Belg. J. Zool. - Volume 129 (1999) - issue 2 - pages 363-389 - Brussels 1999

Received : 9 October 1998

CHECKLIST OF ANOMURAN CRABS (CRUSTACEA : DECAPODA) FROM THE EASTERN TROPICAL PACIFIC

MICHEL E. HENDRICKX (1) AND ALAN W. HARVEY (2)*

(1) Laboratorio de Invertebrados Bentónicos,
Instituto de Ciencias del Mar y Limnología, Estación Mazatlán,
UNAM. P.O. Box 811 – Mazatlán – 82000, Sinaloa – México.
(2) Department of Invertebrates, American Museum of Natural History.
Central Park West at 79th Street. New York, NY 10024. USA.
e-mail : michel@mar.icmyl.unam.mx

Abstract. Literature dealing with anomuran crabs from the east Pacific is reviewed. Marine and brackish water species reported at least once in the Eastern Tropical Pacific zoogeographic subregion, which extends from Magdalena Bay, on the west coast of Baja California Sur, Mexico, to Paita, in northern Peru, are listed, and their distribution range along the Pacific coast of America are provided. Unpublished records, based on material kept in the collections of the authors, were also considered to determine or confirm the presence of species, or to modify previously published distribution ranges within the study area. A total of 207 species, belonging to 56 genera, are included in the checklist, the first ever made available for the entire tropical zoogeographic subregion of the west coast of America. A list of names of species and subspecies currently recognized as invalid for the area is also included.

Key words : Anomura, Eastern Tropical Pacific, Checklist.

INTRODUCTION

Reliable regional checklists of marine species have multiple uses. In addition to providing comparative data for biodiversity studies, they serve as an important tool in recognizing and delimiting areas in need of protection, inferring the potential impact of anthropogenic activity, assessing the complexity of biological communities, and estimating the availability of living resources. Checklists for zoogeographic regions or provinces also facilitate biodiversity studies in specific habitats, which serve as points of departure for (among others) studying the structure of food chains, the relative abundance of species, and the size-related distribution and abundance of species or individuals within species (MAY, 1992). It is now recognized that comprehensive surveys and inventories help rein-

* Current address: Department of Biology, Georgia Southern University. Statesboro, GA 30460, USA.

force local conservation practices, which is particularly important in poorly known areas of the tropics (HATCHER *et al.*, 1989; MCNEELY *et al.*, 1990).

Subtropical and tropical marine invertebrates communities remain largely undescribed, although some species-rich areas of the world have attracted substantial attention in recent years. Major recent surveys have focused on the Indo-West Pacific, the tropical Atlantic and the Eastern Tropical Pacific (see FOREST, 1989; RICHER DE FORGES, 1990; BIANCHI, 1991; MACPHERSON, 1991; CERVIGÓN *et al.*, 1992; HENDRICKX, 1993b).

Decapod crustaceans are important members of tropical benthic communities. Beside the fact that the largest, most abundant species are usually used as a food source for human consumption (*e.g.*, shrimps, lobsters), there exists a very large variety of smaller species that contribute to the size, complexity and functioning of tropical ecosystems. Every marine habitat includes major predatory species of decapod crustaceans that play an important role in regulating the trophic relationships of benthic communities.

The only monographic or review paper dealing with a significant number of species of anomuran crabs living in tropical waters of the Pacific coast of America is HAIG's (1960) study on Porcellanidae of the east Pacific. Anomurans were included in some general papers dealing with all Eastern Pacific decapods: HENDRICKX (1992) analyzed the composition and zoogeography of the decapod fauna of the Gulf of California, listing 108 species of Anomura; LEMAITRE & ALVAREZ-LEÓN (1992) considered all decapod species known to have been collected along the Pacific coast of Colombia, including 61 species of Anomura; MORAN & DITTEL (1993) cited 73 species of Anomura for the Pacific coast of Costa Rica. Later, CASTRO & VARGAS (1996) and VARGAS *et al.* (1996) provided data related to recent collections of 16 species of Anomura along the coast of Costa Rica. HENDRICKX (1993c) provided a checklist of all decapod species known from the Pacific coast of Mexico (including the temperate, Mexican portion of the Californian Province). For comparative purposes, HENDRICKX (1993c: p. 316) also estimated that 926 species of decapods in 329 genera, including 201 species and 52 genera of anomurans, occur in the Eastern Tropical Pacific subregion (hereafter ETP) from Magdalena Bay, Lower California, to Paita, Peru.

Although comprehensive studies are lacking, many papers have dealt with selected elements of the anomuran fauna of the ETP. The most important are briefly discussed here.

Because the Hippidae and Albuneidae contain relatively few species, these families are probably among the better-known anomurans in the ETP. The genus *Lepidopa*, although reviewed by EFFORD (1971), still offer some taxonomic problems because the descriptions of most species, known from only a few specimens, are somewhat ambiguous and may not always represent distinct species.

Hermit crabs have been a difficult group to study. Many species are known from only one or a few localities (sometimes even the type locality is unknown), and many still-undescribed species are known to occur in the region. Three groups in particular: the genera *Pagurus* and *Paguristes,* and the « *Pylopagurus*-like » species, have caused considerable identification problems among specialists and nonspecialists alike. In a remarkable series of publications, MCLAUGHLIN (1981a, 1981b, 1982; MCLAUGHLIN & GUNN, 1992; LEMAITRE & MCLAUGHLIN, 1996) has studied all species of « *Pylopagurus* » that are known worldwide, resulting in the reassignment of most species into new genera.

Intensive work also has been done on the genus *Pagurus*, resulting in the redescription of poorly defined species and the description of several new species in the ETP (HAIG & HARVEY, 1991; HAIG & MCLAUGHLIN, 1991; HARVEY & MCLAUGHLIN, 1991; MCLAUGHLIN & HAIG, 1993).

The Porcellanidae of the ETP was thoroughly reviewed by HAIG (1960); since her monograph, the taxonomic and ecological knowledge of this family in the ETP has remained almost unchanged, and only a few new species have been described (CHACE, 1962; GORE & ABELE, 1973; HARVEY, 1999). On the other hand, many species have seen their northernmost or southernmost distribution limit modified, sometimes considerably. GORE & ABELE (1976) and GORE (1982) in particular, clarified the geographic distributions of American porcellanids. CARVACHO (1980) presented a zoogeographic analysis of west American species, and HARVEY (1991) studied the biogeographic relationships of the Galapagos porcellanid fauna.

The Galatheidae and Chirostylidae of the ETP have hardly been considered since the original descriptions of most species by FAXON (1893) and BENEDICT (1902). The general distributional range of deep-water species was reviewed by WICKSTEN (1989), but only three new species of *Munidopsis* have been added since BENEDICT published his list of known marine species (BENEDICT, 1902). HENDRICKX (1996) provided new distributional records for two species of *Munidopsis*.

New data on the Anomura from the ETP were also presented by HAIG *et al.* (1970), BALL & HAIG (1974), and by ROMERO & CARVACHO (1987). Common species of Anomura (mostly intertidal) were discussed in R. C. Brusca's 1980 treatise on the invertebrates of the Gulf of California (*e.g.*, HAIG, 1980; SNYDER-CONN, 1980).

General information related to the Anomura of the Gulf of California is also found in RODRIGUEZ DE LA CRUZ (1987). Data related to more southern species were presented by SOSA-HERNÁNDEZ *et al.* (1980; Gulf of Tehuantepec), and HENDRICKX *et al.* (1997; Gulf of Tehuantepec). As mentioned earlier, MORÁN & DITTEL (1993) and LEMAITRE & ALVAREZ-LEÓN (1992) listed species cited for Costa Rica and Pacific Colombia, respectively .

In this paper, we provide an annotated list of all species of anomurans reported from the ETP, based on previous literature and our own unpublished data.

METHODS

Records in the checklist were derived from the review of literature dealing with Eastern Tropical Pacific anomuran crabs and from unpublished data obtained during recent surveys of the decapod crustacean fauna of the Pacific coast of Mexico. Unpublished information was also obtained while reviewing museum collections. Some new records were also provided or confirmed by Patsy MCLAUGHLIN, Albertina KAMEYA and the late Janet HAIG. The ETP is here defined as the area extending from Magdalena Bay, on the west coast of Baja California Sur, to the area of Paita, Peru, including the entire Gulf of California and all oceanic islands that lie within the latitudinally-defined tropical fringe.

Presence of species in other geographic regions of the world has been indicated by the following abbreviations: I-PAC, Indo-Pacific; I-WPAC, Indo-West Pacific; W-ATL, West

Atlantic; ATL, West and East Atlantic; N-PAC, North Pacific; MED, Mediterranean; COSMO, cosmopolitan species. Records on offshore islands or rocks are cited separately, as they often correspond to southern or northern distribution limits markedly different from those known along the continent. As a rule, we considered only oceanic islands (Clarion and Socorro, Revillagigedo, Mexico; Clipperton, France; Coco, Costa Rica; Malpelo, Colombia; Galapagos, Ecuador; Juan Fernandez, Chile) or rocks (Alijos, Mexico) to be «offshore» records. For the sake of clarity, all records for «Isla del Coco», Costa Rica (such as «Coco Island», «Cocos Island», «isla Coco», «isla Cocos» and [rarely] «isla del Coco») are referred to as «Coco». Records on continental islands, such as Gorgona Island, the Tres Marias Islands, and those in the Gulf of California and the Gulf of Panama, are included in the general continental range of the species. A question mark («?») indicates that reasonable doubt exists concerning the record of a species at a given locality.

The taxonomic sequence of families follows HENDRICKX (1993b; 1993c). Within families, species are listed alphabetically by genus and species. If the range was given in the original description and has not been modified since, the source is the original citation. Authors citations are given at the end of the range. Synonyms for invalid species or subspecies cited for the ETP are provided under each species and a note including comments has been added whenever it was necessary. Invalid names cited for other zoogeographic regions are not included as they are not relevant to this study .

RESULTS

The present paper provides an updated taxonomic list of all species of Anomura known from the area: 207 species, belonging to 56 genera. In addition, there are numerous undescribed species of anomurans known to us in the study area. These include three species of *Parapagurus* (LEMAITRE, pers. comm.), two species of *Dardanus*, two species of *Clastotoechus*, at least six species of *Paguristes*, and one species each of *Isocheles*, *Clibanarius*, and *Petrolisthes*. In addition, several species of undescribed albuneids are known from this region (BOYKO, pers. comm.). No doubt numerous other species of anomurans await discovery in the ETP.

In a publication dealing with the crustaceans of Peru, del SOLAR *et al.* (1970) provided «Isla Galapagos (= Isla Galapago, near Pucusana)» as a sampling locality for several species of Porcellanidae and one Hippidae. This locality, which could inadvertently be confused with the «Galapagos Islands, Ecuador», is in fact a Peruvian locality (ca. 12°28' S-76°48' W), far south of Paita.

SYSTEMATIC ACCOUNT

ALBUNEIDAE Stimpson, 1858

1. *Albunea lucasia* (de Saussure, 1853)
   From San Lucas Cape, Baja California Sur, Carmen and Tiburon Islands, Gulf of California, Mexico, to Peru (HAIG, 1980; HENDRICKX unp. data).

2. *Lepidopa californica* Efford, 1971
From San Pedro (Los Angeles) to San Diego, California, USA ; Angel de la Guarda Island, San Miguel Cape, Baja California and Estero Tastiota, Sonora, Gulf of California, Mexico (EFFORD, 1971).
3. *Lepidopa deamae* Benedict, 1903
From Southern Sinaloa (locality unknown), Mexico, to Buenaventura, Colombia (RIOS *et al.*, 1990 ; HENDRICKX unp. data).
4. *Lepidopa esposa* Efford, 1971
Known only from La Paz, Baja California Sur, Mazatlan, Sinaloa, Cholla Bay and Norse Beach (Puerto Peñasco), Sonora, Gulf of California, Mexico (EFFORD, 1971 ; HAIG, 1980).
5. *Lepidopa haigae* Efford, 1971
Chacahua Bay (north of Gulf of Tehuantepec), Mexico (EFFORD, 1971).
6. *Lepidopa mearnsi* Benedict, 1903
From Puerto Peñasco, Sonora, Gulf of California, Mexico, to Choco, Colombia (EFFORD, 1971 ; RIOS *et al.*, 1990).
7. *Lepidopa mexicana* Efford, 1971
From Teacapan, Sinaloa, Gulf of California, Mexico, south to Buenaventura, Colombia (EFFORD, 1971 ; RIOS *et al.*, 1990).
8. *Lepidopa myops* Stimpson, 1860
From Santa Maria Bay, west coast of Baja California Sur, and in the San Lucas Cape area, Baja California Sur, Mexico, to Colombia (HAIG, 1980 ; LEMAITRE & ALVAREZ-LEÓN, 1992).
9. *Lepidopa sorodeamae* Efford, 1971
Known only from Ecuador and Peru (EFFORD, 1971).
NOTE : This species is a possible synonym of *Lepidopa deamae* (C. Boyko, pers. comm.)
10. *Lepidopa wolleboeki* Sivertsen, 1933
Galapagos Islands (SIVERTSEN, 1933).
11. *Paraleucolepidopa panamaensis* (Efford, 1971)
Known only from Tabogilla, Perlas Is., Panama (EFFORD, 1971).
NOTE : This species is a possible synonym of *Lepidopa myops* (C. Boyko, pers. comm.)

HIPPIDAE Latreille, 1825

12. *Emerita analoga* (Stimpson, 1857)
From Kodiak Island, Alaska, USA, to Magdalena Bay, west coast of Baja California Sur, and central Gulf of California, Mexico ; from Paita, Peru, to Magellan Strait, Chile ; ?Hawaiin Islands (EFFORD, 1976).
13. *Emerita rathbunae* Schmitt, 1935
From San Francisquito and Kino Bay, Sonora, Gulf of California, Mexico, to Iquique, Chile (EFFORD, 1976 ; HAIG, 1980).
14. *Hippa pacifica* (Dana, 1852)
From La Paz, Baja California Sur, and Morro Colorado (28°15'N-111°22'W), Sonora, Gulf of California, Mexico, to Gorgona Island and Ensenada de Utria, Colombia ; Socorro, Clipperton, Coco and Galapagos Islands (EFFORD, 1972 ; LEMAITRE & ALVAREZ-LEÓN, 1992 ; RAMOS & RIOS, 1995). **I-PAC**
15. *Hippa strigillata* (Stimpson, 1860)
From Cabo San Lucas, Los Frailes, Baja California Sur, and Mazatlan, Sinaloa, Gulf of California, Mexico, to Ensenada de Utria, Colombia (EFFORD, 1972 ; RAMOS & RIOS, 1995).

COENOBITIDAE Dana, 1851

16. *Coenobita compressus* H. Milne Edwards, 1837
From Magdalena Bay, west coast of Baja California Sur, Rasa Island and Guaymas, Sonora, Gulf of California, Mexico, south to Paita, Peru; Revillagigedo, Coco and Galapagos Islands (BALL & HAIG, 1974; VILLALOBOS *et al.*, 1989).
SYNONYMS: *Coenobita intermedia* Streets, 1871; *Coenobita panamensis* Streets, 1871.

DIOGENIDAE Ortmann, 1892

17. *Allodardanus rugosus* Haig & Provenzano, 1965
Coco Island (HAIG & PROVENZANO, 1965).

18. *Aniculus elegans* Stimpson, 1859
From Magdalena Bay, west coast of Baja California Sur, La Paz, Baja California and San Carlos, Sonora, Gulf of California, Mexico, south to Salinas, Ecuador; Malpelo and Galapagos Islands (BALL & HAIG, 1974; BIRKELAND *et al.*, 1975; HOLTHUIS, 1979; SNYDER-CONN, 1980).
SYNONYM: *Aniculus longitarsis* Streets, 1871.

19. *Calcinus californiensis* Bouvier, 1898
From Magadalena Bay, west coast of Baja California Sur, Angel de la Guarda, Baja California and Puerto Peñasco, Sonora, Gulf of California, to Huatulco bays, Mexico; Clipperton Island (CHACE, 1962; HAIG *et al.*, 1970; VILLALOBOS *et al.*, 1989; HARVEY, unp. data).

20. *Calcinus explorator* Boone, 1932
Tres Marias Islands and Mita Point, Nayarit, Gulf of California, and Chamela Bay, Jalisco, Mexico; Clarion, Socorro and Galapagos Islands (CHACE, 1962; HERNÁNDEZ-AGUILERA *et al.*, 1986).
NOTE: The possible synonymy between *Calcinus obscurus* Stimpson, 1859, and *Calcinus explorator* Boone, 1932, has been discussed by several authors. We feel that further studies are needed to determine whether *C. explorator* (type locality: Galapagos Islands) is a junior synonym of *C. obscurus* or not. Schmitt (1939) considered his Socorro and Galapagos material to belong to Stimpson's species. CHACE (1962), in reviewing material of what he recognized as specimens of *Calcinus explorator* from Clipperton Island, noted that « ... constant morphological differences between this species [*C. explorator*] and *C. obscurus* Stimpson from Central America could not be found ... »; his arguments for conserving both species valid were based on slightly different color patterns and exclusive geographic distribution pattern (i.e., insular for *C. explorator*; mainland for *C. obscurus*). Subsequently, *C. explorator* has been collected from the Gulf side of the Baja Peninsula, north to Pulmo Cape (HAIG, 1980), Chamela Bay, Jalisco, Mexico (HERNÁNDEZ-AGUILERA *et al.*, 1986), and Mita Point, Nayarit (unp. data). The most recent report on *C. obscurus* is by LEMAITRE & ALVAREZ-LEÓN (1992) who, citing HOLTHUIS (1954) and BALL & HAIG (1974) as their main sources, consider its distribution range to be from Ecuador to California, USA. LEMAITRE & ALVAREZ-LEÓN (1992) do not include the insular records of *C. explorator* in their distribution of *C. obscurus*, indicating that they also maintain the distinction between these species.

21. *Calcinus obscurus* Stimpson, 1859
La Libertad, El Salvador, to Ecuador (BALL & HAIG, 1974). ?To California (LEMAITRE & ALVAREZ-LEÓN, 1992).
NOTE: The California records of this tropical species seem suspect. HOLTHUIS (1954) mentions the Southern California record, but says it might have been based on *Calcinus californiensis*, which seems also doubtful. Unfortunately, HOLTHUIS (*op. cit.*) doesn't say where he learned of this record and we are not able to trace it in previous literature.

22. *Cancellus tanneri* Faxon, 1893
Gorda Bank, Baja California Sur, Gulf of California, Mexico, to Perlas Islands, Panama; Galapagos Islands (HENDRICKX, 1987).

23. *Clibanarius albidigitus* Nobili, 1901
From Puerto Peñasco, Sonora, Gulf of California, Mexico, to Paita, Peru (BALL & HAIG, 1974; SNYDER-CONN, 1980).

24. *Clibanarius digueti* Bouvier, 1898
From Magdalena Bay, west coast of Baja California Sur, and throughout the Gulf of California, to Zihuatanejo, Guerrero, Mexico (SNYDER-CONN, 1980; HAIG, pers. comm.).
NOTE: A closely related, undescribed species is known from the Galapagos (HARVEY, unpub. data).

25. *Clibanarius janethaigae* Hendrickx & Esparza-Haro, 1997
From off Santa Maria Bay, Sinaloa, Gulf of California, to the Gulf of Tehuantepec, Mexico; probably to El Salvador and Colombia (HENDRICKX & ESPARZA-HARO, 1997).
NOTE: Unidentified specimens of a subtidal species of *Clibanarius* had been reported by MORAN (1984) from El Salvador, and recognized among Mexico and Colombia material by the late J. Haig (fide MORAN, 1984: Haig pers. comm.). According to HENDRICKX & ESPARZA-HARO (1997: 117) this material probably belongs to *C. janethaigae*.

26. *Clibanarius panamensis* Stimpson, 1859
From Magdalena Bay, west coast of Baja California Sur, and Cholla Bay, Sonora, Gulf of California, Mexico, to Capon, Peru (HAIG *et al.*, 1970; SNYDER-CONN, 1980).

27. *Dardanus sinistripes* (Stimpson, 1859)
Magdalena Bay, west coast of Baja California Sur, and throughout the Gulf of California, Mexico, to Sechura Bay, Peru (BALL & HAIG, 1974; HENDRICKX, unp. data).
SYNONYMS: *Dardanus imbricatus* Rathbun, 1910; *Dardanus peruensis* Balss, 1921.
NOTE: Two closely related species have been confounded under this name (HARVEY, unp. data). Also, a third, undescribed species in this genus has recently been collected in the Galapagos (HARVEY, unp. data).

28. *Isocheles pacificus* Bouvier, 1907
Known from Paita, Peru (the type locality) and perhaps from the Upper Gulf of California, Mexico (BOUVIER, 1907).
NOTE: A second, undescribed species of this genus has been collected in the northern Gulf of California (HARVEY, unp. data). Previous records of *Isocheles* in the eastern Pacific may correspond to one or both species and an examination of material from different localities will be necessary to determine their respective ranges. Another species, *I. pilosus* (Holmes, 1900), is known from the west coast of Baja California south to Estero de Punta Banda.
SYNONYM: *Isocheles wurdemanni pacificus* Bouvier, 1907.

29. *Paguristes anahuacus* Glassell, 1938
Throughout the Gulf of California, Mexico, south to Mazatlan, Sinaloa (SNYDER-CONN, 1980; ROMERO & CARVACHO, 1987; HENDRICKX, unp. data).
NOTE: Several species, including some that are undescribed, have been confounded under this name (HARVEY & HAIG, in prep.).

30. *Paguristes aztatlanensis* Glassell, 1937
Known only from Cape Pulmo, Baja California Sur, Gulf of California, Mexico (GLASSELL, 1937).

31. *Paguristes bakeri* Holmes, 1900
From San Francisco, California, USA, along the west coast of Baja California, and from off Consag Rock to Teacapan, Sinaloa, Gulf of California, Mexico (SCHMITT, 1921; HAIG *et al.*,

1970; HENDRICKX, unp. data). Possibly to Puntarenas, Costa Rica (as *P. holmesi* Glassell; MORÁN & DITTEL, 1993; see remarks below).

32. *Paguristes digueti* Bouvier, 1893
From Magdalena Bay, west coast of Baja California Sur, San Miguel Cape, Baja California and Arboleda Point, Sonora, Gulf of California, Mexico, to Ecuador (GLASSELL, 1937; HAIG, pers. comm.; HENDRICKX, unp. data).

33. *Paguristes fecundus* Faxon, 1893
Known only from Malpelo Island, Colombia (LEMAITRE & ALVAREZ-LEÓN, 1992).

34. *Paguristes holmesi* Glassell, 1937
Cedros Islands, west coast of Baja California, and Arena Bank, Baja California Sur, Gulf of California, Mexico, to Costa Rica (GLASSELL, 1937; MORÁN & DITTEL, 1993).
NOTE: This species was previously synonymized with *Paguristes bakeri* Holmes, 1900 by HAIG *et al.* (1970). However, MORÁN & DITTEL (1993: 601) recently reported *P. holmesi* from Costa Rica, based on material that was identified by the late Janet HAIG (MORÁN & DITTEL, pers. comm.). We could not locate any recent reference that withdraws *P. holmesi* from the synonymy of *P. bakeri*, but it is possible that the Costa Rican material, collected in the vicinity of Puntarenas, persuaded HAIG to reinstate GLASSELL's species. Unfortunately, the specimens identified by HAIG as *P. holmesi*, which were housed first at the Allan Hancock Foundation and then moved to the Los Angeles County Museum of Natural History, cannot be located (George E. Davis, pers. comm.).

35. *Paguristes oculiviolaceus* Glassell, 1937
Known only from Gorda Bank, Baja California Sur, Gulf of California, Mexico (GLASSELL, 1937).

36. *Paguristes perrieri* Bouvier, 1895
Gulf of California, Mexico (BOUVIER, 1895).

37. *Paguristes praedator* Glassell, 1937
From Magdalena Bay, west coast of Baja California Sur, and from Consag Rock to Cape Pulmo, Baja California Sur, Mazatlan, Sinaloa, and Isabel Island, Nayarit, Gulf of California, Mexico (HAIG *et al.*, 1970; HAIG, pers. comm.).
NOTE: Several species have been confounded under this name (HAIG, pers. comm.; HARVEY, unp. data).

38. *Paguristes sanguinimanus* Glassell, 1938
From Percebu Lagoon, Baja California and Puerto Peñasco, Sonora, south to Carmen Island, Baja California Sur and Arboleda Point, Sonora, Gulf of California, Mexico (SNYDER-CONN, 1980; ROMERO & CARVACHO, 1987; HENDRICKX, unp. data).

39. *Paguristes tomentosus* A. Milne Edwards, 1888
From Sechura Bay and Tumbes, Peru, to Taltal, Chile (del SOLAR *et al.*, 1970; RETAMAL, 1981).

40. *Paguristes ulreyi* Schmitt, 1921
From British Columbia, Canada, to San Hipolito Bay, west coast of Baja California Sur, and from Gorda Point, Baja California Sur, Gulf of California, Mexico, to Gulf of Panama area, Panama; Alijos Rocks (ABELE, 1976; WICKSTEN, 1995).
SYNONYM: *Paguristes occator* Glassell, 1937.

41. *Petrochirus californiensis* Bouvier, 1895
From Santa Maria bay, west coast of Baja California Sur, and throughout the Gulf of California, Mexico, to Caleta la Cruz, Peru; Galapagos Islands (HAIG *et al* 1970; BALL & HAIG, 1974; HENDRICKX, unp. data; HARVEY, unp. data).
SYNONYM: *Petrolisthes granulatus californiensis* Bouvier, 1895.

42. *Trizopagurus magnificus* (Bouvier, 1898)
From Magdalena Bay, west coast of Baja California Sur, and Santa Maria Bay, Sinaloa, Gulf of California, Mexico, to Northern Peru; Malpelo and Galapagos Islands (HAIG *et al.*, 1970; BALL & HAIG, 1974; BIRKELAND *et al.*, 1975; FOREST, 1995; HENDRICKX, unp. data).
SYNONYM: *Clibanarius chetrykini* Boone, 1932.

PAGURIDAE Latreille, 1803

43. *Catapagurus diomedeae* Faxon, 1893
From Santa Ines Bay to Arena Bank, Baja California Sur, Gulf of California, Mexico, and in the Bay of Panama; Coco Island (GLASSELL, 1937).

44. *Enallopaguropsis janetae* McLaughlin, 1982
Known only from Coco Island (MCLAUGHLIN, 1982).

45. *Enallopaguropsis guatemoci* (Glassell, 1937)
From Point Hueneme, California, USA, along the west coast of Baja California, to Guadelupe and Cedros Islands, and Angel de la Guarda Island, off San Francisquito Bay, Baja California and at 22°52'N-109°55'W, Gulf of California, Mexico (WALTON, 1954; MCLAUGHLIN, 1982).
SYNONYM: *Pylopagurus hancocki* Walton, 1954.
NOTE: *Enallopaguropsis hancocki* was mistakenly listed by HENDRICKX (1993b: 309), who failed to note that this species had been synonymized with *E. guatemoci* by MCLAUGHLIN (1982: 849).

46. *Enallopagurus affinis* (Faxon, 1893)
Known only from Estero Tastiota, Sonora, Gulf of California, Mexico, and the Bay of Panama (MCLAUGHLIN, 1982; HENDRICKX unp. data).

47. *Enallopagurus coronatus* (Benedict, 1892)
Known only from Cabo San Lucas, Arena Bank, Baja California Sur, Partida Island and San Francisquito Bay, Baja California, Gulf of California, Mexico (WALTON, 1954; MCLAUGHLIN, 1982).

48. *Enallopagurus spinicarpus* (Glassell, 1938)
From Eugenia Point to Tosca Point, west coast of Baja California Sur, and Angel de la Guarda Island, Baja California to Gorda Bank, Baja California Sur, Gulf of California, Mexico, south to Gorgona Island, Colombia (GLASSELL, 1938b; WALTON, 1954).

49. *Iridopagurus occidentalis* (Faxon, 1893)
From Santa Ines Bay to Arena Bank, Baja California Sur, Gulf of California, Mexico, and in the Bay of Panama; Coco Island (GLASSELL, 1937).

50. *Manucomplanus cervicornis* (Benedict, 1892)
San Lucas Cape, Baja California Sur, and throughout the Gulf of California, Mexico, south to San Pedro Nolasco Island, Sonora (WALTON, 1954).

51. *Manucomplanus longimanus* (Faxon, 1893)
Baja California coast, Gulf of California to off Panama; San Nuez and Coco Island (LEMAITRE & MCLAUGHLIN, 1996).

52. *Manucomplanus varians* (Benedict, 1892)
From Magdalena Bay, west coast of Baja California Sur, and throughout the Gulf of California, Mexico, to Secas Islands, Panama (WALTON, 1954; BALL & HAIG, 1974; HENDRICKX, unp. data).

53. *Pagurus albus* (Benedict, 1892)
From Percebu Lagoon, Baja California and Cholla Bay, Sonora, Gulf of California, Mexico, to Costa Rica (SNYDER-CONN, 1980; ROMERO & CARVACHO, 1987; HAIG pers. comm.).

54. *Pagurus annexus* McLaughlin & Haig, 1993
Abreojos Point, west coast of Baja California Sur and San Ignacio Bay, Gulf of California, Mexico, to off San Jose Point, Guatemala (McLaughlin & Haig, 1993).

55. *Pagurus arenisaxatilis* Harvey & McLaughlin, 1991
From San Felipe to Punta Willard, Baja California and Cholla Bay to south of Tiburon Island, Sonora, Gulf of California, Mexico (Harvey & McLaughlin, 1991).

56. *Pagurus benedicti* (Bouvier, 1898)
From Magdalena bay, west coast of Baja California Sur, Angel de la Guarda Island and Puerto Peñasco, Sonora, Gulf of California, Mexico, to off La Plata Island, Ecuador; Galapagos Islands and Alijos Rocks (Wicksten, 1995; McLaughlin & Haig, 1993).
Synonyms: *Eupagurus minutus* Benedict, 1892; *Nympagurus galapagensis* Boone, 1932.

57. *Pagurus gladius* (Benedict, 1892)
From Tosca Point, west coast of Baja California Sur, and throughout the Gulf of California, Mexico, to Ecuador (Haig *et al.*, 1970; Hendrickx unp. data).

58. *Pagurus lepidus* (Bouvier, 1898)
From Cedros Island, west coast of Baja California Sur, La Paz, Baja California Sur, and Puerto Peñasco, Sonora, Gulf of California, Mexico, to Talara, Peru (40°34' S) (Haig & McLaughlin, 1991).

59. *Pagurus nanodes* Haig & Harvey, 1991
Costa Rica to Ecuador (Haig & Harvey, 1991).

60. *Pagurus nesiotes* Haig & McLaughlin, 1991
Clipperton, Malpelo, and Galapagos Islands (Haig & McLaughlin, 1991).

61. *Pagurus parvus* (Benedict, 1892)
Gulf of California (unknown locality), Mexico (Benedict, 1892).

62. *Pagurus perlatus* H. Milne Edwards, 1848
Known from Tumbes and San Lorenzo Island, Peru, to Puerto Corral, Chile (del Solar *et al.*, 1970; Retamal, 1981).

63. *Pagurus rhabdotus* Haig & Harvey, 1991
From San Hipolito to Magdalena Bay, west coast of Baja California Sur, Mexico (Haig & Harvey, 1991).

64. *Pagurus smithi* (Benedict, 1892)
From San Benedito Island, west coast of Baja California, and from Consag Rock and off Estero Tastiota, Sonora to La Paz, Baja California Sur, and Mazatlan, Sinaloa, Gulf of California, Mexico (Haig *et al.*, 1970; Hendrickx unp. data).

65. *Pagurus spighti* McLaughlin & Haig, 1993
Bay of Panama, Panama (McLaughlin & Haig, 1993).

66. *Pagurus vetaultae* Harvey & McLaughlin, 1991
San Carlos and Guaymas, Sonora, Gulf of California, Mexico, to Perlas Islands, Bay of Panama, Panama (Harvey & McLaughlin, 1991).

67. *Pagurus virgulatus* Haig & Harvey, 1991
From Acapulco, Guerrero, Mexico, to Ataiame Reef, Ecuador; Coco Island (Lemaitre & Alvarez-León, 1992).

68. *Phimochirus californiensis* (Benedict, 1892)
From Santa Catalina Island, California, USA, Angel de La Guarda Island, Baja California and Cholla Bay, Sonora, Gulf of California, Mexico, to Panama; Coco and Galapagos Islands (Schmitt, 1921; Glassell, 1937; Snyder-Conn, 1980).
Synonym: *Eupagurus mexicanus* Benedict, 1892.

NOTE : *Phimochirus mexicanus* was mistakenly listed by HENDRICKX (1993b : 309), who failed to note that this species had been synonymized with *P. californiensis* by MCLAUGHLIN (1981b : 349). SCHMITT (1921 : 143) gives the northernmost record of this species at « Monterey Bay or Santa Catalina Island ». Our records (Harvey, unp. data) indicate that the species do not occur north of the latter locality.

69. *Phimochirus roseus* (Benedict, 1892)
Magdalena Bay, west coast of Baja California Sur, and from San Pedro Martir Island and Cholla Bay, Sonora, Gulf of California, Mexico, to Costa Rica (HAIG *et al.*, 1970 ; SNYDER-CONN, 1980 ; HAIG *in lit.*).

70. *Phimochirus venustus* (Bouvier, 1898)
Known from Magadalena Bay (Hughes Point), west coast of Baja California Sur, the Bay of La Paz, Baja California Sur, Gulf of California, Mexico and off Ecuador (HAIG *et al.*, 1970 ; SNYDER-CONN, 1980).

71. *Pylopaguropsis teevana* (Boone, 1931)
Gorgona Island, Colombia, to La Plata, Ecuador ; Galapagos Islands (MCLAUGHLIN & HAIG, 1989).

72. *Pylopagurus longicarpus* Walton, 1954
Off Consag Rock to Angel de la Guarda Island, Baja California and off Tepoca Cape, Sonora, Gulf of California (WALTON, 1954 ; HENDRICKX unp. data).

73. *Rhodochirus hirtimanus* (Faxon, 1893)
Arena Bank and Pulmo Cape, Baja California Sur, Gulf of California, Mexico ; Mancora Bank (03°26'S-81°02'W), Peru ; Coco and Galapagos Islands (FAXON, 1893 ; GLASSELL, 1937 ; del SOLAR, 1972 ; MCLAUGHLIN, 1981b ; KAMEYA, 1998).

74. *Spiropagurus occidentalis* Faxon, 1893
Arena Bank and Santa Ines Bay (GLASSELL, 1937).

75. *Tomopagurus maclaughlinae* Haig, 1976
Galapagos Islands (HAIG, 1976).

76. *Tomopagurus merimaculosus* (Glassell, 1937)
From Arena Bank and Pulmo Reef, Baja California Sur, Gulf of California, Mexico, to Buenaventura, Colombia (GLASSELL, 1937 ; MCLAUGHLIN, 1981a and pers. comm.).

77. *Tomopagurus purpuratus* (Benedict, 1892)
From Puerto Refugio, Baja California and Arena Bank, Baja California Sur, Gulf of California, Mexico, to Colombia ; Revillagigedo and Galapagos Islands (GLASSELL, 1938a ; MCLAUGHLIN, 1981a ; Haig, unp. data).
SYNONYM : *Pagurus bunomanus* Glassell, 1937.

78. *Xylopagurus cancellarius* Walton, 1950
Know from Puerto Utria, Colombia and Costa Rica (WALTON, 1950 ; LEMAITRE, 1995).

PARAPAGURIDAE Smith, 1882

79. *Oncopagurus haigae* (de Saint Laurent, 1972)
Gulf of California, Mexico, to the Gulf of Panama (de SAINT LAURENT, 1972 ; WICKSTEN, 1989 ; LEMAITRE, 1996).

80. *Parapagurus benedicti* de Saint Laurent, 1972
From Alaska, USA, to the Gulf of Panama and off Juan Fernandez Islands, Chile (WICKSTEN, 1989 ; LEMAITRE, 1989).
SYNONYM : *Parapagurus pilosimanus benedicti* de Saint Laurent, 1972.

81. *Parapagurus holthuisi* Lemaitre, 1989
From California and Gulf of California to Valparaiso, Chile; Galapagos (de SAINT LAURENT, 1972 as *P. pilosimanus abyssorum* Henderson; LEMAITRE, 1989). **I-WP**
SYNONYM: *Parapagurus pilosimanus abyssorum* Henderson, 1888; *Parapagurus abyssorum* Henderson, 1888.

82. *Parapagurus microps* de Saint Laurent, 1972
Known only from off the Galapagos Islands (de SAINT LAURENT, 1972).

83. *Probeebei mirabilis* Boone, 1926
Costa Rica to Peru; Coco Island (WOLFF, 1961; WICKSTEN, 1989).

LITHODIDAE Samouelle, 1819

84. *Glyptolithodes cristatipes* (Faxon, 1893)
Off Palo Alto, California, USA, to off Valparaiso (19°45'S), Chile (WICKSTEN, 1982, 1989; RETAMAL, 1993).

85. *Hapalogaster cavicauda* Stimpson, 1862
From Cape Mendocino (4°25'N), California, USA, to San Jeronimo Island, west coast of Baja California; Guaymas, Sonora, Gulf of California, Mexico (SCHMITT, 1921; BRUSCA & HAIG, 1972).

86. *Lithodes panamensis* Faxon, 1893
Off Panama to Peru (WICKSTEN, 1989); unconfirmed record off San Lucas Cape, Baja California Sur, Mexico (LUKE, 1977: 25).

87. *Neolithodes diomedeae* (Benedict, 1894)
Reported by PARKER (1964) at 23°39'N in the Gulf of California, and to Chonos Archipelago (ca. 45°S) by MACPHERSON (1988). LUKE (1977) cited several captures of this species, including a record in the Guaymas Basin (ca. 27°23'N-111°19.5'W) and off the coast of California (Piedras Blancas Point, ca. 35°24.4'N-121°42.8'W). **W-ATL**

88. *Paralomis aspera* Faxon, 1893
Off Mariato Point (07°06.15'N-80°34'W), Panama, to northern Peru (03°48'S-81°20'W) (WICKSTEN, 1989; HAIG, 1974).

89. *Paralomis longipes* Faxon, 1893
From Colombia (ca. 05°26'N) and Peru (03°48'S-81°20'W) to Iquique, Chile (18°25'S-70°40'W); Coco Island (HAIG, 1974; WICKSTEN, 1989; MORÁN & DITTEL, 1993; RETAMAL, 1993).

90. *Paralomis multispina* (Benedict, 1894)
From Alaska to San Diego, California, USA (WICKSTEN, 1989). According to LUKE (1977), this species has also been found off Conception Island (26°50'N-111°55'W) and off Carmen Island (25°56.6'N-110°37.5'W), Gulf of California, and off Guadalupe Island, off the west coast of Baja California, Mexico.

91. *Paralomis papillata* (Benedict, 1895)
Off Baja California, Mexico, to Peru (06°31'S-81°01'W) (HAIG, 1974; WICKSTEN, 1989).

92. *Paralomis verrilli* (Benedict, 1894)
From Sea of Okhostk to Cortez Bank, California (WICKSTEN, 1989). According to LUKE (1977) this species also occurs in the Gulf of California (Guaymas Basin and at 27°22.4'N-111°20.5'W), and off San Benito Island, west coast of Baja California, Mexico.

CHIROSTYLIDAE Ortmann, 1892

93. *Chirostylus defensus* (Benedict, 1902)
Off Galapagos Islands (WICKSTEN, 1989).

94. *Uroptychus bellus* Faxon, 1893
Off Mariato Point, Panama (FAXON, 1893).

95. *Uroptychus granulatus* Benedict, 1902
Off Galapagos Islands (WICKSTEN, 1989).

96. *Uroptychus nitidus occidentalis* Faxon, 1893
Gulf of Panama, Panama (FAXON, 1893).

97. *Uroptychus pubescens* Faxon, 1893
Off Mariato Point, Panama, and off Peru (07°48'S-80°32'W) (del SOLAR, 1972; KAMEYA *et al.*, 1998).

GALATHEIDAE Samouelle, 1819

98. *Janetogalathea californiensis* (Benedict, 1902)
Monterey Bay, California, USA to off Cedros Island, Baja California, Mexico; San Lorenzo Island, Baja California Sur, and San Pedro Nolasco Islands, Sonora, Gulf of California (WICKSTEN, 1987; BABA & WICKSTEN, 1997).

99. *Munida debilis* Benedict, 1902
Gorda Bank, Cabo San Lucas, Baja California Sur and Tres Marias Islands, Gulf of California, Mexico (BENEDICT, 1902; HENDRICKX unp. data).

100. *Munida gracilipes* Faxon, 1893
Gulf of Panama, Panama, to off Colombia (LEMAITRE & ALVAREZ-LEÓN, 1992).

101. *Munida hispida* Benedict, 1902
Monterey Bay, California, USA to off Magdalena Bay, west coast of Baja California Sur; Galapagos Islands (WICKSTEN, 1987).

102. *Munida mexicana* Benedict, 1902
From off San Miguel Cape, Baja California and Tepoca Bay, Sonora, to Gorda Bank, Baja California Sur and off Piaxtla Point, Sinaloa, Gulf of California, Mexico; Bay of Panama (« Albatross » St. 2794); Galapagos Islands (BENEDICT, 1902; HENDRICKX unp. data).

103. *Munida ?microphthalma* A. Milne Edwards, 1880
Off Coco Island (BENEDICT, 1902; WICKSTEN, 1989). **W-ATL**
NOTE: This doubtful East Pacific record is based on an incomplete specimen (FAXON, 1893).

104. *Munida obesa* Faxon, 1893
Gulf of Panama to Colombia (LEMAITRE & ALVAREZ-LEÓN, 1992).

105. *Munida perlata* Benedict, 1902
Southern Gulf of California (23°58.4'N-108°59.5'W), Mexico; Galapagos Islands (LUKE, 1977; WICKSTEN, 1989).

106. *Munida propinqua* Faxon, 1893
Gulf of Panama to Quintero, off Chile; off Galapagos Islands (GARTH & HAIG, 1971; RETAMAL, 1993).

107. *Munida refulgens* Faxon, 1893
Off Gorda Bank, Baja California Sur and off Tres Marias Islands, Gulf of California, Mexico, to off the coast of Ecuador (03°58.3'N-81°36'W); off Coco and Malpelo Islands (BENEDICT, 1902; LUKE, 1977; WICKSTEN, 1989).

108. *Munida tenella* Benedict, 1902
Throughout the Gulf of California, south to Santa Maria Bay, Sinaloa, Mexico (HENDRICKX unp. data).

109. *Munidopsis agassizii* Faxon, 1893
Gulf of Panama to Tumbes, Peru (del SOLAR *et al.*, 1970).

110. *Munidopsis albatrossae* Pequegnat & Pequegnat, 1973
Off Costa Rica (MORAN & DITTEL 1993).

111. *Munidopsis alvisca* Williams, 1988
From Guaymas Basin, Gulf of California, Mexico, to Explorer Ridge (49°45.6'N-130°16.16'W) (WILLIAMS, 1988).

112. *Munidopsis antoni* (A. Milne Edwards, 1884)
Off Baja California, Mexico, to Peru; Juan Fernandez Islands (WICKSTEN, 1989). **COSMO**

113. *Munidopsis aspera* (Henderson, 1885)
Off California, USA, to Strait of Magellan, Chile (WICKSTEN, 1989).

114. *Munidopsis bairdii* (Smith, 1884)
Oregon, USA, to Panama (WICKSTEN, 1989). **COSMO**

115. *Munidopsis carinipes* Faxon, 1893
Off Mariato Point, Panama (FAXON, 1893).

116. *Munidopsis ciliata* Wood-Mason, 1891
Oregon, USA, to off Panama (5°43'N-85°50'W) (BENEDICT, 1902; WICKSTEN, 1989). **I-WPAC**
SYNONYM: *Munidopsis brevimana* Henderson, 1885.

117. *Munidopsis crinita* Faxon, 1893
Gulf of Panama, Panama (FAXON, 1893).

118. *Munidopsis depressa* Faxon, 1893
Off Santa Catalina Island, California, USA, and off Ahome Point (25°45.2'N-109°06'W), to off Tres Marias Island, Gulf of California, Mexico (WICKSTEN, 1989; HENDRICKX, 1996).

119. *Munidopsis diomedeae* (Faxon, 1893)
Off San Clemente Island (32°54.5'N-118°55'W), California, and from Blind Spot (27°23'N-111°31.7'W) and 27°34'N-110°53'W, Gulf of California, Mexico, to off Arica, Chile (HAIG & WICKSTEN, 1975; LUKE, 1977; WICKSTEN, 1989).

120. *Munidopsis hamata* Faxon, 1893
Off Baja California (24°59'N-113°14'N), Mexico, Gulf of Panama, Panama and off Peru (LUKE, 1977; WICKSTEN, 1989; KAMEYA *et al.*, 1998).

121. *Munidopsis hendersoniana* Faxon, 1893
Gulf of Panama, Panama (7°15'N-79°36'W) (FAXON, 1895).

122. *Munidopsis hystrix* Faxon, 1893
From Anacapa Island, California, USA, and off San Ignacio Bay, Gulf of California, to off Peru (11°50'S-77°58'W) (GARTH & HAIG, 1971; HENDRICKX, 1996).

123. *Munidopsis inermis* Faxon, 1893
Off Mariato Point, Panama (FAXON, 1895).

124. *Munidopsis latirostris* (Henderson, 1895)
Off Oregon, USA, to off Panama (WICKSTEN, 1989).

125. *Munidopsis margarita* Faxon, 1893
Off Galapagos Islands (FAXON, 1895).

126. *Munidopsis ornata* Faxon, 1893
Off Galapagos Islands (FAXON, 1895).

127. *Munidopsis quadrata* Faxon, 1893
Canada to Tres Marias Islands, Gulf of California, Mexico (WICKSTEN, 1989).

128. *Munidopsis rostrata* (A. Milne Edwards, 1880)
From off Acapulco, Guerrero, Mexico; Galapagos Islands (BENEDICT, 1902; WICKSTEN, 1989). **ATL**

129. *Munidopsis scabra* Faxon, 1893
Oregon, USA, and Tres Marias Islands, Mexico, to off Peru (11°50'S-77°58'W) (HAIG & WICKSTEN, 1975; WICKSTEN, 1989).

130. *Munidopsis sericea* Faxon, 1893
Known only from the Gulf of Panama (7°21'N-79°35'W), Panama (FAXON, 1895).

131. *Munidopsis subsquamosa* Henderson, 1885
Oregon, USA, to Chile; off Galapagos Islands (BENEDICT, 1902; WICKSTEN, 1989). **N-PAC (Japan)**

132. *Munidopsis tanneri* Faxon, 1893
Known only from the Gulf of Panama (7°32'N-78°36'30" W and 7°33'N-78°34'20"W), Panama (FAXON, 1895).

133. *Munidospis verrucosus* Khodkina, 1973
Oregon, USA, to Antofagasta, Chile (WICKSTEN, 1989).

134. *Munidopsis vicina* Faxon, 1893
Gulf of Panama (6°17'N-82°5'W and 6°21'N-80°41'W), Panama; off Coco Island (WICKSTEN, 1989).

135. *Munidopsis villosa* Faxon, 1893
Gulf of Panama (7°21'N-79°35'W), Panama, and off Arica, Chile (BENEDICT, 1902; WICKSTEN, 1989).

136. *Pleuroncodes monodon* (H. Milne Edwards, 1837)
Gulf of Tehuantepec, Mexico; Peru to Chile (LONGHURST, 1967; BIANCHI, 1991).
NOTE: According to LONGHURST (1967), a pelagic form of *P. monodon* is not known from the Peru Current area; at that time, the benthic phase had been recorded as far north as a locality off Central America. LONGHURST & SEIBERT (1971) later confirmed the presence of *P. monodon* off El Salvador and Costa Rica.

137. *Pleuroncodes planipes* Stimpson, 1860
From San Francisco, California, USA, and throughout the Gulf of California north to Tiburon Island, Sonora, Mexico to Central America (LONGHURST, 1967; MATHEWS *et al.*, 1974; HENDRICKX, 1993b).
NOTE: The southern distribution limit of this species is imprecisely known. Distribution ranges of *P. monodon* and *P. planipes* would indicate that both species might locally co-occur in part of their range but so far there are no field data to support this hypothesis.

PORCELLANIDAE Haworth, 1825

138. *Clastotoechus diffractus* (Haig, 1957)
From Cabo San Lucas Baja California and Acapulco, Mexico (HAIG, 1960; HARVEY, 1999).
NOTE: This rare species has been the source of some confusion in the literature. The specimens referred to by GORE & ABELE (1976) as *C. diffractus* from Panama are actually *C. gorgonensis* Werding & Haig, 1983; those discussed by BIRKELAND *et al.* (1975) from Malpelo Island and by GORE (1982) from Jalisco, Mexico represent two different, new species (HARVEY, in press).

139. *Clastotoechus gorgonensis* Werding & Haig, 1983
Known from Panama and Gorgona Island (WERDING & HAIG, 1983).

140. *Euceramus panatelus* Glassell, 1938
From Mazatlan, Sinaloa, Gulf of California, Mexico, to La Libertad, Ecuador (HAIG, 1960; HENDRICKX *et al.*, 1982a).

141. *Euceramus transverslineatus* (Lockington, 1878)
Magdalena Bay, west coast of Baja California Sur, and from San Felipe to Los Angeles Bay, Baja California and from Puerto Peñasco, Sonora, Gulf of California, Mexico, to Taboga Island, Panama (HAIG, 1960).

142. *Heteroporcellana corbicola* (Haig, 1960)
Known only from off Consag Rock, Gulf of California, Mexico, and Taboguilla Island, Panama (GORE & ABELE, 1976).

143. *Megalobrachium erosum* (Glassell, 1936)
From Malarrimo Point, west coast of Baja California, Percebu Lagoon, Baja California and Tiburon Island, Sonora, Gulf of California, Mexico, to the Bay of Panama (HAIG, 1960; GORE & ABELE, 1976; ROMERO & CARVACHO, 1987).

144. *Megalobrachium festai* (Nobili, 1901)
Piaxtla Point, Sinaloa, Gulf of California, Mexico, to Santa Elena Bay, Ecuador (HAIG, 1960; HENDRICKX & VAN DER HEIDEN, 1984).

145. *Megalobrachium garthi* Haig, 1957
From Puerto Escondido, Baja California Sur and Tiburon Island, Gulf of California, Mexico, to Puerto Utria, Colombia (HAIG, 1960, 1968).
SYNONYM: *Pachycheles rotundus* Milne Edwards & Bouvier, 1894.

146. *Megalobrachium pacificum* Gore & Abele, 1973
Salinas Bay, Costa Rica, to Honda Bay, Panama (GORE & ABELE, 1973).

147. *Megalobrachium sinuimanus* (Lockington, 1878)
Puerto Refugio, Baja California to Arena Bank, Baja California Sur and Puerto Lobos, Sonora to Mita Point, Nayarit, Gulf of California, Mexico (HAIG, 1960; VÁZQUEZ-CUREÑO, 1985).

148. *Megalobrachium smithi* (Glassell, 1936)
Percebu Lagoon, Baja California and Peñasco Point, Sonora, Gulf of California, Mexico, to Perlas Island, Panama (HAIG, 1960; ROMERO & CARVACHO, 1987).

149. *Megalobrachium tuberculipes* (Lockington, 1878)
From Santa Maria Bay, west coast of Baja California Sur, and San Felipe, Baja California and Cholla Bay, Sonora, Gulf of California, Mexico, to Santa Elena Bay, Ecuador (HAIG, 1960, 1968; GORE, 1982).

150. *Minyocerus kirki* Glassell, 1938
Known from San Felipe, Baja California and from Peñasco Point to Tepoca Bay, Sonora, Gulf of California; also from Gulf of Fonseca, Nicaragua (HAIG, 1960, 1968).

151. *Neopisosoma bicapillatum* Haig, 1960
Puerto Utria, Colombia, to La Libertad, Ecuador; Galapagos Islands (HAIG, 1960).

152. *Neopisosoma dohenyi* Haig, 1960
From Cabo San Lucas, Baja California Sur and Mazatlan, Sinaloa, Gulf of California, Mexico to Gorgona Island, Colombia (HAIG, 1960; WERDING & HAIG, 1982).

153. *Neopisosoma mexicanum* (Streets, 1871)
Piaxtla Point, Sinaloa, Gulf of California, Mexico, to Santa Elena Point, Ecuador; Galapagos Islands (HAIG, 1960; HENDRICKX, unp. data).

154. *Orthochela pumila* Glassell, 1936
From San Hipolito Bay, west coast of Baja California Sur, Mazatlan, Sinaloa, Gulf of California, Mexico, to Caraquez Bay, Ecuador (HAIG, 1960; HAIG *et al.*, 1970).

155. *Pachycheles biocellatus* (Lockington, 1878)
From Espiritu Santo Island, Baja California Sur and Isabel Island, Nayarit, Gulf of Californa, Mexico, to La Plata Island, Ecuador; Revillagigedo, Clipperton, Malpelo and Galapagos Islands (HAIG, 1960; CHACE, 1962; BIRKELAND *et al.*, 1975).
SYNONYMS: *Petrolisthes gibbosicarpus* Lockington, 1878; *Petrolisthes aphrodita* Boone, 1932.

156. *Pachycheles calculosus* Haig, 1960
From Cholla Bay, Sonora, Gulf of California, Mexico, to La Libertad, Ecuador (HAIG, 1960; GORE, 1982).

157. *Pachycheles chacei* Haig, 1956
San Jose, Guatemala, to Santa Helena Bay, Ecuador (HAIG 1960). **W-ATL**

158. *Pachycheles crassus* (A. Milne Edwards, 1869)
Guerrero, Mexico, to Balboa, Panama; Gorgona Island, Colombia (HAIG, 1960; GORE, 1982).

159. *Pachycheles marcortezensis* Glassell, 1936
From Magdalena Bay, west coast of Baja California Sur, Angel de la Guarda Island, Baja California to Arena Bank, Baja California Sur and Tiburon Island to Guaymas, Sonora, Gulf of California, Mexico (HAIG, 1960; HAIG *et al.*, 1970).

160. *Pachycheles monilifer* (Dana, 1852)
La Libertad, Ecuador (HAIG, 1960). **W-ATL**

161. *Pachycheles panamensis* Faxon, 1893
From Santa Maria Bay, west coast of Baja California Sur, Tiburon Island, Sonora and Pulmo Cape, Baja California Sur, Gulf of California, Mexico, to Santa Elena Bay, Ecuador (HAIG, 1960; 1968; HAIG *et al.*, 1970).
SYNONYM: *Pachycheles sonorensis* Glassell, 1936.

162. *Pachycheles setimanus* (Lockington, 1878)
From San Felipe, Baja California to Pulmo Cape, Baja California Sur and Puerto Peñasco, Sonora to Mazatlan, Sinaloa, Mexico (HAIG, 1960; VOGEL, 1966; VILLALOBOS *et al.*, 1989).

163. *Pachycheles spinidactylus* Haig, 1957
From Magdalena Bay, west coast of Baja California Sur, San Lucas Cape, Baja California Sur and Mazatlan, Sinaloa, Gulf of California, Mexico, to Puerto Utria, Colombia (HAIG, 1960; HENDRICKX, unp. data).

164. *Pachycheles subsetosus* Haig, 1960
El Salvador to Puntarenas, Costa Rica (MORÁN, 1984).

165. *Pachycheles trichotus* Haig, 1960
Acajutla, El Salvador, to Panama City, Panama (HAIG, 1960).

166. *Pachycheles velerae* Haig, 1960
Off Bindloe, Galapagos and Coco Islands (HAIG, 1960; HARVEY, 1998).

167. *Pachycheles vicarius* Nobili, 1901
Acajutla, El Salvador, to Santa Elena Bay, Ecuador (HAIG, 1960).

168. *Petrolisthes agassizii* Faxon, 1893
From Piaxtla Point, Sinaloa, Gulf of California, Mexico, to Gorgona Island, Colombia (HAIG, 1960; WERDING & HAIG, 1982; HENDRICKX unp. data).

169. *Petrolisthes artifrons* Haig, 1960
El Salvador to Santa Elena Point, Ecuador (MORÁN, 1984).

170. *Petrolisthes armatus* (Gibbes, 1850)
From San Felipe, Baja California and Puerto Peñasco, Sonora, Gulf of California, Mexico, to Independencia Bay, Peru; Galapagos Islands (HAIG, 1960). **ATL**

171. *Petrolisthes brachycarpus* Sivertsen, 1933
Bahia Honda, Panama; Galapagos Islands (HAIG, 1960).
SYNONYM: *Petrolisthes gracilis* var. *brachycarpus* Sivertsen, 1933.

172. *Petrolisthes crenulatus* Lockington, 1878
From Magdalena Bay, west coast of Baja California Sur, and throughout the Gulf of California, Mexico, to Mita Point and Tres Marias Islands (HAIG, 1960; VILLALOBOS *et al.*, 1989; HENDRICKX, unp. data).

173. *Petrolisthes cocoensis* Haig, 1960
Coco Island, Costa Rica (HAIG, 1960).

174. *Petrolisthes edwardsii* (de Saussure, 1853)
From Santa Maria Bay, west coast of Baja California Sur, Percebu Lagoon, Baja California and Puerto Peñasco, Sonora, Gulf of California, Mexico, to La Plata Island, Ecuador; Revillagigedo, Coco and Galapagos Islands (HAIG, 1960; BRUSCA & HAIG, 1972; ROMERO & CARVACHO, 1987).

175. *Petrolisthes galapagensis* Haig, 1960
Estanque Island (Angel de la Guarda), Baja California, Gulf of California, Mexico, and Gulf of Nicoya, Costa Rica; Galapagos Islands (HAIG, 1960; GORE, 1982; VILLALOBOS *et al.*, 1989).

176. *Petrolisthes galathinus* (Bosc, 1802)
El Salvador to off La Libertad, Ecuador (MORÁN, 1984). **W-ATL**
SYNONYM: *Petrolisthes occidentalis* Stimpson, 1858

177. *Petrolisthes glasselli* Haig, 1957
From San Lucas Cape, Baja California Sur and Isabel Island, Nayarit, Gulf of California, Mexico, to Gorgona Island, Colombia; Revillagigedo, Clipperton, Malpelo and Galapagos Islands (HAIG, 1960; CHACE, 1962; WERDING & HAIG, 1982).

178. *Petrolisthes gracilis* Stimpson, 1859
From Magdalena Bay, west coast of Baja California Sur, and throughout the Gulf of California, to Tangola-Tangola Bay, Oaxaca, Mexico (HAIG, 1960).

179. *Petrolithes haigae* Chace, 1962
From San Francisquito Island and Guaymas, Sonora, Gulf of California, Mexico, to Santa Elena Bay, Ecuador; Revillagigedo, Clipperton, Malpelo and Galapagos Islands (HAIG, 1960; CHACE, 1962).

180. *Petrolisthes hians* Nobili, 1901
From Tosca Point, west coast of Baja California Sur, Pulmo Cape, Baja California Sur and Guaymas, Sonora, Gulf of California, Mexico, to Santa Elena Bay, Ecuador; Revillagigedo Islands (HAIG, 1960; HAIG *et al.*, 1970).
SYNONYM: *Petrolisthes flagraciliata* Glassell, 1937.

181. *Petrolisthes hirtipes* Lockington, 1878
From Magdalena Bay, west coast of Baja California Sur, and throughout the Gulf of California, Mexico, south to Guaymas, Sonora (HAIG, 1960; VOGEL, 1966).

182. *Petrolisthes hirtispinosus* Lockington, 1878
From Angel de la Guarda Island, Baja California to San Lucas Cape, Baja California Sur and Puerto Peñasco, Sonora to Mazatlan, Sinaloa, Gulf of California, Mexico (HAIG, 1960; HENDRICKX *et al.*, 1982b; VILLALOBOS *et al.*, 1989).

183. *Petrolisthes holotrichus* Nobili, 1901
La Union, El Salvador, to La Libertad, Ecuador (GORE, 1982).

184. *Petrolisthes lewisi* (Glassell, 1936)
From del Carmen Island, Baja California Sur and Tiburon Island, Sonora, Gulf of California, Mexico, to Santa Elena Point, Ecuador (VILLALOBOS *et al.*, 1989; HENDRICKX, 1993c).

SYNONYMS : *Petrolisthes lewisis lewisis* (Glassell, 1936) ; *Petrolisthes lewisis austrinus* Haig, 1960.

185. *Petrolisthes lindae* Gore & Abele, 1973
From Teacapan, Sinaloa, Mexico to Panama Canal Zone, Panama (GORE & ABELE, 1973 ; HENDRICKX unp. data).

186. *Petrolisthes nigrunguiculatus* Glassell, 1936
From Angel de la Guarda Island, Baja California to San Lucas Cape, Baja California Sur and Puerto San Carlos, Sonora, Gulf of California, Mexico ; a single record at Puerto Utria, Colombia (HAIG, 1960).
NOTE : According to HAIG (1960 : 64), the single record of *Petrolisthes nigrunguiculatus* from Puerto Utria, Colombia « should be accepted with caution » ; indeed, this otherwise relatively common species has not been reported south of the Gulf of California since the Colombian specimen, a male, was caught in 1935.

187. *Petrolisthes nobilii* Haig, 1960
From Cabeza Ballena Point, west coast of Baja California Sur, and Piaxtla Point, Sinaloa, Gulf of California, Mexico, to Santa Elena Bay, Ecuador (HAIG, 1960 ; HENDRICKX unp. data).

188. *Petrolisthes ortmanni* Nobili, 1901
From Agua Verde Bay, Baja California Sur and north point of Tiburon Island, Sonora, Gulf of California, Mexico, to Lobos de Afuera Island, Ecuador ; Coco Island (HAIG, 1960 ; VILLALOBOS *et al.*, 1989).

189. *Petrolisthes platymerus* Haig, 1960
Puerto Parker, Costa Rica to Taboguilla Island, Panama (HAIG, 1960 ; ABELE & KIM, 1989).

190. *Petrolisthes polymitus* Glassell, 1937
From Espiritu Santo Island, Baja California Sur and Mazatlan, Sinaloa, Gulf of California, Mexico, to La Libertad, Ecuador ; Galapagos Islands (HAIG, 1960 ; VILLALOBOS *et al.*, 1989).

191. *Petrolistes robsonae* Glassell, 1945
From Urias Estuary, Mazatlan, Sinaloa, Mexico to Guayaquil, Ecuador (HAIG, 1960 ; HENDRICKX unp. data). **W-ATL**

192. *Petrolisthes sanfelipensis* Glassell, 1936
« Pequeña » Point (San Juanico Bay), west coast of Baja California Sur, and throughout the Gulf of California, Mexico, south to Mazatlan, Sinaloa (HAIG, 1960 ; HAIG *et al.*, 1970).

193. *Petrolisthes schmitti* Glassell, 1936
From Percebu Lagoon Baja California to Espiritu Santo Island, Baja California Sur and Puerto Peñasco to Ensenada de San Francisco, Sonora, Gulf of California, Mexico (HAIG, 1960 ; ROMERO & CARVACHO, 1987 ; VILLALOBOS *et al.*, 1989).

194. *Petrolisthes tiburonensis* Glassell, 1936
From San Felipe, Baja California to San Marcos Island, Baja California Sur and Puerto Peñasco to Guaymas, Sonora, Gulf of California, Mexico (HAIG, 1960 ; VILLALOBOS *et al.*, 1989).

195. *Petrolisthes tonsorius* Haig, 1960
From San Lucas Cape, Baja California Sur and Piaxtla Point, Sinaloa, Gulf of California, Mexico, to Santa Elena Point, Ecuador ; Revillagigedo, Coco, Malpelo and Galapagos Islands (HAIG, 1960 ; WERDING, 1977). **W-ATL**

196. *Petrolisthes tridentatus* Stimpson, 1858
From San Juan del Sur, Nicaragua to Isla Puña, Ecuador (HAIG, 1960 ; WERDING & HAIG, 1982). **W-ATL**

197. *Petrolisthes zacae* Haig, 1968
Costa Rica to Panama (ABELE & KIM, 1989).

198. *Pisidia magdalenensis* (Glassell, 1936)
Santa Maria Bay, west coast of Baja California Sur, and Mazatlan, Sinaloa, Gulf of California, Mexico, to Tumbes, Peru (HAIG, 1960, 1962; HENDRICKX & VAN DER HEIDEN, 1984).

199. *Polyonyx confinis* Haig, 1960
Corinto, Nicaragua, and Panama City, Panama (GORE, 1982).

200. *Polyonyx quadriungulatus* Glassell, 1935
From Santa Rosa Island, California, USA, to San Eugenio Point, west coast of Baja California Sur, from Loreto to El Mogote, Baja California Sur and Puerto Peñasco, Sonora to Mazatlan, Sinaloa, Gulf of California, Mexico (HENDRICKX & VAN DER HEIDEN, 1983; VILLALOBOS *et al.*, 1989).

201. *Polyonyx nitidus* Lockington, 1878
From El Mogote, Baja California Sur and Tepoca Bay, Sonora, Gulf of California, Mexico, to Gorgona Island, Colombia (HAIG, 1960; WERDING & HAIG, 1982).

202. *Porcellana cancrisocialis* Glassell, 1936
San Juanico Bay, west coast of Baja California Sur, and throughout the Gulf of California, Mexico, to Tumbes, Peru (HAIG, 1960, 1968; GORE & ABELE, 1976).

203. *Porcellana hancocki* Glassell, 1938
From Consag Rock, Gulf of California, Mexico, to the Bay of Panama; ? to Chiclayo, Peru (HAIG, 1962; GORE & ABELE, 1976; HENDRICKX, unp. data).

204. *Porcellana paguriconviva* Glassell, 1936
From Magdalena Bay, west coast of Baja California Sur, Percebu Lagoon, Baja California and Cholla Bay, Sonora, Gulf of California, Mexico, to the Bay of Panama (HAIG, 1960, 1968; ROMERO & CARVACHO, 1987).

205. *Ulloaia perpusillia* Glassell, 1938
From Percebu Lagoon, Baja California and Puerto Peñasco, Sonora, Gulf of California, Mexico, to Perlas Islands, Panama (HAIG, 1960; GORE & ABELE, 1976; ROMERO & CARVACHO, 1987).

Note added in proofs

Two new Eastern tropical Pacific species of the porcelain crab genus *Clastotoechus*, Porcellanidae, have been recently described by HARVEY (1999):

206. *Clastotoechus hickmani* Harvey, 1999
Galapagos Islands, and Malpelo Island, Colombia. (Harvey, 1999).

207. *Clastotoechus lasios* Harvey, 1999
Known only from the type locality, Bahia Cuastecomate, Jalisco, Mexico (Harvey, 1999).

ACKNOWLEDGEMENTS

The authors acknowledge the help of many colleagues who provided or corrected information related to the Anomura of the Eastern Pacific. In particular we wish to acknowledge the help of the late Janet HAIG, and of Jacques FOREST, Rafael LEMAITRE, Christopher BOYKO, Patsy MCLAUGHLIN and Albertina KAMEYA. Museum material related to this study was loaned by Raymond MANNING and Rafaek LEMAITRE (Smithsonian Institution, Washington, D.C.) and George E. DAVIS (Los Angeles County Museum of Natural History). A first draft was prepared during a sabbatical stay (MEH) supported by E. MACPHERSON, Instituto de Ciencias del Mar, Barcelona, and the Dirección General de

Investigación Científica y Técnica, Madrid, Spain. Several drafts and the final manuscript were edited by Mercedes CORDERO.

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