



**Southern California Association of
Marine Invertebrate Taxonomists**

3720 Stephen White Drive
San Pedro, California 90731

April, 1993

Vol. 11, No.12

NEXT MEETING: Master Species List

GUEST SPEAKER: None

DATE: May 10, 1993
9:30 am - 3:00 pm

LOCATION: Cabrillo Marine Museum
San Pedro, CA

MAY 10 MEETING

The meeting will be devoted to working on the master species list. We will be resolving the final version of the list containing the four major dischargers and discussing the addition of the minor dischargers.

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*SCAMIT Newsletter is not deemed to be a valid publication for
formal taxonomic purposes.*

MINUTES FROM MEETING ON APRIL 12

Larry Lovell is looking for suggestions for possible speakers and subjects (especially non-polychaete taxa) for the next year. He would appreciate any input you might have. You can write him at:

Larry Lovell
1036 Buena Vista
Vista, CA 92083

Larry announced again that for the 1994 Annual Meeting of the Southern California Academy of Sciences SCAMIT might be able to have a taxonomic symposium. Also discussed was the possibility of SCAMIT organizing a volume of the SCAS bulletin devoted to marine invertebrate taxonomy. If anyone has any other ideas please contact Ron Velarde at:

City of San Diego
Ocean Monitoring Program
4077 N. Harbor Drive, MS-45A
San Diego, CA 92101

Larry also stated that the officers for 1993-94 will be the same as last year and for members to start thinking about next years election because some of the officers will not be running for office again.

Decapoda Workshop

Dr. Jodi Martin started the workshop by announcing that the American Society of Zoologist annual meeting will be in Los Angeles on December 27-31, 1993. There will be three crustacean symposia; Branchiopods, Maxillopoda (including univalve ostracods), and Camberid crayfish. It was also announced that there will be field trips around Southern California arranged by Hans Kuck and Jodi. They would like to

have SCAMIT members volunteer to assist on trips as knowledgeable guides. Jodi is also laying plans for a Crustacean Biodiversity workshop. He will contact international experts on as many families as possible to get estimates on number of known and remaining species to be described.

Jodi began by discussing Decapod higher taxonomy. Based on Spears et al. (1992) *Brachyura* and *Anomura* are clearly differentiated by sperm. *Dromidia* (Dromiacea) and *Lithodids* (Alaskan King crab) have been confirmed as anomurans by recent research. Jodi also stated that *Cyclodorippe* (*Clythrocerus*) is not a doripid. Included in this newsletter are two handouts compiled by Jodi. One of the handouts is the "Classification of Xanthid Crabs". The other is a "Checklist of the Crabs of California" which Jodi would like for SCAMIT members to review and if there are any comments and/or corrections please contact Jodi at the Los Angeles County Museum of Natural History, Los Angeles, Ca.

The following is a list of references that were passed around:

- Williams, A. B. et al 1989. Common and scientific names of aquatic invertebrates from the U.S. and Canada: Decapod Crustaceans. American Fisheries Society Special Publication 17:1-77.

- Harrison, F. W. and A. G. Humes (ed) 1992. Microscopic Anatomy of Invertebrates. Vol. 10. Decapod Crustacea. Wiley-Liss, Inc. NY, 459pp.

- Williams, A. B. 1988. Lobsters of the World-An Illustrated Guide. Osprey Dooks, Huntington, NY. 186pp.

• Serine, R. 1984. Crustaces Decapodes Brachyours de l'Ocean Indien Occidental et de la Mer Rouge. Xanthoidea: Xanthidae et Trapeziidae. Editions de l'ORSTOM. Institut Francais de Recherche Scientifique pour le Developpement en Cooperation, Collection Faune Tropicale n XXIV, Paris. 1-349 + plates I-XLVIII.

• Dawson, E. W. 1989. King crabs of the world (Crustacea: Lithodidae) and their fisheries. A comprehensive bibliography. Misc Publication 101, New Zealand Oceanographic Institute, Div. of Water Sciences, DSIR, Wellington, NZ. 1-338.

• Kim, W. and L. G. Abele. 1988. The snapping shrimp genus *Alpheus* from the Eastern Pacific (Decapoda: Caridea: Alpheidae). Smithsonian Contribution Zool. No. 454:1-119.

• Holthuis, L. B. 1991. FAO Species Catalogue. Vol. 13. Marine Lobsters of the World. FAO, Rome, 292pp.

If anyone is interested in the following articles please contact Diane O'Donohue at:

City of San Diego
Ocean Monitoring Program
4077 N. Harbor Drive, MS-45A
San Diego, CA 92101
(619) 692-4901

• Wicksten, Mary K. 1990. Key to the Hippolytid Shrimp of the Eastern Pacific Ocean. Fishery Bulletin, U.S. 88:587-598.

• Chace JR, Fenner A. 1992. On the Classification of the Caridea (Decapoda). Crustaceana. 63(1):70-80.

• Abele, L. G. 1991. Comparison of Morphological and Molecular Phylogeny of the Decapoda. Memoirs of the Queensland Museum. 31:101-108.

• Jamieson, B.G.M. 1991. Ultrastructure and Phylogeny of Crustacean Spermatozoa. Memoirs of the Queensland Museum. 31:109-142.

• Spears, Trisha, L. G. Abele and Won Kim. 1992. The Monophyly of Brachyuran Crabs: A Phylogenetic Study Based on 18S rRNA. Systematic Biology. 41(4):446-461.

• Wicksten, Mary K. 1989. Ranges of offshore decapod crustaceans in the eastern Pacific Ocean. Transactions of the San Diego Society of Natural History. 21(19):291-316.

• Wicksten, Mary K. and Michel E. Hendrickx. 1992. Checklist of Penaeoid and Caridean Shrimps (Decapoda: Penaeoidea, Caridea from the Eastern Tropical Pacific. Proceedings of the San Diego Society of Natural History. No. 9:1-11.

• Hendrickx, Michel E. 1992. Distribution and Zoogeographic Affinities of Decapod Crustaceans of the Gulf of California, Mexico. Proceedings of the San Diego Society of Natural History. No. 20:1-12.



FUTURE MEETINGS

The meeting on June 14, 1993 will cover Anthurid Isopods with Dr. Rick Brusca of the San Diego Natural History Museum and Don Cadien of the Los Angeles County Sanitation Districts. It will be held at the San Diego Natural History Museum, San Diego, Ca.

The Sabellid Polychaete meeting originally scheduled for March 8, 1993 will be on July 12, 1993. Dr. Fitzhugh will emphasize the Subfamily Sabellinae (*Demonax*, *Sabella*, *Megalomma*, *Pseudopotamilla* etc). It will be held in the new polychaete lab at LACMNH.

SCAMIT OFFICERS:

If you need any other information concerning SCAMIT please feel free to contact any of the officers.

President	Ron Velarde	(619)692-4903
Vice-President	Larry Lovell	(619)945-1608
Secretary	Diane O'Donohue	(619)692-4901
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Classification of Xanthid Crabs

12 April 1993

J. Martin

There are more species of xanthid crabs on earth than there are in any other crab family. Estimates (such as Powers, 1977; Rice, 1980, Martin, 1989) are in the neighborhood of 130 + genera, and well over 1,000 species described. Work in this country and abroad (mostly France) over the last few decades has led to a greater appreciation of xanthid diversity, with many former "species" being split into several distinct and recognizable forms (e.g. William's work on xanthids in the genus Panopeus along the eastern coasts of North and South America). Because differences among groups of xanthids (genera, subfamilies, etc.) are often slight, in all probability there are large numbers of undescribed species awaiting detection.

Because of the large number of species in the "family," it's not surprising that many workers have tried to make the group more manageable by subdividing it, erecting new families, grouping genera into what appear to be "natural" assemblages, etc. Some of these historical attempts are reviewed starting on page 71 in my 1989 paper on using xanthid larval stages (megalopae) to look at phylogeny (several copies are here, if anyone wants one).

The "classic" approach has been to follow Alcock (1898) (who based his classification on Dana, 1852) or Balss (1957). Alcock recognized two "sections" of xanthids based on the nature of the buccal ridges of the mouth region, each divided into subfamilies as follows:

Alcock (1898)

Section Hyperomerista
Menippinae
Ozzinae
Pilumninae
Eriphiinae

Section Hyperolissa
Xanthinae
Actaeinae
Chlorodinae

Balss' approach was a little simpler, and probably for that reason was used more widely, and is often used today. He simply recognized four subfamilies:

Xanthinae
Menippinae
Pilumninae
Trapeziinae

More recent workers have added to the complexity of classification, but have not, as far as I can tell, really clarified anything. Some of these approaches include:

Takeda (1976): 14 subfamilies (see my 1989 paper if you're interested)

Guinot (1978): Former xanthids recognized as a superfamily Xanthoidea (not equal to the Xanthoidea of Glaessner, 1969) composed of 8 families:

Carpiliidae
Menippidae
Platyxanthidae
Xanthidae (restricted, and now having the subfamilies Xanthinae, Trichiinae, Actaeinae, Polydectinae, and Euxanthinae)
Pilumnidae
Trapeziidae
Panopeidae
(? tentatively) Geryonidae

Serene (1984) felt that Guinot's work was an improvement, but he disagreed on several points, and came up with a classification that included the Xanthidae (now with 10 subfamilies), Trapeziidae (2 subfamilies), Pilumnidae (5 subfamilies), Carpiliidae (with no further subdivisions), and Menippidae (3 subfamilies). Serene did not treat Guinot's other three xanthoid families (Panopeidae, Platyxanthidae, and Geryonidae) as they do not occur in Asia.

There have been attempts to find evidence for (or against) these groupings, by using zoeal characters (e.g. Rice, 1980, Martin, 1984), megalopal characters (Martin, 1988), and characters of the male pleopods (gonopods) (Martin and Abele, 1986), a feature considered to be of great importance by Guinot. But any universally agreed upon classification of the xanthids, if there is going to be one, seems a long way off.

It is the classification scheme of Guinot (1978) that seems to be gaining favor. If her families are eventually recognized, the changes for the species names and family placement of California crabs would be as follows:

Eurypanopeus hyperconvexus Garth, 1986 would be placed in the family Panopeidae, along with all other Panopeus-like xanthids in Central and South America and along the east coast of the Americas.

Lophopanopeus species would also belong to the family Panopeidae, as would the introduced Rhithropanopeus harrisi (Gould, 1841).

Pilumnus spinohirsutus (Lockington, 1877) would be placed in the family Pilumnidae, and would be the only California member of this family

Micropanope areolata (which Guinot transferred to the genus Gonopanope) would also be a member of the Panopeidae; however, Micropanope latimanus Stimpson, 1871, was not transferred by Guinot (or even mentioned by her), so at present its placement in the correct genus and family are both unknown.

Paraxanthias taylori would be placed in the family Xanthidae (restricted), probably subfamily Xanthinae, but I am unsure about that.

Cycloxanthops and Heteractaea: I do not yet know to which of Guinot's proposed families these genera would belong.

A Checklist of the Crabs of California

J. W. Martin

12 April 1993

Although the decapod crustaceans of California are relatively well known, at the moment there is no published, current guide to, or even a checklist of, all the species reported from the state, other than the still very useful but now somewhat outdated classic by Waldo Schmitt (1921, *The Marine Decapod Crustacea of California*; University of California Publications in Zoology, vol. 23, University of California Press, Berkeley). This situation is being rectified by a book that has been in the planning stages for some time. The book, which will be a revision of Schmitt's monograph, is being written by Dr. John S. Garth and Ms. Janet Haig (Allan Hancock Foundation) and Dr. Mary Wicksten (Texas A & M University). My understanding at this time is that the authors are searching for a publisher; completion and publication may be a few years away.

Another work in progress is a monograph on the crab family Xanthidae in the eastern Pacific. This project, a joint effort by Dr. John S. Garth and myself, will likely appear in several different parts, corresponding to what we feel are logical taxonomic subdivisions of the family. The first such part will deal with the subfamily (or family) Panopeinae (Panopeidae). Relatively few of the xanthids that we will be treating are found in California waters, the majority being from the tropical eastern Pacific.

The following checklist was originally compiled by me in early 1988, in an attempt to familiarize myself with the local crab fauna. From time to time I have tried to update the list for some families, but it is still far from being either complete or up to date. It is important to note that this list does not constitute a publication as defined by ICZN regulations and should not be cited as such.

It is also important to note that the species "treatments" are extremely superficial and uneven; for some species no synonymy has been included, for others only some of the literature has been consulted, for most only one or two of the more more salient citations are given, etc. No ecological information (depth, habitat, etc.) has been included either.

The information in this checklist is not original research but rather was compiled from previous publications, notably Schmitt (1921), Garth (1958, 1986), Garth and Abbott (1980), Garth and Stevenson (1966), Williams (1974), Wicksten (1980, 1984, 1989), Haig and Wicksten (1975), Allen (1977), Word and Charwat (1975), Hart (1982), Nations (1975, 1979), and Zmarzly (1992). I have given this list to Dr. Garth, but not in time for him to have looked it over prior to today's SCAMIT meeting. Undoubtedly Dr. Garth, as well as many SCAMIT members, will have corrections and additions to this list.

The "higher classification" follows, for the most part, Bowman and Abele (1982). That classification is now outdated in several respects, such as the inclusion of dromiacean crabs as brachyurans, recognition of "sections" such as the Oxystomata that are most likely artificial assemblages, treatment of the Xanthidae as a single family (rather than a superfamily), correction of some family names (e.g. Cryptochiridae instead of Haplocarcinidae), etc. But for purposes of this checklist it still serves as a convenient framework for listing species, as long as workers recognize that several taxonomic changes have been, and are being, proposed that will eventually change this classification.

Although not all families of the Brachyura are represented in California waters, I have included all currently recognized crab families on this list, for two reasons. First, I find it helpful and interesting to view the larger context in which local species are placed. Second, one never knows what might be encountered for the first time, even in waters as relatively well known as those of coastal California (for example the 1986 discovery by Dr. Garth of a new xanthid species of the genus Eurypanopeus from off Anacapa Island, and the new thalassinoid that Don Cadien and I are describing from the Santa Maria Basin). Families for which no species are as yet known from California waters are indicated.

Allen, 1977
Austin, 1985
Bowman and Abele, 1982
Garth, 1958, 1986
Garth and Abbott, 1980
Garth and Stevenson, 1966
Haig and Wicksten, 1975
Hart, 1982
Nations, 1975, 1979
Rathbun, 1918, 1925, 1930, 1937
Schmitt, 1921
Wicksten, 1980, 1984, 1989
Williams, 1974
Word and Charwat, 1975
Zmarzly, 1992

INFRAORDER BRACHYURA

Section Dromiacea

SUPERFAMILY DROMIOIDEA

FAMILY DROMIIDAE

Dromidia larraburei Rathbun, 1910

Dromidia sarraburei Rathbun, 1910: 553, pl. 48, fig. 4
(misspelling; named for Senor Don Carlos Larrabure y Correa).
Dromidia segnipes Weymouth, 1910: 15, pl. 1, figs. 1-2.
Dromidia larraburei Rathbun, 1910. --Schmitt, 1921: 183, pl. 33,
fig. 1.

Monterey Bay and Long Beach, California, to Bahia Magdalena, Baja
California, and Galapagos Islands (Schmitt, 1921: 183)

FAMILY DYNOMENIDAE

(No known species in California waters)

FAMILY HOMOLODROMIIDAE

(No known species in California waters)

Section Archaeobrachyura

SUPERFAMILY TYMOLOIDEA

Note: Williams et al. (1989) list, as a superfamily, the
Cyclodorippoidea, and do not list the Tymoloidea (although they
claim to follow Bowman and Abele's classification), and they list
the family Cyclodorippidae in this superfamily. The significance
to species in southern California is that the genus Clythrocerus
would now belong to the superfamily Cyclodorippoidea, rather than
to the Dorippoidea, and to the family Cyclodorippidae rather than
to the Dorippidae.

FAMILY CYMONOMIDAE

(No known species in California waters)

FAMILY TYMOLIDAE

(No known species in California waters)

SUPERFAMILY HOMOLOIDEA

FAMILY HOMOLIDAE

Paromola faxoni (Schmitt, 1921)

Homola faxoni Schmitt, 1921: 184-185, pl. 31, fig. 7
Paromola faxoni. --Rathbun, 1937: 68-69, pl. 18, fig. 1; table 19.
--Church, 1971: 113 (color photograph, presumably this species). -
-Wicksten, 1983: 185, fig. 1b (drawing based on Church's
photograph). --Kuck and Martin, in press.

Tajiguas, California, south to Isla Cedros (Baja California) (Kuck and Martin, in press)

FAMILY LATREILLIIDAE

(No known species in California waters)

SUPERFAMILY RANINOIDEA

FAMILY RANINIDAE

(No known species in California waters)

Section Oxystomata

SUPERFAMILY DORIPPOIDEA

FAMILY DORIPPIDAE

[see previous note concerning placement of these "dorippids" in the family Cyclodorippidae, superfamily Cyclodorippoidea. If that arrangement is accepted (and unfortunately I have not tracked down the reasons for or publications stating this change) then there would be no dorippids in California.]

Clythrocerus decorus Rathbun, 1933

Rathbun, 1937: 118, fig. 30, pl. 34, figs. 3, 4.

Off Brockway Point, Santa Rosa Island; off Catalina Island; off Point Loma (Rathbun, 1918).

Clythrocerus planus (Rathbun, 1900)

Cyclodorippe plana Rathbun, 1900: 519. --Schmitt, 1921: 186.

Clythroceros planus Rathbun, 1900. --Rathbun, 1904: 168, pl. 9, fig. 4. --Nininger, 1918: 36, figs. 9, 10. --Wicksten, 1980: 361 (table, distribution). --Wicksten, 1982: 306 (behavior)

Catalina Island (Channel Islands) and Point Fermin; Laguna Beach (Schmitt, 1921: 186); Huntington Beach (Wicksten, 1982: 306)

SUPERFAMILY LEUCOSIOIDEA

FAMILY CALAPPIDAE

Mursia gaudichaudii (H. Milne Edwards, 1837)

Platymera gaudichaudii Milne Edwards, 1837: 108. --Milne Edwards and Lucas (in D'Orbigny), 1843: 28, pl. 13; 1847 [? see Schmitt, 1921: 190]. --Holmes, 1900: 99. --Rathbun, 1904: 170.

Mursia gaudichaudii. --Weymouth, 1910: 19. --Schmitt, 1921: 190, fig. 118. --Rathbun, 1937: 220. --Haig and Wicksten, 1975: 102. --Austin, 1985: 645 (list).

Farallon Islands, California to Chile (Schmitt, 1921: 190; Rathbun, 1937: 220). Range extended north to 18.7 mi WSW of Klamath River, California (Haig and Wicksten, 1975: 102)

FAMILY LEUCOSIIDAE

Randallia ornata (Randall, 1839)

Ilia ornata Randall, 1839: 129.

Randallia ornata Randall. --Stimpson, 1854: 471, pl. 19, fig. 3. --Holmes, 1900: 100. --Rathbun, 1904: 170. --Weymouth, 1910: 18, pl. 1, fig. 3. --Baker, 1912: 102. --Schmitt, 1921: 188, fig. 116. --Austin, 1985: 646 (list).

Central California (Mendocino County) to Bahia Magdalena, Baja California (Schmitt, 1921: 187; Allen, 1977)

Randallia bulligera Rathbun, 1898

Randallia bulligera Rathbun, 1898: 614, pl. 44, fig. 6. --Holmes, 1900: 101. --Weymouth, 1910: 19. --Schmitt, 1921: 189, fig. 117.

Monterey Bay, California (questionable according to Schmitt, 1921) to Bahia Magdalena, Baja California (Schmitt, 1921: 189)

Section Oxyrhyncha

SUPERFAMILY MAJOIDEA

FAMILY MAJIDAE

Chionoecetes tanneri Rathbun, 1893

Garth, 1958: 156, pl. I, fig. 8; pl. 16, fig. 2 (contains prior synonymy). --Austin, 1985: 1985: 646 (list)

Off Sea Lion Rock, Washington to off Los Coronados Islands and off Cortez Bank, Mexico (Garth, 1958); southern Alaska to Baja California (Austin, 1985).

Chorilia longipes Dana, 1851

Garth, 1958: 263, pl. P, figs. 4, 5; pl. 30 (contains prior synonymy). --Austin, 1985: 646 (list)

Shumagin Bank, Alaska, south to off Santa Rosa Island (Channel Islands). A different subspecies, C. l. japonica, occurs in the western Pacific (Garth, 1958: 263-264)

Chlorilia longipes turgida Rathbun, 1924

Garth, 1958: 263, pl. P, figs. 4, 5; pl. 30 (contains prior synonymy)

Monterey Bay south to Cortez Bank, Baja California (Garth, 1958: 264-265) (see Garth, 1958: 263-268 for discussion of the subspecies) Wicksten, 1980: 363 (table, distribution)

Epialtoides hiltoni (Rathbun, 1923)

Garth, 1958: 234, pl. O, fig. 7; pl. 26, fig. 3 (contains prior synonymy). --Garth and Abbott, 1980

Santa Catalina Island (Channel Islands) and Laguna Beach (Orange County) to Bahia Magdalena; also Isla Guadalupe, Islas San Benito,

and Isla Cedros (Baja California) (Garth, 1958: 233-234; Garth and Abbott, 1980)

Erileptus spinosus Rathbun, 1893

Erileptus spinosus Rathbun, 1893: 227. --Holmes, 1900: 21. --Rathbun, 1904: 171, pl. 10, fig. 1. --Weymouth, 1910: 27, pl. 3, fig. 7. --Garth, 1958: 91, pl. E, fig. 8; pl. 5, fig. 2 (contains prior synonymy). --Wicksten, 1980: 361 (table, distribution)

Anasimus rostratus Rathbun, 1893: 226. --Rathbun, 1904: 171, pl. 10, fig. 4

Anasimus spinosus (Rathbun). --Schmitt, 1921: 196, fig. 121.

San Miguel Island and off Santa Barbara, California, to Bahia Magdalena (Baja California), including the Gulf of California; also Panama (Garth, 1958; Wicksten, 1980)

Herbstia parvifrons Randall, 1839

Garth, 1958: 316, pl. S, fig. 5; pl. 34, fig. 2 (contains prior synonymy). --Garth and Abbott, 1980: . --Austin, 1985: 646 (list). --Foster and Schiel, 1985: 67 (list).

Monterey Bay to Bahia Magdalena (Baja California) (Garth and Abbott, 1980) Schmitt, 1921: 215.

Loxorhynchus crispatus Stimpson, 1857

Garth, 1958: 260, pl. P, fig. 3; pl. 27, fig. 2; pl. 28, fig. 1 (contains prior synonymy). --Garth and Abbott, 1980

Rathbun, 1925: 200. Haig and Wicksten, 1975: 103. --Austin, 1985: 646 (list). --Foster and Schiel, 1985: 67 (list).

Redding Rock (Humboldt County) to Isla Natividad (Baja California) (Garth and Abbott, 1980).

Loxorhynchus grandis Stimpson, 1857

Garth, 1958: 257, pl. P, fig. 2; pl. 29 (contains prior synonymy). --Charwat, 1975: 61 (fig.), 62. --Garth and Abbott, 1980. --Austin, 1985: 646 (list). --Foster and Schiel, 1985: 67 (list).

Loxorhynchus grandis Stimpson, 1857 (part)

Loxorhynchys grandus. --Weymouth, 1910

Mithrax rostratus. --Boone, 1930 (part)

Cordell Bank (Marin County) to Punta San Bartolome (Baja California) (Garth, 1958; Garth and Abbott, 1980)

Mimulus foliatus Stimpson, 1860

Garth, 1958: 183, pl. L, fig. 1; pl. 25, fig. 3 (contains prior synonymy). --Austin, 1985: 646 (list).

Captain's Bay (Unalaska, Alaska) to Point Arguello (Santa Barbara County) and Santa Cruz Island (Channel Islands), and occasionally San Diego (Garth, 1958: 183; Garth and Abbott, 1980) Schmitt,

1921: 204.

Mithrax (Mithraculus) denticulatus Bell, 1835

Garth, 1958: 372, pl. V, fig. 9; pl. 42, fig. 2 (contains prior synonymy)

San Diego (extralimital) to Manta Bay, Ecuador (Garth, 1958: 373).

Oregonia gracilis Dana, 1851

Oregonia gracilis Dana, 1851: 270. --Dana, 1852: 106, pl. 3, fig. 2 (1855; date of publication of plates). --Doflein, 1899: 183. --Holmes, 1900: 19. --Rathbun, 1904: 171. --Way, 1917: 369, fig. 20. --Schmitt, 1921: 198, fig. 122. --Garth, 1958: 136, pl. I, fig. 2; pl. 10; pl. 11, fig. 1. --Wicksten, 1984: 136 (list).

Alaska to Monterey Bay (Garth, 1958; Wicksten, 1984)

Pelia tumida (Lockington, 1877)

Garth, 1958: 271, pl. Q, fig. 1; pl. 31, fig. 2 (contains prior synonymy). --Garth and Abbott, 1980: . --Foster and Schiel, 1985: 67 (list), 69.

Monterey Bay to Bahia de Petatlan (Mexico), including Gulf of California (Garth, 1958; Garth and Abbott, 1980)

Podochela hemphilli (Lockington, 1877)

Microrhynchus hemphilli Lockington, 1877: 30.
Podochela hemphilli. --Holmes, 1900: 17. --Rathbun, 1904: 171, pl. 10, fig. 2. --Weymouth, 1910: 26, pl. 2, fig. 6. --Nininger, 1918: 39, fig. 14. --Schmitt, 1921: 195, fig. 120. --Garth, 1958: 104, pl. H, fig. 6; pl. 7 (contains prior synonymy)

From Monterey Bay (San Luis Obispo County) and San Miguel Island (Channel Islands) to Bahia Magdalena (Baja California) (Garth, 1958: 106)

Podochela lobifrons Rathbun, 1893

Garth, 1958: 116, pl. H, fig. 1; pl. 8, fig. 1 (contains prior synonymy)

Point Mugu (Ventura County), California; Brockway Point, Santa Rosa Island and off Santa Catalina Island (Channel Islands) to west coast of Baja California and Gulf of California (Garth, 1958)

Pugettia dalli Rathbun, 1893

Garth, 1958: 199, pl. L, fig. 6; pl. 21, fig. 1 (contains prior synonymy)

San Miguel Island (Channel Islands) to Cabo Thurloe (Baja California) (Garth, 1958: 200; Garth and Abbott, 1980)

Pugettia gracilis Dana, 1851

Garth, 1958: 196, pl. L, fig. 4; pl. 20, fig. 2 (contains prior synonymy). --Garth and Abbott, 1980 . --Austin, 1985: 646

(list).

Attu Island (Aleutian Islands, Alaska) to Monterey Bay (Garth, 1958: 196; Garth and Abbott, 1980)

Pugettia producta (Randall, 1839)

Epialtus productus Randall, 1839: 110. --Rathbun, 1884: 778, pl. 268. --Holmes, 1900: 22, pl. 1, fig. 1. --Rathbun, 1904: 173. --Weymouth, 1910: 28, fig. 9. --Baker, 1912: 100. --Schmitt, 1921: 201, fig. 124.

Pugettia producta (Randall). --Garth, 1958: 188, pl. L, fig. 2; pl. 19 (contains prior synonymy). --Reish, 1972: 85, fig. 278. Austin, 1985: 646 (list). --Foster and Schiel, 1985: 60, fig. 20 (part), 63 (list), 66. --Garth and Abbott, 1980: 00.

Prince of Wales Island (Alaska) to Punta Asuncion (Baja California) (Garth, 1958; Garth and Abbott, 1980)

Pugettia richii Dana, 1851

Garth, 1958: 193, pl. L, fig. 3; pl. 20, fig. 1
Garth and Abbott, 1980
Austin, 1985: 647 (list)

Prince of Wales Island (Alaska) to Isla San Geronimo (Baja California) (Garth, 1958: 193; Garth and Abbott, 1980)

Pugettia venetiae Rathbun, 1924

Garth, 1958: 204, pl. L, fig. 5; pl. 21, fig. 2 (contains prior synonymy)

From end of Santa Catalina Island (Channel Islands) and off San Pedro (Los Angeles County) to Bahia Magdalena (Garth, 1958: 204)

Pyromaia tuberculata tuberculata (Lockington, 1877)

Garth, 1958: 85, pl. E, fig. 7; pl. 6, figs. 1, 2 (contains prior synonymy)

[Plate 6, fig. 1 is of this "form," which is the typical form found off California]

Austin, 1985: 647 (list; as *P. tuberculata*)

Tomales Bay (Marin County) south to Cabo Corrientes (Colombia); also Japan (Garth and Abbott, 1980)

Pyromaia tuberculata mexicana (Rathbun, 1893)

Garth, 1958: 85, pl. E, fig. 7; pl. 6, figs. 1, 2 (contains prior synonymy)

This form apparently is restricted to the Gulf of California (Garth, 1958: 89)

For the species (both subspecies) the range would be:

Tomales Bay (Marin County) to off Cape Corrientes, Colombia,

including entire Gulf of California (Garth, 1958: 86-87)

Scyra acutifrons Dana, 1851

Garth, 1958: 252, pl. P, fig. 1; pl. 27, fig. 1 (contains prior synonymy)

Austin, 1985: 647 (list).

Kachemak Bay (Cook Inlet, Alaska) to Punta San Carlos (Baja California) (Garth, 1958: 252-253; Garth and Abbott, 1980)

Garth (1958) notes that there is a northern and a southern form ("facies") to this species, a similar situation to what is seen in Chlorilia longipes.

Taliepus nuttalli (Randall, 1839)

Epialtus nuttalli Randall, 1839: 109, pl. 3. --Holmes, 1900: 23. --Rathbun, 1904: 173. --Schmitt, 1921: 202, fig. 125.

Taliepus nuttalli (Randall). --Garth, 1958: 208, pl. L, fig. 8; pl. 22. --Garth and Abbott, 1980: 00. --Foster and Schiel, 1985: 63 (list), 66.

Santa Barbara to Bahia Magdalena (Baja California) (Garth, 1958; Garth and Abbott, 1980)

SUPERFAMILY HYMENOSOMATOIDEA

FAMILY HYMENOSOMATIDAE

(No known species in California waters)

SUPERFAMILY MIMILAMBROIDEA

FAMILY MIMILAMBRIDAE

(No known species in California waters)

SUPERFAMILY PARTHENOPOIDEA

FAMILY PARTHENOPIDAE

Heterocrypta occidentalis (Dana, 1854)

Cryptopodia occidentalis Dana, 1854: 18.

Heterocrypta occidentalis (Dana). --Holmes, 1900: 44. --Rathbun, 1904: 170. --Weymouth, 1910: 21, pl. 2, figs. 4, 5. --Schmitt, 1921: 192, fig. 119. --Garth, 1958: 476, pl. Z₄, figs. 14, 14a; pl. 55, fig. 2. --Austin, 1985: 647 (list).

From Drakes Bay (Marin County) south to Dewey Channel (Baja California), including all Channel Islands (Garth, 1958)

Leiolambrus punctatissimus (Owen, 1839)

Original report from California almost certainly an error; see Garth, 1958: 462-46

Section Cancridea

SUPERFAMILY CANCROIDEA

FAMILY ATELECYCLIDAE

Telmessus cheiragonus (Tilesius, 1815)

Rathbun, 1930: 150, fig. 21, 22a-c (contains prior synonymy)

Northern California (Rathbun, 1930: 152; Austin, 1985: 647 (list))

FAMILY CANCRIDAE

Cancer amphioetus Rathbun, 1898

Rathbun, 1898: 582 (new name for *Trichocarcinus dentatus* Miers, 1879). --Rathbun, 1930a: 205 (contains prior synonymy). --Nations, 1975: 30, figs. 4, 6, 15, 16, 30-7, 30-8, tables 1, 2, 4. --Nations, 1979 (mostly repeating information in 1975 paper).

La Jolla, California, to Gulf of California; also Japan and Korea (Rathbun, 1930a) and northern China (Shen, 1932: 97) (Nations, 1975).

Cancer antennarius Stimpson, 1856

Cancer antennaria Stimpson, 1856: 88

Cancer antennarius Stimpson, 1857: 462. --Rathbun, 1930a: 210 (contains prior synonymy). --Reish, 1972: 85, fig. 279. --Nations, 1975: 31, figs. 4, 13, 14, 32-5, 32-6, tables 1, 2, 5. --Nations, 1979: (mostly repeating information in 1975 paper). Garth and Abbott, 1980: 00). --Austin, 1985: 647 (list). --Foster and Schiel, 1985: 67 (list).

Cancer productus Randall, 1839. --Rathbun, 1926: 62, 63 (in part)

Cancer anthonyi Rathbun, 1897. --Rathbun, 1926: 64 (in part)

Coos Bay, Oregon, to Baja California, including Islas de Todos Santos; probably not British Columbia (Garth and Abbott, 1980)

Cancer anthonyi Rathbun, 1897

Cancer anthonyi Rathbun, 1897: 111. --Rathbun, 1926: 64. --Rathbun, 1930a: 218 (contains prior synonymy). --Reish, 1972: 86, fig. 279. --Nations, 1975: 32, figs. 4, 13, 14, 35-5, 35-6, tables 1, 2, 6. --Nations, 1979: (mostly repeating information in 1975 paper). --Austin, 1985: 647 (list). --Foster and Schiel, 1985: 67 (list).

Cancer gracilis Dana, 1852. --Rathbun, 1926: 65 (in part)

Cancer productus Randall, 1839. --Rathbun, 1926: 62 (in part).

Humboldt Bay to Bahia Magdalena (Baja California); uncommon north of San Pedro (Los Angeles County) (Garth and Abbott, 1980)

Cancer branneri Rathbun, 1926

Cancer branneri Rathbun, 1926: 63. --Rathbun, 1930a: 211 (contains

prior synonymy). --Menzies, 1951: 170. --Nations, 1975: 33, figs. 4, 15, 16, 31-1, 31-2, tables 1, 2, 7. --Nations, 1979: (mostly repeating information in 1975 paper). --Austin, 1985: 647 (list).

Cancer gracilis Dana, 1852

Cancer gracilis Dana, 1852: 73. --Rathbun, 1926: 65. --Rathbun, 1930a: 219 (contains prior synonymy). --Menzies, 1951: 166. --Nations, 1975: 34, figs. 4, 17, 18, 36-1, 36-2, tables 1, 2, 8. --Nations, 1979: (mostly repeating information in 1975 paper). --Garth and Abbott, 1980: 00, . --Austin, 1985: 647 (list).
Cancer anthonyi Rathbun, 1897. --Rathbun, 1926: 64 (in part).
Cancer magister Dana, 1852. --Rathbun, 1926: 64 (in part).
Cancer productus Randall, 1839. --Rathbun, 1926: 62 (in part).

Prince William Sound (Alaska) to Bahia Playa Maria (Baja California); usually not taken intertidally south of central California (Garth and Abbott, 1980)

Cancer jordani Rathbun, 1900

Cancer jordani Rathbun, 1900: 133. --Rathbun, 1930a: 215 (contains prior synonymy). --Menzies, 1951: 169. --Nations, 1975: 36, figs. 4, 15, 16, 31-3, 31-4, tables 1, 2, 9. --Nations, 1979: (mostly repeating information in 1975 paper). --Austin, 1985: 647 (list). --Foster and Schiel, 1985: 67 (list).
Cancer antennarius Stimpson, 1856. --Rathbun, 1926: 64 (in part).

Coos Bay, Oregon, to Cabo Thurloe (Baja California) (Garth and Abbott, 1980)

Cancer magister Dana, 1852

Cancer magister Dana, 1852: 73. --Rathbun, 1926: 64. Rathbun, 1930a: 222 (contains prior synonymy). --Menzies, 1951: 168. --Nations, 1975: 37, figs. 4, 17, 18, 23, 34-1, 34-2, tables 1, 2, 10. --Nations, 1979: (mostly repeating information in 1975 paper). --Austin, 1985: 648 (list).
Cancer productus Randall, 1839. --Rathbun, 1926: 62 (in part).
Cancer breweri Gabb, 1869. --Lawson, 1894: 261.

Tanaga Island (Aleutian Islands, Alaska) to Pismo Beach, San Luis Obispo County, rarely to Santa Barbara; probably not to Bahia Magdalena (Baja California) (Garth and Abbott, 1980)

Cancer oregonensis (Dana, 1852)

Cancer oregonensis. --Rathbun, 1898: 581. --Rathbun, 1930a: 226 (contains prior synonymy). --Zullo, 1969: 347-361. --Nations, 1975: 38, figs. 4, 17, 18, 30-1, 30-2, tables 1, 2, 11. --Nations, 1979: (mostly repeating information in 1975 paper). --Austin, 1985: 648 (list).
Cancer productus Randall, 1839. --Rathbun, 1926: 62 (in part).
Lophopanopeus somaterianus Rathbun, 1930a: 332. --Menzies, 1948: 22.

St. George Island (Pribilof Islands, Alaska) to Palos Verdes (Los Angeles County); probably not Bahia Magdalena (Baja California)

(Garth and Abbott, 1980)

Cancer productus Randall, 1839

Cancer productus Randall, 1839: 116. --Rathbun, 1926: 62. --Rathbun, 1930a: 203. not Menzies, 1951: 168. --Reisch, 1972: 86, fig. 281. --Nations, 1975: 40, figs. 4, 13, 14, 39-1, 39-2, tables 1, 2, 12. --Nations, 1979: (mostly repeating information in 1975 paper). --Austin, 1985: 648 (list). --Foster and Schiel, 1985: 67 (list).

Cancer breweri Gabb, 1869: 1. --Cooper, 1887: 227. --Arnold, 1903: 345.

Cancer antennarius Stimpson, 1856. --Rathbun, 1926: 62, 63 (in part).

Kodiak Island (Alaska) to San Diego; probably not Bahia Magdalena (Baja California) (Garth and Abbott, 1980)

(Additional ecological information on species of Cancer is in MacKay, 1943, Ecology 24(1): 113-115)

FAMILY CORYSTIDAE

(No known species in California waters)

FAMILY PIRIMELIDAE

(No known species in California waters)

FAMILY THIIDAE

(No known species in California waters)

Section Brachyrhyncha

SUPERFAMILY PORTUNOIDEA

FAMILY GERYONIDAE

(No known species in California waters)

FAMILY PORTUNIDAE

Callinectes arcuatus Ordway, 1863

Garth and Stephenson, 1966: 43, pl. 5, fig. A; pl. 8, fig. A; pl. 10, fig. A; pl. 12, fig. D. --Williams, 1974: 752, Figs. 8, 18f, 20g-h, 22f, 24 (contains prior synonymy)

Los Angeles harbor, California, to Mollenda, Peru, including Gulf of California and Galapagos Islands (Williams, 1974; Garth and Abbott, 1980)

Callinectes bellicosus (Stimpson, 1862)

Garth and Stephenson, 1966: 47, pl. 5, fig. B; pl. 8, fig. B, pl. 10, fig. B; pl. 12, fig. B. --Williams, 1974: 761, Figs 10, 18h, 20j-k, 22h, 27 (contains prior synonymy)

Point Loma and San Diego, California, to Bahia Almejas (southeastern extension of Bahia Magdalena), Baja California, and

Gulf of California (Rathbun, 1895; Schmitt, 1921; Garth and Stephenson, 1966; Williams, 1974)

Euphylax dovii Stimpson, 1860

Stimpson, 1860: 226, pl. 13 [not 5], fig. 5, 5a. --A. Milne Edwards, 1879: 204, pl. 38, figs. 2-2d. --Rathbun, 1930: 147, pl. 65. --Austin, 1985: 648 (list)

At least one report from southern California, in the early 1970's, but I have not been successful in recalling the author/date of that publication. I believe it was off Catalina Island.

Portunus xantusii xantusii (Stimpson, 1860)

Santa Barbara to Topolobampo (Mexico) (Garth and Abbott, 1980)
Schmitt, 1921: 237.

SUPERFAMILY BYTHOGRAEOIDEA

FAMILY BYTHOGRAEIDAE

(No known species in California waters)

SUPERFAMILY XANTHOIDEA

FAMILY GONEPLACIDAE

Malacoplax californiensis (Lockington, 1877)

Mugu Lagoon (Ventura County) to Bahia Magdalena (Baja California)
(Garth and Abbott, 1980)

FAMILY HEXAPODIDAE

(No known species in California waters)

FAMILY PLATYXANTHIDAE

(No known species in California waters)

FAMILY XANTHIDAE

Cycloxanthops novemdentatus (Lockington, 1877)

Rathbun, 1930: 292, pl. 134, fig. 1; pl. 135, figs. 2, 3 (contains prior synonymy, including C. rugosus of Holmes (1900) and Schmitt (1921: 240)

Charwat, 1975: 69 (fig.), 70.

Garth and Abbott, 1980:

Austin, 1985: 648 (list).

Monterey Bay to Punta Abreojos (Baja California), including offshore islands; conspicuous in intertidal zone at La Jolla
(Garth and Abbott, 1980)

Eurypanopeus hyperconvexus Garth, 1986

Garth, 1986: 11, fig. 6A-F.

One-half to one mile NW of Anacapa Island light (Channel Islands), California. Known only from the type locality.

Heteractaea lunata (H. Milne Edwards and Lucas, 1843)
Charwat, 1975: 77 (fig.), 78.

Lophopanopeus bellus bellus (Stimpson, 1860)
see Rathbun for full synonymy. --Austin, 1985: 648 (list, as L. bellus). --Foster and Schiel, 1985: 67 (list), 69.

Resurrection Bay (Alaska) to Cayucos (San Luis Obispo County)
(Garth and Abbott, 1980)

Lophopanopeus bellus diegensis Rathbun, 1930
see Rathbun for full synonymy. --Reish, 1972: 87, fig. 284 (as L. diegensis). --Charwat, 1975: 71 (fig.), 72 (as L. bellus). --Garth and Abbott, 1980:)

Monterey Bay to San Diego (Garth and Abbott, 1980)

Lophopanopeus frontalis (Rathbun, 1893)
see Rathbun for full synonymy, including former L. lockingtoni:

Lophopanopeus lockingtoni Rathbun, 1900
Rathbun, 1900: 137. --Rathbun, 1904: 183, pl. 7, fig. 7. --
Schmitt, 1921: 244, pl. 37, fig. 2. --Rathbun, 1930: 325, pl. 153,
figs. 1, 2, 8; pl. 154, figs. 1-3.

Santa Monica Bay (Los Angeles County) to Bahia Magdalena (Baja California), including Gulf of California (Garth and Abbott, 1980)
Charwat, 1975: 73 (fig.), 74.

Lophopanopeus leucomanus heathi Rathbun
see Rathbun for full synonymy
Moss Beach (San Mateo County) to La Jolla (San Diego County)
(Garth and Abbott, 1980) Charwat, 1975: 75 (fig.), 76 (as L. leucomanus (Lockington))

Lophopanopeus leucomanus leucomanus (Lockington, 1877)
see Rathbun for full synonymy

Carmel (Monterey County) to beach at Rosarito (Baja California)
(Garth and Abbott, 1980) Charwat, 1975: 75 (fig.), 76 (as L. leucomanus) [which subspecies did Charwat figure?]

Micropanope areolata Rathbun, 1898
Rathbun, 1930: 450, pl. 182, figs. 1, 2.
Southern California (6 mi N of Santa Monica, Los Angeles County)
(Rathbun, 1930)

Is this synonymous with Gonopanope areolata (Rathbun, 1898)? The name and date certainly suggest that, although Williams et al. (1989) treat them (list them) separately, giving one a common name, but not the other. Probably a result of Guinot's work.

Micropanope latimanus Stimpson, 1871
Rathbun, 1937: 433 (no figures)

San Diego, California, to Cabo San Lucas, Baja California
(Rathbun, 1930)

Paranxanthias taylori (Stimpson, 1860)

Monterey Bay to Bahia Magdalena (Baja California) (Garth and
Abbott, 1980) Charwat, 1975: 79 (fig.), 80.

Pilumnus spinohirsutus (Lockington, 1877)

San Pedro (Los Angeles County) to Bahia Magdalena (Baja
California) (Garth and Abbott, 1980) Charwat, 1975: 81 (fig.),
82.

Rhithropanopeus harrisi (Gould, 1841)

South of Coos Bay, Oregon; San Francisco Bay and Delta areas, as
far upriver as Stockton (San Joaquin County); Atlantic coast from
New Brunswick (Canada) to Tampico (Mexico); Europe (Garth and
Abbott, 1980). Introduced species; first west coast record (San
Francisco Bay) reported in 1940 (Jones, 1940; see Garth and
Abbott, 1980).

SUPERFAMILY BELLIOIDEA

FAMILY BELLIIDAE

(No known species in California waters)

SUPERFAMILY GRAPSIDOIDEA

FAMILY GECARCINIDAE

(No known species in California waters)

FAMILY GRAPSIDAE

Grapsodius eximius Holmes, 1900

Rathbun, 1918: 259. --Schmitt, 1921: 276.

Known only from Holmes' description of the single male from San
Diego, California (Rathbun, 1918)

Hemigrapsus nudus (Dana, 1851)

Yakobi Island (Alaska) to Bahia de Tortuga (Baja California);
uncommon in southern California and southward (Garth and Abbott,
1980)

Hemigrapsus oregonensis (Dana, 1851)

Resurrection Bay (Alaska) to Bahia de Todos (Baja California; not
Gulf of California (specimens previously reported from there are
referrable to *Goetice americanus* Rathbun) (Garth and Abbott, 1980)

Pachygrapsus crassipes Randall, 1839

Charleston (Oregon) to Isla de Santa Margarita (Baja California)
and Gulf of California (Garth and Abbott, 1980: 619)

Planes cyaneus Dana, 1852

Rathbun, 1918, treats this as a junior synonym of P. minutus. However, Williams et al. (1989) treat it (or at least list it) separately. Not mentioned by Schmitt, 1921.

Planes minutus (Linnaeus, 1758)
Schmitt, 1921: 272, pl. 46.

Pelagic (on floating seaweed and algae), west of Humboldt Bay, off Santa Catalina Island; off San Pedro, Los Angeles County; off Point Loma; off San Diego (Rathbun, 1918; Schmitt, 1921).

FAMILY MICTYRIDAE

(No known species in California waters)

SUPERFAMILY PINNOTHEROIDEA

FAMILY PINNOTHERIDAE

Fabia canfieldi Rathbun, 1918
Rathbun, 1918: 106, fig. 57.

Monterey, California; known only from the type locality (Rathbun, 1918)

Fabia concharum (Rathbun, 1893)
San Pedro (Los Angeles County) to Bahia de Tortuga (Baja California) (Garth and Abbott, 1980)

Fabia subquadrata Dana, 1851
Akutan Pass (Aleutian Islands, Alaska) to La Jolla (San Diego County); uncommon south of San Pedro (Los Angeles County) (Garth and Abbott, 1980)

Opisthopus transversus Rathbun, 1893
Monterey to Laguna San Ignacio (Baja California); San Felipe Baja California) (Garth and Abbott, 1980)

Parapinnixa affinis Holmes, 1900
San Pedro (Los Angeles County); Anaheim Landing and Newport Beach (Orange County); San Diego; also Sakhalin and Kurile Islands (Russia) (Garth and Abbott, 1980)

Pinnixa barnharti Rathbun, 1918
Puget Sound, Washington (Lie, 1968) to Isla de Ixtapa, Zihuatanejo, Guerrero, Mexico (Caso, 1965) (Garth and Abbott, 1980: 614, fig. 25.34; Ricketts et al., 1985: 338; Zmarzly, 1992: 679, figs. 2, 3)

Pinnixa faba (Dana, 1851)
Dana, 1851. Garth and Abbott, 1980: 615, fig. 25.35; Hart, 1982: 234, fig. 97 and color plate; Rudy and Rudy, 1983: 143-144;

Ricketts et al., 1985: 377), (Zmarzly, 1992: 682, figs. 4, 5)
Schmitt et al., 1973. Pearce, 1965. Zullo and Chivers, 1969.

Prince of Wales Island (Alaska) to Newport Bay (Orange County)
(Garth and Abbott, 1980), south to Camalu Point, Baja California
(Zmarzly, 1992)

Pinnixa forficulimanus Zmarzly, 1992

Zmarzly, 1992: 685, fig. 6. Santa Cruz to San Diego, California
(Zmarzly, 1992)

Pinnixa franciscana Rathbun, 1918

Rathbun, 1918. Dales, 1957. Garth and Abbott, 1980: 495, 579-
580, 617, fig. 25.38; Ricketts et al., 1985: 307, 385, fig. 238;
Zmarzly, 1992: 687, fig. 7)

San Francisco Bay to Bahia de Tortugas (Baja California) (Zmarzly,
1992)

Pinnixa hiatus Rathbun, 1918

Rathbun, 1918.

Southern California Bight (Goleta to San Diego, California)
Zmarzly, 1992: 690, fig. 8

Pinnixa littoralis Holmes, 1894

Sitka, Alaska, to Bahia Santa Maria (10 km south of San Quintin),
Baja California (Schmitt, 1921; Garth and Abbott, 1980: 616, fig.
25.36a, b; Hart, 1982: 236, fig. 98 and color plate; Ricketts et
al., 1985: 334, 377; Campos-Gonzalez, 1986: 238; Zmarzly, 1992:
693, fig. 9) Rathbun, 1918. Schmitt, 1921.

Pinnixa longipes (Lockington, 1877)

Lockington, 1877. Holmes, 1894. Rathbun, 1918. Schmitt, 1921.
Bousquette, 1980 (larval development); Garth and Abbott, 1980:
616, fig. 25.37; Ricketts et al., 1985: 349, 369-370, fig. 288.
Carlisle, 1969.

Bodega Bay harbor (Sonoma County) to Ensenada (Baja California);
one erroneous report from east coast of North America (Garth and
Abbott, 1980; Zmarzly, 1992: 695, fig. 10)

Pinnixa minuscula Zmarzly, 1992

Zmarzly, 1992: 697, fig. 11. Goleta to San Diego, California
(Zmarzly, 1992)

Pinnixa occidentalis Rathbun, 1893

Hart, 1982: 242, fig. 101; Roesijadi, 1978: 259 (larval
physiology). Wicksten 1980: 360 (table, distribution) Zmarzly,
1992: 700, fig. 12. See also Glassell, 1934; Lie, 1968.

Alaska to Bahia Magdalena, Baja California, Mexico (Hart, 1982;
Zmarzly, 1992)

Pinnixa schmitti Rathbun, 1918

Hart, 1982: 244, fig. 102; Ricketts et al., 1985: 307, 385, 387; Zmarzly, 1992: 702, figs. 13, 14. See also Wells, 1928; Dales, 1957; Lie, 1968 (as cited in Zmarzly, 1992)

Unalaska, Alaska to San Francisco Bay (Schmitt et al., 1973; Garth and Abbott, 1980) and San Diego (Zmarzly, 1992) Wicksten, 1980: 360 (table, distribution)

Pinnixa tomentosa Lockington, 1876

Lockington, 1876. Holmes, 1894. Scanland and Hopkins, 1978; Garth and Abbott, 1980: 617; Zmarzly, 1992: 706, fig. 15.

San Clemente Island (Channel Islands); Mission Bay (San Diego County), San Felipe and Bahia de Los Angeles (Baja California) (Garth and Abbott, 1980) Monterey, California to Cabo San Lucas, Baja California, and Gulf of California (Scanland and Hopkins, 1978; Zmarzly, 1992). Bay

Pinnixa tubicola Holmes, 1894

Holmes, 1894. Scanland and Hopkins, 1978; Garth and Abbott, 1980: 617-618, fig. 25.39; Hart, 1982: 238, fig. 99 and color plate; Ricketts et al., 1985: 82, 307; Zmarzly, 1992: 709, fig. 16. See also Wells, 1928, for host record.

Alaska (no specific locality given); Prince Rupert (British Columbia) to San Diego (Garth and Abbott, 1980); south to Bahia Blanca, Baja California (Zmarzly, 1992)

Pinnixa weymouthi Rathbun, 1918

Weymouth, 1910: fig. 7. Rathbun, 1918. Garth and Abbott, 1980: 618, fig. 25.40. Zmarzly, 1992: 710, fig. 17.

Monterey Bay and Peninsula (Pacific Grove) (Garth and Abbott, 1980; Zmarzly, 1992)

Pinnotheres nudus Holmes, 1894

Rathbun, 1918: 83, fig. 40a-e. --Schmitt, 1921: 252, fig. 149a-e (after Holmes, from Rathbun)

Santa Cruz, California, and Monterey (Holmes, 1894; Rathbun, 1918; Schmitt, 1921)

Pinnotheres holmesi Rathbun, 1918

Rathbun, 1918: 68, fig. 32; pl. 15, figs. 1, 2. --Schmitt, 1921: 39, figs. 7, 8.

Known only from a single female, probably from Pacific Grove (Schmitt, 1921).

Pinnotheres pugettensis Holmes

Departure Bay (British Columbia) to Monterey Bay (Garth and Abbott, 1980)

Scleroplax granulata Rathbun, 1893

Roller Bay (Hope Island, off northern Vancouver Island, British Columbia) to Ensenada (Baja California) (Garth and Abbott, 1980)

SUPERFAMILY POTAMOIDEA

(8 Families of Freshwater crabs, none known from North America)

SUPERFAMILY OCYPODOIDEA

FAMILY OCYPODIDAE

Uca crenulata crenulata (Lockington, 1877)

Playa del Rey (Los Angeles County) (small colony) to Isla de los Mangles (Baja California); formerly large colonies at Newport Bay (Orange County) and Mission Bay (San Diego County), facing extinction as of 1980 (Garth and Abbott, 1980)

Uca musica Rathbun, 1914

Rathbun, 1914: 417, fig. 5; pl. 10. --Rathbun, 1918: 417, pl. 154. --Schmitt, 1921: 280, pl. 50, fig. 165 (after Rathbun).

Vancouver, British Columbia, and Seattle Washington, to Guaymas, Mexico (Rathbun, 1918; Schmitt, 1921). Curiously, Rathbun (1918) gives as the range "From San Diego, California, to Mazatlan, Mexico; occasionally further north" but includes two extreme northern records, Vancouver and Seattle (both records in the form of photographs sent to her by collectors). to her from Vancou

FAMILY PALICIDAE

(No known species in California waters)

FAMILY RETROPLUMIDAE

(No known species in California waters)

SUPERFAMILY CRYPTOCHIROIDEA

FAMILY CRYPTOCHIRIDAE (formerly Haplocarcinidae)

(No known species in California waters)