter on the University of Hawaii campus by F.H. Haramoto.

Actineda:

Family Tydeidae: Several ♀ of the genus *Lorryia* were collected from leaf litter. This is the first record of this genus in Hawaii. There are a large number of undescribed species in this genus and the taxonomy of the group is currently in a state of confusion. M. Lee Goff.

Mites damaging corn plants: In Dec. 1980, Fred Bianchi was contacted by a farmer in Kahaluu who had problems with corn plants showing stunted growth. Examination of the stunted plants showed small holes in the roots containing oribatid mites. I visited the field on 10 Dec. and observed these mites in the root tissue of stunted plants and in developing roots of germinating plants. Roots of normally developed plants did not have these mites present. The distribution of the stunting was irregular in the field and appeared to be affecting approximately 15% of the plants. The mites were collected and have been identified by Dr. Howard Sengbusch as *Schelor-*

bates sp. nr. *muiri* Jacot, 1934. It is not known if these mites were responsible for the initial penetration of the root tissue, but feeding by the mites on root tissue was observed. While oribatid mites are not generally considered to be of agricultural significance, there are records of *Minunthozetes semirufus* larvae and nymphs burrowing into roots of grasses in England, and *Perlohnmannia dissimilis* (Hewitt) damaging root systems of potatoes, strawberry and tulip. In addition, Jacot (1934) described *Protoribates pembertoni* Jacot from specimens "within minute fresh hole in tender cane root, six inches in depth". Jacot suggested that the possibility that this species was the burrower should be investigated. **M. Lee Goff and F. Bianchi.**

MAY

The 905th meeting of the Hawaiian Entomological Society was called to order by President Ronald Mau at 2:05 p.m., May 11, 1981, at the Manoa Library meeting room.

Members present: Beardsley, Bianchi, V. Chang, Culliney, Gagné, Goff, Glanstein, Haramoto, Harris, Heu, Howarth, Joyce, Kajiwara, Kaneshiro, Komatsu, Kunishi, Mau, Megens, Mitchell, Montgomery, Nagamine, Nakahara, Saul, Shroyer, Stein.

Executive Committee: Mau reported that the committee had decided to extend an invitation to the Pacific Branch of the Entomological Society of America to hold the 1985 annual meeting in Hawaii.

Membership Committee: Kaneshiro proposed Peter A. Maddiger of New Zealand for membership in the Society. The application was unanimously approved.

Science Fair Committee: Mau read a thank you letter to the Society from the Science Fair Committee of the Hawaiian Academy of Science.

Announcements: Volume 14 of Insects of Hawaii, Diptera: Cyclorrhapha IV, by Dr. D. Elmo Hardy has been published. Univ. of Hawaii Press, Honolulu, HI. 1981.

Gagné announced a conference on the role of the feral pig in Hawaii.

A memorial moment of silence was observed for 2 members of the Society who recently died. A few words of remembrance were spoken for Kiichi Ohinata by Wally Mitchell, and for P.H. Timberlake by Jack Beardsley. A motion was made and approved to send letters of sympathy to the surviving families from the Society.

Program: George Komatsu of the Vector Control Branch of the State Dept. of Health spoke on the "Yellowjacket in Hawaii", illustrated with some excellent slides.

NOTES AND EXHIBITIONS

Abgrallaspis palmae (Cockerell): Several specimens of an armored scale insect previously unrecorded in the Hawaiian Islands were collected by Ms. Lynn Robin on an ornamental bromeliad in Manoa Valley on March 18, 1981. These were determined by J.W. Beardsley as *Abgrallaspis palmae* (Cockerell) (Homoptera: Diaspididae), also known under the name *Hemiberlesia palmae*, a species of nearly worldwide tropical and subtropical distribution. This scale was described, as *Aspidiotus palmae*, in 1893 from specimens from Jamaica (Ent. Mo. Mag. 29:39). It has been adequately illustrated by Ferris, (1938, Atlas' Scale Insects North America S-II:242) and Balachowsky (1948, Les Cochenilles de France, d' Europe, du Nord de l'Afrique et du Bassin Mediterranean IV:80). *A. palmae* has a broad host range, and has been recorded from avocado, banana, bird of paradise, various bromeliads, breadfruit, citrus, coconut and several other palms, mango, and several other hosts. **J.W. Beardsley.**

Thysanofiorinia leei Williams: This armored scale insect (Homoptera: Dactylopiidae), was previously known in Hawaii on the basis of two unpublished plant quarantine interceptions by Steve Nakahara, USDA, SETA, Beltsville, Maryland. It has been present here at least since 1965, but was confused with a similar species, *T. nephelii* (Maskell) which also occurs here. *T. leei* was described in 1971 from specimens from Hong Kong and Taiwan (Bul. Entomol. Res. 60:451). Two Hawaiian collections are at hand; Manoa Valley, Honolulu, I-5-1965, J.W. Beardsley, on litchee leaves and Lihue, Kauai, X-30-1968, G. Funasaki, on litchee twigs. Litchée is the only known host of this scale. J.W. Beardsley.

Human myiasis on Hawaii: This is to report on a case of human myiasis involving *Oestrus ovis* L. (Diptera: Oestridae). The Vector Control Branch of the State Dept. of Health received a report from a woman residing in Hilo that on May 25, 1980, while camping with a group at Makalawena Beach, North Kona, she and another woman were struck on the eyes by "something". Both of the women experienced immediate pains and spent many agonizing hours trying to remove the "something" out of the eyes. In due time, they were able to seek medical attention in Hilo. A total of 25 maggots (14 and 11 respectively) were removed from their eyes.

A team of Dept. of Health personnel conducted an investigation on June 16 and confirmed a sheep bot fly infestation in the goat herd at Makalawena. Although no adults were encountered, a postmortem examination conducted by the Public Health Veterinarian on a 7-8 month old goat, sacrificed with the owners permission, revealed the presence of a single half-grown bot fly larva about $\frac{1}{2}$ in. in length in the posterior nasal cavity. Identification was confirmed by S.Y. Higa, Hawaii State Department of Agriculture. G.H. Komatsu.

Rearing melon fly parasites: Laboratory parasite rearing studies were conducted at the Tropical fruit and Vegetable Research Laboratory on the melon fly, *Dacus cucurbitae* Coquillett by Ratana Poramarcom (IAEA fellow from Thailand). From March 31 to May 6, a total of 6 *Biosteres incisi* (Silvestri) and 9 *B. longicaudatus* (Ashmead) parasites were recovered from the melon fly. This is the first known record of the successful rearing of these particular parasites in the melon fly. Previous work by T. Nishida showed that only *B. fletcheri* (Silvestri) was successfully reared in the melon fly. E.J. Harris.

JUNE

The 906th meeting of the Hawaiian Entomological Society was called to order by President Ronald Mau, June 8, 1981, at 2:02 p.m., in the Manoa Library meeting room.

Members present: Beardsley, Bianchi, Chang, Culliney, Gagné, Goff, Harris, Henderson, Ikeda, Joyce, Kaneshiro, Mau, Muruvanda, Nishida, Radovsky, Rahman, Saul, Sherman, Takara, Williamson, Yoshida.

Visitors: James Litsinger, David Oi, Neil Reimer.

Executive Committee: Mau reported that the Executive Committee had recommended that Dr. Linsley Gressitt be considered for Honorary membership in the Society. A resolution to that effect was made, seconded, and approved unanimously.

Mau also reported that possible changes to the Constitution were being reviewed.

Editorial Committee: Dr. Joyce reported that Vol. 23(3) of the Proceedings was off the press. He asked members to respond to the questionnaire concerning an evaluation of the Proc. of the Hawaiian Entomol. Soc. mailed with the monthly meeting notice. Members of the Society are urged to express what they like and dislike about the Proceedings and give suggestions as to how it might be improved.

Treasurer's Report: Kaneshiro reported that the bill for the last proceedings was \$5,600.

Program: John Takara of the Dept. of Entomology, Univ. of Hi., spoke on the "Spatial Distribution and Surveillance of the Corn Delphacid".

NOTES AND EXHIBITIONS

Scotinophara tarsalis (Vollenhoven): This small, black, pentatomid bug (subfamily Podopinae) was first reported by me in February, 1979 on the basis of two specimens collected at Waialae Nui Ridge, Oahu by a student in the general entomology class at Univ. of Hi. Manoa. (Proc. Hawaiian Entomol. Soc. 24(1):5 & 21). Since then two additional specimens have turned up in collections made by students: one from Pearl City, IV-18-1981, R. Agsalsa. These specimens suggest strongly that *S. tarsalis* is established on Oahu. **J.W. Beardsley.**

Morganella conspicua (Brain): Specimens of an armored scale insect, determined as *Morganella conspicua* (Brain) by J.W. Beardsley, were collected on Oleander stems at the Univ. of Hi. Manoa campus by Mr. David Oi, on April 18, 1981 and on May 20, 1981. This scale was not previously known to be established in Hawaii. However, Nakahara has listed this species on the basis of a single quarantine interception record from Hawaii at San Pedro, California in 1947 (Nakahara. Proc. Hawaiian Entomol. Soc. Vol. 23(3):401). It is likely that it has been present in Hawaii for many years but was previously overlooked. *M. conspicua* was described from specimens from Africa (Brain, 1919, Bul. Entomol. Res. 9:228) and was redescribed and figured by Balachowsky (1956, Ann. Mus. Roy. Congo Belge Sci. Zool. 3:124). Apparently, Hawaii is the only place outside Africa where the species has been reported. **J.W. Beardsley.**

Aleurodicus dispersus Russell: The spiraling whitefly, *A. dispersus* was found infesting guava, plumeria, citrus, and other plants in the Hyundai, Mongmong housing development at Mongmong, Guam on May 19, 1981. This is the first record of the spiraling whitefly on the island of Guam, Mariana Islands. Presented by W.C. Mitchell for: **F. Cruz, J. Cruz, and R. Muniappan.**

JULY

The 907th meeting of the Hawaiian Entomological Society was called to order by President Ronald Mau at 2:05 p.m., July 13, 1981, at the Manoa Library meeting room.

Members present: Arita, Bess, Bianchi, Culliney, Gagné, Haramoto, Henderson, Heu, Joyce, Kaneshiro, Kariel, Kunishi, Lai, Litsinger, Look, Mau, Mitchell, Nakahara, Nishida, Saul, Sherman, Shiroma, Shroyer, Takara, Tamimoto, Vargas, Williamson, Yoshida, Yoshioka.

Visitors: David L. Bishop, David Oi.

Membership Committee: Mau suggested that the Society formulate a specific policy to deal with the problem of members 2 years or more in arrears. Kaneshiro proposed James Litsinger and Neil Reimer for membership and they were approved unanimously.

Liaison Committee: Gagné reported on his progress in establishing communication links with the national office of the ESA.

Announcements: Dr. Mitchell reminded the membership of the ESA questionnaire on training and professional standards.

Mau read a letter of greeting to the Society from Sengbusch.

Program: Dr. Roger Vargas of the USDA/ARS Tropical Fruit and Vegetable Research Laboratory presented a program on recent efforts to determine the distribution of the Mediterranean fruit fly on Kauai.

NOTES AND EXHIBITIONS

New invertebrate host associates of Greensword (*Argyroxiphium virescens*): During 21-25 June, 1981, I had an opportunity to accompany members of the Hawai'i Service Trip Program of the Hawaii Chapter of the Sierra Club during the fencing of a portion of "Greensword Bog" in Haleakala National Park to attempt to halt further damage to the bog from feral pigs. This bog is located at 1860 m elevation near the NE rim of Kipahulu Valley. I was then able to visually examine many dozens of greenswords in this and adjacent bogs and forest openings.

An exotic arionid slug, *Milax gagates* (Draparnaud) (det. by C. Christensen, BPBM) was observed feeding on greensword leaves causing scarification to them. *M. gagates* is a common lowland slug, but Dr. Christensen was surprised and alarmed that I found it at that elevation. This abundant mollusc may also be helping to induce feral pig disturbance in search of it and earthworms for food in the bog, thereby destroying most bog vegetation.

The adults of 2 species of endemic cerambycids were found resting on greensword leaf axils. These were *Plagitymysus (Aeschrihmysus) terryi* Perkins and *P. (Nesithmysus) sp. nr. swezeyellus* Gressitt (det. Samuelson & Gressitt). The former species, of which about a dozen were collected, were active on greenswords in considerable numbers during a continuously warm sunny day. An attempted mating was observed so there seems little doubt that its larvae were feeding on these plants. This species was previously known only from silversword (*Argyroxiphium sandwicense*). *P. (N.) sp. nr. swezeyellus* adults were also collected with them, but only 2 specimens were seen. If this species also proves to be associated with greensword, this would biologically substantiate Gressitt's (PHES 20:356) proposed phylogenetic relationships of the *Pelea*-feeding subgenus *Nesithmysus* with the *Argyroxiphium*-feeding subgenus *Aeschrihmysus* in that it provides a biological link between the two subgenera. A further piece of supporting evidence for this is that a specimen of *P. (N.) swezeyellus* Gressitt in the Bishop Museum, collected in this general area by J. Jacobi in August 1973, is recorded "on *Dubautia plantaginea*", a greensword relative and a member of a genus with which the greensword will hybridize (Carr, pers. comm.). Gressitt (ibid, pg. 358), however, considered *swezeyellus* (then called *Nesithmysus swezeyi* Perkins) to attack *Pelea*, but I do not believe that this has yet been substantiated by rearing records.

Adults and nymphs of the endemic plant bug *Cyrtopeltis (Engytatus) hawaiiensis* Kirkaldy were also newly associated with *A. virescens*. Previously this bug had been only recorded from species of *Dubautia* (= *Railliardia*) Gagné, W.C. 1968. PHES 20:38). It was additionally newly collected nearby on another kupaoa, *D. waianapanapaensis*.

Numerous individuals of a delphacid planthopper, *Nesosydne* sp. nr. but not *bridwelli* (Muir) were also observed and collected on greensword. The only *Nesosydne* species presently recorded from this host is *N. bridwelli* (Zimmerman, E.C. 1948. Insects of Hawaii 4:202) but my specimens do not match the types of either *N. bridwelli*, nor the supposedly closely related *N. osborni* Muir, and thus is likely undescribed. W.C. Gagné.

New egg-laying record of *Trichopoda* sp.: The parasitic flies, *Trichopoda* spp., were introduced into Hawaii to biologically combat the southern green stink bug, *Nezara viridula* (L.). *T. pilipes* (Fab.) has also been reared from the endemic koa bug, *Coleotichus blackburniae* White, and eggs of apparently *T. pilipes* were found on the Australian mantis, *Tenodera australasiae* (Leach) (Hardy, D.E. 1981. Insects of Hawaii 14:423). An egg of a *Trichopoda* sp. (presumably *T. pilipes*, the only species presently known on Oahu) was found attached to the base of the hemelytron of an adult of the endemic plant bug, *Hyalopeplus pellucidus* Kirkaldy attracted to a light on Tantalus, Oahu by S.L. Montgomery, in July 1981. It would be interesting to document whether the comparatively small body size of this potential host would have precluded successful rearing of the fly, and whether the egg-laying record on the Australian mantid was also likely fortuitous. W.C. Gagné.

Hylephila phyleus (Drury): F. Bianchi stated for Father C. Riote that 3 males and one female of this fiery skipper had been collected at the Rice residence, Kokee, Kauai, on June 26, 1981, making a new island record for the species. F.A. Bianchi.

Agraulis vanillae (L.): F. Bianchi stated that during June of this year many caterpillars of this heliconiid had been observed by Father Riote feeding on the foliage of *Passiflora mollissima*, the banana poka, in the yard of the Rice residence at Kokee, Kauai. Many previous observations had shown *A. vanillae* only on *Passiflora manicata*, which is found only in a small area in and near the residence. It should prove interesting to follow the probable future expansion of the *Agraulis* population into the Kokee forest, where *P. manicata* is not found but *P. mollissima* is ubiquitous. F.A. Bianchi.

Ecacanthothrips tibialis (Ashmead): F. Bianchi reported that a number of this Phlaeothripinae were collected by Dr. Wayne Gagné at North Halawa Valley, Oahu, on July 2, 1981 (Thysanoptera: Phlaeothripidae). The series comprises both sexes and all stages of the thrips and provides a good sample of the sexual dimorphism and allometric development which characterize the species, which is known from Africa, India, Malaya, China, Australia and many islands of the Pacific but has not been previously recorded in Hawaii. F.A. Bianchi.

AUGUST

The 908th meeting of the Hawaiian Entomological Society was called to order by President Ronald Mau at 2:04 p.m., August 10, 1981 in the meeting room of the Manoa Library.

Members present: Arakaki, Arita, Beardsley, Bianchi, Brennan, Chang, Evenhuis, Gagné, Goff, Glanstein, Haramoto, Heu, Kaneshiro, Krauss, Lai, Mau, Megens, Mitchell, Montgomery, Samuelson, Saul, Sherman, Shiroma, Shroyer, Swift, Uchida, Vargas, Williamson.

Visitors: David L. Bishop, Hampton Carson, Betsy Gagné, Gail A. Mason.

Executive Committee: President Mau reported the following recommendations for the committee:

1. That Dr. Frank H. Haramoto be recommended for honorary membership in the Society.
2. That members more than 2 years in arrears should be dropped from the membership rolls and that a constitutional amendment to that effect be drafted by the membership committee.
3. That the Society should consider the options for disposing of the remaining HES exchange library.

Membership Committee: David Oi was nominated and approved for membership. A resolution proposing Professor Frank H. Haramoto for honorary membership was read and approved unanimously.

Announcements: Mitchell read a request from USDA/APHIS/PPQ for preliminary information on a state pest survey procedure.

Haramoto reported that the Pacific Branch of the ESA would like to meet in Hawaii in 1985.

Lai presented the Hawaii Pest Report of the State Department of Agriculture.

Program: Professor Hampton L. Carson of the Dept. of Genetics, University of Hawaii presented a talk on "Possible effects of the proposed tri-fly eradication project on rare species of Hawaiian *Drosophila*".

NOTES AND EXHIBITIONS

Wyeomyia mitchellii (Theobald): Females of this new member of the Hawaiian mosquito fauna were discovered by D.A. Shroyer along the Makiki Valley Trail, Oahu on 4 July, 1981. Forty-four biting females were collected and transported to the laboratory (Arbovirus Program, Pacific Biomedical Research Center). Numerous progeny reared from these females provided larvae, pupae, and male genitalia needed to facilitate identification (det. by D.A. Shroyer). Specimens were sent and confirmed by Ronald Ward, Smithsonian Institution.

Larvae of *Wy. mitchellii* were subsequently found in aroid leaf axils (*Colocasia*, "taro", and *Alocasia*, "ape" of the family Araceae) in the lower Makiki Valley and along Tantalus Drive near the head of the valley. Other leaf axil habitats might also be utilized on Oahu. *Wy. mitchellii* was previously known from Jamaica, Cuba, Hispaniola, southern Florida and the Atlantic coast of Mexico, where bromeliads are the most common larval habitat (Knight & Stone 1977, Catalog of the Mosquitoes of the World). The species may have been introduced by the importation of bromeliads, possibly from Florida. It is not yet known whether *Wy. mitchellii* occurs elsewhere on Oahu, but its abundance in Makiki Valley suggests that the introduction was not recent. This appears to be the only example of a *Wyeomyia* species occurring outside the New World.

Subsequent collections by personnel of the Vector Control Branch of the Hi. State Dept. of Health indicate that the mosquito is present in Manoa, Pauoa, and Nuuanu valleys as a result of larval samples taken from bromeliads (personal communication, P.Y. Nakagawa). *Wy. mitchellii* is the first new mosquito to become established in Hawaii since 1962. Although arborviruses have occasionally been isolated from other *Wyeomyia* species, *Wy. mitchellii* has not been incriminated as a vector of any known vertebrate pathogen. D.A. Shroyer.

Echinothrips americanus Morgan 1913: (Thripidae-Thripinae-Sericothripini-Sericothripina) On July 15, 1981, this thrips was found feeding on the surfaces of Bunlong taro, *Colocasia esculenta* L. Schott in the shade house at the U.H. Waiakea Research Station, Hawaii. Feeding injury began at the base of the leaf and extended outward along the midrib and veins. The species determination was made by K. Sakimura and constitutes a new record for the state.

Mr. Sakimura reported the thrips to be a common general feeder in wooded areas on various undergrowth from Southern Quebec to Florida, westward to Iowa. A detached collection was reported in Shasta County, California in 1909 but never has been duplicated to date by a new collection thus it probably never became established. It is rather common in Florida, Georgia and Louisiana.

Host plant records include *Veratrum viride* (Indian Poke) — Melanthiaceae, a herb in swamps and damp wood; *Magnolia grandiflorum* — Magnoliaceae, tree in woods in coastal plains of the south; *impatiens* group — Balsaminaceae (preferred host), herb under-growth; grasses; *Adicea* sp. Urticaceae, herb in moist banks and cool shaded places; *Polymnia* sp. (leaf cups) — Carduaceae, herb in woods and hillside; *Desmodium* sp. — Leguminosae, herb to shrub among wild growth; *Prunus* sp. — Rosaceae, stone fruit group. Some of the aforementioned plants could be accidental hosts, but apparently the species prefers to feed on various herbs or shrubs in cool and shady surroundings under some canopy. W.C. Mitchell.

Cryptorhynchus mangiferae (Fabricius): The mango seed weevil was reported from Guam by LaPlante (H.I. Rainwater, 1964. Proc. Hawaiian Entomol. Soc. 18:353). Also there is a report of Mr. Frank Madinger finding one seed weevil out of 9 lbs. of intercepted mangoes mailed from Guam to Honolulu in January 20, 1971. Recently, a survey was conducted to confirm the status of establishment of mango seed weevil on Guam. It has been recorded that 10 out of 76 mango seeds collected from the village of Piti were infested with *C. mangiferae*. Samples from the villages of Maina, Asan, Yigo, Dededo, Barrigada, Agat, Merizo and Santa Rita did not have the seed weevils, possibly because sample size in these villages was small and most of the sampled mangoes were immature and damage was hard to detect. R. Maniappan and R. Iwamoto.

Ornithonyssus sylviarum in nest of Elepaio: A nest of the Elepaio, *Chasiempis sandwichensis*, was collected from the Keauhou Ranch area, Hawaii by Rena Wenkart on 1 July, 1981. The nest was collected immediately following the fledging of the young. There was an extremely heavy infestation of the Northern Fowl Mite, *Ornithonyssus sylviarum* (Canestrini & Fanzago, 1877) in the nest material. While this mite is a common nest dwelling ectoparasite of a number of species of birds throughout its range, there are few records of this species from Hawaiian endemic birds. There are specimens in the Bishop Museum collection from the Alala, *Corvus tropicus*, from the S. Kona District of Hawaii and Goff (1980) has reported this species from the House Finch, *Carpodacus mexicanus frontalis*, in the Hawaii Volcanoes National Park. The present record is the first from an Elepaio. M. Lee Goff.

SEPTEMBER

The 909th meeting of the Hawaiian Entomological Society was called to order by President Ronald Mau at 2:03 p.m., Monday September 14th, 1981 at the Manoa Library meeting room.

Members present: Beardsley, Brennan, Conant, Gettman, Goff, Heu, Higa, Howarth, Joyce, Kaneshiro, Kunishi, Look, Mau, Megens, Nagamine, Nakahara, Oi, Saul, Sherman, Yoshida.

Visitors: Gail Mason, Lynne Kaneshiro.

Membership Committee: Nominations for membership for Gail Mason, a graduate student in the Dept. of Entomology, U. of Hi., and Samuel Gon, a graduate student at the U. of Calif., working on Hawaiian spiders were moved, seconded, and approved.

Announcements: The annual dinner meeting alternatives were presented and voted upon with the decision to be announced at the next meeting.

Stan Higa was appointed Chairman of the Nominations Committee.

The Bishop Museum Library is only open to the public by appointment only on Wednesdays from 9-12 and 1-4. Society members may use it Monday-Friday 8-12,

1-4 by identifying themselves to the Librarian. Xerox costs will be 25¢ a page if done by the library staff. Society members may be allowed to do their own copying at 7¢ per page.

Mr. Wayne Redman will be the new Area Director of APHIS/PPQ, Western Region, Honolulu, Hawaii, replacing Stan Miyake.

Program: Dr. Stan Higa of the State Department of Agriculture presented a program on the "Current Status of the Brown Garden Snail, *Helix aspersa*, in Hawaii".

NOTES AND EXHIBITIONS

Cosmopolites sordidus (Germar): Adults of the banana root borer were first collected from infested banana stumps from Waimanalo, Oahu, on July 31, 1981, by Po-Yung Lai and Kenneth Murai after being reported by a banana grower from that area. Identification was made by George Funasaki, Hi. Dept. of Agric., as *Cosmopolites sordidus* (Germar) (Coleoptera: Curculionidae), and was confirmed by D.R. Whitehead, Systematic Entomology Laboratory USDA. This is a new state record.

The grub or larval stage of the banana root borer tunnels and develops within the corm of banana plants. Extensive tunneling destroys the corm and root system and facilitates secondary invasions of other organisms. Heavy infestations and corm damage can cause the death of young suckers, the loss of vitality in old plants resulting in lower yields and longer maturation periods, and the destruction of root systems in older plants making them more susceptible to toppling by slight winds.

The adult is a black weevil, about $\frac{1}{2}$ in. in length, and has a long snout. It is active at night feeding and laying eggs between the old leaf sheaths near ground level around the corm. During the day, the adult hides under debris on the ground or around the corm. A newly hatched grub bores directly into the corm increasing the diameter of the tunnel to about $\frac{1}{4}$ inch as it matures. The grub pupates in the corm near the surface. The life cycle, from egg to adult, takes about 30-40 days. The adult has been reported to live for more than 2 years and can survive for long periods without food.

The banana root borer is distributed in nearly all banana growing areas of the world including southern Asia, Africa, many Pacific Islands, Australia, northern South America, most of Central America, Mexico, and the West Indies. It is also found in Florida in the U.S.

Preliminary surveys by Hawaii Department of Agriculture and University of Hawaii personnel (L.M. Nakahara, K.T. Murai, P.Y. Lai, R.F.L. Mau, B.R. Kumashiro, K.K. Teramoto, T.M. Watanabe, and R.A. Heu) indicate that the banana root borer is well established in approximately 1.74 square miles in the Waimanalo area of Oahu. Surveys also indicate that the pest may have been present in the Waimanalo area for several years. The adult is a poor flyer and disperses very slowly on its own.

Gross borer damage varied in different plantings indicating that plant vigor, current chemical and cultural practices, and other unknown factors may influence borer abundance and plant damage. Surveys also indicate that it may take several years for a borer infestation to express damage in a planting.

Over 2 dozen other plantings throughout Oahu and the neighbor islands have been inspected thus far and no borers have been detected. However, the probability of borer movement outside of Waimanalo on or in infested planting material is high and growers throughout the State are being asked to survey their fields as a precaution. Surveys by DOA personnel are being continued. L.M. Nakahara.

OCTOBER

The 910th meeting of the Hawaiian Entomological Society was called to order by President Ronald Mau at 2:03 p.m., Monday October 19, 1981 in the meeting room of the Manoa Library.

Members present: Brennan, Gettman, Glanstein, Goff, Hardy, Higa, Howarth, Joyce, Mason, Mau, Montgomery, Oi, Rashid, Saul, Steffan, Su, Tsuda, Wong.

Visitors: John Cossboom, Bill Snell, William J. Wrenn.

Membership Committee: Marshall Kirby, Quarantine Entomologist in Guam was nominated and approved for membership in the Society.

Common Names Committee: Tsuda reported that there would be no meetings this year and the next revisions would be in 1982.

Nomination Committee: Higa announced the candidates for 1982 as follows:

President-elect L. Pinter and J. Tenorio

Secretary G. Nishida and S. Saul

Treasurer V. Tanimoto and R. Vargas

Advisor A. Ota and F. Radovsky

The name of Frank Haramoto was placed in nomination from the floor for President. He later declined to accept the nomination. The slate of candidates as presented by the committee was moved, seconded and approved by the membership.

New Business: Any organizations wishing to be listed as "environmentally interested" were urged to make these interests known to the compiler of the list, Life of the Land. The Society voted to make such interests known.

Announcements: J.L. Gressitt sent a note of thanks to the Society for electing him to Honorary Membership.

The annual dinner meeting will be held December 18 at the Ranch House.

Program: Mr. Nan-Yao Su presented a program entitled "Foraging Behavior of the Formosan Subterranean Termite, *C. formosanus*".

NOTES AND EXHIBITIONS

New mite genus and family in Hawaii: Specimens of the genus *Litarachna* (Fam. Pontarachnidae) were found in the teaching collection of the University of Hawaii. The specimens were collected from seaweed in tidepools at Koko Head on 19 Oct. 1971 by D. Tsuda and K. Murai and at Wawamalu Beach on 14 Apr. 1972 by D. Tsuda, on Oahu. The family Pontarachnidae is unusual among the Hygrobatoidae in that it has adapted completely to the marine littoral habitat. The genus *Litarachna* contains 6 described species, all from continental areas. This is the first record of this family from the Hawaiian Islands and the first record of the genus from an oceanic island. M. Lee Goff.

NOVEMBER

The 911th meeting of the Hawaiian Entomology Society was called to order by Past President Frank Howarth (in the absence of President and President-elect) at 2:03 p.m., Monday, November 9, 1981 in the meeting room of the Manoa Library.

Members present: Beardsley, Bianchi, Brennan, V. Chang, Conant, Gagné, Glanstein, Hardy, Higa, Howarth, Joyce, Kunishi, Megens, Montgomery, Muruvanda, Nakahara, Oi, Ota, Reimer, Saul, Sherman, Taniguchi, Young.

Visitors: Chao Hon Chiu, Yvonne Ching.

Unfinished Business: Ota reported that he is in charge of site selection for the 1985 Pacific Branch meeting of the ESA. The members of the site selection committee

favor Hawaii as the meeting site and he asked for an informal vote as to whether the meeting should be held on Oahu or another island. The vote was approximately 3 to 1 in favor of Oahu.

Announcements: Brennan announced that the Hawaii Pest Control Association would meet the first 2 weeks of January, 1982.

Presentation of Papers: Beardsley et al., submitted a paper entitled "Field Investigations on the Inter-relationships of the Big Headed Ant, Gray Pineapple Mealybug, and Pineapple Mealybug Wilt Disease in Hawaii".

Program: Drs. Jack Beardsley and Barry Brennan presented a slide-cassette program entitled "Of Ants and Men and Mealybugs".

DECEMBER

The annual dinner meeting, the 912th meeting of the Hawaiian Entomological Society was held at the Ranch House Restaurant, 5156 Kalanianaole Highway on Friday, December 18, 1981 at 6:00 p.m. Dr. Wallace Mitchell served as Master of Ceremonies for the occasion.

Members present: Beardsley, Bess, Bianchi, Chang, Evenhuis, Goff, Gressitt, Hapai, Haramoto, Hardy, Harris, Higa, Howarth, Joyce, Litsinger, Mau, Mitchell, Muruvanda, G. Nishida, Ota, Radovsky, Riotte, Sakimura, Samuelson, Saul, Sherman, Shiroma, Shroyer, Steffan, Swift, Tanimoto, Tenorio, Tsuda, Yoshioka.

Annual Dinner Program: The 26 wives and other guests of the 34 members present were introduced. President Ron Mau recognized the officers who had served during 1981. Stan Higa announced the officers who will be guiding the Society for the year 1982:

President-elect	JoAnn Tenorio
Secretary	Stephen Saul
Treasurer	Victor Tanimoto
Advisor	Asher Ota

Ron Mau gave his Presidential Address on "The History of Insect Pest Management in Hawaii". After awarding of door prizes, the meeting was adjourned at 9:00 p.m.

NEW IMMIGRANT RECORDS FOR THE YEAR 1980

The following species were reported in the Hawaiian Islands for the first time during 1980, or earlier, on the dates recorded in the text. Species marked with an asterisk may be considered as doubtfully established as these records are based on a single collection. Some of the parasitic Acari may have been present previously but have not been searched for or reported from Hawaii.

CHANCE IMMIGRANTS

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OFFICERS AND COMMITTEES FOR 1980 and 1981

1980	ELECTED OFFICERS	1981
Frank Howarth	<i>President</i>	Ronald Mau
Ronald Mau	<i>President-Elect</i>	M. Lee Goff
Darwin Yoshioka	<i>Secretary</i>	Stephen Saul
Kenneth Kaneshiro	<i>Treasurer</i>	Kenneth Kaneshiro
Toshiyuki Nishida	<i>Advisor</i>	Wallace Mitchell
Franklin Chang	<i>Advisor (Past-Pres.)</i>	Frank Howarth

STANDING COMMITTEES

Editorial

C.R. Joyce, Editor		
G.A. Samuelson, Co-Editor		(Same as 1980)
E.J. Harris, A.K. Ota,		
M. Tamashiro, J.A. Tenorio		

Finance

Dick Tsuda	<i>Chairman</i>	P.-Y. Lai
C.R. Joyce	<i>Editor</i>	C.R. Joyce
G. Funasaki, K. Kaneshiro		K. Teramoto, K. Murai
P.-Y. Lai		

Program

S. Saul	<i>Chairman</i>	B. Brennan
F.G. Howarth, H. Megens		F. Haramoto

Membership

K. Kaneshiro	<i>Treas., Chairman</i>	K. Kaneshiro
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L. Nakahara, G.M. Nishida		G. Kitaguchi, K. Murai

Science Fair

F. Chang *Chairman* L. Arita

Liaison

W. Gagné	<i>Chairman</i>	W. Gagné
S. Montgomery		L. Nakahara
F. Bianchi		D. Tsuda

Common Names

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E. Shiroma, G. Toyama		B.R. Kumashiro, J.M. Takara
D. Tsuda		W.C. Mitchell, G. Toyama

Ad Hoc (Dinner Arrangements)

T.H. Lauret *Chairman* J.R. Yates, III
Nan-Yao Su

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T.-S. Chon (81 only) ⁷	W.C. Gagné	F.H. Haramoto
M. Chun	F.M. Gamaitan	D.E. Hardy

¹Elected to Honorary membership in June, 1981. Deceased 4-26-82.

²Elected to Honorary membership in August, 1981.

³Elected to Honorary membership in January, 1981.

⁴Deceased, April 17, 1981.

⁵Deceased, 1-25-83.

⁶Members for both 1980 and 1981 unless otherwise indicated.

⁷Member for the year indicated.

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¹Deceased, May 5, 1981.

IN MEMORIAM

Dr. J. Linsley Gressitt 1914-1982

The loss of Judson Linsley Gressitt and his wife Margaret Kriete Gressitt has been deeply felt through the Honolulu community and far beyond to many corners of the world. They were among the 112 people aboard the airliner that crashed into a mountain in southern China on April 26th, 1982, and there were no survivors. The Gressitts' visit to China was very much a homecoming, for Lin and Peg, as they were affectionately known by friends and colleagues the world over, had resided in Canton during their early years of marriage. There, Lin had taught at Lingnan University (now called Zhongshan) where among his endeavors were his early studies on Oriental phytophagous Coleoptera. Peg, a musicologist and graduate of Oberlin College, and a professional in her own right, supported Lin in his scientific pursuits through continuous and active interest for the rest of their lives; in that light, her artistic talents surfaced on occasion to produce illustrations of host plants of beetles or of plants in general for subsequent publications, including a Wau Ecology Institute handbook which she illustrated. The Gressitts' return to China was by invitation with the purpose of Lin giving lectures on biogeography at Zhongshan University and elsewhere. The schedule, insofar as Canton, was fulfilled before the ill-fated flight.

As a child of a missionary family, Lin was born in Tokyo on June 16th, 1914, and grew up in Japan with intervals for education in California. Even before entering college, he began his major Far Eastern biological explorations, including three months on Taiwan. These trips continued during his summers while a student, first at Stanford and then completing his B.S. (1938) and M.S. (1939) at the University of California, Berkeley. He received his Ph.D. (1945) at Berkeley.

Lin Gressitt settled with his family in Hawaii in 1952, following pre- and post-World War II periods of teaching and research in Canton. Lin's first position in Hawaii was as head of the Insects of Micronesia project based at Bishop Museum, and that led to a permanent appointment with the Museum in the following year, 1953. Lin was soon in charge of the entomology section and became Chairman of the Department of Entomology upon its inception. In 1964, Lin received the Linus Allen Bishop Distinguished Chair of Zoology, a position he held through the rest of his career. By that time, the department was witnessing phenomenal growth, with increased staff and programs, rapidly expanding collections, and a new building, Pauahi Hall, just being completed. It seemed that in a remarkably brief time, the department had become a center for the study of Oriental and Pacific medically important arthropods, airborne dispersal studies of arthropods, Antarctic and subantarctic entomology, along with the underlying studies devoted to systematics and evolution of arthropods in general, with, understandably, considerable concentration on Pacific Basin faunas. During this period, Lin's administrative assistant, the late Setsuko Nakata, born and educated in Hawaii, provided outstanding service, and she added greatly to the momentum of Lin's programs. In 1972, Lin resigned from the chairmanship in order to spend more time overseas, though his central role in the department continued, including the period after his formal retirement in 1981.

It is indicative of Lin's extraordinary abilities and efforts that, while doing so much else, he founded several publication series through the Museum, as well as a field

station in New Guinea, all of which continue to have synergistic effects on the growth and functions of the entomological collections in Bishop Museum. The series are the quarterly, *Pacific Insects* (now *International Journal of Entomology*) and the companion series, *Pacific Insects Monographs*, *Insects of Micronesia*, and the bimonthly *Journal of Medical Entomology*. The field station is now incorporated and an autonomous daughter institution, the Wau Ecology Institute. The Institute today stands in the forefront in its combined effort to promote studies in the biological sciences, science education, agriculture, forestry, and conservation in the nation of Papua New Guinea.

Despite his wide-ranging activities throughout the Pacific and beyond, Lin devoted a great deal of his attention to Hawaiian entomology and its setting. His concern in general for the conservation of natural diversity, particularly for the natural ecosystems of Pacific islands, gave considerable inertia to tackling the problems at hand in Hawaii. With this concern, he served on the Governor's Commission on the Preservation of Scientific Sites (1969-1970) and later helped to convince Governor Burns to stop the proposed transferral of axis deer to the Big Island. In the early 1970s he served as the first Chairman of the Hawaii Natural Area Reserves Commission. Also at that time he was one of the three co-directors of the steering committee for the International Biological Program in Hawaii, a program which had immense success in elucidating considerable new information on Hawaiian ecosystems, through the efforts of many participants. Lin accordingly spent a good share of his time exploring and collecting in Hawaii, and he predictably became further involved with longicorn beetles (Cerambycidae), a group that had held his fascination from the onset of his entomological life. This work centered on the plaghmysines, one of the groups to have radiated to some extent in the Hawaiian Islands; a number of papers were published, some written with C.J. Davis, and these culminated in his 1978 paper on the evolution of the genus (*Pacific Insects* 18:137-167).

Lin was unusually broad in his biological undertakings and published over 350 papers, many of monographic scope, including the editing of a two-volume work on the biogeography of New Guinea. Overall, his subjects covered systematics (mainly of phytophagous Coleoptera), biogeography, ecology, conservation, insect dispersal, polar (particularly Antarctica) and subpolar entomology, biological control, and even herpetology for a time. But he was most notably a field biologist and he never remained away from the field for very long. He was drawn to the hinterlands and particularly to mountains, and he was apparently tireless under even the most difficult conditions. His ventures of discovery, as they very much were, were often only attained under the most arduous circumstances, yet the rewards of experiencing a pristine ecosystem were limitless and undoubtedly had a most profound effect upon him. Lin had a deep feeling for natural systems and he saw great beauty in them.

Through most phases of his career, Lin was a teacher by example, and while some of his teachings did take place in the classroom, he was not bounded by that, for both the field and laboratory were his arena. His approach was a practical and effective one that produced magnificent results and carried constant inspiration to those working with him, students and peers alike. While such an interaction could take place anywhere Lin was, Lin's activities at Bishop Museum made his department an especially fertile ground. The collection, for example, was the setting for a number of postgraduate interns from Kyushu University during their one-year assignments at the Museum, prior to their doctorate degrees. And all those fortunate to work closely with Lin before completing their degrees benefitted immeasurably in developing their careers.

Lin was President of the Hawaiian Entomological Society in 1955 and was elected to honorary membership in 1981. He received numerous other honors, as well as grants and fellowships. He received many grant awards through the National Science Foundation, National Institutes of Health, office of Naval Research, National Geographic Society and others. He was a Guggenheim Fellow in New Guinea (1955-1956) and a Fullbright Fellow in Australia (1960-1961). One of the most meaningful awards received during his career was the Gregory Medal, given at the XIII Pacific Science Congress in 1975 for his contributions in scientific research and development of scientific institutions. Other awards include his election to honorary membership in the Hungarian Entomological Society, the naming of the Gressitt Glacier in Antarctica, and a multitude of taxa named in his honor.

The Gressitts are survived by their four daughters: Sylvia G. Jones of Los Angeles, California, Rebecca G. Lau of Haiku, Maui, Carolyn G. Freyermuth of Las Cruces, New Mexico, and Ellyn Gressitt of Anchorage, Alaska; by Dr. Gressitt's sister, Dr. Felicia Bock of Berkeley, California; by Mrs. Gressitt's brother, Bertrand Kriete of Thousand Oaks, California; and by several grandchildren.

At the request of the family, the J. Linsley and Margaret K. Gressitt Memorial Fund has been established at Bishop Museum. Donors may indicate application of gifts supporting programs in Papua New Guinea or in Honolulu.

Readers may want to see the Gressitt biography and bibliography appearing in the first two numbers of volume 25 (1983) of *International Journal of Entomology*. — G.A. Samuelson and W.C. Gagné.

Kiichi Ohinata, 1926-1981

Kiichi Ohinata, a research chemist who made major contributions to fruit fly research in Hawaii, died on May 5, 1981. Kiichi was a research chemist with the U.S. Department of Agriculture, Tropical Fruit and Vegetable Research laboratory (Hawaii Fruit Fly Laboratory) for 30 years.

Mr. Ohinata graduated from Kaimuki High School and received his B.S. and M.S. degrees in Chemistry from the University of Hawaii. He was recognized for his research on bait sprays and the development of attractants for the oriental (*Dacus dorsalis* Hendel), melon (*D. cucurbitae* Coq.) and Mediterranean (*Ceratitis capitata* (Wied)) fruit flies. He was instrumental in determining that the malathion toxicant in the bait spray caused the spotting of automobile paint rather than the acid hydrolysate of corn protein. He also analyzed various plant materials to determine the fruit fly attractant components. He developed and patented the male mediterranean fruit fly attractant methyl (E)-6 nonenoate (MEN). His analyses of multitudes of samples for toxic pesticide residues, for levels of attractant, and for efficacy of baits helped the research programs of his colleagues to progress more rapidly. He assisted in the development of a shipping carton for sterile fruit fly puparia. He published 41 research papers during his career. Kiichi was elected to membership in the Hawaiian Entomological Society on November 4, 1963. He was also a member of the American society.

In addition to being a fine chemist and researcher, he was also a devoted father and an avid golfer. As a charter member of the "USDA-UH Weekenders", he helped many a "duffer" improve their game.

Kiichi was born on October 6, 1926 in Honolulu, Hawaii and lived on Oahu all of his life. He spent two years in the U.S. Army and was honorably discharged as a Tech 4 Translator in 1948. Kiichi and Jane traveled to Japan and Okinawa to attend the XVI International Congress of Entomology and to participate in a fruit fly meeting in Okinawa. He really enjoyed the trip so very much. Shortly after returning home Kiichi was tired and became ill. His wife, Jane, and daughters, Lori and Sandy, survive him. — Wallace C. Mitchell.