

prawns of this species are exported in cardboard boxes from Hong Kong all over the world. Tanikawa (1971:245) listed the present species as of commercial importance in Japan where it is mostly dried. The species, however, is also canned in Japan for export. Also Harada (1968:83) indicated that the present species is fished for by commercial fishermen in Lake Naka-umi, Honshu, Japan. Kamita (1954:33) stated that fishermen of Lake Koyama and Lake Tôgô, S.W. Honshu, Japan, catch the species by trawling; the prawns are eaten there cooked or fried. Sollaud (1914:315) indicated that this species is "l'objet d'une pêche active au Tonkin [Viet Nam] et se vend en grande quantité sur les marches d'Hanoi". Aquaculture experiments with this species have been initiated in Japan.

*Macrobrachium ohione* (Smith, 1874)

PALAEM Macro 37

*Palaemon ohionis* Smith, 1874, Rep.U.S.Fish Comm., 2:640

Synonymy: *Palaemon sallei* Kingsley, 1882; *Bithynis ohionis* - Cary & Spaulding, 1909.

FAO Names: Ohio river prawn (En), Bouquet ohio (Fr), Camarón de Ohio (Sp).

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

Literature: Holthuis, 1952:62, Pl. 14.

Distribution: Western Atlantic: U.S.A. (Virginia to Texas, Mississippi basin).

Habitat: Fresh water, part of the early life history probably in brackish or salt water.

Size: Maximum total length 68 mm (♂), 102 mm (♀).

Interest to Fishery: Hedgpeth (1947:183) remarked that at "one time there was a small-scale commercial fishery for this shrimp in Illinois, but that seems, to have been abandoned in recent years", McCormick (1933:218) indicated that *M. ohione* "is a staple market article" in Louisiana, he also discussed the fishery for the species in Illinois. Smith (1874) in the original description stated that in Indiana the species "is taken for food". Experiments for its culture have been started in the U.S.A.

*Macrobrachium olfersii* (Wiegmann, 1836)

PALAEM Macro 38

*Palaemon olfersii* Wiegmann, 1836, Arch.Naturgesch.Berlin, 2(1):150

Synonymy: *Palaemon spinimanus* H. Milne Edwards, 1837; *Palaemon potiporanga* Müller, 1880; *Bithynis olfersii* - M.J. Rathbun, 1902.

FAO Names: Buchura river prawn (En), Bouquet buchura (Fr), Camarón buchura (Sp).

Local Names: Buchura (Venezuela), Aratanha, Camarão aratanha (N.E. Brazil).

Literature: Holthuis, 1952:95, Pls.24,25, Fig. a,b.

Distribution: Western Atlantic:U.S.A. [Florida to Texas) and Mexico to S. Brazil; not in the West Indies,

Habitat: Fresh water, bottom sand and rocks.

Size: Maximum total length 90 mm.

Interest to Fishery: Davant (1963:106) reported that this species is of local economic value in Venezuela, being a "very abundant species in the Manzanares River and the people living in this area catch them with cast-nets or even by hand". In N.E. Brazil it is of considerable local importance and is used fresh or for the preparation of special dishes.

*Macrobrachium patsa* (Coutière, 1899)

PALAEM Macro 39

*Palaemon (Parapalaemon) patsa* Coutière, 1899, Bull.Mus.Hist.Nat.Paris, 5:382

FAO Names: Patsa river prawn (En), Bouquet patsa (Fr), Camarón patsa (Sp).

Local Names : Orana (Madagascar, indig.), Camerón (Madagascar, europ.).

Literature: Coutière, 1901:284, Pl. 11, Fig. 20-22.

Distribution: Indo-West Pacific: Madagascar.

Habitat: Fresh water.

Size: Maximum total length 72 mm.

Interest to Fishery: Louvel (1930:19) listed the species together with others of the same genus as being fished for in Madagascar.

*Macrobrachium pilimanus* (De Man, 1879)

PALAEM Macro 40

*Palaemon pilimanus* De Man, 1879, Notes Leyden Mus., 1:181

Synonymy: *Palaemon (Macrobrachium) pilimanus leptodactylus* De Man, 1892; *Palaemon (Macrobrachium) pygmaeus* J.Roux, 1928; *Palaemon (Macrobrachium) pilimanus malayanus* J. Roux, 1935.

FAO Names: Muff prawn (En), Bouquet manchon (Fr), Camarón manguito (Sp).

Literature: De Man, 1892:471, Pls.27,28, Fig. 44.

Distribution: Indo-West Pacific: Malaya; Sumatra; Java; Borneo.

Habitat: Fresh water.

Size: Maximum total length 59 mm

Interest to Fishery: Longhurst (1970:284) cited this species as of commercial importance in Indonesia. Djajadiredja & Sachlan (1956:370) listed the species as economically important in Sumatra and Java.

*Macrobrachium raridens* (Hilgendorf, 1893)

PALAEM Macro 41

*Palaemon (Eupalaemon) raridens* Hilgendorf, 1893, S.B.Ges.Naturf.Freunde Berlin, 1893:181

Synonymy: *Palaemon (Eupalaemon) paucidens* Hilgendorf, 1893; *Bithynis paucidens* - M.J. Rathbun, 1900.

FAO Names: Volta river prawn (En), Bouquet volta (Fr), Camarón del Volta (Sp).

Local Names: Sanson (Guinea), Ga, Twi, Fante, Nzima, Ewe (Ghana, in various languages).

Distribution: Eastern Atlantic: West Africa from Guinea to Nigeria.

Habitat: Fresh water.

Size: Maximum total length about 150 mm.

Interest to Fishery: Gruvel (1912:16) stated that the species is caught by the natives in Guinea. Irvine (1947:306) mentioned that in Ghana it is caught in fish traps, cooked, eaten whole or peeled and sometimes dried.

*Macrobrachium rosenbergii* (De Man, 1879)

PALAEM Macro 42

*Palaemon rosenbergii* De Man, 1879, Notes Leyden Mus.,1:167

Synonymy: *Palaemon carcinus rosenbergii* - Ortmann, 1891; *Palaemon whitei* Sharp, 1893; *Palaemon (Eupalaemon) rosenbergii* - Nobili, 1899; *Palaemon spinipes* Schenkel, 1902; *Palaemon dacqueti* Sunier, 1925; *Cryphiops (Macrobrachium) rosenbergii* - Johnson, 1966. In older literature the species is often, but incorrectly, indicated with the name *Palaemon carcinus*.

FAO Names: Giant river prawn (En), Bouquet géant (Fr), Camarón gigante (Sp).

Local Names: Giant freshwater shrimp, Giant freshwater prawn (U.S.A.), Golda chingri, Mocha chingri (Calcutta, India; Bangladesh), Bharo chingri (or Bara chingri), Chooan chingri, Mota chingri, Shala chingri (Bangladesh), Udang satang, Udang duri (Java, Indonesia), Udang galah (Malaya, Borneo, Indonesia), Koong yai (Thailand).

Literature: Cowles, 1914:324, Pl. 1, Fig. 1.

Distribution: Indo-West Pacific: N.W. India to Viet Nam, the Philippines, New Guinea and Northern Australia.

Habitat: Fresh and brackish water, sometimes marine.

Size: Maximum total length 320 mm (♂), 250 mm (♀).

Interest to Fishery: Qureshi (1956:362, under *Palaemon carcinus*) listed the species as recorded from commercial catches of prawns brought to the market in Pakistan. Jones (1967:1 1337, Fig. 5) indicated a regular fishery for the species in the following regions of India: Bombay area, Kerala, and the northern half of the coast of the Bay of Bengal; in other areas of the Indian coast the fishery was either "occasional" or "stray", the species also "contributes to a fairly good freezing industry in the Kerala backwaters". Longhurst (1970:281) stated that in S.W. India *M. rosenbergii* is caught in very limited quantities in certain areas only. Raman (1967:649-669) dealt extensively with the fishery and biology of the species on the Kerala coast of India. Kurian & Sebastian (1976: 93) stated that there is an intensive fishery in Kerala, India, during the monsoon and post-monsoon months, but that the harvest has diminished owing to indiscriminate fishing. Ahmad (1957:23, as *Palaemon carcinus*) mentioned that the species "is exploited throughout the year in the estuaries in [Bangladesh] and during the winter months from beels and rivers"; it "is much relished by everybody". In Malaysia and Indonesia the species is economically exploited on a considerable scale (Johnson, 1968:235; Longhurst, 1970:264,265). Djajadiredja & Sachlan (1956:370) indicated it as economically important in the Indonesian islands of Sumatra, Java, Borneo, Celebes and the Lesser Sunda Islands. Figures given for the annual catch of this species in Indonesia are (in metric tons): 4 300 (in 1973), 3 065 (in 1974), 2 516 (in 1975), 2 530 (in 1976). In New Guinea the species is fished for by the population throughout the western part of the island. In Papua it is obtained from the Fly River. In the Philippines Cowles (1914:325 under *Palaemon carcinus*) called it "the most important species from a commercial point of view in the Philippines Islands". Longhurst (1970:289) indicated that there is a small fishery for this species in Thailand.

The great size of this species and its excellent taste ("in my view, shared by many people, it is superior to the best of the penaeid prawns", Johnson, 1966:279), made this species fished for wherever it occurs. Also it has become the subject of intensive efforts to cultivate it. Ling (1969:589-619), in Malaysia was the first to manage to raise the species through complete metamorphosis and showed that it can be successfully cultivated in ponds. Also in other areas of South and East Asia (e.g., India, Sri Lanka, Bangladesh, Birma, Indonesia, Thailand, Cambodia, Viet Nam, Japan, Taiwan, Philippines) experiments on a larger or smaller scale have been started to investigate the possibility of raising this species in ponds for commercial purposes. Similar experiments are under way, in Hawaii, Palau, Tahiti, Australia, Africa (Malawi, Mauritius, Seychelles), in various countries in America (U.S.A., Mexico, Puerto Rico, Honduras, Colombia) and even in England.

*Macrobrachium rude* (Heller, 1862)

PALAEM Macro 43

*Palaemon rudis* Heller, 1862, Verh.Zool.-Bot.Ges.Wien, 12:527

Synonymy: *Palaemon mossambicus* Hilgendorf, 1879; *Palaemon (Eupalaemon) rudis* - Coutière, 1900; *Palaemon (Eupalaemon) alcocki* Nobili, 1903; *Palaemon delagoae* Stebbing, 1915; *Urocaridella borradailei* Stebbing, 1923.

FAO Names: Hairy river prawn (En), Bouquet velu (Fr), Camarón de cerda (Sp).

Local Names: Goda chingri (Bengal, India; Bangladesh), Paitta ichha (Bangladesh).

Literature: Henderson & Matthai, 1910:291, Pl. 17, Fig. 5.

Distribution: Indo-West Pacific: East Africa; Madagascar; India; Bangladesh.

Habitat: Fresh and brackish water.

Size: Maximum total length about 130 mm.

Interest to Fishery: Bailey & Crichton (1971:7) mentioned this species as being of minor commercial value in Tanzania and in Kenya. According to Jones (1967:1 337, Fig. 5) there is a regular fishery for this species in India in the following areas: Bombay region, Kerala, and the northern half of the coast of the Bay of Bengal; elsewhere on the west coast there is a stray fishery. Chopra (1943:4) indicated that the species "is common in Bengal from August to October, when large numbers of egg-bearing females are brought to the markets. In the Chilka Lake this is the commonest *Palaemon* fished in large quantities from September to November". Kurian & Sebastian (1976:93) reported that the species is the subject of a good seasonal fishery in Bengal and Orissa, India. Qureshi (1956:362) and Ahmad (1957:26) mentioned that there is a fishery for this species in Bangladesh. Aquaculture experiments with *M. rude* have been initiated in Thailand (Ling & Costello, 1976:3).

*Macrobrachium scabriculum* (Heller, 1862)

PALAEM Macro 44

*Palaemon scabriculus* Heller, 1862, Verh.Zool.-Bot.Ges.Wien, 12:527

Synonymy: *Palaemon dolichodactylus* Hilgendorf, 1879; *Palaemon (Parapalaemon) scabriculus* - De Man, 1897; *Palaemon (Parapalaema) dolichodactylus* - Hilgendorf, 1898; *Palaemon dubius* Henderson & Matthai, 1910; *Palaemon (Macrobrachium) dolichodactylus* - J. Roux, 1934.

FAO Names: Goda river prawn (En), Bouquet goda (Fr), Camarón goda (Sp).

Local Names: Goda chingri (Bangladesh).

Distribution: Indo-West Pacific: East Africa and Madagascar to India, Sri Lanka, Bangladesh and Sumatra.

Habitat: Fresh and brackish water.

Size: Maximum total length 70 mm (♂), 62 mm (♀).

Interest to Fishery: Bailey & Crichton (1971:7) reported this species as of minor commercial value in Kenya, and probably also in Tanzania. Jones (1967:1 337) and Kurian & Sebastian (1976:94) stated that the species is of minor economical importance in India. Ahmad (1957:21) listed it among the prawns that are fished for in Bangladesh.

*Macrobrachium sintangense* (De Man, 1898)

PALAEM Macro 45

*Palaemon (Eupalaemon) sintangensis* De Man, 1898, Notes Leyden Mus., 20:138

Synonymy: *Palaemon (Eupalaemon) elegans* De Man, 1892; *Bithynis (Eupalaemon) elegans* - M.J. Rathbun, 1910; *Macrobrachium elegans* - Suvatti, 1937.

FAO Names: Sunda river prawn (En), Bouquet Krakatoa (Fr), Camarón Krakatoa (Sp).

Literature: De Man, 1892:440, Pl. 26, Fig. 36.

Distribution: Indo-West Pacific: S. Thailand; Malaya; Indonesia (Sumatra, Java, Borneo).

Habitat: Fresh water.

Size: Maximum total length 66 mm.

Interest to Fishery: Johnson (1968:236) remarked that in Malaysia this species "appears to have potential economic value". Longhurst (1970:285) stated that in Malaysia there is an unrecorded subsistence fishery in freshwater for a number of prawn species, including the present. Djajadiredja & Sachlan (1956:370) reported the present species to be of economic importance in Java.

*Macrobrachium tenellum* (Smith, 1871)

PALAEM Macro 46

*Palaemon tenellus* Smith, 1871, Rep. Peabody Acad. Sci., 1869:98

Synonymy: *Palaemon longipes* Lockington, 1878.

FAO Names: Longarm river prawn (En), Bouquet brasolargue (Fr), Camarón brazolargo (sp).

Local Names: Chacal, Langostino (Mexico), Molla (southern Sinaloa, Mexico), Camarón del río (El Salvador).

Literature: Holthuis, 1952:54, Pls. 10,11, Figs. a,b.

Distribution: Eastern Pacific: Lower California, Mexico to N. Peru.

Habitat: Fresh water, sometimes brackish. Bottom rocks, sand and mud.

Size: Maximum total length 150 mm; maximum carapace length 48 mm.

Interest to Fishery: In Mexico and El Salvador the species is of secondary commercial importance. It is consumed directly, fresh or cooked (Dr. Y.L. Cifuentes, in Litt.). It is fished locally in El Salvador.

*Macrobrachium trompii* (De Man, 1898)

PALAEM Macro 47

*Palaemon* (*Parapalaemon*) *trompii* De Man, 1898, Notes Leyden Mus., 20:144

Synonymy: *Palaemon* (*Parapalaemon*) *thienemanni* J. ROUX, 1898; *Palaemon* (*Parapalaemon*) *trompi armatus* J. Roux, 1936.

FAO Names: Forest river prawn (En), Bouquet forestier (Fr), Camarón guardabosque (Sp).

Literature: Holthuis, 1950:211.

Distribution: Indo-West Pacific: Malay Peninsula; Sumatra; Borneo.

Habitat: Fresh water.

Size: Maximum total length 72 mm.

Interest to Fishery: Longhurst (1970:285) included this species among those for which there are unrecorded subsistence fisheries in fresh water in Malaysia. Johnson (1968:236) stated that the species is abundant in forest streams in Malaysia and is of excellent flavour; but the waters of its natural habitat tend to be unproductive so that it is unlikely that the species will ever be exploited on a large scale.

*Macrobrachium villosimanus* (Tiwari, 1949)

PALAEM Macro 48

*Palaemon villosimanus* Tiwari, 1949, Rec.Indian Mus., 45:329

FAO Names: Dimua river prawn (En), Bouquet dimua (Fr), Camarón dimúa (Sp).

Local Names: Dimua ichha (Bangladesh).

Distribution: Indo-West Pacific: N.E. India; Bangladesh.

Habitat: Fresh water.

Size: Maximum total length 146 mm (♂), 117 mm (♀).

Interest to Fishery: The species is listed by Kurian & Sebastian (1976:94) among the commercial prawns of India, but they state that it is found in small numbers only near Calcutta and Chittagong. Ahmad (1957:22) ranged the species among the prawns fished for in Bangladesh.

*Macrobrachium vollenhovenii* (Herklots, 1857)

PALAEM Macro 49

*Palaemon vollenhovenii* Herklots, 1857, Tijdschr.Entomol., 1:96

Synonymy: *Palaemon jamaicensis africanus* Bouvier, 1895; *Palaemon* (*Bithynis*) *jamaicensis vollenhovenii* - Lönnberg, 1903; *Palaemon* (*Macrobrachium*) *jamaicensis angolensis* De Man, 1904; *Palaemon* (*Parapalaemon*) *vollenhovenii* - De Man, 1912; *Palaemon* (*Macrobrachium*) *jamaicensis herklotsii* De Man, 1912; *Palaemon* (*Macroterocheir*) *jamaicensis herklotsii* - De Man, 1925.

FAO Names: African river prawn (En), Bouquet africain (Fr), Camarón africano (Sp).

Local Names: Sipa sipa (Ouolof language, Senegal), Sanfoui (Soussou language, Guinea), Sanzaket (Appollonia language, Ivory Coast), Abitan (Abouré language, Ivory Coast), Otana (Gabon), Kossa (Congo).

Literature: Schmitt, 1926a:37,65, Pl. 6, Fig. 2, Pl. 7; Holthuis, 1951:150; Miller, 1971:5-11.

Distribution: Eastern Atlantic: West Africa from the Cape Verde Islands and Senegal to S. Angola.

Habitat: Fresh, brackish and sometimes salt water.

Size: Maximum total length 182 mm.

Interest to Fishery: Gruvel (1908:159) reported the fishery for this species in Senegal and later (Gruvel, 1912:14-16), that in French Guinea; Ivory Coast, Gabon and Congo (Zaire). Miller (1971) very extensively dealt with the fishery of this species in Liberia. The large size of the specimens of this species and their excellent taste, make it likely that it is caught throughout its range. But the fishery, due to the fact that the species does not seem to occur in large quantities, probably everywhere is of a local nature.

*Nematopalaemon hastatus* (Aurivillius, 1898)

PALAEM Nemat 2

*Palaemon (Leander) hastatus* Aurivillius, 1898, Bih.K.Sven.Vetenskapsakad.Handl., 24(4) (1):27

FAO Names: Estuarine prawn (En), Bouquet étier (Fr), Camarón estuarino (Sp).

Literature: Holthuis, 1951:142.

Distribution: Eastern Atlantic: West Africa from Senegal to Angola.

Habitat: Depth 1 to 50 m. Bottom sand and mud. Marine and estuarine.

Size: Maximum total length 74 mm.

Interest to Fishery: The species forms the subject of local fisheries, usually with seines (Monod, 1967:136; Longhurst, 1970:278). Bassindale (1961:485) reported it from Ghana as "to be sufficiently abundant in the sub-littoral to be fished and marketed". In Nigeria *N. hastatus* is caught during the rainy season "en quantités parfois importantes", it is "sechée ou fumée et uniquement vendue sur place" (Crosnier & de Bondy, 1967:3). Holthuis (1952b:57) listed specimens from Moanda, Zaire obtained by "pêche indigène". Gruvel (1912:16) when dealing with the occurrence of the species in the mouth of the Congo stated: "ce palaemonide est bien une forme comestible, mais, en fait, il n'est que très rarement utilisé par les rares Européens qui, à l'aide d'engins perfectionnés, peuvent se livrer à sa pêche".

*Nematopalaemon schmitti* (Holthuis, 1950)

PALAEM Nemat 1

*Palaemon schmitti* Holthuis, 1950, Proc.K.Ned.Akad.Wet., 53:97

FAO Names: Whitebelly prawn (En), Bouquet covac (Fr), Camarón cuac (Sp).

Local Names: Fine shrimp, White bellies (Guyana), Wittt bere (Surinam), Crevette couac (French Guyane).

Literature: Holthuis, 1952:169, Pl: 43.

Distribution: Western Atlantic: north coast of S. America from Venezuela to N.E. Brazil.

Habitat: Depth 5 to 75 m. Bottom mud or sand. Marine and estuarine.

Size: Maximum total length 80 mm.