2.3.3 FAMILY CALLIANASSIDAE Dana, 1852 — CALL

Callianassidae Dana, 1852 Proceedings Academy Natural Sciences, Philadelphia, 6:l2, 14. Name placed on the Official List of Family Names in Zoology, in Opinion 434 (published in 1956).

Recent studies of the family do not agree on the number of genera to be recognized. De Saint Laurent (1973, 1979) divided the family into 9 genera, while Poore & Griffin (1979) only recognized three, as several of their species of ***Callianassa*** S.l. could not be assigned with confidence to any of De Saint Laurent's genera. Poore & Griffin therefore only recognized the genera ***Callianassa*** Leach, 1814, ***Ctenocheles*** Kishinouye, 1926, and ***Gourretia*** De Saint Laurent, 1973, and placed all the other genera recognized by De Saint Laurent in the synonymy of ***Callianassa.*** Recently, Manning & Felder (1986:437-443) redefined the genus ***Callichirus*** Stimpson, 1866, placing in it 4 species formerly assigned to ***Callianassa;*** they convincingly showed ***Callichirus*** to be distinct from ***Callianassa*** s.l. None of the four species at present known to belong to ***Callichirus*** has been reported to be of economic importance.

Without taking a definite stand on the generic taxonomy of the Callianassidae, I recognize here, for purely practical reasons, only the genera ***Callianassa, Callichirus, Ctenocheles*** and ***Gourretia.*** All species reported to be of interest to fisheries belong to the genus ***Callianassa*** s.l. as accepted here.

Callianassa Leach, 1814 — CALL Call

Callianassa Leach, 1814, Brewster's Edinburgh 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) subterraneus*** Montagu, 1808. 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).

Synonyms: ***Montagua*** Leach, 1814, Brewster's Edinburgh Encyclopaedia, 7:436. Type species, by monotypy: ***Cancer (Astacus) subterraneus*** Montagu, 1808. Gender feminine.

Gebios Risso, 1822, Journal de Physique, de Chimie, d'Histoire naturelle et des Arts, 95:243. Type species, by monotypy: ***Gebios davianus*** Risso, 1822 (= junior subjective synonym of ***Cancer candidus*** Olivi, 1792). Gender masculine.

Gebius Agassiz, 1846, Nomenclator Zoologicus Index universalis:160. Emendation of ***Gebios*** Risso, 1822. Gender masculine.

Trypaea Dana, 1852, Proceedings Academy Natural Sciences, Philadelphia, 6:14,19. Type species, by monotypy: ***Trypaea australiensis*** Dana, 1852. Gender feminine.

Mesostylus Bronn & Roemer, 1852, Lethaea geognostica (ed.3) 2 (5):353. Type species, by monotypy: ***Pagurus faujasi*** Desmarest, 1822. Gender masculine.

Glypturus Stimpson, 1866, Proceedings Chicago Academy Sciences, 1:46. Type species, by monotypy: ***Glypturus acanthochirus*** Stimpson, 1866. Gender masculine.

Cheramus Bate, 1888,. Report Voyage Challenger (Zool.), 24:x, xi, xlvi, lxxv, 7, 10,26,28,30,36.Type species, by present designation: ***Cheramus orientalis*** Bate, 1888. Gender masculine.

Scallasis Bate,1888, Reportt Voyage Challenger (Zool.), 24:xi. lxxv, 7,10,28,34,36. Typespecies,bymonotypy: ***Scallasis amboinae*** Bate, 1888. Gender feminine.

Calliactites Borradaile, 1903, Annals Magazine Natural History, (7)12:54. Type species, by original designation: ***Callianassa secura*** Lanchester, 1902. Gender masculine.

Lepidophthalmus Holmes, 1904, Proceedings California Academy Sciences, (3)3:311. Type species, by monotypy: ***Lepidophthalmus eiseni*** Holmes, 1904 (=a subjective junior synonym of ***Callianassa bocourti*** A. Milne Edwards, 1870). Gender masculine.

Calliax De Saint Laurent, 1973, Comptes Rendus hebdomadaires séances Académie Sciences, Paris, (D) 277:514. Type species, by original designation and monotypy: ***Callianassa lobata*** De Gaillarde & Lagardère, 1966. Gender feminine.

Callianopsis De Saint Laurent, 1973, Comptes Rendus hebdomadaires séances Académie Sciences, Paris, (D) 277:515. Type species, by original designation and monotypy: ***Callianassa goniophthalma*** Rathbun, 1901. Gender feminine.

Anacalliax De Saint Laurent, 1973, Comptes Rendus hebdomadaires séances Académie Sciences, Paris, (D)277:515. Type species, by original designation and monotypy: ***Callianassa argentinensis*** Biffar, 1971. Gender feminine.

Calliapagurops De Saint Laurent, 1973, Comptes Rendus hebdomadaires séances Académie Sciences, Paris, (D)277:515. Type species, by original designation and monotypy: ***Calliapagurops charcoti*** De Saint Laurent, 1973. Gender masculine

Paracalliax De Saint Laurent, 1979, Comptes Rendus hebdomadaires séances Académie Sciences, Paris, (D)288: 1396. Type species, by original designation and monotypy: ***Paracalliax bollorei*** De Saint Laurent, 1979. Gender feminine.

Of the many (about 150) species of Callianassidae known at present, only 9 have, to my knowledge, been reported as being of interest to fisheries (either as bait or for human consumption). These 9 species are the only ones dealt with in this catalogue. Of each, a short morphological account of the most salient diagnostic features is given.

Eight of these nine species seem to be used exclusively as bait, while the ninth, ***Callianassa turnerana,*** is used as food for humans in W. Africa. However, since most publications on Callianassids do not provide information on utilization, it seems likely that many more species actually are used as bait. Scylr It seems obvious that any species occurring-in dense populations in the littoral or sublittoral zones and can easily be taken by digging or by suction pumps, is hence a likely candidate for bait. The present catalogue therefore may be quite incomplete and any additional information Will be welcome.

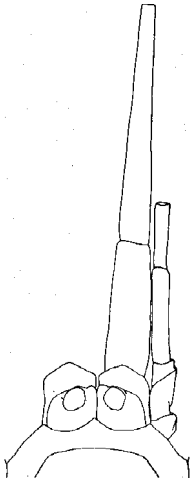
The species of ***Callianassa*** are burrowers in mud or in muddy Sand. They are characterized by their elongate, soft body covered by a thin integument. The carapace is smooth and glabrous, on the abdominal pleura a tuft of hairs may be present, but otherwise the abdomen is also smooth and naked. The rostrum usually is small and does not reach beyond the eyes, it is triangular, or conical and sometimes reduced to a low central angle of the anterior margin of the carapace; in some species, however, it ends in 3 or 5 large teeth. The eyes are small, placed close to each other, sometimes with the inner margins touching. The pereiopods of the first pair are large and asymmetrical, and have well developed chelae. The legs of the second pair are small, also chelate. The following legs are simple. The abdomen is longer than the carapace

Callianassa australiensis (Dana, 1852) **Fig. 441** **CALL Call 1**

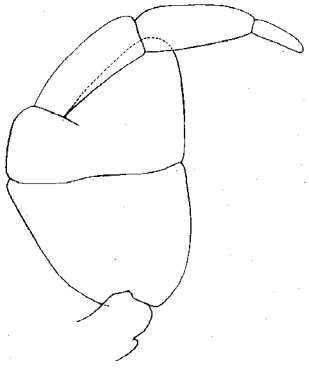
Trypaea australiensis Dana, 1852, Proceedings Academy Natural Sciences, Philadelphia , 6: 19.

Synonyms: ***Trypaea porcellana*** Kinahan, 1856.

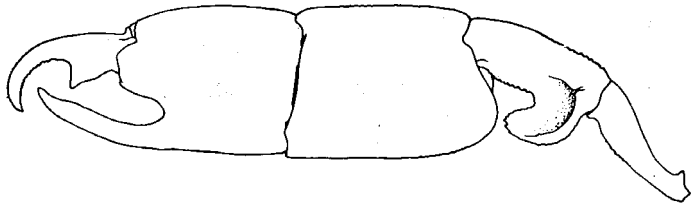
FAO Names : En - Australian ahost shrimp.



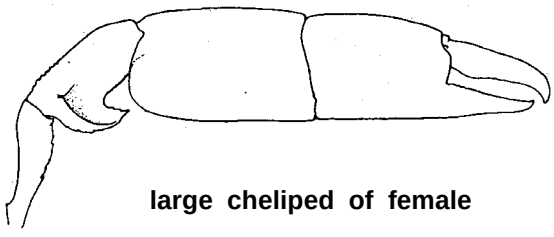
anterior part of body (dorsal view)



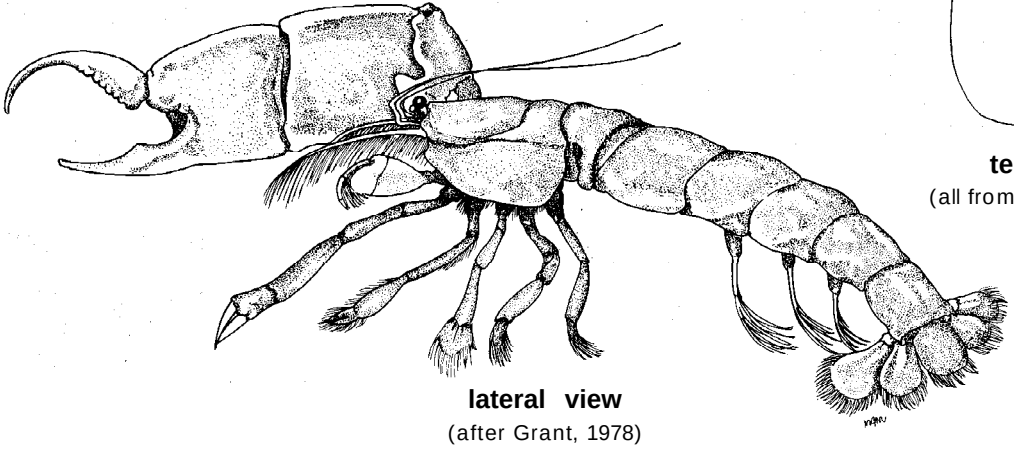
third maxilliped



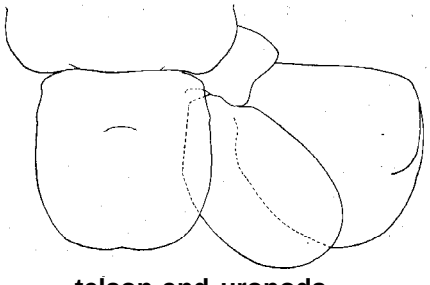
large cheliped of male



large cheliped of female



lateral view
(after Grant, 1978)



telson and uropods
(all from Poore 13 Griffin, 1979)

Fig. 441

Type : Type locality of ***Trypaea australiensis:*** "in oris Illawarrae Australiae orientalis" (= mouth of Illawarra Lake, S. of Sydney, New South Wales, Australia) Types in USNM, now lost.

Type locality of ***Trypaea porcellana:*** "washed up at St Kilda" (= St. Kilda, 37º52'S 144º59'E, at present a district of Melbourne, Victoria, Australia). Two syntypes in NMI.

Diagnostic Features: Rostrum a short, blunt and wide triangle, far overreached by the squarish eyes (almost with their, full length). No antennal spine, but antennal angle low, broad and rounded. Antennular peduncle reaching with more than half the length of the third segment beyond the antennal peduncle. Third maxilliped with merus and ischium strongly widened, forming an operculum; distal three segments all narrow, each three times or more longer than wide.Large chela in adult male with a deep concavity in the anterior margin of the palm just above the base of the fixed finger. Carpus about as long as the palm and slightly longer than high. Merus with a large, curved, bluntly rounded lobe in the basal part of the lower margin. Telson quadrangular, longer than wide with broadly rounded posterolateral angles, without spines.Endopod of uropod broadly oval, only slightly longer than telson.

Geographical Distribution : E. and S.E. Australia, from Townsville (N. Queensland) to Port Phillip Bay (Victoria). The most abundant Callianassid in E. Australia (Fig. 442).

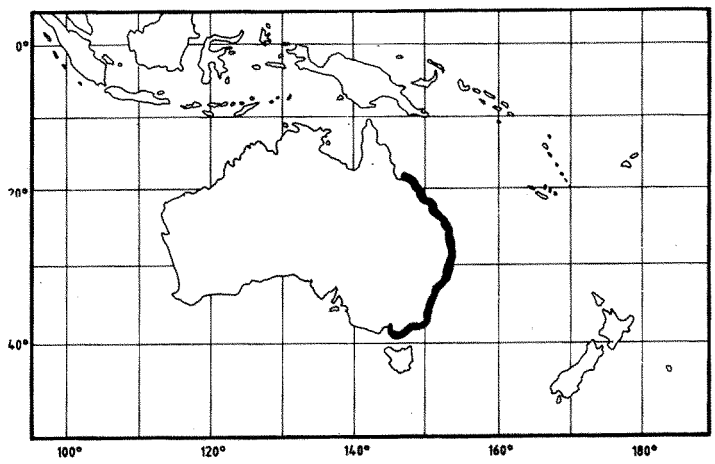


Fig. 442

Habitat and Biology : On intertidal Sand- or mud-flats, often in or near estuaries. The animals burrow in the soft substratum.

Size : Total body length 1.5 to 6 cm.

Interest to Fisheries : In E. Australia the species is extensively used as bait for fishing. The so-called yabbie-pumps received their name from the Australia bait collectors, who were the first to use this suction pump for collecting these burrowing animals. As described by Hailstone (1962:29-30) there are 3 types of yabbie-pumps (also called slurpguns). Two of these types are manual and are "essentially coring tubes, which, when pushed into the sand and extracted, remove a core of about 2 ft. [= about 60 cm] in length and from 2 in. to 4 in. [=5 to 10 cm] in diameter. Either pump is then reinserted in the hole So formed and suction is applied (with the aid of a plunger in one model or by closing off all air outlets and withdrawal of the pump in the other model). As a results of this suction, water, Sand and yabbies are drawn into the hole and removed ´´ (Hailstone, 1962:30). The third type is motor-driven and "works on the reverse principle, i.e.,water under pressure is driven deeply into the Sand and yabbies are flooded to the surface". The pump with the plunger is now used extensively in many parts of the world for collecting burrowing Crustacea from sandy or muddy substrates in the intertidal and subtidal Zones asdescribed by Manning (1975:318-319).

Local Names : AUSTRALIA: Marine yabbie, Burrowing shrimp, Ghost nippers.

Literature : Hailstone & Stephenson, 1961:259-285; Poore & Griffin, 1979:250-256, figs 18-20.

Callianassa biffari nom. nov.

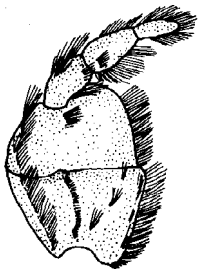
Fig. 443

CALL Call 2

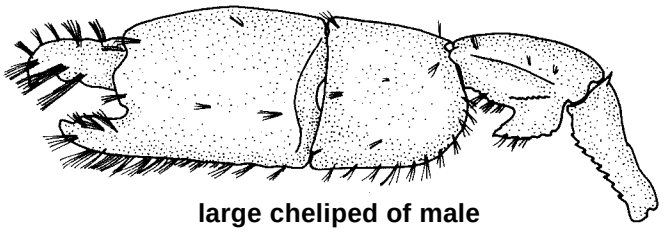
Callianassa biffari new name for ***Callianassa affinis*** Holmes, 1900, Occasional Papers California Academy Sciences, 7:162 (a junior primary homonym of ***Callianassa affinis*** A. Milne Edwards, 1860, Annales Sciences Naturelles, Paris, (Zool.) (4)14: 188).

Synonyms : Biffar (unpubl. Ph.D. thesis, 1972, University of Miami) pointed out that the well known name ***Callianassa affinis*** Holmes, 1900 for a species from California is a junior primary homonym of ***Callianassa affinis*** A. Milne Edwards, 1860, for a fossil species from the Lutetian of Central France (Parnes). Biffar indicated the species as ***"Callianassa*** sp. A, new name". So far as is known to me no subsequent author has proposed a replacement name for the species (most continued to use the name ***affinis*** for it). As Dr Biffar informed me, circumstances beyond his control forced him to end his carcinological researches, and he Will not be able to propose a new name himself. Therefore I believe it best to propose such a name here. It gives me great pleasure to dedicate this species to Dr Biffar, who was the first to discover the homonymy, and who has done so much useful work in Decapod taxonomy.

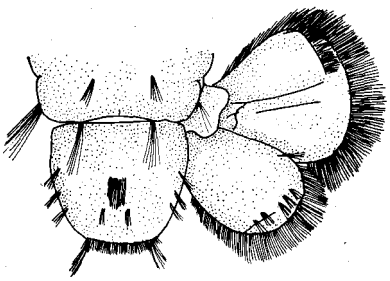
FAO Names : En - Beach ghost shrimp.



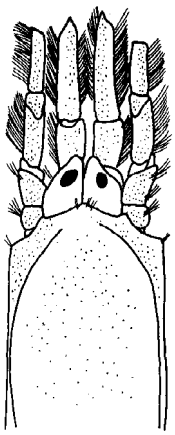
third maxilliped



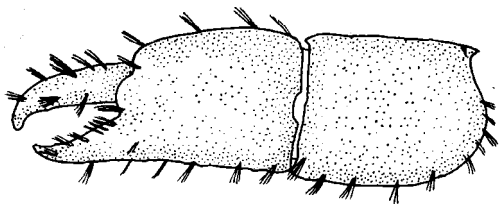
large cheliped of male



telson and uropods



anterior part of body (dorsal view)



large cheliped of female

(all after Biffar, unpubl.)

Fig 443

Type : Type locality (for ***C. affinis*** and thus also for ***C. biffari***):"Point Loma, Calif." (= Point Loma near San Diego, southern California, USA). Lectotype male in USNM, no. 86810; 2 paralectotypes, probably lost.

Diagnostic Features : The rostrum is a low blunt angle in the median part of the anterior margin of the carapace, being overreached by the eyes with practically their full lengih. The eyes are triangular with a blunt top. The antennal angles are low, rounded, without tooth. Antennular peduncle only slightly longer than antennal peduncle. Third maxilliped with ischium and merus strongly widened to form a kind of operculum; the distal three segments much narrower, each about twice as long as wide. Large chela in adult male with a small concavity above the base of the fixed finger. Carpus slightly shorter than Palm, about as high as long. Lower margin of merus with a broad forward directed hook-shaped process, which ends in a triangular top. Telson about as long as wide, gradually narrowing posteriorly: the convex lateral margins merge evenly with the posterior margin. Each posterolateral angle bears two very small denticles, no median denticle present. Endopod of uropod broadly oval, slightly longer than telson.

Geographical Distribution : Eastern Pacific region: Santa Monica Bay (California, USA) to San Quintin Bay (N.W. Baja California, Mexico) (Fig. 444).

Habitat and Biology : On open beaches with a rocky boulder-covered shore (Frey, 1971:9). The species thus has a preference for a different habitat from those chosen by ***C. californiensis*** and ***C. gigas*** (see there). The species constructs rather complicated burrows in the soft sandy substratum.

Site : Total body length 2.5 to 6 cm.

Interest to Fisheries : In California the species is used as bait together with ***C. californiensis*** and ***C. gigas,*** and in the accounts of the bait fishery the three are usually treated together. ***C. californiensis*** is the most important of the three (see there for further details). The burrows of ***C. biffari*** are often among rocks, which first have to be removed before digging can start

Local Names : USA: Beach ghost shrimp, Ghost shrimp (California).

Literature : Haig & Abbott, 1980:580, fig. 24.3.

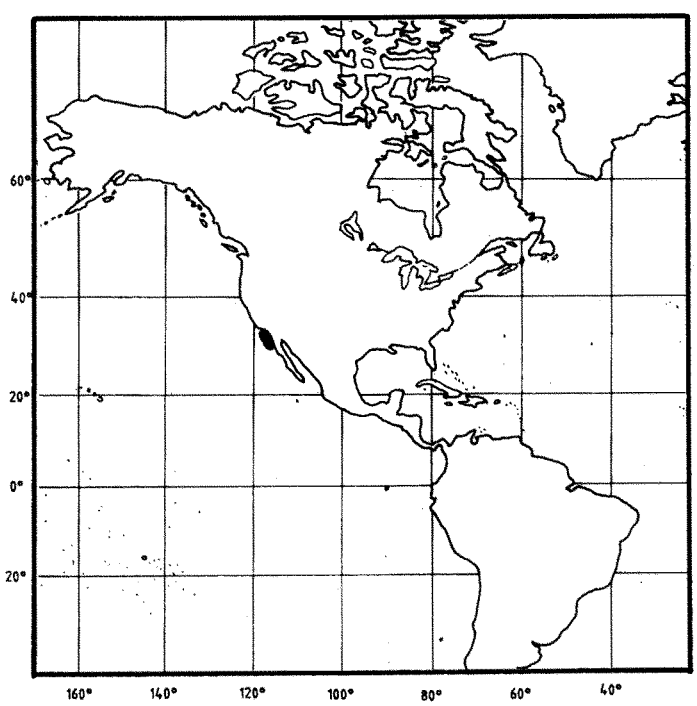


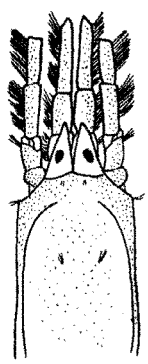
Fig. 444

Callianassa californiensis Dana, 1854 | **Fig. 445** | **CALL Call 3**

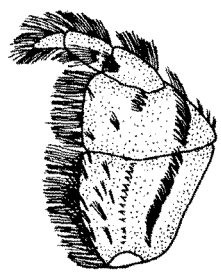
Callianassa californiensis Dana, 1854 Proceedings Academy Natural Sciences, Philadelphia, 7:175.

Synonyms : ***Callianassa occidentalis*** Stimpson, 1856.

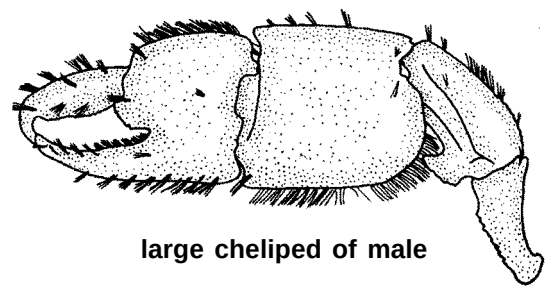
FAO Names : En - Bay ghost shrimp.



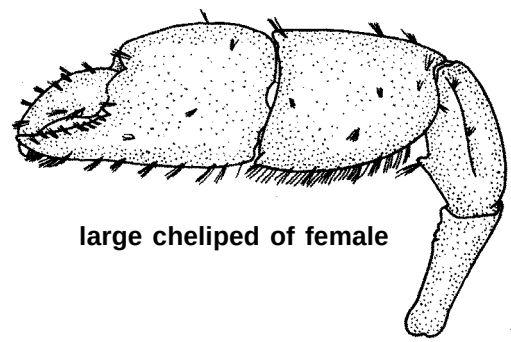
anterior part of body (dorsal view)



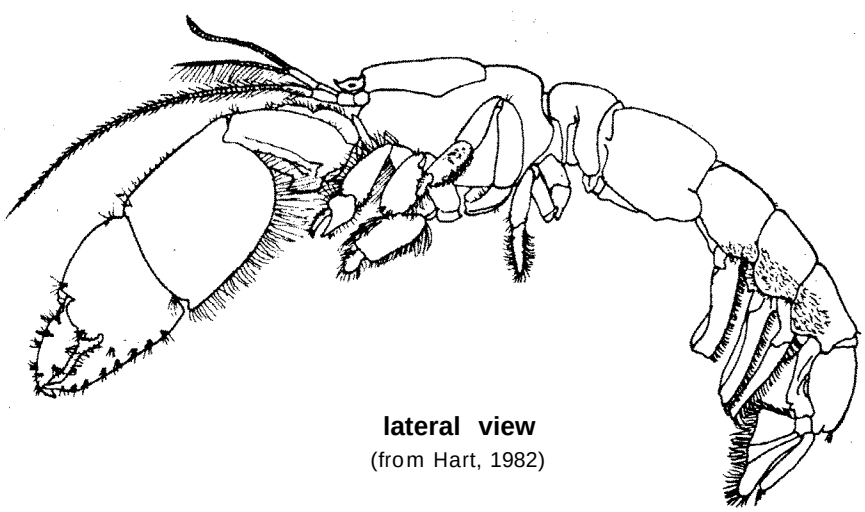
third maxilliped



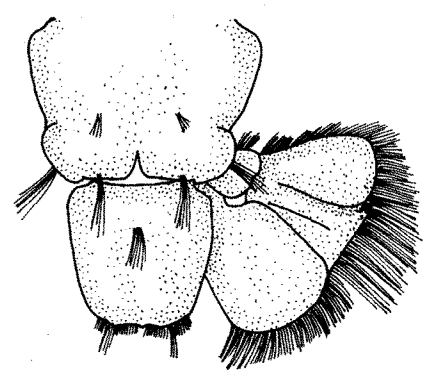
large cheliped of male



large cheliped of female



lateral view
(from Hart, 1982)



telson and uropods
(all after Biffar, unpubl.)

Fig. 445

Type : Type locality of ***C. californiensis:*** "California". Type material in USNM, now lost.

Type locality of ***C. occidentalis:*** "This species lives in the holes which are seen in such numbers at low water on the smooth sandy beaches near the entrance of San Francisco Bay", California USA. Type material now lost.

Diagnostic Features : Rostrum hardly noticeable, a slight angle in the anterior margin of the carapace. Eyes triangular, reaching with their full length beyond the rostrum. Antennal angles rounded, without spine. Antennal peduncle somewhat shorter than antennular. Third maxilliped with merus and ischium strongly widened to an operculum; last three segments far narrower, each about twice as long as wide. Large chela of adult male with a distinct concavity in the anterior margin of the palm above the base of the fixed finger;this concavity absent or inconspicuous in females and juvenile males. Carpus about as long as the Palm, and about as high as long. Merus with a distinct broad and bluntly truncated process in the basal part of the lower margin; in the female this process is more in the shape of a triangular tooth. Telson about quadrangular, longer than wide and slightly and gradually narrowing posteriorly; the posterolateral angles are broadly rounded; the posterior margin shows a small triangular tooth in the middle; no other teeth or spines are present. Endopod of uropod squarish with rounded angles, slightly longer than the telson.

Geographical Distribution : Eastern Pacific from Alaska (USA) to northwestern Baja California, Mexico (Fig. 446).

Habitat and Biology : In tidal flats of Sand and mud on the sea coasts and in estuarine areas. The animals make their burrows in the soft substrate.

Size : Total body length up to about 11.5 cm.

Interest to Fisheries : The species (together with ***C. biffari*** and ***C. gigas***) is collected as bait for fishing along the California coast, and sold as such in bait shopsThe animals are dug out with spades and forks, or by "stomping the mud over the burrow entrance which puddles the mud, seals off the burrow, and forces the shrimp to swim to the surface where it can be easily picked up" (Turner & Sexsmith, 1964:37).

Local Names : USA: Bay ghost shrimp, Ghost shrimp, Saltwater crayfish (California).

Literature : Stevens, 1928:333-340, figs 10-13, 16-17, 55-71; Frey, 1971:9-10.

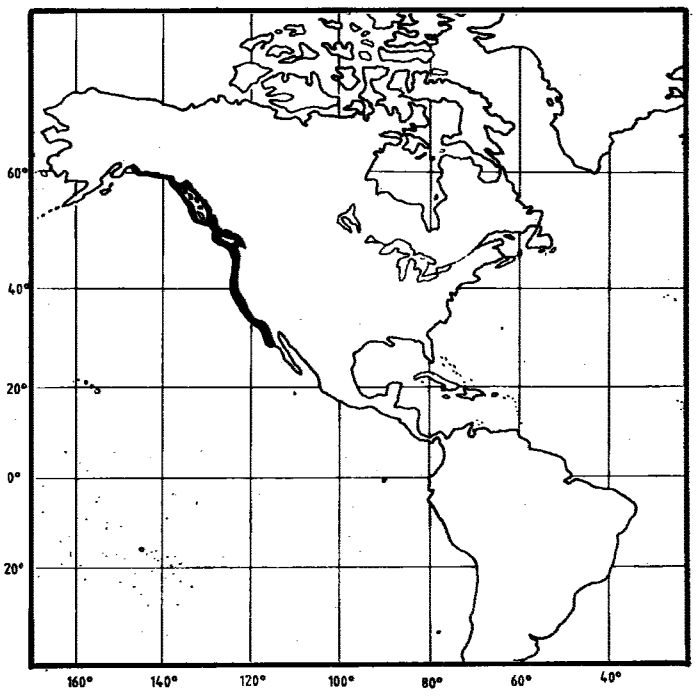


Fig. 446

Callianassa gigas Dana, 1852

Fig. 447

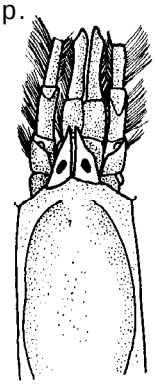
CALL Call 4

Callianassa gigas Dana 1852, Proceedings Academy Natural Sciences, Philadelphia , 6:19.

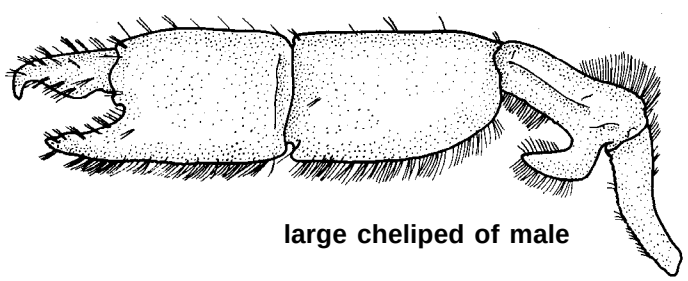
Synonyms: ***Callianassa longimana*** Stimpson, 1857; ***Callianassa (Trypaea) gigas*** - Borradaile, 1903; ***Callianassa (Trypaea) longimana -*** Borradaile, 1903

FAO Names : En - Giant ghost shrimp.

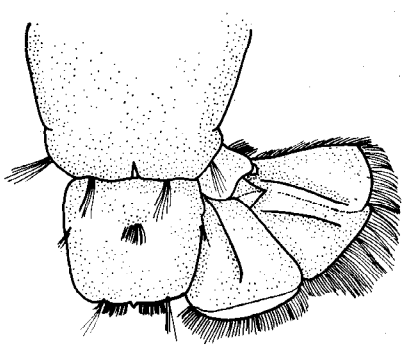
third maxilliped



anterior part of body (dorsal view)

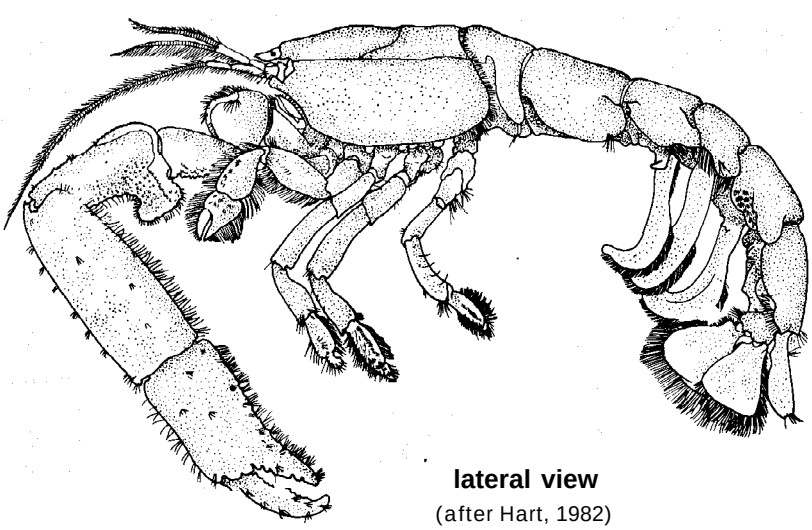


large cheliped of male



telson and uropods

(all after Biffar, unpubl.)



lateral view

(after Hart, 1982)

Fig. 447

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

Type locality of ***C. longimana:*** "Puget Sound" (= Steilacoom on Puget Sound between Tacoma and Olympia, Washington State, USA). Type material in the Museum of the Boston Society of Natural History, in ANSP (not located in 1989). and in USNM (lost).

Diagnostic Features : Rostrum a low median angle on the anterior margin of the carapace. Eyes elongate triangular, pointed, reaching with their full length beyond the rostrum. Antennal angles blunt, without spine. Antennal peduncle practically as long as the antennular peduncle. Third maxilliped with merus and ischium strongly expanded forming an operculum; the last three segments of the maxilliped less than half as wide as the merus, but not very slender, twice or less than twice as long as wide.Large chela of adult male with the concave part of the anterior margin of the palm above the base of the fixed finger absent or hardly noticeable. Carpus distinctly longer than Palm. Merus with a large and rather wide hook-shaped process in the basal part of the lower margin;in the females this process is reduced to a small triangular tooth. Telson quadrangular, longer than wide and slightly narrowing posteriorly; posterolateral angles rounded. Posterior margin with a small triangular median denticle; no other spines or teeth on telson. Endopod of uropod broad, quadrangular or slightly triangular, with rounded angles and slightly longer than telson.

Geographical Distribution : Eastern Pacific region from Vancouver Island (British Columbia, Canada) to San Quintin Bay (N.W. Baja California, Mexico) (Fig. 448).

Habitat and Biology : Lower intertidal zone of tidal flats on the sea coast and in estuaries. Burrowing in soft substrate of sand and mud. The species is less frequent than ***C. californiensis,*** which lives in the same habitat.

Size : Total body length about 12.5 to 15 cm; a larger species than ***C. californiensis.***

Interest to Fisheries : Like ***C. californiensis*** and ***C. biffari,*** the present species is taken as fish bait on the California coast and sold in bait shops. The animals are caught in the same way as ***C. californiensis.***

Local Names : USA: Ghost shrimp, Long-handed ghost shrimp.

Literature : Stevens, 1928:325-333, figs 6-9, 14-15, 38-54.

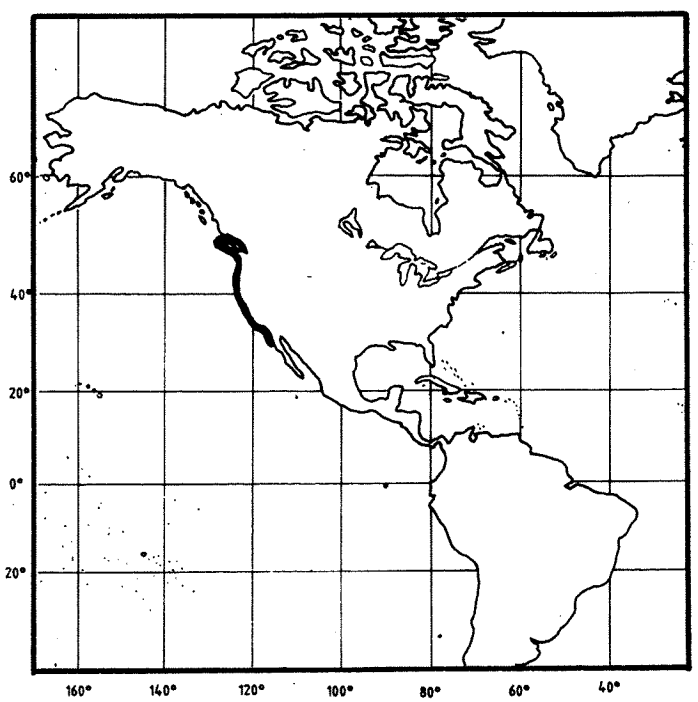


Fig. 448

Callianassa japonica Ortmann, 1891

Fig. 449

CALL Call 5

Callianassa subterranea japonica Ortmann, 1891, Zoologische Jahrbücher (Systematik, Geographie und Biologie), 6: 56.

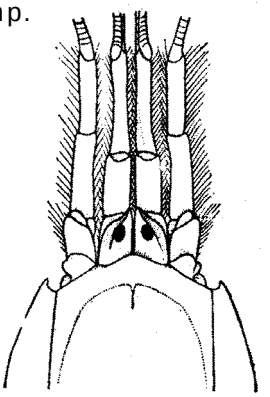
Synonyms: ***Callianassa harmandi*** Bouvier, 1901; ***Callianassa californiensis japonica*** Bouvier, 1901; ***Callianassa (Trypaea) harmandi -*** Borradaile, 1903; ***Callianassa (Trypaea) japonica -*** Borradaile, 1903; ***Callianassa californiensis bouvieri*** Makarov, 1938.

FAO Names : **En -** Japanese ghortshrimp.

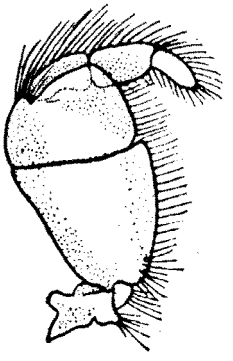
Type : Type locality of ***C. subterranea japonica:*** "Japan, Tokiobai"; holotype female, in MZS, preserved in alcohol, condition very poor.

Type locality of ***C. harmandi:*** "Japon"; syntypes (1 male, 3 females) in MP, no. Th 80, in alcohol, condition mediocre.

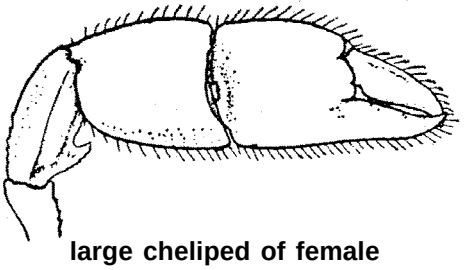
Type locality of ***C. californiensis japonica*** (and ***C. c. bouvieri,*** which is its replacement name): "Japon"; holotype female in MP, no. Th 70, in alcohol, condition rather good.



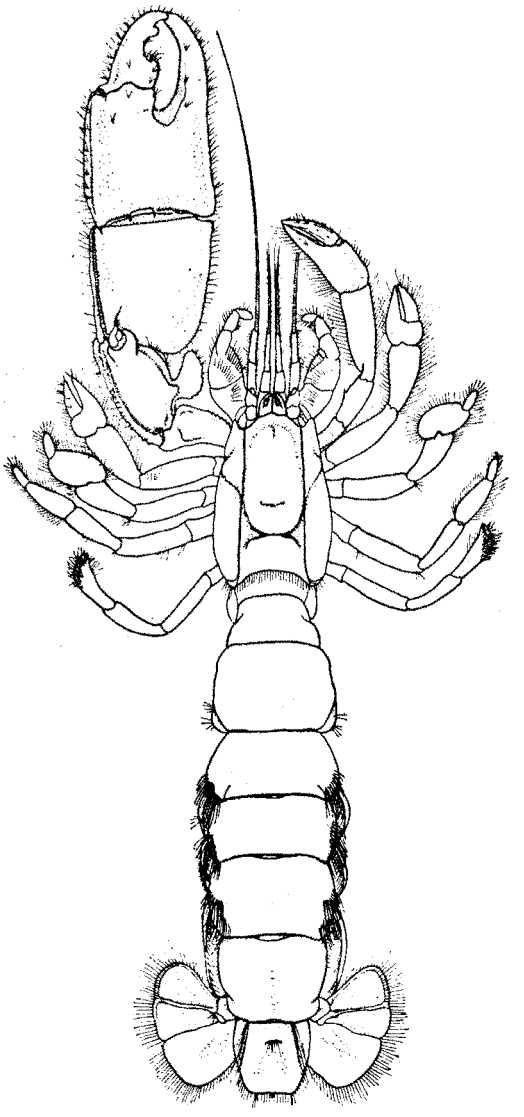
anterior part of body (dorsal view)



third maxilliped



large cheliped of female



dorsal view

(all from Liu, 1955)

Fig. 449

Diagnostic Features: Rostrum a low blunt angle of anterior margin of carapace. Eyes triangular, overreaching rostrum with their full length. Antennal spine absent, antennal angle inconspicuous and blunt. Peduncles of antennula and of antenna of about same length. Third maxilliped with merus and ischium considerably widened, forming an operculum; the last three segments narrow, about twice as long as wide. Large chela of adult male with a distinct concavity in the anterior margin above the base of the fixed finger; in females and Young males this concavity is absent or insignificant. Carpus about as long as palm and about as long as high. Merus of adult males with a distinct rounded, forwards produced lobe in basal half of lower margin, Upper margin of merus serrate; in females and young males the lobe is much smaller, more triangular, upper margin of merus smooth or indistinctly serrate. Telson longer than wide at base, quadrangular in outline, narrowing slightly posteriorly; posterolateral angles rounded. A small denticle present in the middle of the posterior margin, otherwise telson unarmed. Endopod of uropod broadly quadrangular with rounded corners, slightly longer than telson.

Geographical Distribution : Western Pacific region: S.E. Siberia, Korea, N. China and Japan (Fig. 450) Also found in fossil state in Japan.

Habitat and Biology : On intertidal mud flats in protected habitats. The animal makes its burrows in the soft substrate.

Size : Total body length 1.2 to 6 cm, rarely 7 cm. Ovigerous females with a body length of 2.5 to at least 5 cm.

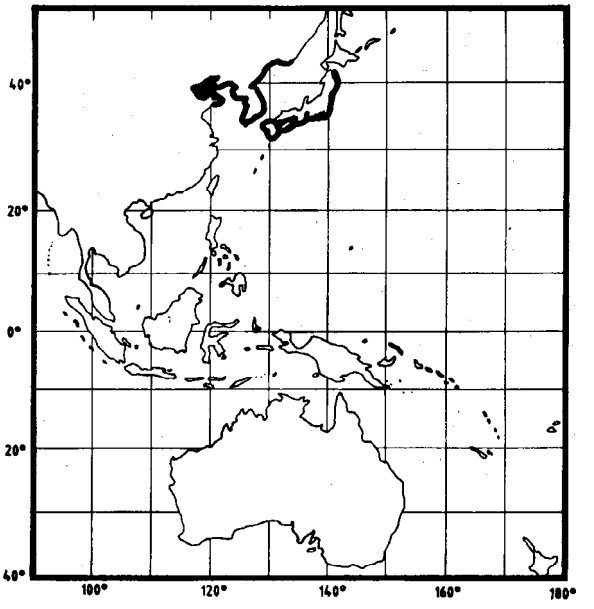


Fig. 450

Interest to Fisheries : Supposedly this species, like most other ***Callianassa*** listed here, is used as bait for fishing. The only mention of its economic importance known to me is that by Liu (1955:63, pl. 23 figs 1-5) who included the species (under the name ***Callianassa harmandi***) in his "Economie Shrimps and Prawns of North China".

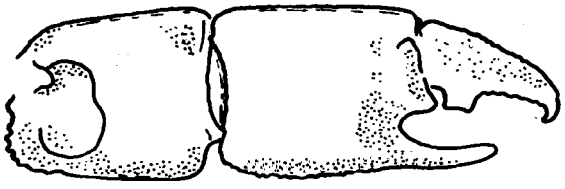
tocal Names : JAPAN: Nihon-suna-moguri.

Callianassa kraussi Stebbing, 1900	**Fig. 451**	**CALL Call 6**

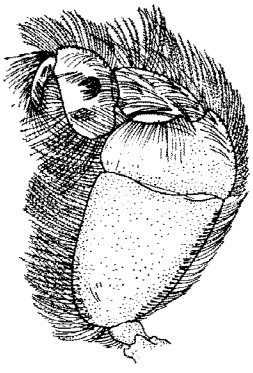
Callianassa kraussi Stebbing, 1900, Marine Investigations in South Africa, 1:39, pls 2,3.

Synonyms: ***Callichirus kraussi -*** Stebbing, 1910

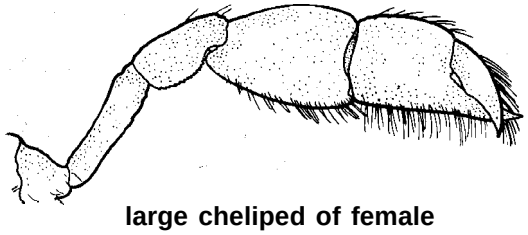
FAO Names : En - Pink ghost shrimp.



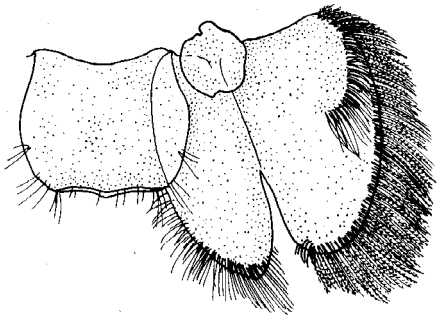
large cheliped of male
(after Barnard, 1950)



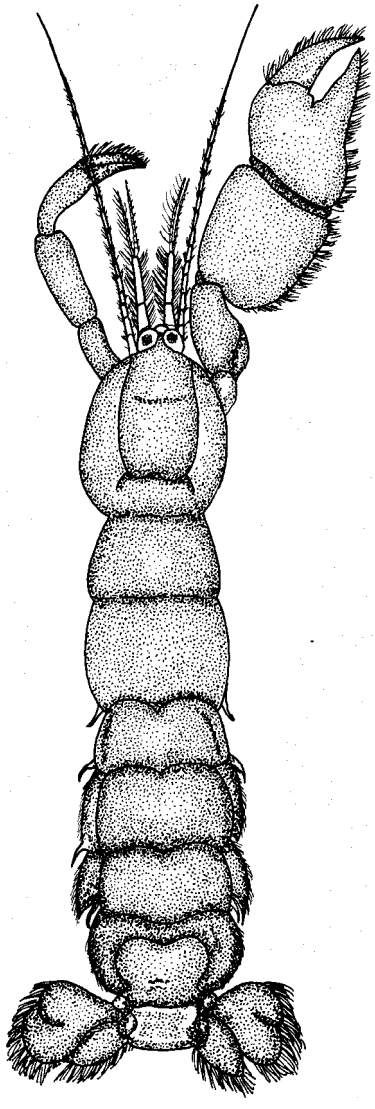
third maxilliped



large cheliped of female



telson and uropods



dorsal view

(all after Stebbing. 1900) **Fig. 451**

Type : Type locality: "Cape of Good Hope, Gordon's Bay, a little below high water mark". Syntypes in SAM.

Diagnostic Features : Rostrum broadly triangular, far overreached by the eyes that are oval. Antennal angle low and blunt, without spine. Antennular peduncle much longer than antennal peduncle, which it overreaches with more than half the length of the last segment. Third maxilliped with merus and ischium strongly widened to form an operculum. Carpus somewhat widened, being less than twice as long as wide; propodus strongly widened, being wider than long; dactylus slender. Large chela of adult male with a deep, but rather wide concavity in the anterior margin of the palm above the fixed finger. Carpus about as long as Palm, and as long as high. Merus with a rounded lobe in basal part of lower margin. Surface of larger cheliped with numerous tubercles. Telson distinctly wider than long and much shorter than uropods, being only somewhat more than half as long as endopod. Lateral margins of telson convex, posterolateral corners rounded, posterior margin almost straight, without a spine. Endopod of uropod elongate oval.

Geographical Distribution : Southern Africa from Lambert´s Bay (west coast of Cape Province, South Africa) to Delagoa Bay (= Bay of Lourenço Marques, Mozambique) (Fig. 452).

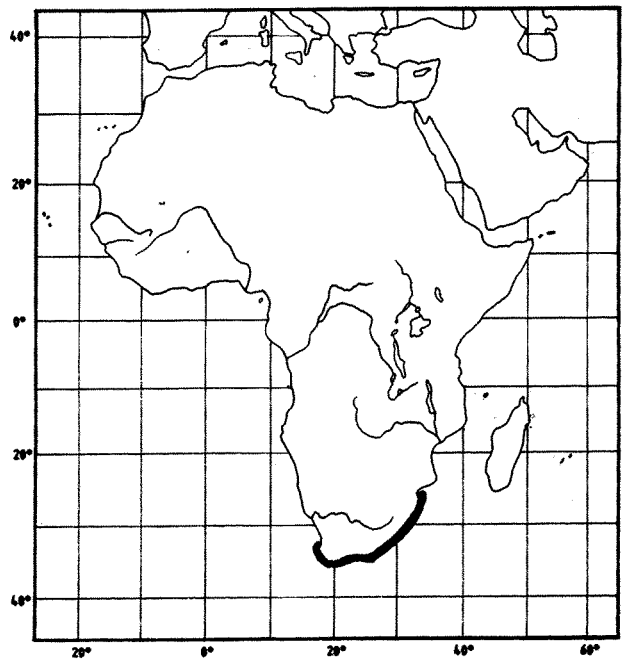


Fig. 452

Habitat and Biology : Littoral zone to 0.5 m deep, in sheltered bays and estuaries. Substrate sand, in which it digs its burrows, the populations usually are very dense.-

Size : Total body length up to 7 cm.

Interest to Fisheries : Day (1969: 108) mentioned that in South Africa the species is considered as forming "good bait" and it is partially protected in so far, that only 50 specimens can be taken per person per day, while the use of spades and forks is prohibited (but yabbie pumps are not). The importance of the species as bait in southern Africa also is demonstrated by the fact that when in 1984 Ciskei issued a series of 4 stamps figuring bait animals, the 11 c stamp showed the present species.

Local Names : SOUTH AFRICA: Pienkgarnaal, Pink prawn, Sand prawn.

Literature : Barnard, 1950: 506-509, fig. 94.

Callianassa petalura Stimpson, 1860

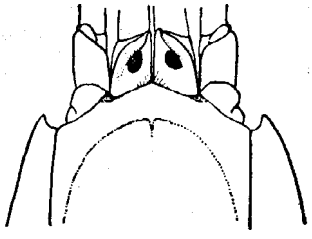
Fig. 453

CALL Call 7

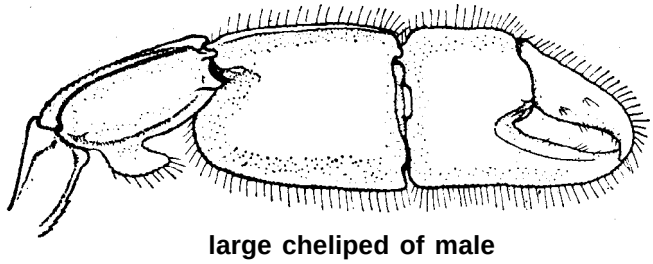
Callianassa petalura Stimpson, 1860, Proceedings Academy Natural Sciences, Philadelphia , 1860:23.

Synonyms: ***Callianassa (Trypaea) petalura* -** Borradaile, 1903; ***Callianassa gigas japonica*** Makarov, 1935; ***Callianassa gigas eoa*** Makarov, 1938.

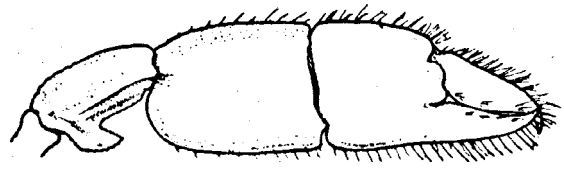
FAO Names : En - Flower ghost shrimp



anterior part of body (dorsal view)

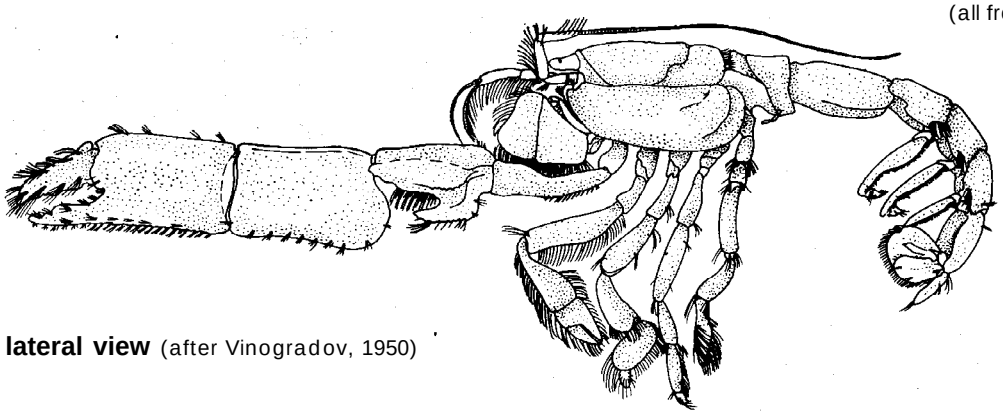


large cheliped of male



large cheliped of female

(all from Liu, 1955)



lateral view (after Vinogradov, 1950)

Fig. 453

Type : Type locality of ***C. petalura:*** "In portu "Simoda" Japoniae" (= Shimoda, Izu peninsula, Shizuoka prefecture, Honshu, Japan). Type material probably lost in the 1871 Chicago fire.

Type locality of ***C. gigas japonica*** and ***C. g. eoa*** (the latter being a replacement name for the preoccupied former): "Japanisches Meer, Meerbusen Peter der Grosse, Bucht Patrokl" (= Patrokol Bight (Bukhta Patrokl) in Peter the Great Bay (Zaliv Petra Velikogo)), S.E. Siberian coast of Sea of Japan. Holotype male in Hydrology Institute, Leningrad, USSR.

Diagnostic Features: Rostrum very inconspicuous, a wide angle in the anterior margin of the carapace, overreached by the full length of the eyes. The eyes bluntly triangular or quadrangular. Antennal angle likewise inconspicuously triangular, without antennal spine. Antennular peduncle distinctly longer than the antennal peduncle, reaching beyond it with more than half the last segment. Third maxilliped with the ischium and merus expanded to form a distinct operculum. Large chela of adult male with a small concavity in the anterior margin of the palm above the fixed finger. Carpus somewhat longer than the palm and longer than high. Merus with a distinct process in the basal half of the lower margin; this process produced forward, ending in a narrowing rounded top. In the females this process is reduced to a small triangular tooth. Telson quadrangular slightly shorter than the uropods. The endopod of the uropod broadly triangular with rounded corners.

Geographical Distribution : S.E. Siberia, N. China, Japan (Fig. 454).

Habitat and Biology : On sand or mud flats of coasts that are more exposed than those where C. japonica is found. The species makes its burrows in the soft substrate.

Site : The totalbody lengthis 1.5 to5cm(mates), 1 to 5 cm (females), 2.8 to 5 cm (ovigerous females).

Interest to Fisheries : The only reference known to me, concerning this aspect of the species, is its inclusion in Liu's (1955:65, pl. 23 fig. 6-9) "Economic shrimps and prawns of North China". It is most likely used as fish bait.

Local Names : JAPAN: Suna-moguri.

Citerature : Sakai, 1969:233.

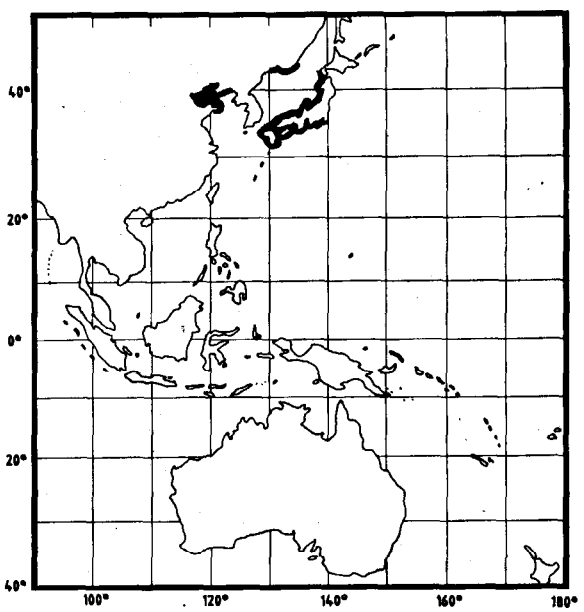


Fig. 454

Callianassa turnerana White, 1861

Fig. 455

CALL Call 8

Callianassa turnerana White, 1861, Proceedings Zoological Society London, 1861:42, pl. 6.

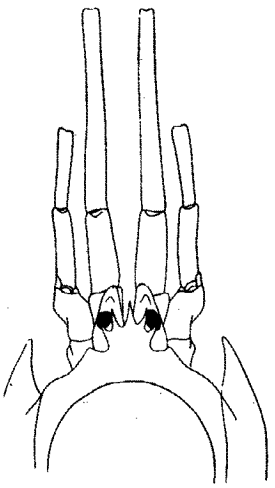
Synonyms: ***Callianassa krukenbergi*** Neumann, 1878; ***Callianassa diademata*** Ortmann, 1891; ***Callianassa (Callichirus) turnerana -*** Borradaile, 1903; ***Callianassa (Callichirus) krukenbergi -*** Borradaile, 1903; ***Callianassa (Callichirus) diademata -*** Borradaile, 1903.

FAO Names : En - Cameroon ghost shrimp.

Type : Type locality of ***C. turnerana:*** "Africa occ. (Cameroons)";holotype in BM, no 58.36, in alcohol, condition fair.

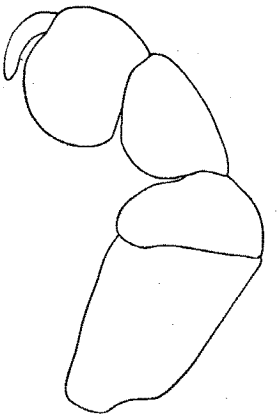
Type locality of ***C. krukenbergi:*** "Central-Amerika" (this evidently is an incorrect statement of the type locality, as the species, before or since, has never been found outside West Africa); type material in SMF(not located in 1989) where it should be on permanent loan from the Zoological Museum Heidelberg University, Germany.

Type locality of ***C. diademata:*** "Afrika. Vielleicht aus Westafrika"; holotype male in MZS, preserved in alcohol, condition fair.

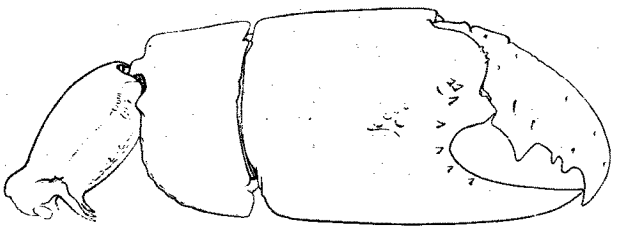


anterior part of body (dorsal view)

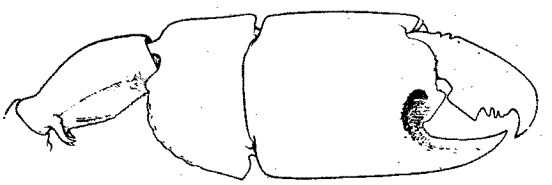
(from Le Loeuff & Intes, 1974)



third maxilliped

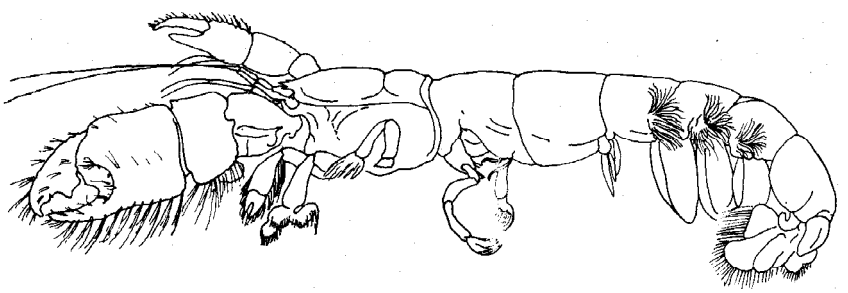


large cheliped of male



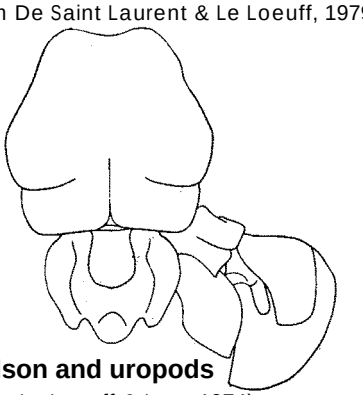
large cheliped of female

(from De Saint Laurent & Le Loeuff, 1979)



lateral view

(after Vanhöffen, 1911)



telson and uropods

(from Le Loeuff & Intes 1974)

Fig. 455

Diagnostic Features: Rostrum very distinct and reaching beyond the cornea of the eyes; in adult specimens the rostrum ends in three or five large teeth of equal size. In juveniles the rostrum is a simple elongate narrowly triangular tooth which reaches beyond the middle of the eyes. The antennal angles are bluntly rounded and unarmed. The antennular peduncle reaches with about half of the third segment beyond the antennal peduncle. The third maxilliped has the merus and ischium widely expanded to form an operculum. Also the carpus (which is only slightly longer than wide) and especially the propodus (which is much wider than long) are distinctly widened. The dactylus is very slender. The large first pereiopod of the female shows on the outer surface of the palm near the base of the fixed finger, a deep crescent-shaped depression with tubercles and spinules; this depression is not present in the males, where the anterior margin of the palm shows a rather wide not too deep concavity. In both sexes the carpus of the larger leg is shorter than the Palm. The merus has a short process in the basal part of the lower margin, which ends in a few small Sharp teeth. The telson is slightly broader than long and is distinctly shorter than the elongate, roughly diamond-shaped endopod of the uropod. The lateral margins of the telson are convex. In adult specimens the posterior margin of the telson consists of three bluntly rounded lobes; in the Young the posterior margin of the telson is about straight but for a median concavity. No spines are found on the telson.

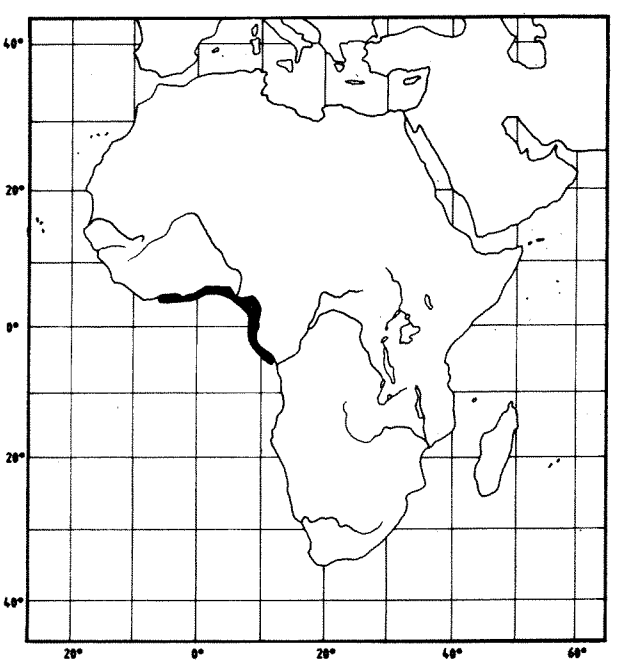


Fig. 456

Geographical Distribution : West Africa from the Ivory Coart to Congo (Fig. 456).

Habitat and Biology : Li ke most, if not all ***Callianassa*** species, ***C. turnerana*** lives in burrows in the mud. It is found in estuarine areas, sometimes in practically fresh water. Every few (3 to 5) years the species swarms in enormous numbers in the slightly brackish or almost fresh waters of the estuaries.

Size : Total body length 5.5 to 14.5 cm.

Interest to Fisheries : The swarming of ***C. turnerana*** is the sign for the native population for large scale fishing activities. With baskets and with their bare hands the people from Cameroon catch enormous quantities while wading out into the river. Monod (1927:595-601; 1928:117-121) gave a vivid account of the fishery for these Callianassids in the cameroon River near Douala. The female shrimps are eaten whole; the males are said to contain a substance that irritates the throat. The male abdomina are pressed and produce a kind of oil. The females are eaten and are highly esteemed as food. Part of the catch is eaten fresh, part is dried for later use in sauces and Soups. A little known account of the fishery is given by Mary H. Kingsley (1897:402): "This swarming of the crayfish occurs about every five years, and for days the river-water is crowded with them, So that you can bale them out by basketfuls. This the native does, accompanying his operations with songs and tom-toms, and he then eats any quantity of them; another quantity he smokes and preserves, in what he pleases to regard as a dried state, for sauce making; and the greatest quantity of all he chucks in heaps to fester round his dwellings".

local Names : CAMEROON: Mbéatoé, Mbotoré.

Literature : De Saint Laurent & Le Loeuff, 1979:64, figs 14c, 19e, 20a-d, 23 a-e.

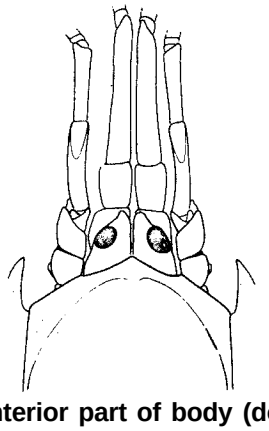
Remarks: This species is probably the only crustacean (and certainly the only Thalassinid) for which a country is named. As reported by Vanhoffen (1911) and Monod (1927, 1928), when the Portuguese in the 15th Century discovered the Cameroon River, they arrived at a time that ***C. turnerana*** was swarming; greatly impressed by this phenomenon they named the river Rio dos Camarãos (shrimp river) and a nearby cape Cabo dos Camarãos. The English transliterated this to Cameroons River, and the name Cameroons was used for the country and also adopted in other languages (Cameroun in French, Kamerun in German, Kameroen in Dutch, etc.).

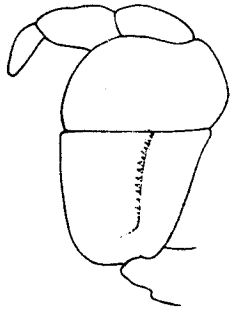
Callianassa tyrrhena (Petagna, 1792) **Fig. 457** **CALL Call 9**

Astacus tyrrhenus Petagna, 1792, Institutiones Entomologicae , 1:418, pl. 5 fig. 3.

Synonyms: ***Callianassa laticauda*** Otto, 1828; ***Callianassa (Callichirus) stebbingi*** Borradaile, 1903; ***Callianassa (Callichirus) laticauda -*** Borradaile, 1903.

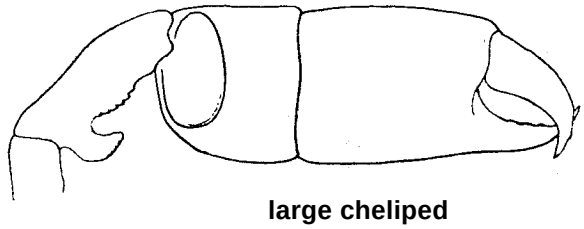
FAO Names : En - Sand ghost shrimp.





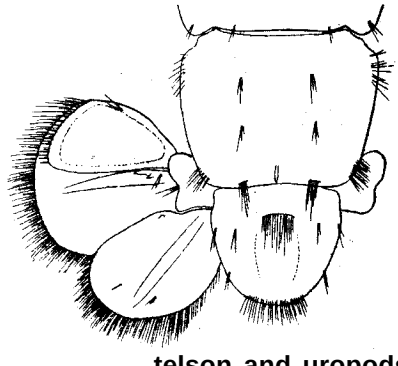
anterior part of body (dorsal view) **third maxilliped**

(from De Saint Laurent & Bozic,1976)



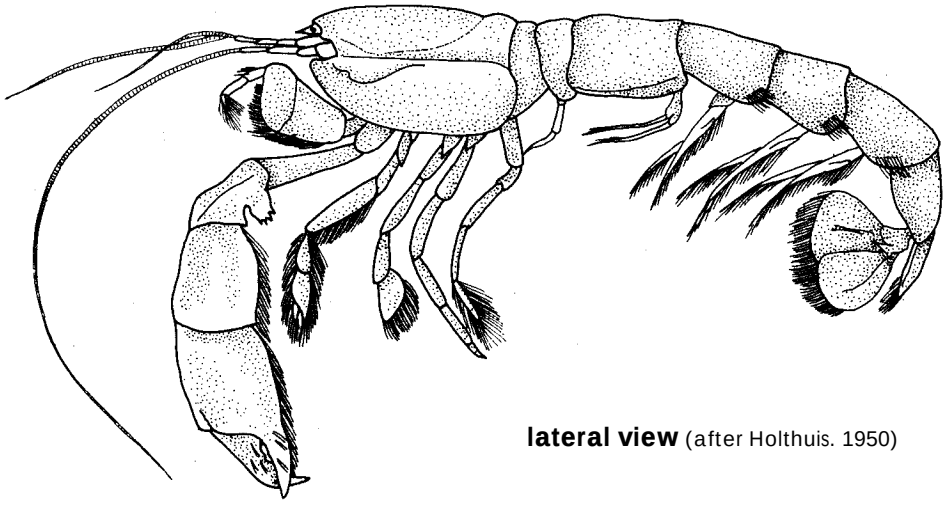
large cheliped

(from Bouvier, 1940)



telson and uropods

(from De Man, 1928)



lateral view (after Holthuis. 1950)

Fig. 457

Type : Type locality of ***C. tyrrhena:*** "In nostri maris arena habitat", i.e. the sea near Naples, Italy, where Petagna was a teacher. Whereabouts of type material unknown.

Typé locality of ***Callianassa laticauda:*** "Ich fand diesen Krebs in ziemlicher Anzahl zu Nizza" (= Nice, dépt. Alpes Maritimes, S. France). Depository of syntypes unknown.

Type locality of ***C. stebbingi:*** Jersey, Channel Islands, UK. Two syntypes in BM, no. 84.18, alcohol, condition fair.

Diagnostic Features: Rostrum short and broadly triangular with tip blunt. Eyes bluntly triangular, reaching beyond rostrum with practically their full length. Antennal angles also bluntly angular, without spine. Antennular peduncle slightly longer than antennal peduncle. Third maxilliped with merus and ischium expanded to form an operculum; last three segments not widened, much narrower and slenderer than operculum. Large chela without deep concavity in anterior margin of palm. Carpus as long as or slightly shorter than palm, and about as long as high. Merus with a rounded lobe in the basal part of lower margin; this lobe crenulate and not ending in a sharp point. Telson about as long as wide. Lateral margins convex, forming a regular curve with posterior margin. No spines present on telson. Endopod of uropod broadly oval or quadrangular with rounded corners, slightly longer than telson. Colour pale pink.

Geographical Distribution : Eastern Atlanlic region from the North Sea and the Kattegat to Mauritania (N.W. Africa), also in the entire Mediterranean (Fig. 458). Previous records from the Black Sea may pertain to ***C. candida*** (Olivi, 1792) a species also known as ***C. pontica*** Czerniavsky, 1884 or ***C. pestae*** De Man, 1928.

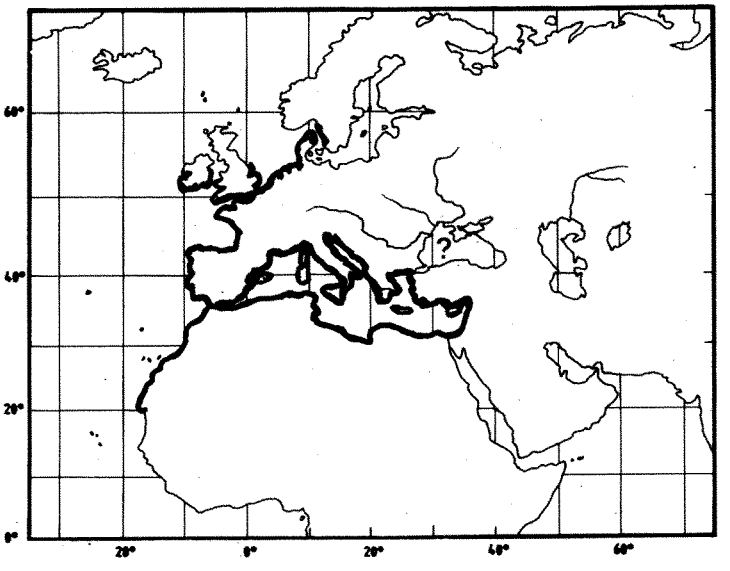


Fig. 458

Habitat and Biology : The species is found from the mesolittoral zone to a depth of a few meters (there are records of depths of 70 m). It burrows in the sand or muddy sand. The burrows may be 40 cm deep or more and have several exits. Water with low salinity is avoided

Size : Total body length up to 7 cm.

Interest to Fisheries : Already Petagna (1792:418) in the original description remarked : "piscium esca praestantissima". Cottiglia (1983:85) also observed that the species and especially the large specimens are used as bait by sport fishermen, although it does not show the same resistance to the fish hook as does ***Upogebia pusilla.***

Local Names : GERMANY: Maulwurfkrebs, Sandkrebs; ITALY: Corbola selvatica falsa, Scardobola; Corbola salvadega (Veneto); SPAIN: Topo de mar; Talp de mar (Cataluña).

Literature : Cottiglia, 1983:80-85, fig. 27a, 30, 31.

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