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Chapter 23

Crustacea Decapoda (Brachyura and Anomura) of Enewetak Atoll

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INTRODUCTION

A preliminary report on the Crustacea Decapoda (Brachyura and Anomura) of Enewetak Atoll, Marshall Islands, was published by the first author in 1964. It reported the collecting of 19 families, 81 genera, and 147 species of brachyuran and anomuran crabs, mostly at Enewetak Atoll. The report was based on collections made by Donald J. Reish in 1956 and 1957; A. H. Banner in 1957; John S. Garth and Fred C. Ziesenhenné in 1957 and 1959, with the assistance of J. Coatsworth, L. Donaldson, T. Goreau, E. Held, R. Neshida, R. Palumbo, J. Roberts, E. Ryan, and A. Smith; and R. A. Boolootian, E. S. Reese, B. Sather, J. Shoup, and R. A. Stevenson in 1960 and 1961. Only those species were listed, however, that occurred in the two specialized habitats discussed: those found in association with branching corals and those obtained by dredging in the lagoon. (Reporting of Anomura was of a preliminary nature, giving number of families, genera, and species but listing only four species, two of them to genus only, from the lagoon-bottom habitat.) The overwhelming presence of the family Xanthidae was noted. These comprised 45% of the genera and 56% of the species of Brachyura encountered, a circumstance attributed to the abundance and variety of corals in which many of the xanthid species reside.

The present report, although still of a preliminary nature, is based additionally upon the more extensive collections made by Jens W. Knudsen, who visited Enewetak annually from 1965 through 1969 and again in 1971 and 1972; by Alan Havens, who visited the atoll in 1968, 1969, and 1970; and by C. Allan Child, who collected at Enewetak for the Smithsonian Institution in 1969. Smaller

collections used in preparing the report were those of W. A. Bartos in 1944, F. C. Ziesenhenné in 1946, G. J. Bakus and B. H. Bussing in 1965, C. V. MacCoy in 1967, S. L. Brunenmeister and E. Chave in 1974 and 1975, A. Fielding in 1976 and 1978, and P. Colin and D. M. Devaney in 1980. Of the decapod crustaceans obtained in the Marshall Islands during Operation Crossroads in 1946 and 1947, the Portunidae (Stephenson and Rees, 1967), the Xanthidae (under study by John S. Garth), and the Porcellanidae (under study by Janet Haig) from Enewetak could be included. Although the earlier report (Garth, 1964) could compare what was then known of Enewetak Brachyura and Anomura with the limited work done in the Marshall Islands by the Pacific Science Board's Coral Atoll Survey (Holthuis, 1953), a much better comparison of the Enewetak fauna with those of other atolls of the northern Marshall Islands can now be made with reference to the earlier Operation Crossroads collections. The Porcellanidae from Marshall Islands other than Enewetak are also being studied by Haig.

Records of previous anomuran and brachyuran collecting in the Marshall Islands at atolls other than Enewetak are those of Balss (1938) from Ailinglablab, Ebon, Jaluit, Kwadelin (Kwajalein), Namu, and Namorik of the Ralik group; Likiep and Majeru (Majuro) of the Ratak group; of Miyake (1939) from the above plus Arno of the Ratak group; of Miyake (1943) (Porcellanidae only) from Jaluit; of Holthuis (1953) from Ailuk, Arno, Bikar, Jemo, Kwajalein, Lae, Likiep, Pokak, Taka, Ujae, Ujelang, Utrik, and Wotho; and of Stephenson and Rees (1967) (Portunidae only) from Bikini, Rongelap, and Rongerik.

LAND CRABS

The first decapod crustaceans encountered at Enewetak, as at any mid-Pacific atoll, and the only ones likely to be seen by many visitors, are the semiterrestrial and terrestrial species. These are the species that spend most of their lives at high-tide mark or above it, returning to the sea only to deposit their eggs, which require seawater for hatching and for nurturing the larval stages. Anomuran crabs having this habit are hermit crabs of the

family Coenobitidae, genus *Coenobita*, and the coconut crab, *Birgus latro*. Brachyuran crabs found in the terrestrial environment are grapsoid crabs of the families Gecarcinidae, Ocypodidae, and a few Grapsidae.

The spray zone on rocky shore is inhabited by the Sally Lightfoot crab, here *Grapsus tenuicrustatus* rather than *Grapsus grapsus* Linnaeus, 1758. The highest elevations of sandy beaches are inhabited by the grapsid crabs *Cyclograpsus* and *Pseudograpsus*; the intermediate elevations (with burrows extending below water level) are inhabited by the ghost crab, *Ocypode ceratophthalma*. The mole crab, *Hippa pacifica*, an anomuran, lives in the surf zone, burying itself quickly and emerging suddenly to grasp its food with its first pair of legs. Analogous situations on muddy beaches (rare at Enewetak) are inhabited by the ocypodid crabs *Macrophthalmus* and *Uca*. Where soil accumulates, as at the bases of coconut palms, the land crab *Gecarcinus*, family Gecarcinidae, burrows. The collector who turns inland will encounter the grapsids *Geograpsus crinipes* and *G. grayi* among leaf litter and the *Metasesarma* and *Sesarma* among roots and low branches.

It was no accident that the collector responsible for most of the records of land crabs in the Pacific Science Board's Coral Atoll Survey (Holthuis, 1953) was F. R. Fosberg, a terrestrial botanist, or that the first crabs to reach the senior author soon after arriving at Enewetak were brought to him by Edward Held and Ralph Palumbo, members of the University of Washington group studying the effects of radiation on terrestrial organisms. Thus every habitat available to them, both terrestrial and marine, has been colonized by these ubiquitous arthropods, the decapod crustaceans.

CRABS AS SYMBIONTS

The relationships between crabs and the corals in which they may be found vary widely, from parasitism and commensalism (or mutualism) to facultative symbiosis. In parasitism, the crab burrows into the coral or the coral grows around the crab, in both cases enclosing it. In commensalism, the crab, although apparently free-living, invariably selects a living coral of a particular kind as its host. Facultative symbiosis is a relationship in which the crab, while often found in living coral, is also found in dead coral, in coral rubble, or even on a noncoral, rubbly substrate.

The true parasites, long thought to include only the coral gall crabs and coral-burrowing crabs of the family Hapalocarcinidae, are now known to include some of the apparently free-living crabs of the family Xanthidae as well—in particular, the genera *Trapezia* and *Tetralia*, the former found on pocilloporid, the latter on acroporid corals. These were shown by Knudsen (1967) to feed on coral polyps, which they macerate with their specially adapted dactyls before ingesting. The genera *Domecia* and *Cymo*, different species of which occur on pocilloporid and acroporid corals, apparently have similar feeding habits,

although only those of *Domecia* have been investigated (Patton, 1967).

Other crabs found in coral apparently use it only for shelter and protection from predators. These include not only xanthid crabs like *Liomera* (= *Carpilodes*) and *Pseudoliomera*—some species of which rarely, if ever, occur elsewhere—but also a host of genera such as *Chlorodiella*, *Phymodius*, and *Pilodius*, which are found abundantly in dead coral and coral rubble. These are joined by crab genera of other families: the smaller swimming crabs of the genus *Thalamita*, family Portunidae; a number of spider crabs, including *Perinea* and *Tylocarcinus*, family Majidae; hermit crabs of the genus *Calcinus*, family Diogenidae; *Coralligalatea* and *Galathea*, family Galatheidae; and porcelain crabs of the genera *Pachycheles* and *Petrolisthes*, family Porcellanidae.

Small xanthid crabs of the genus *Actumnus* have been observed to carry a small piece of live coral as they move about the ocean bottom, much as a hermit crab carries a gastropod shell. *Actumnus antelmi* Ward, the species originally described as having this habit, occurs at Enewetak, but its coral-carrying propensity was not observed (Lamberts and Garth, 1977).

Crabs that use not a coral polyp but an actinian coelenterate, which they carry in each claw to fend off attackers, are members of the genera *Lybia* and *Polydectus*. Several species of diogenid hermit crabs of the genus *Dardanus* carry anemones on their shells. In both cases, the crab benefits from the stinging nematocysts of the coelenterate, and the anemone achieves mobility and probably food as well. The porcelain crab *Neopetrolisthes*, family Porcellanidae, inhabits several species of large anemones.

Crabs associated with living mollusks include the pinnotherid *Xanthasia murigera*, found in the mantle cavity of the giant clam, *Tridacna gigas*. Crabs associated with living echinoderms include the parthenopid *Harrovia elegans*, found on the crinoid *Comanthus*, and the galatheids *Allogalatea elegans* and *Galathea amboinensis*, also found on crinoids. The portunids *Lissocarcinus orbicularis* and *L. holothuricola* found in the respiratory tree or cloaca of the sea cucumbers *Holothuria atra* Jaeger and *Actinopyga mauritiana* (Quoy and Gaimard) proved impossible to partition between their holothurian hosts.

CRABS AS SUBJECTS FOR RESEARCH

The Anomura and Brachyura of Enewetak Atoll have proven valuable as subjects for research. The terrestrial hermit crabs, *Coenobita*, were used by University of Washington School of Fisheries personnel in determining residual activity from tests conducted by the Atomic Energy Commission in the late 1940s and early 1950s (Held, 1960). Reese (1968a) used the coconut crab, *Birgus latro*, in life history studies showing use of a shell by the glaucothoe larva. Hermit crabs, *Coenobita*, and the ghost crab, *Ocypode ceratophthalma*, were used by Reese in motion picture studies of locomotion. Experiments conducted by

Knudsen (1967) showed that the coral-inhabiting xanthid crabs, *Trapezia* and *Tetralia*, ate coral polyps after first macerating them and, hence, were true parasites rather than commensals. The coral burrowing crabs, family Hapalocarcinidae (Fize and Serène, 1957), were used by Knudsen in unpublished studies. The portunid crab, *Thalamita integra*, was used by Pomeroy and Kuenzler (1967) in studies of phosphorus turnover by coral reef animals. Highsmith (1981) involved the xanthid crabs, *Tetralia* and *Maldivia*, in studies of coral erosion by invertebrates and fishes. Intertidal crabs of the family Xanthidae were utilized by Havens (1974) in studies of competitive exclusion (the partitioning of food resources). Wenner (1977) and Wenner and Fusaro (1979) conducted studies of population structure and dynamics using the Pacific mole crab, *Hippa pacifica*. The xanthid crabs—*Dacryopilumnus eremita*, *Eriphia sebana*, *Phymodius unguulatus*, *Pilumnus longicornis*, and *Trapezia speciosa*—were shown by Danforth (1967, 1970) to host epicarid isopod parasites of hitherto undescribed species. The hermit crabs *Dardanus* were shown by Humes (1971) to be hosts of harpacticoid copepods. The hermit crabs *Calcinus* and *Diogenes* were used by Orians and King (1964) in studies on shell selection and invasion rates.

Systematic studies have been published on the genus *Petrolisthes*, family Porcellanidae, by Haig (1981); on coral-inhabiting crabs by Garth (1964); and on swimming crabs, family Portunidae, by Stephenson and Rees (1967), with additional studies by Garth, Haig, and Knudsen in progress.

POISONOUS CRABS

During the 1970s Garth and Alcalá (1977) showed beyond a reasonable doubt that numerous reef-inhabiting crabs of the Indo-West Pacific are harmful when eaten because they are poisonous. Included among these are several common Enewetak species: *Daldorfia horrida* (Linnaeus), *Atergatis floridus* (Linnaeus), *Eriphia sebana* (Shaw and Nodder), and *Zoerymus aeneus* (Linnaeus). The first is an elbow crab, family Parthenopidae; the remaining three are members of the family Xanthidae, as are most of the crabs found to be toxic to man and to domestic animals. The poison, a saxitoxin, is chemically indistinguishable from that produced by certain mollusks. It causes vomiting, followed by locomotory and neurological symptoms which, if not treated, result in paralysis and death.

Crab-caused fatalities have been documented, and the crabs were identified by competent taxonomists in the Ryukyu Islands, the Philippines, and Palau. Native populations of many South Sea island groups have traditions of killer crabs and vernacular names for the poisonous species. Although no poisonings from crabs are known to have occurred at Enewetak Atoll, crabs known to be poisonous elsewhere are common on the reef at Enewetak. Caution is urged in the handling of these crabs (a person who has handled such a crab might experience numbness

after touching his tongue to his hand). Abstinence from their culinary use is also advised.

FOSSIL CRUSTACEANS

Fossil anomuran and brachyuran decapod species obtained by U. S. Geological Survey drillings at Enewetak and reported by Roberts (1964) include *Callichirus armatus* (A. Milne Edwards), *Callichirus articulatus* (Rathbun), *Actaeodes hirsutissimus* (Rüppell), and *Etisus laevimanus* (Randall). Although known from elsewhere in the Indo-West Pacific, these four species have not been found living at Enewetak. This could mean either that subtle changes have occurred in the reef environment that render Enewetak no longer a suitable habitat or, as seems more likely, that the suite of species inhabiting Enewetak is changing constantly as new species are introduced, become established, are eliminated by competitors, and become locally extinct until reintroduced in another cycle. It is also possible that further and more diligent searching may yet uncover these four species at Enewetak in the living state.

COLLECTING DECAPOD CRUSTACEANS*

Enewetak Atoll ascends abruptly to the surface where the North Equatorial Current, the prevailing trade winds, and the oceanic waves strike the atoll. Waves refract all the way around the atoll reef and penetrate the lagoon through channels or over the algal ridge. Therefore, we felt that every compass point, from windward to leeward, would have unique physical factors that influenced distribution of both coral species (plus morphotypes of coral species) and decapod crustaceans. This proved useful. Since several other experts were to receive crustacean specimens beyond our interest, much time was spent hunting new corals, crinoids, algae, and sediments that harbored decapods.

The intertidal zone is shallow (based on Kwajalein information), yet while zones are compressed, a centimeter elevation on the reef flat would usually yield some different brachyuran. We also believed zones directly below and above the tidal range were relatively shallow but became thicker (or deeper) down into the lagoon depth, or to the height of land and its vegetation on islands.

This, in theory, kept us close to the intertidal zone where we thought the greatest species density of decapods was to be, and apparently is, found. We collected on all but three of the 34 named islands. The northwest chain from Bogallua Island to Bogon Island was considered too dangerous for camping trips as opposed to 1-day M-boat runs. Our radio carried less than 5 miles and the Equatorial Current flowed westward. Later, the Garth-Knudsen teams found the restricted access limited the work on the northwest chain as compared to that done on the more accessible islands.

*This section was provided by Jens Knudsen.

The windward algal ridge receives the largest waves which supersaturate incoming water with oxygen. Algae grow here in a profusion of species and mass. Initially we used pry bars to loosen slabs from the algal ridge. These were placed in plastic bags or buckets while another team member attempted to secure all free decapods. Slabs were carried to the nearest island for cracking and collecting of decapods. Subsequently, a rigid, heavy-welded pipe cracking table with a car-decking top was designed and built for the purpose of cracking coral or slabs at any site including the algal ridge (Fig. 1). Buckets, hammers, and other equipment were secured to the table. A marker allowed note taking (even under water), so station numbers were issued and recorded as needed. Naturally someone held the table when very large waves were running. The yield of species was dramatically increased by the use of the cracking table.

Illuminated by a Coleman lantern, the reef-flat and algal ridge were also collected at night with excellent success. The algal ridge off Enewetak Island was also collected during waveless doldrums—until two large tsunamic waves came shoreward, throwing Knudsen 30 feet back onto the reef flat.

Small amounts of formaldehyde were applied full strength to the reef flat at low-low tide. The preservative diluted in patches of water and entered worm burrows, evicting numerous decapods which otherwise would have been impossible to collect. Behind the reef flat, formal-

dehyde was injected 6 inches deep in coral rubble. Soon afterwards, decapods that resembled chips of coral worked up to the surface and were captured with a guppy net.

On our first trip, we snorkeled every day and averaged about 5 to 10 miles of swimming per day in local areas. Always new corals or new formations, new wave patterns, reef drainage currents, etc., provided new records. Plastic bags were placed over corals or crinoids, and the coral and/or crinoid was removed with decapod species intact. The author was towed by our slow moving outboard skiff to survey miles of lagoon margin. A hand signal meant new coral formation—or possible shark attack. We snorkeled down to about 60 feet in quest of some crinoids and corals.

Collecting was successfully attempted with a dredge built and outfitted at Pacific Lutheran University (PLU). We used the dredge, powered by a skiff, in shallow water (to 30 feet). In deeper lagoon water, we used an M-boat in reverse, with the dredge rope and buoy ready to go overboard when fouled. Markers placed and recorded to allow work to continue the next day were never found again. However, many rare and some new records of crabs were worth the effort. A cable and winch, as opposed to pulling the cable by hand, would have greatly facilitated lagoon studies.

Islands possessed many species of decapods on land and even in trees. Since islands are scattered around much of the reef, and refracting waves strike islands differently,



Fig. 1 Cracking table on the algal ridge at Enewetak, about 1000 ft from land.

the intertidal and island sediments had to be sampled all the way around and at all elevations (the highest being 13 feet above sea level). Several islands were studied in great detail with some new records derived. Can-traps, baited traps, lantern light, etc., helped secure the nocturnal individuals. Crepuscular decapods were the least collected. Two locations were found where real mud occurred, and there *Uca*, the fiddler crab, was collected for the first time.

Some of my studies, such as the ecology and distribution of brachyurans at the north end of Enewetak Island, became so large and required so much space that they were self-defeating. Because of the high class loads (18 to

22 contact hours at PLU until about 1970), research data had to be set aside so long it lost its relevancy. Despite such failings, evidence has been produced of a much richer and grander decapod fauna than any had guessed existed. Yet I am convinced another 50 species must lurk there waiting. I would like to capture them . . . personally!

Students serving well at Enewetak include Jack Shannon, M. D.; David Pearson, Ph.D., Penn State; Douglas Lambrecht, M. D.; Douglas Holt; Richard Myking, teacher; John Rankin, teacher; David Soderlund, Ph.D., Cornell University; and Erik Severeid, business overseas.

Checklist of Anomura and Brachyura from Enewetak Atoll

Order DECAPODA

Suborder PLEOCYEMATA

Infraorder ANOMURA

Superfamily THALASSINOIDEA

Family CALLIANASSIDAE

*†*Callianassa* sp.

*†*Calliax* sp., aff. *novaebritanniae* (Borradaile, 1900).

Callichirus armatus (A. Milne Edwards, 1870).

‡*Callianassa armata*: Roberts, 1964.

Callichirus articulatus (Rathbun, 1906).

‡*Callianassa articulata*: Roberts, 1964.

*†*Callichirus vigilax* (De Man, 1916).

*†*Thomassinia* sp.

Family CALLIANIDEIDAE

*†*Callianidea* [undescribed sp.].

*†New genus [undescribed sp. 1].

*†New genus [undescribed sp. 2].

Family AXIIDAE

*†*Enoplometopus* (*Enoplometopus*) sp.

Enoplometopus (*Holometopus*) *holthuisi* Gordon, 1968; Holthuis, 1983.

*†New genus [? undescribed sp.].

Superfamily HIPPOIDEA

Family HIPPIDAE

*†*Hippa adactyla* Fabricius, 1787.

Hippa pacifica (Dana, 1852): Wenner, 1977; Fusaro, 1978; Wenner and Fusaro, 1979; Wenner and Haley, 1981.

Family ALBUNEIDAE

*†*Paralbunea dayriti* (Serène and Umali, 1965).

‡*Albunea ?elioti* Benedict, 1904.

‡*Albunea* sp.

Superfamily PAGUROIDEA

Family COENOBITIDAE

Birgus latro (Linnaeus, 1767): Gross, 1964; Reese, 1968a; Reese and Kinzie, 1968; Page and Willason, 1982.

Coenobita brevimanus Dana, 1852: Gross, 1964; Lawrence, 1976; Page and Willason, 1982.

*†*Coenobita cavipes* Stimpson, 1858.

Coenobita perlatus H. Milne Edwards, 1837: Held, 1960; Gross, 1964; Reese, 1969; Lawrence, 1976;

Page and Willason, 1982.

Coenobita rugosus H. Milne Edwards, 1837: Lawrence, 1976; Page and Willason, 1982.

Family DIOGENIDAE

Aniculus aniculus (Fabricius, 1787): Reese, 1969; Forest, 1984.

*†*Aniculus* sp.

*New Enewetak record.

†New Marshall Islands record.

‡Fossil record.

‡J. S. Garth manuscript lists.

- Calcinus elegans* (H. Milne Edwards, 1836): Reese, 1969.
Calcinus gaimardii (H. Milne Edwards, 1848): Reese, 1969.
- *†*Calcinus guamensis* Wooster, 1984.
 †*Calcinus* sp. indet. #2.
- *†*Calcinus imperialis* Whitelegge, 1901.
Calcinus laevimanus (Randall, 1839): Reese, 1962; Reese, 1968b; Reese, 1969.
Calcinus latens (Randall, 1839): Provenzano, 1963; Orians and King, 1964; Reese, 1969; Humes, 1971.
Calcinus seurati Forest, 1951: Reese, 1969.
- *†*Calcinus* sp., aff. *spicatus* Forest, 1951.
- *†*Clibanarius* sp., aff. *boschmai* Buitendijk, 1937.
Clibanarius corallinus (H. Milne Edwards, 1848): Reese, 1969.
 **Clibanarius eurysternus* (Hilgendorf, 1879).
- *†*Clibanarius zebra rhabdodactylus* Forest, 1953.
 †*Clibanarius zebra* var. *rhabdodactylus*.
- *†*Clibanarius* sp.
- *†*Dardanus crassimanus* (H. Milne Edwards, 1836).
 **Dardanus deformis* (H. Milne Edwards, 1836).
 *†*Dardanus gemmatus* (H. Milne Edwards, 1848).
Dardanus guttatus (Olivier, 1812): Humes, 1971.
Dardanus lagopodes (Forsskål, 1775): Humes, 1971.
Dardanus sanguinolentus (Quoy and Gaimard, 1824): Provenzano, 1963.
 †*Dardanus sanguinolentus*.
Dardanus megistos (Herbst, 1804): Humes, 1971.
Dardanus scutellatus (H. Milne Edwards, 1848): Provenzano, 1963; Orians and King, 1964; Garth, 1964; Humes, 1971.
Dardanus woodmasoni (Alcock, 1905): Garth, 1964.
Diogenes gardineri Alcock, 1905: Provenzano, 1963; Orians and King, 1964.
 †*Diogenes* sp.
- *†*Diogenes pallescens* Whitelegge, 1897.
- *†*Paguristes* sp.
- *†*Trizopagurus strigatus* (Herbst, 1804).
- Family PAGURIDAE
- *†*Catapagurus* sp.
- *†*Pagurixus anceps* (Forest, 1954): McLaughlin and Haig, 1984.
 †*Pagurus* sp. (in part).
 †*Pagurus* (*Pagurixus*) sp. 1.
Pagurixus boninensis (Melin, 1939): McLaughlin and Haig, 1984.
Pagurixus maorus (Nobili, 1906): McLaughlin and Haig, 1984.
 †*Pagurus* sp. (in part).
 †*Pagurus* (*Pagurixus*) sp. 2.
- *†New genus, sp.
- Superfamily GALATHEOIDEA
- Family GALATHEIDAE
- Allogalatea elegans* (Adams and White, 1848): Baba, 1977; Baba, 1979; Bruce and Zmarzly, 1983.
 †*Galathea elegans*.
- *†*Coralligalatea humilis* (Nobili, 1905).
 †*Galathea tridentirostris* Miyake, 1953.
- *†*Galathea aegyptiaca* Paulson, 1875.
- *†*Galathea affinis* Ortmann, 1892.
 †*Galathea spinosorostris* Dana, 1852 (in part).
 †*Galathea* sp., aff. *australiensis* Stimpson, 1858.
- *†*Galathea amboinensis* De Man, 1888.
- *†*Galathea* sp., aff. *tanegashimae* Baba, 1969.
 †*Galathea spinosorostris* Dana, 1852 (in part).
- *†*Phylladorhynchus serrirostris* (Melin, 1939).
 †*Galathea serrirostris*.
- Family PORCELLANIDAE
- **Neopetrolisthes maculatus* (H. Milne Edwards, 1837).
 **Pachycheles johnsoni* Haig, 1965.
 †*Pachycheles sculptus* (H. Milne Edwards, 1837).

*New Enewetak record.

†New Marshall Islands record.

†J. S. Garth manuscript lists.

- *† *Pachycheles pisoides* (Heller, 1865).
- *† *Pachycheles spinipes* (A. Milne Edwards, 1873).
- *† *Petrolisthes asiaticus* (Leach, 1820).
- *† *Petrolisthes bispinosus* Borradaile, 1900.
- Petrolisthes borradalei* Kropp, 1984: Kropp, 1984.
- † *Petrolisthes lamarckii* (Leach, 1820) (in part).
- *† *Petrolisthes coccineus* (Owen, 1839).
- *† *Petrolisthes decacanthus* Ortmann, 1897.
- Petrolisthes elegans* Haig, 1981: Haig, 1981.
- Petrolisthes fimbriatus* Borradaile, 1898: Highsmith, 1981.
- * *Petrolisthes lamarckii* (Leach, 1820).
- *† *Petrolisthes masakii* Miyake, 1943.
- *† *Petrolisthes penicillatus* (Heller, 1862).
- *† *Petrolisthes pubescens* Stimpson, 1858.
- *† *Petrolisthes* [undescribed sp. 1, R. K. Kropp MS].
- *† *Petrolisthes* [undescribed sp. 2, J. Haig and R. K. Kropp MS].
- † *Petrolisthes decacanthus* Ortmann, 1897 (in part).

Infraorder BRACHYURA

Section DROMIACEA

Superfamily DROMIOIDEA

Family DROMIIDAE

- *† *Cryptodromia canaliculata* Stimpson, 1858.
- *† *Cryptodromia* sp.

Family DYNOMENIDAE

- Dynomene hispida* Desmarest, 1825: Highsmith, 1981.
- *† *Dynomene pilumnoides* Alcock, 1899.
- * *Dynomene praedator* A. Milne Edwards, 1879.
- * *Dynomene spinosa* Rathbun, 1911.

Section OXYSTOMATA

Superfamily CALAPPOIDEA

Family LEUCOSIIDAE

- *† *Cryptocnemus haddoni* Calman, 1900.
- *† *Ebalia woodmasoni* Alcock, 1986.
- Ebaliopsis erosa* (A. Milne Edwards, 1873): Garth, 1964.
- * *Heterolithadia* sp.
- *† *Heteronucia venusta* Nobili, 1906.
- *† *Merocryptus durandi* Serène, 1955.
- *† *Myra fugax coalita* Hilgendorf, 1878.
- *† *Nucia ingens* (Rathbun, 1911).
- *† *Nucia speciosa* Dana, 1852.
- *† *Oreophorus (Oreatios) latus* Borradaile, 1903.
- *† *Species incertae sedis*.

Family CALAPPIDAE

- *† *Calappa calappa* (Linnaeus, 1758).
- *† *Calappa gallus* (Herbst, 1803).
- * *Calappa hepatica* (Linnaeus, 1758):‡ Roberts, 1964.

Section OXYRHYNCHA

Superfamily MAJOIDEA

Family MAJIDAE

- *† *Camposcia retusa* Latreille, 1825.
- *† *Camposcia* sp.
- * *Cyclax suborbicularis* (Stimpson, 1858).
- *† *Huenia brevifrons* Ward, 1941.
- Huenia proteus* De Haan, 1839: Garth, 1964.
- *† *Hyastenus irami* (Laurie, 1906).
- *† *Hyastenus uncifer* Calman, 1900.
- *† *Hyastenus verrucosipes* (Adams and White, 1848).
- *† *Hyastenus* sp.

*New Enewetak record.

†New Marshall Islands record.

‡Fossil record.

††J. S. Garth manuscript lists.

- Menaethius monoceros* (Latreille, 1825): Garth, 1964.
- *† *Micippa margaritifera* Henderson, 1893.
 - Micippa philyra* (Herbst, 1803): Garth, 1964.
 - *† *Micippa platypes* Rüppell, 1830.
 - *† *Micippa thalia* (Herbst, 1803).
 - *† *Naxiodes spinigera* Borradaile, 1903.
 - *† *Paratymolus bituberculatus* Miers, 1882.
 - Paratymolus sexspinosus* Miers, 1884: Garth, 1964.
 - *† *Parazewa bocki* Balss, 1938.
 - Perinea tumida* Dana, 1851: Garth, 1964.
 - Schizophrys aspera* (H. Milne Edwards, 1834): Garth, 1964.
 - *† *Trigonothir obtusirostris* Miers, 1879.
 - *† *Tylocarcinus ?gracilis* Miers, 1879.
 - Tylocarcinus styx* (Herbst, 1803): Garth, 1964.
- Superfamily PARTHENOPOIDEA
Family PARTHENOPIDAE
- *† *Actaeomorpha* sp., nr. *erosa* (Miers, 1878).
 - *† *Cryptopodia ?pan* Laurie, 1905.
 - * *Daldorfia horrida* (Linnaeus, 1758).
 - *† *Daldorfia* (or *Parthenope*) sp.
 - Harrovia elegans* De Man, 1888: Garth, 1964.
 - *† *Heterocrypta?* sp.
 - *† *Parthenope* (*Aulacolambrus*) *curvispinis* (Miers, 1879).
 - *† *Parthenope* (*Aulacolambrus*) *hoplonotus* (Adams and White, 1848).
 - *† *Parthenope* (*Aulacolambrus*) sp.
 - *† *Parthenope* (*Pseudolambrus*) sp.
 - Parthenope* sp.: Garth, 1964.
 - *† *Thyrolambrus erosus* (Miers, 1879).
 - *† *Thyrolambrus* sp.
- Section CANCRIDEA
Superfamily CORYSTOIDEA
Family ATELECYCLIDAE
- *† *Kraussia integra* Rathbun, 1906.
 - *† *Kraussia* sp., cf. *marquesa* Serène, 1972.
 - *† *Kraussia nitida* Stimpson, 1858.
 - *† *Kraussia rastripes* F. Müller, 1857.
 - *† *Kraussia rugulosa* (Krauss, 1843).
- Section BRACHYRHYNCHA
Superfamily PORTUNOIDEA
Family PORTUNIDAE
- * *Carupa tenuipes* Dana, 1851.
 - † *Carupa laeviuscula* Heller, 1861.
 - *† *Catoptrus inaequalis* (Rathbun, 1906).
 - * *Catoptrus nitidus* A. Milne Edwards, 1870.
 - *† *Catoptrus rathbunae* Serène, 1965.
 - *† *Catoptrus ?truncatifrons* De Man, 1887.
 - * *Charybdis* (*Goniosupradens*) *erythroductylus* (Lamarck, 1818).
 - *† *Coelocarcinus foliatus* Edmondson, 1930.
 - *† *Libistes villosus* Rathbun, 1924.
 - *† *Lissocarcinus holothuricola* Streets, 1877.
 - *† *Lissocarcinus orbicularis* Dana, 1852.
 - Portunus* (*Achelous*) *granulatus* (H. Milne Edwards, 1834).
 - Portunus granulatus*: Garth, 1964.
 - Portunus* (*Achelous*) sp., nr. *orbicularis* (Richters, 1880).
 - Portunus orbicularis* (Richters): Garth, 1964.
 - Portunus* (*Hellenus*) *longispinosus* Stephenson and Campbell, 1959.
 - Portunus longispinosus* (Dana, 1852): Garth, 1964.
 - Thalamita admete* (Herbst, 1803): Garth, 1964; Stephenson and Rees, 1967.
 - Thalamita bouvieri* Nobili, 1906: Stephenson and Rees, 1967.

*New Enewetak record.

†New Marshall Islands record.

‡J. S. Garth manuscript lists.

- *† *Thalamita chaptalii* (Audouin, 1826).
 - *† *Thalamita coeruleipes* Jacquinet, 1852.
 - *† *Thalamita corrugata* Stephenson and Rees, 1961.
 - † *Thalamita cooperi* (Borradaile, 1902).
 - *† *Thalamita dakini* Montgomery, 1931.
 - † *Thalamita medipacifica* Edmondson, 1954.
 - Thalamita gloriensis* Crosnier, 1962: Stephenson and Rees, 1967.
 - Thalamita gracilipes* (A. Milne Edwards, 1873).
 - Thalamonyx gracilipes*: Garth, 1964.
 - Thalamita integra* Dana, 1852: Pomeroy and Kuenzler, 1967.
 - *† *Thalamita oculatea* Alcock, 1899.
 - Thalamita picta* Stimpson, 1858: Garth, 1964; Stephenson and Rees, 1967.
 - Thalamita pilumnoides* Borradaile, 1902: Garth, 1964.
 - * *Thalamita prymna* (Herbst, 1803).
 - *† *Thalamita quadrilobata* Miers, 1884.
 - *† *Thalamita sexlobata* Miers, 1886.
 - *† *Thalamita sima* H. Milne Edwards, 1834.
 - Thalamita spiceri* Edmondson, 1954: Highsmith, 1981.
 - *† *Thalamita spinimana* Dana, 1852.
 - † *Thalamita danae* Stimpson, 1858.
 - *† *Thalamita stimpsoni* A. Milne Edwards, 1861.
 - *† *Thalamita wakensis* Edmondson, 1925.
 - *† *Thalamita yoronensis* Sakai, 1969.
 - *† *Thalamita* sp., nr. *auauensis* Rathbun, 1906.
 - Thalamitoides quadridens* A. Milne Edwards, 1869: Garth, 1964;‡ Roberts, 1964.
- Superfamily XANTHOIDEA
- Family XANTHIDAE
- *† *Actaea* sp., nr. *bocki* Odhner, 1925.
 - *† *Actaea*(?) *cavipes* (Dana, 1852).
 - *† *Actaea margaritifera* Odhner, 1925.
 - *† *Actaea pulchella modesta* (De Man, 1888).
 - *† *Actaea quadriareolata* Takeda and Miyake, 1968.
 - *† *Actaea* sp.
 - * *Actaeodes consobrinus* (A. Milne Edwards, 1873).
 - † *Actaea consobrina*.
 - Actaeodes hirsutissimus* (Rüppell, 1830).
 - ‡ *Actaea hirsutissima*: Roberts, 1964.
 - *† *Actumnus antelmei* Ward, 1942.
 - *† *Actumnus asper* (Rüppell, 1830).
 - *† *Actumnus setifer* (De Haan, 1835).
 - † *Actumnus tomentosus* Dana, 1852.
 - *† *Actumnus* sp.
 - *† *Actumnus* (or *Pilumnus*) sp.
 - *† *Atergatis ?dilitatus* De Haan, 1835.
 - * *Atergatis floridus* (Linnaeus, 1767).
 - *† *Atergatopsis signata* (Adams and White, 1848).
 - * *Banareia nobilii* (Odhner, 1925).
 - † *Actaea nobilii*.
 - *† *Banareia parvula* (Krauss, 1843).
 - † *Actaea parvula*.
 - *† *Carpilius convexus* (Forsskål, 1775).
 - *† *Carpilius maculatus* (Linnaeus, 1758).
 - *† *Chlorodiella corallicola* Miyake and Takeda, 1968.
 - *† *Chlorodiella cytherea* (Dana, 1852).
 - Chlorodiella laevis* (Dana, 1852): Garth, 1964.
 - Chlorodiella nigra* (Forsskål, 1775): Garth, 1964.
 - *† *Cycloxanthops cavatus* Rathbun, 1907.
 - Cymo andreosyi* (Audouin, 1826): Garth, 1964.

*New Enewetak record.

†New Marshall Islands record.

‡Fossil record.

†J. S. Garth manuscript lists.

- Cymo deplanatus* A. Milne Edwards, 1873: Garth, 1964.
Cymo melanodactylus De Haan, 1835: Garth, 1964.
 **Cymo quadrilobatus* Miers, 1884.
Dacryopilumnus eremita Nobili, 1906: Danforth, 1970.
 *†*Dacryopilumnus rathbunae* Balss, 1932.
 **Daira perlata* (Herbst, 1790).
Domecia glabra Alcock, 1899: Garth, 1964.
Domecia hispida Eydoux and Souleyet, 1842: Garth, 1964.
 **Eriphia scabricula* Dana, 1852.
Eriphia sebana (Shaw and Nodder, 1803): Reese, 1969; Danforth, 1970.
 †*Eriphia laevimana* Guérin, 1838.
 *†*Etisus bifrontalis* (Edmondson, 1935).
 *†*Etisus demani* Odhner, 1925.
 *†*Etisus* sp., nr. *demani* Odhner, 1925.
 **Etisus dentatus* (Herbst, 1785).
Etisus electra (Herbst, 1801): Garth, 1964.
 *†*Etisus frontalis* Dana, 1852.
 ‡*Etisus laevimanus* (Randall, 1839): Roberts, 1964.
 *†*Etisus molokaiensis* (Rathbun, 1906).
 *†*Etisus splendidus* Rathbun, 1906:‡ Roberts, 1964.
 *†*Etisus* sp. 1.
 *†*Etisus* sp. 2.
 *†*Etisus* sp. 3.
Euxanthus exsculptus (Herbst, 1790): Garth, 1964.
 *†*Euxanthus* (or *Hypocolpus*) sp.
Gaillardiiellus rueppellii (Krauss, 1843).
Actaea reppellii [sic]: Garth, 1964.
Gaillardiiellus superciliaris (Odhner, 1925).
Actaea superciliaris: Garth, 1964.
 **Globopilumnus globosus* (Dana, 1852).
 *†*Heteropilumnus* sp., cf. *longipes* (Stimpson, 1858).
 **Lachnopodus ponapensis* (Rathbun, 1907).
 †*Paraxanthias haematostictus* Ward, 1930.
 *†*Lachnopodus subacutus* (Stimpson, 1858).
 **Lachnopodus tahitensis* De Man, 1889.
 **Leptodius exaratus* (H. Milne Edwards, 1834).
 **Leptodius gracilis* (Dana, 1852).
 *†*Leptodius davaoensis* Ward, 1941.
 **Leptodius nudipes* (Dana, 1852).
 †*Xantho danae* Odhner, 1925.
 **Leptodius sanguineus* (H. Milne Edwards, 1834).
 *†*Leptodius waialuanus* Rathbun, 1906.
Liocarpilodes armiger pacificus Balss, 1938: Garth, 1964; Highsmith, 1981.
Liocarpilodes biunguis (Rathbun, 1906): Highsmith, 1981.
Zozymodes biunguis: Garth, 1964.
 †*Xanthodius biunguis*.
Liocarpilodes integerrimus (Dana, 1852): Garth, 1964.
Liocarpilodes pumilus (Jacquinot, 1852): Garth, 1964.
 †*Zozymodes pumilus*.
 †*Zozymodes cristatus* (Borradaile, 1902).
Liomera bella (Dana, 1852).
Carpilodes bellus: Garth, 1964; Highsmith, 1981.
Liomera coelata (Odhner, 1825).
Carpilodes coelatus: Garth, 1964.
 *†*Liomera loevis* (A. Milne Edwards, 1873).
 †*Carpilodes loevis*.
 *†*Liomera monticulosa* (A. Milne Edwards, 1873).
 †*Carpilodes monticulosus*.

*New Enewetak record.

†New Marshall Islands record.

‡Fossil record.

†J. S. Garth manuscript lists.

- * *Liomera pallida* (Borradaile, 1900).
† *Carpilodes pallidus*.
- *† *Liomera rugata* (H. Milne Edwards, 1834).
† *Carpilodes rugatus*.
- *† *Liomera stimpsoni* (A. Milne Edwards, 1865).
† *Carpilodes stimpsoni*.
- * *Liomera tristis* (Dana, 1852).
† *Carpilodes tristis*.
- *† *Liomera* sp.
† *Carpilodes* sp.
- *† *Lophozozymus dodone* (Herbst, 1801).
- *† *Lophozozymus incisus* (H. Milne Edwards, 1834).
* *Lophozozymus pulchellus* A. Milne Edwards, 1867.
- *† *Lybia caestifera* (Alcock, 1898).
- *† *Lybia tessellata* (Latreille, 1812).
* *Lydia annulipes* (H. Milne Edwards, 1834).
- *† *Macromedaeus nudipes* (A. Milne Edwards, 1867).
† *Xantho nudipes*.
Maldivia palmyrensis Rathbun, 1923: Highsmith, 1981.
Maldivia triunguiculata (Borradaile, 1902): Highsmith, 1981.
- *† *Medaeus elegans* A. Milne Edwards, 1867.
- *† *Medaeus ornatus* Dana, 1852.
- *† *Neoxanthias impressus* (Lamarck, 1818).
† *Xantho impressus*.
- *† *Paractaea retusa* (Nobili, 1905).
† *Actaea retusa*.
Paractaea rufopunctata (H. Milne Edwards, 1834).
Actaea rufopunctata: Garth, 1964.
- *† *Paractaea rufopunctata* f. *plumosa* Guinot, 1969.
- *† *Paractaea tumulosa* (Odhner, 1925).
† *Actaea tumulosa*.
- *† *Paramedaeus simplex* (A. Milne Edwards, 1873).
† *Medaeus simplex*.
- *† *Parapilumnus coralliophilus* Takeda and Miyake, 1968.
Parapilumnus verrucosipes (Stimpson): Garth, 1964.
- *† *Parapilumnus ?incertus* Takeda and Miyake, 1969.
† *Heteropilumnus* sp., nr. *quadriscopinosus* (Zehntner, 1894).
Paraxanthias notatus (Dana, 1852): Garth, 1964; Highsmith, 1981.
- *† *Paraxanthias pachydactylus* (A. Milne Edwards, 1873).
* *Phymodius ?granulatus* (Targioni-Tozzetti, 1877).
* *Phymodius laysani* Rathbun, 1906.
- *† *Phymodius monticulosus* (Dana, 1852).
Phymodius nitidus (Dana, 1852): Garth, 1964.
Phymodius unguulatus (H. Milne Edwards, 1834): Garth, 1964; Danforth, 1967, 1970.
Pilodius areolatus (H. Milne Edwards, 1834): Highsmith, 1981.
Chlorodopsis areolata: Garth, 1964.
Pilodius flavus Rathbun, 1906: Garth, 1964.
- *† *Pilodius melanodactylus* (A. Milne Edwards, 1873).
† *Chlorodopsis melanodactylus*.
Pilodius pilumnoides (White, 1847): Garth, 1964.
† *Chlorodopsis pilumnoides*.
Pilodius pugil Dana, 1852: Garth, 1964.
‡ *Chlorodopsis pugil*: Roberts, 1964.
- *† *Pilodius scabriculus* Dana, 1852.
Pilodius spinipes Heller, 1861: Garth, 1964.
† *Chlorodopsis spinipes*.
- *† *Pilumnus andersoni* De Man, 1887.
* *Pilumnus caerulescens* A. Milne Edwards, 1873.

*New Enewetak record.

†New Marshall Islands record.

‡Fossil record.

†J. S. Garth manuscript lists.

- *† *Pilumnus ?elegans* De Man, 1888.
Pilumnus longicornis Hilgendorf, 1878: Garth, 1964.
Pilumnus sp.: Danforth, 1970.
- *† *Pilumnus ransonii* Forest and Guinot, 1961.
- *† *Pilumnus rotumanus* Borradaile, 1900.
 - * *Pilumnus tahitensis* De Man, 1890.
 - * *Pilumnus vespertilio* (Fabricius, 1793).
- *† *Pilumnus* sp.
 - Planopilumnus vermiculatus* (A. Milne Edwards, 1873): Garth, 1974.
 - Polydectus cupulifer* (Latreille, 1825): Garth, 1964.
- *† *Pseudoliomera granosimanus* (A. Milne Edwards, 1865).
- *† *Pseudoliomera helleri* (A. Milne Edwards, 1865).
 - † *Actaea helleri*.
- *† *Pseudoliomera* sp., nr. *helleri* (A. Milne Edwards, 1865).
 - † *Actaea* sp., nr. *helleri*.
 - * *Pseudoliomera lata* (Borradaile, 1902).
 - † *Actaea lata*.
- *† *Pseudoliomera* sp., nr. *lata* (Borradaile, 1902).
 - † *Actaea* sp., nr. *lata*.
- *† *Pseudoliomera rueppellioides* (Odhner, 1925).
 - † *Actaea rueppellioides*.
 - Pseudoliomera speciosa* (Dana, 1852).
 - Actaea speciosa*: Garth, 1964.
 - * *Pseudozius caystrus* (Adams and White, 1848).
 - * *Pseudozius pacificus* Balss, 1938.
- *† *Ralumia dahli* Balss, 1933.
 - Tetralia glaberrima* (Herbst, 1799): Garth, 1964; Knudsen, 1967.
 - * *Tetralia glaberrima rubridactylus* Patton, 1966.
 - Tetraloides nigrifrons* (Dana, 1852).
 - Tetralia heterodactyla* Heller, 1861: Garth, 1964; Knudsen, 1967.
 - † *Tetralia heterodactyla fusca* Serène, 1959.
 - † *Tetralia ?nigrifrons* Dana, 1852.
 - Trapezia cymodoce* (Herbst, 1801): Garth, 1964; Knudsen, 1967.
- *† *Trapezia dentata* Macleay, 1838.
 - Trapezia digitalis* Latreille, 1825: Garth, 1964; Knudsen, 1967.
- *† *Trapezia digitalis bella* Dana, 1852.
 - Trapezia* sp., *digitalis* group: Garth, 1964.
 - Trapezia ferruginea* Latreille, 1825: Garth, 1964; Knudsen, 1967.
- *† *Trapezia guttata* Rüppell, 1830.
 - Trapezia rufopunctata* (Herbst, 1799): Garth, 1964; Knudsen, 1967.
- *† *Trapezia rufopunctata flavopunctata* Eydoux and Souleyet, 1841.
- *† *Trapezia rufopunctata maculata* Macleay, 1838.
 - Trapezia speciosa* Dana, 1852: Garth, 1964; Danforth, 1970.
 - Trapezia tigrina* Eydoux and Souleyet, 1842.
 - Trapezia danai* Ward, 1939: Garth, 1964; Knudsen, 1967.
 - Trapezia wardi* Serène, 1970.
- *† *Trapezia* sp. 1.
- *† *Trapezia* sp. 2.
- *† *Xanthias canaliculatus* Rathbun, 1906.
- *† *Xanthias gilbertensis* Balss, 1938.
 - Xanthias lamarcki* (H. Milne Edwards, 1834): Highsmith, 1981.
- *† *Xanthias lividus* Lamarck, 1808.
- *† *Xanthias punctatus* (H. Milne Edwards, 1834).
- *† *Xantho* sp.
- *† *Zozymodes cavipes* (Dana, 1852).
- *† *Zozymus actaeoides* (A. Milne Edwards, 1867).
 - † *Platypodia actaeoides*.
 - Zozymus* sp., nr. *actaeoides* (A. Milne Edwards, 1867).
 - † *Platypodia* sp., nr. *actaeoides*.

*New Enewetak record.

†New Marshall Islands record.

†J. S. Garth manuscript lists.

- * *Zozymus aeneus* (Linnaeus, 1758).
- *† *Zozymus gemmula* Dana, 1852.
- *† *Zozymus hawaiiensis* (Rathbun, 1907).
 - † *Platypodia hawaiiensis*.
- *† *Zozymus kuekenthali* De Man, 1902.
- Family GONEPLACIDAE
- *† *Ceratoplax* sp.
- *† Genus and species *incertae sedis*.
- Family PALICIDAE
- *† *Palicus jukesi* (White, 1847).
- *† *Palicus whitei* (Miers, 1879).
- *† *Palicus* sp., nr. *oahuensis* Rathbun, 1906.
- Superfamily GRAPSOIDEA
- Family GRAPSIDAE
- * *Cyclograpsus integer* H. Milne Edwards, 1837.
 - † *Cyclograpsus parvulus* De Man, 1896.
- *† *Cyclograpsus longipes* Stimpson, 1858.
- *† *Cyclograpsus sanctaecrucis* Griffin, 1968.
 - Geograpsus crinipes* (Dana, 1851): Page and Willason, 1982.
 - * *Geograpsus grayi* (H. Milne Edwards, 1853).
- *† *Grapsus intermedius* De Man, 1888.
 - * *Grapsus longitarsus* Dana, 1851.
 - * *Grapsus tenuicrustatus* (Herbst, 1783): Page and Willason, 1982.
 - * *Metasesarma rousseauxi* H. Milne Edwards, 1853.
 - * *Metopograpsus thukuhar* (Owen, 1839).
 - Pachygrapsus minutus* A. Milne Edwards, 1873: Highsmith, 1981.
- *† *Pachygrapsus planifrons* De Man, 1888.
 - * *Pachygrapsus plicatus* H. Milne Edwards, 1837.
 - * *Percnon abbreviatum* (Dana, 1851).
- *† *Percnon pilimanus* (A. Milne Edwards, 1873).
 - Percnon planissimum* (Herbst, 1804): Highsmith, 1981.
- *† *Plagusia depressa tuberculata* Lamarck, 1818.
- *† *Plagusia immaculata* Lamarck, 1818.
- *† *Plagusia speciosa* Dana, 1852.
 - * *Pseudograpsus albus* Stimpson, 1858.
- *† *Sesarma* (*Holometopus*) sp.
- Family GECARCINIDAE
- * *Gecarcoidea lalandii* H. Milne Edwards, 1837.
- Superfamily PINNOTHEROIDEA
- Family PINNOTHERIDAE
- * *Xanthasia murigera* White, 1846.
- Superfamily OCYPODOIDEA
- Family OCYPODIDAE
- *† *Macrophthalmus* (*Macrophthalmus*) *telescopicus* (Owen, 1839) var.
 - * *Macrophthalmus* (*Mopsocarcinus*) *bosci* Audouin and Savigny, 1825.
 - Ocypode ceratophthalma* (Pallas, 1872): Page and Willason, 1982.
 - Ocypode cordimana* Desmarest, 1825: Page and Willason, 1982.
- *† *Paracleistostoma* (or *Cleistostoma*) sp.
- *† *Uca tetragonon* (Herbst, 1790).
- *† Genus and species *incertae sedis*.
- Superfamily HAPALOCARCINOIDEA
- Family HAPALOCARCINIDAE
- *† *Cryptochirus coralliodytes* Heller, 1861.
- *† *Hapalocarcinus marsupialis* Stimpson, 1858.
- *† *Neotroglocarcinus dawydoffi* (Fize and Serène, 1955).
 - Troglocarcinus viridis* Hiro: Garth, 1964.
 - Pseudocryptochirus viridis* (Hiro): Garth and Hopkins, 1968.
- *† *Pseudocryptochirus crescentus* (Edmondson, 1925).
- *† Species 1, *incertae sedis*.
- *† Species 2, *incertae sedis*.

*New Enewetak record.

†New Marshall Islands record.

SUMMARY

The Anomura presently known from Enewetak Atoll comprise 76 species, representing 29 genera and 10 families. Of this number, 48 species are new to Enewetak, and 43 are new to the Marshall Islands as well. The family Diogenidae is best represented, with 27 species in seven genera; the family Porcellanidae has 17 species in three genera. Expressed in percentages, of the 76 species listed, 63.15% are new to Enewetak, and 56.57% are new to the Marshall Islands. The Diogenidae contain 35.52% of the species and 24.13% of the genera; the Porcellanidae contain 22.36% of the species and 10.34% of the genera.

The Brachyura presently known from Enewetak Atoll comprise 291 species, representing 115 genera and 16 families. Of this number, 218 species are new to Enewetak, and 170 are new to the Marshall Islands as well. The family Xanthidae is best represented, with 155 species in 49 genera; the family Portunidae by 36 species in nine genera; the family Majidae by 23 species in 13 genera; and the family Grapsidae by 21 species in 10 genera. Expressed in percentages, 74.91% of the 291 species are new to Enewetak and 58.42% are new to the Marshall Islands as well. The Xanthidae contain 53.26% of the species and 42.60% of the genera; the Portunidae contain 12.37% of the species but only 7.82% of the genera; the Majidae contains 7.90% of the species and 11.3% of the genera; and the Grapsidae contain 7.22% of the species and 8.70% of the genera reported. (The number of species and genera new to Enewetak and the Marshall Islands would be even greater had not many been reported in publications in which the crabs, often identified by the first writer, were not the primary interest of the investigator who reported them but incidental as the hosts of isopod or copepod parasites or as agents of bioerosion of corals.)

Because so large a number of brachyuran crabs remain identified to genus (35) or even to family (3) only, no meaningful comparison with other crab faunas is possible at this time. This shortcoming will be rectified when the Enewetak crabs are elaborated a family at a time and the new or obscure species described and illustrated. The deficiency is particularly apparent in the family Parthenopidae, of which no comprehensive review has been made since the Siboga report (Flipse, 1930).

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Appendix

COLLECTION RECORDS

Anomuran Crustacea

Taxa are listed in the same order as in the checklist under their respective families. Higher categories may be found in the checklist. For most species reported below, the records are abbreviated, giving only the islet, year, and collector; following these records is a brief statement on habitat. Where only one or two records are available for a species, more detailed information is included for each. A summary of collectors, years of collection, identifiers, and deposition of material is given in Table 1.

Family CALLIANASSIDAE

Callianassa sp.

Enewetak: 1980, collected from the lagoon by airlift, P. Colin and D. M. Devaney.

Calliax sp., aff. *novaebritanniae* (Borradaile)

Enewetak: 1980, collected from the lagoon by airlift, P. Colin and D. M. Devaney.

Callichirus vigilax (De Man)

Enewetak: 1980, collected from the lagoon by airlift, P. Colin and D. M. Devaney.

Thomassinia sp.

Enewetak: 1980, collected from the lagoon by airlift, P. Colin and D. M. Devaney

Family CALLIANIDEIDAE

Callianidea [undescribed sp.]

Engebi: 1959, shore collecting, +0.5-foot tide, from coral, F. C. Ziesenhenné. Enyu: 1959, shore collecting at north end of island, 0.8-foot tide, in or under coral, F. C. Ziesenhenné.

New genus [undescribed sp. 1]

Off Rigili: 1957, ocean reef flat, inner edge about 100 feet out, from *Acropora* or *Pocillopora* in 1.5 feet of water, A. H. Banner.

New genus [undescribed sp. 2]

Engebi: 1959, shore collecting, +0.5-foot tide, from coral, F. C. Ziesenhenné.

Family AXIIDAE

Enoplometopus (*Enoplometopus*) sp.

Enewetak: 1969, in surge channel, 0 to 3 feet, C. E. Dawson. Enewetak: 1969, in surge channel, 2 to 10 feet, C. A. Child.

Enoplometopus (*Holometopus*) *holthuisi* Gordon

Enewetak: 1981, pinnacle, 10 m in small cave, fragments of both claws, S. Johnson.

Enoplometopus sp.

Off Enewetak: 1946, juvenile in *E. longirostris* stage, L. P. Schultz. Rigili: 1946, 2 miles south, leeward side of reef, light at night, juvenile in *E. longirostris* stage, L. P. Schultz.

New genus [?undescribed sp.]

Aaraanbiru: 1959, shore collecting, +0.6-foot tide, from coral, F. C. Ziesenhenné.

Family HIPPIDAE

Hippa adactyla Fabricius

Enewetak: 1975, lagoon side southwest end of islet, 10 to 20 m northeast cargo pier, in sand at water's edge, C. Fusaro.

Hippa pacifica (Dana)

Bogallua: 1968, J. W. Knudsen. Enewetak: 1968, A. Havens. Igurin: 1967, C. V. MacCoy. Rigili: 1956, student collector. On sandy beach, and in coarse sand and gravel on reef.

Family ALBUNEIDAE

Paralbunea dayriti (Serène and Umali)

Enewetak: 1966, dredged in lagoon at about 11°21.5'N, 162°20'E in 45 m of water, J. W. Knudsen. Enewetak: 1980, collected from the lagoon by airlift, P. Colin and D. M. Devaney.

Family COENOBITIDAE

Birgus latro (Linnaeus)

Igurin: 1960, E. S. Reese and R. A. Boolootian. Mui: 1957, L. Donaldson and E. Held. Rigili: 1957, J. S. Garth. On land.

Coenobita brevimanus Dana

Aaraanbiru: 1957, J. S. Garth. Igurin: 1960, E. S. Reese and R. A. Boolootian. Mui: 1957, L. Donaldson and E. Held. Rigili: 1957, J. S. Garth. On land.

Coenobita cavipes Stimpson

Igurin: 1960, E. S. Reese and R. A. Boolootian. Mui: 1957, L. Donaldson and E. Held. Mui: 1966, J. W. Knudsen. Rigili: 1960, B. Sather and R. Stevenson. Inland and on beach.

Coenobita perlatus H. Milne Edwards

Aomon, Bijile, and Rojoa: 1959, F. C. Ziesenhenné. Chinimi: 1965, G. Bakus. Igurin: 1956, student collector. Igurin: 1959, A. Smith and J. Coatsworth. Igurin: 1960, E. S. Reese and R. A. Boolootian. Medren: 1960, E. S. Reese and R. A. Boolootian. Medren: 1965, G. Bakus. Muzin, Kirinian, and Bokonaarappu: 1959, F. C. Ziesenhenné. Rigili: 1956, student collector. Rigili: 1957, J. S. Garth. Rigili: 1965, G. Bakus. Inland and on beach; on sandy bottom, outer reef flat; dredged in lagoon, 1.8 to 7.2 m.

Coenobita rugosus H. Milne Edwards

Aaraanbiru: 1959, F. C. Ziesenhenné. Aniyaanii: 1956, student collector. Aomon, Bijile, and Rojoa: 1959, F. C. Ziesenhenné. Igurin: 1959, A. Smith and J. Coatsworth. Igurin: 1960, E. S. Reese and R. A. Boolootian. Medren: 1959, F. C. Ziesenhenné. Medren: 1960, E. S. Reese. Muzin, Kirinian, and Bokonaarappu: 1959, F. C. Ziesenhenné. Rigili: 1956, student collectors. Inland and on beach; lagoon and seaward sides; on sandy bottom to 7.2 m.

Family DIOGENIDAE

Aniculus aniculus (Fabricius)

Aaraanbiru: 1959, F. C. Ziesenhenné. Enewetak: 1967, J. W. Knudsen. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. Igurin: 1960, E. S. Reese and R. A. Boolootian. On reef flat and algal ridge.

Aniculus sp.

Off Bokandretok: 1974, 2.4 to 3 m on sandy bottom, S. L. Brunenmeister.

Calcinus elegans (H. Milne Edwards)

Aniyaanii: 1957, J. S. Garth. Bogen: 1957, J. S. Garth. Enewetak: 1961, E. S. Reese. Enewetak: 1965, 1967, J. W. Knudsen. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. Engebi: 1957, J. S. Garth. Engebi: 1959, F. C. Ziesenhenné. Igurin: 1957, J. S. Garth. Medren: 1959, J. S. Garth. Medren: 1960, E. S. Reese. Medren: 1974 or 1975, S. L. Brunenmeister. Rigili: 1957, 1959, J. S. Garth. Runit: 1959, J. S. Garth. Enewetak Atoll, no further locality data: 1946, F. C. Ziesenhenné. Lagoon side of reef; seaward reef flat and algal ridge. Under rocks and dead coral, on dead coral heads, on live *Acropora* and *Pocillopora*.

Calcinus gaimardii (H. Milne Edwards)

Enewetak: 1968, J. W. Knudsen. Igurin: 1957, J. S. Garth. Medren: 1959, J. Roberts and/or F. C. Ziesenhenné. Rigili: 1956, student collector. On reef and on sandy beach; under and around *Porites* colonies.

Calcinus guamensis Wooster

Enewetak: 1966, 1967, J. W. Knudsen. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. On reef, from *Porites*, *Favia*, live *Acropora*, and live and dead *Pocillopora*.

Calcinus imperialis Whitelegge

Enewetak: 1967, J. W. Knudsen. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. Reef flat and algal ridge, from *Acropora* and *Pocillopora* corals.

Calcinus laevimanus (Randall)

Aniyaanii: 1956, student collectors. Aniyaanii: 1957, J. S. Garth. Bokandretok: 1967, J. W. Knudsen. Enewetak: 1961, E. S. Reese. Enewetak: 1965, 1967, 1968, J. W. Knudsen. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. Engebi: 1956, student collector. Engebi: 1957, 1959, J. S. Garth. Engebi: 1967, J. W. Knudsen. Igurin: 1957, 1959, J. S. Garth. Medren: 1956, student collectors. Medren: 1957, 1959, J. S. Garth. Medren: 1960, E. S. Reese. Medren: 1974 or 1975, S. L. Brunenmeister. Muti: 1965, G. Bakus. Muti: 1967, J. W. Knudsen. Rigili: 1959, J. S. Garth. Runit: 1959, J. S. Garth. Enewetak Atoll, no further locality data: 1946, F. C. Ziesenhenné. Seaward reef flat and beach on lagoon side; under rock, coral rubble, and dead corals, and in live *Porites* colonies.

Calcinus latens (Randall)

Aniyaanii: 1966, J. W. Knudsen. Aomon, Bijile, and Rojoa: 1959, F. C. Ziesenhenné. Bogallua: 1968, J. W. Knudsen. Bokandretok: 1967, J. W. Knudsen. Enewetak: 1961, E. S. Reese. Enewetak: 1966 to 1968, J. W. Knudsen. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. Engebi: 1959, F. C. Ziesenhenné. Engebi: 1967, J. W. Knudsen. Igurin: 1959, J. S. Garth. Medren: 1957, A. H. Banner. Medren: 1957, T. Goreau. Medren: 1957, 1959, J. S. Garth. Medren: 1959, J. Coatsworth. Medren: 1960, E. S. Reese. Medren: 1974 or 1975, S. L. Brunenmeister. Between Medren and Muti: 1960, E. S. Reese. Muti: 1966, J. W. Knudsen. Rigili: 1959, J. S. Garth. Rojoa: 1966 to 1968, J. W. Knudsen. Runit: 1959, J. S. Garth. Sandy bottom and on corals in lagoon, to 9 m; seaward reef, from live and dead *Acropora* and *Porites* corals.

Calcinus seurati Forest

Enewetak: 1961, E. S. Reese. Medren: 1956, student collector. Medren: 1957, 1959, J. S. Garth. Medren: 1960, E. S. Reese. Medren: 1974 or 1975, S. L. Brunenmeister. Muzin, Kirinian, and Bokanaarappu: 1959, F. C. Ziesenhenné. On reef.

Calcinus sp., aff. *spicatus* Forest

Enewetak: 1967, from *Porites*, J. W. Knudsen. Rojoa: 1968, ocean reef three-fourths way out, green algal turf and burrows, J. W. Knudsen.

Clibanarius sp., aff. *boschmai* Buitendijk

Enewetak: 1975, collected intertidally from crevice in the benchrock at lagoon margin, northern end of island, S. L. Brunenmeister.

Clibanarius corallinus (H. Milne Edwards)

Aaraanbiru: 1959, F. C. Ziesenhenné. Aniyaanii: 1956, student collector. Aniyaanii: 1957, J. S. Garth. Enewetak: 1961, E. S. Reese. Enewetak: 1965, 1967, 1968, J. W. Knudsen. Enewetak: 1974, 1975, S. L. Brunenmeister. Engebi: 1959, F. C. Ziesenhenné. Igurin:

1959, J. S. Garth. Medren: 1959, J. S. Garth. Medren: 1960, E. S. Reese. Between Medren and Muti: 1960, E. S. Reese. Rigili: 1959, J. S. Garth. Runit: 1959, J. S. Garth. Intertidal on reef flat.

Clibanarius eurysternus (Hilgendorf)

Between Aomon and Bijile: 1975, in shallow of blind channel, lagoon side, E. Chave. Enewetak: 1975, intertidally on benchrock, lagoon side, at northern end of island, S. L. Brunenmeister.

Clibanarius zebra rhabdodactylus Forest

Enewetak: 1967, from under cemented slabs at the highest place the slabs occur on the beach, J. W. Knudsen. Enewetak: 1975, collected intertidally from crevice in the benchrock at lagoon margin, northern end of island, S. L. Brunenmeister.

Clibanarius sp.

Enewetak: 1975, under intertidal on seaward reef flat under large rock, in large aggregation; also intertidally on benchrock at lagoon margin, northern end of island, S. L. Brunenmeister. (A species with antennules, antennae, and eyestalks orange, chelipeds brown with light orange fingers, legs banded orange and black.)

Dardanus crassimanus (H. Milne Edwards)

Off Bokandretok, just across interisland channel from Enewetak: 1974, collected at 2.4 to 3 m on sandy bottom around coral heads, S. L. Brunenmeister.

Dardanus deformis (H. Milne Edwards)

Off Bokandretok: 1974, S. L. Brunenmeister. Medren: 1959, F. C. Ziesenhenné. Between Medren and Muti: 1960, E. S. Reese. Muti: 1956, student collector. Enewetak Atoll, no further locality data: 1946, F. C. Ziesenhenné. Reef, ocean side; lagoon side; sublittoral, 0.6 to 9 m on sand and coral rubble.

Dardanus gemmatus (H. Milne Edwards)

Between Enewetak and Bokandretok: 1974, collected at low tide in shallows of interisland channel on sandy bottom with coral rubble, crabs carrying anemones on shells, S. L. Brunenmeister.

Dardanus guttatus (Olivier)

Between Aomon and Bijile: 1975, E. Chave. Off Enewetak: 1967, 1968, J. W. Knudsen. Off Enewetak: 1974 or 1975, S. L. Brunenmeister. Between Medren and Muti: 1960, E. S. Reese. Off Muti: 1967, J. W. Knudsen. Rigili: 1959, J. S. Garth. On reef, in channels, and in lagoon; littoral and to depths of 30 m.

Dardanus lagopodes (Forsskål)

Aaraanbiru: 1959, J. S. Garth. Off Bokandretok: 1974, S. L. Brunenmeister. Enewetak: 1967, J. W. Knudsen. Between Medren and Muti: 1960, E. S. Reese. Muzin, Kirinian, and Bokanaarappu: 1959, F. C. Ziesenhenné. Rigili: 1959, J. S. Garth. Enewetak Atoll, 11°25'N, 162°13'E: 1967, J. W. Knudsen. In lagoon, littoral, diving to 9 m on and around corals, and dredged at 45 m.

Dardanus megistos (Herbst)

Muti: 1968, collected in 6 m of water at night, J. W. Knudsen. Rigili: 1959, southeast side between ocean and lagoon, +0.8 foot tide, from rock and dead coral, J. S. Garth.

- Dardanus scutellatus* (H. Milne Edwards)
Aomon, Bijile, and Rojoa: 1959, F. C. Ziesenhenné. Off Bokandretok: 1974, S. L. Brunenmeister. Chinieero: 1960, E. S. Reese. Medren: 1957, 1959, J. S. Garth. Medren: 1960, E. S. Reese. Muti: 1956, student collector. In lagoon, littoral to 12 m, on sandy bottoms around and on coral heads and among coral rubble.
- Dardanus woodmasoni* (Alcock)
Aomon, Bijile, and Rojoa: 1959, 1.8 to 7.2 m on sandy bottom, lagoon side, F. C. Ziesenhenné.
- Diogenes gardineri* Alcock
Aomon, Bijile, and Rojoa: 1959, F. C. Ziesenhenné. Enewetak: 1966, 1967, J. W. Knudsen. Medren: 1959, J. S. Garth. Between Piiraa and Runit: 1967, J. W. Knudsen. On sandy bottoms in lagoon, 1.8 to 24 m.
- Diogenes pallescens* Whitelegge
Enewetak Atoll: 1966, in lagoon 100 yds west of marker, ran 250 yds due south, shell-sponge bottom at 60 m, J. W. Knudsen. Enewetak Atoll: 1968, in lagoon at 11°26'N, 162°17.5'E, dredging near coral mound, bottom of shell and some algae at 60 m, J. W. Knudsen.
- Paguristes* sp.
Medren: 1959, J. Coatsworth, J. S. Garth. Rojoa: 1967, J. W. Knudsen. Enewetak Atoll, 11°26'N, 162°17.5'E: 1968, J. W. Knudsen. Behind reef on coral, 1.5 m; in lagoon, to 45 m.
- Trizopagurus strigatus* (Herbst)
Enewetak: 1974 or 1975, in interisland channel at northern end of island, low tide at about 0.3 m depth, S. L. Brunenmeister. Medren: 1959, reef between island and L. C. T. wreck, intertidal at +0.8-foot tide, J. Roberts and/or F. C. Ziesenhenné.
- Family PAGURIDAE
- Catapagurus* sp.
Enewetak Atoll: 1966, dredging in lagoon on sponge and sand bottom, depth not indicated, J. W. Knudsen. Enewetak Atoll: 1968, dredging in lagoon at 11°26'N, 162°17.5'E, in 30 m depth on bottom of broken coral and shell, J. W. Knudsen.
- Pagurixus anceps* (Forest)
Bogallua: 1968, J. W. Knudsen. Bokandretok: 1967, J. W. Knudsen. Enewetak: 1975, S. L. Brunenmeister. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. Igurin: 1959, J. S. Garth. Medren: 1957, T. Goreau and R. Neshida. Rojoa: 1967, J. W. Knudsen. Intertidal under rocks and to 15 ft, lagoon side; more frequently on reef flat at low water, from *Porites*, *Acropora*, and *Favia*, some live.
- Pagurixus boninensis* (Melin)
Medren: 1957, about 8 ft, from *Pocillopora* and *Acropora*, A. H. Banner.
- Pagurixus maorus* (Nobili)
Aniyaanii: 1966, in mostly dead *Acropora*, J. W. Knudsen. Between Piiraa and Runit: 1967, from 95 to 105 ft in lagoon, J. W. Knudsen. Rojoa: 1966, northwest side on outer reef channel, from dead *Acropora*, J. W. Knudsen. Enewetak Atoll: 1968, dredging in lagoon at 11°26'N, 162°17.5'E, 100 ft, broken coral and shell with much live coral, J. W. Knudsen.
- New genus, sp.
Muti: 1966, collected at pier from dead and heavily encrusted pocilloporid coral, J. W. Knudsen.
- Family GALATHEIDAE
- Allogalatea elegans* (Adams and White)
Near Jierorv, at about 11°26'N, 162°21'E: 1967, J. W. Knudsen. Off Medren: 1968, 1971, J. W. Knudsen. Enewetak Atoll, 11°29'N, 162°19'E: J. W. Knudsen. Enewetak Atoll: 1976 or 1978, A. Fielding. In lagoon, to 9 m; all specimens from crinoids.
- Corallioalatea humilis* (Nobili)
Bogombogo: 1957, D. Reish. Enewetak: 1967, J. W. Knudsen. Enewetak: 1967, S. Swerdloff. Rigili: 1965, J. W. Knudsen. Enewetak Atoll, 11°25'N, 162°13'E: 1967, J. W. Knudsen. On reef from dead corals and live *Acropora*; dredged in lagoon in 45 m on bottom of sponge, dead shell, coral, and algae.
- Galathea aegyptiaca* Paulson
Aniyaanii: 1960, north lagoon side, from coral head, E. S. Reese.
- Galathea affinis* Ortmann
Aniyaanii: 1957, A. H. Banner. Aniyaanii: 1966, 1967, J. W. Knudsen. Between Billee and Bokonaarappu: 1967, J. W. Knudsen. Bogallua: 1968, J. W. Knudsen. Bogombogo: 1957, D. Reish. Bokandretok: 1965, J. W. Knudsen. Enewetak: 1965, 1967, 1968, J. W. Knudsen. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. Engebi: 1967, J. W. Knudsen. Igurin: 1965, J. W. Knudsen. Between Kirinian and Muzin: 1965, J. W. Knudsen. Medren: 1957, T. Goreau and R. Neshida. Medren: 1959, J. Coatsworth. Rigili: 1965, 1968, J. W. Knudsen. Rojoa: 1966, 1967, J. W. Knudsen. On reef to 4.5 m in live and dead corals, including *Acropora* and *Porites*; dredged in lagoon at 30 m.
- Galathea amboinensis* De Man
Enewetak Atoll: 1976 or 1978, from crinoids, A. Fielding.
- Galathea* sp., aff. *tanegashimae* Baba
Enewetak: 1967, S. Swerdloff. Jierorv: 1967, 1968, J. W. Knudsen. Medren: 1957, A. H. Banner. Rojoa: 1966, J. W. Knudsen. On reef and in lagoon, to 9 m depth; on corals including live and dead *Acropora*, and from crinoids.
- Phylladorhynchus serrirostris* (Melin)
Enewetak: 1967, from coral head in lagoon about 300 yds. from laboratory site, J. W. Knudsen. Medren: 1957, diving in 3 to 4.5 m, coral heads and dead coral, T. Goreau and R. Neshida.
- Family PORCELLANIDAE
- Neopetrolisthes maculatus* (H. Milne Edwards)
Bokandretok: 1968, J. W. Knudsen. Medren: 1971, J. W. Knudsen. Between Medren and Enewetak: 1968, J. W. Knudsen. Rigili: 1968, J. W. Knudsen. To 3 m depth in channels and lagoon, from anemones.
- Pachycheles johnsoni* Haig
Bijile: 1968, A. Havens. Bokandretok: 1967, J. W.

- Knudsen. Bokandretok: 1968, A. Havens. Enewetak: 1965 to 1967, J. W. Knudsen. Enewetak: 1968, A. Havens. Enewetak: 1969, C. A. Child. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. Engebi: 1959, F. C. Zieshenne. Engebi: 1967, J. W. Knudsen. Mui: 1967, J. W. Knudsen. Muti: 1966, 1968, J. W. Knudsen. Rigili: 1957, A. H. Banner. Rigili: 1966, J. W. Knudsen. On reef, intertidal or shallow subtidal, frequently in or under live and dead *Porites*, *Pocillopora*, and *Acropora*; occasionally under rocks.
- Pachycheles pisoides* (Heller)
Enewetak: 1969, surge channel and blow hole about 20 ft back from outer reef edge, C. A. Child. Between Enewetak and Bokandretok: 1966, on reef inside algal ridge, from dead encrusted algae or from *Pocillopora*, J. W. Knudsen.
- Pachycheles spinipes* (A. Milne Edwards)
Chinieero: 1965, J. W. Knudsen. Enewetak: 1965, 1967, J. W. Knudsen. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. On reef, from corals.
- Petrolisthes asiaticus* (Leach)
Bogen: 1957, J. S. Garth. Bokandretok: 1967, J. W. Knudsen. Bokandretok: 1968, A. Havens. Enewetak: 1965, J. W. Knudsen. Enewetak: 1968, A. Havens. Enewetak or Gugegwe [Kwajalein Atoll]: 1946, F. C. Zieshenne. Engebi: 1957, J. S. Garth. Iguir: 1959, J. S. Garth. Jieruro: 1946, M. W. Johnson. Medren: 1957, J. S. Garth. Medren: 1965, J. W. Knudsen. Muti: 1957, J. S. Garth. Muti: 1965, G. Bakus. Muti: 1967, 1968, J. W. Knudsen. Rigili: 1956, student collector. Rigili: 1959, J. S. Garth. Runit: 1959, J. S. Garth. Runit: 1965, J. W. Knudsen. Runit: 1968, A. Havens. On reef, usually under rocks and coral rubble.
- Petrolisthes bispinosus* Borradaile
Bokandretok: 1967, J. W. Knudsen. Enewetak: 1965, 1967, J. W. Knudsen. Enewetak: 1969, C. E. Dawson, C. A. Child. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. Mui: 1967, T. Smith. Muti: 1968, J. W. Knudsen. On seaward reef flat and algal ridge, in corals including *Pocillopora*.
- Petrolisthes borradailei* Kropp
Aniyaanii: 1956, student collector. Bogen: 1957, J. S. Garth. Bokandretok: 1967, J. W. Knudsen. Enewetak: 1965, 1967, J. W. Knudsen. Engebi: 1957, J. S. Garth. Iguir: 1959, J. S. Garth. Muti: 1965, 1968, J. W. Knudsen. Muti: 1965, G. Bakus. Muti: 1968, A. Havens. Rigili: 1957, J. S. Garth. Runit: 1959, J. S. Garth. On reef, usually under rocks and in coral rubble.
- Petrolisthes coccineus* (Owen)
Enewetak: 1969, surge channel and blow hole about 20 ft back from outer reef edge, C. A. Child. Engebi: 1967, algal ridge, J. W. Knudsen.
- Petrolisthes decacanthus* Ortmann
Enewetak: 1967, algal ridge, J. W. Knudsen. Enewetak: 1969, outer reef rim and surge channels along north one-third of island, C. E. Dawson and C. A. Child. Enewetak: 1969, surge channel and blow hole about 20 ft back from outer reef edge, C. A. Child.
- Petrolisthes elegans* Haig
Enewetak: 1965, 1967, J. W. Knudsen. Enewetak: 1969, C. A. Child. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. Medren: 1965, J. W. Knudsen. Muti: 1968, J. W. Knudsen. Rujoru: 1946, M. W. Johnson. Reef flat and algal ridge, under rocks and from corals, including *Pocillopora*.
- Petrolisthes fimbriatus* Borradaile
Aniyaanii: 1957, J. S. Garth. Aniyaanii: 1967, J. W. Knudsen. Bogen: 1966, J. W. Knudsen. Bokandretok: 1967, J. W. Knudsen. Bokandretok: 1968, A. Havens. Enewetak: 1957, J. S. Garth. Enewetak: 1965 to 1968, J. W. Knudsen. Enewetak: 1968, A. Havens. Enewetak or Gugegwe [Kwajalein Atoll]: 1946, F. C. Zieshenne. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. Engebi: 1956, student collector. Engebi: 1957, J. S. Garth. Iguir: 1957, 1959, J. S. Garth. Iguir: 1965, J. W. Knudsen. Jeroju: 1946, J. P. E. Morrison. Jieruro: 1946, M. W. Johnson. Medren: 1957, 1959, J. S. Garth. Medren: 1965, J. W. Knudsen. Muti: 1957, J. S. Garth. Muti: 1965, 1968, J. W. Knudsen. Muti: 1965, G. Bakus. Muti: 1968, A. Havens. Piirai: 1968, A. Havens. Rigili: 1956, D. Reish. Rigili: 1959, J. S. Garth. Rigili: 1966, 1968, J. W. Knudsen. Runit: 1959, J. S. Garth. Enewetak Atoll, no further locality data: 1944, W. A. Bartos. Enewetak Atoll, no further locality data: 1946, F. C. Zieshenne. On reef, under rocks and from rubble; occasionally from corals.
- Petrolisthes lamarckii* (Leach)
Aniyaanii: 1957, J. S. Garth. Bokandretok: 1967, J. W. Knudsen. Bokandretok: 1968, A. Havens. Enewetak: 1965, 1967, 1968, J. W. Knudsen. Enewetak: 1968, A. Havens. Engebi: 1957, J. S. Garth. Iguir: 1957, 1959, J. S. Garth. Medren: 1959, J. S. Garth. Medren: 1965, J. W. Knudsen. Mui: 1968, A. Havens. Muti: 1957, J. S. Garth. Muti: 1965, G. Bakus. Muti: 1967, 1968, J. W. Knudsen. Muti: 1968, A. Havens. Piirai: 1968, A. Havens. Rigili: 1957, 1959, J. S. Garth. Rigili: 1966, J. W. Knudsen. Runit: 1959, J. S. Garth. Runit: 1965, J. W. Knudsen. Enewetak Atoll, no further locality data: 1946, F. C. Zieshenne. On reef, usually under rocks and in coral rubble.
- Petrolisthes masakii* Miyake
Enewetak: 1969, surge channel and blow hole about 20 ft back from outer reef edge, C. A. Child.
- Petrolisthes penicillatus* (Heller)
Off Bokandretok: 1968, A. Havens. Enewetak: 1968, J. W. Knudsen. Enewetak: 1968, A. Havens. Enewetak: 1969, C. A. Child. Between Enewetak and Bokandretok: 1966, J. W. Knudsen. Medren: 1965, 1968, J. W. Knudsen. Rigili: 1965, J. W. Knudsen. On reef, to 0.9 m depth, under rocks and rubble, and in *Porites*, *Acropora*, and *Pocillopora*.
- Petrolisthes pubescens* Stimpson
Bokandretok: 1968, channel southwest of island, under rock, A. Havens.
- Petrolisthes* [undescribed sp. 1]
Rigili: 1965, north end of island from live *Pocillopora elegans*, J. W. Knudsen.

Petrolisthes [undescribed sp. 3]

Enewetak: 1967, J. W. Knudsen. Enewetak: 1968,
A. Havens. Enewetak: 1969, C. A. Child. Engebi:

1967, J. W. Knudsen. Reef flat and ridge, some specimens from corals.

TABLE 1
Data on Collections of *Anomura**

Collector(s)	Date	Identifier	Depository
Bakus, G.	1965	J. Haig	AHF
Banner, A.H.	1957	J. Haig, M. de Saint Laurent, P. McLaughlin	AHF
Bartos, W. A.	1944	J. Haig	USNM
Brunenmeister, S. L.	1974, 1975	S. Brunenmeister, P. McLaughlin, J. Haig	
Chave, E.	1975	P. McLaughlin	
Child, C. A.	1969	J. Haig, L. B. Holthuis	USNM, RMNH
Coatsworth, J.	1959	J. Haig	AHF, MPRL
Colin, P., and D. M. Devaney	1980	M. de Saint Laurent, J. Haig	BPBM
Dawson, C. E.	1969	J. Haig, L. B. Holthuis	USNM, RMNH
Donaldson, L., and E. Held	1957	J. S. Garth	AHF, MPRL
Fielding, A.	1976, 1978	K. Baba	BPBM
Fusaro, C.	1975	C. Fusaro	BPBM
Garth, J. S.	1957, 1959	J. S. Garth, J. Haig P. McLaughlin	AHF, MPRL
Goreau, T., and R. Neshida	1957	J. Haig, P. McLaughlin	AHF, MPRL
Havens, A.	1968	J. Haig	AHF
Johnson, M. W.	1946	J. Haig	USNM
Johnson, S.	1981	L. B. Holthuis	BPBM, MPRL, USNM
Knudsen, J. W.	1965 to 1968	J. Haig	AHF
MacCoy, C. V.	1971	P. McLaughlin	AHF
Morrison, J. P. E.	1967	J. Haig	AHF
Morrison, J. P. E.	1946	J. Haig	USNM
Reese, E. S.	1960, 1961	E. S. Reese, J. Haig	AHF
Reese, E. S., and R. A. Boolootian	1960	E. S. Reese, J. Haig	AHF
Reish, D.	1956, 1957	J. Haig	AHF
Roberts, J.	1959	J. Haig	AHF
Sather, B., and R. Stevenson	1960	J. Haig	AHF
Schultz, L. P.	1946	L. B. Holthuis	USNM
Smith, A., and J. Coatsworth	1959	J. Haig	AHF
Smith, T.	1967	J. Haig	AHF
Student collectors	1956	J. S. Garth	MPRL
Swerdloff, S.	1967	J. Haig	AHF
Ziesennehenne, F. C.	1946, 1959	J. S. Garth, J. Haig, M. de Saint Laurent	AHF

*AHF, Allan Hancock Foundation; BPBM, Bernice P. Bishop Museum; MPRL, Mid-Pacific Research Laboratory, Enewetak; RMNH, Rijksmuseum van Natuurlijke Historie, Leiden; USNM, National Museum of Natural History, Smithsonian Institution.

Brachyuran Crustacea

Taxa are listed in the same order as in the checklist under their respective families. Higher categories and also synonyms may be consulted in the checklist. Because plans are to give complete data—including islet, substrate, depth, month, and year of collecting—in future publications, only collectors' surnames in chronological order are given here. Their respective periods of activity at Enewetak Atoll and the present depository of their collections will be found in Table 2.

Family DROMIIDAE

- Cryptodromia canaliculata* Stimpson
EMBL, Reish, Garth, Ziesenhenne, Bakus, Knudsen.
Cryptodromia sp.
Knudsen.

Family DYNOMENIDAE

- Dynomene hispida* Desmarest
Garth, Reese, Knudsen, Havens, Child, Highsmith.
Dynomene pilumnoides Alcock
Knudsen.
Dynomene praedator A. Milne Edwards
Knudsen.
Dynomene spinosa Rathbun
Garth, Knudsen, Havens.

Family LEUCOSIIDAE

- Cryptocnemus haddoni* Calman
Havens.
Ebalia woodmasoni Alcock
Knudsen.
Ebaliopsis erosa (A. Milne Edwards)
Garth, Ziesenhenne, Knudsen.
Heterolithadia sp.
Knudsen.
Heteronucia venusta Nobili
Knudsen, Havens.
Merocryptus durandi Serène
Knudsen.
Myra fugax coalita Hilgendorf
Knudsen.
Nucia ingens (Rathbun)
Knudsen.
Nucia speciosa Dana
Knudsen.
Oreophorus (Oreotlos) latus Borradaile
Knudsen, Havens.
Species incertae sedis
Knudsen.

Family CALAPPIDAE

- Calappa calappa* (Linnaeus)
Knudsen, Havens.
Calappa gallus (Herbst)
Garth, Knudsen, Fielding.
Calappa hepatica (Linnaeus)
EMBL, Reish, Garth, Ziesenhenne, Knudsen, Havens,
Child, USGS (fossil).

Family MAJIDAE

- Camposcia retusa* Latreille
Garth.
Camposcia sp.
Knudsen.
Cyclax suborbiculatus (Stimpson)
Garth, Ziesenhenne, Knudsen, Havens.
Huenia brevifrons Ward
Knudsen.
Huenia proteus De Haan
Ziesenhenne, Knudsen.
Hyastenus irami (Laurie)
Banner, Knudsen, Child.
Hyastenus uncifer Calman
Knudsen, Child.
Hyastenus verrucosipes (Adams and White)
Knudsen.
Hyastenus sp.
Knudsen.
Menaethius monoceros (Latreille)
Reish, Banner, Garth, Ziesenhenne, Reese, Knudsen,
Havens, Child.
Micippa margaritifera Henderson
Knudsen.
Micippa philyra (Herbst)
Garth, Ziesenhenne, Knudsen.
Micippa platypes Rüppell
Reish, Ziesenhenne, Stokes, Knudsen, Havens.
Micippa thalia (Herbst)
Knudsen.
Naxioides spinigera Borradaile
Knudsen.
Paratymolus bituberculatus Miers
Knudsen.
Paratymolus sexspinosus Miers
Garth.
Parazewa bocki Balss
Knudsen.
Perinea tumida Dana
Reish, Banner, Garth, Ziesenhenne, Reese, Knudsen,
Havens.
Schizophrys aspera (H. Milne Edwards)
Garth, Reese, Knudsen, Child.
Trigonothir obtusirostris Miers
Palumbo, Knudsen.
Tylocarcinus ?gracilis Miers
Knudsen.
Tylocarcinus styx (Herbst)
Banner, Garth, Reese, Shoup, Knudsen, Havens,
Child.

Family PARTHENOPIDAE

- Actaeomorpha* sp., nr. *erosa* (Miers)
Knudsen.
Cryptopodia ?pan Laurie
Knudsen.
Daldorfia horrida (Linnaeus)
EMBL, Garth, Knudsen, Havens.

- Daldorfia* (or *Parthenope*) sp.
Knudsen.
- Harrovia elegans* De Man
Garth.
- ?*Heterocrypta* sp.
Knudsen, Havens.
- Parthenope* (*Aulacolambrus*) *curvispinis* (Miers)
Knudsen.
- Parthenope* (*Aulacolambrus*) *hoplonotus* (Adams and White)
Knudsen.
- Parthenope* (*Aulacolambrus*) sp.
Knudsen, Havens.
- Parthenope* (*Pseudolambrus*) sp.
Knudsen.
- Parthenope* sp.
Knudsen.
- Thyrolambrus erosus* (Miers)
Knudsen.
- Thyrolambrus* sp.
Knudsen.
- Family ATELECYCLIDAE
- Kraussia integra* Rathbun
Knudsen, Havens.
- Kraussia* sp., cf. *marquesa* Serène
Knudsen.
- Kraussia nitida* Stimpson
Garth.
- Kraussia rastroipes* F. Müller
Havens.
- Kraussia rugulosa* (Krauss)
EMBL, Garth, Knudsen, Havens, Child.
- Family PORTUNIDAE
- Carupa tenuipes* Dana
Ziesenhenné, Knudsen, Havens.
- Catoptrus inaequalis* (Rathbun)
Knudsen.
- Catoptrus nitidus* A. Milne Edwards
Garth, Ziesenhenné.
- Catoptrus rathbunae* Serène
Ziesenhenné.
- Catoptrus ?truncatifrons* De Man
Havens.
- Charybdis* (*Goniosupradens*) *erythroductylus* (Lamarck)
Havens, Fielding.
- Coelocarcinus foliatus* Edmondson
Havens.
- Libistes villosus* Rathbun
Knudsen, Havens.
- Lissocarcinus holothuricola* Streets
Knudsen.
- Lissocarcinus orbicularis* Dana
Garth, Shoup, Knudsen, Havens.
- Portunus* (*Achelous*) *granulatus* (H. Milne Edwards)
Ziesenhenné, Knudsen, Havens.
- Portunus* (*Achelous*) sp., nr. *orbicularis* (Richters)
Garth, Ziesenhenné.
- Portunus* (*Hellenus*) *longispinosus* Stephenson and Campbell.
- Reish, Garth, Ziesenhenné, Knudsen, Havens.
- Thalamita admete* (Herbst)
EMBL, Reish, Garth, Ziesenhenné, Knudsen, Havens, Child.
- Thalamita bouvieri* Nobili
Knudsen.
- Thalamita chaptalii* (Audouin)
Knudsen.
- Thalamita coeruleipes* Jacquinet
Knudsen, Havens.
- Thalamita corrugata* Stephenson and Rees
Knudsen.
- Thalamita dakini* Montgomery
Knudsen, Havens, Child.
- Thalamita gloriensis* Crosnier
Morrison.
- Thalamita gracilipes* (A. Milne Edwards)
Garth, Ziesenhenné, Knudsen, Havens.
- Thalamita integra* Dana
Pomeroy and Kuenzler.
- Thalamita oculatea* Alcock
Knudsen.
- Thalamita picta* Stimpson
EMBL, Garth, Ziesenhenné, Knudsen, Havens, Child.
- Thalamita pilumnoides* Borradaile
Garth, Knudsen.
- Thalamita prymna* (Herbst)
Knudsen, Havens, Child, Fielding.
- Thalamita quadrilobata* Miers
Knudsen.
- Thalamita sexlobata* Miers
Knudsen.
- Thalamita sima* H. Milne Edwards
Knudsen.
- Thalamita spiceri* Edmondson
Garth, Knudsen, Havens, Highsmith.
- Thalamita spinimana* Dana
EMBL, Garth.
- Thalamita stimpsoni* A. Milne Edwards
Knudsen.
- Thalamita wakensis* Edmondson
Knudsen, Havens.
- Thalamita yoronensis* Sakai
Knudsen.
- Thalamita* sp., nr. *auauensis* Rathbun
Knudsen.
- Thalamitoides quadridens* A. Milne Edwards
Banner, Garth, Reese, Knudsen, USGS (fossil).
- Family XANTHIDAE
- Actaea* sp., nr. *bocki* Odhner
Knudsen.
- Actaea*(?) *cavipes* Dana
Knudsen, Havens.
- Actaea margaritifera* Odhner
Knudsen.
- Actaea pulchella modesta* (De Man)
Knudsen.

- Actaea quadriareolata* Takeda and Miyake
Banner, Garth, Knudsen.
- Actaea* sp.
Knudsen, Havens.
- Actaeodes consobrinus* (A. Milne Edwards)
Garth, Reese, Knudsen, Havens.
- Actaeodes hirsutissimus* (Rüppell)
USGS (fossil).
- Actumnus antelmei* Ward
Knudsen.
- Actumnus asper* (Rüppell)
Knudsen.
- Actumnus setifer* (De Haan)
Knudsen.
- Actumnus* sp.
Knudsen.
- Actumnus* (or *Pilumnus*) sp.
Knudsen.
- Atergatis ?dilitatus* De Haan
de Gruy.
- Atergatis floridus* (Linnaeus)
Knudsen.
- Atergatopsis signata* (Adams and White)
Knudsen, Burke.
- Banareia nobilii* (Odhner)
Knudsen.
- Banareia parvula* (Krauss)
Knudsen.
- Carpilius convexus* (Forsskål)
Johnson, Ziesenhenne, Knudsen, Havens, Fielding.
- Carpilius maculatus* (Linnaeus)
Knudsen, Fielding.
- Chlorodiella corallicola* Miyake and Takeda
Knudsen.
- Chlorodiella cytherea* (Dana)
Ziesenhenne, Knudsen, Havens.
- Chlorodiella laevisima* (Dana)
Reish, Garth, Ziesenhenne, Reese, Knudsen, Havens.
- Chlorodiella nigra* (Forsskål)
Reish, Banner, Garth, Shoup, Knudsen, Havens.
- Cycloxanthops cavatus* Rathbun
Garth, Knudsen, Havens.
- Cymo andreossi* (Audouin)
Banner, Reese, Knudsen.
- Cymo deplanatus* A. Milne Edwards
Ziesenhenne, Reese, Shoup, Knudsen, Child.
- Cymo melanodactylus* De Haan
Garth, Reese, Knudsen.
- Cymo quadrilobatus* Miers
Knudsen.
- Dacryopilumnus eremita* Nobili
Knudsen, Havens.
- Dacryopilumnus rathbunae* Balss
Knudsen, Havens.
- Daira perlata* (Herbst)
Havens.
- Domecia glabra* Alcock
Banner, Garth, Ziesenhenne, Reese, Shoup, Knudsen,
Havens, Child.
- Domecia hispida* Eydoux and Souleyet
Reese, Shoup, Knudsen, Havens.
- Eriphia scabricula* Dana
Morrison, EMBL, Garth, Ziesenhenne, Knudsen,
Havens, Child.
- Eriphia sebana* (Shaw and Nodder)
Morrison, EMBL, Garth, Ziesenhenne, Bakus, Knud-
sen, Havens, Child.
- Etisus bifrontalis* (Edmondson)
Knudsen.
- Etisus demani* Odhner
Johnson, Knudsen, Garth, Havens.
- Etisus* sp., nr. *demani* Odhner
Knudsen, Havens.
- Etisus dentatus* (Herbst)
Garth, Ziesenhenne, Knudsen, Havens, Child.
- Etisus electra* (Herbst)
Reish, Knudsen.
- Etisus frontalis* Dana
Knudsen.
- Etisus laeimanus* Randall
USGS (fossil).
- Etisus molokaiensis* (Rathbun)
Garth, Havens.
- Etisus splendidus* Rathbun
Fielding, USGS (fossil).
- Etisus* sp. 1
Knudsen, Havens.
- Etisus* sp. 2
Knudsen, Havens.
- Etisus* sp. 3
Havens.
- Euxanthus exsculptus* (Herbst)
Garth.
- Euxanthus* (or *Hypocolpus*) sp.
Knudsen.
- Gaillardiiellus rueppellii* (Krauss)
Ziesenhenne, Knudsen.
- Gaillardiiellus superciliaris* (Odhner)
Reish, Banner, Garth, Ziesenhenne, Reese, Shoup,
Knudsen, Havens, Child.
- Globopilumnus globosus* (Dana)
Knudsen, Havens.
- Heteropilumnus* sp., cf. *longipes* (Stimpson)
Knudsen, Havens.
- Lachnopodus ponapensis* (Rathbun)
Knudsen, Havens.
- Lachnopodus subacutus* (Stimpson)
Knudsen, Havens, Fielding.
- Lachnopodus tahitensis* De Man
EMBL, Garth, Knudsen, Havens, Child, Burke.
- Leptodius davaoensis* Ward
Havens, Child.
- Leptodius exaratus* (H. Milne Edwards)
Reish, Garth, Bussing, Knudsen, Child.
- Leptodius gracilis* (Dana)
Ziesenhenne, Bakus, Knudsen, Havens.
- Leptodius nudipes* (Dana)
Knudsen, Havens.

- Leptodius sanguineus* (H. Milne Edwards)
Ziesenhenne, Morrison, Johnson, EMBL, Garth,
Bakus, Knudsen, Havens, Child.
- Leptodius waiialuanus* Rathbun
Knudsen, Havens, Child.
- Liocarpilodes armiger pacificus* Balss
Ladd, Banner, Garth, Reese, Shoup, Knudsen,
Havens, Highsmith.
- Liocarpilodes biunguis* (Rathbun)
Ladd, EMBL, Reish, Garth, Knudsen, Havens, Child,
Highsmith.
- Liocarpilodes integerrimus* (Dana)
Reish, Knudsen, Havens.
- Liocarpilodes pumilus* (Jacquinot)
Ladd, EMBL, Knudsen.
- Liomera bella* (Dana)
Bartos, Morrison, Banner, Garth, Ziesenhenne,
Shoup, Bakus, Knudsen, Havens, Highsmith.
- Liomera coelata* (Odhner)
Banner.
- Liomera loevis* (A. Milne Edwards)
Garth.
- Liomera monticulosa* (A. Milne Edwards)
Reese, Knudsen.
- Liomera pallida* (Borradaile)
Knudsen, Havens.
- Liomera rugata* (H. Milne Edwards)
Ziesenhenne, Garth, Knudsen, Havens.
- Liomera stimpsoni* (A. Milne Edwards)
Knudsen.
- Liomera tristis* (Dana)
Garth.
- Liomera* sp.
Knudsen.
- Lophozozymus dodone* (Herbst)
Knudsen, Child.
- Lophozozymus incisus* (H. Milne Edwards)
Johnson.
- Lophozozymus pulchellus* A. Milne Edwards
Shoup, Knudsen, Havens.
- Lybia caestifera* (Alcock)
Knudsen.
- Lybia tessellata* (Latreille)
Ziesenhenne, Stokes, Knudsen, Havens.
- Lydia annulipes* (H. Milne Edwards)
Knudsen, Havens, Fielding.
- Macromedaeus nudipes* (A. Milne Edwards)
Garth, Knudsen, Havens, Child.
- Maldivia palmyrensis* Rathbun
Knudsen, Highsmith.
- Maldivia triunguiculata* (Borradaile)
Knudsen, Havens, Highsmith.
- Medaeus elegans* A. Milne Edwards
Knudsen, Havens.
- Medaeus ornatus* Dana
Knudsen, Havens.
- Neoxanthias impressus* (Lamarck)
Garth, Ziesenhenne, Knudsen, Burke.
- Paractaea retusa* (Nobili)
Knudsen, Havens.
- Paractaea rufopunctata* (H. Milne Edwards)
Banner, Garth, Knudsen, Havens.
- Paractaea rufopunctata* f. *plumosa* Guinot
Knudsen.
- Paractaea tumulosa* (Odhner)
Knudsen.
- Paramedaeus simplex* (A. Milne Edwards)
Knudsen, Havens, Child.
- Parapilumnus coralliophilus* Takeda and Miyake
Shoup, Knudsen, Havens.
- Parapilumnus ?incertus* Takeda and Miyake
Knudsen.
- Paraxanthias notatus* (Dana)
Ladd, Reish, EMBL, Banner, Garth, Ziesenhenne,
Knudsen, Havens, Highsmith.
- Paraxanthias pachydactylus* (A. Milne Edwards)
Knudsen, Havens.
- Phymodius ?granulatus* (Targioni-Tozzetti)
Knudsen.
- Phymodius laysani* Rathbun
Reese, Knudsen, Havens.
- Phymodius monticulosus* (Dana)
Garth, Knudsen.
- Phymodius nitidus* (Dana)
Garth, Knudsen, Havens.
- Phymodius ungulatus* (H. Milne Edwards)
Banner, Reish, Garth, Reese, Shoup, Knudsen,
Havens.
- Pilodius areolatus* (H. Milne Edwards)
Ziesenhenne, Johnson, Ladd, EMBL, Garth,
Ziesenhenne, Shoup, Bakus, Knudsen, Havens,
Highsmith.
- Pilodius flavus* Rathbun
Reese, Knudsen, Havens.
- Pilodius melanodactylus* (A. Milne Edwards)
Knudsen.
- Pilodius pilumnoides* (White)
Morrison, Reish, Garth, Knudsen, Havens.
- Pilodius pugil* Dana
Johnson, Reish, Banner, Ziesenhenne, USGS (fossil).
- Pilodius scabriculus* Dana
Knudsen, Havens.
- Pilodius spinipes* Heller
Reish, Banner, Garth, Knudsen, Havens.
- Pilumnus andersoni* De Man
Knudsen, Havens.
- Pilumnus caeruleus* A. Milne Edwards
Knudsen, Havens, Child.
- Pilumnus ?elegans* De Man
Knudsen.
- Pilumnus longicornis* Hilgendorf
Banner, Garth, Knudsen, Havens, Child.
- Pilumnus ransoni* Forest and Guinot
Knudsen.

- Pilumnus rotumanus* Borradaile
Knudsen.
- Pilumnus tahitensis* De Man
Knudsen, Havens.
- Pilumnus vespertilio* (Fabricius)
Knudsen.
- Pilumnus* sp.
Havens.
- Planopilumnus vermiculatus* (A. Milne Edwards)
Banner, Knudsen, Havens.
- Polydectus cupulifer* (Latreille)
Banner, Knudsen, Havens, Child.
- Pseudoliomera granosimanus* (A. Milne Edwards)
Knudsen, Havens.
- Pseudoliomera helleri* (A. Milne Edwards)
Knudsen.
- Pseudoliomera* sp., nr. *helleri* (A. Milne Edwards)
Knudsen.
- Pseudoliomera lata* (Borradaile)
Knudsen.
- Pseudoliomera* sp. nr. *lata* (Borradaile)
Knudsen.
- Pseudoliomera rueppellioides* (Odhner)
Knudsen.
- Pseudoliomera speciosa* (Dana)
Reish, Reese and Stevenson, Shoup, Knudsen, Havens.
- Pseudozius caystrus* (Adams and White)
Ziesenhenne, Johnson, EMBL, Garth, Knudsen,
Havens, Child.
- Pseudozius pacificus* Balss
Garth, Knudsen.
- Ralumia dahli* Balss
Knudsen.
- Tetralia glaberrima* (Herbst)
Morrison, Ladd, Reish, EMBL, Banner, Garth,
Ziesenhenne, Reese, Shoup, Knudsen, Havens, Child.
- Tetralia glaberrima rubridactylus* Patton
Reese, Child
- Tetraloides nigrifrons* (Dana)
Garth, Ziesenhenne, Reese, Shoup, Knudsen, Havens.
- Trapezia cymodoce* (Herbst)
Morrison, EMBL, Garth, Reese and Stevenson,
Shoup, Knudsen, Havens, Child.
- Trapezia dentata* Macleay
Knudsen, Child.
- Trapezia digitalis* Latreille
Garth, Ziesenhenne, Shoup, Knudsen, Havens.
- Trapezia digitalis bella* Dana
Knudsen.
- Trapezia* sp., *digitalis* group
Reese, Knudsen.
- Trapezia ferruginea* Latreille
Morrison, Banner, Reish, Garth, Ziesenhenne,
Reese and Stevenson, Shoup, Knudsen,
Havens, Child.
- Trapezia guttata* Rüppell
Ladd, Reish?, Reese, Shoup, Bussing, Knudsen,
Havens.
- Trapezia rufopunctata* (Herbst)
Knudsen.
- Trapezia rufopunctata flavopunctata* Eydoux and
Souleyet
Knudsen.
- Trapezia rufopunctata maculata* Macleay
Garth, Reese and Stevenson, Shoup, Knudsen.
- Trapezia speciosa* Dana
Ladd, Ziesenhenne, Knudsen, Havens.
- Trapezia tigrina* Eydoux and Souleyet
Reish?, Garth, Ziesenhenne, Reese and
Stevenson, Shoup, Knudsen, Havens, Child.
- Trapezia* sp. 1
Knudsen, Havens.
- Trapezia* sp. 2
Havens.
- Xanthias canaliculatus* Rathbun
Knudsen, Havens.
- Xanthias gilbertensis* Balss
Knudsen.
- Xanthias lamarcki* (H. Milne Edwards)
Ziesenhenne, Morrison, Johnson, Ladd, EMBL,
Garth, Ziesenhenne, Knudsen, Havens, Highsmith.
- Xanthias lividus* Lamarck
Knudsen.
- Xanthias punctatus* (H. Milne Edwards)
Knudsen, Havens.
- Xantho* sp.
Knudsen.
- Zozymodes cavipes* (Dana)
Ziesenhenne.
- Zozymus actaeoides* (A. Milne Edwards)
Knudsen.
- Zozymus* sp., nr. *actaeoides* (A. Milne Edwards)
Knudsen.
- Zozymus aeneus* (Linnaeus)
Morrison, Ladd, Garth, Ziesenhenne, Knudsen, Havens.
- Zozymus gemmula* Dana
Knudsen.
- Zozymus hawaiiensis* (Rathbun)
Knudsen.
- Zozymus kuekenthalii* De Man
Knudsen, Havens.
- Family GONEPLACIDAE
- Ceratoplax* sp.
Knudsen.
- Genus and species *incertae sedis*
Knudsen.
- Family PALICIDAE
- Palicus jukesii* (White)
Knudsen.
- Palicus whitei* (Miers)
Knudsen.
- Palicus* sp., nr. *oahuensis* Rathbun
Ziesenhenne.
- Family GRAPSIDAE
- Cyclograpsus integer* H. Milne Edwards
Knudsen, Child.

- Cyclograpsus longipes* Stimpson
Knudsen, Havens.
- Cyclograpsus sanctaerucis* Griffin
Knudsen.
- Geograpsus crinipes* (Dana)
Held, Knudsen, Havens, Fielding.
- Geograpsus grayi* (H. Milne Edwards)
Held, Knudsen, Havens, Fielding.
- Grapsus intermedius* De Man
Knudsen.
- Grapsus longitarsus* Dana
EMBL, Held, Child, Havens.
- Grapsus tenuicrustatus* (Herbst)
EMBL, Garth, Ziesenhenne, Reese and Boolootian,
Knudsen, Havens.
- Metasesarma rousseauxi* H. Milne Edwards
Knudsen.
- Metopograpsus thukuhar* (Owen)
Knudsen, Havens.
- Pachygrapsus minutus* A. Milne Edwards
EMBL, Reish, Garth, Ziesenhenne, Bakus, Knudsen,
Havens, Child, Highsmith.
- Pachygrapsus planifrons* De Man
Garth, Bakus, Knudsen, Havens, Child.
- Pachygrapsus plicatus* H. Milne Edwards
EMBL, Bakus, Knudsen, Havens, Child.
- Percnon abbreviatum* (Dana)
Knudsen, Havens, Child.
- Percnon pilimanus* (A. Milne Edwards)
Knudsen, Havens, Child, Fielding.
- Percnon planissimum* (Herbst)
EMBL, Bakus, Knudsen, Havens, Child, Highsmith.
- Plagusia depressa tuberculata* Lamarck
Knudsen, Havens.
- Plagusia immaculata* Lamarck
Fielding.
- Plagusia speciosa* Dana
Knudsen, Havens, Child, Fielding.
- Pseudograpsus albus* Stimpson
EMBL, Knudsen, Havens.
- Sesarma (Holometopus)* sp.
Knudsen.
- Family GECARCINIDAE
Gecarcoidea lalandii H. Milne Edwards
Knudsen, Fielding.
- Family PINNOTHERIDAE
Xanthasia murigera White
Garth.
- Family OCYPODIDAE
Macrophthalmus (Macrophthalmus) telescopicus (Owen)
Knudsen.
- Macrophthalmus (Mopsocarcinus) bosci* Audouin and
Savigny
Garth, Knudsen.
- Ocypode ceratophthalma* (Pallas)
EMBL, Garth, Ziesenhenne, Reese and Boolootian,
Bakus, Child.
- Ocypode cordimana* Desmarest
Knudsen, Fielding.
- Paracleistosoma* (or *Cleistosoma*) sp.
Knudsen.
- Uca tetragonon* (Herbst)
Knudsen.
- Genus and species *incertae sedis*
Knudsen.
- Family HAPALOCARCINIDAE
Cryptochirus coralliodytes Heller
Bakus, Knudsen, Wijsman.
- Hapalocarcinus marsupialis* Stimpson
Reese, Shoup, Knudsen, Havens.
- Neotroglocarcinus dawydoffi* (Fize and Serène)
Reese and Stevenson, BPBM.
- Pseudocryptochirus crescentus* Edmondson
Pichon.
- Species 1, *incertae sedis*
Knudsen.
- Species 2, *incertae sedis*
Knudsen.

TABLE 2
Data on Collections of Brachyura*

Collector(s)	Date	Identifier	Depository
Bakus, G. J., and B. H. Bussing	1965	J. Garth	AHF
Banner, A. H.	1957	J. Garth	AHF, MPRL
Bartos, W. A.	1944	†J. Garth	USNM
Burke, R.	1978	J. Garth	BPBM
Child, C. A.	1969	J. Garth	USNM
Coatsworth, J.	1959	J. Garth	AHF, MPRL

*AHF, Allan Hancock Foundation; BPBM, Bernice P. Bishop Museum; MPRL, Mid-Pacific Research Laboratory, Enewetak; USNM, National Museum of Natural History, Smithsonian Institution.

†Xanthidae only; the Portunidae were identified by Stephenson and Rees (1967).

(This table continued on next page.)

TABLE 2 (cont'd)

Collector(s)	Date	Identifier	Depository
de Gruy	1978	J. Garth	BPBM
Fielding, A.	1976, 1978	J. Garth	BPBM
Garth, J. S.	1957, 1959	J. Garth	AHF, MPRL
		and others	
Goreau, T., and R. Neshida	1957	J. Garth	AHF, MPRL
Havens, A. D.	1968, 1969,	A. Havens,	AHF
	1970	J. Garth	
Held, E.	1957	J. Garth	AHF
Johnson, M. W.	1946	†J. Garth	USNM
Knudsen, J. W.	1965 to 1968,	J. Garth	AHF
	1971, 1972	and others	
Ladd, H. S.	1952	†J. Garth	USNM
Morrison, J. P. E.	1946	†J. Garth	USNM
Palumbo, R.	1957	J. Garth	AHF
Pichon, M.	1976	M. Takeda	BPBM
Reese, E. S., and R. A. Boolootian	1960	J. Garth	AHF
Reese, E. S., and R. A. Stevenson	1961	J. Garth	AHF
Reish, D.	1956, 1957	J. Garth	AHF, MPRL
Ryan, E.	1957	J. Garth	AHF
Shoup, J.	1961	J. Garth	AHF
Stokes, D.	1965	J. Garth	AHF
Wijsman, M.	1976	M. Takeda	BPBM
Ziesenhenné, F. C.	1946,	†J. Garth	AHF, USNM
	1957, 1959		AHF, MPRL

†Xanthidae only; the Portunidae were identified by Stephenson and Rees (1967).

Authors' Note

During the lengthy period in which "The Natural History of Enewetak Atoll" was in press, papers appeared proposing significant changes in nomenclature which, had they been able, the authors would have incorporated into their chapter on the Crustacea Decapoda (Brachyura and Anomura). These important changes are listed below, together with their sources. It is the authors' hope that users of these lists will thus be kept abreast of developments in crustacean systematics. Such listing does not constitute publication, and scientific names should be formally cited as they appear in the printed lists.

John S. Garth, Janet Haig, Jens W. Knudsen

February 1, 1988

- Page 237, 247, Family HAPALOCARCINIDAE. Now Family CRYPTOCHIRIDAE:
260 Kropp and Manning, 1985.
- " 240 Pagurus anceps (Forest, 1954). This should not have been marked as a new record for Enewetak and the Marshall Islands; as indicated, it was recorded from Enewetak by McLaughlin and Haig, 1984.
- " 240, 252 New genus, sp. This genus was recently described as Micropagurus McLaughlin (McLaughlin, 1986). The status of the Enewetak species has yet to be determined.
- " 241 Petrolisthes lamarckii (Leach, 1820). Recorded from Enewetak by Kropp (1984).
- " 241, 253 Petrolisthes penicillatus (Heller, 1862). Now Petrolisthes tomentosus (Dana, 1852): Kropp, 1986.

- Page 241, 253 Petrolisthes [undescribed sp. 1]. This species was recently described as Petrolisthes heterochrous Kropp (Kropp, 1986).
- " 243, 256 Actaea(?) cavipes (Dana, 1852). Now Psaumis cavipes (Dana, 1852): Serène, 1984.
- " 243, 256 Actaea pulchella modesta (De Man, 1888). Now Novactaea pulchella modesta (De Man, 1888): Serène, 1984.
- " 243, 257 Actaea quadriareolata Takeda and Miyake, 1968. Now Paractaeopsis quadriareolata (Takeda and Miyake, 1968): Serène, 1984.
- " 243, 257 Cycloxanthops cavatus Rathbun, 1907. Now Aff. Neoxanthops cavatus (Rathbun, 1907): Serène, 1984.
- " 245, 258 Paractaea tumulosa (Odhner, 1925). Now Paractaeopsis tumulosa (Odhner, 1925): Serène, 1984.
- " 245, 258 Paraxanthias pachydactylus (A. Milne Edwards, 1873). Now Xanthias pachydactylus (A. Milne Edwards, 1873): Serène, 1984.
- " 245, 258 Phymodius laysani Rathbun, 1906. Now Tweedieia laysani (Rathbun, 1906): Serène, 1984.
- " 245, 258 Pilodius melanodactylus (A. Milne Edwards, 1873). Now Pilodius pubescens Dana, 1852: Serène, 1984.

- Page 246, 259 Tetralia glaberrima rubridactylus Patton, 1966. Now
Tetralia rubridactyla Garth, 1969: Galil, 1988.
- " 247, 260 Superfamily HAPALOCARCINOIDEA. Now Superfamily CRYPTO-
 CHIROIDEA: Kropp and Manning, 1985.

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- Galil, B., 1988, Further Notes on Species of Tetralia (Decapoda, Trapeziidae), Crustaceana, 54: 57-68.
- Kropp, R. K., 1986, A Neotype Designation for Petrolisthes tomentosus (Dana), and Description of Petrolisthes heterochrous, New Species, from the Mariana Islands (Anomura: Porcellanidae), Proc. Biol. Soc. Wash., 99: 452-463.
- Kropp, R. K., and R. B. Manning, 1985, Cryptochiridae, the Correct Name for the Family Containing the Gall Crabs (Crustacea: Decapoda: Brachyura), Proc. Biol. Soc. Wash., 98: 954-955.
- McLaughlin, P. A., 1986, Three New Genera and Species of Hermit Crabs (Crustacea: Anomura: Paguridae) from Hawaii, J. Crust. Biol., 6: 789-803.
- Serène, R., 1984, Crustacés Décapodes Brachyours de l'Océan Indien Occidental et de la Mer Rouge. Xanthoidea: Xanthidae et Trapeziidae. Avec un Addendum par Crosnier (A.): Carpiliidae et Menippidae, Faune Tropicale, 24: 1-400.