

A preliminary list of shallow water decapod Crustacea in the Kerama Group, the Ryukyu Archipelago

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Abstract. During a faunal survey of the Kerama Group in 1978 and 1992-1994, S. Nagai and K. Nomura made intensive collections of decapod crustaceans. The material includes 299 species representing 37 families, excluding the Chirostylidae and Galatheidae. Of these, 47 species remain to be unidentified, because they include possibly undescribed or taxonomically problematical species. First Japanese records are reported for the following 21 species, most of which are considered to be widely distributed in tropical and subtropical waters of the West Pacific or Indo-West Pacific: *Odontozona ensifera*, *Discias exul*, *Leptochela irrobusta*, *Hamodactylus boshmai*, *Periclimenaeus djiboutensis*, *P. hecate*, *Periclimenes amboinensis*, *P. cristimanus*, *P. novaecaledoniae*, *P. longirostris*, *Alpheus ehlersii*, *A. pareuchirus*, *A. tenuipes*, *Parabetaeus culliereti*, *Axiopsis serratifrons*, *Pylopaguropsis fimbriata*, *Petrolisthes extremus*, *Hyastenus uncifer*, *Tiarinia dana*, *Portunus mariei* and *Hypocolpus rugosus*.

Key words: Crustacea, Decapoda, Fauna, Kerama, Ryukyu

Introduction

The Kerama Group, which belongs to the Okinawa Islands, the Ryukyu Archipelago, is located 30 km west of Okinawa-jima, and consists of about 20 islands of various sizes. Despite the considerable development of coral reef and related environment, its marine fauna has been little studied in the past. Major faunal or systematic studies that have dealt with decapod crustaceans have been centered on the Amami Islands, Okinawa-jima and the Yaeyama Islands (e.g., Minei, 1973; Sakai, 1976; Miyake, 1983; Bruce, 1985; Hirata et al., 1988; Kamezaki et al., 1988; Nagai & Nomura, 1988; Baba, 1989; Takeda, 1989; Miyake, 1991). Consequently, the species composition of the Kerama Group remains little understood. Minei (1971, 1973) recorded two species of portunid crab and one hermit crab from the Kerama Group. Takeda (1980) described a new xanthid crab, *Hypocolpus kurodai*, from Zamami-jima, and he (1986) also identified 25 species of decapods from the area based on photographs. Asakura (1991) analyzed the distributional pattern of

seven species of porcellanid crab in intertidal zone of Zamami-jima. Recently, Okuno (1994) recorded three species of rhynchocinetid shrimps, including a new species, *Rhynchocinetes concolor*, from Aka-jima.

During a faunal survey of the Kerama Group in 1978 and 1992-1994, S. Nagai and K. Nomura made intensive collection of decapod crustaceans. The material amounts to hundreds of species, including a number of new to Japanese fauna and unidentified species. The aim of this paper is to present a preliminary result of our identification. The undescribed or taxonomically problematical species will be discussed elsewhere in separate works.

Material and Methods

The main survey was carried out at three islands, Aka-jima, Kuba-jima and Yakabi-jima in 1992-1994 by K. Nomura. A survey also carried out at Zamami-jima in 1978 by S. Nagai. Collections were made in depths ranging from intertidal to 25 m, by reef

walking, and by SCUBA diving. Collections were made from a total 23 localities (Fig. 1). Materials used in this study were supplemented by the following small collections: a collection made by T. Habe in 1991 at one site off Sakubaru, Aka-jima, at a depth of 40 m using a dredge (Fig. 1, St. 6); a collection made by M. Osawa at Aka-jima in 1992; materials deposited in the Akajima Marine Science

Laboratory.

Identifications were made by K. Nomura for Penaeidea, Stenopodidea, Caridea and Palinuridea, A. Asakura for Anomura, S. Nagai for Brachyura and T. Komai for Thalassinidea, some species of Caridea, Anomura and Brachyura. A part of the specimens examined will be deposited in the Natural History Museum and Institute, Chiba.

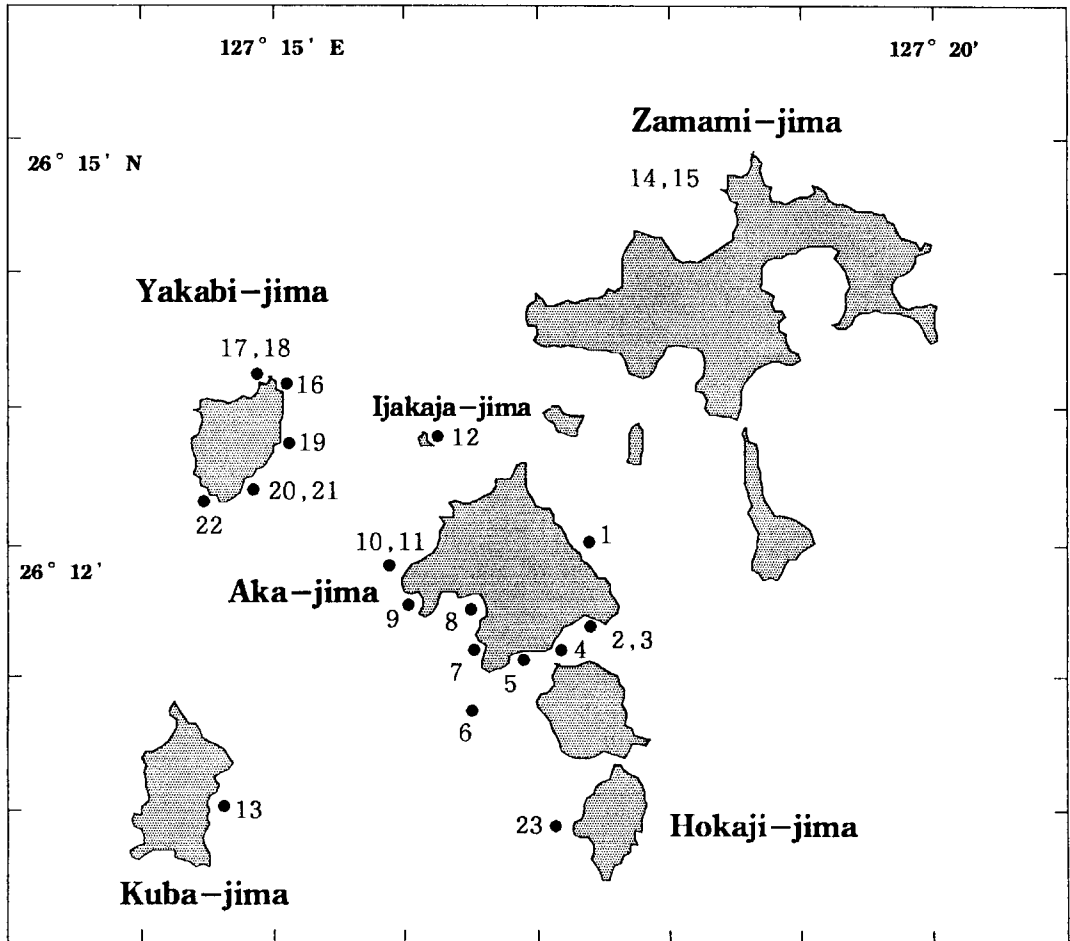


Fig. 1. Map showing western part of the Kerama Group. Study area showing location of stations represented by numerals 1-23. St. 1, Nishihama, Aka-jima, 3-20 m; St. 2, Majanohama, Aka-jima, intertidal; St. 3, same, 3-10 m; St. 4, Aka Port, Aka-jima, 0-10 m; St. 5, Maenohama, Aka-jima, intertidal; St. 6, off Sakubaru, Aka-jima, 40 m (dredged); St. 7, Hizushihama, Aka-jima, 5-10 m; St. 8, Agonohama, Aka-jima, 5-10 m; St. 9, Yakarahama, Aka-jima, intertidal; St. 10, Kushibaru, Aka-jima, intertidal; St. 11, same, 3-15 m; St. 12, Ijakaja-jima; St. 13, eastern reef, Kuba-jima, intertidal; St. 14, Zamami-jima, intertidal; St. 15, same, 3-6 m; St. 16, Yakabi-jima, 10-15 m; St. 17, Yakabi-jima, intertidal; St. 18, Yakabi-jima, 3-20 m; St. 19, Yakabi-jima, 10-15 m; St. 20, Yakabi-jima, intertidal; St. 21, Yakabi-jima, 3-15 m; St. 22, Yakabi-jima, 10-15 m; St. 23, western reef, Hokaji-jima, 25m.

Results

The decapods collected are listed below. Genera and species are arranged alphabetically within each family. Totally 299 species, excluding chirostylids and galatheids, have been identified: 2 species of Penaeidea, 5 species of Stenopodidea, 128 species of Caridea, 6 species of Palinulidea, 4 species of Thalassinidea, 33 species of Anomura and 121

species of Brachyura. Among these, 21 species are recorded from Japanese waters for the first time (marked with an asterisk: see Table 1).

Forty seven species, which remain to be unidentified at specific level, include undescribed or taxonomically problematical species; the specimens of *Penaeus* are too immature to make certain identification.

List of collected decapod Crustacea

Infraorder/ family/ species	Collecting sites (St. no.)	Number of specimens
Penaeidea		
PENAEIDAE		
<i>Penaeus</i> sp.	4	5
SERGESTIDAE		
<i>Sicyonella</i> cf. <i>inermis</i> (Paulson, 1875)	4	1
Stenopodidea		
SPONGICOLIDAE		
<i>Microprosthema scabricaudatum</i> (Richters, 1880)	20	2
<i>Microprosthema validum</i> Stimpson, 1860	1,11	1,1
STENOPODIDAE		
<i>Odontozona ensifera</i> (Dana, 1852) *	11	2
<i>Odontozona</i> sp.	1,19	1,1
<i>Stenopus hispidus</i> (Olivier, 1811)	4	1
Caridea		
PASIPHAEIDAE		
<i>Leptochela irrobusta</i> Chace, 1976 *	6	3
BRESILIIDAE		
<i>Discias exul</i> Kemp, 1920 *	1,22	2,10
RHYNCHOCINETIDAE		
<i>Rhynchocinetes conspiciocellus</i> Okuno & Takeda, 1992	1,4,11,16,18,19	3,1,3,1,1,1
<i>Rhynchocinetes hendersoni</i> Kemp, 1925	4	1
<i>Rhynchocinetes rigens</i> Gordon, 1936	4	2
<i>Rhynchocinetes striatus</i> Nomura & Hayashi, 1992	1	2

List of collected decapod Crustacea (continued)

Infraorder/ family/ species	Collecting sites (St. no.)	Number of specimens
ANCHISTIOIDIDAE		
<i>Anchistioides compressus</i> Paulson, 1875	22	2
PALAEMONIDAE		
Subfamily Palaemoniinae		
<i>Brachycarpus biunguiculatus</i> (Lucas, 1846)	4,21	1,1
<i>Palaemon serrifer</i> (Stimpson, 1860)	2	3
<i>Urocaridella</i> sp.	4	1
Subfamily Pontoniinae		
<i>Araiopontonia odontorhyncus</i> Fujino & Miyake, 1970	1,18	2,3
<i>Coralliocaris graminea</i> (Dana, 1852)	7	1
<i>Coralliocaris superba</i> (Dana, 1852)	7	1
<i>Hamodactylus boschmai</i> Holthuis, 1952 *	19	8
<i>Hamodactylus noumeae</i> Bruce, 1970	1,18	10,6
<i>Harpiliopsis beaupresii</i> (Audouin, 1826)	20	1
<i>Harpiliopsis depressa</i> (Stimpson, 1860)	11	3
<i>Jocaste lucina</i> (Nobili, 1901)	20	5
<i>Onycocaris oligodentata</i> Fujino & Miyake, 1969	1	1
<i>Palaemonella pottsi</i> (Borradaile, 1898)	1,18	1,1
<i>Palaemonella rotumana</i> (Borradaile, 1898)	10	1
<i>Palaemonella</i> sp.	1	1
<i>Parapontonia nudirostris</i> Bruce, 1967	1	10
<i>Paratypton siebenrocki</i> Balss, 1914	4	2
<i>Periclimenaeus djiboutensis</i> Bruce, 1970 *	1	4
<i>Periclimenaeus gorgonidarum</i> (Balss, 1913)	1	3
<i>Periclimenaeus hecate</i> (Nobili, 1904) *	Aka-jima	1
<i>Periclimenella spinifera</i> (De Man, 1902)	4,20	7,7
<i>Periclimenes affinis</i> (Zehantner, 1894)	1,18	1,4
<i>Periclimenes amboinensis</i> (De Man, 1888) *	1,18	1,2
<i>Periclimenes brevicarpalis</i> (Schenkel, 1902)	1,9,23	2,1,1
<i>Periclimenes commensalis</i> Borradaile, 1915	1	4
<i>Periclimenes cristimanus</i> Bruce, 1965 *	1	1
<i>Periclimenes elegans</i> (Paulson, 1875)	9,13,20	2,3,1
<i>Periclimenes grandis</i> (Stimpson, 1860)	1,5,9,10,16,18	2,5,5,1,1,1
<i>Periclimenes imperator</i> Bruce, 1967	16,18	1,1
<i>Periclimenes inornatus</i> Kemp, 1922	1,9,18	1,1,1
<i>Periclimenes longirostris</i> (Borradaile, 1915) *	1	1
<i>Periclimenes lutescens</i> (Dana, 1852)	11	1
<i>Periclimenes novaecaledoniae</i> Bruce, 1968 *	1	1
<i>Periclimenes ornatus</i> Bruce, 1969	3	1
<i>Periclimenes soror</i> Nobili, 1904	10	3
<i>Periclimenes tenuipes</i> Borradaile, 1898	11,16	1,1

List of collected decapod Crustacea (continued)

Infraorder/ family/ species	Collecting sites (St. no.)	Number of specimens
<i>Periclimenes</i> cf. <i>venustus</i> Bruce, 1989	23	1
<i>Philarius gerlachei</i> (Nobili, 1905)	11	2
<i>Thaumastocaris streptopus</i> Kemp, 1922	1	1
Pontoniinae gen. sp.	1	6
GNATHOPHYLLIDAE		
<i>Gnathophyllum americanum</i> Guérin, 1856	11	1
ALPHEIDAE		
<i>Alpheopsis aequalis</i> Coutière, 1896	1,11,16,18,20,21	1,1,3,3,2,3
<i>Alpheopsis yaldwyni</i> Banner & Banner, 1973	1,9	2,1
<i>Alpheus alcyone</i> De Man, 1902	20	2
<i>Alpheus architectus</i> De Man, 1897	10,13,17,20	1,2,1,4
<i>Alpheus barbatus</i> Coutière, 1897	5,20	4,2
<i>Alpheus collumianus</i> Stimpson, 1861	20	3
<i>Alpheus crockeri</i> (Armstrong, 1941)	19	1
<i>Alpheus diadema</i> Dana, 1852	Aka-jima	5
<i>Alpheus ehlersii</i> De Man, 1909 *	20	1
<i>Alpheus edwardsii</i> (Audouin, 1827)	5,20	9,1
<i>Alpheus frontalis</i> H. Milne Edwards, 1837	1,20	5,2
<i>Alpheus funafutensis</i> Borradaile, 1898	20	1
<i>Alpheus gracilipes</i> Stimpson, 1861	1,9,20	1,2,1
<i>Alpheus gracilis</i> Heller, 1861	17,20	1,6
<i>Alpheus hailstonei</i> Coutière, 1905	19,21	1,1
<i>Alpheus lanceoloti</i> Coutière, 1905	1	1
<i>Alpheus lottini</i> Guérin, 1829	10,20	2,1
<i>Alpheus obesomanus</i> Dana, 1852	5	1
<i>Alpheus pachychirus</i> Stimpson, 1860	10,20	2,3
<i>Alpheus pacificus</i> Dana, 1852	1,9,11,13,20,21	2,7,2,1,4,1
<i>Alpheus pareuchirus</i> Coutière, 1905 *	1,16	3,1
<i>Alpheus parvirostris</i> Dana, 1852	5,9,10,20	3,4,3,9
<i>Alpheus praedator</i> De Man, 1908	1	2
<i>Alpheus strenuus</i> Dana, 1852	5,20	12,3
<i>Alpheus sulcatus</i> Kingsley, 1878	11,20	1,1
<i>Alpheus tenuipes</i> De Man, 1910 *	1,11,21,22	3,1,1,1
<i>Alpheus tungii</i> Banner & Banner, 1966	17,20	1,1
<i>Alpheus</i> sp. 1 aff. <i>alcyone</i>	22	2
<i>Alpheus</i> sp. 2 aff. <i>edwardsii</i>	1,11,18,21	1,2,2,1
<i>Alpheus</i> sp. 3 aff. <i>edwardsii</i>	18	2
<i>Alpheus</i> sp. 4 aff. <i>gracilipes</i>	2,5,9	2,2,2
<i>Alpheus</i> sp. 5 aff. <i>leptochirus</i>	16	1
<i>Alpheus</i> sp. 6 aff. <i>leviusculus</i>	20	3
<i>Alpheus</i> sp. 7 aff. <i>leviusculus</i>	2,10,20	1,9,5

List of collected decapod Crustacea (continued)

Infraorder/ family/ species	Collecting sites (St. no.)	Number of specimens
<i>Alpheus</i> sp. 8 aff. <i>leviusculus</i>	5,20	2,1
<i>Alpheus</i> sp. 9 aff. <i>leviusculus</i>	10,20	5,1
<i>Alpheus</i> sp. 10 aff. <i>lobidens</i>	20	1
<i>Alpheus</i> sp. 11 aff. <i>lobidens</i>	1,3,11,18,21	3,1,2,2,2
<i>Alpheus</i> sp. 12 aff. <i>lobidens</i>	5	9
<i>Alpheus</i> sp. 13 aff. <i>lobidens</i>	1,5,9	1,1,2
<i>Alpheus</i> sp. 14 aff. <i>lobidens</i>	1	1
<i>Alpheus</i> sp. 15 aff. <i>mitis</i>	20	1
<i>Alpheus</i> sp. 16 aff. <i>paracrinatus</i>	9,10	2,2
<i>Alpheus</i> sp. 17 aff. <i>pareuchirus</i>	1,16	1,1
<i>Alpheus</i> sp. 17 aff. <i>staphylinus</i>	20	1
<i>Alpheus</i> sp. 18	19	1
<i>Alpheus</i> sp. 19	1	1
<i>Arete acanthocarpus</i> Miya & Miyake, 1968	13,20	2,6
<i>Arete</i> cf. <i>indicus</i> Coutière, 1905	1,10,20	5,1,4
<i>Arete</i> sp.	10,20	1,6
<i>Aretopsis amabilis</i> De Man, 1910	9	1
<i>Athanas areteformis</i> Coutière, 1903	1,11	2,2
<i>Athanas dimorphus</i> Ortmann, 1894	9	2
<i>Athanas djiboutensis</i> Coutière, 1897	2,5,9,11,13,20	1,1,4,1,2,1
<i>Athanas marshallensis</i> Chace, 1955	1,20	1,2
<i>Athanas ornithorhynchus</i> Banner & Banner, 1973	1	1
<i>Athanas sibogae</i> De Man, 1910	18,19	1,1
<i>Automate dolichognatha</i> De Man, 1888	2,5,9,10,20	2,2,2,1,4
<i>Metalpheus paragracilis</i> (Coutière, 1897)	20,21	8,1
<i>Metalpheus rostratipes</i> (Pocock, 1890)	17	1
<i>Nennalpheus sibogae</i> De Man, 1910	18	1
<i>Parabetaeus cullieti</i> Coutière, 1897 *	3,20,21	1,1,1
<i>Racilius compressus</i> Paulson, 1875	11	4
<i>Salmoneus serratidigitus</i> (Coutière, 1896)	1,11,19	2,1,1
<i>Salmoneus tricristatus</i> Banner, 1956	5,9	1,2
<i>Synalpheus bituberculatus</i> De Man, 1910	21	1
<i>Synalpheus demani</i> Borradaile, 1899	1	1
<i>Synalpheus neomeris</i> (De Man, 1897)	22	2,2
<i>Synalpheus stimpsoni</i> (De Man, 1888)	1	2
<i>Synalpheus tumidomanus</i> (Paulson, 1875)	1,2,5,11,20	1,7,1,11,20
<i>Synalpheus</i> sp.	22	4
HIPPOLYTIDAE		
<i>Koror misticius</i> Clark, 1989	7	1
<i>Lysmata dentata</i> (De Haan, 1844)	1	3
<i>Saron inermis</i> Hayashi, 1983	4	1
<i>Saron</i> sp. 1 cf. <i>marmoratus</i>	1,4,11,21	1,3,1,1

List of collected decapod Crustacea (continued)

Infraorder/ family/ species	Collecting sites (St. no.)	Number of specimens
<i>Saron</i> sp. 2 cf. <i>marmoratus</i>	1,4,10	1,2,3
<i>Thor amboinensis</i> (De Man, 1888)	1	2
<i>Thor paschalis</i> (Heller, 1862)	1	1
<i>Thoralus</i> sp.	11	1
PROCESSIDAE		
<i>Nikoides danae</i> Paulson, 1875	1	1
Palinulidea		
PALINURIDAE		
<i>Panulirus penicillatus</i> (Olivier, 1791)	4	1
<i>Panulirus longipes</i> (A. Milne Edwards, 1868)	4	3
SCYLLARIDAE		
<i>Scyllarus</i> sp.	7	1
<i>Scyllarides haani</i> (De Haan, 1841)	4	1
<i>Parribacus antarcticus</i> (Lund, 1793)	Aka-jima	1
<i>Parribacus japonicus</i> Holthuis, 1960	Aka-jima	1
Thalassinidea		
AXIIDAE		
<i>Axiopsis serratifrons</i> (A. Milne Edwards, 1873) *	1,21	2,1
<i>Paraxiopsis brocki</i> (De Man, 1888)	1	1
<i>Neaxius acanthus</i> (A. Milne Edwards, 1878)	1,9	1,2
CALLIANIDEIDAE		
<i>Callianidea typa</i> H. Milne Edwards, 1837	5,20,21	1,1,1
DIOGENIDAE		
<i>Aniculus ursus</i> (Olivier, 1811)	20	1
<i>Calcinus elegans</i> (H. Milne Edwards, 1836)	17	2
<i>Calcinus gaimardii</i> (H. Milne Edwards, 1848)	1	1
<i>Calcinus guamensis</i> Wooster, 1982	18	1
<i>Calcinus laevimanus</i> (Randall, 1839)	20	1
<i>Calcinus latens</i> (Randall, 1839)	18	1
<i>Calcinus lineapropodus</i> Morgan & Forest, 1991	18	2
<i>Calcinus minutus</i> Buitendijk, 1937	20	1
<i>Calcinus vachoni</i> Forest, 1958	1,17,21	1,1,1
<i>Calcinus</i> sp. cf. <i>gaimardii</i>	17,21	2,1
<i>Calcinus</i> sp.	1,18	1,1
<i>Clibanarius eury sternus</i> Hilgendorf, 1878	17	1
<i>Dardanus gemmatus</i> (H. Milne Edwards, 1848)	21	1
<i>Dardanus lagopodes</i> (Forsskål, 1775)	9,18	1,1

List of collected decapod Crustacea (continued)

Infraorder/ family/ species	Collecting sites (St. no.)	Number of specimens
<i>Dardanus megistos</i> (Herbst, 1804)	9	1
<i>Ciliopagurus strigatus</i> (Herbst, 1804)	18,22	1,1
PAGURIDAE		
<i>Pagurixus anceps</i> (Forest, 1954)	20	1
<i>Pagurixus boninensis</i> (Melin, 1939)	1,20	1,1
<i>Pagurixus laevimanus</i> (Ortmann, 1892)	22	1
<i>Pagurixus nomurai</i> Komai & Asakura, 1995	1	1
<i>Pagurus hirtimanus</i> (Miers, 1880)	18	2
<i>Pylopaguropsis fimbriata</i> McLaughlin & Haig, 1989 *	1,18	1,2
PORCELLANIDAE		
<i>Neopetrolisthes oshimai</i> Miyake, 1937	9	1
<i>Pachycheles garciaensis</i> (Ward, 1942)	17,20	1,1
<i>Pachycheles pisoides</i> (Heller, 1862)	20	2
<i>Petrolisthes asiaticus</i> (Leach, 1820)	20	1
<i>Petrolisthes extremus</i> Kropp & Haig, 1994 *	20	4
<i>Petrolisthes lamarkii</i> (Leach, 1820)	20	3
<i>Petrolisthes masakii</i> Miyake, 1943	21	1
<i>Petrolisthes pubescens</i> Stimpson, 1858	1,9	1,2
<i>Petrolisthes tomentosus</i> (Dana, 1852)	18,20	1,2
<i>Petrolisthes virgatus</i> Paulson, 1875	20	1
<i>Petrolisthes</i> sp. cf. <i>carinipes</i>	20	1
Brachyura		
DROMIIDAE		
<i>Cryptodromia tuberculata</i> Stimpson, 1858	14	2
<i>Dromidiopsis dormia</i> (Linnaeus, 1763)	15	1
DYNOMENIDAE		
<i>Dynomene hispida</i> Desmarest, 1825	21	1
CALAPPIDAE		
<i>Calappa gallus</i> (Herbst, 1803)	7	1
<i>Calappa hepatica</i> (Linnaeus, 1758)	14	1
<i>Matua banksii</i> Leach, 1817	4	1
LEUCOSIIDAE		
<i>Oreophorus (Oreotlos) latus</i> (Borradaile, 1903)	14	1
HYMENOSOMATIDAE		
<i>Elamena truncata</i> (Stimpson, 1858)	14	1

List of collected decapod Crustacea (continued)

Infraorder/ family/ species	Collecting sites (St. no.)	Number of specimens
MAJIDAE		
<i>Camposcia retusa</i> Latreille, 1829	9	1
<i>Criocarcinus tuberculata</i> Miers, 1880	7	1
<i>Cyclax spinicinctus</i> Heller, 1861	15,21	1,1
<i>Cyclax suborbicularis</i> (Stimpson, 1858)	7	1
<i>Hyastenus uncifer</i> Calman, 1909 *	4	1
<i>Menaethius monoceros</i> (Latreille, 1825)	14	2
<i>Perinia tumida</i> Dana, 1852	21	3
<i>Pseudomicippe</i> sp.	12	1
<i>Schizophrys aspera</i> (H. Milne Edwards, 1834)	7,8,15	1,1,3
<i>Tiarinia tiarata</i> (Adams & White, 1848)	Aka-jima	1
<i>Tiarinia dana</i> Griffin & Tranter, 1986 *	8	1
<i>Tylocarcinus styx</i> (Herbst, 1803)	11,21	1,2
PARTHENOPIDAE		
<i>Daldorfia horrida</i> (Linnaeus, 1758)	1,5,21	1,3,1
<i>Parthenope (Aulacolambrus) hoplonotus</i> (Adams & White, 1848)	4	1
PORTUNIDAE		
<i>Catopirus nitidus</i> A. Milne Edwards, 1870	1,9	1,1
<i>Charybdis (Goniohellenes) obtusifrons</i> (Leene, 1936)	15	1
<i>Charybdis (Gonioinfradens) paucidentata</i> (A. Milne Edwards, 1861)	1	1
<i>Libystes villosus</i> Rathbun, 1924	10,14	1,1
<i>Lissocarcinus laevis</i> Miers, 1886	1	1
<i>Lissocarcinus orbicularis</i> Dana, 1852	4	1
<i>Portunus (Xiphonectes) emarginatus</i> Stephenson & Campbell, 1959	14	5
<i>Portunus (Xiphonectes) iranjae</i> Crosnier, 1962	10	1
<i>Portunus (Xiphonectes) mariei</i> Guinot, 1957 *	4	1
<i>Scylla serrata</i> (Forsskål, 1755)	14	1
<i>Thalamita admete</i> (Herbst, 1803)	5,9,10,14	1,1,1,2
<i>Thalamita coeruleipes</i> Jacquinot & Lucas, 1853	15	4
<i>Thalamita danae</i> Stimpson, 1858	15	2
<i>Thalamita picta</i> Stimpson, 1858	5,13	1,1
<i>Thalamita</i> sp.	18	1
XANTHIDAE		
<i>Actaea polyacantha</i> (Heller, 1861)	21	1
<i>Actaea</i> cf. <i>pulchella</i> (A. Milne Edwards, 1865)	20	1
<i>Actaeodes tomentosus</i> (H. Milne Edwards, 1834)	1,5,10,14,21	1,1,1,2,1
<i>Banareia armata</i> A. Milne Edwards, 1869	14	8

List of collected decapod Crustacea (continued)

Infraorder/ family/ species	Collecting sites (St. no.)	Number of specimens
<i>Banareia banareias</i> (Rathbun, 1911)	14	5
<i>Chlorodiella barbata</i> (Borradaile, 1899)	Aka-jima	1
<i>Chlorodiella cytherea</i> (Dana, 1852)	14,21	2,1
<i>Chlorodiella laevis</i> (Dana, 1852)	5,16	1,1
<i>Chlorodiella nigra</i> (Forsskål, 1775)	5,20	1,1
<i>Chlorodiella</i> sp.	1,20	1,1
<i>Cymo andreosyi</i> (Audouin, 1826)	15	3
<i>Cymo deplanatus</i> A. Milne Edwards, 1873	11	1
<i>Daira perlata</i> (Herbst, 1790)	20	1
<i>Etisus demani</i> Odhner, 1925	1,5	3,1
<i>Etisus dentatus</i> (Herbst, 1785)	15	2
<i>Etisus electra</i> (Herbst, 1801)	1	1
<i>Hypocolpus kurodai</i> Takeda, 1980	15	1
<i>Hypocolpus rugosus</i> (Henderson, 1893) *	10	1
<i>Leptodius sanguineus</i> (H. Milne Edwards, 1834)	5,20	1,1
<i>Liomera bella</i> (Dana, 1852)	5,10,14	1,1,2
<i>Liomera cinctimana</i> (White, 1847)	10,14,20	1,3,1
<i>Liomera laevis</i> (A. Milne Edwards, 1873)	1,9	1,1
<i>Liomera rubra</i> (A. Milne Edwards, 1865)	4	1
<i>Liomera rugata</i> (H. Milne Edwards, 1834)	10,21	1,1
<i>Lophozozymus dodone</i> (Herbst, 1801)	1,15	1,2
<i>Lophozozymus pulchellus</i> A. Milne Edwards, 1867	14	1
<i>Lybia caestifera</i> (Alcock, 1898)	14	3
<i>Lybia tessellata</i> (Latreille, 1812)	11,15	1,2
<i>Neoliomera pubescens</i> (H. Milne Edwards, 1834)	4	1
<i>Paramedaeus simplex</i> (H. Milne Edwards, 1873)	15	2
<i>Paraxanthias elegans</i> (Stimpson, 1858)	1	2
<i>Paraxanthias notatus</i> (Dana, 1852)	21	1
<i>Pilodius areolatus</i> (H. Milne Edwards, 1834)	1,19,21	1,1,1
<i>Pilodius pilumnoides</i> (White, 1847)	1	1
<i>Pilodius scabriculus</i> Dana, 1852	10	1
<i>Platypodia granulosa</i> (Rüppell, 1830)	10	1
<i>Psaumis cavipes</i> (Dana, 1852)	14	2
<i>Pseudoliomera helleri</i> (A. Milne Edwards, 1865)	18	1
<i>Pseudoliomera lata</i> (Borradaile, 1902)	10,17	1,1
<i>Pseudoliomera speciosa</i> (Dana, 1852)	17	1
<i>Pseudoliomera</i> sp.	21	1
<i>Xanthias lamarkii</i> (H. Milne Edwards, 1834)	14	2
<i>Xanthias pachydactylus</i> (A. Milne Edwards, 1873)	1,5	1,1
<i>Xanthias punctatus</i> (H. Milne Edwards, 1834)	10,11	1,1
<i>Xanthias</i> sp.	17	1
<i>Zozymodes cavipes</i> (Dana, 1852)	20	1
<i>Zozymodes pumilus</i> (Jacquinot, 1852)	17,20	3,1

List of collected decapod Crustacea (continued)

Infraorder/ family/ species	Collecting sites (St. no.)	Number of specimens
OZIIDAE		
<i>Eriphia scabricula</i> Dana, 1852	20	1
<i>Eriphia sebana</i> (Shaw & Nodder, 1803)	20	1
<i>Epixanthus corrosus</i> A. Milne Edwards, 1873	20	2
<i>Epixanthus frontalis</i> (H. Milne Edwards, 1834)	20	2
TRAPEZIIDAE		
<i>Domecia glabra</i> Alcock, 1899	15	3
<i>Domecia hispida</i> Eudoux & Souleyet, 1842	15	4
<i>Tetraria glaberrima</i> (Herbst, 1790)	11,15	2,1
<i>Trapezia areolata</i> Dana, 1852	10,15,21	1,2,1
<i>Trapezia cymodoce</i> (Herbst, 1790)	10	1
<i>Trapezia digitalis</i> Latreille, 1825	10,15	2,1
<i>Trapezia ferruginea</i> Latreille, 1825	15,21	2,1
<i>Trapezia rufopunctata</i> (Herbst, 1799)	18	1
PILUMNIDAE		
<i>Heteropilumnus integer</i> (Miers, 1884)	5	1
<i>Lophoplax sculpta</i> (Stimpson, 1858)	5	1
<i>Pilumnus purpureus</i> A. Milne Edwards, 1873	21	1
<i>Pilumnus vespertilio</i> (Fabricius, 1793)	21	1
<i>Planopilumnus vermiculatus</i> (A. Milne Edwards, 1873)	1,15,18	1,1,1
<i>Planopilumnus</i> sp.	5	1
Rizopinae gen. sp.	5	1
THIIDAE		
<i>Krausia nitida</i> Stimpson, 1858	23	1
<i>Krausia rastroipes</i> Müller, 1887	1,15,16	1,2,1
<i>Krausia rugulosa</i> (Krauss, 1843)	2	1
EUMEDONIIDAE		
<i>Echinoecus pentagonus</i> (A. Milne Edwards, 1879)	15	1
GONEPLACIDAE		
<i>Litocheira quadrispinosa</i> Zehntner, 1894	10	2
<i>Typhlocarcinodes crassipes</i> Tesch, 1918	1	1
Goneplacidae gen. sp.	21	1
GRAPSIDAE		
<i>Grapsus albolineatus</i> Lamarck, 1818	14	1
<i>Grapsus tenuicrustatus</i> (Herbst, 1783)	14	2
<i>Geogapsus grayi</i> (H. Milne Edwards, 1853)	14	1
<i>Metopogapsus messor</i> (Forsskål, 1775)	14	2

List of collected decapod Crustacea (continued)

Infraorder/ family/ species	Collecting sites (St. no.)	Number of specimens
<i>Pachygrapsus minutus</i> A. Milne Edwards, 1873	17	1
<i>Pachygrapsus plicatus</i> (H. Milne Edwards, 1834)	9	1,1
<i>Percnon planissimum</i> (Herbst, 1804)	10,17	1,1,1
<i>Percnon</i> sp.	13,20	1,1
<i>Thalassograpsus harpax</i> (Hilgendorf, 1892)	9,13	1,1
HAPALOCARCINIDAE		
<i>Cryptochirus edmondsoni</i> Fize & Serène, 1955	21	1
<i>Hapalocarcinus marsupialis</i> Stimpson, 1859	15,21	1,1

Table 1. The species new to Japanese record in this study, with the known geographical distribution range and the selected literatures.

Species	Distribution	References
STENOPODIDAE		
<i>Odontozona ensifera</i>	Indonesia, Fiji	Holthuis, 1946
PASIPHAEIDAE		
<i>Leptchela irrobusta</i>	Red Sea, Persian Gulf, western Indian Ocean to Samoa Is.	Chace, 1976
BRESILIDAE		
<i>Discias exul</i>	South Africa to Great Barrier Reef	Kensley, 1983
PALAEEMONIDAE		
<i>Hamodactylus boschmai</i>	Western Indian Ocean, Indonesia, Hong Kong, New Caledonia	Bruce, 1982b
<i>Periclimenaeus djiboutensis</i>	Djibouti, Madagascar	Bruce, 1974
<i>P. hecate</i>	Western Indian Ocean to Indonesia and Great Barrier Reef	Bruce, 1974
<i>Periclimenes amboinensis</i>	Indonesia and Great Barrier Reef	Bruce, 1982a
<i>P. cristimanus</i>	Singapore, Malaysia, Hong Kong, Great Barrier Reef, Marshall Is.	Bruce, 1965, 1982a
<i>P. novaecaledoniae</i>	New Caledonia	Bruce, 1968
<i>P. longirostris</i>	Red Sea, western Indian Ocean to Papua, Philippines, Marshall Is.	Bruce, 1981
ALPHEIDAE		
<i>Alpheus ehlersii</i>	Red Sea, western Indian ocean to Polynesia	Banner & Banner, 1966, 1982
<i>A. pareuchirus</i>	Red Sea, western Indian ocean to Caroline Is.	Coutière, 1906; Banner & Banner, 1982
<i>A. tenuipes</i>	Indonesia	De Man, 1911
<i>Parabetaeus culliereti</i>	Tahiti	Coutière, 1896; Holthuis, 1993

Table 1. (Continued.)

Species	Distribution	References
AXIIDAE		
<i>Axiopsis serratifrons</i>	Probably pantropical	Kensley, 1981; Manning & Chace, 1989
PAGURIDAE		
<i>Pylopaguropsis fimbriata</i>	Guam, east Malaysia, Indonesia	McLaughlin & Haig, 1989
PORCELLANIDAE		
<i>Petrolisthes extremus</i>	Taiwan, Mariana Is., Lord Howe Is., Kermadec and Easter Is.	Kropp & Haig, 1994
MAJIDAE		
<i>Hyastenus uncifer</i>	Banda, South Timor, Sumatra, Christmas I.	Griffin & Tranter, 1986
<i>Tiarinia dana</i>	Indonesia	Griffin & Tranter, 1986
PORTUNIDAE		
<i>Portunus mariei</i>	Comolo Is., Madagascar, Palau Is.	Guinot, 1957; Crosnier, 1962; Takeda & Hayashi, 1973
XANTHIDAE		
<i>Hypocolpus rugosus</i>	India	Guinot-Dumortier, 1960

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