

each end. Metasternum mildly elevated into a small, subglobular nodule or bulla-like structure, the crest of which is as high as the metacoxae, and which is neither emarginate behind, nor carinate laterally. Median spine of the second abdominal sternite stout, conical at the base, slightly compressed anteriorly, the apex acute, feebly curved dorsally there and reaching between the mesocoxae. Central portion of the abdominal disc strongly elevated anteriorly, there continuous with the surface of the median spine, and then gradually decreasing in height posteriorly; the surface strongly convex there but with no median keel or carina evident. Male provided with a pair of small sericeous plagae on the fourth and fifth abdominal sternites. Legs moderate in length, the anterior femora devoid of antepical spines or tubercles; tibiae essentially terete, dorsal surface slightly flattened apically, certainly not sulcate.

Genotype: *Bulbostethus chrysopterus* (Herrich-Schaffer).

The resemblance between examples of this genus and *Parealda*, *Cantboconidea* or other Micronesian asopines is strictly superficial, the likeness being emphasized because of approximate similarity in size, color and shape. Schouteden, however, has stressed the diagnostic importance of other morphological characteristics, such as the structure of the mesosternum, metasternum, abdomen and abdominal spines, among others. In this respect then, *Bulbostethus* is distinctive because it does not show similarity of these parts to other known genera. It belongs to that complex of asopines in which the second rostral segment is shorter than the following two combined; the terminal rostral segment is shorter than the preceding; the femora are aspinose and the tibiae terete; the anterior portion of the abdomen is well elevated and provided with a stout spine which reaches but does not surpass the mesocoxae; and the metasternum is neither flat nor bicarinate.

While the foregoing description may seem overly detailed and somewhat lengthy, it follows the format for such descriptions established by Schouteden in his monograph on the Asopinae in the Genera Insectorum. Some of the diagnostic characteristics given are probably of specific as much as generic magnitude, but are included for the sake of completeness.

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Insects and Other Arthropods from Midway Atoll

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BERNICE P. BISHOP MUSEUM
 HONOLULU, HAWAII

(Submitted for publication February, 1960)

Midway Atoll lies 1150 nautical miles northwest of Oahu and consists of a nearly circular rim of coral reef about 5 miles in diameter enclosing a lagoon. Near the southern rim of the atoll are two low islets, Sand Island measuring about a mile and one-half long by a mile wide, and Eastern Island, triangular in shape and a mile and a quarter long by three quarters of a mile wide. Though Eastern Island always has had a growth of low shrub, Sand Island was originally covered with nearly bare sand. When a cable station was established on Sand Island in 1902, numerous plants, together with shiploads of soil were imported, principally from Hawaii. Undoubtedly many insects were introduced at the same time. From 1935 to 1950, Sand Island was an operating base for Pan American Airways, and it has been a refueling base for east-bound Armed Forces transport planes.

The first insect recorded from Midway was the moth, *Peridroma fasciata*, described in 1894 by W. Rothschild, and probably collected in July, 1891 by Henry Palmer, a bird collector for Rothschild. A few insects were taken by G. P. Wilder in 1905, but the first scientific survey of Midway was made by the Tanager Expedition in 1923, with D. T. Fullaway as entomologist, during the course of an exploration of islands of the Hawaiian chain northwest of Kauai. The entomological results were published by E. H. Bryan, Jr. and collaborators in B. P. BISHOP MUSEUM BULLETIN 31, 1926, which lists 43 species of insects in 12 orders from Midway.

During the past few years C. F. Clagg, with the U. S. Naval District Public Works, and Yoshio Oshiro, a construction worker with Hawaiian Dredging Company, have brought in numerous specimens from Midway. E. J. Ford, Jr. made an intensive survey of the atoll in November, 1959. Their collections form the basis for the present list, and bring the total number of insect species to approximately 205, to which are added one species each of scorpion, centipede, and mite, and 13 species of spiders.

For their assistance in determining specimens thanks are due to J. W. Beardsley, F. A. Bianchi, E. J. Ford, Jr., W. J. Gertsch, C. R. Joyce, D. E. Hardy, L. W. Quate, E. S. Ross, C. Sabrosky, R. L. Usinger, R. H. Van Zwaluwenburg, R. A. Ward, and C. M. Yoshimoto. The information about Midway Atoll is largely taken from AMERICAN POLYNESIA AND THE HAWAIIAN CHAIN by E. H.

- Cecidomyiidae (Determined by Hardy)
Giardomyia pallidithorax Hardy
Parallelodiplosis bimaculata Hardy
- Sciaridae
Sciara (Lycoriella) garretti Shaw, determined by Hardy
 **Sciara (Lycoriella) molokaiensis* Grimshaw (Probably a misidentification—Hardy)
- Dolichopodidae
Condylostylus sp., determined by R. H. Foote
 **Chrysosoma fraternum* Van Duzee (recorded as *Psilopus patellifer* Thomson)
Chrysotus pallidipalpus Van Duzee, determined by Hardy
Medetera atrata Van Duzee
- Syrphidae
Xanthogramma scutellaris Fabricius
- Calliphoridae
Chrysomyia megacephala Fabricius
Dyscritomyia sp., teneral
 **Lucilia graphita* Shannon
 **Ophyra chalcogaster* Wiedemann, determined by C. R. Joyce
Phaenicia sericata (Meigen)
Rhinia testacea (Robineau-Desvoidy), determined by C. R. Joyce
- Sarcophagidae
 **Goniophyto bryani* Lopes (Lopes, B. P. BISHOP MUS., OCC. PAPERS 14(11): 195, 1938)
Helicobia morionella (Aldrich), determined by Joyce
Parasarcophaga argyrostoma (Robineau-Desvoidy)
Parasarcophaga misera (Walker), determined by Joyce
- Muscidae
Fannia pusio (Wiedemann)
Fucellia sp., determined by R. Foote
Musca domestica Linnaeus (Also reported as *M. vicina* Macquart)
Muscina assimilis (Fallen), determined by Joyce
Ophyra aenescens (Wiedemann), determined by Hardy
Ophyra sp.
- Chyromyidae
Chyromyia sp., in poor condition, determined by C. Sabrosky
- Lauxaniidae
Homoneura unguiculata (Kertész)
- Drosophilidae
Drosophila simulans Sturtevant, determined by Hardy
- Chloropidae
 **Cadrema pallida* Loew (Misidentified as *Hippelates nigricornis flavus* Thomson—Hardy)

- Siphunculina signata* Wollaston, determined by Hardy
- Agromyzidae
Liriomyza sp., in poor condition, determined by Hardy
Phytobia sp., determined by Hardy
Phytoliriomyza sp., determined by Hardy
- Ephydriidae
Hecamede persimilis Hendel, determined by Hardy
- Tethinidae
Tethina albula (Loew)
Tethina insularis Aldrich, determined by Hardy
- Milichiidae
Desmometopa tarsalis Loew, determined by Hardy
Desmometopa sp., determined by Hardy
 **Milichiella lacteipennis* (Loew)
- Canaceidae
Nocticanace sp., determined by W. W. Wirth
- Sphaeroceridae
 **Limosina* sp., near *ferruginata* (Stenhammer) (reported as *Leptocera* sp.)

HYMENOPTERA

- Evaniidae
Evania appendigaster (Linnaeus)
- Braconidae
Apanteles carpatus (Say), determined by C. F. W. Muesebeck
 **Chelonus blackburni* Cameron
Phanerotoma hawaiiensis Ashmead, determined by C. M. Yoshimoto
Urosigalphus bruchi Crawford, determined by Muesebeck
- Ichneumonidae
Diplazon laetatorius Fabricius
Idechthis canescens (Gravenhorst), determined by Yoshimoto
Idechthis sp. near *canescens*
- Chalcididae
Antrocephalus pertorvus (Girault), determined by Muesebeck
- Encyrtidae
 **Anagyrus swezeyi* Timberlake
 **Pauridia peregrina* Timberlake
- Pteromalidae
Lariophagus texanus Crawford, determined by B. D. Burks
- Eulophidae
 **Elachertus advena* Timberlake
Tetrastichus sp., determined by K. V. Krombein
- Formicidae
Camponotus variegatus hawaiiensis Forel, determined by Ford

PROCEEDINGS
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JANUARY 12, 1959

The 637th meeting of the Hawaiian Entomological Society was held at the Experiment Station, HSPA, at 2:00 P. M. on Monday, January 12, 1959, with President Nishida presiding.

Members present: Balock, Beardsley, Bess, Bianchi, Burditt, Butler, Carter, Chilson, Chong, Clagg, Davis, Fullaway, Gressitt, Hardy, Hinckley, Holloway, Joyce, Kajiwara, Kamasaki, Keck, Kim, Kimoto, Krauss, Look, Maehler, S. Mitchell, W. Mitchell, P. Nakagawa, Nakata, Nishida, Ota, Pemberton, D. Rainwater, Sherman, Suehiro, Steiner, Thistle, Wilton, Woolford, Worthington, and Yamada.

The Society voted to present an award for the best entomological exhibit at the Second Annual Hawaiian Science Fair which is to be held during March. Dr. Pemberton was appointed to serve as chairman of a committee to select an appropriate award. The sum of 100 dollars was voted for the Zoological Society of London as the Hawaiian Entomological Society's contribution toward the publication of the ZOOLOGICAL RECORD. It has been the policy of the Society to send fifty dollars for this purpose to the Zoological Society of London each year, and the present contribution will be for the years 1958 and 1959.

The president extended the Society's best wishes for a successful future to Mr. Maehler who will be moving to California in the near future.

Mr. Krauss gave an interesting account of his work and travels through Southeast Asia during the past year while searching for enemies of the giant African snail, lantana, and other weed pests for the State Board of Agriculture and Forestry.

NOTES AND EXHIBITIONS

Aediomyia catastica Knab on Guam: Miss Nakata reported for Dr. W. W. Cantelo, entomologist for the U. S. Navy on Guam, that two males and one female of this mosquito were first collected in a light trap near Apra Harbor, Guam, on January 22, 1958, and that the species has since been taken frequently