

of possible commercial importance off tropical. West Africa. Longhurst (1970:278) stated that Spanish trawlers off Sierra Leone and Senegal fish this species together with a number of others. Longhurst (1970:299) indicated that *Plesionika martia* is landed in Natal (South Africa) in rather small quantities and often not marketed. Crosnier & Jouannic (1973:12) ranged this species among those "éventuellement commercialisables" on the continental slope of Madagascar. Jones (1969:747), Suseelan (1976) and Kurian & Sebastian (1976:95) listed a number of species, among which the present, that might become of economic value off the west coast of India. Longhurst (1970:285) mentioned the possibility of a commercial fishery for this species on the continental slope of N. Sumatra and N.W. Malaysia. In a list of species important in the shrimp fishery in the Inland Sea of Japan near Seto, the present species also occurs (Yasuda, 1957:30). In a pamphlet put out by the New Zealand Marine Department (Anon., 1964:5,9) a number of prawn species is listed as commercial (probably potentially commercial is meant) for New Zealand waters; among these is also *Plesionika martia*.

*Plesionika williamsi* Forest, 1963

PANDL Plesion 9

*Plesionika williamsi* Forest, 1963, Bull.Mus.Hist.Nat.Paris, (2)35:621

FAO Names: Guinea striped shrimp (En), Crevette rayée guinéenne (Fr), Camarón rayado de Guinea (Sp).

Literature: Crosnier & Forest, 1973:211, Fig. 65e.

Distribution: Eastern Atlantic: West Africa, Guinea and Ivory Coast.

Habitat: Depth 300 to 455 m. Bottom mud. Marine.

Size: Maximum total length 166 mm.

Interest to Fishery: Forest (1963:628) suggested, that the species might prove to be of commercial value, because of its abundance, size and quality of the meat.

#### SUPERFAMILY CRANGONOIDEA Hawarth, 1825

Crangonidea Bate, 1888, Rep.Voyage Challenger, (Zool.), 24:480-1

Of the two families in this superfamily only one contains species of commercial interest.

#### FAMILY CRANGONIDAE Haworth, 1825

Crangonidae Haworth, 1825, Philos.Mag.J., 65:184

Among the Crangonidae only a few species are of considerable commercial importance; such species are found in temperate and boreal waters.

*Argis lar* (Owen, 1839)

CRANG Arg 1

*Crangon lar* Owen, 1839, In Beechey, Voyage Blossom, (Zool.), 88

Synonymy: *Crangon (Nectocrangon) lar* - Brandt, 1851.

FAO Names: Kuro shrimp (En), Crevette kuro (Fr), Camarón kuro (Sp).

Local Names: Kuro zako-ebi (Japan).

Literature: M.J. Rathbun, 1904:137, Figs. 74,75.

Distribution: Northern Pacific: Alaska and Bering Sea to Korea and N. Japan. Atlantic records of this species pertain almost certainly to *A. dentata* (Rathbun).

Habitat: Depth 22 to 400 m. Marine.

Size: Maximum total length 109 mm.

Interest to Fishery: Yoshida (1941:29) listed this species among the economically important shrimps of Korea.

*Crangon affinis* De Haan, 1849

CRANG Crang 2

*Crangon affinis* De Haan, 1849, In Von Siebold, Fauna Japonica, Crustacea, (6):183

Synonymy: The taxonomic status of the N.W. Pacific *Crangon* is very unsettled. A thorough revision must decide whether the forms described as *Crangon propinquus* Stimpson, 1860; *Steiracrangon orientalis* var. *longicauda* forma *pacifica* Czerniavsky, 1884; *Crangon crangon affinis* Ortmann, 1895; *Crangon vulgaris shidlovskii* Ostroumoff, 1396; *Crangon hakodatei* M.J.Rathbun, 1902; *Crangon consobrinus* De Man, 1906; *Crangon cassiope* De Man, 1906; *Crangon septemspinosa amurensis* Brashnikov, 1907; *Crangon septemspinosa anivensis* Brashnikov, 1907, are identical with *Crangon affinis*, and even whether or not the latter species is distinct from *Crangon crangon* (L.). For the time being the authors are followed who consider *C. affinis* the only species of the *Crangon crangon* group in the N.W. Pacific.

FAO Names: Japanese sand shrimp (En), Crevette japonaise (Fr), Quisquilla japonesa (Sp).

Local Names: Zako ebi, Ebi zako (Japan).

Distribution: Northwestern Pacific: Siberia; Korea; China; Saghalin; Japan.

Habitat: Depth 0 to 219 m. Marine, sometimes in somewhat brackish water.

Size: Maximum total length 63 mm (♀); maximum carapace length 17 mm.

Interest to Fishery: Liu (1955:58,59,60) listed *Crangon crangon*, *C. cassiope* and *C. affinis* among the shrimps of economic importance in N. China. Harada (1969:82) indicated that the species is fished for by commercial fishermen in the region of Lake Naka-umi on the west coast of Honshu, Japan. Also in the Inland Sea of Japan near Seto *Crangon affinis* is of some importance in the shrimp fishery (Yasuda, 1956:9; 1957:30).

*Crangon alaskensis* Lockington, 1877

CRANG Crang 3

*Crangon alaskensis* Lockington, 1877, Proc.Calif.Acad.Sci., 7:34

Synonymy: *Crago ataskensis* - Shelford, 1935.

FAO Names: Alaska shrimp (En), Crevette alaska (Fr), Quisquilla de Alaska (Sp).

Local Names: Alaska shrimp, Gray shrimp (U.S.A.).

Literature: M.J. Rathbun, 1904:114, Figs. 52,53.

Distribution: Northeastern Pacific: Bering Sea to Washington, U.S.A.

Habitat: Depth 6 to 72 m. Marine.

Size: Maximum total length 77 mm.

Interest to Fishery: According to Flora & Fairbanks (1966:172) this species is "sometimes netted commercially for food" presumably in the Puget Sound area.

*Crangon communis* Rathbun, 1899

CRANG Crang 4

*Crangon communis* M.J. Rathbun, 1899, Fur Seals & Fur Seal Islands, 3:556

Synonymy: *Sclerocrangon communis* - Brashnikov, 1907; *Crango communis* - Schmitt, 1921; *Crangon (Neocrangon) communis* - Zarenkov, 1965.

FAO Names: Gray shrimp (En), Crevette cendrée (Fr), Quisquilla gris (Sp).

Local Names: Gray shrimp (U.S.A.).

Literature: M.J. Rathbun, 1904:123, Fig. 64; Schmitt, 1921:95, Fig. 63.

Distribution: Northeastern Pacific: Bering Sea to S. California, U.S.A.

Habitat: Depth 32 to 555 m. Marine.

Size: Maximum total length 73mm.

Interest to Fishery: Flora & Fairbanks (1966:173) cited this species among the shrimp from Puget Sound area that are of commercial value, be it that it is less important than *C. franciscorum*. Also Ricketts, Calvin & Hedgpeth (1968:286) mentioned "commercially netted *Crango communis* in Puget Sound".

*Crangon crangon* (Linnaeus, 1758)

CRANG Crang 1

*Cancer crangon* Linnaeus, 1758, Syst.Nat., (ed. 10) 1:632

Synonymy: *Astacus crangon* - Müller, 1776; *Crangon vulgaris* Fabricius, 1798; *Crango vulgaris* - Lamarck, 1801; *Crangon rubropunctatus* Risso, 1816; *Crangon maculosa* Rathke, 1837; *Crangon maculatus* Marcusen, 1067; *Crangon maculosa typica* Czerniavsky, 1834; *Crangon maculosa brevirostris* Czerniavsky, 1884; *Crangon maculosa suchumica* Czerniavsky, 1884; *Steiracrangon orientalis* Czerniavsky, 1884 (with var. *longicauda* forma *intermedia* and var. *brevicauda*); *Crangon crangon typicus* Doflein, 1900; *Crangon crangon mediterranea* Brashnikov, 1907.

FAO Names: Common shrimp (En), Crevette grise (Fr), Quisquilla (Sp).

Local Names: Sandreke, Hestereke (Norway), Hestereje, Sandhest (Denmark), Råkhäst, Sandräka (Sweden), Hieta katkarapu (Finland), Nordseegarnele, Nordseekrabbe, Krabbe, Granat, Kraut, Porre, Sanduhl (Germany), Garnaal, Noordzeegarnaal, Garnaat, Garn (Netherlands, Belgium), Shrimp, Common shrimp, Brown shrimp (Great Britain), Crevette grise (France, Belgium), Sauticot (Normandy, France), Bouc (Brittany, France), Cabra, Camarao mouro, Camarao branco (Portugal), Quisquilla (Spain; official name), Gambaro gris (Provence, France), Gambero della sabbia, Gamberetto grigio (Italy; Palombi & Santarelli, 1961:368, indicate many local Italian names for the species), Pieskorovna kozica (Yugoslavia), Cali karidesi (Turkey), Creveta de nisip, Garida de nisip (Romania), Garida (Israel), Bargouth bharr (Tunisia), ОБЪ КНТОВЕНЪ И ШРИМС, ГРАНАТ (U.S.S.R.).

Literature: Tiews, 1970:1 167-1 224, Figs. 1-20.

Distribution: Eastern Atlantic: Baltic, Atlantic coast of Europe from the White Sea to Portugal; Mediterranean; Black Sea; Atlantic coast of Morocco,

Habitat: Shallow coastal waters (0 to 20 m) although there are records of up to 130 m depth. Bottom sand or muddy sand. Marine or slightly brackish.

Size: Maximum total length 89 mm.

Interest to Fishery: The commercial fishery for *Crangon crangon* is carried out along the entire North Sea coasts of Germany, the Netherlands and Belgium, on the east, southeast and northwest coasts of England, and the Atlantic coasts of France especially near the estuaries. In Portugal it is caught with special nets, the so called "mugigangas" (Nobre, 1936, 176). In Morocco it is also fished and sold. Gruvel (1923:84) remarked: "On la rencontre en petit nombre, surtout sur le marché de Casablanca et aussi sur celui de Mogador ... Sa consommation est très réduite" (compared to *Parapenaeus* and *Palaemon longirostris*). Summarizing we can say that in the northeastern Atlantic *Crangon crangon* is caught in far greater quantities than any other crustacean; it is especially important on the North Sea coasts of Germany, the Netherlands, and Belgium, and seems to diminish in economic value farther away from this center.

As far as the Mediterranean is concerned, in Algeria *Crangon crangon* forms the main part of the catches from the shrimping grounds near Nemours and Oran (Ivanov, 1967:56). Although Heldt & Heldt (1954) do not mention the species, Gruvel (1926a:36) and Kouki (1970?:95) treated it among the edible Crustacea of Tunis. Brian (1941:46) stated that the species is sold at the fishmarket of Genoa, Italy, where this shrimp is fished in great quantities. Giordani Soika (1946:27) also indicated that *Crangon crangon* in the Venice area is of considerable commercial importance, being greatly esteemed as food.

Ivanov's (1967:1) statement that the species is fished in Iceland must have been based on incorrect information: Stephenson (1939) did not even list the species among the Decapoda of Iceland.

*Crangon franciscorum* Stimpson, 1856

CRANG Crang 5

*Crangon franciscorum* Stimpson, 1856, Proc.Calif.Acad.Sci., 1:97

Synonymy: *Crago franciscorum* - Scofield, 1919.

FAO Names: California shrimp (En), Crevatte californienne (Fr), Quisquilla californiana (Sp)

Local Names: California shrimp, Bay shrimp, Gray shrimp (U.S.A.).

Literature: M.J. Rathbun, 1904:120, Fig. 61; Schmitt, 1921:92, Fig. 62.

Distribution: Eastern Pacific: Alaska to South California, U.S.A.

Habitat: Depth 5 to 50 m. Bottom sand, mud. Marine.

Size: Maximum total length 80 mm:

Interest to Fishery: R. Rathbun (1884:818) indicated that this "is the Shrimp par excellence of the San Francisco market, where large quantities are sold during nearly every month of the year". "Up to 1954, Bay shrimp [= *C. franciscorum* (mainly), with *C. nigricauda* and *C. nigromaculata*] account for about 75 percent of the total California catch of shrimp" after that time the *Pandalus* catch exceeded the *Crangon* catch (U.S. Bureau of Commercial Fisheries 1958:8). According to McGinitie & McGinitie (1949: 275) "the main fisheries [for this species] are in Puget Sound and San Francisco Bay". Also Flora & Fairbanks (1966:173) indicated this species, together with *C. nigricauda* and *C. communis* as "of commercial value with *C. franciscorum* most important", presumably in the Puget Sound area.

*Crangon nigricauda* Stimpson, 1856

CRANG Crang 6

*Crangon nigricauda* Stimpson, 1856, Proc.Calif.Acad.Sci., 1:89

Synonymy: *Crago nigricauda* - Hilton, 1918; *Crangon (Neocrangon) nigricauda* - Zarenkov, 1965.

FAO Names: Blacktailed shrimp (En), Crevette queue noire (Fr), Quisquilla rabo negro (Sp).

Local Names: Black-tailed shrimp (U.S.A.).

Literature: M.J. Rathbun, 1904:112, Fig. 50; Schmitt, 1921:84, Fig. 56.

Distribution: Eastern Pacific: British Columbia, Canada to Baja California, Mexico.

Habitat: Depth 5 to 50 m: Bottom sand and mud. Marine.

Size: Maximum total length 68 mm.

Interest to Fishery: The species is sold with *Crangon franciscorum*, e.g. at the San Francisco market, but is much less important than that species (U.S. Bureau of Commercial Fisheries, 1958:8), the same seems to be true for the Puget Sound area (Flora & Fairbanks, 1966:173). Ricketts, Calvin & Hedgpeth (1968:286) called this "one of the common market shrimps in California". According to Bonnot (1932:14) in the California shrimp catches the present species is the second in importance, the first being *C. franciscorum*, the third *C. nigromaculata*; sometimes the order of importance between *C. nigricauda* and *C. nigromaculata* is revised.

*Crangon nigromaculata* Lockington, 1877

CRANG Crang 7

*Crangon nigromaculata* Lockington, 1877, Proc.Calif.Acad.Sci., 7:34

Synonymy: *Crago nigromaculatus* - Hilton, 1916; *Crangon (Neocrangon) nigromaculata* - Zarenkav, 1965.

FAO Names: Bay shrimp (En), Crevette baie (Fr), Quisquilla de caleta (Sp).

Local Names: Bay shrimp, Gray shrimp (U.S.A.).

Literature: M.J. Rathbun, 1904:114, Fig. 52; Schmitt, 1921:86, Fig. 57.

Distribution: Eastern Pacific: Northern California, U.S.A. to Baja California, Mexico.

Habitat: Depth 5 to 60 m. Bottom muddy sand or mud. Marine.

Size: Maximum total length 69 mm.

Interest to Fishery: This is, one of the three commercial shrimps of the San Francisco Bay area: *Crangon franciscorum* being by far the most important, *C. nigricauda* is usually the next important and *C. nigromaculata* the third. According to Bonnot (1932:14) in some seasons *C. nigromaculata* is more numerous than *C. nigricauda*.

*Crangon septemspinosa* Say, 1818

CRANG Crang 8

*Crangon septemspinosa* Say, 1818, J.Acad.Nat.Sci.Phila., 1:246

Synonymy: *Crago septemspinus* - M.J. Rathbun, 1905. This species has often been identified with *Crangon crangon* (L.) and its status, like that of *Crangon affinis*, is far from clear. Here *Crangon septemspinosa* is treated as the representative of the *Crangon crangon* group on the American Atlantic coast. A thorough revision of the genus will show the relation between the various forms and also make certain whether or not *C. septemspinosa* does occur in both sides of the northern Pacific as some authors think.

FAO Names: Sand shrimp (En), Crevette sable (Fr), Quisquilla arenera (Sp).

Local Names: Sand shrimp, Common shrimp, Bail shrimp, Gray shrimp (U.S.A.), **Песчань и Шримс** (U.S.S.R.).

Literature: Williams, 1965:89, Fig. 72.

Distribution: Northwestern Atlantic: Baffin Bay to east coast of Florida, U.S.A.

Habitat: Depth 0 to 90 m, rarely to 440 m. Bottom sand. Marine and estuarine.

Size: Maximum total length 50 mm (♂), 70 mm (♀).

Interest to Fishery: According to De Kay (1844:26) in New York it is "being used exclusively for bait". Also Gould (1841:331) stated that in Massachusetts "it is nowhere sufficiently abundant to make it an object to collect it for food". R. Rathbun (1884:817) however, mentioned that "In the neighbourhood of New York and about New Bedford, Mass., it is taken as food. Northward from there it is, so far as we know, only utilized to a slight extent, and for bait only ... from all the information we have been able to obtain, no notice is taken of it south of New York". The U.S. Bureau of Commercial Fisheries (1958:8) indicated that "in New York and New Jersey, where the fishery is almost entirely for bait shrimp, sand shrimp *Crangon vulgaris* and grass shrimp *Palaemonetes vulgaris* and *Palaemonetes carolinus* constitute the entire catch".

*Pontocaris lacazei* (Gourret, 1887)

CRANG Pont 1

*Crangon lacazei* Gourret, 1837, C.R.Hebd:Séances Acad.Sci., Paris, 105:1 033

Synonymy: *Aegeon brendani* Kemp, 1906; *Aegeon lacazei* - Kemp, 1910.

FAO Names : Hardshell shrimp (En), Crevette crâne (Fr), Camarón de casco (Sp).

Literature: Kemp, 1910:156, Pl. 22, Figs. 1-5.

Distribution: Eastern Atlantic: from S.W. Ireland to S. Africa; Western Mediterranean. Indo-West Pacific: also reported from E. Africa and New Zealand.

Habitat: Depth 50 to 684 m. Marine.

Size: Maximum total length 49 mm.

Interest to Fishery: Probably nil. Zariquiey Alvarez (1946:90) indicated that the species is caught "con grandisima frecuencia" by the commercial trawlers off the Catalanian coast of Spain. Specimens do reach the fishmarkets, but usually as trash or as admixtures with other shrimps.

*Pontocaris pennata* Bate, 1888

CRANG Pont 2

*Pontocaris pennata* Bate, 1888, Rep.Voyage Challenger, (Zool.), 24:499

Synonymy: ?*Aegeon affine* Alcock, 1901; *Aegeon pennata* - Balss, 1914; *Aegeon obsoletum* - Balss, 1914.

FAO Names: Feather shrimp (En), Crevette emplumée (Fr), Camarón de pluma (Sp).

Literature: De Man, 1920:294, Pl. 24, Fig. 70.

Distribution: Indo-West Pacific: Red Sea to Japan and the Malay Archipelago.

Habitat: Depth 20 to 900 m. Bottom sandy mud. Marine.

Size: Maximum total length 43 mm.

Interest to Fishery: So far minor. Only Yasuda (1957:30) mentioned it as important in the shrimp fishery of the Inland Sea of Japan near Seto.

*Pontophilus spinosus* (Leach, 1815)

CRANG Pontop 1

*Crangon spinosus* Leach, 1815, Trans.Linn.Soc.Lond., 4:346

Synonymy: *Pontophilus spinosus* - Leach, 1817; *Astacus (Crangon) spinosus* Moore, 1839; *Cheraphilus spinosus* - Kinahan, 1860.

FAO Names: Spiny shrimp (En), Crevette épine (Fr), Camarón espinudo (Sp).

Local Names: Spiny shrimp (Great Britain; White, 1857).

Literature: Kemp, 1910:160,. Pl. 21, Fig. 8.

Distribution: Eastern Atlantic: Iceland and N. Norway south to the Mediterranean.

Habitat: Depth 20 to 1 550 m. Marine.

Size: Maximum total length 52 mm.

Interest to Fishery: Little if at all. Zariquiey Alvarez (1946:91) indicated that it is caught by commercial trawlers off the Catalonian coast of Spain. The species is not sold as such, but may be mixed in with other shrimps. Brian (1941:44, Fig. 11) found a few specimens of this species on the fishmarket of Genoa, Italy, mixed in with *Aristeus* and *Aristaeomorpha*.

*Sclerocrangon salebrosa* (Owen, 1839)

CRANG Sclero 1

*Crangon salebrosus* Owen, 1839, In Beechey, Voyage Blossom, (Zool.), 88

FAO Names: Bering shrimp (En), Crevette bering (Fr), Camarón de Bering (Sp).

Local Names: Шримс - Медвежонок (U.S.S.R.), Kijin ebi (Japan).

Literature: Brashnikov, 1907:91, Pl. 2, Fig. 4; Urita, 1942:34, Fig. 10; Ivanov, 1955:32, Figs. 9,10.

Distribution: Northwestern Pacific: Bering Sea, Okhotsk Sea and northern Japan Sea as far south as Peter the Great Bay.

Habitat: Depth 10 to 250 m. Marine.

Size: Maximum total length 200 mm, seldom to 300 mm.

Interest to Fishery: The species is considered by Ivanov (1955:32-34) and Kobjakova (1955:151) to be potentially of commercial value along the east coast of Siberia. It is interesting to note that the related *Sclerocrangon boreas* in Greenland is considered unfit for consumption because of the dryness of the meat (Jensen, 1928:77).