

## Insects and other Arthropods from Kwajalein Atoll (Marshall Islands)

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Kwajalein Atoll is located in the Ralik (Sunset or Western) Chain of the Marshall Islands in the West Central Pacific Ocean. It is 2100 nautical miles southwest of San Francisco. Lying less than 700 miles north of the Equator, Kwajalein is in the latitude of Panama and the southern Philippines; it is in the longitude of New Zealand, 2300 miles south, and the Kamchatka Peninsula, USSR, 2600 miles north.

Kwajalein Atoll is of coral reef formation in the shape of a crescent loop enclosing a lagoon. Situated on the reef are approximately 100 small islands, with a total land area of only 5.6 square miles (3584 acres). The three largest islets, Kwajalein (1.2 square miles), Roi-Namur and Ebadon, at the extremities of the Atoll, account for nearly half the total land area. While the typical size of the remaining isles may be about 140 by 225 m, the smallest islands are no more than sand cays that merely break the water's surface at high tide. The lagoon enclosed by the reef is the world's largest lagoon, having a surface area of 902 square miles. The Atoll's longest dimension is 75 miles from Kwajalein to Ebadon, and its average width is about 15 miles. Kwajalein Islet at the Atoll's southern tip and Roi-Namur at its northern extremity are 50 miles apart. All islets are flat and few natural points exceed 15 feet above mean sea level; those which do are sand dunes. The average elevation of Kwajalein Atoll islets is 1.8 m.

The average monthly temperature is 29°C, with a variation of only 1.1°C during the year, while the daily temperature range is between 6° and 7°C. The relative humidity averages from 83 percent (midnight) to 76 percent (noon). Precipitation has averaged 25.14 cm per year over the 22 year period of 1945–1966, with most rainfall from August to December.

Northeasterly trade winds are dominant most of the year. During the period from December through June, the wind blows mostly from the east-northeast at velocities averaging about 16 miles per hour. During the summer months, winds are generally weaker with occasional doldrums of almost no wind; the direction tends to be more easterly and sometimes southeasterly.

Kwajalein, Meck and Roi-Namur Islets are the only islets in the Atoll that have airports. At the time of writing all air service is either government operated or chartered. Most flights are from Hawaii or

the mainland, but there are non-scheduled transient military flights from other parts of the Pacific. Ocean cargo service is provided by freighters averaging about five calls a month.

#### *Historical Background*

It is believed that Kwajalein Atoll was sighted by Captain Ruy Lopes de Villalobos in 1542 although other Spanish voyagers sighted or landed on the various Atolls of the Marshall Islands between 1526 and 1566. The islets were claimed for the Spanish crown, but nothing was done for the next 300 years. During this period, traders, whalers and missionaries reached the Marshall Islands. The traders introduced metal tools, cloth, guns and gadgets which were traded for coconut oil.

Germany took over the area in 1885 after negotiations with Spain which resulted in the sale of all Spanish interests in Micronesia. The German government immediately established law and order, a health and education program was started, and trade and commerce were developed.

Following the end of World War I, the responsibility for administering the Marshall, Caroline and Northern Marianas Islands formally was entrusted to Japan by mandate of the League of Nations in 1920. (See E. H. Bryan, Jr.'s excellent historical account.)

Kwajalein Atoll was captured by American Forces in February, 1944 after heavy bombardment and combat. It was used as an American sea and air base until the end of World War II, and then was retained as a U. S. Naval Station for 19 years until July, 1967, when it was transferred to the U. S. Army. During the Navy years, Kwajalein served as a base for communication, rescue services and MATS aircraft stopovers. During the construction of facilities in the Kwajalein Atoll by U. S. military administration, there has been a tendency to ignore vegetation. Areas larger than required were bulldozed by contractors, whereas German and Japanese administrations preserved or imported flowering plants and trees. At present a program of replanting vegetation is being carried out by the housekeeping contractor in all bare areas on all the islands of the Atoll.

The arthropod species listed below were either collected by the author during visits to Kwajalein Atoll in 1965, 1967 and 1969, or by Kwajalein Test Site Entomology Services personnel from from 1965 to the present. Other species listed are taken from "Insects of Micronesia" and from E. H. Bryan, Jr.'s "Life in Micronesia."

For assistance in determining and/or confirming identification of specimens, thanks are due to D. M. Anderson, R. H. Arnett, Jr., P. D. Ashlock, J. L. Barnard, J. W. Beardsley, O. L. Cartwright, E. A. Chapin, C. M. Clifford, D. R. Davis, D. C. Ferguson, S. Fluker, R. C. Froeschner, R. J. Gagné, W. C. Gagné, A. B. Gurney, D. E. Hardy, J. L. Herring, R. W. Hodges, P. D. Hurd, Jr., C. R. Joyce, J. M. Kingsolver, L. V.

Knutson, J. P. Kramer, K. V. Krombein, H. W. Levi, P. M. Marsh, A. S. Menke, D. R. Miller, E. L. Mockford, W. B. Peck, L. M. Russell, C. W. Sabrosky, T. Saigusa, K. Sakimura, G. A. Samuelson, D. R. Smith, R. V. Southcott, T. J. Spilman, W. A. Steffan, G. Steyskal, A. Stone, E. L. Todd, G. B. Vogt, R. E. Warner, D. M. Weisman, R. White, N. Wilson, W. W. Wirth, and C. M. Yoshimoto.

Special thanks are due to Mr. E. H. Bryan, Jr., the late Miss Setsuko Nakata and Dr. G. A. Samuelson for reading, correcting and editing this paper

The historical and geographical information was compiled from Mr. E. H. Bryan, Jr.'s "Life in Micronesia" and from a U. S. Army Information booklet, "Kwajalein Test Site." Species marked with an asterisk had been previously recorded from Kwajalein Atoll in "Insects of Micronesia," and those marked with a double asterisk from "Life in Micronesia." (The last name is the code name used by the U. S. Army during the invasion of the atoll in January, 1944. Because of the confusion and

TABLE 1. *Islets on Kwajalein Atoll from which Insect Specimens have been Collected*  
(Listed clockwise from the northernmost)

<i>Sequence Number</i>	<i>Approved Name</i>	<i>Alternate Names and Variant Spellings</i>	
1-2	Roi-Namur	Ruotto, Rwuert, Burlesque Nimuru, Emuru, Nimwur, Camouflage	The two islets are connected.
6	Ennubira	Enibuni, Ennubirr, Anebwin, Allen	
14	Gagan	Gooakkan, Kowakkan, Arlington	
16	Gellinam	Gereiyan, Girenian, Kidenen, Ashburry	
17	Omelek	Komire, Konwle, August	
18	Kwadack	Kuotoppu, Kuoteppu, Kwateb, Augustine	
19	Eniwetak	Eniwetakku, Anewatak, Barney	
20	Meck	Meiku, Meik, Mech, Bascome	
21	Bigej	Pigeji, Bidedj, Bikeej, Bennett (*)	
22	Gugegwe	Gugeegue, Benson	
23	Ningi	Ngenge, Berlin (*)	
25	Loi	Riiji, Roji, Blankenship	
27	Ebeye	Ebigie, Ebijie, Ebjja, Burton	
28	Little Buster	Ebijerikku, Ebjadik, Buster	
29	Big Buster	Grubebbe, Wirbab, Byron	
30	Kwajalein	Kuejerin, Kuwzyerin, Kwadjelinn, Kwajleen, Porcelein	
31	Enubuj	Enibujii, Eniibuaji, Anilwuij, Enubuj, Carlson	
32	Ennylabegan	Ennierappukan, Enulabegan, Aneclabkan, Enelapkan, Ennulat, Carlos	
41	Legan	Ambo, Amboo, Amwbwo, Clifford	
46	Illeginni	Rikijjine, Rikitsujine, Illygain, Likijjine, Curtis	
53	Enmat	Ennumet, Enemato, Enemaato, Ennumet, Anmwaat, Edgar	
56	Eru	Era, Ero, Elton	

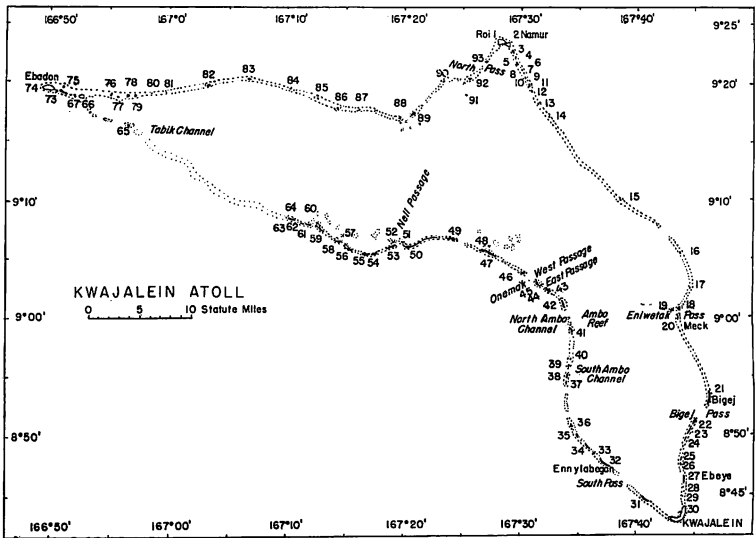


FIG. 1. Map of Kwajalein Atoll. Numbers assigned to islets correspond to numbers in Table 1.

difficulty of spelling the indigenous islet names, many of these code names are in the present use.

The islets marked with an asterisk in Table 1 were not visited by the author. Records of species for these islets were taken from "Insects of Micronesia."

## ARACHNIDA

### ACARINA

#### Tetranychidae

*Tetranychus tumidus* Banks—determined by N. Wilson—Kwajalein Islet

#### Ixodidae

*Rhipicephalus sanguineus* (Latreille)—verified by C. M. Clifford—Kwajalein Islet

#### Smaridiidae

*Calorema* sp.—determined by R. V. Southcott—Ennylabegan Islet

### SCORPIONIDA

#### Buthidae

*Isometrus maculatus* (De Geer)\*—Kwajalein Islet

## ARANEIDA

**Oonopidae**

*Gamasomorpha* sp.—determined by W. B. Peck—Ennylabegan Islet

**Tetragnathidae**

*Leucauge* sp.—determined by W. B. Peck—Ennylabegan Islet

**Argiopidae**

*Araneus* (?) sp.—determined by W. B. Peck—Enubuj and Illeginni Islets

*Neoscona* sp.—determined by H. W. Levi—Ennylabegan Islet

## CRUSTACEA

## AMPHIPODA

**Orchestidae**

*Talorchestia spinipalma* (Chevreux)\*—determined by J. L. Barnard—Kwajalein and Eniwetak Islets

## DIPLOPODA

## POLYDESMIDA

**Strongylosomidae**

*Oxidus gracilis* Koch\*—Enubuj and Kwajalein Islets

## INSECTA

## ORTHOPTERA

**Blattidae**

*Neostylopyga rhombifolia* (Stoll)—Kwajalein Islet

*Cutilia nitida* (Brunner)—Ennylabegan Islet

*Cutilia soror* (Brunner)—Ennylabegan Islet

*Periplaneta americana* (Linnaeus)\*\*—Kwajalein and Ebeye Islets

*Blattella germanica* (Linnaeus)—Kwajalein and Roi-Namur Islets

*Blattella* sp. apparently *lituricollis* (Walker)—verified by A. B. Gurney—Enubuj and Kwajalein Islets

*Pycnoscelus surinamensis* (Linnaeus)—Kwajalein and Roi-Namur Islets

**Tettigoniidae**—determined by A. B. Gurney

*Phisis* sp.—Kwajalein Islet

*Phaneroptera furcifera* Stål—Kwajalein, Eniwetak and Roi-Namur Islets

**Acrididae**—determined by A. B. Gurney

*Locusta migratoria manilensis* (Mayne)—Kwajalein, Roi-Namur and Gugeegue Islets

*Aiolopus thalassinus tamulus* (Fabricius)—Gugeegue, Eniwetak, Ennylabegan, Enubuj, Ennubira, Meck, and Legan Islets

## ISOPTERA

**Kalotermitidae**

*Cryptotermes brevis* (Walker)\*\*—Kwajalein Islet

*Glyptotermes* sp.—determined by D. R. Smith—Roi-Namur Islet

**Rhinotermitidae**

*Coptotermes* sp.—determined by D. R. Smith—Kwajalein Islet

*Coptotermes formosanus* Shiraki\*\*—Kwajalein Islet

*Prorhinotermes* sp.—determined by D. R. Smith—Kwajalein Islet

## ODONATA

**Aeshnidae**

*Anax guttatus* (Burmeister)\*\*—Kwajalein Islet

**Libellulidae**

*Diplacodes bipunctata* (Brauer)—Kwajalein Islet

*Pantala flavescens* (Fabricius)—Kwajalein Islet

*Tramea transmarina propinqua* Lieftinck\*—Eniwetak, Kwajalein and Gugeegue Islets

## PSOCOPTERA

**Psocidae**

*Ptycta* sp. (prob.)—determined by E. L. Mockford—Ennylabegan Islet

**Ectopsocidae**

*Ectopoposocus* sp.—determined by E. L. Mockford—Kwajalein Islet

## DERMAPTERA

**Labiduridae**

*Labidura riparia* (Pallus)—determined by A. B. Gurney—Kwajalein Islet

## THYSANOPTERA

**Thripidae**

*Taeniothrips vitticornis* Karny—determined by K. Sakimura—Ennylabegan Islet

## HOMOPTERA

**Cicadellidae**

*Exitianus capicola* (Stål)\*—determined by J. P. Kramer—Kwajalein,

Roi-Namur, Eniwetak, Ennylabegan, Enubuj, Meck, Legan, Gellinam, Big Buster, Ennubira, Little Buster, Loi and Bigej Islets

*Exitianus plebeius* (Kirkaldy)—determined by W. C. Gagné—Ennylabegan, Gugeegue, Eniwetak, Gagan, Gellinam, and Legan Islets

*Exitianus fusconervosus* (Motschulsky)—determined by W. C. Gagné—Gagan Islet

*Balclutha incisa* (Matsumura)\*—determined by J. P. Kramer—Kwajalein Islet

*Recilia* sp.—determined by J. P. Kramer—Gugeegue and Eniwetak Islets

*Empoasca* sp.—determined by J. P. Kramer—Roi-Namur Islet

### Delphacidae

*Chloriona (Sogatella) paludum* (Kirkaldy)\*—Kwajalein and Loi Islets

*Chloriona (Sogatella) furcifera* (Horvath)—determined by J. P. Kramer—Roi-Namur Islet

*Chloriona (Sogatella) kolophon* (Kirkaldy)—determined by W. C. Gagné—Eniwetak Islet

*Tarophagus prosperina* (Kirkaldy)\*\*—Kwajalein Islet

*Ugyops superciliata* Fennah\*\*—Kwajalein Islet

*Ugyops* sp.—determined by J. P. Kramer—Ennylabegan Islet

### Derbidae

*Lamenia caliginea charon* Fennah\*—Kwajalein, Eniwetak and Ennylabegan Islets

*Swezeyia zephyrus* Fennah\*—Kwajalein, Gugeegue, Ennylabegan and Bigej Islets

*Swezeyia* sp.—determined by J. P. Kramer—Illeginni Islet

### Aphididae

*Aphis craccivora* Koch—determined by L. M. Russell—Ennylabegan Islet

*Aphis gossypii* Glover\*—Kwajalein Islet

*Hysteroneura setariae* (Thomas)—determined by L. M. Russell—Eniwetak, Ennylabegan, Meck and Omelek Islets

### Margarodidae

*Icerya aegyptiaca* (Douglas)\*—Kwajalein, Ebeye, and Eru Islets

*Icerya purchasi* Maskell\*—Kwajalein Islet

### Pseudococcidae

*Antonina graminis* (Maskell)\*—Kwajalein Islet

*Dysmicoccus neobrevipes* Beardsley—determined by D. R. Miller—Kwajalein Islet

*Ferrisia virgata* (Cockerell)\*—Kwajalein Islet

*Laminicoccus pandani* (Cockerell)\*—Kwajalein Islet

*Palmicultor palmarum* (Ehrhorn)—Ebeye Islet

*Phenacoccus solani* Ferris\*—Kwajalein Islet

- Planococcus citri* (Risso)\*—Kwajalein Islet  
*Pseudococcus microadonidum* Beardsley\*—Kwajalein Islet  
*Pseudococcus orchidicola* Takahashi\*—Kwajalein Islet

**Coccidae**

- Ceroplastes cirripediformis* Comstock\*—Kwajalein Islet  
*Ceroplastes rubens* Maskell—determined by J. W. Beardsley—Kwajalein Islet  
*Coccus elongatus* (Signoret)\*—Kwajalein Islet  
*Coccus hesperidum* Linnaeus\*—Kwajalein Islet  
*Saissetia coffeae* (Walker)\*—Kwajalein Islet  
*Saissetia nigra* (Nietner)—determined by J. W. Beardsley—Kwajalein Islet

**Diaspididae**—determined by J. W. Beardsley

- Anoidiella inornata* McKenzie\*—Kwajalein Islet  
*Aspidiella sacchari* (Cockerell)\*—Kwajalein Islet  
*Furcaspis oceanica* Lindinger\*—Kwajalein Islet  
*Hemiberlesia cyanophylli* (Signoret)\*—Kwajalein Islet  
*Hemiberlesia lataniae* (Signoret)\*—Kwajalein Islet  
*Lepidosaphes beckii* (Newman)\*—Kwajalein Islet  
*Lepidosaphes esakii* Takahashi\*—Kwajalein Islet  
*Phinnaspis strachani* (Cooley)\*—Kwajalein Islet

**Psyllidae**

- Mesohomotoma hibisci* (Froggatt)—determined by L. M. Russell—Kwajalein Islet

## HEMIPTERA

**Miridae**

- Campylomma lividicornis* Reuter\*—Kwajalein and Ebeye Islets  
*Halticus tibialis* Reuter\*—also determined by J. L. Herring—Kwajalein, Roi-Namur, Ebeye, Gugeegue, Ennylabegan, Enubuj, Gellinam, Legan, Big Buster, and Little Buster Islets

**Nabidae**

- Nabis capsiformis* Germar—also determined by W. C. Gagné—Kwajalein, Ebeye, Eniwetak, Enubuj, Ennubira, Gagen and Legan Islets

**Lygaeidae**

- Nysius caledoniae* Distant. determined by W. C. Gagné—Kwajalein Islet  
*Nysius pulchellus* Stål\*—also determined by J. L. Herring. All Islets visited  
*Pachybrachius nigriceps* (Dallas)\*—Kwajalein Islet

**Coreidae**

- Leptocoris isolata* (Distant)\*—Kwajalein and Gugeegue Islets



*Leptocoris* sp.—determined by J. L. Herring—Eniwetak Islet

**Pentatomidae**—determined by P. D. Ashlock

*Oechalia schellenbergii* (Guerin-Meneville)\* also determined by R. C. Froeschner—Kwajalein and Legan Islets

*Platynopus melacanthus* (Boisduval)\*—Kwajalein Islet

**Cydnidae**

*Geotomus pygmaeus* (Dallas)\*—Kwajalein Islet

NEUROPTERA

**Chrysopidae**

*Chrysopa ramburi* Schneider\*—Kwajalein and Gugeegue Islets

LEPIDOPTERA

**Tineidae**

*Ereunetis* prob. *simulans* (Butler)—determined by D. M. Weisman—Eniwetak Islet

**Gelechiidae**

*Stoerberhinus testaceus* Butler—determined by R. W. Hodges—Kwajalein Islet

**Olethreutidae**

*Acroclita physalodes* Meyrick—determined by R. W. Hodges—Kwajalein Islet

**Pyralidae**

prob. *Diaphania* sp.—determined by D. M. Weisman—Eniwetak Islet

*Hedylepta* sp.—determined by D. C. Ferguson—Ennylabegan Islet

*Hedylepta* sp. near *diemenalis* (Gueneé)—determined by D. C. Ferguson—Kwajalein and Enubuj Islets

*Herpetogramma licarsisalis* (Walker)—verified by D. C. Ferguson—Kwajalein Islet

*Hymenia recurvalis* (Fabricius)—determined by D. M. Weisman—Eniwetak Islet

**Sphingidae**

*Agrius cingulatus* (Fabricius)—Kwajalein and Meck Islets

*Chromis erotus eras* (Boisduval)—Ennylabegan Islet

*Cephonodes* sp.—Gugeegue Islet

**Noctuidae**

*Achaea janata* (Linnaeus)—Kwajalein Islet

*Achaea* sp.—determined by E. L. Todd—Kwajalein Islet

*Anticarsia irrorata* (Fabricius)—determined by E. L. Todd—Kwajalein and Enubuj Islets

prob. *Bocana manifestalis* Walker—determined by D. M. Weisman—Enubuj Islet

*Chrysodeixis chalcites* complex—determined by E. L. Todd—Kwajalein

and Meck Islets

*Mocis* sp.—determined by E. L. Todd—Ennylabegan Islet

*Platysenta* sp. (?) *illecta* (Walker)—determined by E. L. Todd—  
Kwajalein Islet

*Spodoptera litura* (Fabricius)—determined by E. L. Todd—Kwajalein  
and Meck Islets

*Spodoptera mauritia* (Boisduval)—Kwajalein Islet

#### **Arctiidae**

*Utetheisa pulchelloides* Hampson\*\*—All islets visited

*Lithosine* sp.—determined by D. M. Weisman—Legan Islet

#### **Hesperiidae**

*Badamia exclamationis* (Fabricius)—Omelek Islet

#### **Nymphalidae**

*Hypolimnas bolina inconstans* Fruhstorfer—All islets visited

### COLEOPTERA

#### **Carabidae**

*Egadroma smaragdula* (Fabricius)—Kwajalein Islet

#### **Hydrophilidae**

*Dactylosternum abdominale* (Fabricius)—determined by G. A. Samuelson—  
Roi-Namur Islet.

#### **Staphylinidae**—determined by G. A. Samuelson

*Lispinus impressicollis* Motschulsky—Gugeegue Islet

*Medon* sp. (?)—Kwadack Islet

#### **Scarabaeidae**—determined by O. L. Cartwright

*Trichiorhyssemus* sp.—Kwajalein Islet

*Trichiorhyssemus esakii* Nomura—Kwajalein Islet

#### **Elateridae**

*Anchastus* sp.—determined by T. J. Spilman—Kwajalein Islet

*Conoderus* sp.—determined by T. J. Spilman—Kwajalein Islet

*Conoderus pallipes* Eschscholtz\*—determined by G. A. Samuelson—  
Kwajalein and Gugeegue Islets

*Simodactylus fasciolatus* Fairmaire\*—Kwajalein Islet

*Simodactylus tasmani* Candeze\*—Kwajalein and Loi Islets

#### **Dermestidae**

*Dermestes ater* De Geer\*—Kwajalein and Ebeye Islets

*Trogoderma anthrenoides* (Sharp)—determined by J. M. Kingsolver—  
Enubuj Islet

#### **Anobiidae**

*Lasioderma serricorne* (Fabricius)—determined by R. White—Kwajalein  
and Roi-Namur Islets

#### **Bostrichidae**

*Dinoderus bifoveolatus* (Wollaston)—determined by G. A. Samuelson—

## Kwajalein Islet

**Tenebrionidae**

- Alphitobius diaperinus* (Panzer)—Ebeye Islet  
*Chariotheca costata* Kulzer—determined by G. A. Samuelson  
*Gonocephalum adpressiforme* (Kaszab)—Kwajalein and Gugeegue Islets  
*Gonocephalum* sp.—determined by T. J. Spilman—Eniwetak Islet  
*Platolenes hydrophiloides hydrophiloides* (Fairmaire)\* also determined  
 by G. A. Samuelson—Kwajalein, Kwadack and Ebeye Islets  
*Tribolium castaneum* (Herbst)—Kwajalein Islet  
*Tribolium confusum* J. du Val—Kwajalein and Roi-Namur Islets

**Oedemeridae**—determined by R. H. Arnett

- Eobia trukana* Kono—Kwajalein, Ennylabegan and Enubuj Islet  
*Pselaphanca apicata* (Fairmaire)—Enubuj Islet  
*Pseudohyperasclera*—undescribed species—Kwajalein Islet  
*Sessinia livida* (Fabricius)—Ennylabegan Islet

**Anthicidae**

- Anthicus oceanicus* LaFerté—Kwajalein and Gugeegue Islets

**Nitidulidae**

- Carpophilus maculatus* Murray\*—Kwajalein and Gugeegue Islets  
*Carpophilus dimidiatus* (Fabricius)—determined by G. A. Samuelson—  
 Kwajalein Islet  
*Urophorus humeralis* (Fabricius)—determined by G. A. Samuelson—  
 Kwajalein Islet

**Cucujidae**

- Oryzaephilus surinamensis* (Linnaeus)—Roi-Namur Islet

**Coccinellidae**

- Coccinella repanda* Thunberg\*—Ebeye and Ningi Islets  
*Coelophora inaequalis* (Fabricius)\*\*—also determined by E. A. Chapin—  
 Kwajalein, Roi-Namur, Ennylabegan and Gugeegue Islets  
*Harmonia arcuata* (Fabricius)—determined by G. A. Samuelson—  
 Kwajalein Islet  
*Nephus roepkei* (Fluiter)\*—also determined by G. A. Samuelson—  
 Kwajalein Islet  
*Rodolia pumila* Weise\*—Kwajalein Islet  
*Scymnus nigrosuturalis* H. Kamiya\*—also determined by G. A. Samuelson—  
 Kwajalein, Roi-Namur and Eniwetak Islets  
*Telsimia nitida* Chapin—Kwajalein Islet

**Cerambycidae**

- Ceresium adamsi adamsi* Gressitt—determined by G. A. Samuelson—  
 Legan Islet  
*Prosoplus atlanticus atlanticus* Breuning\*—Gugeegue, Enmat, and Loi  
 Islets  
*Prosoplus hibisci* Gressitt—determined by G. A. Samuelson—Gugeegue  
 Islet

*Sybra* sp.—determined by G. A. Samuelson—Kwajalein and Enubuj Islets

*Sybra alternans* (Wiedemann)—determined by G. B. Vogt—Kwajalein and Enubuj Islets

### **Chrysomelidae**

*Brontispa chalybeipennis* (Zacher)—Enmat Islet

*Pagria signata* (Motschulsky)—collected and determined by J. L. Gressitt. Reported in Proc. Haw. Entomol. Soc. Vol. XVII: 10—Kwajalein Islet

### **Anthribidae**

*Araecerus* sp.—determined by R. White—Roi-Namur Islet

### **Curculionidae**

*Trigonops hirsuta* Zimmerman\*—Gugegue Islet

## SIPHONAPTERA

### **Pulicidae**

*Ctenocephalides felis felis* (Bouché)—Ebeye Islet

## DIPTERA

### **Tipulidae**

*Limonia* sp.—determined by A. Stone—Kwajalein, Ennylabegan and Legan Islets

### **Culicidae**

*Culex pipiens quinquefasciatus* Say\*—Kwajalein Islet

*Aedes marshallensis* Stone & Bohart\*—Kwajalein, Roi-Namur, Gugegue, Eniwetak, Ennylabegan, Enubuj, Illeginni, Kwadack and Legan Islets

*Aedes aegypti* (Linnaeus)\*—Kwajalein Islet

### **Chironomidae**

*Chironomus crassiforceps* Kieffer—determined by W. W. Wirth—Kwajalein Islet

*Chironomus (Chironomus) javanus* Kieffer\*—Kwajalein Islet

*Cricotopus* sp. No. 1 Tokunaga\*—Kwajalein Islet

*Thalassomya maritima* Wirth—determined by W. W. Wirth—Kwajalein Islet

### **Ceratopogonidae**

*Dasyhelea palauensis* Tokunaga\*—Kwajalein Islet

### **Sciaridae**

*Bradysia radicum* (Brunetti)\*—Kwajalein and Enubuj Islets

*Bradysia tritici* (Coquillett)—determined by W. A. Steffan—Kwajalein Islet

*Bradysia* sp.—determined by R. J. Gagné—Kwajalein and Ennylabegan Islets

*Plastosciara latipons* Hardy\*—Kwajalein Islet

### Stratiomyiidae

*Hermetia illucens* (Linnaeus)\*—Ebeye Islet

### Dolichopodidae

*Chrysosoma fraternum* (Van Duzee)—Eniwetak Islet

*Chrysosoma* sp. probably undescribed—determined by G. Steyskal—  
Roi-Namur Islet

### Asilidae

*Clinopogon* sp.—determined by L. V. Knutson—Kwajalein Islet

### Phoridae

*Megaselia scalaris* (Loew)—Kwajalein Islet

*Megaselia* sp.—determined by W. W. Wirth—Kwajalein Islet

### Syrphidae

*Ischiondon scutellaris* (Fabricius)\*—Kwajalein Islet

*Syritta orientalis* Macquart—determined by W. W. Wirth—Kwajalein  
and Meck Islets

### Otitidae

*Pseudeuxesta prima* (Osten-Sacken)—determined by G. Steyskal—  
Kwajalein Islet

### Tephritidae

*Dacus frauenfeldi* Schiner—Legan Islet

*Ensina sororcula* (Wiedemann)—determined by G. Steyskal—Kwajalein  
Islet

### Platystomatidae

*Plagiostenoptera aenea* (Wiedemann)—determined by G. Steyskal—  
Legan Islet

*Scholastes carolinensis* Enderlein—Gugeegue, Eniwetak, Ennylabegan,  
Illeginni and Legan Islets

### Lonchaeidae

*Lonchaea* sp.—Eniwetak Islet

*Lamprolonchaea* sp.—determined by G. Steyskal—Enubuj, Meck, and  
Gellinam Islets

### Lauxaniidae—determined by G. Steyskal

*Hononeura* sp.—Roi-Namur, Gugeegue, Eniwetak, Ennylabegan, En-  
nubira, Legan, and Enubuj Islets

*Prosopomyia* sp.—Enubuj, Legan, Roi-Namur, Gugeegue and Omelek  
Islets

### Tethinidae

*Dasyrhicnoessa* sp. may be *insularis* (Aldrich)—determined by G. Steys-  
kal—Kwajalein and Enubuj Islets

### Ephydriidae

*Hostis guamensis* Cresson—determined by G. Steyskal—Kwajalein  
and Enubuj Islets

### Canaceidae

*Nocticanace marshallensis* Wirth—determined by W. W. Wirth—  
Kwajalein Islet

### **Drosophilidae**

*Gitonides perspicax* Knab—determined by W. W. Wirth—Kwajalein Islet

### **Agromyzidae**

*Ophiomyia cornuta* (de Meijere)\*—Kwajalein and Ebeye Islets

*Ophiomyia* sp.—determined by G. Steyskal

*Pseudonapomyza spicata* (Malloch)\*—Kwajalein Islet

### **Milichiidae**

*Milichiella lacteipennis* (Low)—determined by C. W. Sabrosky—  
Kwajalein Islet

### **Chloropidae**—determined by C. W. Sabrosky

*Cadrema* sp.—Kwajalein Islet

*Cadrema pallida* (Loew)—Kwajalein, Gugeegue, Eniwetak, Enubuj,  
Illeginni, Meck, Gellinam and Omelek Islets

*Eutropha noctilux* (Walker)—Kwajalein Islet

### **Tachinidae**—determined by C. W. Sabrosky

*Exorista* sp.—Kwajalein Islet

*Lespesia archippivora* (Riley)—Kwajalein Islet

### **Sarcophagidae**

*Phytosarcophaga gressitti* (Hall & Bohart)\*—Kwajalein and Ebeye Islet

*Parasarcophaga misera* (Walker)\*—also verified by R. J. Gagné—  
Kwajalein, Ebeye, Gellinam and Ennylabegan Islets

### **Calliphoridae**

*Chrysomya megacephala* (Fabricius)—Kwajalein, Ebeye, Eniwetak, Legan,  
Meck, Illeginni, and Ennylabegan Islets

*Phaenicia cuprina* (Wiedemann)—verified by R. J. Gagné—Kwajalein,  
Ebeye and Ennylabegan Islets

*Rhinia apicalis* (Wiedemann)\*—Boi-Namur and Ebeye Islets

### **Anthomyiidae**

*Atherigona exisa* (Thomson)\*—Ebeye and Gugeegue Islets

*Atherigona flavipalpis* Malloch\*—Ebeye and Gugeegue Islets

*Atherigona* sp.—determined by R. J. Gagné—Enubuj Islet

*Dichaetomyia rufa* (Stein)\*—also determined by R. J. Gagné—Kwajalein  
and Ennylabegan Islets

### **Muscidae**

*Musca domestica* Linnaeus—determined by R. J. Gagné—Kwajalein,  
Roi-Namur, Ebeye, Eniwetak, Enubuj, Illeginni, Ennylabegan,  
Meck, Big Buster, Little Buster Islets

*Musca sorbens* Wiedemann\*—also verified by R. J. Gagné—Kwajalein,  
Ebeye, Ennylabegan, Enubuj, Legan, Gugeegue, Ennubira, and  
Eru Islets

## HYMENOPTERA

**Evaniidae**

*Evania appendigaster* (Linnaeus)\*—also determined by K. V. Krombein—Kwajalein and Ebeye Islets

**Eucharidae**

*Parachalcura maculata* Watanabe—Gugeegue Islet

**Braconidae**

*Microplitis* sp.—determined by P. M. Marsh—Eniwetak and Ennylabegan Islets

**Eulophidae**

*Sympiesis swezeyi* Yoshimoto and Ishii\*—Kwajalein Islet

**Bethylidae**

*Sclerodema* sp.—determined by A. S. Menke—Kwajalein Islet

**Formicidae**

*Camponotus* sp.—determined by D. R. Smith—Illeginni Islet

*Camponotus variegatus* (Fr. Smith)—Kwajalein Islet

*Iridomyrmex anceps* (Roger)—determined by D. R. Smith—Gugeegue, Illeginni and Legan Islets

*Monomorium floricola* (Jerdon)—determined by D. R. Smith—Ennylabegan Islet

*Odontomachus simillimum* Fr. Smith—determined by S. Flucker—Kwajalein, Ebeye, Gugeegue, Eniwetak, and Legan Islets

*Paratrechina bourbonica* (Forel)—determined by D. R. Smith—Kwajalein, Ennylabegan and Legan Islets

*Paratrechina longicornis* (Latreille)—determined by D. R. Smith—Illeginni Islet

*Paratrechina (Nylanderia)* sp.—determined by D. R. Smith—Ennylabegan Islet

*Pheidole megacephala* (Fabricius)—Kwajalein and Roi-Namur Islets

*Solenopsis geminata rufa* (Jerdon)—Kwajalein and Legan Islets

*Tapinoma melanocephalum* (Fabricius)—determined by D. R. Smith—Ennylabegan Islet

*Tetramorium guineense* (Fabricius)—determined by D. R. Smith—Eniwetak, Enubuj, and Legan Islets

**Vespidae**

*Pachodynerus nasidens* (Latreille)—determined by A. S. Menke—Legan, Gellinam, Gugeegue, Gagan and Eniwetak Islets

*Polistes fuscatus aurifer* Saussure—determined by C. M. Yoshimoto—Kwajalein Islet

*Ropalidia marginata sundaica* Van der Vecht—Kwajalein, Gugeegue, Ennylabegan, Illeginni, Kwadack, Ennubira, Legan and Meck Islets

**Sphecidae**

*Liris opulenta* (Lepeletier)—determined by K. V. Krombein—Kwaja-

lein Islet

*Chalybion bengalense* (Dahlbom)—determined by C. M. Yoshimoto—  
Roi-Namur Islet

**Megachilidae**

*Megachile fullawayi* Cockerell—Gugeegue Islet

*Megachile diligens* Smith—determined by P. D. Hurd, Jr.—Legan Islet