

2.1 INFRAORDER ASTACIDEA Latreille, 1802

Astacini Latreille, 1802, Histoire naturelle générale et particulière des Crustacés et des Insectes, 3:32.

This group includes the true lobsters and crayfishes. The Astacidea can be easily distinguished from the other lobsters by the presence of chelae (pincers) on the first three pairs of legs, and by the fact that the first pair is by far the largest and most robust. The last two pairs of legs end in a simple dactylus, except in **Thaumastocheles**, where the 5th leg may bear a minute pincer.

The infraorder consists of three superfamilies, two of these, the Astacoidea Latreille, 1802 (crayfishes of the northern Hemisphere) and the Parastacoidea (crayfishes of the southern Hemisphere), include only freshwater species and are not further considered here. The third superfamily, Nephropoidea, comprises the true lobsters, treated below.

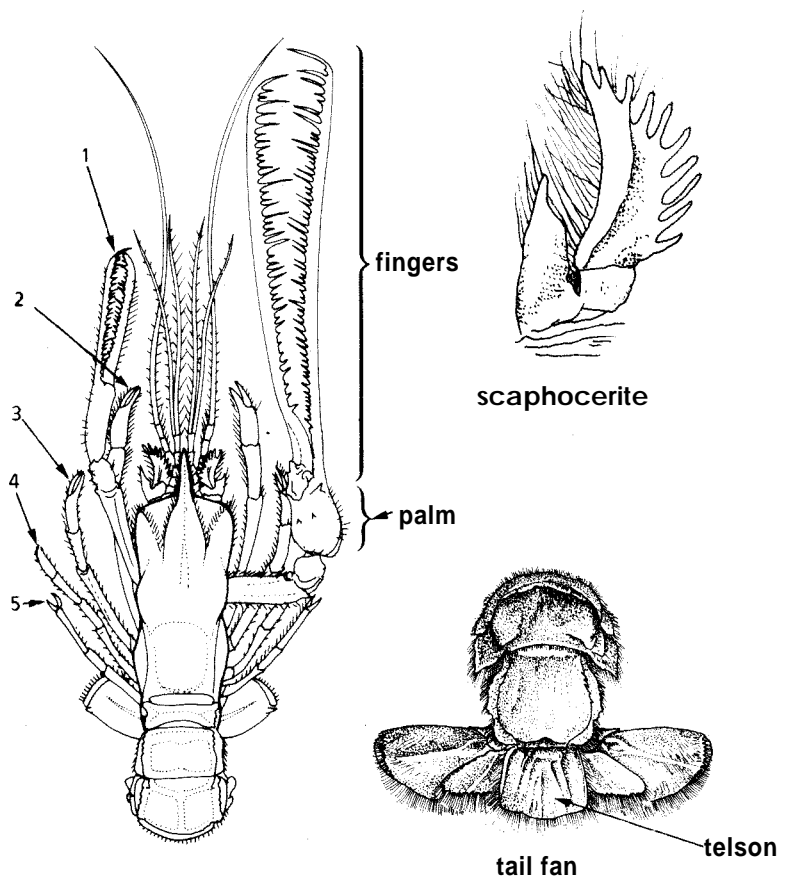
SUPERFAMILY NEPHROPOIDEA Dana, 1852

Nephropinae Dana, 1852, Proceedings Academy natural Sciences Philadelphia, 6: 15.

The Nephropoidea or true lobsters include two families, Thaumastochelidae and Nephropidae. The Nephropidae are commercially very important, while the Thaumastochelidae include only three species, none of which is of economic interest; they are only listed here for completeness' sake.

Key to the Families and Subfamilies of Nephropoidea

1a. Eyes entirely absent, or strongly reduced, without pigment. Telson unarmed. Chelipeds very unequal, the larger with fingers more than four times as long as the palm; cutting edges of the fingers of the larger cheliped with many slender spines. Fifth pereiopod (at least in the female) with a chela. Abdominal pleura short, quadrangular, lateral margin broad, truncate, not ending in a point. Scaphocerite with several very large teeth on the inner margin (Fig. 25) **Thaumastochelidae**



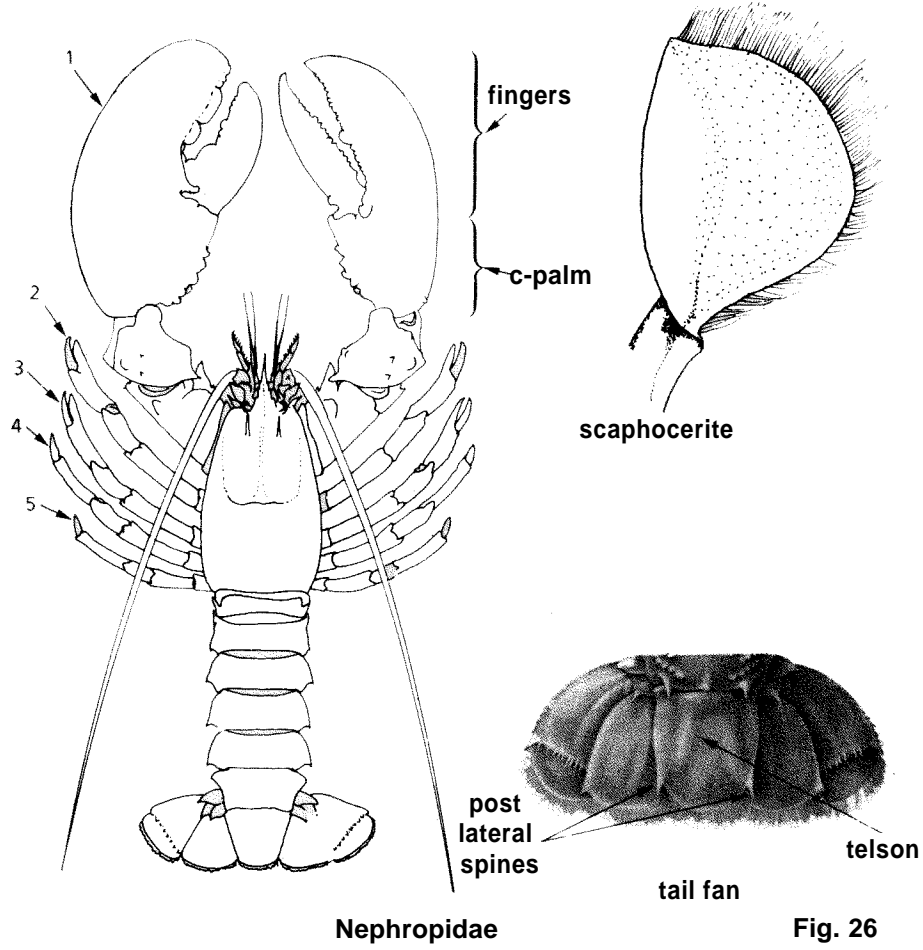
Thaumastochelidae

Fig. 25

1b Eyes well developed or reduced, always present as movable appendages. Telson with lateral and/or postlateral spines. Chelipeds equal or unequal, but fingers always considerably less than twice as long as palm; teeth on the cutting edge placed in the same plane. Fifth pereopod without a true chela. Abdominal pleura large, triangular or ovate, usually ending in a point. Scaphocerite, if present, with the inner margin evenly curved, unarmed (Fig. 26) **Nephropidae**

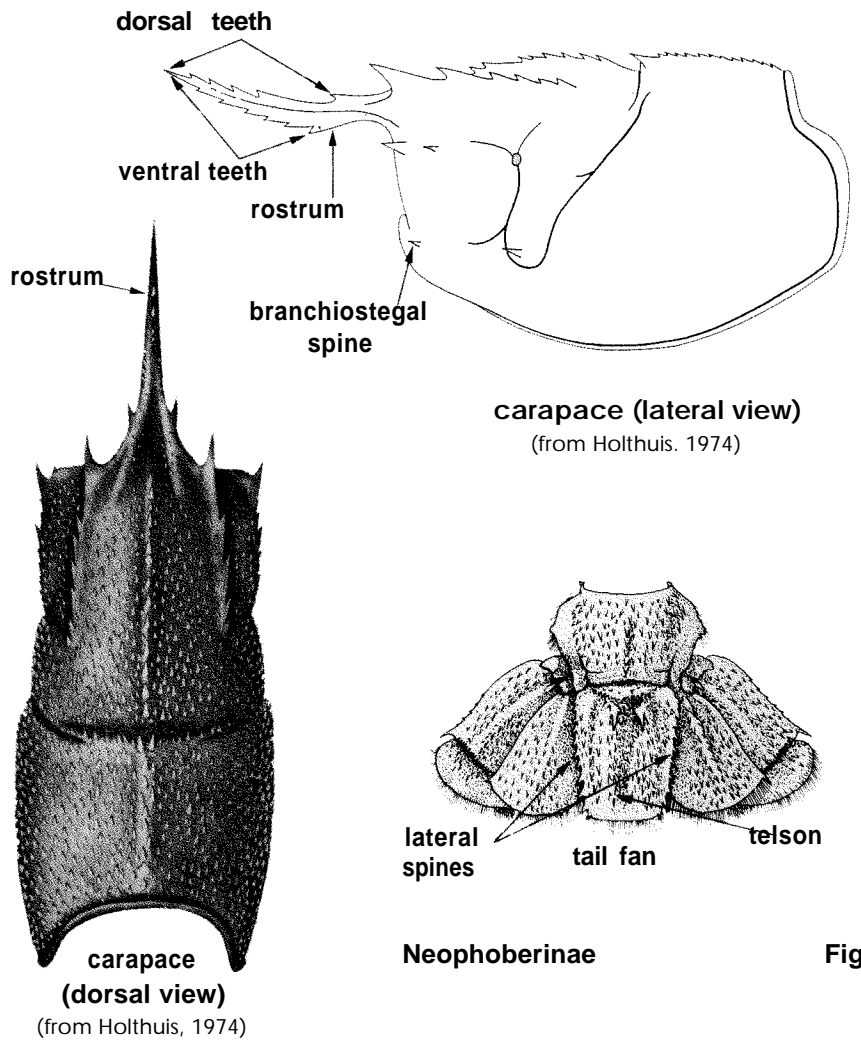
2a. Rostrum laterally compressed for the larger part of its length, with dorsal and ventral, but no lateral teeth. Carapace with branchiostegal spine. Body entirely covered by numerous closely placed and sharply pointed spinules. Lateral margin of the telson with 6 to 12 spines (Fig. 27) .. **Neophoberinae**

2b. Rostrum dorsoventrally depressed with lateral (and sometimes ventral), but without dorsal teeth; sometimes without any teeth. Carapace without a branchiostegal spine. Body never uniformly covered with spinules, although granules may be present all over, or spinules may be placed on the carapace. The lateral margin of the telson with at most three lateral spines, which if present, are usually small and irregular



Nephropidae

Fig. 26



carapace (lateral view)
(from Holthuis, 1974)

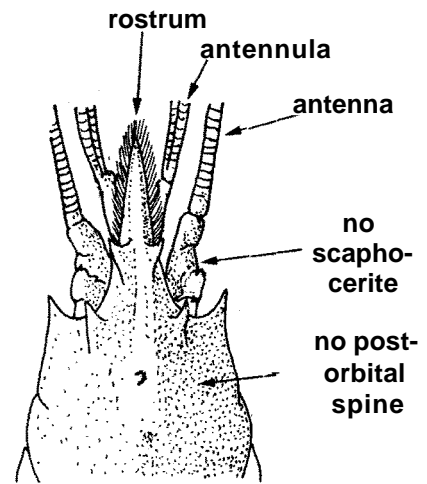
carapace
(dorsal view)
(from Holthuis, 1974)

Neophoberinae

Fig. 27

3a Scaphocerite absent. Carapace without post-orbital spine (Fig. 28). Abdominal sternites unarmed in both sexes. No podobranch on second maxilliped **Thymopinae**

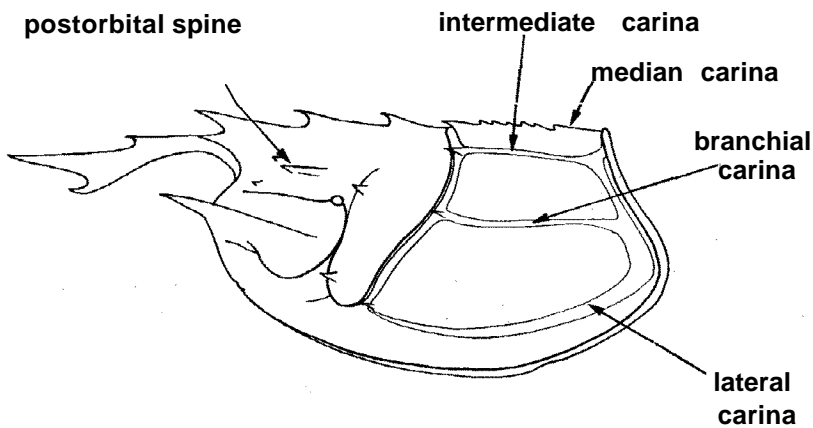
3b Scaphocerite present. Carapace with a distinct postorbital spine (Fig. 29). Sternites of second to fifth abdominal somites in the male with a sharp median spine each. Podobranch usually present on the second maxilliped **Nephropinae**



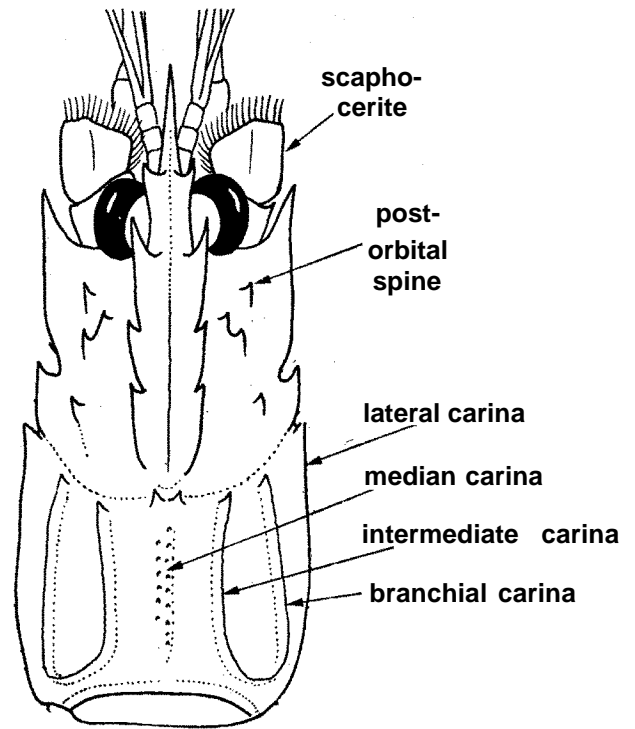
front part of carapace

Thymopinae

Fig. 28



carapace (lateral view)



carapace (dorsal view)

Nephropinae

Fig. 29

2.1.1 FAMILY THAUMASTOCHELIDAE Bate, 1888

THAU

Thaumastochelidae Bate, 1888, Report Voyage Challenger Zool. 24:7,11,46.

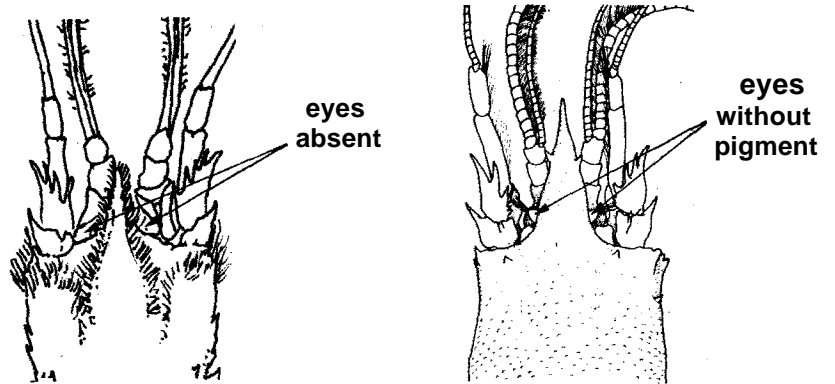
The family is easily recognized by the peculiar shape of the large cheliped with its swollen palm and the very elongate fingers (at least four times as long as the palm) that have very slender, alternating, large and small teeth.

Two genera with a total of three species known so far.

Key to Genera:

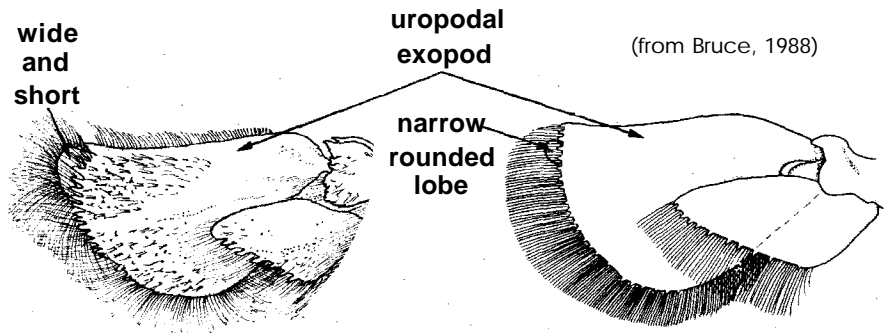
1a. Eyes totally absent, eventual remnants immovably fused to the ophthalmic somite (Fig. 30a). Second and third maxillipeds with well developed exopods. Distal part of uropodal. exopod behind the diaeresis wide and short (Fig. 30b) **Thaumastocheles**

1b. Eyes present, slender and slightly movable, without pigment (Fig. 31a). Exopods of second and third maxillipeds reduced to short scale-like rudiments. Distal part of uropodal exopod, behind diaeresis a narrow rounded lobe (Fig. 31b) **Thaumastochelopsis**



a. anterior part of carapace (dorsal view)

a. anterior part of carapace (dorsal view)



b. uropod

b. uropod

Thaumastocheles Fig. 30

Thaumastochelopsis Fig. 31

Thaumastocheles Wood-Mason, 1874

THAU Thau

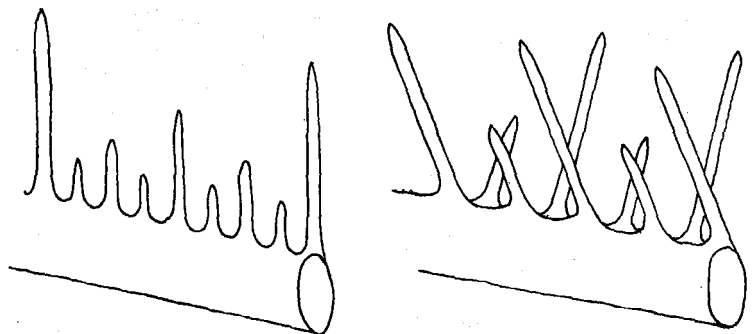
Thaumastocheles Wood-(Mason, 1874, Proceedings Asiatic Society Bengal. 1874: 181. Gender masculine. Name placed on the Official List of Generic Names in Zoology in Opinion 519 (published in 1958).

Type Species : by monotypy: *Astacus zaleucus* Thomson, 1873.

Key to Species:

1a. Teeth on fingers of large cheliped placed in a single row and oriented in the same plane as the fingers themselves (Fig. 32a). Indo-West Pacific **T. japonicus** (Fig. 33).

1b. The teeth on fingers of large cheliped not in the same plane as the fingers themselves, pointing alternately obliquely inward and outward; the bases of the teeth are placed in a single line, but the teeth themselves form two diverging rows (Fig. 32b). Western Atlantic . . . **T. zaleucus** (Fig. 35)



a. *T. japonicus*

b. *T. zaleucus*

Diagram (not drawn to scale) showing arrangement of teeth on finger of large cheliped (after Calman. 1913) Fig. 32

Thaumastocheles japonicus Calman, 1913

Fig. 33

THAU Thau 1

Thaumastocheles japonicus Calman, 1913, *Annals Magazine Natural History*, (7)12:230.

FAO Names : En - Pacific pincer lobster.

Type : Type locality: "Off Yenoshima, Odawara Bay [= off Enoshima near Odawara, Sagami Bay], Japan, 200 fms [= 366 m]" Type specimen in Zoological Museum of University of St. Andrews, Scotland, UK.

Geographical Distribution : East coast of Japan between Sagami and Tosa Bays. A single pincer collected near New Caledonia (22°02' S 165°57' E; 800 m deep) may belong to the present species (Monod, 1973: 126, figs 37-39) (fig. 34).

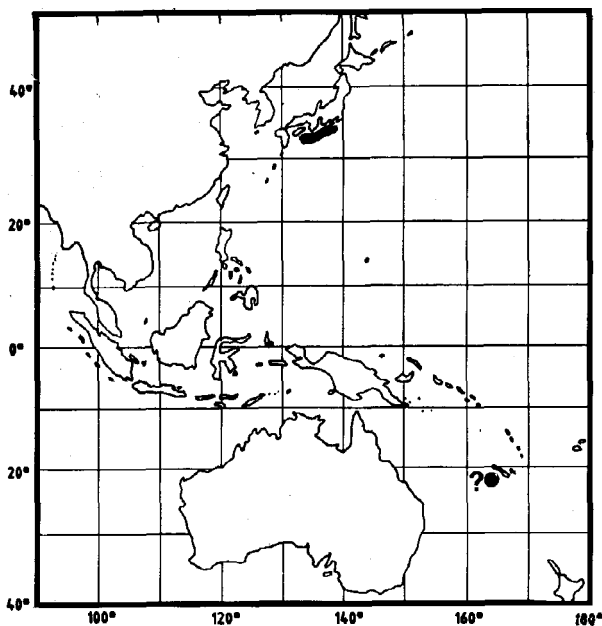
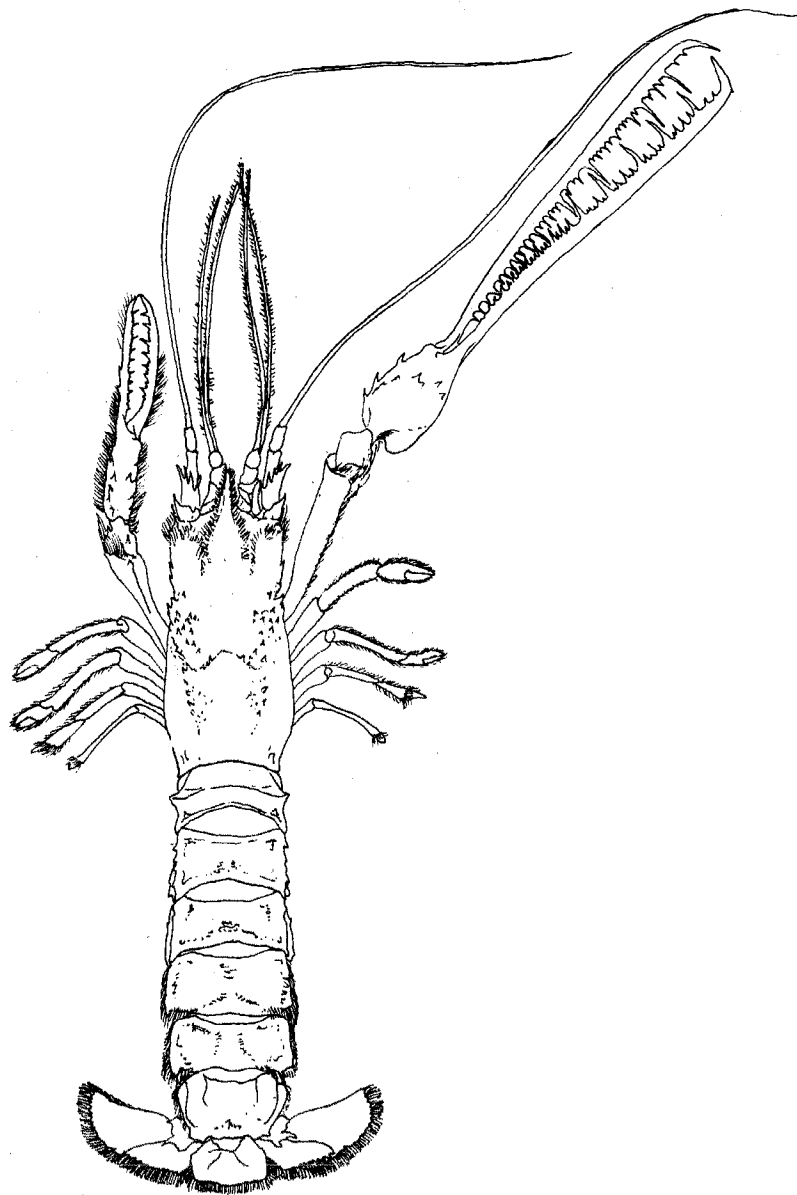


Fig. 34



(after Doflein, 1906)

Fig. 33

Habitat and Biology : The species is known from depths between 366 and 700 m (the New Caledonian specimen from 800 m).

Size : Total length 9 to 17.5 cm, carapace length between 4 and 6 cm.

Interest to Fisheries : None so far. The species is rarely caught, and usually as single specimens. Also the great depths at which it occurs makes it less interesting for commercial exploitation.

Literature : Baba et al., 1986: 152, 153, 281, fig. 104.

Thaumastocheles zaleucus (Thomson, 1873)

Fig. 35

THAU Thu 2

Astacus zaleucus Thomson, 1873, Nature, London, 8:246, 247, fig. 1. Specific name placed on Official List of Specific Names in Zoology in Opinion 519 (published in 1958).

FAO Names : En Atlantic pincer lobster.

Type : Type locality: "Challenger" Station 23, off Sombrero Island, West Indies, 18°24' N 63°28' W, 450 fms [= 823 m], bottom pteropod ooze. Female holotype in BM, No. 88.22 (in alcohol, condition fair); paratype in BM (only fragments).

Geographical Distribution : West Indian region (Straits of Florida, off Yucatan, east of Nicaragua, off Sombrero Island, and off Grenada) (Fig. 36).

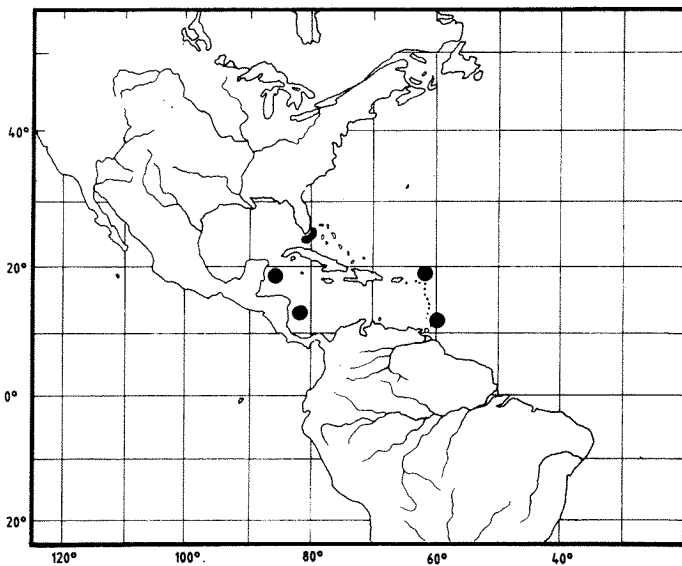


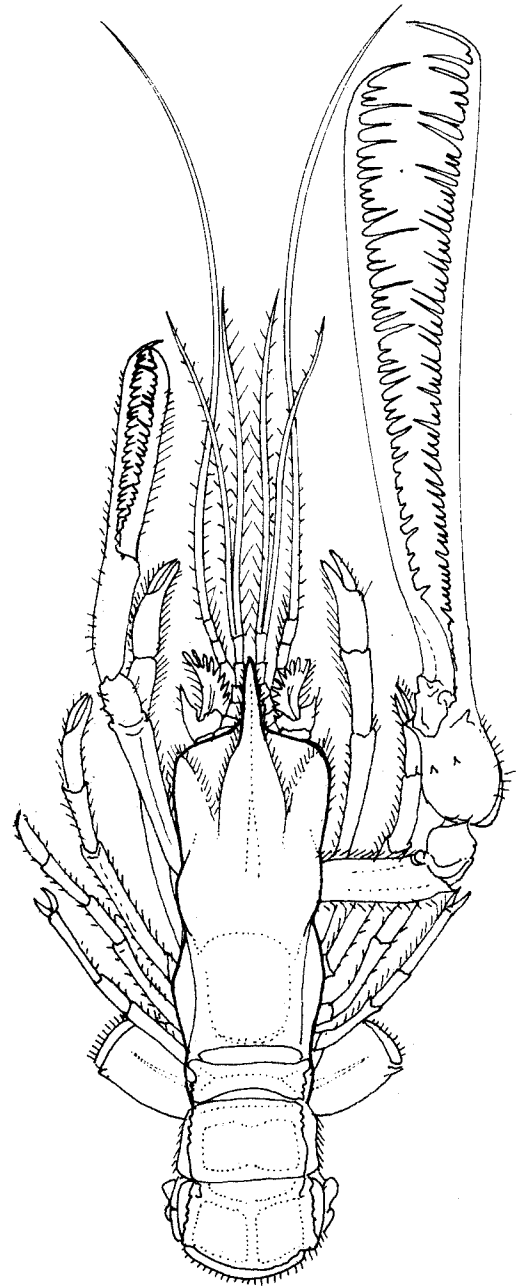
Fig. 36

Habitat and Biology : Deep-sea species from 640 to 1054 m depth. Bottom very flat, of soft mud (ooze). Possibly a burrowing species.

Size : Total length 10 to 16 cm.

Interest to Fisheries : So far none. Only 7 specimens have so far been taken, there are no indications that they ever could be caught in commercially interesting quantities.

Literature : Bate, 1888:47, text fig. 40, pl. 6, pl. 7 fig 1; Holthuis, 1974:1729, fig. 1.



(from Bouvier, 1925)

Fig. 35

Thaumastochelopsis Bruce, 198

THAU Thaup

Thaumastochelopsis Bruce, 1988, Invertebrate Taxonomy, 2:903.

Type Specie : by original designation and monotypy: *Thaumastochelopsis wardi* Bruce, 1988. Gender feminine.

Genus with a single known species.

Thaumastochelopsis wardi Bruce, 1988

Fig. 37

THAU Thaup 1

Thaumastochelopsis wardi Bruce, 1988, *Invertebrate Taxonomy*, 2:909, figs 1-7.

FAO Names : En - Australian pincer lobster.

Type : Type locality: "Marian Plateau, off Townsville," Queensland, Australia, "59°05.00'S [error for 19°05.00'S], 149°26.75'E, 425 m". Holotype female, and allotype male, Northern Territory Museum, Darwin, Australia, no. Cr. 004231.

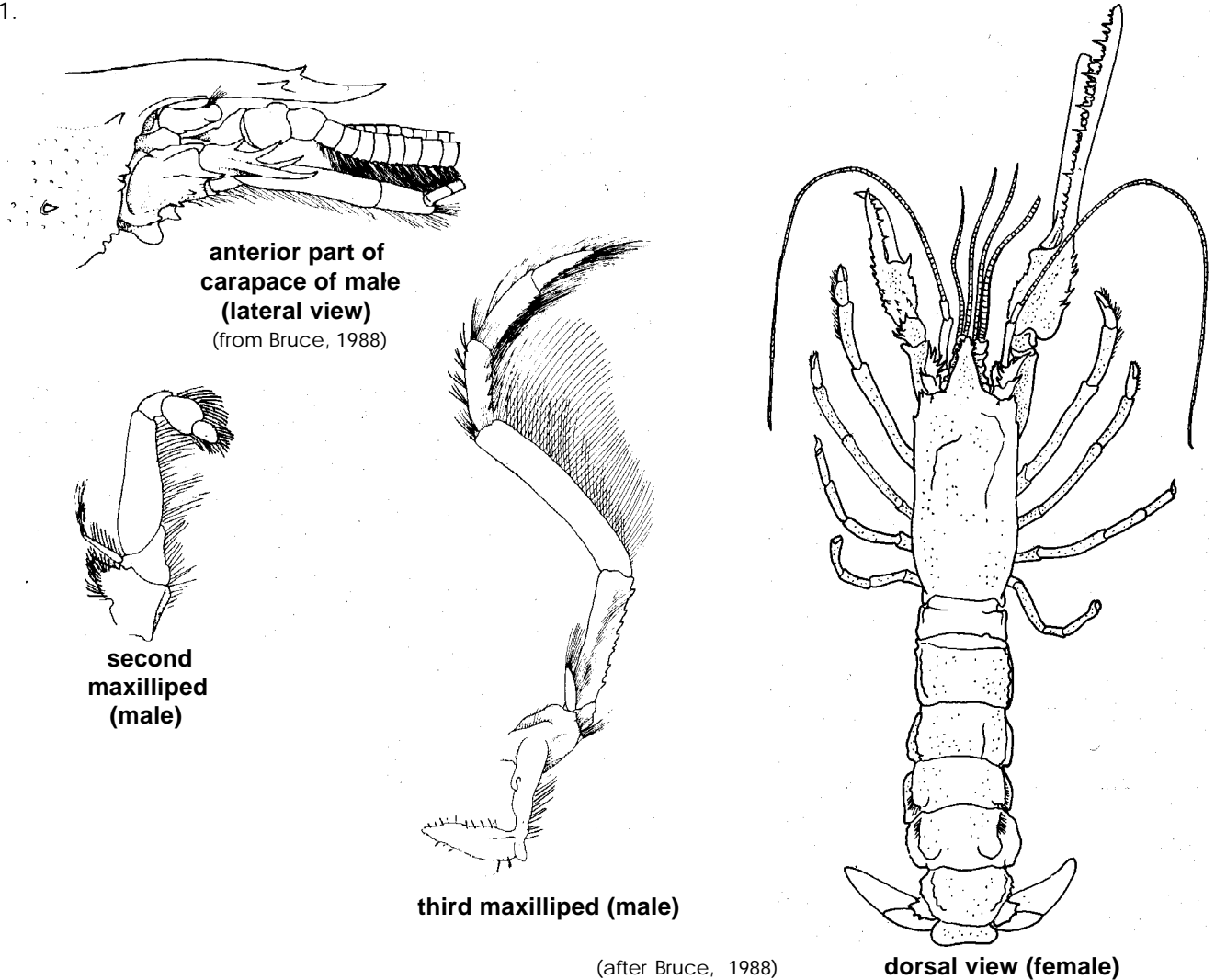


Fig. 37

Geographical Distribution : NE Australia (Fig. 38). Only known from the type locality.

Habitat and Biology : Taken at a depth of 425 m.

Size : Total length approximately 7.7 cm (female), 5.7 cm (male); carapace length 2.5 cm (female), 1.9 cm (male).

Interest to Fisheries : Inasmuch as only two specimens are known of this species nothing can be stated on this aspect, but it is not likely that the species ever will become of commercial interest.

Literature : Original description.

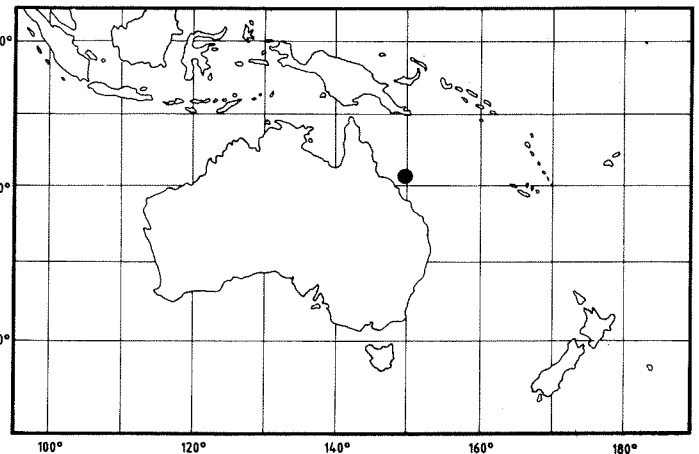


Fig. 38