2.3 INFRAORDER **THALASSINIDEA** Latreille, 1831

Thalassinides Latreille, 1831, Coursd'Entomologie:377.

The infraorder contains a single supetfamily Thalassinoidea Latreille, 1831, with 7 families, viz., Axianassidae, Axiidae, Callianassidae, Callianideidae, Laomediidae, Thalassinidae and Upogebiidae with all together more than 350 known species. Of these 7 families only 3 are dealt with here as the other do not have species of which it is known that they are of interest to fisheries. Of these three families, Thalassinidae, Callianassidae and Upogebiidae, perhaps two or three species are used for human consumption, a number of others is used as bait fo: fishing.

2.3.1 **FAMILY THALASSINIDAE** Latreille, 1831 — **THAL**

Thalassinides Latreille, 1831, Cours d'Entomologie:377. Name placed on the Official List of Family Names in Zoology, in Opinion 434 (published in 1956).

Synonyms: Scorpionoidae Haworth, 1825, Philosophical Magazine, London, 65: 184 (not based on an included genus and thus unavailable).

The family consists of a single genus.

Thalassina Latreille, 1806 — **THAL Thal**

Thalassina Latreille, 1806, Genera Crustaceorum et Insectorum; 1:51. Gender feminine. Name placed on the Official List of Generic Names in Zoology by the International Commission on Zoological Nomenclature in their Opinion 434 (published in 1956)

Type species: by monotypy: ***Thalassina scorpionides*** Latreille, 1806 (= junior subjective synonym of ***Cancer* (*Astacus*) *anomalus*** Herbst, 1804).

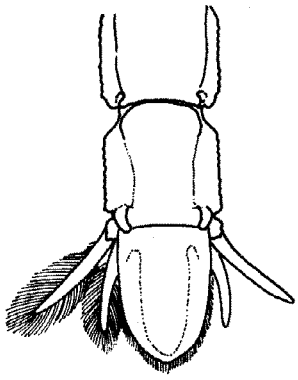
Until recently this genus was generally considered to have a single species, but recent investigations make it likely that more than one have to be recognized. A revision of the taxonomy of ***Thalassina*** is badly needed.

Thalassina anomala (Herbst, 1804) — **Fig. 429** — **THAL Thal 1**

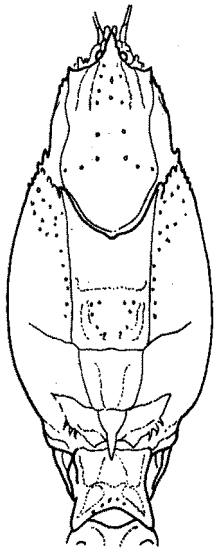
Cancer(Astacus) anomalus Herbst, 1804, Versuch einer Naturgeschichte der Krabben und Krebse, 3(4):45, pl. 62. Name placed on the Official List of Specific Names in Zoology, in Opinion 434 (published in 1956).

Synonyms: ***Thalassina scorpionides*** Latreille, 1806; ***Thalassina scabra*** Leach, 1814; ***Thalassina talpa*** White, 1847 (nom. nud.); ? ***Thalassina gracilis*** Dana, 1852; ***Thalassina chilensis*** Steenstrup & Lütken, 1862; ***Thalassina maxima*** Hess, 1865.

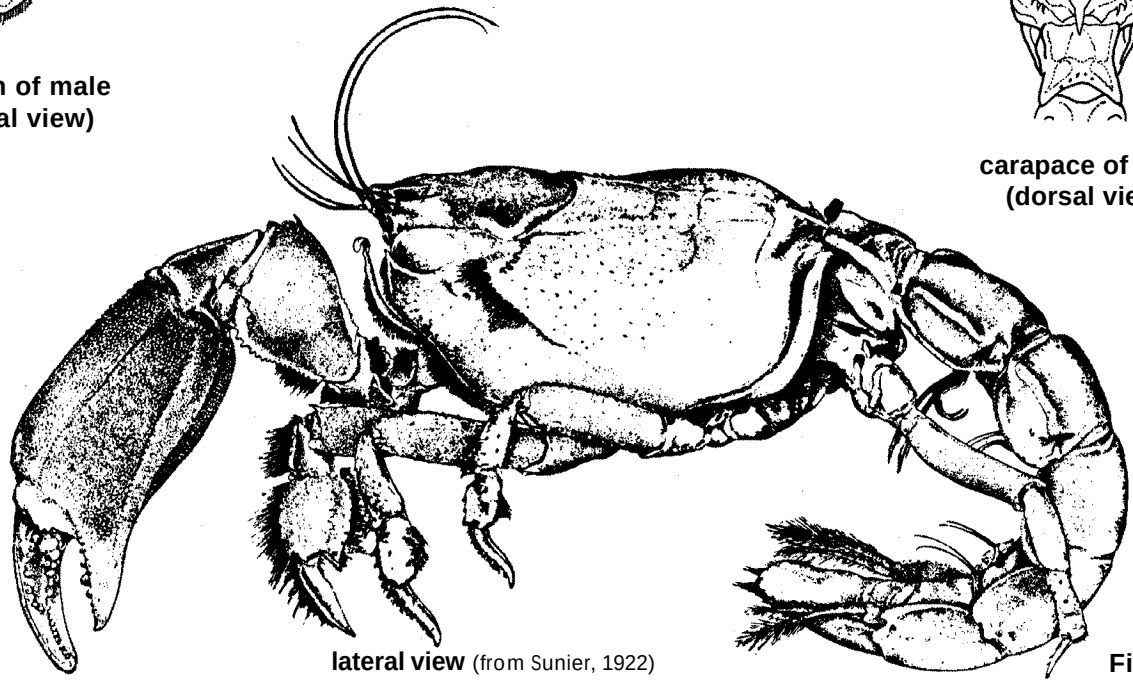
FAO Names : **En** - Scorpion mud lobster.



tail fan of male
(dorsal view)



carapace of male
(dorsal view)



lateral view (from Sunier, 1922)

Fig. 429

Type : Type locality of ***Cancer anomalus***: "Das Vaterland dieses Krebses ist völlig unbekannt"; holotype in ZMB, no. 1256, dry, condition reasonable.

Type locality of ***Thalassina scorpionides*** not indicated in the original description, evidently likewise unknown; type material in MP, now absent.

Type locality of ***T. scabra*** not mentioned either, probably unknown; type material "in the Hunterian Museum", present whereabouts unknown.

Type locality of ***T talpa***: "Philippine Islands"; holotype in BM, no. 43.6 (in alcohol, condition poor)

Type locality of ***T. gracilis***: "from shores of Telegraph Island, near Singapore"; holotype in USNM.

Type locality of ***T. chilensis***: "Mare Chilense"; holotype in MP, no Th 537, in alcohol, condition mediocre. As pointed oui by Holthuis (1952:85-86) the locality label probably is incorrect, as the species since has never been found in Chile.

Type locality of ***T. maxima***: "Sydney", New South Wales, Australia; holotype in SMF, no. ZMG 227, in alcohol, broken, but condition otherwise fair. This locality indication likewise is highly dubious as the species does not occur near Sydney.

Diagnostic Features : The integument of the body is very firm. The carapace is high; in dorsal view it is elongate oval in outline. In adults the carapace measures less than 1/3 of the total body length. The rostrum is narrowly triangular and short; it is depressed and its lateral margins continue for some distance on the carapace as short divergent ridges. The rostrum has no teeth. The carapace ends posteriorly in a distinct posteriorly directed median tooth that overhangs the articulation with the first abdominal somite. The abdomen is long and narrow, more than 5 times as long as wide in the males, about 4 times as long as wide in the females. The somites are of about equal width throughout their length, they have a longitudinal carina over the base of the pleura. The telson is about as long as the previous somite, but slightly narrower, the posterior margin is broadly rounded. The uropods are styliform. The eye are small. The first pair of pereiopods is very strong and asymmetrical, both chelae are subchelate, the larger less conspicuously so than the smaller. The second legs are smaller, also subchelate; the other legs are simple. Epipods are present on the pereiopods. Colour: the whole body is rather uniformly yellowish or reddish brown.

Geographical Distribution : Indo-West Pacific region, from the west coast of India to S. Japan (Ryukyu Islands), Vietnam, the Philippines, indonesia, New Guinea, New Britain Island, N. and N.E. Australia, Fiji, Samoa (Fig. 430).

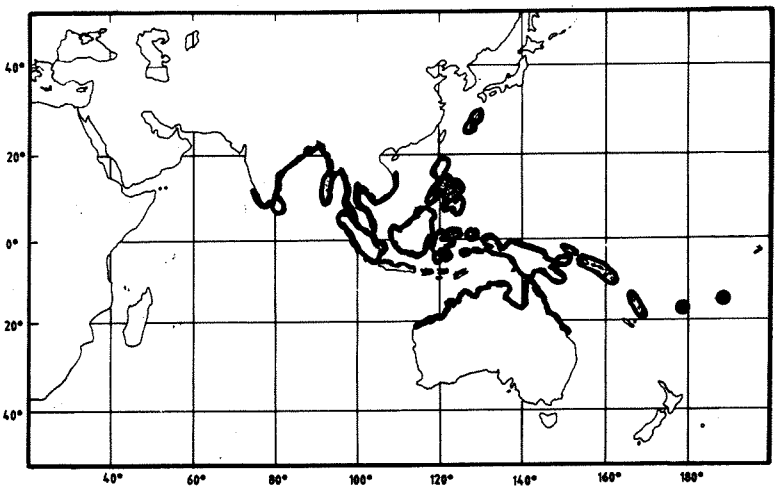


Fig. 430

Habitat and Biology : The species lives in the littoral and supralittoral zones, where it digs its burrows. These can be found in mangrove areas and estuaries. The excavated mud forms a kind of chimney or mound over the openings of the burrows, and because of their height form a most conspicuous feature in the landscape. The chimneys can be 75 cm high, but sometimes several chimneys together can form complex hills of mud up to 1.5 m high. The burrows go down vertically or obliquely to the water level after which they may make zigzags and side branches; the depths of the burrows has been estimated to be up to 2.5 m. The animals are rarely seen out of their burrows, not even at night, but it seems that after heavy rainfall they may venture outside. They are sluggish and are definitely mud feeders, reports that they also are vegetarian have been doubted. Their burrowing activities take usually place during the night.

Size : Usually up to 16 to 20 cm in total body length, although there are records of up to 30 cm.

Interest to Fisheries : Minor. Already Rumphius (1705:6), when dealing with this species from Amboina, Moluccas, Indonesia, remarked on its poor culinary qualities: "Hy heeft weinig ja schier geen vleesch, want het geheele lyf en de staert steeken vol groenachtige modder, en slechts in de scheeren vindmen een weinig wit brokkelig vleesch, van geenen byzonderen smaak.... De Inlanders van Celebes eeten het vleesch van de scheeren, 't welk ik hun willende nadoen, hebbe my niet wel daar op bevonden; dies ik hem voor eenen onnutten Kreeft houde, of hy most in andere Landen beter zyn" (It has little, or almost no meat, as the entire body and the tail are full of a greenish mud, and only in the pincers there is a small amount of white, crumbly meat, without a particular taste. The natives of Celebes eat the meat of the pincers, but when : myself tried this, the meat did not agree with me, therefore : consider this a useless lobster, unless it is of a better quality in other countries). Motoh & Kuronuma (1980:64) remarked that there is no special fishery for this species in the Philippines and that it is only occasionally picked up by fish pond workers. It appears only rarely on the Philippine fish markets. Ward (1943, Army, 2(4):30, fig.) in his paper "New Guinea menu" listed ***Thalassina anomala*** among the edible crustaceans. Tan & Ng (1988:85), remarked that in Singapore the animals are considered edible, but are "not popular locally". On a wall chart, issued recently by the Fisheries Division of the Ministry of Primary Industries of Fiji, the present species figures among the "aquatic foods of Fiji". In Thailand, as I was informed by Prof. Phaibul Naiyanetr of Chulalongkorn University, Bangkok, the species is not eaten but used as medicine against asthma; it is then either dried, ground to powder, and the powder drank with water, or the specimen is placed in a kind of alcoholic liquor and left there for a couple of days, after which the liquor with the beneficial substances dissolved in it is drunk.

The positive qualities of the species from the point of human interest thus are rather small, and its negative qualities seem to be more important. In many areas the species is considered a pest."The animal is notorious for causing severe damage to bunds [of prawn ponds] by its burrowing activities. The paddy fields and backyards of houses in the proximity of the creeks are also subject to this sort of damage" (Sankolli, 1963:604). Also earth roads can suffer from the burrowing of the species. Dammerman (1929:120) reported that "the species has been noticed as destructive to nipa seedlings, which may be protected by surrounding them with small bamboo fences", but the correctness of this observation has later been doubted by Kalshoven & Van der Vecht (1950:63); the fact that Thalassina is not a vegetarian but mainly a mud feeder supports the view of the latter authors. All in all it seems that Rumphius indeeed was right in considering this as a "useless lobster" from an economic viewpoint.

Local Names : AUSTRALIA: Mud lobster; FIJI: Maná Tola. INDONESIA: Udang katak, Udang tanah; Udang petsje (Amboina); JAPAN: Okinawa-ana-jyako; MALAYSIA: Udang ketak; PHILIPPINES: Kolokoy, Kulokoy, Palatak (Tagalog language), Oson, Uson (Ilongo language); Manla (Cebu language); THAILAND: Mae hop.

2.3.2 FAMILY UPOGEBIIDAE Borradaile, 1903

UPOG

Upogebiinae Borradaile, 1903, Annals Magazine Natural History, (7)12:542. Name placed on the Official List of Family Names in Zoology, in Opinion 434 (published in 1956). Type genus ***Upogebia*** Leach, 1814.

Synonyms: Gebiadae Haworth, 1825, Philosophical Magazine, London, 65: 184. Type genus ***Gebia*** Leach, 1815.

The taxonomy of this family is still in a state of uncertainty. Until recently only a single genus, ***Upogebia,*** was recognized in it, being divided into several subgenera. In 1982, Sakai added two more Upogebiid genera, while some recent authors have elevated some of the subgenera to full generic status (an action not recognized here).

Of the many (about 100) species of Upogebiidae known at present, this catalogue deals only with the five species that have been reported to be of fisheries interest. All five of these species belong in the nominotypical subgenus ***Upogebia.***

As the number of species treated here isso small compared to the total number of Upogebiids, no effort has been made to provide a key, but of each species the most important morphological features are presented.

Upogebia Leach, 1814

UPOG Upog

Upogebia Leach, 1814, Brewster's Edinburah Encyclopaedia, 7:400. Gender feminine. Name placed on the Official List of Generic Names in Zoology by the International Commission on Zoological Nomenclature in their Opinion 434 (published in 1956).

Type Species: by monotypy: ***Cancer (Astacus) stellatus*** Montagu, 1808.

Synonyms: ***Gerbios*** Bosc, 1813, Bulletin Société philomatique , Paris,3(66):233. Type species, selected by Holthuis, 1954, Bulletin zoological Nomenclature, 9(11):335: ***Thalassina littoralis*** Risso, 1816 (= junior subjective synonym of **Astacus *pusillus*** Petagna, 1792). Gender feminine. Name suppressed under the plenary power of the International Commission on Zoological Nomenclature and placed on the Official Index of Rejected and Invalid Generic Names in Zoology in their Opinion 434 (published in 1956).

Gebia Leach, 1815, Transactions Linnean Society, London , 11:335, 342. Type species, selected by Lucas, 1835, Dictionnaire pittoresque d'Histoire naturelle, 3:353: ***Cancer (Astacus) stellatus*** Montagu, 1808. Gender feminine.

Bigea Nardo, 1847, Sinonimia moderna delle specie registrata nell'opera intitolata.: Descrizione de' Crostacei, de Testacei e de' Pesci che abitano le lagune e Golfo Veneto .... dall'Abate Stefano Chiereghini: 8. Type species, by monotypy: ***Bigea tipica*** Nardo, 1847. Gender feminine.

Calliadne Strahl, 1862, Monatsberichte Königlichen Akademie Wissenschaften Berlin, 1861: 1064. Type species, by monotypy: ***Calliadne savignii*** Strahl, 1862. Gender feminine.

Gebiopsis A. Milne Edwards, 1868, Nouvelles Archives Muséum Histoire naturelle, Paris, 4:63. Type species, by monotypy: ***Gebiopsis nitidus*** A. Milne Edwards, 1868. Gender feminine.

Gebicula Alcock, 1901, A Descriptive Cataloque of the indian Deep-Sea Crustacea Decapoda Macrura and Anomala in the Indian Museum: 201. Type species by monotypy: ***Gebicula exigua*** Alcock, 1901. Gender feminine.

Neogebicula K. Sakai, 1982, Researches on Crustacea, Tokvo, spec. no. 1:8,72. Type species, by original designation: ***Upogebia*** (***Neogebicula***) ***alaini*** K. Sakai, 1982. Gender feminine.

Acutigebia K. Sakai, 1982, Researches on Crustacea, Tokyo, spec .no. 1:8, 69. Type species, by original designation: ***Gebia danai*** Miers, 1876. Gender feminine.

The species of this genus are burrowers in mud or sandy mud. All the species treated here are used as bait for fishing. Only one of them, ***U. pusilla*** is said to be used for human consumption. For most ***Upogebia*** species, very little or no information on use as food or bait is available. Therefore, it is well possible that many more species than those included in the catalogue are actually consumed and most likely all species inhabiting accessible places in sufficiently great numbers qualify for use as bait.

Remarks: The species of ***Upogebia*** can easily be distinguished from those of ***Callianassa*** enumerated here, by the following features:the shape of the carapace, which in the present genus ends in a broad, flat rostrum, sometimes tridentate anteriorly and reaching beyond the eyes; the dorsal surface of the rostrum, which continues onto the anterior part of the carapace, is elongate, flat and wide, and densely packed with tubercles and tufts of short hair.In ***Callianassa,*** the carapace is smooth and naked and ends in a short conical or 3- to 5-pronged rostrum. The pereiopods of the first pair are equal in ***Upogebia,*** unequal in ***Callianassa.***

The five species of ***Upogebia*** enumerated here all belong to the nominotypical subgenus ***Upogebia,*** which is characterized by the presence of one or more spine(s) on the anterolateral margin of the carapace, just behind the eye, and by the pereiopods of the first pair that are subchelate. There are no epipods on the pereiopods.

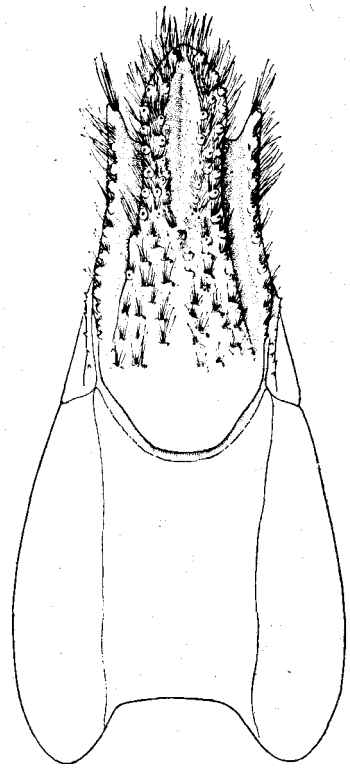
Upogebia capensis (Krauss, 1843)

Fig. 431

UPOG Upog 1

Gebia major capensis Krauss, 1843, Die Südafrikanischen Crustaceen :54.

Synonyms: ***Gebia africana*** Ortmann, 1894; ***Upogebia africana*** - Barnard, 1947. Until 1947 usually only a single species of the subgenus ***Upogebia*** was recognized in South African waters, the names ***Gebia major capensis*** Krauss, 1843, ***Gebia subspinosa*** Stimpson, 1860, and ***Gebia africana*** Ortmann, 1894, were considered synonyms Barnard (1947:380-381; 1950: 519) then showed that two species are involved and used for them the names ***Upogebia africana*** (Ortmann, 1894) and ***U. capensis*** (Krauss, 1843). considering ***U. sobspinosa*** (Stimpson, 1860) a synonym of ***U. capensis.*** The original description of ***Gebia major capensis*** is short and to modern standards very incomplete and does not unequivocally point to be based on one or the other of the South African species; there are arguments for the identity of the type rnaterial with both ***U. subspinosa*** and ***U. africana,*** while furthermore the type material is no longer extant. K Sakai (1982:43-46) definitely decided the problem by selecting a neotype for Krauss' species. Unfortunately Sakai chose as the neotype a specimen of ***U. africana,*** upsetting thereby the nomenclature for the two species that was rather consistently used since Barnard in 1947 recognized their distinctness. Sakai's action switched the name ***capensis*** from one species to the other. As Sakai's decision is perfectly legal, his nomenclature has to be followed. It is good to realite, however, that in most papers since 1948 the present species is indicated as ***U. africana*** (Ortmann) and that the name ***U. capensis*** during that period was mostly used for ***U. subspinosa*** (Stimpson).



carapace (dorsal view)

(from Sakai, 1982) **Fig. 431**

FAO Names : **En** - Cape mud shrimp

Type : Type locality of ***Gebia major capensis***: "Tafelbai" (= Table Bay, Cape Province, South Africa). Type material in Staatliches Museum für Naturkunde, Stuttgart, Germany, now lost; neotype locality: "Knysna, South Africa"; neotype male in ZMH, no. 29852.

Type locality of ***Gebia africana*** : "Port Elisabeth" (= Port Elizabeth, Cape Province, South Africa). Holotype in MZS, preserved dry, condition very poor.

Diagnostic Features: Rostrum ending in three teeth; the lateral teeth are placed at the end of a ridge that is separated from the central part of the dorsal surface of the rostrum by a deep groove On the central part itself a very shallow median groove is present. There are no ventral teeth on the rostrum. The antero-lateral border of the carapace with a single spine behind the eye First pereiopods subchelate. Dactylus of adult male with a longitudinal groove on either lateral surface, and without a tooth on the cutting edge. Palm with 2 dorsal denticulate carinae. Merus without an anterodorsal spine. Coxae of first three pereiopods without spines.

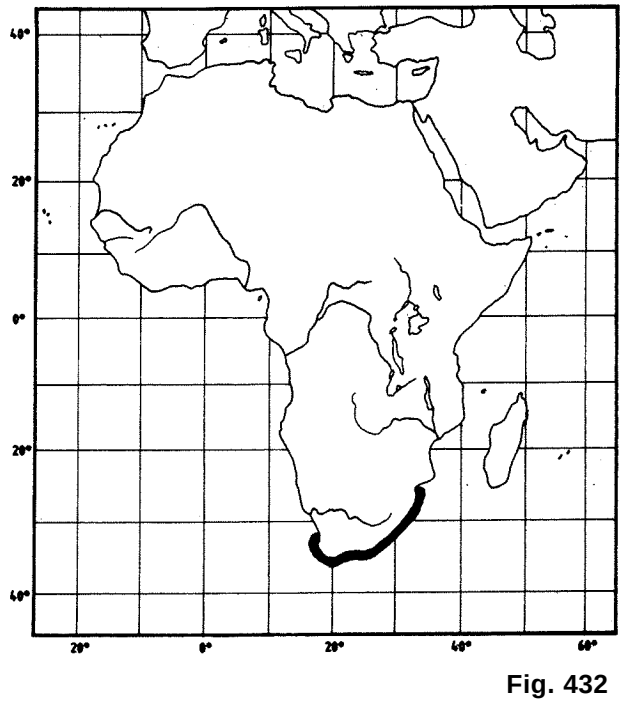


Fig. 432

Geographical Distribution : Southern Africa from Olifants River estuary (Atlantic coast of Cape Province, South Africa) to Delagoa Bay (= Bay of Lourenço Marques, Mozambique) (Fig. 432).

Habitat. and Biology : "Burrows in the sandy mud of estuaries from mid-tide ta LWS [= Low water spring tide]. A detritus feeder" (Day, 1969: 108)

Size : Total body length 1 5 to 1.6 cm, ovigerous females 2.7 to 6.5 cm.

Interest to Fisheries : In South Africa the species is "used extensively as bait" (Day, 1969: 108), but there are restrictions to its collecting, as according to the law each person may collect "not more than fifty per day and the prawns may not be disturbed or removed by means of a shovel, fork or spade" (Tietz & Robinson, 1974:88).

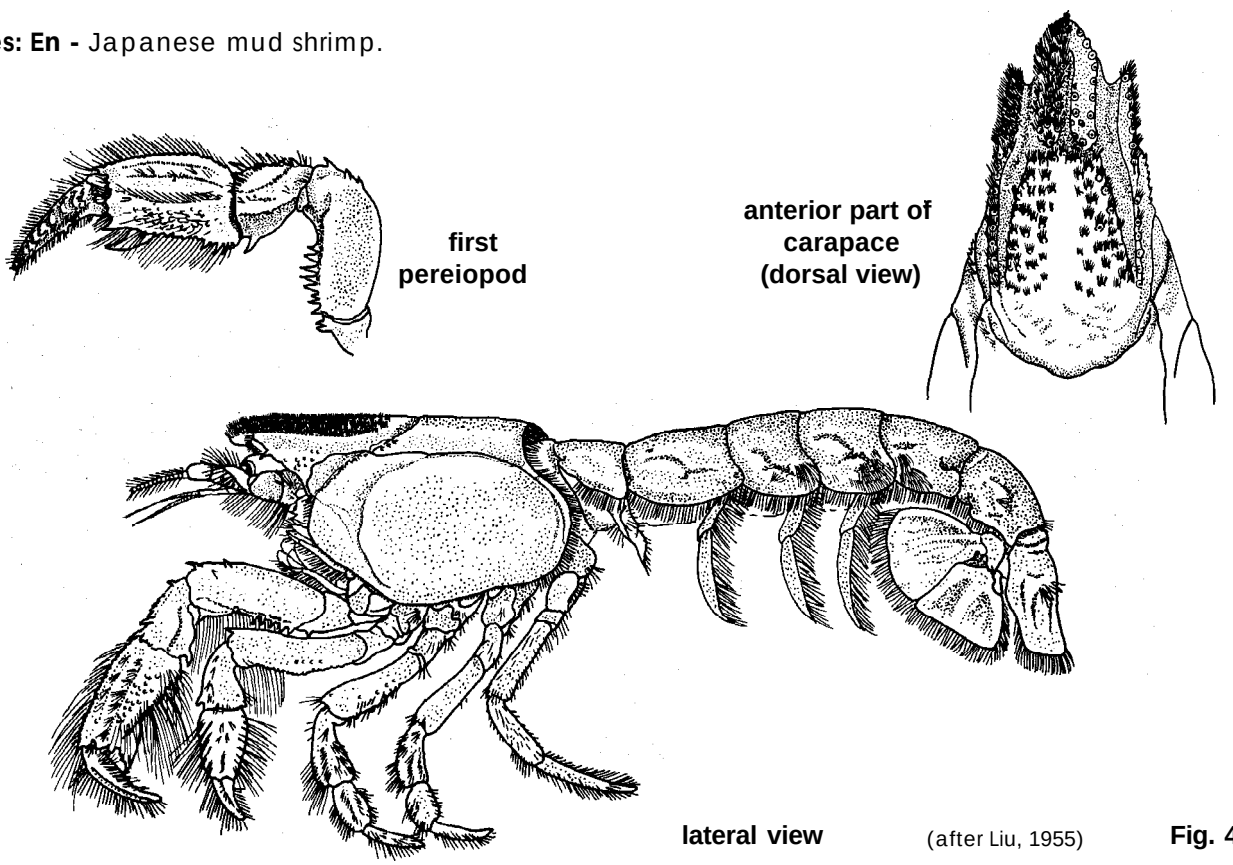
Local Names : SOUTH AFRICA: Moddergarnaal, Mud prawn.

Literature : Barnard, 1950:519 Sakai, 1982:43, text-fig. 9c, pl. A fig. 6, pl. D figs 5.6.

Upogebia major (De Haan, 1841) **Fig. 433** **UPOG Upog 2**

Gebia major De Haan, 1841, in P.F. von Siebold, Fauna Japonica, Crustacea , (5):pl.35 fig. 7. The description, p. 165, appeared in part 6, published in 1849.

FAO Names: En - Japanese mud shrimp.



(after Liu, 1955) **Fig. 433**

Type : Type locality: "Japonia", probably near Nagasaki, Kyushu, Japan. Type material in RMNH, now lost.

Diagnostic Features: Rostrum ending in 3 teeth, the lateral at the end of a ridge that is separated from the central part of the rostrum by a deep groove; a shallow median longitudinal groove is present in the central part. The lower surface of the rostrum has no spines. Anterolateral border of carapace with a single spine at the level of the eye. First pereiopods subchelate. Dactylus of adult male wi th 9 to 11 oblique ridges on the outer surface, and with a low tooth in the proximal half of the cutting edge. Two denticulate ridges on the Upper surface of the Palm. Merus of first pereiopod with a distinct subdistal anterodorsal spine; coxa of that leg with a spine.

Geographical Distribution : Northwest Pacific region: S.E. coast of Siberia, USSR, from Olga Bay (about 44"N) southward, Korea, N. China, Kuril Islands, Japan (Fig. 434).

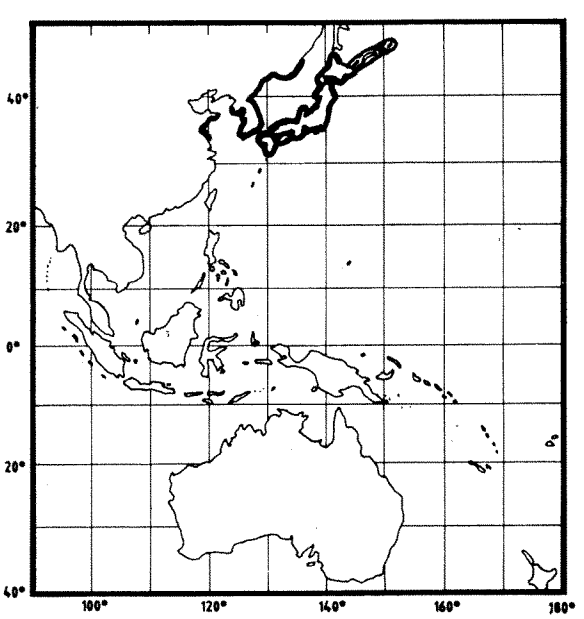


Fig. 434

Habitat and Biology : In tidal mud flats. The animals make Y-shaped burrows in the mud and are filter feeders.

Size : Maximum total body length 9.5 cm.

Interest to Fisheries : Probably used as bait for fishing. Listed by Liu (1955:66, pl. 24 figs l-6) among the "Economic Shrimps and Prawns of North China". Parisi (1917:23) mentioned 3 specimens obtained at the market of Yokohama, Japan.

Local Names : JAPAN: Ana-jyako.

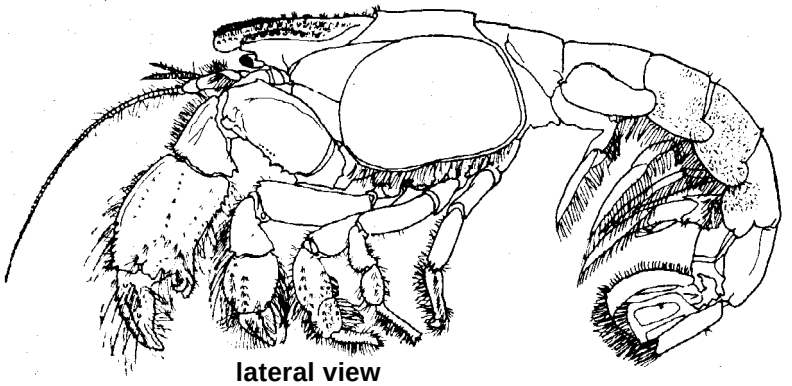
Upogebia pugettensis (Dana, 1852) **Fig. 435** **UPOG Upog 3**

Gebia pugettensis Dana, 1852, Proceedings Academy Natural Sciences, Philadelphia, 6: 19.

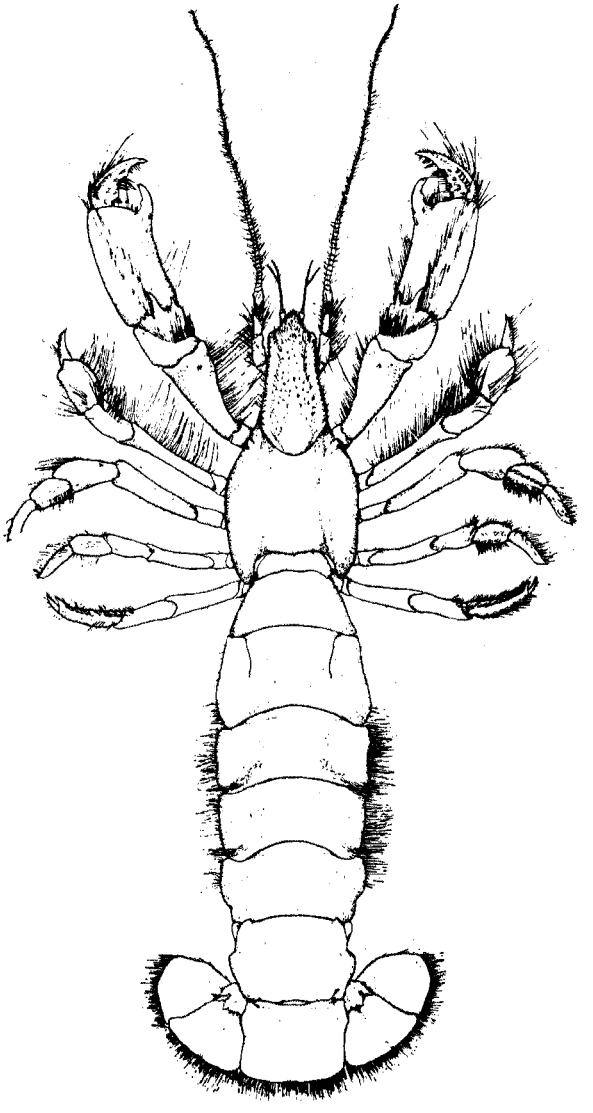
Synonyms: ***Gebia californica*** Stimpson, 1856.

FAO Names : En - Blue mudshrimp.

first pereiopod
(from Stevenr. 1928)



lateral view
(from Hart 1982)



dorsal view
(from Stevens, 1928)

Fig. 435

Type : Type locality of ***Gebia pugettensis:*** "in freto Pugettensi, Oregoniae" (= Puget Sound, Washington State, USA). Type material in USNM, now lost.

Type locality of ***Gebia californica:*** "from the coast near Monterey",California, USA. Type material probably lost.

Diagnostic Features: Rostrum ending in three teeth, the median tooth broad and triangular, the lateral teeth much shorter. A groove between the median and lateral teeth, also a very shallow median longitudinal groove. Lower surface of rostrum without spines. Anterolateral border of carapace with a very small tooth at the level of the eye. First pereiopods subchelate. Dactylus of adult male on inner surface with a longitudinal row of 6-12 tubercles, that are placed close together. Carpus with some anterior spines. Merus with a subdistal anterodorsal spine. Coxae without spines.

Geographical Distribution : N.E. Pacific region from Valdez Narrows, Alaska, USA (about 60ºN) to Morro Bay, California, USA (about 3SºN) (Fig. 436).

Habitat and Biology : Burrowing in muddy sand of the intertidal zone, sometimes under rocks. Burrows Y-shaped, and about 0.6 to 1.0 m deep.

Size : Total body length up to 11 cm (Williams, 1986a. who stated the males to be smaller than females). Hart (1982;53), on the contrary gave.the total length as up to 15 cm (males), 10.5 cm (females).

Interest to Fisheries : The species is dug for bait in California (Frey, 1971:9, 10), perhaps also in other areas. Williams (1986a:36) listed a specimen obtained in 1876 on the "San Francisco Market". According to Hart (1982:53) the species is "of some economic importance due to burrowing activities. On certain types of oyster beds, Young oysters can be smothered by the mud displaced by these animals Also dykes designed to retain a layer of sea water may be riddled with burrows through which water drains at low tide".

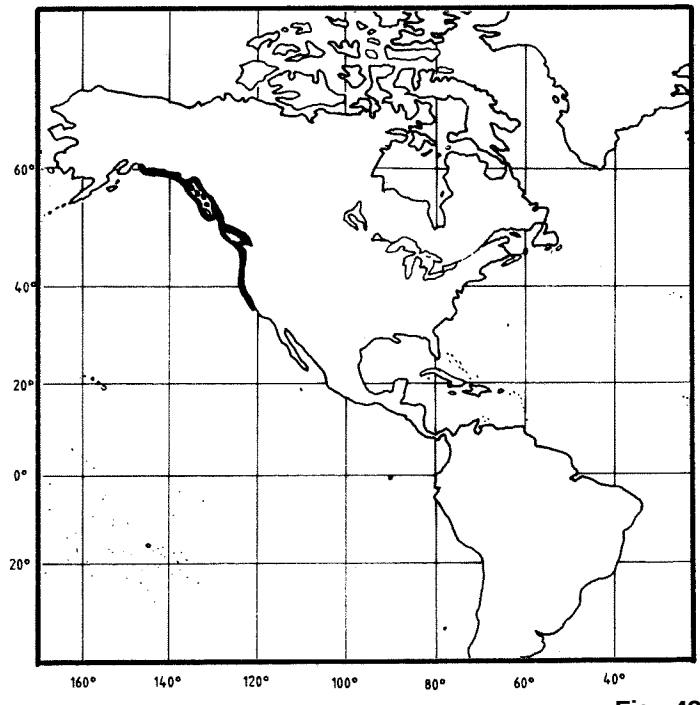


Fig. 436

Local Names : CANADA: Mud shrimp; USA: Elue mud shrimp, Marine crayfish, Puget Sound ghost crab (Washington State); Blue mud shrimp (California State).

Literature : Stevens, 1928: 318-324, figs 1-5,20-37; Williams, 1986a: 35, fig. 13.

Upogebia pusilla (Petagna, 1792)

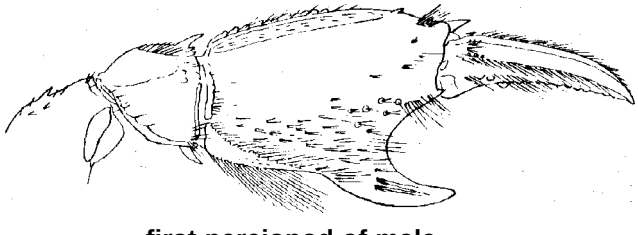
Fig. 437

UPOG Upog 4

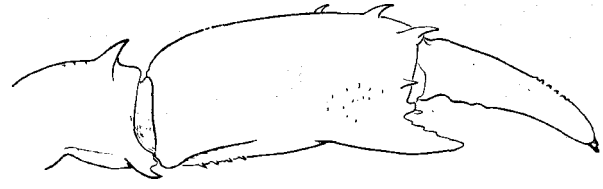
Astacus pusillus Petagna, 1792, Institutiones Entomologicae, 1:418, pl. 5 fig. 5.

Synonyms: ***Thalassina littoralis*** Risso, 1816; ***Gebia littoralis*** - Desmarest, 1823; ***Gebios littoralis*** - Risso, 1827; ***Gebia lacustris*** Costa, 1840; ***Gebia venetiarum*** Nardo, 1869; ***Upogebia littoralis*** - Thompson, 1901.

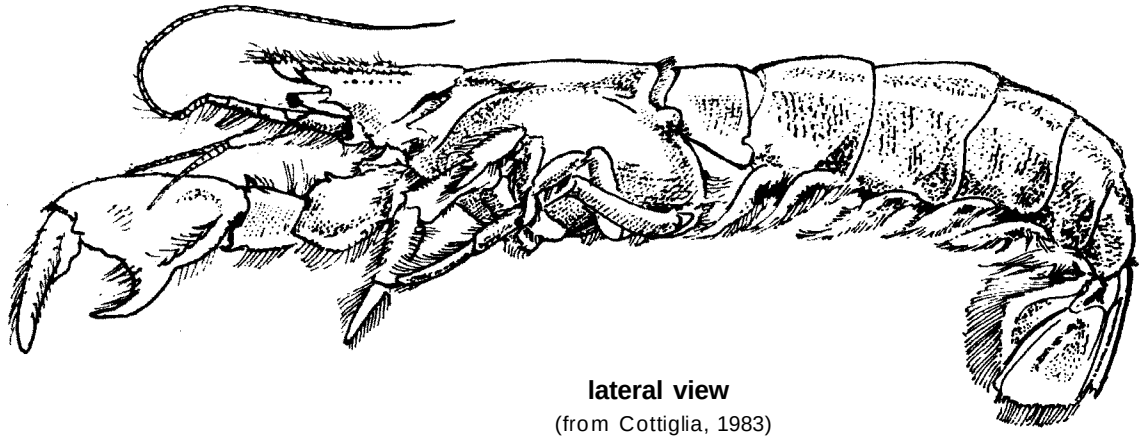
FAO Names : En - Mediterranean mud shrimp.



first pereiopod of male
(from De Man, 1927)



first pereiopod of female
(from De Saint Laurent & Le Loeuff. 1979)



lateral view
(from Cottiglia, 1983)

Fig. 437

Type : Type locality of ***Astacus pusillus :*** "Habitat in nostri maris arena, sed rarior". In nostri maris obviously stands for the seas near Naples, where Petagna lived. The whereabouts of the type material is unknown, it must be considered lost.

Type locality of ***Thalassina littoralis:*** "environs de Nice", dépt. Alpes Maritimes, S. France. Depository of type material unknown.

Type locality of ***Gebia lacustris:*** "Vive nel fango del lago Lucrino", west of Naples, Italy. Whereabouts of type material unknown.

Type locality of ***Gebia venetiarum:*** "del Veneto Estuario" "nelle nostre lagune" [= lagoon of Venice, Italy]. Depository of types unknown.

Diagnostic Features : Rostrum ending in 3 teeth, the median long with a rounded apex ending in two spines; lateral teeth short, much shorter than half the median tooth, and separated from it by a deep groove. The median groove of the median tooth shallow. No spines on the ventral surface of the rostrum. Anterolateral margin of the carapace with a small but distinct tooth at the level of the eye. First pereiopods subchelate. In the adult male the palm is distinctly widened at the base of the fixed finger, so that the height of the chela is only slightly less than the length. Movable finger with blunt tubercles on the cutting edge, but otherwise without tubercles, spines or ridges. Palm with 2 dorsal rows of spinules. Merus with a subdistal anterodorsal spine.

Geographical Distribution : Eastern Atlantic region from Bretagne (Atlantic coast of France) to Mauritania (N.W. Africa), also in the entire Mediterranean and in the Black Sea (Fig. 438).

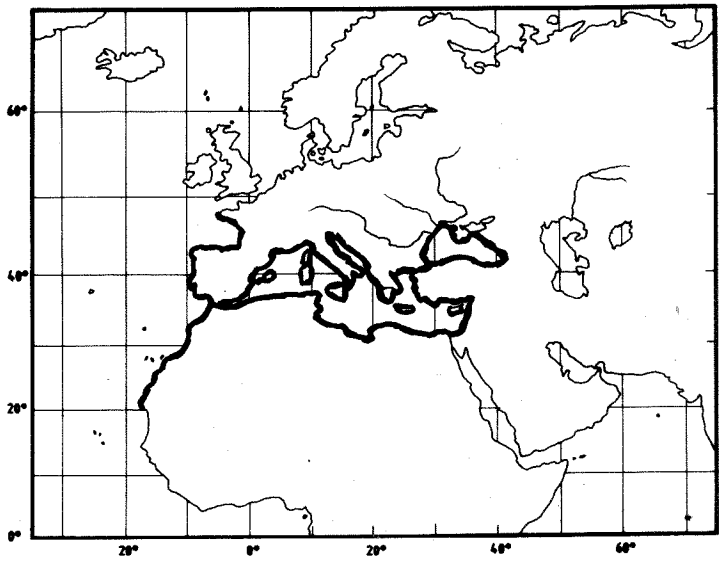


Fig. 438

Habitat and Biology : Intertidal and subtidal zones down to about 45 m; sometimes in estuarine areas. The species makes simple Y-shaped burrows with 2 or more entrances in the mud or sandy mud.

Size : Total body length about 4 to 6.5 cm.

Interest to Fisheries : I found only a single reference indicating that the species is used for human consumption: Pesta (1918: 199) after reporting that the animals are used for fish bait in the Adriatic sea, remarked in parentheses "(Auch gegessen!) [= it is eaten!]." On the other hand there are numerous observations that the species is used as bait for fishing. So Chaud (1984: 169) remarked that on the coast of Cantabria (north coast of Spain) "la capture de ces crustacés comme excellents appâts naturels pour la pêche assure la totalité des revenus pour quelques centaines de famille", and he also suggested that the species could well be used in the laboratory as a test animal for experiments. Cottiglia (1983:79) stated that in Italy the species "viene esclusivamente usata corne esca e corne tale é molto ricercata" (= it is only used as bait), more or less contradicting Pesta's statement that the animals are also used for human consumption. To obtain the animals, they are usually dug out of their burrows with spades. But when the mud is very soft, the water and the mud may be stirred with the feet so that the burrows become exposed or damaged and the animals flee and are easily picked up in the murky water. The most modern and efficient method, however, is that with a suction pump (the so-called yabbie pump; see under ***Callianassa australiensis***), with which the contents of the burrow, including the shrimp is pumped out in a quick and sudden movement. Finally there is a method by which through the application of a certain pressure the contents of the burrow is forced out; this so-called "casserole" method is described by Chaud (1984:22) and used in Arcachon (S.W. France).

Local Names : FRANCE: Crevette fouisseuse; GERMANY: Maulwurfskrebs, Strandkrebs; ITALY: Corbola, Cicaledda, Rufola, Scardobola; SPAIN Grillo real marino; Cadell de mar (Cataluña); TURKEY: Mamun; YUGOSlAVIA: Karlic.

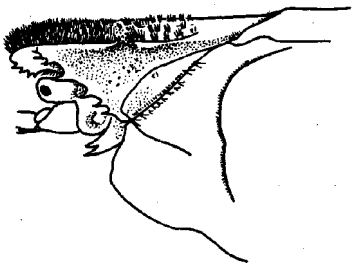
Upogebia wuhsienweni, Yu, 1931

Fig. 439

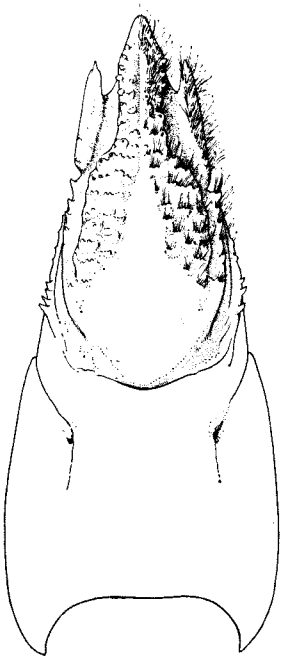
UPOG Upog 5

Upogebia wuhsienweni Yu,1931, Bulletin Fan Memorial Institute Biology, 2(6):89, fig. 2.

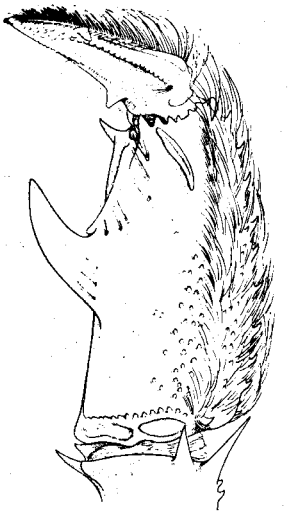
FAO Names : En - Chinese mud shrimp.



anterior part of carapace (lateral view)
(from Liu; 1955)



carapace (dorsal view)
(from Sakai. 1982)



first pereiopod
(from Sakai, 1982)

Fig. 439

Type: Type locality: "Kiaochow bay" (= Jiaozhou Wan, near Qingdao, Shandong Province, N. China) syntypes in Fan Memorial institute of Biology, Beijing, China; present whereabouts unknown.

Diagnostic Features : Rostrum ending in 3 teeth, the lateral about half as long as the median. The carina behind the lateral teeth interrupted in the male. The grooves between central and lateral teeth wide and deep. Lower surface of the rostrum with a median row of 3 to 5 spines. Anterolateral border of the carapace with several small teeth behind the eye. The first pereiopods are subchelate. The dactylus in the adult male has a longitudinal row of tubercles on either surface. The palm shows an oblique carina in the anterior part of the inner surface near the base of the dactylus. The dorsal margin of the palm has a row of 9 or 10 small teeth. The merus has a subdistal anterodorsal spine. A spine is present on the coxa

Ceographical Distribution : China: from Shandong Province (Shantung) to Fujian Province (Fukien); Taiwan Island (Fig. 440).

Habitat and Biology : Probably burrowing in the mud like the other economically important species of this genus.

Size : The types measured 3.1 and 4.6 cm and were described as being Young.

Interest to Fisheries : Liu (1955:68, pl. 24 figs 7-12) included this species in his "Economic shrimps and prawns of North China", and for that reason it is mentioned here.

Literature : Sakai, 1982:59, text-figs 1 1d, 12f, g, 13 g, h, pl. G figs 1,2.

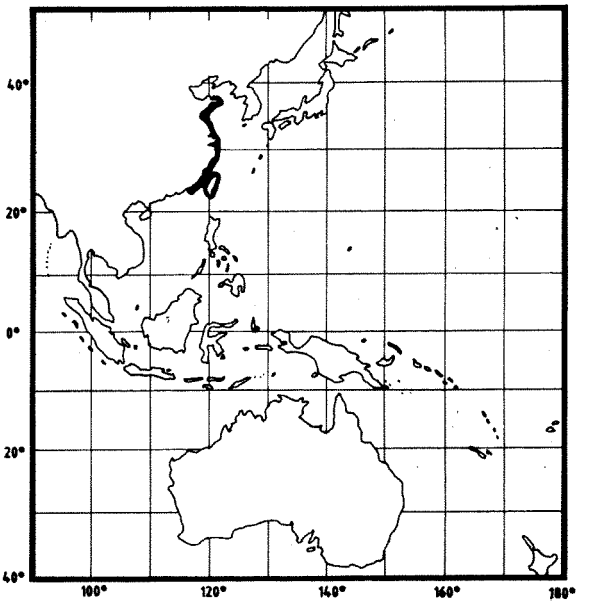


Fig. 440

click for next page