

PROCEEDINGS
of the
HAWAIIAN ENTOMOLOGICAL SOCIETY

VOLUME 31 FOR THE YEARS 1989 & 1990 DECEMBER 31, 1992

The following minutes, notes and exhibitions were recorded by the Secretary on the month indicated during the calendar years 1989 and 1990. The minutes contain only the highlights in abbreviated form. Total attendance is indicated as well as important committee reports and business transactions. Complete minutes may be seen in the Secretary's file.

"PHES" is the abbreviation used in the Notes and Exhibitions section of the Proceedings for "Proc. Hawaii. Entomol. Soc.". In headings for the notes the scientific names are in boldface type if the insect is reported as a new immigrant to Hawaii (The Editor).

1989
JANUARY

The 996th meeting of the Hawaiian Entomological Society was held at the Manoa Library, Honolulu, starting at 2:00 p.m. on Monday, January 9, 1989, with President Patrick Conant presiding. Fifteen members and three guests attended.

Program: Four members: Dr. Franklin Chang, Ms. Sue McCombs, Dr. Wally Mitchell and Dr. Jay Rosenheim; each spoke briefly on highlights of the 35th National Meeting of the Entomological Society of America, held in Louisville, Kentucky, December 4-8, 1988.

Election of New Member: Ms. Faith Fujimoto, a graduate student in Entomology at the University of Hawaii, was elected to membership.

NOTES AND EXHIBITIONS

Nomenclatural changes for Pacific Tephritidae (Diptera): The following nomenclatural changes involving Pacific Tephritidae need to be placed on record:

Cycasia Malloch 1942, B.P. Bish. Mus. Bull. 172:202 is a new synonym of *Ornithoschema* de Meijere 1914, Tijdschr. Entomol. 57:221.

Cycasia oculata Malloch is a homonym of *Ornithoschema oculatum* de Meijere. I am proposing the name *Ornithoschema mallochi* n. name for *O. oculata* (Malloch).

Cycasia flava Hardy 1943, Pac. Insects Monogr. 31:168 is a new synonym of *Ornithoschema oculatum* de Meijere.

O. oculatum is known from Indonesia (Java), New Britain, Malaysia (Sabah), Solomon Islands and Thailand.

O. mallochi is known only from Guam. **D.E. Hardy.**

Thripobius semiluteus Boucek (Hymenoptera: Eulophidae): An eulophid thrips parasite was reared from larvae of the greenhouse thrips, *Heliothrips haemorrhoidalis* (Bouché), collected on croton in Waimanalo, Oahu, on June 14, 1988 by K. Murai and M. Early. It was subsequently reared from larvae of the red-banded thrips, *Selenothrips rubrocinctus* (Giard), collected on macadamia nut trees at the same location, June and July 1988. Further collections were made from greenhouse thrips found in Kailua, Makiki, Manoa and Nuuanu, on a variety of host plants. Identification was made by J. LaSalle, University of California at Riverside. This is a new state record. Voucher specimens are in the collection of the Hawaii State Department of Agriculture. **M. Early Chun.**

Lius poseidon Napp (Coleoptera: Buprestidae): The initial releases of adults of this leaf feeding beetle, introduced from Trinidad West Indies, were made at three different sites on Oahu, to aid in the control of *Clidemia hirta* (L.) D. Don, a forest and pasture weed. Host specificity tests, using 35 species representing 27 families of plants, showed that *L. poseidon* confines its feeding primarily to *C. hirta*, but may occasionally feed on other members of the Melastomataceae. On October 26, 1988, 30 beetles were released in Palolo Valley (elev. 146m) and 43 at Schofield Barracks East Range (elev. 472m) in Wahiawa. On November 16, 1988, 52 were released on Aiea Loop Trail (elev. 360m). During subsequent visits to the three sites, larval leaf mines were observed at Palolo, live larvae in mines at Schofield, and eggs on leaves at Aiea.

The most recent release of the beetle was made 3.3 km west of Kapaa, Kauai at the north end of the Nonou mountain range (61m elev.) on December 23, 1988. Thirteen adults were released at this site. **P. Conant.**

Gasteracantha sp. (Araneae: Araneidae): A new island record was established on Dec. 22, 1988 when this spider was collected at Ulupalakua Ranch (675m elevation) on Maui by M. Steuermann. She mentioned that she had seen the spider around ranch buildings about six months prior to this collection. Identification was made by B. Kumashiro, Hawaii Department of Agriculture. This spider was first collected in the state in Hilo, Hawaii, on December 16, 1985, and was subsequently collected at Lawai, Kauai, on March 20, 1988. **P. Conant.**

Sipha flava (Forbes) (Homoptera: Aphididae): The yellow sugarcane aphid, *Sipha flava* (Forbes), was found infesting pasture grasses, primarily kikuyu grass (*Pennisetum clandestinum*) and pangola grass (*Digitaria decumbens*) in the North Kona District of Hawaii Island in mid-November of 1988. Since then it has been found on pasture grasses and sugarcane at several additional locations (Pahala, Wainaku, Hakalau and Hilo) on that island. This is a new state record.

Specimens of this aphid were first collected from kikuyu grass at around 3,000 feet elevation on Hualalai Ranch by the ranch manager, Mr. Franklin Boteilho, and County Agent Mr. Glen Fukumoto. At that location, several hundred acres of pasture grass between ca. 3,000 and 3,500 feet elevation were being severely damaged by heavy infestations of this aphid. Specimens

were submitted to the University of Hawaii Plant Diagnostic Clinic. Initial identification was made by Mr. Dick Tsuda and Dr. Beardsley, and later confirmed by Dr. Manya Stoetzel, USDA-ARS Systematic Entomology Laboratory, Beltsville, Maryland. Surveys by DOA entomologists and others revealed that this aphid was already widespread in the Kona area, and was also present elsewhere on Hawaii Island.

Feeding by *S. flava* colonies apparently is phytotoxic as leaves of infested hosts become discolored, turning yellowish to reddish, and eventually drying up completely. Affected plants may be severely stunted or killed by heavy infestations. *Sipha flava* is widely distributed in the Western Hemisphere where it occurs throughout much of the continental United States, Central America, South America and Caribbean islands. However, except for *S. flava*, the genus *Sipha* is Old World in distribution, and the apparent lack of specific parasites of that species in the New World suggests that it may be of Old World origin. Voucher specimens are in the collection of the Dept. of Entomology, U.H. Manoa and the Hawaii State D.O.A.

This aphid has the potential to become a serious pest of sugarcane and pasture grasses in Hawaii. For additional information and references see Blackman and Eastop (1984), *Aphids of the World's Crops*. J.W. Beardsley, R.A. Heu, A.K. Ota, D.M. Tsuda and E. Yoshioka.

FEBRUARY

The 997th meeting of the Hawaiian Entomological Society was called to order at 2:00 p.m., Monday, February 13, 1989 at the Manoa Library, Honolulu. Thirteen members and one guest attended.

Program: Dr. John W. Armstrong, USDA-ARS Tropical Fruit and Vegetable Research Laboratory, Hilo, Hawaii, spoke on the topic "Update on Hot-Air Forced-Heat Quarantine Treatment."

MARCH

The 998th meeting of the Hawaiian Entomological Society was held at the Manoa Library, Honolulu, beginning at 2:00 p.m., Monday, March 13, 1989, with President Conant presiding. Thirteen members and three guests attended.

President Conant presented Dr. C.R. Joyce with a letter of appreciation for his donation of \$250.00 to the Society to establish a fund to assist in defraying page charges for Society members who lack institutional support and request waiver of such charges for papers submitted for publication in PHES.

Program: Dr. Parker Gambino, research entomologist at Hawaii Volcanoes National Park, spoke on the topic "Interactions between Yellow Jackets and Insect Pathogens."

Election of New Member: Mr. Jong-Yoon Kim, a graduate student in the Entomology Department, University of Hawaii, was elected to membership in the Society.

NOTES AND EXHIBITIONS

Calophya rubra (Blanchard) (Homoptera: Psyllidae): A new state record was established when this insect was collected in Kula, Maui on February 14, 1989 by T. Gunther and J. Tavares. Identification was made by J.W. Beardsley. This psyllid is apparently restricted to its host, *Schinus molle* L., the California pepper tree. Gunther reported a few heavily-infested, sickly-looking trees in the Kula area. A subsequent survey by P. Conant found the psyllid to be distributed throughout the Kula area from Ulupalakua in the south to Makawao in the north. All trees examined in Kula were only lightly infested with the characteristic open galls on leaves which are produced by nymphs of this psyllid. The lowest elevation where an infested tree was found was in Wailuku (about 70m elev.), reported by T. Gunther. He also reported a single infested tree in upper Paia. The highest elevation an infested tree was found was in Kula at 1,153m. Voucher specimens are in the collection of the Hawaii State Department of Agriculture.

C. rubra is native to Peru, which is also the native home of *S. molle*. The psyllid was accidentally introduced into California in 1984, where it has caused serious damage to ornamental pepper trees throughout the coastal areas of the state (Dower et al., California Agriculture, March-April 1988).

A brief survey of a few *S. molle* trees in the Manoa, Kaimuki, Alewa Heights and Wahiawa areas of Oahu, between March 1 and March 24, 1989, found no evidence of the pest. P. Conant, J.W. Beardsley and D.M. Tsuda.

APRIL

The 999th meeting of the Hawaiian Entomological Society was held at the Atherton Halau, Bernice P. Bishop Museum, Honolulu, beginning at 7:00 p.m., Monday, April 10, 1989, with President Conant presiding. Eighteen members and six guests attended.

Program: Dr. Eugene Munroe of the Canada Agriculture Biosystematic Research Center, Ottawa, spoke on the topic "Classification and Zoogeography of Pyraloid Moths."

Election of New Members: Mr. Renato Bautista, Ms. Carolina, Mr. Wayne Hunter, Ms. Lynn Kaneshiro and Ms. Susan McCombs, all graduate students in the Department of Entomology, University of Hawaii, were elected to membership in the Society.

New Business: Two motions affecting the presentation of contributions to the Notes and Exhibitions section of the PHES were adopted by the membership. Henceforth, contributors are required to provide the order and family of organisms named in the title of notes. In addition, authors should provide the name and affiliation of persons making identifications of organisms referred to in notes, and also state where voucher specimens are deposited.

NOTES AND EXHIBITIONS

Taeniaptera angulata (Loew) (Diptera: Micropezidae): Five specimens of a micropezid fly, *Taeniaptera angulata* (Loew), were collected by Mr. John Herr and Dr. Sam Gon at Waimanu Valley, Hawaii, 12•VIII•1988. This is a new state record, and the first record of the family Micropezidae in Hawaii. *T. angulata* is a Neotropical species which has been reported to occur from Honduras to Panama and Colombia, south to Argentina. Nothing is known of its biology; however, most Micropezidae are scavengers which feed on decaying vegetation.

Determination was made by A.L. Norrbom, USDA Systematic Entomology Laboratory, Washington, D.C. Two specimens are deposited in the U.S. National Museum; three are the University of Hawaii collection. **D.E. Hardy.**

Ferrisia consobrina Williams and Watson (Homoptera: Pseudococcidae): For many years I have known that there are two mealybug species in Hawaii which have been lumped together as *Ferrisia virgata* (Cockerell), the striped mealybug. One of the species is bisexual, and mating is necessary for reproduction. The second species reproduces by theletokous parthenogenesis, and males are unknown. There are also minor but consistent morphological differences between females of the two species.

Through reference to type material in the British Museum (Natural History), Dr. D.J. Williams of the Commonwealth Institute of Entomology has shown that Cockerell's *Dactylopius virgatus* is a bisexual species. Based on female morphology, the bisexual species in Hawaii appears to be the same as the true *Ferrisia virgata*. In a recently published book (The Scale Insects of the Tropical South Pacific Region Part 2, Mealybugs (Pseudococcidae), by D.J. Williams and G.W. Watson, C.A.B. International Institute of Entomology, London, 1988) the parthenogenetic species of this sibling pair was described under the name *Ferrisia consobrina*.

Williams and Watson list the distribution of *F. consobrina* as Australia, Papua New Guinea, New Caledonia, Vanuatu, Tuvalu, Tonga, Cook Islands and Kiribati (Gilbert Is.). I have compared Hawaiian specimens in my collection with the description and figure of *F. consobrina* by Williams and Watson, and our species appears to be identical.

This is a new insect record for Hawaii; however, it has been present here for many years. The oldest specimens which I have seen were collected by me at Waipahu, Oahu, IX•28•1955, on *Ambrosia artemisiifolia* L. Other specimens of *F. consobrina*, all from Oahu, bear the following data: Makapuu Pt., IV•1963, F.A. Bianchi, on *Lipochaeta integrifolia*; Honolulu, XII•1973, J.L. Leeper, on unidentified compositae; Kahuku, sea level, IX•27•1975, W.C. Gagné, on *Euphorbia degneri*; and Honolulu, Hawaii Kai, I•4•1982, K. Kanegawa, on sea grape. Although it is presently known here only from Oahu, *F. consobrina* probably is more widely distributed in the state. Voucher specimens are in the author's collection. **J.W. Beardsley.**

Hierodula patellifera (Servile) (Orthoptera: Mantidae): A mature female specimen of this mantis was observed on a California pepper tree (*Schinus*

molle) at Pukalani, Maui, on February 28, 1989, by J.W. Beardsley. This immigrant mantis, known from Kauai since 1924, was found established on Oahu in 1977 (PHES 23:178), where it is now common. It has not been reported previously from any other islands, and this is a new island record.
J.W. Beardsley.

Gasteracantha mammosa C.L. Koch (Aranea: Araneidae): An unidentified introduced species of *Gasteracantha* was reported from Hilo, Hawaii in 1986 (Kumashiro 1988, PHES 28:10). Kumashiro stated that the species "somewhat resembles *G. cancriformis* (L.)" which also occurs in Hawaii. A newspaper story which appeared in "The Garden Island" on 1•III•1989 reported that "a new crab spider" had recently become a nuisance on Kauai. At my request, numerous specimens of this spider were collected in Kalaheo, Kauai during March 1989 by R. Nakama. I have identified the species as *G. mammosa* C.L. Koch of the family Araneidae. It is not properly called a crab spider as that common name is only correctly applied to members of the Thomisidae.

G. cancriformis (L.) was first reported in Hawaii in 1954 by Fullaway (1955, PHES 15:378). Several authors, including Suman (1964, Pacific Insects 6:668) have used the name *G. cancriformis*, following Bonnet (1957, Bibliographia Araneorum 5(2):1945) who recognized *G. cancriformis* as a senior synonym of *G. elipsoides* (Walchenaer) and *G. mammosa* C. Koch. Bonnet's attempt to synonymize several apparently valid species of *Gasteracantha* under *G. cancriformis* was unfortunate. For example, Kanston (1972, How to Know the Spiders, p.132) has reported *G. elipsoides* "also known under the name *cancriformis*" as occurring in the southern United States. I have compared specimens of *G. elipsoides* collected in Los Angeles County with specimens of *G. cancriformis* from Honolulu, and believe them to be conspecific. However, it would be unwise to correct the obvious errors in Bonnet's synonymy now, without a thorough revision of the genus *Gasteracantha* which is needed to clarify the taxonomic relationships of these species. Until such a revision is published, I suggest that the names *G. cancriformis* (probably introduced from North America) and *G. mammosa* (probably introduced from Asia) be used for the two species now found in Hawaii.

G. cancriformis has been found on Hawaii, Maui, Molokai, Oahu, Kauai, and Niihau. In addition to the Kauai specimens cited above, I have identified specimens of *G. mammosa* from Nago, Okinawa (15•XI•1986, L. Pinter); Panaewa, Hawaii (28•II•1985, A. Hara); Haiku, Maui (18•II•1988, F. Britain); and Kalaupapa, Molokai (4•IV•1989, L. Pinter). Voucher specimens are deposited in the Hawaii State Department of Agriculture collection, Honolulu, and in my personal collection. **L. Pinter.**

MAY

The one thousandth meeting of the Hawaiian Entomological Society was held in the Atherton Halau at the Bernice P. Bishop Museum, beginning at 7:00 p.m., Monday, May 8, 1989, with President Patrick Conant

presiding. This was a special celebration of the Society's 1000th meeting; the first meeting having been held in the Board Room of the old Bureau of Agriculture and Forestry in Honolulu on January 26, 1905 (PHES 1:5, 1906). Thirty-one members and eight guests attended.

Program: Five senior members of the Society spoke on various aspects of the meeting's theme: The Hawaiian Entomological Society, 1905-1989: a Historical Perspective. The speakers were: Dr. John W. Beardsley, Professor and Chairman, Department of Entomology, University of Hawaii at Manoa; Dr. D. Elmo Hardy, Professor Emeritus, Department of Entomology, UHM; Mr. William Look, Hawaii State Department of Agriculture (retired); Dr. Wallace C. Mitchell, Professor Emeritus, Department of Entomology, UHM; and Mr. Fred Bianchi, Entomologist, Hawaiian Sugar Planters' Association Experiment Station (retired).

JUNE

The 1001st meeting of the Hawaiian Entomological Society was held in the Board Room at the Bernice P. Bishop Museum, Honolulu, beginning at 2:00 p.m., Monday, June 19, 1989, with President Conant presiding. Nineteen members and four guests attended.

Program: Mr. John Strazanac, Department of Entomology, University of Hawaii at Manoa, spoke on the topic "Inside Southwest Africa: an Entomological Journey."

NOTES AND EXHIBITIONS

Termatophyloides sp. (Heteroptera: Miridae): Specimens of a very small (ca 2.0mm long) mirid bug, which was first collected from light trap material from Honolulu International Airport in May 1981 by J.W. Beardsley, were recently determined as *Termatophyloides* sp. by G.M. Stonedahl at the Commonwealth Institute of Entomology in London. In addition to the light trap specimens, this mirid was collected on 26•X•1988 at Palolo, Oahu on *Clidemia hirta* by M. Early Chun. These appeared to prey on the clidemia thrips, *Liothrips urichi* Karney, when held in the laboratory, indicating that this mirid may have a negative impact on the thrips, which was purposefully introduced into Hawaii from Fiji in 1953 to combat *Clidemia* infestations here. Dr. Stonedahl suggested that the mirid may have been introduced into Hawaii on *Clidemia* and that it probably originated from tropical America. Voucher specimens are in the collections of the Department of Entomology, U.H. Manoa, and the Hawaii State Department of Agriculture. J.W. Beardsley, B. Kumashiro and M. Early Chun.

Macroura sp. (Coleoptera: Nitidulidae): Dr. Beardsley exhibited specimens of a black nitidulid beetle of the genus *Macroura* which were collected on Oahu. This is a new state record. The beetle was first collected at Kahuku in November 1983 by R. Ito. There are four other specimens in the U.H. Entomology Collection, taken at Kailua, Waimanalo and Manoa, during 1985-1989. Nothing is known about the habits of this beetle. The

Waimanalo specimen was taken sweeping weeds and grass. Identification was made by Dr. Samuelson who noted that *Macrourea* is an Indoaustralian genus which has reached various Pacific Islands. Grouvelle (1913, Coleop. Cat. 15(56):156) listed 28 species. The genus has not been reported previously from Hawaii. **J.W. Beardsley and G.A. Samuelson.**

Gall-forming **Epichrysomaline wasp** from *Ficus microcarpa* leaves (Hymenoptera: Chalcidoidea): Specimens of leaf galls from Chinese banyan (*Ficus microcarpa*), and the chalcidoid wasp which produced them, were exhibited by Dr. Beardsley, who first noticed these galls on *E. microcarpa* trees on the University of Hawaii Manoa campus on May 18, 1989. Wasps reared from these galls were determined by Beardsley (later confirmed by E. Grissell of the USDA Systematic Entomology Laboratory in Washington, D.C.) as belonging to an undetermined species of the subfamily Epichrysomalinae (possibly a species of *Camarothorax* according to Grissell). This subfamily formerly was placed in the Pteromalidae, but Boucek (1988, Chalcidoidea of Australia) transferred the group to the Agaonidae. Apparently, all other species of this group with known biologies develop within the synconia of various *Ficus* species, and no others are known which form leaf galls. Voucher specimens are in the Department of Entomology, U.H. Manoa. **J.W. Beardsley.**

Name changes for Hawaiian Diptera: The following recently published nomenclatural changes affect species present in Hawaii.

Muscidae. *Lispocephala* Pokorny, 1893 has been replaced by *Caricea* Robineau-Desvoidy, 1830 and *Orthellia* Robineau-Desvoidy, 1863 by *Neomyia* Walker, 1859. These synonymies have been established by Adrian Pont in the Catalogue of Palearctic Diptera and in the Catalog of the Diptera of Australia and Oceania.

Tephritidae. Changes of names for Hawaiian fruit flies. In the recent work of R.A.I. Drew, 1989, Tropical Fruit Flies (Tephritidae-Dacinae) of the Australasian and Oceanian Regions, Mem. Qld. Mus. 26:521p., *Bactrocera* Macquart is elevated to generic status. This requires the following combination changes: *Dacus dorsalis* Hendel is now *Bactrocera dorsalis* (Hendel). *Dacus latifrons* (Hendel) is now *Bactrocera latifrons* (Hendel). *Dacus cucurbitae* Coquillett is now *Bactrocera* (*Zeugodacus*) *cucurbitae* (Coquillett). **D.E. Hardy.**

Uroplata girardi Pic (Coleoptera: Chrysomelidae): A single adult specimen of this beetle was collected from *Ocimum basilicum* (basil) at Kahului, Maui, and was en route to California when the interception was made by N. Hashimoto of USDA-APHIS. On March 10, 1989, T. Hori collected four adults which were feeding on leaves of basil growing in Happy Valley, Maui. Specimens were identified by D. Tsuda. Later, on March 20, 1989, W. Bates submitted more adults, also from basil in Happy Valley, to B. Kumashiro who identified them as *U. girardi*. P. Conant visited the basil grower in Happy Valley on June 7, 1989. Several more adults were collected from damaged leaves. The grower mentioned that several plants were unmarketable due to feeding damage. Specimens were deposited in the University of Hawaii Entomology Department and Hawaii Department of Agriculture collections.

Lantana camara, the natural host of *U. girardi*, is uncommon in the Happy Valley area, except for a purple flowered ornamental variety covering a small plot approximately 200m away from the infested basil. D. Flavin reported that the beetle was uncommon in this lantana planting in March.

U. girardi was introduced into Hawaii in 1961 from Brazil, and 1974 from Australia, for control of *L. camara*. It was first released on Maui in 1965, but its recovery was never reported. **P. Conant and D.M. Tsuda.**

Annona seed wasp, *Bephratelloides cubensis* (Ashmead) (Hymenoptera: Eurytomidae): Cherimoya (*Annona cherimola*) fruits infested with the annona seed wasp were collected in Kapahulu, Honolulu, Oahu on August 26, 1986 by M. Pang. The wasp was later collected from atemoya (a cherimoya X sugar apple hybrid) at Waianae, Oahu on August 3, 1987 by W. Yee. It also was collected from soursop (*A. muricata*) from Waipahu, Oahu on April 12, 1989 by R. Heu, K. Minami, and R. Macapinlac. Cherimoya, atemoya, and soursop are new Hawaiian host records for this wasp. Identification was made by B. Kumashiro. The wasp was first collected from sugar apple (*A. saquamosa*) on Oahu in 1986 (Heu, 1988, PHEs 28:4).

Cherimoya fruit infested with the annona seed wasp also were collected at Kurtistown, Hawaii Island on February 2, 1989 by E. Weinert. This is a new island record. Identification of the wasp was made by B. Kumashiro. **R. Heu, B. Kumashiro, and E. Yoshioka.**

Yellow sugarcane aphid, *Sipha flava* (Forbes) (Homoptera: Aphididae): Roadside grass infested with this aphid was collected at the H3-Mokapu Interchange/Kaneohe Bay Drive, Oahu, on April 19, 1989 by A. Yee. Identification of the aphids was made by D. Tsuda, U.H. Entomology Department. Specimens of this aphid were also collected from pangola grass (*Digitaria eriantha* subsp. *pentzii* (Stent) Kok) at Kapahi, Kauai on May 25, 1989 by J. Vilela. Identification was made by B. Kumashiro, Hawaii Department of Agriculture. Oahu and Kauai are new island records for this aphid which was previously known from Hawaii Island (Beardsley et al., January 1989, Notes & Exhibitions). **D.M. Tsuda, D. Sugawa and R. Heu.**

Sugarcane lace bug, *Leptodictya tabida* (Herrich-Schaeffer) (Hemiptera: Tingidae): Specimens of the sugarcane lace bug were collected from Guinea grass (*Panicum maximum* Jacq.) and Napier grass (*Pennisetum purpureum* Schumach.) in Kona on December 20, 1988 by S. Matayoshi and L. Doi. Specimens were also collected from sugarcane in Wahiawa, Kauai by C. Ragasa on March 1, 1989. Identification of the lace bug was made by B. Kumashiro. Hawaii Island and Kauai are new island records for the lace bug, which previously was found infesting sugarcane on Maui in 1985 (Heu, 1986, PHEs 27:10), Molokai in 1986 (Conant, 1988, PHEs 27:10), and Oahu in 1987 (Ota & Heu, 1989, PHEs 29:9). **S. Matayoshi, A. Ota, D. Sugawa and R. Heu.**

JULY

The 1002nd meeting of the Hawaiian Entomological Society was held at the Bernice P. Bishop Museum, beginning at 7:00 p.m., Wednesday, July

19, 1989, with President Conant presiding. Fifteen members and five guests attended.

Program: Dr. Chris Simon, Department of Biology, University of Hawaii Manoa, spoke on the topic "Incorporating Molecular Genetic Techniques in Systematic Studies of Insects."

Election of New Members: The following people were elected to membership in the Society: Mr. Arthur Medeiros, Haleakala National Park, Maui; Ms. Caitlin O'Connell, Entomology Department, B.P. Bishop Museum; and Ms. Agnes Vargo, American Samoa Community College, Pago Pago.

NOTES AND EXHIBITIONS

Hylephila phyleus (Drury) (Lepidoptera: Hesperidae) Ovipositing on *Oxalis*: In the subfamily Hesperinae, which includes the fiery skipper (*Hylephila phyleus*), known larval food plants are exclusively monocotyledons. Larvae of the fiery skipper feed on common lawn grasses such as Bermuda grass in Hawaii. Females usually lay eggs singly on the host plant. On two occasions I observed females of this skipper laying eggs on the yellow wood sorrel (*Oxalis corniculata* L.) which is a dicotyledon. The first observation was made on 18•IV•1989 at the UH campus. The second one was made on 6•VII•1989 at the Waimanalo Experimental Station. H. Chiba.

Cybocephalus nipponicus Endrody-Younga (Coleoptera: Nitidulidae): *Cybocephalus* is a genus of a minute predatory beetle, usually placed in the Nitidulidae as a subfamily, Cybocephalinae, but which resemble tiny Coccinellidae in having a convex body form with elytra extending to near the end of the abdomen. So far as is known, all *Cybocephalus* species develop as predators of scale insects (principally Diaspididae) and whiteflies (Clausen 1940, Entomophagous Insects, p. 570-71). Although species of this genus have been utilized occasionally in biological control programs, there are no records of any species having been introduced into Hawaii. Therefore, the discovery of a species of this genus on Maui and Hawaii Islands, discussed below, constitutes a new state record.

During May 1989, a single male specimen of an unidentified *Cybocephalus* species was found by Dr. Beardsley in material from a suction trap operated by Dr. Aubrey Moore in a vegetable field at Kula, Maui. This material had been collected during March and April 1989. During June, bird of paradise foliage infested with coconut scale, *Aspidiotus destructor* Signoret, was submitted to Mr. Tsuda for identification by R. Iwata. The material was collected in Hilo on June 8, 1989. Mr. Tsuda noticed some unusual small, dome-like cocoons made up largely of detached scale covers, on the infested leaves. Most of these were empty, but three adult *Cybocephalus* beetles (2 males, 1 female), apparently the same species as the Maui specimen, were recovered. A few larvae believed to be *Cybocephalus* also were found.

Reference to a paper on Micronesian Cybocephalidae by S. Endrody-Younga (1971, Insects of Micronesia 16(7):281-285) suggested that Hawaiian specimens might be *C. nipponicus* Endrody-Younga, a species known to

be widely distributed in the Palearctic and Oriental Realms, as well as in Micronesia. We compared our specimens with paratypes of *C. nipponicus* from the Bishop Museum collection, and found no difference between them. Therefore, the Hawaiian *Cybocephalus* is provisionally assigned to that species, pending examination by a specialist. Adults of this species are slightly more than one mm long, convex, with shiny black elytra. Males have the head and prothorax orange to yellowish brown, while females are almost entirely black. Voucher specimens are in the collection of the Department of Entomology, University of Hawaii Manoa. J.W. Beardsley and D.M. Tsuda.

AUGUST

The 1003rd meeting of the Hawaiian Entomological Society was held at the Komohana Agricultural Complex, University of Hawaii at Hilo, Hawaii beginning at 12:00 p.m., Monday, August 14, 1989, with President Conant presiding. Thirteen members and ten guests attended.

Program: Mr. William Mull, a well-known nature photographer, gave a presentation titled: "Hawaiian Invertebrates in Color: A Slide Show." Following the meeting, Mr. Mull led a field trip to the Olaa Tract of Hawaii Volcanoes National Park, which was attended by several members and guests.

Election of New Members: Mr. Brian Bush, Ms. Cathy Mello and Ms. Lori Nago were elected to membership in the Society. All three are research support staff members at the Beaumont Laboratory, College of Tropical Agriculture and Human Resources, University of Hawaii, in Hilo.

SEPTEMBER

The 1004th meeting of the Hawaiian Entomological Society was held in the Board Room, Bernice P. Bishop Museum, Honolulu, beginning at 7:00 p.m., Monday, September 11, 1989, with President Conant presiding. Ten members attended.

Program: Dr. Robin Rathman, Assistant Entomologist, Department of Entomology, University of Hawaii Manoa, spoke on the topic "Influence of Native Habitat on Arthropods Colonizing Apples."

NOTES AND EXHIBITIONS

Liothrips varicornis Hood (Thysanoptera: Phlaeothripidae): This thrips is known as the hollyhock thrips in California. It is known to occur also in Washington State, Mexico, Texas, Florida and El Salvador. Live specimens of the thrips were first collected in the State by A. Ota in Pukalani, Maui, on June 7, 1989, on a native plant, *Abutilon menziesii*. Subsequently, it was collected by M. Steuermann in Ulupalakua on *Hibiscus* sp. on June 15, 1989. R. Nakagawa found it seriously damaging potted native Malvaceae, including *Kokia dryanarioides*, *Hibiscadelphus* sp. and *A. menziesii*, at the State Divi-

sion of Forestry and Wildlife nursery in Kahului on June 26, 1989. P. Conant collected it at the Makawao fire station and in Kula on *Hibiscus* sp., on July 12, 1989.

Both adults and larvae of this thrips feed on Malvaceae, especially on the younger stem tissue. The larvae are dark reddish orange while the adults are very dark black. Feeding damage can be heavy, causing depressions in the bark, leaf abscission, and may kill the entire stem. Positive identification was made by S. Nakahara of the USDA Systematic Entomology Laboratory. **A. Ota, P. Conant and B. Kumashiro.**

Dysmicoccus neobrevipes Beardsley (Homoptera: Pseudococcidae): Specimens of this mealybug were found inside the closed blossom cups of pineapple fruit at Kapalua, Maui. Dr. J.W. Beardsley observed this same phenomenon on Molokai in 1979. Apparently the mealybugs enter the open blossoms of the pineapple during anthesis. An examination of open pineapple blossoms revealed the presence of mealybug crawlers. Some green pineapples had open fruitlets which were plugged with soil. When soil plugs were removed, ants (*Pheidole megacephala* (Fabricius)) and mealybugs were found inside the fruitlets. It is not known if ants prevent the fruitlets from closing, if ants dig burrows to the enclosed mealybugs, or if the ants seek and cover those fruitlets which have not closed for some other reason. The occurrence of *D. neobrevipes* inside pineapple fruit may have serious implications for mealybug control and quarantine procedures. **G.C. Jahn and J. Koga.**

New Aphid Records for Hawaii (Homoptera: Aphididae): Beginning November 1987, a survey of alate aphids was made in the Kula and Pulehi region on the island of Maui. Yellow pan traps were set out, and aphids were collected by Dr. John Cho of the University of Hawaii Plant Pathology Department and Mr. Lance Kanemoto of the Kula Agricultural Experimental Station. The aphids were sent to and identified by Dr. David Voegtlin of the Illinois State Natural History Survey Division. The following species, reported here as new state records, were first collected during November, 1987. Voucher specimens are in the collection of the Entomology Department, University of Hawaii.

Tetraneura nigriabdominalis Sasaki. This aphid belongs to the subfamily Pemphiginae, and is characterized by possessing short, pore-like cornicles and short antennae with a short terminal filament, unlike typical aphids (subfamily Aphidinae) which have longer antennae and longer terminal filaments. It has been captured in pan traps in relatively large numbers and appears to be well established in the Kula region. In literature it is reported to be a pest of rice and sugarcane. Colonies develop on the roots of various grasses (Blackman and Eastop, 1984, *Aphids on the World's Crops*. John Wiley & Sons).

Dysaphis acupariae Buckton. This aphid is a member of the subfamily Aphidinae, tribe Macrosiphini. Host plants reported in the literature include *Plantago major* and *P. lanceolata*, the broad-leaved and narrow-leaved plantains, respectively.

Hayhurstia atriplicis (L.). This aphid is another member of the Macrosiphini. It is reported to feed on *Chenopodium*. **R.H. Ebesu.**

New Aphid Records for the Island of Maui (Homoptera: Aphididae): In addition to the new state records cited above, the following species, not previously recorded from Maui, were taken in yellow pan traps operated in the Kula area during late 1987 and 1988. Identifications were by Dr. David Voegtlin.

1. *Acyrtosiphon kondoi* (Shinji)
2. *Aphis fabae* (Scopoli)
3. *Aphis oenotherae* (Oestlund)
4. *Aulacorthum solani* (Kaltenbach)
5. *Lipaphis erysimi* (Kaltenbach)
6. *Rhopalosiphum padi* (L.)
7. *Rhopalosiphum rufiabdominalis* (Sasaki)
8. *Therioaphis trifolii* (Monell)
9. *Toxoptera citricidus* (Kirkaldy)
10. *Uroleucon sonchi* (L.)
11. *Vesiculaphis caricis* (Fullaway)

Vouchers are deposited in the U.H. Manoa, Department of Entomology collection. **R.H. Ebesu.**

First Records of Male Aphids in Hawaii (Homoptera: Aphididae): Among aphid specimens collected in yellow pan traps at Kula, Maui and determined by Dr. David Voegtlin (see previous notes) there were several adult male alates, including one determined provisionally as the rusty plum aphid, *Hysteroneura setariae* Thomas. Other males were determined only to genus, as *Aulacorthum* sp., *Dysaphis* sp., *Myzus* sp. and *Rhopalosiphum* sp. These records comprise the first confirmed occurrences of male aphids in the Hawaiian Islands. Vouchers are in the U.H. Manoa Entomology collection. **R.H. Ebesu.**

OCTOBER

The 1005th meeting of the Hawaiian Entomological Society was held at the Manoa Library, Honolulu, beginning at 2:00 p.m., Monday, October 23, 1989, with President Conant presiding. Eight members and one guest attended.

Program: Dr. Todd Shelly of the Hawaiian Evolutionary Biology Program, University of Hawaii at Manoa, spoke on the topic "Mating Behavior of the Hawaiian Cricket, *Laupala palolo*."

NOTES AND EXHIBITIONS

Aleurocybotus occiduus Russell (Homoptera: Aleyrodidae): Specimens of a whitefly, new to Hawaii, were collected on Australian carpet grass, *Axonopus affinis*, at Puna, on the island of Hawaii, on November 1, 1988 by S. Matayoshi. It was identified as *Aleurocybotus occiduus* Russell by S. Nakahara, USDA Systematic Entomology Laboratory, and is the twentieth whitefly

species recorded for the state. *A. occiduus* also occurs in California and Arizona on various grasses. Among the hosts recorded in literature which are found in Hawaii are nutgrass (*Cyperus rotundus*), finger grass (*Chloris* sp.), Bermuda grass (*Cynodon dactylon*), barnyard grass (*Echinochloa crusgalli*), Dallis grass (*Paspalum dilatatum*), Italian millet (*Setaria italica*), Sudan grass (*Sorghum sudanense*), and corn (*Zea mays*). Voucher specimens are in the collection of the Hawaii State Department of Agriculture.

A. occiduus was collected by V. Chang on sugarcane in a greenhouse on the grounds of the Hawaiian Sugar Planters' Association at Aiea, Oahu on September 6, 1989, for new island and host records. On September 19, 1989, it was collected at Lahaina, Maui on sugarcane by V. Chang for a new island record. **B. Kumashiro, S. Matayoshi and V. Chang.**

Maconellicoccus hirsutus (Green) (Homoptera: Pseudococcidae): The Egyptian hibiscus mealybug was collected at Lihue, Kauai on *Hibiscus rosa-sinensis* by L. Ishii on August 8, 1989, for a new island record. Identification was made by B. Kumashiro, Hawaii Department of Agriculture, and confirmed by J.W. Beardsley, University of Hawaii. This mealybug was first discovered in the state at Kahala, Oahu, on hibiscus in September 1983 (Beardsley 1985, PHEs 25:27). In April 1985, it was first collected on Maui at Kaanapali (Beardsley 1986, PHEs 27:14). **B. Kumashiro and L. Ishii.**

NOVEMBER

The 1006th meeting of the Hawaiian Entomological Society was held at the Atherton Halau, Bernice P. Bishop Museum, Honolulu, beginning at 7:00 p.m., Monday, November 13, 1989, with President Conant presiding. Eleven members and one guest attended.

Program: Dr. Vincent P. Jones, Department of Entomology, University of Hawaii at Manoa, spoke on the topic "Generic Sampling Plans for Spider Mites and their Implications for Pest Management."

NOTES AND EXHIBITIONS

Stromatium longicorne (Newman) (Coleoptera: Cerambycidae): Two specimens of this longicorn beetle, collected by Ernest Yoshioka from lumber in Puna, Hawaii Island on 15•III•1989, constitute a new state record. Identification was by G.A. Samuelson; specimens deposited in BPBM and HDOA. *Stromatium longicorne* is an Oriental species, belonging to the Hesperophanini. It resembles superficially the adventive *Gelonaetha hirta* (Fairmaire), but has numerous pustules on the elytra, which the latter lacks. Furthermore, *G. hirta* is in a different tribe, Callidiopini. *S. longicorne* ranges from India and southern China through SE Asia, Philippines, Taiwan, and the Ryukyu and Bonin Islands of Japan. Gressitt (1939, Lingnan Sci. J. 18:11) reported that this species tunnels in the timber in houses, causing considerable damage to dwellings in the Ryukyus and Taiwan. It is probable that our specimens arrived in imported lumber from Asia or the western

Pacific and the species may not be permanently established here. G.A. Samuelson and C.J. Davis.

Rhipiphorothrips pulchellus Morgan (Thysanoptera: Thripidae): The only record of this species in Hawaii was based on specimens intercepted on koa haole seed pods (*Leucaena leucocephala*) at a preclearance inspection in Honolulu in December 1967 (1969, PHES 20:272). At that time, it was published as a new state record; however, there had been no subsequent records, which led to doubt that it had become established.

Recently, several additional collections of this thrips were made. In June 1988, specimens of *R. pulchellus* were collected from beef steak plant (*Acalypha wilkesiana*) at Makiki, Oahu by M. Early Chun. Subsequently, in September 1988, collections were made from mountain apple leaves (*Eugenia malaccensis*) in Nuuanu by K. Murai, and from natal plum, (*Carissa grandiflora*) on the grounds of the University of Hawaii at Manoa by D. Tsuda. On October 18, 1989, specimens were collected from mango leaves (*Mangifera indica*) in Pauoa by P. Conant and W. Hudson. The thrips was tentatively identified by D. Tsuda, University of Hawaii, and confirmed by S. Nakahara, Systematic Entomology Lab, USDA, Beltsville, MD.

This thrips is often found in association with the redbanded thrips, *Selenothrips rubrocinctus* (Giard). Outside of Hawaii, *R. pulchellus* has been found in Sri Lanka, Java, Philippine Islands and Taiwan. It is reported to be injurious to grapevine in Sri Lanka, but is probably a minor pest elsewhere. B. Kumashiro and D.M. Tsuda.

DECEMBER

The 1007th meeting of the Hawaiian Entomological Society was held at the Manoa Library, Honolulu, beginning at 2:00 p.m. on Tuesday, December 19, 1989, with President Conant presiding. Fifteen members attended.

Program: President Conant addressed the Society on the topic "Banana Bunchy-Top Disease, A New Threat to Banana Cultivation in Hawaii."

Election of New Members: The following four people were elected to membership in the Society: Mr. William Hudson, Hawaii State Dept. of Agriculture Entomologist for Maui County; Mr. Myron Isherwood, Hawaii State Dept. of Agriculture, Plant Pest Control Branch Chief; Mr. Allen Phillips, U.H. Manoa Department of Biology, graduate student; Dr. Robin Rathman, Assistant Entomologist, Dept. of Entomology, U.H. Manoa.

Officers for 1990: The following officers were elected to serve during 1990:

President: Dr. Stanley Higa (1989 President-Elect).

President Elect: Dr. Marshall Johnson.

Secretary: Mr. David Preston.

Treasurer: Mr. John Strazanac.

Advisor: Mr. Dick Tsuda.

Election of New Honorary Members: Dr. Minoru Tamashiro, Professor Emeritus, Department of Entomology, University of Hawaii at Manoa and Dr. Yoshinori Tanada, Professor Emeritus, University of California,

Berkeley, both of whom are past Presidents of the HES, have been elected as Honorary Members of the Society.

Amendment to the By-Laws: A proposed amendment to Article II, Section D of the by-laws of the Society, which was previously circulated by mail to the entire membership, was formally accepted by the members present. The amended section now reads as follows:

Full membership dues shall be \$15.00 annually. Student membership dues shall be \$10.00 annually. Retired and Honorary members shall be exempt from paying dues.

This increase in dues is effective January 1, 1990.

President-Elect, Dr. Stanley Higa accepted the gavel from retiring President Conant. Dr. Higa stated that he will attempt to reinstate the Society's annual dinner meeting, which was not held during 1988 and 1989. Dr. Beardsley suggested holding the dinner meeting earlier in the year, rather than in December, because many members are away from Hawaii during December.

NOTES AND EXHIBITIONS

Phasioormia pallida Townsend (Diptera: Tachinidae): This tachinid fly is new to Hawaii. The first two specimens were taken at UV light on sheet at Ohikilolo, Oahu, 11•VI•1989 by Patrick Conant, Steven L. Montgomery, and David J. Preston. Subsequently, three additional specimens were collected on the Schofield-Waikane Trail, Oahu, 30•IX•1989, from UV light trap and at sheet, by Keith Arakaki, Cynthia Fritzler, and John Strazanac. Identifications were made by Neal L. Evenhuis, Bishop Museum. Voucher specimens are in the Bishop Museum collection.

The type locality of *P. pallida* is Singapore. Specimens in BPBM Collection are from Sarawak (Borneo). There are no known hosts for this species; other members of the tribe (Ormiini) are parasites of Lepidoptera and Orthoptera.

There are only two species known in the genus *Phasioormia*. The other species, *P. bicornis* (Malloch), is from India and peninsular Malaysia. **D.J. Preston.**

Pantala hymenaea (Say) (Odonata: Libellulidae): A single male specimen of this dragonfly was collected by Mr. William DeClue from Makakilo, Oahu, on Sept. 25, 1989. Identification was made by Francis G. Howarth, Bishop Museum.

This skimmer is easily distinguished from our only other skimmer, *P. flavescens* (Fabricius), by having a round brown spot at the base of the hindwing. It ranges throughout the U.S. and southern Canada, south throughout Central and South America, including the Bahamas, Bermuda, West Indies, and Galapagos. This is the first record of *P. hymenaea* in Hawaii. The voucher specimen is in the B.P. Bishop Museum collection. **D.J. Preston.**

Siphonatrophia cupressi (Swain) (Homoptera: Aphididae): Another aphid species new to Hawaii has been identified from material collected in

yellow pan traps in the Kula region of Maui. This aphid, *Siphonatrophia cupressi* (Swain), is known to infest cypress trees in California. Specimens were collected at the U.H. College of Tropical Agriculture Kula Research Station, elevation 3,000 ft. Identification was by Dr. David Voegtlin of the Illinois State Natural History Survey and voucher specimens are in the collection of the Dept. of Entomology, U.H. Manoa. **R.H. Ebesu.**

Aulacaspis alisiana Takagi (Homoptera: Diaspididae): Leaves of rambutan (*Nephelium mutabile*) from Hilo, Hawaii, which were infested with an armored scale insect, were submitted to the College of Tropical Agriculture and Human Resources, Plant Diagnostic Center, during September, for pest identification. Mr. Dick Tsuda made slide preparations and identified the scale as an unknown species of *Aulacaspis*. Specimens subsequently were referred to Dr. Beardsley for further study. He tentatively identified the scale as *A. alisiana* Takagi, described from Taiwan (1970, Insecta Matsumurana 33:89). This determination was confirmed by Mr. Donald Riley of the USDA-ARS Systematic Entomology Laboratory, Beltsville, MD. This is a new state record. Rambutan also appears to be a new host record for this scale which was known previously from the leaves of *Litsea* sp. and *Neolitsea acuminatissima*. In addition to Taiwan, it is known from Japan and China, based on USDA-ARS specimens, according to Mr. Riley. Voucher specimens are in the Department of Entomology, University of Hawaii and the USDA Systematic Entomology Lab in Beltsville.

On rambutan, the individual white female scales were widely scattered on both upper and lower leaf surfaces, usually near leaf veins or leaf edges. Some females were accompanied by a large group (ca 20-40) of elongate, carinate, white male scales, in roughly parallel alignment, creating a conspicuous white patch on the leaf. **J.W. Beardsley and D.M. Tsuda.**

NEW IMMIGRANT RECORDS FOR THE YEAR 1989

The following species were reported for the first time in the Hawaiian Islands during 1989 on the dates indicated in the text. Species marked with an asterisk is considered as doubtfully established as record is based on a single collection.

Chance Immigrants

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<i>Sipha flava</i> (Forbes) (Homoptera: Aphididae)	2
<i>Calophya rubra</i> (Blanchard) (Homoptera: Psyllidae)	4
<i>Taeniaptera angulata</i> (Loew) (Diptera: Micropezidae)	5
<i>Ferrisia consorbrina</i> Williams & Watson (Homoptera: Pseudococcidae)	5
<i>Teratophyloides</i> sp. (Heteroptera: Miridae)	7
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? <i>Camarthorax</i> sp. (Hymenoptera: Agaonidae)	8

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<i>Cybocephalus nipponicus</i> Endrody-Younga (Coleoptera: Nitidulidae)	10
<i>Liothrips varicornis</i> Hood (Thysanoptera: Phlaeothripidae)	11
<i>Tetraneura nigriabdominalis</i> Sasaki (Homoptera: Aphididae)	12
<i>Dysaphis aucupariae</i> Buckton (Homoptera: Aphididae)	12
<i>Hayhurstia atriplicis</i> (L.) (Homoptera: Aphididae)	13
<i>Aleurocybotus occiduus</i> Russell (Homoptera: Aleurodidae)	13
* <i>Stromatium longicorne</i> (Newman) (Coleoptera: Cerambycidae)	14
<i>Phasioormia pallida</i> Townsend (Diptera: Tachnidae)	16
* <i>Pantala hymenaea</i> (Say) (Odonata: Libellulidae)	16
<i>Siphonatrophia cupressi</i> (Swain) (Homoptera: Aphididae)	16
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<i>Cardiastethus minutissimus</i> Usinger (Heteroptera: Miridae)	152

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Recovered During 1989**

<i>Lius poseidon</i> Napp (Coleoptera: Buprestidae)	2
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NAME CHANGES AND CORRECTIONS CITED IN 1989 NOTES

Name Previously Used	Changed to	Reason*	Page
<i>Cycasia oculata</i> Malloch	<i>Ornithoschema mallochi</i> Hardy	Hom.	1
<i>Cycasia flava</i> Hardy	<i>Ornithoschema oculatum</i> de Meijere	Syn.	1
<i>Gasteracantha</i> sp.	<i>Gasteracantha mammosa</i> C.L. Koch	Det.	6
<i>Lispocephala</i> spp.	<i>Caricea</i> spp.	Syn.	8
<i>Orthellia</i> spp.	<i>Neomyia</i> spp.	Syn.	8
<i>Dacus cucurbitae</i> Coquillett	<i>Bactrocera cucurbitae</i> (Coquillett)	Syn.	8
<i>Dacus dorsalis</i> (Hendel)	<i>Bactrocera dorsalis</i> (Hendel)	Syn.	8
<i>Dacus latifrons</i> (Hendel)	<i>Bactrocera latifrons</i> (Hendel)	Syn.	8

*Det. = determined, Hom. = homonym, Syn. = synonym.

OFFICERS AND COMMITTEES FOR 1989

Elected Officers

President	Patrick Conant
President-Elect	Stanley Higa
Secretary	Nicanor Liquido
Treasurer	John Strazanac
Advisor (Past President)	John Armstrong
Advisor	Lorna Arita

Standing Committees

Editorial	John W. Beardsley, Editor J.W. Gilmore, M.W. Johnson, C.R. Joyce, G.A. Samuelson
Finance	Dick Tsuda, Business Manager J.W. Beardsley, Sam Gon, John Strazanac
Program	Chris Simon, Chairman Patrick Conant, Scott Miller
Membership	John Strazanac, Chairman David Preston, Roger Vargas, Ernest Yoshioka
Science Fair	Hide Chiba, Chairman Gary Jahn
Liaison	Larry Nakahara, Chairman Francis Howarth, Julian Yates
Common Names	Ronald Mau, Chairman J.W. Beardsley, B. Kumashiro, R. Kunishi, G. Nishida
Nominations	Neil Reimer, Chairman F. Chang, N.L. Evenhuis, A.N. Hara, S.L. Montgomery

1990 JANUARY

The 1009th meeting of the Hawaiian Entomological Society was held at the Manoa Public Library, Honolulu, starting at 2:00 p.m. on Monday, January 8, 1990, with President Stanley Higa presiding. Eighteen members and two guests attended.

Program: Several members who attended the annual meeting of the Entomological Society of America in San Antonio, Texas during December, 1989, as well as those who attended the First Asia Entomology Conference in Chingmai, Thailand, during November, spoke briefly about these meetings. Speakers were Drs. J.W. Beardsley, M.L. Goff, Scott Miller, W.C. Mitchell and Stephen Saul.

FEBRUARY

The 1010th meeting of the Hawaiian Entomological Society was held in the Board Room, Bernice P. Bishop Museum, Honolulu, beginning at 2:00 p.m., Monday, February 12, 1990, with President Higa presiding. Twenty-two members and one guest attended.

Program: Dr. Joseph C. Stranton, University of Hawaii Department of Arts and Humanities, spoke on the topic "Insects and Their Symbolic Use in Art, Literature and Science Fiction Movies."

Election of New Member: Mr. J. Nickolas Nisson, of the Agricultural Commissioner's Office, Anaheim, California, was elected to membership in the Society.

NOTES AND EXHIBITIONS

Paratettix mexicanus (Saussure) (Orthoptera: Tetrigidae): The family Tetrigidae (pygmy grasshoppers) has not been recorded previously from the State of Hawaii. A single adult specimen was collected by D. Sagawa at the Kauai Community College, Puhi, Kauai on October 23, 1987. Subsequently, additional specimens were taken on Kauai at Lihue, Omao, Wailua and Moloaa. Several of these were collected at lights. During May 1989, specimens of what appeared to be the same species were collected in Kohala on Hawaii Island. Mr. Strazanac, while working with the extensive Orthoptera collection at the Philadelphia Academy of Natural Sciences, compared Hawaiian tetrigid specimens with named material and determined them as *Paratettix mexicanus* (Saussure), a species which is widely distributed in North America. *Paratettix* species are easily recognized by their truncate fastigium (anterior part of vertex of head that projects between the eyes) which has its anterior margin parallel to the anterior-most point of eyes. *P. mexicanus* may be identified easily by its unique dorsoventrally expanded and lobed middle femur. The color pattern is somewhat variable. Most pygmy grasshoppers prefer moist habitats. *Paratettix* species are thought to be semiaquatic as they are strong swimmers, using the expanded middle

femora for that purpose. They are also powerful jumpers and the long-winged morphs are strong fliers. These tetrigids are believed to be algivores or general herbivores, and not of significant economic importance. However, the presence of these grasshoppers was observed where young coffee trees were found girdled near their bases, at AmFac's coffee nursery on Kauai. The damp conditions there may have been ideal for a large population to develop. **B.R. Kumashiro and J.S. Strazanac.**

MARCH

The 1011th meeting of the Hawaiian Entomological Society was held at the Tripler Army Medical Center Officer's Club, Honolulu, beginning at 1:00 p.m., Monday, March 12, 1990, with President Higa presiding. Eighteen members and five guests attended.

Mr. Fred A. Bianch, a long-time active and now honorary member of the Society, was presented with a certificate, in recognition of his many years of service to entomology and to the Hawaiian Entomological Society, at a luncheon held prior to the regular business meeting.

Program: Lt. Col. Bruce Furlow spoke on the subject: "Responsibilities of Military and Department of Defense Entomologists for Pest Management Aspects of Overseas Deployment of U.S. Forces: Case Study, Thailand."

Election of New Member: Dr. Eugene Munroe, systematic entomologist with Agriculture Canada, was elected to membership.

APRIL

The 1012th meeting of the Hawaiian Entomological Society was held in the Board Room, Bernice P. Bishop Museum, Honolulu, starting at 2:00 p.m., Monday, April 9, 1990, with President-elect Dr. Marshall Johnson presiding. Twenty-three members and three guests attended.

Program: Dr. Eugene Munroe, systematic entomologist with Agriculture Canada in Ottawa, spoke on "The Biogeography of Pyraloid Moths in Polynesia."

Election of New Members: Mr. Wayne Brown, graduate student in entomology at University of Hawaii; Dr. Russell Messing, Assistant Entomologist, University of Hawaii; and Dr. F. Christian Thompson USDA-ARS Systematic Entomology Laboratory, Washington, D.C. were elected to membership in the Society.

Announcement: Dr. Johnson announced that Dr. Harry Kaya, Entomologist at University of California, Davis, and long-time member of this Society, has been selected as the Outstanding Alumnus of the University of Hawaii College of Tropical Agriculture and Human Resources, for the year 1990.

MAY

The 1013th meeting of the Hawaiian Entomological Society was held at the Manoa Library, Honolulu, beginning at 2:00 p.m. on Monday, May 14, 1990, with President Higa presiding. Twenty-four members and three guests attended.

Program: Three University of Hawaii entomology students who participated in a recent student research symposium sponsored by the College of Tropical Agriculture and Human Resources, and were each winners in their sections (undergraduate, M.S. candidate and Ph.D. candidate), each presented the papers which they had given at the symposium. The speakers were: Mr. Mark Berman, undergraduate (The White Monarch Butterfly of Hawaii); Ms. Carolina, M.S. student (Host Plant Expansion by the Leaf-miner, *Liriomyza sativae* Blanchard); and Mr. Gary Jahn, Ph.D. student (The Role of Big-Headed Ants in Mealybug Wilt of Pineapple).

Election of New Members: Three new members were approved. They are Dr. Parker Gambino, a post-doctoral research entomologist working on *Vespula* control; Mr. Hector Gonzalez-Hernandez, entomology graduate student, University of Hawaii; and Ms. Wendy Jones, research technician at the U.H. Entomology Department.

Science Fair Committee: Chairman Hide Chiba announced the Society's awards to contestants in the 33rd annual Hawaii Science and Engineering Fair. They were Judy Ng (Senior Division), McKinley High School, and Banning Sung (Junior Division), Waimea Elementary School.

Editorial Committee: President Higa announced the appointment of Dr. Toshi Nishida to the Editorial Committee to replace Mr. Eugene Gilmore who has retired and left the state.

NOTES AND EXHIBITIONS

Thelacantha brevispina (Doleschall) (Aranea: Araneidae), a spiny-backed spider which was first found in Hawaii at Hilo during December 1985 (Kumashiro 1988, PHEs 28:10), and has become a serious residential and agricultural nuisance in several parts of the state, has been determined as *Thelacantha brevispina* (Doleschall) by Dr. Nikolaj Scharff, a spider specialist located at the Zoologisk Museum, Copenhagen, Denmark, who is presently revising the araneid subfamily Gasteracanthinae. Outside Hawaii, *T. brevispina* ranges from the western Pacific to islands north of Madagascar. Field and laboratory tests by J.R. Yates, A.H. Hara and T.Y. Hata have determined toxicity of 13 non-restricted and five restricted insecticides, three detergents, Volck oil and Pinesol disinfectant to adult females of this spider (1989, Insecticide and Acaricide Tests 14:367-368). **J.R. Yates III.**

Editors Note: The spider referred to above as *Thelacantha brevispina* (Doleschall) is the same recent immigrant into Hawaii which L. Pinter identified as *Gasteracantha mammosa* C.L. Koch in a note presented at the HES meeting of April 10, 1989 (see Notes and Exhibitions for that meeting

in this issue). When agreement on the correct name for this species is obtained, the information will be published in a later note.

Solenopsis papuana Emery (Hymenoptera: Formicidae): Ant specimens from Oahu recently were determined by Dr. Roy Snelling of the Los Angeles County Museum of Natural History as *Solenopsis papuana* Emery. This species was first collected by Huddleston and Fluker in Hawaii in 1967, at Mt. Tantalus, Oahu, and at Kaupo, Wailua, Iao Needle Park and Makawao, Maui. They reported it as an unidentified *Solenopsis* sp. (sp. "a") in their 1968 paper on distribution of Hawaiian ants (PHES 20:45-69). I have collected this species also on Molokai, Lanai and Hawaii. *S. papuana* is known from New Guinea, eastern Melanesia, Fiji and Samoa. It prefers rainforest habitats where it develops large, polygynous colonies. This is the first such polygynous ant species able to thrive in wet forests in Hawaii, and it is a potentially serious threat to our endemic forest insects, which have never evolved mechanisms to thwart ant predation. Neil J. Reimer.

Microcanthia humilis (Say) (Heteroptera: Saldidae): One specimen of an unrecognized shore bug was taken by J. Strazanac in Kawai Nui Marsh, Oahu during July 1988. On July 31, 1989, J. Strazanac and C.J. Fritzler collected 28 additional specimens (12 males, 14 females, 2 immatures) along a stream running through Kawai Nui Marsh. Specimens were later identified by Strazanac as *Microcanthia humilis* (Say), a species which is widely distributed in North America. This is a new state record, and the first known immigrant shore bug in Hawaii since an ancient colonizer which gave rise to our complex of endemic *Saldula* species. J.S. Strazanac.

JUNE

The 1014th meeting of the Hawaiian Entomological Society was held at the Manoa Public Library, Honolulu, beginning at 2:00 p.m. on Monday, June 18, 1990, with President-Elect Marshall Johnson presiding. Sixteen members and two guests attended.

Program: Dr. Robin Rathman, Assistant Entomologist at the Department of Entomology, University of Hawaii, spoke on the subject "Resistance Studies on *Liriomyza* Leafminer Parasitoids in Hawaii."

HES Ad Hoc Conference Committee Report: Dr. Johnson, Chairman, submitted the Committee's report, which recommended that planning for a conference, to be held in Honolulu during September or October, 1991, should be initiated. President Higa will be requested to appoint a separate committee to organize and conduct the proposed conference.

NOTES AND EXHIBITIONS

Anthrenus verbasci (Linnaeus) (Coleoptera: Dermestidae): This cosmopolitan dermestid, known as the varied carpet beetle, apparently had never been reported from Hawaii. A series of this species was collected by Valerie de Beaumont-Ross and Al Samuelson in a third-floor storage room of the new Castle Hall at Bishop Museum on 30 April 1990. Specimens were

identified by Samuelson and confirmed by Dr. Richard Beal. They were found in a well-sealed room, which contained only a newly arrived collection of New Guinea artifacts sent from Eugene, Oregon. The beetles had apparently emerged from this material and were found on window sills and the floor. The artifacts were just beginning to be unpacked when the beetles were first noticed. Most beetles were dead when collected but they were in fresh condition; the artifacts had been in the room for only 2-3 days before the beetles were noticed. The artifacts were shipped in a refrigerated container which arrived in Honolulu on 22 April. The container was moved to Bishop Museum on the 27th where it remained for two days for unloading. Thus, there was a period of two days or more when the container could have warmed up, triggering an emergence of the beetles. The artifacts, of the Ruth E. and Wallace R. Ruff Collection, include many pieces made of vegetable fiber and some of these have feathers or fur in their construction, all of which are palatable to this dermestid. *A. verbasci* is a common household pest in the Pacific Northwest, where the artifact collection resided for some years. Although this dermestid was also collected twice in Hilo (single specimen interceptions, Beal records), it is surprising that it has not been detected more frequently in shipments to Hawaii, as it infests a variety of plant and animal products. **G.A. Samuelson and R.S. Beal, Jr.**

Liua poseidon Napp (Coleoptera: Buprestidae): On May 30, 1990 approximately 25 adults of this species were seen along Aiea Loop trail on Oahu (elev. 360m). This is the first recovery of adult specimens of this beetle since its release by the Hawaii Department of Agriculture at this site on November 16, 1988 for control of the forest-pasture weed *Clidemia hirta* (L.) D. Don. Most of the beetles were feeding from the undersides of the leaves, causing noticeable characteristic elongated holes. Only about four larval leafmines were seen in our search, which lasted about one half hour. None of the mines had live larvae in them. The beetles were easy to find along a 200m section of trail, and may have dispersed off the trail as well, although they seemed to prefer the regrowth from trimmed plants along the trail. Foliar damage caused by the adults was light. Damage by *L. poseidon* can be confused with damage caused by *Adoretus sinicus* Bermeister, if one is not familiar with both types. **P. Conant and S. Toba.**

Trichospilus sp., probably *diatraeae* Cherian and Margabandhu (Hymenoptera: Eulophidae): Specimens of a gregarious internal parasitoid, reared by W.D. Perreira from unidentified noctuid moth pupae, have been determined by J.W. Beardsley as a species of the genus *Trichospilus* Ferriere, very probably *T. diatraeae* Cherian and Margabandhu (1942, Indian J. Entomol. 4:101-102). This is a new state record. More than one hundred individuals of this eulophid emerged from two noctuid pupae collected by Mr. Perreira in loose bark at the base of a mango tree, at Waimanalo, Oahu on 19•IV•1990. Specimens were identified using a key to *Trichospilus* species by Boucek (1976, Bul. Entomol. Res. 65:669-681) and the original description of *T. diatraeae*. Confirmation of this identification is being sought. *Trichospilus* is a distinctive genus containing five described species from Africa and south Asia. *T. diatraeae* appears to be the most widely distributed

of these, and is known from India, Burma, south China, Sri Lanka, Mauritius, Papua-New Guinea, and the Solomon Islands. Also, it was purposely introduced, for biological control of lepidopterous sugarcane borers, into Florida and Caribbean islands where it has been reported to be established (Bennett et al. 1987. Florida Entomol. 70:184-86). There are no records of this species having been purposely introduced into Hawaii; therefore, it is assumed to have been accidentally introduced here. **J.W. Beardsley** and **W.D. Perreira**.

Bactrocera latifrons (Hendel) (Diptera: Tephritidae): Adult specimens, tentatively identified by J.W. Beardsley as the solanaceous fruit fly, *Bactrocera latifrons* (Hendel), and later confirmed by D.E. Hardy, were reared from fruit of a naturalized solanaceous weed, apple of sodom (*Solanum linnaeanum* Hepper and Jaeger) which were collected by M. Kido, R. Messing, M.M. Ramadan and G.K. Uchida, southwest of Ulupalakua near Puu Mahoe, at ca 1900 ft elevation, east Maui, on May 7, 1990. This is a new host and island record for the solanaceous fruit fly. **G.K. Uchida**, **M.M. Ramadan** and **J.W. Beardsley**.

JULY

The 1015th meeting of the Hawaiian Entomological Society was held at the Manoa Public Library beginning at 2:00 p.m. on Monday, July 9, 1990, with President Higa presiding. Eleven members and two guests attended.

Program: Mr. Ryan M. Iwaska, Baldwin High School, Maui, spoke on the topic "Biological Control of Pineapple Souring Beetles (Nitidulidae) by *Zeteticontus utilis* Noyes (Hymenoptera: Encyrtidae)."

NOTES AND EXHIBITIONS

Thelacantha brevispina (Doleschall) (Araneae: Araneidae): Specimens of this immigrant spider were collected at a residence in Mililani, Oahu on February 6, 1990 by W. Nagamine. This is a new record for Oahu. With information from S. Hayashi, additional specimens were collected from Pacific Palisades on June 15, 1990 by S. Toba and P. Watanabe. The spider, first known as *Gasteracantha* sp., was collected on Hawaii Island in 1985 (Kumashiro, 1988, PHEs 28:10), Kauai in 1988 (Sugawa, PHEs 30:4), Maui in 1988 (Conant, Notes & Exhibitions 1/89), and Molokai in 1989 (Pinter, Notes & Exhibitions 4/89). **B.R. Kumashiro**.

Brachycyrtarus griseus de Joannis (Lepidoptera: Pyschidae): A pupa of this bagworm was found hanging on a wall of the HDOA Quarantine House at Lihue, Kauai on January 30, 1990 by D. Sugawa. This is a new record for Kauai. This bagworm was first collected in the State on Oahu in 1984 (Heu, 1986, PHEs 27:1-2). Determined by B. Kumashiro, HDOA. **B.R. Kumashiro**.

Sophonia sp., possibly *rufofascia* Kuoh & Kuoh (Homoptera: Cicadellidae): Specimens of this immigrant leafhopper were collected from a lawn at the Hilo Arboretum on Hawaii Island on October 6, 1989 by S. Matayoshi and L. Doi. This is a new record for Hawaii Island. This leafhop-

per was first collected in the State on Oahu in 1987 (Heu & Kumashiro, 1989, PHEs 29:16-17). Determined by B. Kumashiro, HDOA. **B.R. Kumashiro.**

Hysteroneura setariae (Thomas) (Homoptera: Aphididae) on Guam: The rusty plum aphid, *Hysteroneura setariae*, was collected on Guam, in an area of native forest near the northeastern coast on a native monocotyledonous host, *Flagellaria indica* (Flagellaraceae), on June 2, 1990 by J.W. Beardsley and D.M. Nafus. This aphid, which is widely distributed, in normally anholocyclic on grasses in the tropics, and has not been reported previously on Guam. **J.W. Beardsley and D.M. Nafus.**

Eriophyes hibisci Nalepa (Acari: Eriophyidae): Specimens of a mite new to the State of Hawaii were recovered from malformed and galled hibiscus foliage collected at Wheeler Air Force Base at Wahiawa, Oahu on 22 November 1989 by L. Ciechoski. These were identified as *Eriophyes hibisci* Nalepa (for which the name "hibiscus erineum mite" is commonly used), by Dr. M.L. Goff, Entomology Department, University of Hawaii. Jeppson (1975, Mites Injurious to Economic Plants) indicated that this mite attacks Chinese hibiscus (*Hibiscus rosa-sinensis* L.) and perhaps other species of hibiscus as well. It has been reported from Brazil and the south Pacific (Tonga) but is probably more widespread than published records indicate. Subsequent collections on Oahu were from Pearl City, Waimanalo, and several parts of Honolulu, all from Chinese hibiscus. **D.M. Tsuda, B.R. Kumashiro and R.A. Heu.**

AUGUST

The 1016th meeting of the Hawaiian Entomological Society was held at the Campus Center Building, University of Hawaii at Hilo, beginning at 2:00 p.m., Friday, August 10, 1990, with President Higa presiding. Thirteen members and two guests attended.

Program: Dr. Roy Cunningham, USDA-ARS entomologist with the Tropical Fruit and Vegetable Research Laboratory in Hilo, spoke on the subject "Present Status and Future Potential for Tephritid Fruit Fly Eradication in the State of Hawaii."

NOTES AND EXHIBITIONS

Bactrocera latifrons (Hendel) (Diptera: Tephritidae): Adults of the solanaceous fruit fly, *B. latifrons*, were reared from fruit of apple of sodom, *Solanum linnaeanum* (Hepper and Jaeger) which were collected by G.K. Uchida and A. Arakaki in Kilohana, Molokai on June 20, 1990. This is a new island record for the solanaceous fruit fly which has been reported previously only from Oahu and Maui. **G.K. Uchida and M.M. Ramadan.**

SEPTEMBER

The 1017th meeting of the Hawaiian Entomological Society was held at the Manoa Public Library, Honolulu, beginning at 2:00 p.m., Monday, September 10, 1990, with President Higa presiding. Sixteen members and three guests attended.

Program: Dr. J. Kenneth Grace, Assistant Entomologist, University of Hawaii, spoke on the subject "New Directions in Urban Entomology: from the Freezer to the Frying Pan."

Announcements: Dr. Beardsley announced that a conference, tentatively titled "Fighting Alien Fruit Flies in the Unique Hawaiian Environment," sponsored by the University of Hawaii, College of Tropical Agriculture and Human Resources, will be held at the Stouffer Waiohai Beach Hotel, Poipu, Kauai on December 11-13, 1990. Mr. Mike Kido, CTAHR Extension Specialist on Kauai is the conference convener.

NOTES AND EXHIBITIONS

Myllocerus sp. (Coleoptera: Curculionidae): This small weevil was first collected at Hickam Air Force Base, Oahu in July 1978 by J.W. Beardsley, and was reported by him as a new state record in September 1988 (PHES 30:10), at which time only three specimens were known. Several specimens were submitted on August 10, 1990 by N. Warner, a resident of Iroquois Point Naval Housing, and additional specimens were collected at his residence on August 24 by S.Y. Higa, during a pest-call visit. According to the resident, the beetles were observed swarming in large numbers in the evening, at which time they were attracted to lights and became a nuisance. During the day these beetles could be found resting on the walls and eaves of buildings, and were easily collected. A random search of vegetation in the area did not reveal a breeding source of the beetles. Identification was made by B. Kumashiro, Hawaii Department of Agriculture, based on comparison with a specimen previously collected by Beardsley and determined as *Myllocerus* sp. by D.R. Whitehead of the USDA-ARS Systematic Entomology Laboratory in Beltsville, MD. According to Dr. Whitehead, the beetle is probably of Asian origin and no information on its habits is available. **S.Y. Higa.**

Neohydatothrips sp. (Thysanoptera: Thripidae): Specimens of the immigrant thrips reported as *Neohydatothrips variabilis* (Beach) (Tsuda and Sakimura 1988, PHES 28:16) recently were examined by Mr. Sueo Nakahara, thrips specialist with the USDA-ARS Systematic Entomology Laboratory, Beltsville, MD. He found that they are not *variabilis* but represent another, as yet unidentified species of the genus *Neohydatothrips*. This thrips has been found infesting leaves of marigolds (*Tagetes* spp.) on Oahu and Hawaii islands. The Hawaii collection was reported as *Neohydatothrips* sp. (Tsuda 1990, PHES 30:7) because of doubts concerning the original identification. **D.M. Tsuda.**

Anthrax distigma Wiedemann (Diptera: Bombyliidae): Four adults of an immigrant bombyliid fly, *Anthrax distigma* Wiedemann, were reared from nests of the eumenine vespid wasp *Pachodynerus nasidens* (Latreille) and the leaf-cutting bee *Megachile sachauinslandi* Altken. These are new host records for this parasitic fly. The bombyliids emerged from trap nests that were exposed at the University of Hawaii Waimanalo Experiment Station from mid-May until mid-July 1990, and were brought into the laboratory for megachilid bee studies. Two flies emerged from trap nests utilized by *P. nasidens* and two from those utilized by *M. sachauinslandi*. *A. distigma* was not found in nests utilized by another megachilid, *Megachile timberlakei* Cockerell, which were also present. Emerging adults of *A. distigma* left spiny pupal exuviae extruding from the entrance of the host nests, as described by Williams (1945, Aculeate wasps of New Caledonia, with natural history notes. PHES 12:407-452). Hardy (1960, Insects of Hawaii. Vol. 10. Diptera Nematocera-Brachycera, p. 321) speculated that *A. distigma* may parasitize *Eumenes* spp. in Hawaii, as *E. germani* Lucas was recorded as a host in New Caledonia (Williams 1945). However, it appears that this bombyliid has a broader host range than the genus *Eumenes*. The possibility that it may parasitize nests of endemic Hawaiian *Odynerus* species should be investigated. J.-Y. Kim.

Opogona sacchari (Bojer) (Lepidoptera: Tineidae): During May 1990 larvae of an unidentified lepidopterous pest were found feeding at the bases of potted palm seedlings at a nursery in Kohala, Hawaii Island, by J. Lippert. In August 1990 larvae of the same species were collected by Dr. E. Reese of U.H. Zoology Department, from the crown of a rotting coconut tree at Kaneohe, Oahu. Reared adults from these collections were determined as *Opogona sacchari* (Bojer) by D.R. Davis, U.S. National Museum, Washington, D.C. This is a new state record. *O. sacchari*, commonly known as the banana moth, is a widespread species which has been recorded from Africa (Nigeria), Indian Ocean islands (Mauritius, Rodriguez, Seychelles), Canary Is., Madeira Is. and St. Helena in the Atlantic; southern Europe, Central and South America, West Indies and Florida. In Florida, where it apparently became established within the past few years, the moth is primarily a nursery pest, attacking new cuttings of *Dracaena* spp. and ti (*Cordyl-ine terminalis*), and palm seedlings. Larvae normally feed on damaged tissue, then move into healthy tissue to cause more extensive damage (Heppner, J.B., J.E. Pena & H. Glenn 1987, Entomol. Circular 293, Florida Dept. Agric. and Consumer Services). D.M. Tsuda.

Blissus insularis Barber (Heteroptera: Lygaeidae): In August 1990, numerous adults and nymphs of a chinch bug (Lygaeidae) were collected from a sod section of St. Augustine grass, *Stenotaphrum secundatum* (Walter) Kuntze, in the Nuuanu area of Honolulu, and were submitted to the U.H. Insect Diagnostic Clinic by a concerned homeowner. Subsequently, during the same month, additional samples of the bug were recovered from a badly damaged St. Augustine grass lawn in Kaneohe, Oahu, by M. Takemoto, University of Hawaii Urban Extension Agent. The pest was tentatively identified as the southern chinch bug, *Blissus insularis* Barber, by D.M. Tsuda.

The identification was confirmed by T.J. Henry, Systematic Entomology Laboratory, USDA Beltsville, MD. The southern chinch bug is an important pest of St. Augustine grass in Florida, Alabama, Georgia, Texas and other Gulf Coast states, as well as in southern California. According to Kerr (1966, Florida Entomol. 49:10-18) the primary host is St. Augustine grass, but it may feed to some extent on other grasses (bahia, centipede, zoysia, Bermuda) where these are growing in close association with St. Augustine. It prefers the sunny, open areas of lawns where both adults and nymphs feed on basal parts of the grass, causing dwarfing, yellowing, and eventually death. **D.M. Tsuda.**

OCTOBER

The 1018th meeting of the Hawaiian Entomological Society was held at the Manoa Public Library, Honolulu, beginning at 2:00 p.m., Monday, October 15, 1990 with President Higa presiding. Sixteen members and two guests attended.

Election of New Members: Dr. J. Kenneth Grace, Assistant Entomologist, University of Hawaii; Dr. Mary Purcell, post-doctoral entomologist at the U.H. Department of Entomology; Dr. Dan Polhemus, entomologist at the B.P. Bishop Museum; and Dr. Donald Ewart, visiting research entomologist from Australia now working in the termite laboratory at the University of Hawaii, were elected to membership in the Society.

Nominations Committee Report: Committee Chairman Dr. Frank Chang presented the committee's slate of officer nominees for the year 1991, as follows:

President-elect: Dr. Lynn LeBeck and Dr. Nicanor Liquido.

Secretary: Dr. Vince Jones and Mr. David Preston.

Treasurer: Mr. Gordon Nishida and Mr. John Strazanac.

Advisor: Dr. Ray Joyce and Mr. Dick Tsuda.

Election will be by mail ballot.

NOTES AND EXHIBITIONS

Balta sp. (Dictyoptera: Blattellidae): This blattellid cockroach was recently discovered, and appears to have become established on Oahu. Currently it is known from lower, drier elevations, often associated with grasses, including sugarcane. One population appeared to be established in a new home in Kailua. The first specimen recognized as being a new introduction was found in my jeep in Manoa Valley on June 13, 1989. Although at night, the great speed of this cockroach was the first indication to me that I had not seen it before. Specimens were later found in student collections at the University of Hawaii Entomology Department which had been collected as early as December 6, 1988, by D. Theilk. Later collections on Oahu include Kawai Nui Marsh, February 27, 1989, J. McEwen; Ewa, inside and outside of house, August 8, 1989, W. Loui; near Koko Head Recreational Park, in

house, June 12, 1989, H. Roitblat; Kailua, in house, July 18, 1989, J. Strazanac and C.J. Fritzler; Honouliuli, inside and outside of house, at lights, October 24, 1989, Ms Victoria; Newtown, in house, June 4, 1990, R. Furamizo; Ewa, on sugarcane, July 6, 1990; and Waipio Peninsula, in termite trap near irrigation ditch in sugarcane field, September 20, 1990, R. Yamamoto. It is not known from other Hawaiian Islands as yet. It appears also to be present on the Mariana Islands of Guam and Tinian, collected as early as November 22, 1984. Some of the specimens from Guam were identified independently by Louis M. Roth of the Museum of Comparative Zoology at Harvard University, at the same time that J. Strazanac identified the Oahu introductions. Dr. Roth also believes it to be an undescribed form.

This new cockroach can be distinguished from other blattellid cockroaches, including the possibly native *Balta similis* (Saussure), in Hawaii by being straw colored with no strong, distinctive markings, approximately one-half inch long, both sexes fully winged, male subgenital plate symmetrical with a pair of styles symmetrically placed, and very quick, readily taking flight when pursued. **J. Strazanac.**

Rhizoecus saintpauliae Williams (Homoptera: Pseudococcidae): Specimens of a root-infesting mealybug new to Hawaii were submitted to me for identification by Bernarr Kumashiro, taxonomic entomologist for the Hawaii Department of Agriculture. The specimens were collected from roots of pink ginger, at Hawaii Kai, Honolulu, Oahu, 3•VIII•1990 by S. Toba. I tentatively identified the mealybug as *R. saintpauliae* and sent specimens to Dr. D.J. Williams at the CAB International Institute of Entomology in London. Dr. Williams has confirmed my identification. *Rhizoecus saintpauliae* was described from specimens collected on roots of African violets (*Saintpaulia* sp.) in a nursery in Bangkok, Thailand (Williams 1985, Bull. Entomol. Res. 75:621-624). There appear to be no other literature records of this species, and Dr. Williams stated in his letter to me that he has no records for the species other than the original one from Bangkok. The Hawaii population most likely originated from smuggled plant material from southeast Asia. **J.W. Beardsley.**

Calacarus brionase Keifer (Acari: Eriophyidae): Specimens of this mite, for which the common name "papaya leaf edgeroller" has been proposed, were found on papaya fruit at a farm in Kahuku, Oahu during June 1990 by R.T. Hamasaki and R. Chew. Identification was made by Dr. M.L. Goff, Entomology Department, University of Hawaii. This is a new state record. According to Jeppson et al. (1975, Mites Injurious to Economic Plants) this mite is a minor pest of papaya in the Philippines. It produces rolled leaf edges with white spots along the rolls. It has not been reported to attack papaya fruit previously. Surveys conducted by Hawaii Department of Agriculture personnel, during July and August 1990, found infested papaya fruit at other farms in Kahuku, Kaaawa and Haleiwa, Oahu. **R.T. Hamasaki and R.A. Heu.**

Brachycyttarus griseus de Joannis (Lepidoptera: Psychidae): Specimens of this bagworm, for which the common name "grass bagworm" has been proposed, were found near the Department of Health building in Hilo,

Hawaii on 10 July 1990 by L. Shimoda. Additional specimens were found at Pepeekeo, Hawaii on 13 July by M. Isherwood. Identification was made by B. Kumashiro. This is a new record for Hawaii Island. *B. griseus* was first collected in the state on Oahu in 1984 (Heu 1986, PHEs 27:1-2) and later on Kauai (see Notes and Exhibitions for July 1990 in this volume). **R.A. Heu.**

Bemisia tabaci (Gennadius) (Homoptera: Aleyrodidae): Specimens of the sweet potato whitefly, *Bemisia tabaci*, were collected on leaves of poinsettia at Hilo, Hawaii during November 1988 by Arnold Hara. Immatures of this whitefly also were collected on a hibiscus leaf at Omaopio, Maui on 22 May 1990 by T. Hori, U.H. County Extension Agent, and from cauliflower foliage at Hoolehua, Molokai on 29 August 1990 by K. Teramoto, P. Conant and R. Heu. Identifications were made by B. Kumashiro and D.M. Tsuda. These collections represent new island records for *B. tabaci* from Hawaii, Maui, and Molokai. This whitefly was first collected in the state on Oahu in 1982 (Lai 1985, PHEs 25:18), and was reported from Kauai in 1985 (Heu 1986, PHEs 27:7). **D.M. Tsuda and R.A. Heu.**

Liothrips varicornis Hood (Thysanoptera: Phlaeothripidae): Specimens of this thrips, known in California as the hollyhock thrips, were collected from young stems of red hibiscus in a nursery at Hawaii Kai, Oahu on 26 September 1990 by D.M. Tsuda and R.A. Heu. Identification was made by Tsuda and B. Kumashiro. This is a new island record for *L. varicornis* which was collected for the first time in Hawaii on Maui in 1989 (See Notes and Exhibitions for September 1989 in this issue). **D.M. Tsuda and R.A. Heu.**

NOVEMBER

The 1019th meeting of the Hawaiian Entomological Society was held at the Manoa Public Library, Honolulu, beginning at 2:00 p.m. on Tuesday, November 19, 1990, with President-Elect Johnson presiding. Nineteen members and one guest attended.

Program: Dr. C.R. Joyce exhibited photographs taken by him on a recent trip to Antarctica.

Election of New Members: Dr. Vincent Jones, Assistant Entomologist, University of Hawaii, and Mr. Paul Hansen, San Jose, Costa Rica, were elected to membership in the Society.

NOTES AND EXHIBITIONS

Bactrocera latifrons (Hendel) (Diptera: Tephritidae): Larval infestations of the solanaceous fruit fly, *Bactrocera latifrons* (Hendel), in fruit of sodom apple, *Solanum linnaeanum* Hepper & Jaeger, were found at Pahala, Naalehu and South Point, Hawaii Island on 11 July 1990, establishing a new island record for this species. Subsequent samples of sodom apple fruit from Waimea, Waikaloa, Puuwaawaa and Kealakekua revealed widespread infestation by *B. latifrons* in this host on Hawaii Island. Larvae were also found in red pepper, *Capsicum frutescens* L., near Hawi in North Kohala and in

cherry tomato, *Lycopersicon esculentum* Mill., in Naalehu. Both sexes of this fruit fly were caught in protein bait and laliture traps at South Point. N.J. Liquido, G.K. Uchida, and E.J. Harris.

Ceratitis capitata (Wiedemann) (Diptera: Tephritidae), new host record: Three adults of the Mediterranean fruit fly, *C. capitata*, were reared from fruit of coffeeberry (*Rhamnus californica* Escsch.) collected at Mauna Kea State Park, Hawaii Island, during December 1989. This species of *Rhamnus*, a native to California, was planted as forage for game birds in the 1940's at the Mauna Kea State Park and Pohakuloa Military Training Area on Hawaii. This is the first Mediterranean fruit fly host record for any species of *Rhamnus*. This report is significant because coffeeberry and its congeneric relatives occur in a wide variety of plant communities throughout California. D. Foote and N.J. Liquido.

DECEMBER

The 1020th meeting of the Hawaiian Entomological Society was held in the Board Room, Bernice P. Bishop Museum, beginning at 2:00 p.m., Monday, December 10, 1990, with President Higa presiding. Fifteen members attended.

Election of New Member: Dr. Rosemary Gillespie, Zoology Department, University of Hawaii, was elected to membership in the Society.

NEW IMMIGRANT RECORDS FOR THE YEAR 1990

The following species were reported for the first time in the Hawaiian Islands during 1990, or earlier, on the dates indicated in the text. Species marked with an asterisk is considered as doubtfully established as record is based on a single collection.

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*CD = corrected determination, Det = determined.

OFFICERS AND COMMITTEES FOR 1990

Elected Officers

President	Stanley Higa
President-Elect	Marshall Johnson
Secretary	David Preston
Treasurer	John Strazanac
Advisor (Past President)	Patrick Conant
Advisor	Dick Tsuda

Standing Committees

Editorial	John W. Beardsley, Editor M.W. Johnson, C.R. Joyce, G.A. Samuelson and T. Nishida
Finance	Dick Tsuda, Business Manager J.W. Beardsley, R. Heu and D.M. Tsuda
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†Member 1990 only

**Deceased 1991.

IN MEMORIAM



STEPHEN Q.L. AU
1908-1988

Stephen Au, a long-time member of the Hawaiian Entomological Society, passed away on Kauai on January 10, 1988.

Mr. Au was born on Kauai on November 28, 1908. He was educated, through high school, in Hawaii, and attended the University of California at Davis. In August 1935 he was hired as an Agricultural Aide by the Hawaii Board of Agriculture and Forestry, Division of Entomology; first in Honolulu, soon moving to the Board's branch station at Lihue, Kauai. He remained with the Board of Agriculture, later the Hawaii State Department of Agriculture, Division of Plant Industry, on Kauai until his retirement on June 30, 1967. He held a succession of increasingly responsible positions with the Board/Department of Agriculture, retiring as County Entomology and Marketing Representative for Kauai County. During his career on the Garden Island he was active in the fields of entomology, plant quarantine, marketing, and weed control. He was an efficient and courteous public servant who earned the respect of the public he dealt with, as well as his superiors.

Mr. Au was particularly interested and active in the field of biological control of introduced pests. As a result of his careful selection of release sites for natural enemy introductions, many important parasitoids and predators became established on Kauai.

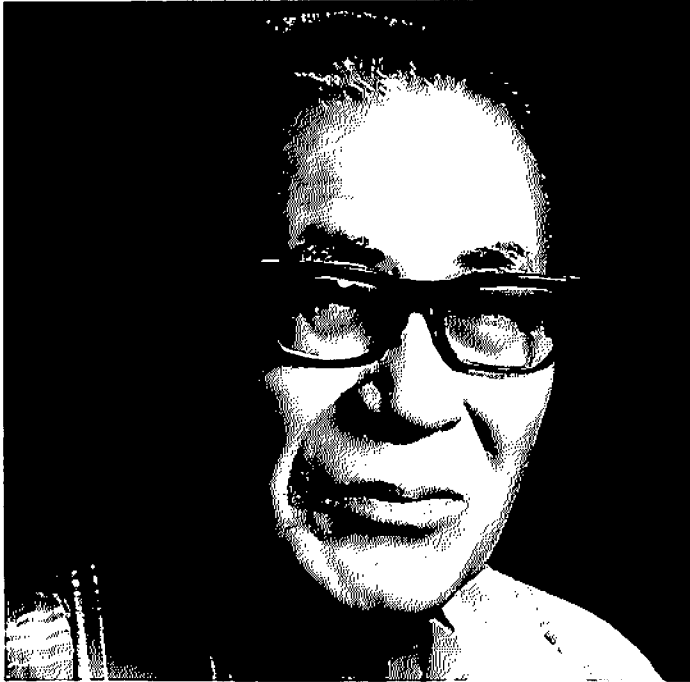
Mr. Au joined the Hawaiian Entomological Society in August 1949, and was elected to Honorary Membership in July 1968. He attended the Society's monthly meetings whenever his presence in Honolulu coincided with meeting dates, and often presented notes on insects and insect conditions on Kauai.

After his retirement Mr. Au served as a volunteer at the National Tropical Botanical Garden at Lawai, near his home. He also served as Kauai County Commissioner for the Hawaii State Department of Agriculture for four years.

Mr. Au is survived by his wife, Mrs. Florence Au; two sons, Steven W.G. and Dr. David K.; and a daughter, Arleen Brown.

Clifton J. Davis
Mabel Chong
Donald Sugawa

IN MEMORIAM



KANJYO SAKIMURA
1903-1989

Mr. Kanjyo Sakimura, one of the most highly regarded entomologists in Hawaii, who helped develop control measures for some of the major pests of pineapple and vegetable crops, died on October 11, 1989.

Mr. Sakimura, or Saki to his multitude of friends and colleagues, was born on March 6, 1903 in Koriyama, Japan. He completed second year post-high school training at Yamaguchi High School, Japan in 1923. He was tired of studying and decided to try his hand at farming. Being a very astute individual, he saw that farming in Japan was not very rewarding, so he emigrated to America, landing in Washington state in 1923.

Life as an immigrant farmer in Washington state was very hard, and Saki went back to studying when time permitted. He traveled to Utah and worked on the railroad there. Saki related to his children how astonished he was the first time he went for a swim in the Great Salt Lake, because he floated so high in the water.

He began to work with insects, and in 1926 he met Dr. Walter Carter, who was in charge of Sugar Beet Insect Investigations at Twin Falls, Idaho. Dr. Carter recognized Saki's ability and diligence and asked him in 1930 to

join the research staff of the Experiment Station, Association of Hawaiian Pineapple Cannery, later known as the Pineapple Research Institute of Hawaii, or PRI.

Saki was hired as an Assistant Entomologist at PRI in 1930, and he advanced through the ranks to Entomologist in 1959, and Head of the Department of Entomology in 1964. He retired from PRI in 1968. Following retirement he continued as a consultant in Entomology with PRI until 1973, and then with the Pineapple Growers' Association from 1973-82.

Mr. Sakimura's 57 years of active service to entomology has been recognized internationally, as well as nationally and in Hawaii. He published 67 scientific papers and numerous notes on a variety of entomological subjects that ranged from biological control of the anomala beetle, pineapple mealybugs, and food preference studies of mango flower beetle grubs, to control measures for symphyliids, nematodes and other pests of pineapple. His lifelong research interest in insect systematics focused primarily on thrips, minute insects with fringed wings, some of which are vectors of serious plant diseases that affect both pineapple and vegetable crops in Hawaii. He was an excellent field entomologist with a keen sense of observation; a true naturalist. He recognized the importance of weeds as reproductive hosts for thrips, as well as reservoirs for the tomato spotted wilt virus. His insight into the transmission of plant diseases by thrips was phenomenal. He spent many hours carefully handling and observing single thrips in studies of the complexities in the etiology of the yellow spot of pineapple, a virus disease transmitted by *Thrips tabaci*. In 1940 he demonstrated that the virus which causes yellow spot of pineapple was actually tomato spotted wilt virus (TSWV). Although the technology and tools were lacking to prove all of his theories, his insight into the biological processes of virus transmission was truly prescient. Participating in an Entomological Society of America symposium on "Biological Transmission of Disease Agents" (1960) he stated, "data are lacking for a thorough evaluation pertaining to the tissue-virus relationships, the effect of fasting of the vector, and virus multiplication in the vector. More data are also required for determining transovarial infection and acquisition threshold." Today, with modern advances in microscopy and knowledge of cellular relationships between plants, pathogens and vectors, data are being secured that support his theories.

Saki often visited the research laboratories at the University of Hawaii, and his experience and intuitive thinking stimulated discussion and further research concerning plant disease transmission processes. His assistance in training young entomologists in the identification of thrips was invaluable. Mr. Sakimura was appointed an Affiliate Member of the Graduate Faculty, Department of Entomology, University of Hawaii in 1955. He served on numerous graduate committees and was great help in our interdisciplinary research project on tomato spotted wilt virus. Saki frequently allowed professors or graduate students to borrow publications from his reprint collection. Many of his reprints are not available in the UH library. All were

amazed to find each reprint with its own cover, and copies of attached correspondence often gave additional insight into the problem at hand.

In addition to his continued support of UH programs, Saki remained active in systematic studies of thrips at the Bernice P. Bishop Museum, following his appointment as Honorary Associate in Entomology in 1964.

Mr. Sakimura received numerous grants and awards for his research. Among the grants and appointments that he received, the following are particularly noteworthy:

Visiting Investigator, Rockefeller Institute of Medical Research, Princeton, New Jersey in 1948.

Research Associate, University of California, Berkeley in 1956.

Fellow, John Simon Guggenheim Memorial Foundation, in 1956.

Fellow, American Association for the Advancement of Science 1958-68.

Entomologist, United Nations, Food and Agriculture Organization, Jamaica in 1964.

National Science Foundation, Grant GB3145 in 1965.

Mr. Sakimura was elected to membership in the Hawaiian Entomological Society in 1930. He was President-elect in 1945 and President in 1946. In April 1968 he was elected to Honorary Membership. In addition to HES, Mr. Sakimura was a member of the following professional and honorary organizations, which are an indication of his broad interests:

Entomological Society of America
American Institute of Biological Sciences
American Phytopathological Society
Hawaiian Academy of Sciences
Hawaiian Botanical Society
Entomological Society of Japan
Sigma Xi (Research Honorary) since 1952.

Even after retiring, Mr. Sakimura frequently attended the monthly meetings of the Hawaiian Entomological Society, giving notes on new thrips records and other items of interest, and contributing to discussion on current issues of entomological interest.

There are two other important dates in his life. He married Bertha in 1938, and they celebrated their 50th wedding anniversary on February 12, 1988. Saki became a naturalized citizen of the United States of America on March 26, 1953.

Mr. Sakimura made many important contributions to our knowledge of thrips and other insects and pests in our gardens and surroundings. Although a quiet and exceedingly modest man, Mr. Kanjyo Sakimura made many close friends, both within his profession and outside of it. He was highly respected and was liked by all who knew him. Capable, cooperative and conscientious in his research, he was also a good companion and a loyal friend. We will all miss him greatly, but the results of his research will

continue to inform and stimulate future workers. He is survived by his wife, Bertha¹; daughter Pualani (Frederick) Kondo; sons, Ronald K.K. and Glenn K. of Kapaa, Hawaii; six grandchildren; two brothers, Junshiro and Sadatoshi of Japan; three sisters, Hana Higashi, Sumi Kimura and Yoshi Ogoshi, and nephews and nieces all of Japan.

In Honor of Mr. Sakimura and his wife Bertha, the Sakimura family has established a memorial fund in the Hawaiian Entomological Society. This fund will be utilized to finance awards made to presenters of entomological exhibits at the annual Hawaii State Science Fair, and to help support research by entomology students at the University of Hawaii. Mr. Dick Tsuda was designated by the Sakimura family to oversee the use of this endowment. Mr. Sakimura's extensive reprint collection on Thysanoptera and related subjects, as well as his very valuable collection of slide-mounted thrips, are now housed at the Department of Entomology, University of Hawaii, under the care of Mr. Tsuda.

W.C. Mitchell
D.M. Tsuda
J.W. Beardsley

¹Bertha Sakimura died on February 4, 1991.

PUBLICATIONS BY KANJYO SAKIMURA

1930. A predaceous mite on alfalfa thrips. *J. Econ. Entomol.* 23:1009.
1932. Life history of *Thrips tabaci* L. on *Emilia sagittata* and its host plant range in Hawaii. *J. Econ. Entomol.* 25:884-91.
1934. The artificial feeding of Thysanoptera. (With W. Carter). *Ann. Entomol. Soc. Amer.* 27:341-2.
1935. Transportation of predaceous coccinellids from Saipan to Bonin Islands and Formosa. *Kontyu (The Insect)* 9:76-82.
1937. The life and seasonal histories of *Thrips tabaci* Lind. in the vicinity of Tokyo, Japan. *Oyo-Dututsugaku-Zasshi (J. Appl. Zool.)* 9:1-24.
- Introduction of *Thripoctenus brui* Vuillet, parasite of *Thrips (tabaci)* Lind., from Japan to Hawaii. *J. Econ. Entomol.* 30:799-802.
- On the bionomics of *Thripoctenus brui* Vuillet, a parasite of *Thrips tabaci* Lind., in Japan. *Kontyu (The Insect)* 11:370-90, 410-24.
- A survey of host ranges of thrips in and around Hawaiian pineapple fields. *Proc. Hawaiian Entomol. Soc.* 9:415-27.
1938. Thysanoptera of Kauai with notes on the incidence of yellow spot on wild host plants. *Proc. Hawaiian Entomol. Soc.* 10:167-73.
1939. On the host plants of some Hawaiian thrips. *Proc. Hawaiian Entomol. Soc.* 10:251-4.
1940. Evidence for the identity of the yellow spot virus with the spotted wilt virus: Experiments with the vector, *Thrips tabaci* Lind. *Phytopathology* 30:281-99.

- *Thrips nigropilosus* Uzel, a non-vector of the yellow spot virus. J. Econ. Entomol. 32:883.
- An annotated list of insects from Lanai. (With M.B. Linford). Proc. Hawaiian Entomol. Soc. 10:451-4.
1944. Thrips from Maui and Molokai. (With N.L.H. Krauss). Proc. Hawaiian Entomol. Soc. 12:113-22.
- Thrips from Kauai. (With T. Nishida). Proc. Hawaiian Entomol. Soc. 12:123-31.
1945. Collections of thrips from Kauai and Hawaii. (With N.L.H. Krauss). Proc. Hawaiian Entomol. Soc. 12:319-31.
1946. Two species of thrips non-vectors of the spotted wilt virus. J. Econ. Entomol. 39:398-9.
1947. Virus transmission by *Cuscuta sandwichiana*. Phytopathology 37:66-7.
- Thrips in relation to gall-forming and plant disease transmission. Proc. Hawaiian Entomol. Soc. 13:59-96.
1948. Residual toxicity of hexachlorocyclohexane incorporated in soil. J. Econ. Entomol. 41:665-6.
1950. Food preference of *Protaetia fusca* grubs. Proc. Hawaiian Entomol. Soc. 14:173-4.
1953. Potato Virus Y in Hawaii. Phytopathology 43:217-8.
- *Parthenothrips dracaenas*, a non-vector of the spotted wilt virus. J. Econ. Entomol. 46:287.
- *Frankliniella tritici*, a non-vector of the spotted wilt virus. J. Econ. Entomol. 46:915-6.
1954. A new *Scolothrips* from Hawaii. Proc. Hawaiian Entomol. Soc. 15:357-9.
1955. A revision of the genus *Dichromothrips* Priesner. Proc. Hawaiian Entomol. Soc. 15:583-600.
1956. Synonymy of *Frankliniella formosae* Moulton (Thysanoptera) with reference to spotted wilt virus transmission. Oyo-Kontyu. 12:12-4.
- *Kurtomathrips morrilli*, a non-vector of the spotted wilt virus, with notes on *Liothrips urichi*. J. Econ. Entomol. 49:562.
- 1958: *Bolacidothrips evittatus* sp. nov. from Okinawa, with note on the genus *Bolacidothrips*. Mushi 31:73-8.
1961. Techniques for handling thrips in transmission experiments with the tomato spotted wilt virus. Plant Dis. Rep. 45:766-71.
- Field observations on the thrips vector species of the tomato spotted wilt virus in the San Pablo area, California. Plant Dis. Rep. 45:772-6.
1962. A study of the Indian species of the genus *Chaetanaphothrips*. (With T.N. Ananthakrishnan). Bull. Entomol. (Loyola College) 3:48-56.
- The present status of thrips-borne viruses. In Maramorosch's Biological transmission of disease agents. Academic Press, New York. pp. 33-40.
- *Frankliniella occidentalis* (Thysanoptera: Thripidae), a vector of the tomato spotted wilt virus, with special reference to the color forms. Ann. Entomol. Soc. Amer. 55:387-9.

1963. *Frankliniella fusca*, an additional vector of the tomato spotted wilt virus, with notes on *Thrips tabaci*, another vector. *Phytopathology* 53:412-5.
1966. A brief enumeration of pineapple insects in Hawaii. Proc. VI-5 Div. Meeting (Agriculture-Plant Protection), the XI Pacific Science Congress, Tokyo, Japan, Sept. 1, 1966.
1967. Redescriptions of *Anaphothrips orchidaceus* and *A. orchidearum* (Thys.: Thripidae). *Fla. Entomol.* 50:89-97.
- A preliminary review of the genus *Isoneurothrips* and the subgenus *Thrips (Isothrips)* (Thys.: Thripidae). *Pac. Insects* 9:429-36.
- A preliminary note on a review of the genus *Chaetisothrips* Priesner (Thys.: Thripidae). *Fla. Entomol.* 50:165-8.
- A preliminary note on a review of the genus *Neuroisothrips*, new genus (Thys.: Thripidae). *Proc. Hawaiian Entomol. Soc.* 19:419-23.
- Preliminary note on a review of subgenus *Taeniothrips (Isochaetothrips)* (Thys.: Thripidae). *Pac. Insects* 9:721-6.
1968. Redefined concept of the genus *Synaptothrips* with redescriptions of two species (Thysanoptera: Thripidae). *J. Entomol. Soc. S. Afr.* 31:75-81.
- A preliminary review of the genus *Homochaetothrips* Gen. n., with brief description of a new species (Thysanoptera: Thripidae). *J. Aust. Ent. Soc.* 7:59-62.
1969. New species of subgenera *Isothrips* and *Isochaetothrips* from Oceania and Australia, with note on changes in nomenclature (Thysanoptera: Thripidae). *Pac. Insects* 11:71-80.
- Date of publication of Schmutz's Thysanopterenfauna von Ceylon. *Orient. Insects* 3:165-7.
- New species and subspecies of the genus *Chaetisothrips* from the Caribbean and Central American region (Thysanoptera: Thripidae). *Fla. Entomol.* 52:123-35.
- A comment on the color forms of *Frankliniella schultzei* (Thysanoptera: Thripidae) in relation to transmission of the tomato-spotted wilt virus. *Pac. Insects* 11:3-4.
1971. A review of the genus *Rhaebothrips* Karny (Thysanoptera: Phlaeothripidae). *Pac. Insects* 13:391-403.
1972. Male of *Megalurothrips distalis* and changes in nomenclature (Thysanoptera: Thripidae). *Kontyu* 40:188-93.
- Male of *Megalurothrips mucunae* and a change in nomenclature (Thysanoptera: Thripidae). *Pac. Insects* 14:663-7.
- Synonymies and collection record of *Rhaebothrips lativentris* Karny (Thysanoptera: Phlaeothripidae). *Pac. Insects* 14:668.
- *Frankliniella invasor*, new species, and notes on *F. gardeniae* and the *Frankliniella* spp. in Hawaii (Thysanoptera: Thripidae). *Proc. Hawaiian Entomol. Soc.* 21:263-70.
1974. Book Review: Types of Thysanoptera in the Collection of the California Academy of Sciences, by P.H. Arnaud, Jr., and V.F. Lee. *Bull. Entomol. Soc. Amer.* 20:70-1.

- _____ A review of some species of *Chaetanaphothrips* (Thysanoptera: Thripidae). *Orient. Insects* 8:315-36.
1975. *Danothrips trifasciatus*, new species, and collection, notes on the Hawaiian species of *Danothrips* and *Chaetanaphothrips* (Thysanoptera: Thripidae). *Proc. Hawaiian Entomol. Soc.* 22:125-32.
1976. *Frankliniella chrysanthemi* synonymous with *F. occidentalis* (Thysanoptera: Thripidae). *Proc. Hawaiian Entomol. Soc.* 22:333-4.
1977. A review of the Hawaiian species of *Idolothripinae* (Phlaeothripidae: Thysanoptera). (With F.A. Bianchi). *Proc. Hawaiian Entomol. Soc.* 22:495-523.
1979. Notes on some Chrypthripine species from Polynesia, with description of a new species (Phlaeothripidae: Thysanoptera). *Pacific Insects* 20:313-7.
- _____ Scientific Note: Lectotype designation for *Frankliniella tritici clara* Moulton. *Pan-Pac. Entomol.* 55:50.
- _____ *Frankliniella*, redefinition of genus and revision of minuta group species (Thysanoptera: Thripidae). (With K. O'Neill). *Tech. Bull.* 1572, U.S.D.A. 49 pp.
1980. Walter Carter, 1897-1977. *Proc. Hawaiian Entomol. Soc.* 23:269-74.
1981. A review of *Frankliniella bruneri* Watson and description of *F. kelliae*, N. Sp. (Thysanoptera: Thripidae). *Fla. Entomol.* 64:483-91.
1983. Note: Abdominal blotches of *Frankliniella trehernei* and differentiation of *F. occidentalis* and *F. bruneri* (Thysanoptera: Thripidae). *Proc. Entomol. Soc. Wash.* 85:398-9.
- _____ A new *Rhamphothrips* from Hawaii, Jamaica and Florida, and notes on *R. pomeroyi* (Thysanoptera: Thripidae). *Proc. Hawaiian Entomol. Soc.* 24:299-303.
1986. A thrips, *Thrips palmi* Karny (Thysanoptera: Thripidae). (With L.M. Nakahara, and H.A. Denmark). *Entomol. Circular No. 280*, Fla. Dept. Agric. & Consumer Serv., Division of Plant Industry. 4 pp.
- _____ Thrips in and around the coconut plantations in Jamaica, with a few taxonomical notes (Thysanoptera). *Fla. Entomol.* 69:348-63.

