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BRACHYURA COLLECTED DURING THE THAI-DANISH EXPEDITION (1966)

by

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ABSTRACT

The paper studies a collection of benthic brachyura collected off the west coast of Thailand on the Andaman Sea, by the Thai-Danish Expedition in January-February 1966. The collection was made by sorting animals among bottom samples obtained with a grab using a standard procedure, as part of a benthic biomass survey covering a limited area. Among the 67 identified species 4 genera and 7 species are new. The largest specimen (Raninidae) measures 20mm., but the size of the great majority does not exceed 10mm. The main families represented are: Leucosiidae (14 species), Portunidae (13 species), Goneplacidae (26 species), Pinnotheridae (6 species). The fauna on the soft bottom of the continental shelf is, on the whole, similar to that mentioned by Rathbun (1910) in the Gulf of Thailand and by Stephensen (1945) in the Gulf of Persia and which have been sampled by similar methods.

INTRODUCTION

The collection was made by sorting the benthic organisms in the bottom samples obtained during the Thai-Danish Expedition. During the expedition itself a preliminary identification of the brachyuran specimens was undertaken by the senior author during a five days stay on board ship in February 1966.

The material having remained only a few days in formalin was still in an almost fresh condition. The senior author was assisted in his work by Dr. Gallardo who was the original sorter. The importance of this close collaboration on the spot between the taxonomist and the sorter should be stressed. Without Dr. Gallardo’s great experience in handling very small specimens the present collection would have been much poorer and its final study more difficult.

Six months later, the specimens, after treatment for the calculation of the biomass, were sent to us for study at the National Museum of Singapore. The manuscript of our report was given to the editor in November 1966. Since then, several taxonomical changes having been published, the original draft was accordingly amended in November 1974. The following four genera and five species are new:

Singhaplax gen. n.
Cryptocnemus siamensis sp. n.
Thalamita muusi sp. n.
Hexapus stephenseni sp. n.
Hexapus edwarsi sp. n.
Asthenognathus gallardoi sp. n.

No comments or only brief ones are given for the well-known species. Some of our identifications are made with a certain reserve, the study of several species (particularly those of Typhlocarcinops) having been entirely discarded. Such material would require further study. Above all, a comparison with specimens previously identified and existing in European or American museums would be necessary.

With more than 60 species, the collection gives an accurate figure for the region of the benthic brachyuran fauna, obtainable by the same sampling method (Petersen’s grab). A more extensive survey would probably provide around 100 species of brachyura, which would correspond to the brachyuran fauna of the soft bottom (sand and mud) of the continental shelf in the region. The main families represented are Raninidae, Leucosiidae, Portunidae, Goneplacidae, Pinnotheridae.

Regarding the investigated biota, the brachyuran fauna of the present collection from the west coast of Thailand (Andaman Sea) is rather similar to that of Rathbun (1910) from the Gulf of
Thailand. The present collection (67 species) with regard to our knowledge of the entire brachyuran fauna of Thailand corresponds to approximately one third. Rathbun (1910) quoted 205 species in her report on the “Danish Expedition to Siam 1899-1900” led by Dr. Mortensen. Her list of species is given in the “Fauna of Thailand” by Chote Suvatti. Serène (1966) corrected this list in accordance with recent nomenclature, adding five species. Recently Mr. Lundoer made a reference collection of 182 species at the Phuket Marine Biological Center, adding 28 species not previously recorded. The present collection includes 30 unrecorded species; this brings the total of species recorded in Thai waters to 269. Our collection is deposited at the Phuket Marine Biological Center, Phuket, Thailand. All measurements are in millimeters, the first figure indicating the length, the second the breadth of the carapace.

LIST OF SPECIES

GYMNOPLEURA Bourne, 1922

RANINIDAE Dana, 1852
NOTOPINAE Serène and Umali, 1972
1. Cosmonotus grayi Adams and White, 1848
2. Notopus dorsipes (F., 1798)

RANININAE Serène and Umali, 1972
3. Raninoides personatus Henderson, 1888
4. Notosceles serratifrons (Henderson, 1893)

OXYSTOMATA H. Milne Edwards, 1834
DORIPPIDAE Dana, 1852
5. Ethusa sp.

LEUCOSIIDAE Dana, 1852
EBALINAE Stimpson, 1858
7. Nuciops modesta (Ihle, 1918) gen.n, comb.n.

CRYPTOCNEMINAE Stimpson, 1858
8. Nursia Lar (F., 1798)
10. Paranursia abbreviata (Bell, 1855) gen.n. comb. n.
11. Cryptocnemus siamensis sp.n.
12. Onychomorpha lamelligera Stimpson, 1858
13. Nursilia tonsor Alcock, 1898
ILIINAE Stimpson, 1871

14. Myra elegans Bell, 1855
15. ? Myra fugax coalita Hilgendorf, 1878
16. Randallia eburnea Alcock, 1896
17. Randallia glans Alcock, 1896
18. Iphiculus spongiosus Adams and White, 1848

LEUCOSIINAE Dana, 1852

19. Leucosia sp.

BRACHYGNATHA Borradaile, 1907

OXYRHYNCHA Latreille, 1803

MAJIDAE Samouelle, 1819

20. Acanthophrys longispinosus (De Haan, 1839)

PARTHENOPIDAE Miers, 1879

22. Rhinolambrus sp.

BRACHYRHYNCHA Borradaile, 1907

PORTUNIDAE Rafinesque, 1815

PORTUNINAE Stephenson and Campbell, 1959

23. Hellenus pulchricristatus Gordon, 1931
24. Hellenus aff. hastatoides (F., 1798)
25. Cycloachelous orbicularis (Richters, 1880)
26. Portunus sp.
27. ? Carupella sp.
28. Thalamita muusi sp. n.
29. Thalamita parvidens Rathbun, 1907
30. Thalamita ? spinifera Borradaile, 1903
31. Thalamita ? sexlobata Miers, 1886
32. Thalamita sp.
33. Goniohellenus vadorum Alcock, 1899

CATOPTRINAE Borradaile, 1903

34. Libystes edwardsi Alcock, 1900
35. Libystes alphonsi Alcock, 1900

GONEPLACIDAE Dana, 1852

GONEPLACINAE Miers, 1886

36. Singhaplax ockelmanni (Serène, 1971) gen.n. comb.n.
37. *Notonyx vitreus* Alcock, 1900
38. *Typhlocarcinodes hirsutus* Borradaile, 1903

Carcinoplacinae H. Milne Edwards, 1852

39. *Carcinoplax longimanus* (De Haan, 1835)
40. *? Homoioplax haswelli* (Miers, 1884)

Goneplacidae Pilumnian *s. str.* Guinot, 1971

41. *Typhlocarcinus rubidus* Alcock, 1900
42. *Typhlocarcinus* sp. 1
43. *Typhlocarcinus* sp. 2.
44. *Typhlocarcinops* sp. (5 or 6 different species)
45. *Xenophthalmodes dolichophallus* Tesch, 1918
46. *Ceratoplax ? fulgida* Rathbun, 1914
47. *Lophoplax takakurai* Sakai, 1935
49. *Scalopidia spinosipes* Stimpson, 1858

Chasmocarcininae Serène, 1964

50. *Helphthopelta mortenseni* Serène, 1964
51. *Chasmocarcinops gelasimoides* Alcock, 1900
52. *Camatopsis rubida* Alcock and Anderson, 1899

Euryplacinae Stimpson, 1858

53. *Eucrate* sp.
54. *Heteroplax nitidus* Miers, 1879

Hexapodinae Alcock, 1900

55. *Thaumastoplax orientalis* Rathbun, 1909
56. *Hexapus sexpes* De Haan, 1835
57. *Hexapus stephenseni* sp.n.
58. *Hexapus granuliferus* Campbell and Stephenson, 1970
59. *Hexapus edwardsi* sp.n.

Pinnotheridae H. Milne Edwards, 1852

Xenophthalminae Alcock, 1900

60. *Xenophthalmus pinnotheroides* White, 1846
61. *Neoxenophthalmus obscurus* (Henderson, 1893)

Asthенognathinae Stimpson, 1858

62. *Asthенognathus gallardoi* sp.n.
63. *Asthенognathus hexagonum* Rathbun, 1909
PINNOOTHERELINAE Alcock, 1900

64. *Pinnixa ? hematostica* Sakai, 1934

OCYPODIDAE Ortmann, 1894

66. *Macrophthalmus* sp. 1
67. *Macrophthalmus* sp. 2

GYMNOPLEURA Bourne, 1922

RANINIDAE Dana, 1852

NOTOPINAE Serène and Umali, 1972

1. *Cosmonotus grayi* White, 1847
   (fig. 1)


**TYPE LOCALITY**: Borneo

**TYPE SPECIMEN**: British Museum (N.H.), London.

**MATERIAL**: Sta. 1011-4, 1A. male of 8 x 10, largest.—Sta. 1012, 1 specimen smaller.—Sta. 1012-7, 1—Sta. 1012-8, 1.—Sta. 1012-4, 1. Ph. 201/1*

**OBSERVATIONS**: The species is widely distributed in the Indo-Pacific region and from 20 to 200m deep. The second species of the genus *genkaiæ* Takeda and Miyake, 1970 is known only by 3 specimens from the waters around Japan.

2. *Notopus dorsipes* (L., 1758)

*Cancer dorsipes* L., 1758: 630
*Albunea dorsipes*, F., 1798: 397

**NOTOPINAE** Serène and Umali, 1972


*Raninoides personatus* White, manuscript.—Henderson, 1888: 27, pl. 2, fig. 5.—Alcock, 1896: 293.—Ihle, 1918: 317 (no specimen).—Bourne, 1922: 73, pl. 4, fig. 5, 6; pl. 6, figs. 36, 37; pl. 7, figs. 48-50.—Yokoya, 1933: 113.—Chopra, 1933: 52, text fig. 1a, pl. 3, figs. 2-2 a.—Sakai, 1937: 167.—1940: 46.—Tyndale, Biscoe and George, 1962: 92.—Serène and Umali, 1972: 37, text figs. 7-14, 31; pl. 2, figs. 6-8.

**TYPE LOCALITY**: Ambon, Indonesia.

**TYPE SPECIMEN**: British Museum (N.H.), London.

**MATERIAL**: Sta. 1004-10, male of 20 x 10


**TYPE LOCALITY**: Ambon, Indonesia.

**TYPE SPECIMEN**: Iconotype in Rumphius, 1705: 29, pl. 10, fig. 3 as *Pediculus Marinus*.

**MATERIAL**: Sta. 1015-1, size: 6 x 8

**OBSERVATIONS**: The species is widely distributed in the Indo-Pacific region. Serène and Umali (1972: 32) suggested that the genus *Notopus* should be restricted to the single species *dorsipes* and that the other two species *ovalis* and *misa-kiiensis* be removed to a different genus aff. *Ranilia*.

**RANININAE** Serène and Umali, 1972


*Phuket Marine Biological Center reference collection numbers.*
4. *Notosceles serratifrons* (Henderson, 1893)

*Raninoides serratifrons* Henderson, 1893:408, pi. 38, fig. 10-12.—Alcock, 1896:293.—Laurie, 1906:367.—Stebbing, 1920:250.—Chopra, 1936:86, pl. 3, text-fig. 1e.—Sakai, 1936:67, pl. 14, fig. 2—1937:116, pl. 16, fig. 3, text-fig. 37.—1965:2, pi. 1, fig. 4.—Barnard, 1950:399, fig. 75c-g.

*Notosceles serratifrons*, Ward, 1942:48.—Serene and Umali, 1972:44, text-fig. 34.

**Type Locality**: Ceylon (Cheval Par)

**Type Specimen**: British Museum (N.H.), London.

**Material**: Sta. 1032-1; size: 20x11.—Sta. 1011-4; smaller specimen. Ph. 202/1

**Observations**: The large specimen is a female and has been studied by Serène and Umali (1972).

**Oxytomata** H. Milne Edwards, 1834

**Dorippidae** Dana, 1852

5. *Ethusa* sp.

(Pl. I, fig. A)

**Material**: Sta. 1020-3, male of 5 × 4

**Observations**: Our specimen differs from all the described species of *Ethusa* by: 1) the spout formed by the efferent branchial channel, which extends not only far beyond the level of the antennular basal segment, but far beyond the front, being well visible from dorsal view. 2) the frontal teeth which are remarkably short. In spite of its small size, the pleopods of the specimen are developed. Taking into consideration our personal lack of experience for the identification of the *Ethusa* species, we prefer to discard any further comment on the specimen, which still need to be studied.

**Leucosiidae** Dana, 1852

**Ebalinae** Stimpson, 1858


(fig. 2)

*Actaeomorpha morum* Alcock, 1896:172, pl. 8, fig. 3.—Illus.Invest., pl.28, fig. 4.—Ihle, 1918:308 (no specimen),—Chopra, 1936:480.—Edmonson, 1935:20.—Sakai, 1937:116, text-fig. 13; 1965:33, pl. 15, fig. 3.—Serene, 1954:458, pl. 7 and text-fig. 1.2.—Zarenkov, 1969:16, fig. 1(1).—Takeda and Miyake, 1970:218.


*Oreophorus rugosus* Yokoya, 1933, not *O. rugosus* Stimpson 1858; vide Takeda and Miyake (1970).

**Type Locality**: Ganjam Coast, India

**Type Specimen**: Zoological Survey of India, Calcutta

**Material**: Sta. 1016-6, 1 male of 5 × 6

**Observations**: Since Guinot (1966) removed the species from *Actaeomorpha* Miers, 1878 and classified it as aff. *Oreophorus*, the generic position of the species was uncertain. We have been informed that Mme. Guinot in a manuscript under preparation has already included it in *Drachiella* gen.n. She has communicated to us the diagnosis of the new taxon, which, with her kind permission is given below in order to give priority of the generic name to Mme. Guinot. The present specimen is well characterized by the presence of mushroom like tubercles ornamenting the carapace and is identical with the specimens from the Nhatrang Bay, identified by Serène (1954). Zarenkov (1969, fig. 1.1, 1.2) figured the male pleopods of *Drachiella morum* and *D. lapillus*. *Drachiella* is easily separated from *Oreophorus*, *Tlos* and *Oreotlos*, by the shape of the chelipeds and particularly of their fingers. Ihle (1918) had already indicated this character for the separation of *Oreophorus s.l.* from *Actaeomorpha*. On *Drachiella* the fingers of the chelipeds are straight, triangular and short; their length does not exceed the length of the palm. On all species of *Oreophorus*, *Tlos*, *Oreotlos* the fingers of the chelipeds are curved, concave inside, approximately twice as long as the palm and mainly the fixed fingers are flattened like a blade. These differences in the fingers are obvious when comparing the chelipeds of *Actaeomorpha morum* illustrated by Serène (1954, pl. 7, fig. 9, 10) with, for example, thoses of
Oreophorus reticulatus figured by Adams and White (1848, pl. 6, fig. 1) or O. rugosus figured by Serène (1954, pl. 8, figs. 4, 7).

Drachiella Guinot gen. n.


Actaeomorpha Miers, emend., et Drachiella gen. nov. ont un habitus similaire (forme de la carapace et des péréiopodes, ornementation du test) ainsi qu’un système respiratoire de type analogue, mais il s’agit seulement d’un phénomène de convergence.

Nuciops gen. n.

Type species : Nucia modesta Ihle, 1918.

Diagnosis : Carapace subglobular, faintly hexagonal, slightly flattened dorsally without marked region, excepting cardiac region on adult male. Surface of carapace and chelipeds entirely
covered with small granules; ambulatory legs, slim and smooth, with long straight dactylus. Male abdomen with formula $1 + 2 + R + 6 + T$ and a swelling on each side of segment 3. Male pleopod 2 as long as pleopod 1, both with an acuminate apex crossing one over the other (see Zarenkov, 1969, fig. 1.5 for modesta).

**Observations:** Ihle (1918), describing modesta, remarked that it differs from the other typical Nucia species by its carapace and particularly by its longer chelipeds and smooth pereiopods with straight dactylus. Serène (1957), studying Nucia bouvieri, which is the species closest to it, again stressed that modesta was markedly different from all the other species of Nucia. Our comparison of its male pleopods with those of the typical Nucia species shows clearly that modesta does not belong to Nucia. The male pleopods of any species of Nucia having not yet been published, we illustrate the male pleopods of the lectotype of Nucia rosea Nobili, 1906 (fig. 4). The lectotype, selected by us among the series of paratype specimens which are deposited in the collection of the Paris Museum, is a male of 9.5 x 11.5. The pleopods of Nucia with the second pleopod much shorter than the first, belong to a type entirely different from that of Nuciops.

Nuciops is separated from Nucia by: 1) a smaller size, maximum 5 instead of 8-11 for Nucia. 2) the male chelipeds longer with palm much less swollen. 3) the ambulatory legs long, slim, smooth with straight setose dactylus instead of being short, stout, granular with dactylus like a chitinous hook on Nucia. 4) the second male pleopod as long as the first instead of being much shorter. Nuciops is a monotype Indo-Pacific genus. The position of Nuciops in the Ebaliiinae needs to be reconsidered. If only by the type of its male pleopods, the genus is closer to Praebebalia than to any other genera of the Leucosiidae.

7. **Nuciops modesta** (Ihle, 1918) comb. n.
   (fig. 3 and Pl. I, fig. B)

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**Nucia modesta** Ihle, 1918: 223, fig. 125.—Serène, 1954: 485, fig. 5, 8a, pl. 10, fig. 1-2.—1957: 164 and pl. 7c.—Zarenkov, 1969: 18, fig. 1.5, 3.1-5.

**Type Locality:** Sala Besi (Celebes)

**Type Specimen:** ? Amsterdam Museum

**Material:** Sta. 1046-8, 1 male of 3 x 4.—Sta. 1046-4, Sta. 1023-3, Sta. 1047-1, juveniles. Coll. Serène, male of 3 x 3.75; loc. Manila Bay, Philippines. Coll. May 1964. Ph. 203/1

**Observations:** Zarenkov (1969) illustrated the two male pleopods of the species; their particularities confirm that modesta does not belong to Nucia. The material of the present collection no longer being in our hands, a male of 3 x 3.75 from the Philippines is illustrated. Its carapace differs from the figures of the authors by its cardiac region being more clearly delimited and more swollen; this is characteristic of the adult male.

Zarenkov (1969) gave a fine drawing of the pleopods 1 and 2 in their natural position, with the greatest part of the pleopod 2 invaginated into the pleopod 1, but made no comment. It is relatively hard to separate one pleopod from the other and perhaps in doing so some slight damage had occurred in the subdistal part of our pleopod 1; however our figures are rather similar to the figures of Zarenkov. Probably also some slight differences are related to a different position on the slide prepared for the microscopical drawing. The subproximal part of pleopod 1 presents 3 long and slim spines (setae-like) on one side and 4 short and strong spines on the other side; the former are situated a little in front of the entrance of the pleopod 2 into the pipe of the pleopod 1. The pleopod 2 at the same level presents a slight narrowing and strengthening, as it is usual in that type of pleopod 2. The preapical structures of the pleopod 1 are complicated, probably in connection with the working of the pleopod 2.

The species is little recorded: 1 male and 2 females by Ihle (1913), one female by Serène (1954), 1 male of 4 x 4.3 by Serène (1957), 2 males and 2 females by Zarenkov (1969). The largest recorded specimen is a male of 4.25 x 4.25 (Ihle).
CRYPTOCNEMINAE Stimpson, 1858

8. Nursia lar (F., 1798)
   (Pl. I, fig. C)

Parthenope lar F., 1798:354.
Not Cancer plicata Herbst, 1803:10, pi. 59, fig. 2.


OBSERVATIONS: The adult male and female are 13-14 in size and the specific character concerning the length of the merus of the cheliped cannot serve to identify our immature female. However the quadridentate frontal border and the sharp teeth of the lateral and posterior border of the carapace are characteristic of lar. Taking into consideration the uncertain specific value of these characteristics, the separation of lar from the closely related species plicata and sinuata needs clarifying. The male pleopods of plicata have been illustrated by Stephensen (1945, fig. 6c) and that of sinuata by Campbell and Stephenson (1970, fig. 9b); that of lar is still unknown. Sakai (1937) considered in his key that Nursia was an intermediate genus between the Ebaliiinae and the Iliinae; we classify it among the Cryptocneminae, a subfamily discarded by Sakai (1937) as well as by other authors.


MATERIAL: Sta. 1011-2, damaged specimen.

Paranursia gen. n.

TYPE SPECIES: Nursia abbreviata Bell, 1855.

DIAGNOSIS: Carapace strongly flattened (almost laminar) of suborbicular outline with laminar sinuous granular border. A granular longitudinal ridge from front to cardiac region; a granular gastric rise from which an oblique slight epibranchial ridge runs on each side; no trace of hepatic ridge. On chelipeds a granular line along borders of trigonal merus and slightly swollen palm. Ambulatory legs with borders finely granular and carinate. Male abdomen with segments 3-6 united into one piece with subdistal median denticle. Male pleopod straight of same breadth all along, short subdistal setae, apex multilobate with chitinous pieces. (See Stephensen, 1945, fig. 6a).

OBSERVATIONS: The male pleopod 1 of abbreviata presents a type similar to that of Leucosis and is mainly characterized by its apical region. The length of the pleopod 2 is approximately one third of the length of pleopod 1.

The apical region of the pleopod 1 has a brown (chitinous) coloration contrasting with its white stem, from which it is separated by an oblique transverse line. Its length is nearly half (0.43) of the total length of the pleopod and several lobes with spinules or chitinous processes can be distinguished on its distal part. On the figure of Stephensen (1945) three special processes are designated by a, b, c. A fourth one is designated by d on our drawing. Further observations are still necessary before being able to precisely position those structures in regard to the opening of the spermal canal and to suggest an interpretation of their role. It is, however, already obvious that abbreviata cannot be maintained in Nursia, nor included in Leucosia.

The genus Nursia Leach, 1817 is still heterogeneous; it probably will have to be limited s. str. to the species of groups “A” of Ihle (1918), the other species being distributed into other genera, some existing, some new ones to be established. The genus Ebalia, particularly with regard to its Indo-Pacific species, is in a similar situation; we believe that Ebalia is probably not represented in the Indo-Pacific region. It is possible that Ebalia orientalis Kossmann, 1877 belongs to Paranursia which we are establishing as a monotypic Indo-Pacific genus. In spite of its similar aspect, Nursia rubifera Muller, 1886 has relation to
10. Paranursia abbreviata (Bell, 1855) comb. n.

*Paranursia abbreviata*; Peyrot-Clausade and Serène (manuscript) have established the species of Muller as synonymous with *Leucisca squalina*. *Paranursia* gen.n. belongs to the Cryptocneminae.

**Nursia abbreviata** Bell, 1855:308, pl. 34, fig. 5.—Miers, 1884:253.—Henderson, 1893:404.—Alcock, 1896:185.—Ihle, 1918:235.—Hale, 1928:103, fig. 26 and 27.—Stephensen, 1945:69, fig. 6A.—Pillai, 1951:10.—Campbell and Stephenson, 1970:249, fig. 10.

**TYPE LOCALITY**: Indian Ocean

**TYPE SPECIMEN**: British Museum (N.H.) London.

**MATERIAL**: Sta. 1024-7, male of 3×3.—Copenhagen Mus., male of 6×6: Loc. Gulf of Iran, coll. Tharson; det. Stephensen, 1945. Ph. 204/1

**OBSERVATIONS**: The largest specimens recorded are a male of 9 and a female of 10 by Alcock (1896); Stephensen (1945) illustrated the male pleopod 1 of a specimen of 7; our specimen is much smaller. The male pleopods figured by us are those of a larger specimen, belonging to the series identified by Stephensen (1945) and which has been kindly lent to us by the Zoological Museum of Copenhagen. The particularities of the male pleopods, as well as several other characteristics justify the removal of *abbreviata* to a different genus. which is described above as *Paranursia* gen.n.

11. Cryptocnemus siamensis sp. n.

(Fig. 6 and Pl. II, fig. C)

**TYPE SPECIMEN**: Phuket Marine Biological Center, Phuket, Thailand.

**MATERIAL**: Sta. 1011-2, holotype, male of 4.2×7.8

**DIAGNOSIS**: Carapace nearly twice broader than long, strongly flattended with laminar borders; a median dorsal weak gastric elevation; outline of carapace transversally oval with lateral wings convex, devoid of any salient lateral or posterolateral angle. Front obtusely triangular. Chelipeds relatively weak with trigonous merus, propodus elongated, twice as long as high; pereiopods strongly carinated. Male abdomen triangular with strong median tooth on proximal border of segment 6. Male pleopod 1 with a subdistal bunch of 5 long setae.

**OBSERVATIONS**: The species differs from all species of *Cryptocnemus* by the weakness of its chelipeds; the propodus of the chelipeds of all other species as long or just a little longer than high. The species most closely related to *siamensis* are *aberrans* Balss, 1938 and *planus* Ward, 1933. The species of Ward, only known by the holotype (a male of 6) from an island off Queensland and deposited at the Australian Museum, was not quoted by Balss (1938) when he described *aberrans*. Comparison between specimens of the two species which are perhaps identical and particularly of their male pleopods will be of particular interest. The species of Balss was described for a single female of 4.7×7.7 from the Solomon Islands. Zarenkov (1968) and Takeda (1972) provided an accurate illustration of male specimens, including their pleopods; their specimens are respectively 5.5 and 4×6.3 in size.

Our specimen of *siamensis* originally was identified by us as *aberrans* from which it differs by:
1) the median dorsal post frontal ridge. 2) the pterygostomian region less salient. 3) the chelipeds weaker and pereiopods 2-5 slimmer. 4) the male pleopod; for *aberrans*, the figure of Zarenkov (1968) seems to be more accurate than that of Takeda (1972).

The examination of the known male pleopods of several species of *Cryptocnemus* clearly demonstrates that they are not congeneric. The necessary revision of the genus might give full consideration to the type of the still unknown male pleopod of *pentagonus*, which is the type species. Until such a revision is made, *siamensis* is described as *Cryptocnemus* with some reserve.

We had the opportunity to examine the type specimen of *C. mortenseni* Rathbun 1909. It is
a small male of 3 x 3.8 with its pleopods not yet developed and in our opinion, it is only a juvenile of *pentagonus*.

12. *Onychomorpha lamelligera* Stimpson, 1858

(fig. 7 and Pl. III, figs. A,B.)

*Onychomorpha lamelligera* Stimpson, 1858:162.—1907:164, pl.19,fig. 9,9a.—Walker, 1887:111,pl. 8,fig.3.—Alcock, 1896:236.—Rathbun, 1910:311.—Ihle, 1918:317 (no specimen).

**TYPE LOCALITY**: Hong Kong

**TYPE SPECIMEN**: ? Lost

**MATERIAL**: Sta. 1022-2, female of 5 x 5.—Copenhagen Mus., male of 6.5 x 6. Loc : Gulf of Thailand; Coll : Mortensen; det : Rathbun, 1910.

**OBSERVATION**: The specimen perfectly agrees with the observations and illustrations of Stimpson (1858, 1907) for a single male of 6.10 x 5.6 from Hong Kong. Alcock (1896) recorded a single female of 7 x 6.5 from Palk Straits. Rathbun (1910) 1 male and 1 ovigerous female from the Gulf of Thailand. We illustrate (fig. 5, C, D) the pleopod of the male specimen of Rathbun which have been kindly lent to us by the Zoological Museum of Copenhagen.


(fig. 8 and Pl. II, figs. A, B)


**TYPE LOCALITY**: Andaman Sea.

**TYPE SPECIMEN**: Zoological Survey of India, Calcutta.

**MATERIAL**: Sta. 1016-2, male of 5 x 5.5.—Sta. 1011-10, 1 juvenile.—Sta. 1011-3, 1 juvenile.

**OBSERVATIONS**: Some years ago (1964), the senior author had the opportunity to reexamine and photograph the type specimen of *tonsor* at the Zoological Survey of India, Calcutta. The photograph in our hands leaves no doubt that our specimen is identical to Alcock's species, but the validity of the species as distinct from *dentata* must be considered. *N. dentata* is relatively well illustrated by various authors. On the contrary, with the exception of its male pleopod (Zarenkov, 1969), no figure of *tonsor* has yet been published. Alcock (1896) separated *tonsor* from *dentata* with regard to: 1) smaller size. 2) a different surface pattern of the dorsum of carapace, the teeth of lateral margin and ridges and spines of dorsum being also much more sharply curved. 3) The palm of cheliped less swollen, with fingers crestiform on their outer edges. Zarenkov (1969) illustrated the male pleopod of *tonsor* (fig. 5.4) with a specimen of 5.4 and the of *dentata* (fig. 5.5) with a specimen of 6.5. The pleopod of *tonsor* differs from that of *dentata* by the two distal branches being closer to each other, the outer branch being straight and ornamented with spinules, more numerous and differently arranged. Considering that *tonsor* is always recorded with specimen smaller in size than those of *dentata*, it may be thought that *tonsor* is only a junior form of *dentata*, their differences being merely of intraspecific value. Our specimen of *tonsor* was compared with several specimens of *dentata* of various origins, particularly with a male of 6.5 x 8.0, which has been used for our illustrations and is recorded below. Our comparison confirms that between *tonsor* and *dentata*, the discrepancies described by Alcock (1896) and illustrated by Zarenkov (1969) exist. However a detailed study of a large series of specimens of various sizes is still necessary to confirm the validity of *tonsor* as a distinct species from *dentata*; the species s.l. has a wide Indo-Pacific geographical distribution from the Red Sea (Monod) to South Africa (Kensley), from Australia (Haswell) to Japan (Takeda and Miyake).

*Nursilia dentata* Bell, 1855

(Pl. II, fig. C)

TYPE LOCALITY: Indian Ocean.

TYPE SPECIMEN: British Museum (N.H.), London.

MATERIAL: Male of 6.5×8.0, Manihine Cruise 336, Station 39, D-5, dredge 15 fm., 21/2/72, Coetivy Island, Coll: A.J. Bruce.

14. Myra elegans Bell, 1855
(fig. 9 and Pl. III, fig. D)

Myra elegans Bell, 1855a: 297, pl. 32, fig. 4a-b.—1855b: 13.—Alcock, 1896: 208.—Ihle, 1918: 261.

Persephona elegans Rathbun, 1910: 309, pl. 1, fig. 12.

TYPE LOCALITY: Oriental seas.

TYPE SPECIMEN: British Museum (N.H.), London.

MATERIAL: Sta. 1035-8, male of 11×6.—Specimen 377, male of 16×8, from Indonesia.

OBSERVATIONS: As our specimen is immature the male pleopod of a larger specimen from Indonesia is illustrated. A species described from one single incomplete specimen is rarely recorded. Alcock (1896) quoted 4 males and 1 female off the Madras and the Arakan coast, at a depth of 12-13 fathoms; the largest male was 12×8 and the largest female 15.5×10.5. Rathbun (1910) mentioned numerous specimens from various localities in the Gulf of Thailand, the largest male being 19.5×10.5, the largest female 18.5×10.4; Ihle (1918), only a juvenile male of 7.75×5.75 from Madura Straits; Chopra (1933), 2 females and 1 male from the mouth of the River Hooghly, the male being (excluding terminal spine) 15×10.5. The senior author identified numerous specimens from Indonesian waters, deposited in the collection of the Marine Research Institute in Jakarta. The specimen (377) illustrated here is one of them.

15. Myra coalita Hilgendorf, 1878

Myra coalita Hilgendorf, 1878: 812, pl. 1, fig. 6.—Cano, 1889: 253.


Myra affinis Stimpson, 1858,?; 1907: 153 Not affinis Bell, 1855 and other authors (vide Sakai 1937: 134).

Myra dubia Miers, 1879: 42.

TYPE LOCALITY: Zanzibar.

TYPE SPECIMEN: ?

MATERIAL: Sta. 1010-6, male of 9×7.—Sta. 1020-4, 1 smaller male.—Sta. 1000-5, 1 juvenile.—Sta. 1020-6, 1 juvenile. Ph. 205/1

OBSERVATIONS: The type specimen is a male of 15 and Sakai (1937) recorded a female of 21×10.5. Our largest specimen is an immature and the male pleopod of the species is still unknown. The species is recorded from Zanzibar (Hilgendorf), Japan (Miers, Ortmann, Sakai) and Amboina (Ortmann). The identity of dubia with coalita was established by Miers (1886).

16. Randallia eburnea Alcock, 1896
(Pl. III, fig. C)

Randallia eburnea Alcock, 1896: 197; Illus. Invest., 1897: pl. 30, fig. 4.—Ihle, 1918: 246.—Sakai, 1934: 289, pl. 18, fig. 4.—1936: 54, pl. 9, fig. 3.—1937: 132, text-fig. 22.—1965: 42, pl. 17, fig. 1.—Utinomi, 1960: 72, pl. 36, fig. 8.—Tyndale and Biscoe, 1962: 87, fig. 7(7).—Chang, 1963: 101, text-fig. 1.—Zarenkov, 1969: 24, fig. 7.3.—Takeda and Miyake, 1970: 225.—Campbell, 1971: 41.—Takeda, 1973: 32, fig. 3E, F.

Randallia japonica Yokoya, 1933: 130, fig. 46.
Not Randallia eburnea Zarenkov, 1969: 24, fig. 7.3.

TYPE LOCALITY: Andaman Sea.

TYPE SPECIMEN: Zoological survey of India, Calcutta.

MATERIAL: Sta. 1004-2, male of 9×9.

OBSERVATIONS: Our specimen is immature. The species can reach the size of 20; the male pleopod of a specimen of 12.7 has been illustrated by Tyndale, Biscoe and George (1962) and that of a specimen of 13.5 more accurately by Takeda (1973). The pleopod published by Zarenkov (1969) does not belong to eburnea. The species
is widely distributed from India to Japan and Australia.

REMARKS: Randallia was established by Stimpson (1875) for *Ilia ornata* Randall, an American species. As far as its Indo-Pacific species is concerned, it appears to be heterogeneous. Obviously *Randallia mirabilis* Zarenkov, 1969 belongs to another genus. Moreover *Randallia glans* which will be recorded below, seems hardly to be congeneric with *R. eburnea*. The genus needs revising.

17. ?*Randallia glans* Alcock, 1896

*Randallia glans* Alcock, 1896 : 195.—Ihle, 1918 : 248.—Serène, 1954: 493, text-fig. 6, 7b, pi. 10, fig. 3-4.—Zarenkov, 1969 : 24, fig. 7.

**TYPE LOCALITY**: Andaman Sea

**TYPE SPECIMEN**: Zoological Survey of India, Calcutta.

**MATERIAL**: Sta. 1012-7, 2 males of 4×4.—Sta. 1014-8, 2 juveniles.—Sta. 1004-5, 1 juvenile. Ph. 206/1

**OBSERVATIONS**: All our specimens are immature. Zarenkov (1969) who recorded 5 males of 5 to 7.5 and 6 ovigerous females of 7.2 to 8.8 illustrated the male pleopod. It seems highly probable that *glans* is not congeneric with *eburnea*. The remark made by Ihle (1918) that the species presents some aspect of *Nucia* was already indicative of its erroneous position in *Randallia*. Serène (1954) stressed its separation from *Nucia modesta* (now placed in *Nuciops*) which presents the most closely related aspect. The male pleopod provides sufficient characteristics to establish a new genus; however it would be premature to do so before having revised the whole genus *Randallia*. Besides, it could be possible that *glans* belong to *Nuciops*.

18. *Iphiculuss pongiosus* Adams & White, 1848

*Iphiculus spongiosis* Adams and White, 1848 : 57, pl. 13, fig. 5.—Bell, 1855 : 15.—Stimpson, 1858 : 161.—1907: 159, pl. 18, fig. 8.—Miers, 1884 : 253.—Alcock, 1896 : 256.—Lanchester, 1900 : 24.—Nobili, 1903 : 170.—Rathbun, 1910 : 314.—Ihle, 1918 : 252.—Chopra, 1933 : 42.—Stephensen, 1945 : 72, fig. 6, D, E.—Buttendich, 1939 : 228.—Serène, 1955 : 209, fig. 10, 11; pl. 11, figs. 1-4.—Sakai, 1963 : 43.—Zarenkov, 1969 : 23, fig. 5.2.

**TYPE LOCALITY**: Philippine Islands

**TYPE SPECIMEN**: British Museum (N.H.), London.

**MATERIAL**: Sta. 1040-6, male of 13×8.—Sta. 1046-5, damaged. Ph. 207/1

**OBSERVATIONS**: The species is very common in Southeast Asia and recorded from Indonesia to India and Japan. Its male pleopod have been illustrated by Stephenson (1945) and Zarenkov (1969).
**PARTHENOPIDAE** Miers, 1879


*Aulacolambrus whitei*, Rathbun, 1906: 885, pl. 5, fig. 3.—Filipse, 1930: 45.

*Lambrus carinatus* Adams and White, 1848: 27, pl. 5, fig. 3.
—Not Milne Edwards.

**MATERIAL**: Sta. 1020-6, male juvenile of 12 x 7

**OBSERVATIONS**: The species is widely distributed throughout the Indo-Pacific region.

22. *Rhinolambrus* sp.

**MATERIAL**: Sta. 1000-6, junior male of 3 x 3.5

**BRACHYRHYNCHA** Borradaile, 1907

**PORTUNIDAE** Rafinesque, 1815

**PORTUNINAE** Stephenson and Campbell, 1959

23. *Hellenus pulchricristatus* Gordon, 1931

(fig. 11 and Pl. IV fig. A)


*Portunus* (*Hellenus*) *pulchricristatus* Gordon, 1931: 534, text-fig. 8-10.—Guinot, 1957: 479.

*Neptunus* (*Hellenus*) *pulchricristatus* Chopra, 1935: 479.


? *Amphitrite gracillima* Stimpson, 1858: 38.—1907: 78, fig...


**TYPE LOCALITY**: Hong Kong

**TYPE SPECIMEN**: British Museum (N.H.), London.

**MATERIAL**: Sta. 1010-1, male of 10 x 19.—Sta. 1010-8, female with eggs.—Sta. 1035-5, female with eggs.—Sta. 1035-8, male. Ph. 26/2

**OBSERVATIONS**: Shen (1940) was probably right in considering the Gordon species (1934) as synonymous with *gracillimus* Stimpson, 1858, described from the Bonin Islands. Unfortunately he gave no comment to support his position. The Stimpsons species was never illustrated and his type specimen is probably lost. So it would be risky to use Stimpson’s name. Stephenson (1972) does not mention *gracillimus* at all in his check list. The species is very common in South-east Asia.

24. *Hellenus aff. hastatoides* (F., 1798)

(Pl. IV, fig. C)


*Neptunus* (*Amphitrite*) *hastatoides*, De Haan, 1835: 39, pl. 1, fig. 3.


**MATERIAL**: Sta. 1027-2, male of 6 x 15

**OBSERVATIONS**: The male pleopods are not yet developed on the specimen. It is a juvenile and our identification is only indicative. It differs from *hastatoides* by its larger carapace, due to the greater length of the last antero-lateral teeth. Its largest breadth is 2.5 times the length of the carapace instead of 2.

Apart from the *longispinosus* group of species (belonging to *Xiphonectes*) none of the *Hellenus* species considered by us has a similar ratio (length to breadth) of carapace, excepting *mariei*, which has a trilobed front instead of the quadrilobed front of our specimen. Similarly, *mariei* is the only species to have, like our specimen, a long and acute spine at the postero-lateral angle of the carapace. When considering the possibility of our specimen being identical with *acerbitermalis* Stephenson and Rees, 1967, we have noticed that *acerbitermalis* could be synonymous with *arabicus* Nobili, 1906, a species which has been overlooked by Stephenson (1972).
25. *Cycloachelous orbicularis* (Richters, 1880)

*Achelous orbicularis* Richters, 1880: 158, pl. 16, fig. 14-15.—

*Portunus (Achelous) orbicularis*, Edmonson, 1946: 280.—1954: 239, fig. 16c-e, 17b.


**Material**: Sta. 1025-2, immature male of 5 × 6

**Observations**: Ward (1942) established *Cycloachelous* for the Indo-Pacific species previously included in *Achelous*, which is an Atlantic genus. The adult of this species is 8 × 10, can reach 18 × 24 and has a wide distribution in the Indo-Pacific region.

26. *Portunus* sp.

**Material**: Sta. 1004-5, 1 immature male of 5 × 10.—Sta. 1017-7, juvenile.—Sta. 1006-7, juvenile.—Sta. 1037-3, juvenile.—Sta. 1012-4, juvenile.

**Observations**: No attempt was made to identify those immature specimens.

27. ? *Carupella* sp.

**Material**: Sta. 1015-8, juvenile of 3 × 4

**Observations**: Our specimen is perhaps a juvenile of a species of *Portunus*.

28. *Thalamita muusi* sp. n.

(Fig. 10 and Pl. IV, fig. D)

**Material**: Sta. 1032-6, holotype, 1 male of 6 × 8, 1 ovigerous female of 6.2 × 9.—Sta. 1040-8, juvenile male.—Sta. 1025-5, juvenile.—Sta. 1010-9, male. Ph. 213/1

**Observations**: The species belongs to the group of species with the front divided into four lobes (inner orbital lobes excluded). It belongs to the section of the group including the species with submedian frontal lobes narrower than lateral. It is mainly characterized by: 1) five antero-lateral teeth (external, orbital angle included); the three posterior smaller than the two anterior; the teeth 3 and 4 smaller than the fifth. 2) the submedian frontal lobes are little salient. 3) the chelipeds with a strong, long, acute tooth at the inner angle of the carpus and only one strong spine on the superior border of the palm. 4) the pereiopod 5 with a spine on the posterior border of the merus and no denticles on the posterior border of the propodus. 5) the male abdomen very wide; the segment 6 is wider than long, subquadrate with the lateral sides not gradually convergent distally but forming a round angle. 6) the male pleopod 1 differs from those of all other species of *Thalamita*. With its submedian frontal lobes salient, *muusi* is close to *intermedia* and *annulipes* in Stephenson’s key (1972), but it differs from them by the antero-lateral teeth of the carapace, by the male abdomen and by the pleopod. *Muusi* is also close to *hanseni*, *kagosimensis* and *sexlobata*. It differs above all from *hanseni* by having 5 antero-lateral teeth instead of 4 in *hanseni*; the frontal submedian lobes are also comparatively broader and less salient on *muusi*. Alcock (1899) described the abdomen of *hanseni* with the “6th abdominal tergum of male much broader than long, with gradually convergent sides’’; the segment is also much broader than long on *muusi* but the sides form distally a round angle after which they abruptly converge. The male pleopod of *hanseni* is unfortunately unknown. If only by its male pleopod, *muusi* is clearly distinct from *kagosimensis* and *sexlobata*.

The new species also have some close relation with *malaccensis*, a species insufficiently known, particularly its male pleopod is unknown.

29. *Thalamita parvidens* (Rathbun, 1907)

(Fig. 12 and Pl. V, fig. A)

*Thalamonix parvidens* Rathbun, 1907: 62, pl. 5, fig. 2.

*Thalamita parvidens*, Sakai, 1939: 425, text-fig. 19a, b.—Stephenson and Hudson, 1957: 318 (no specimen).—Stephenson, 1961: 122, fig. 2F, 4B; pl. 4, fig. 1; pl. 4K, pl. 5H.—Crosnier, 1962: 113, figs. 182, 185-7, 190; pl. 9, fig. 2.—Stephenson and Rees, 1967: 82, fig. 30a, b, c.—1968: 296. Sankaranknotty, 1968: 355, text-figs 5, 18-19, 30.—Turkay.—1971: 137.
TYPE LOCALITY: Caroline Islands

TYPE SPECIMEN: U.S.N.M., Washington D.C.

MATERIAL: Sta. 1006-3, male of 4 × 6

OBSERVATIONS: The very small present specimen has a male abdomen and pleopod similar to the figures of Crosnier (1962). The normal size of the species is 20-30; the type being 15.2 × 18.7. Noticeable variations, particularly of the curvature and armature of the distal part of the pleopod, indicate the possible existence of several subspecies. It is doubtful however that, as suggested by Stephenson and Rees (1968), the variations of the male pleopod could correspond to the size of the specimens. Sakai's specimens (1939) were 15 × 29, those of Stephenson (1961) 19-31, those of Crosnier (1962) 21.5 × 34.

30. Thalamita ? spinifera Borradaile, 1902


TYPE LOCALITY: Maldive Archipelago


MATERIAL: Sta. 1032-9, immature male of 7.5 × 10.

PH. 214/1

OBSERVATIONS: The pleopods are not yet developed on the specimen and its identification is made with reserve. Its main specific character is the presence of 6 antero-lateral teeth, the anterior one being subdivided into two; the subsidiary basal tooth at the base of the anterior tooth is strongly developed on the present specimen. The species reaches a size of 27, and Crosnier (1962) figured the pleopod of a male of 10 × 14. The species inhabits sandy bottom to 100 m. depth and does not occur in the intertidal zone.

31. Thalamita ? sexlobata Miers, 1886


Thalamita sexlobata var. plicatifrons Deman, 1902: 651, pl. 21, fig. 29.

TYPE LOCALITY: ?

TYPE SPECIMEN: British Museum (N.H.), London.

MATERIAL: Sta. 1000-10, immature male of 3.5 × 5.

PH. 215/1

OBSERVATIONS: The pleopods are not yet developed on the specimen and its identification is made with reserve. The species reaches the size of 17 and Crosnier (1962) figured the pleopod of a male of 9 × 13.5. The species inhabits the sandy bottom up to 50 m. depth and is not found in the intertidal zone.

32. Thalamita sp.

TYPE LOCALITY: Indian Sea


MATERIAL: Sta. 1012-3. male of 7 × 13

OBSERVATIONS: Our specimen is well characterized by the great length of the last antero-
lateral spine-like tooth of the carapace and of the spine at the inner angle of the carpus of the cheliped; these spines are slightly less developed on Chopra's figure (1935, pl. 9, fig. 2) and much less so on the figures of Leene (1938, fig. 63), Gordon (1931) and Shen (1934). The species is generally around 20 in size and the present specimen is much smaller; the length of the spines could be a juvenile characteristic. The species is relatively little recorded; the examination of a large series could lead to a reconsideration of the validity of sinensis.

**CATROPTINAE** Borradaile, 1903

34. *Libystes edwardsi* Alcock, 1900

(Fig. 14 and Pl. V, figs. B, C, D)


*Libystes inaequalis* Tesch, 1918: 180, pl. 9, fig. 5.—not *Libystes inaequalis* Rathbun 1906 (vide Seréne, 1966)


**TYPE LOCALITY**: Andaman Sea

**TYPE SPECIMEN**: Zoological Survey of India, Calcutta.

**MATERIAL**: Sta. 1036-9 (1), male of 3.5 x 6.

**OBSERVATIONS**: The present specimen has a pleopod 1 identical with the figures given by Stephensen (1945, fig. 45E, D) for *nitidus* and by Seréne (1966, fig. 1-4) for juveniles of *nitidus*. It is the pleopod of *alphonsi* and Seréne (1966) made a wrong interpretation when considering his specimens as juveniles of *nitidus*. At present four species of *Libystes* are clearly separated by their male pleopod; they are *nitidus, edwardsi, alphonsi, paucidentatus*. The male pleopod of *lepidus* is similar to that of *nitidus*; that of *villosus* is unknown. The senior author, during the past ten years has had the opportunity of examining large series of *Libystes* aff. *nitidus* and has noticed the variations of the antero-lateral border of the carapace, sometimes smooth, sometimes densely granular or crenulated by a rim of acute granules. Similarly the covering with setae along the antero-lateral region and on the chelipeds and pereiopods is noticeably different. The validity of *lepidus* and *villosus* needs to be more clearly demonstrated.

**GONEPLACIDAE** Dana, 1852

**GONEPLACINAE** Miers, 1886

*Singhaplax* gen.n.

**TYPE SPECIES**: *Goneplax ockelmanni* Seréne, 1971.

**DIAGNOSIS**: Carapace dorsally convex, smooth, without trace of region and nearly twice as broad as it is long. Front straight occupying a
quarter of extraorbital breadth. Lateral sides of front diverging and continued by supraorbital border, which is sinuous and runs obliquely backwards. The virtual line traced between tips of external orbital angle hardly beyond middle of carapace length. Lateral border of carapace nearly straight (slightly concave), strongly converging backward without trace of any teeth. Posterior border nearly twice frontal breadth and little less than half largest breadth of carapace. Length of eye peduncles 1.75 frontal breadth, relatively stout with slightly swollen cornea and extending clearly beyond external orbital angle. Antennulae large and transversal, folded into fossae below frontal margin. Third maxillipeds with a small gap between them. Chelipeds with merus overrunning carapace border; carpus with rounded inner angle; pereiopods 2 - 4 with dactylus filiform; pereiopod 5 with carpus, propodus slightly flattened and lanceolated. Male abdomen broad with seven free segments; segment 2 scarcely narrower than segment 3. Male pleopod 1 stout, slightly sinuous with bifurcated apex; strong spines all along outer border; 5 strong preapical spines on inner border; pleopod 2 filiform, much longer than pleopod 1.

OBSERVATIONS: The genus belongs to the Goneplacinae s. str., with a male pleopod 2 filiform and clearly longer than the pleopod 1, and includes at least G. nipponensis, which differs by: chelipeds shorter, eye peduncles shorter and slender and male pleopod with smaller spines. Nipponensis was described for 6 females from Japanese waters. It was recorded by Takeda and Miyake (1968) who studied one male of 3.3 x 5.4 and one ovigerous female of 4 x 6.6.

36. Singhaplax ockelmanni (Serène, 1971) comb. n.

(Fig. 15 and Pl. VI, fig. A)

Goneplax ockelmanni Serène, 1971: 915, pl. 4D.—Serène and Umali, 1972: 82, fig. 82-89.

TYPE LOCALITY: Andaman Sea

TYPE SPECIMEN: Phuket Marine Biological Center, Thailand.

MATERIAL: Holotype: Sta. 1000-5, male of 3 x 5.2. Paratypes: Sta. 1004-3, female of 35 x 3.—Sta. 1004-9, male of 3 x 5.1 and female of 3 x 5.—Sta. 1004-5, ovigerous female of 3 x 6.—Four others pecimens at Stas. 1.001-4., 1.001-7, 1.004-7, 1.012-3.

OBSERVATIONS: The species briefly described by Serène (1971), was illustrated with more details by Serène and Umali (1972), in order to compare it with Goneplax sinuatifrons. They demonstrated that the two species were not congeneric and suggested that probably further studies would lead to the establishment of two different new genera, as neither of these two species can be maintained in Goneplax Leach, 1814. Singhaplax gen.n. is established with Goneplax ockelmanni as type species.

37. Notonyx vitreus Alcock, 1900

(Fig. 16 and Pl. VI, fig. B)

Notonyx vitreus Alcock, 1900: 319; Illus Invest., 1903: pi. 61, fig. 3.—Tesch, 1918: 221.

TYPE LOCALITY: Andaman Sea

TYPE SPECIMEN: Zool. Surv. India. Calcutta

MATERIAL: Sta. 1000-1, male of 3.2 x 4.—Sta. 1020-5, female of 3 x 3.5.—Sta. 1022-3, female of 2.5 x 3.—Sta. 1010-8, female of 4 x 4.5. Ph. 220/1

OBSERVATIONS: Our identification refers back to the brief observations of Alcock (1900) and Tesch (1918) and in particular to the comparison between the present specimen and the specimen of Notonyx nitidus studied by Serène and Umali (1972). N. vitreus differs from nitidus by the narrower carapace, chelipeds without acute inner angle on the carpus and the male pleopods. The male abdomen is similar to that of nitidus. The observations of Tesch (1918) on a male specimen of 2.4 x 2.9 seem to be related to a juvenile stage and perhaps female.
The species is only known by the single type specimen of $5 \times 6$ and the two specimens of Tesch (1918), a male of $2.4 \times 2.9$ and an ovigerous female of $6.7 \times 7.8$. In order to facilitate the separation of *vitreus* from *nitidus*, we are illustrating the carapace's outline (fig. 16E) of the specimen of *nitidus* recorded by Serène and Umali (1972), a male of $5 \times 7.5$.

38. *Thyphlocarcinodes hirsutus*  
Borradaile, 1903  
(Fig. 17)

*Caecopilumnus hirsutus* Borradaile, 1903: 269, text-fig. 59.  
*Thyphlocarcinodes hirsutus*, Tesch, 1918: 228, pl. 15, fig. 3. —Yokoya, 1933: 200.—Sakai, 1936: 192, pl. 55, fig. 1; 1939: 574, pl. 68, fig. 1; 1965: 170, pl. 84, fig. 4.

**TYPE LOCALITY**: Maldive Islands  
**TYPE SPECIMEN**: Cambridge University Museum  
**MATERIAL**: Sta. 1001-5, 1 male of $6.5 \times 7.5$, 1 male of $3 \times 6.5$, 1 female of $4.8 \times 5.1$.—Sta. 1000-10, 1 male of $5.8 \times 6.5$.

**OBSERVATIONS**: The male pleopods of the species, illustrated for a male of $5.8 \times 6.5$, differ from those of *piroculatus* figured by Serène (1964, fig. 15) but confirm the appurtenance of the genus to the Goneplacidae with pleopod 2 as long or longer than pleopod 1. Among those genera, *Thyphlocarcinodes* is close to *Notonyx* and together belong to a group of genera distinct from the Goneplacinae *s. str.* as well as from the Carcinoplacinae *s. str.* A new taxonomic section will have to be established perhaps for these genera. At first it must be seen whether the Indo-Pacific species of *Thyphlocarcinodes* are or not congeneric with the type species, e.g. *integrifrons* Miers 1881. Monod expressed some doubt and the male pleopod of *integrifrons* needs to be known. In case the Indo-Pacific species does not belong to *Thyphlocarcinodes*, the name *Coecopilumnus* Borradaile, 1903 will be used and *hirsutus* will become the type species of the genus.

**Carcinoplacinae Dana, 1852**

39. *Carcinoplax longimanus* (De Haan 1835)  
*Cancer (Curtonotus) longimanus* De Haan, 1835: 50, pl. 6 fig. 1.


*Pilumnoplax glaberrima* Ortmann, 1894: 687, pl. 23, fig. 2. —Yokoya, 1933: 192.

*Pilumnoplax inaequalis* Sakai, 1936: 183, pl. 54, fig. 1.  
*Carcinoplax longimanus indicus* Doflein, 1904: 115, pl. 35, fig. 1-2.  
*Carcinoplax longimanus japonicus* Doflein, 1904: 115, pl. 36.

**TYPE LOCALITY**: Japan  
**TYPE SPECIMEN**: Leyden Museum  
**MATERIAL**: Sta. 1034-3, juvenile male of $6 \times 8$. Ph.217/1  
**OBSERVATIONS**: The species reaches a size of $50 \times 65$.

40. *Homoioplax haswelli* (Miers, 1884)  
*Pseudorhombila vestila var. sexdentata* Miers, 1884: 204, pl. 24, fig. 13.  
*Pilumnoplax vestila sexdentata* Miers, 1886: 229.  
*Homoioplax haswelli*, Rathbun, 1914: 146.—Tesch, 1918: 190, pl. 10, fig. 2.—Balss, 1922: 138.—Sakai, 1939: 566, pl. 102, fig. 2.

*Pilumnoplax inaequalis* Yokoya, 1933: 194, fig. 63.

**TYPE LOCALITY**: Arafura Sea  
**TYPE SPECIMEN**: British Museum (N.H.), London  
**MATERIAL**: Sta. 1031-3, immature of $6 \times 9$  
**OBSERVATIONS**: The specimen agrees with the descriptions and illustrations of the authors. We make some reservation in our identification to indicate that the specimen needs to be reexamined.
GONEPLACIDAE PILUMNIAN s. str.
Guinot, 1971

41. Typhlocarcinus rubidus Alcock, 1900


Not Typhlocarcinus rubidus Barnard, 1926: 120.—1946: 366 = Xenophthalmodes moebii.

TYPE LOCALITY: Indian Ocean

TYPE SPECIMEN: Zool. Survey India, Calcutta

MATERIAL: Sta. 1007-7, 2 males of 4 x 5 and 3 x 4.—Sta. 1007-5, 2 females of 3.2 x 4.5 and 3 x 4.—Sta. 1022-5, 1 male of 3 x 4.—Sta. 1011-3, 1 female of 2 x 3.—Sta. 1011-6, 1 male of 3 x 4.—Sta. 1026-5, 1 male of 3 x 4.—Sta. 1026-6, 1 male of 3 x 4.—Sta. 1046-11, 1 female of 4 x 5.—Sta. 1031-9, 1 male of 3 x 4.—Sta. 1047-1, 3 females of 3 x 4, 2 x 3, 2 x 2.3. Ph.221/1

42. Typhlocarcinus sp. 1

MATERIAL: Sta. 1020-1, female of 3 x 4.

OBSERVATIONS: The specimen is characterized by a carapace strongly granulate and cannot be identified with any of the six species of the genus described at present. However the material is insufficient to allow a description of a new species.

43. Typhlocarcinus sp. 2

MATERIAL: Sta. 1022-6, female of 4.5 x 5.5.—Sta. 1024-7, male of 3 x 4.

OBSERVATIONS: As for Typhlocarcinus sp. 1, from which the present specimen differs, we prefer to wait for more available material.

44. Typhlocarcinops sp.

The collection contains around 50 specimens, which probably belong to 5 or 6 different species. A study of them requires comparison with already identified material, not at present available and has been abandoned for this report.

45. ? Ceratoplax fulgida Rathbun, 1914

(Fig. 18 and Pl. VI, fig. C)

Ceratoplax fulgida Rathbun, 1914: 146.—Tesch, 1918: 203 (no specimen).

TYPE LOCALITY: off Philippine Islands at a depth of 150 m.

TYPE SPECIMEN: U.S.N.M., Washington D.C.

MATERIAL: Sta. 1035-9, male of 3 x 5.—Sta. 1042-7, female of 3.9 x 4.2.—Sta. 1028-9, female of 3 x 5. Ph.219/1

OBSERVATIONS: C. fulgida was described for one male of 4.5 x 7.4 and one female. It has never been illustrated and, since Rathbun (1914), never been recorded. The provisional identification of our specimens needs to be confirmed by re-examination of the type material. In general, it concurs with Rathbun's description (1914), but the specimens have one characteristic not mentioned by Rathbun and which may show their appurtenance to a different and probably new species. This is the existence along the antero-lateral border of the carapace of a very fine longitudinal sulcus. Situated slightly ventrally on the margin itself, the sulcus appears in dorsal view only as a straight cutting of the rounded antero-lateral angle of the carapace; it is more easily observed in lateral view and appears as a line of short dense tomentum running parallel to the margin. The genus Ceratoplax with C. ciliata Stimpson, 1858 as type species is heterogeneous. Our specimen of ? C. fulgida, at least with regard to the very wide and filiform first abdominal segment and the male pleopods, is closely related to Typhlocarcinops. However the clearly expanded antero-lateral angle of the merus of the third maxillipeds is that of Ceratoplax.

46. Xenophthalmodes dolichophallus

Tesch, 1918

(Fig. 19)

Xenophthalmodes dolichophallus Tesch, 1918: 216, pl. 24, fig. 1.—Stephensen, 1945: 178, fig. 47, C-E.—Campbell and Griffin, 1969: 145, fig. 2D, 6C.
Xenophthalmodes moebii Barnard, 1950: 297, fig. 56 a-c. Not moebii Richters. 1880.

**TYPE LOCALITY:** Java Sea, 1880

**TYPE SPECIMEN:** Amsterdam Museum

**MATERIAL:** Sta. 1027-6, male of 5×6.—Sta. 1037-7, female of 6×7. Ph.222/1

**OBSERVATIONS:** The length of the male pleopod 1 of our specimen is characteristic of dolichophallus. As indicated by Campbell and Griffin (1969) on moebii, the “first pleopod is short and sinuous, curving inwards halfway along and outwards apically”. It has not yet been figured. The male pleopod 1 of our specimen entirely agrees with the description by Stephensen (1945). It will be interesting to compare with dolichophallus a specimen of moersi, an endemic species from Japan, which is very closely related and probably identical with dolichophallus. The following tentative key is given as an indicative guide-line:

1 Male abdomen with segment 1 much wider than segment 3; male pleopod 1 not projected beyond distal border of telson; male abdomen and pleopod in Barnard (1955: fig.15 a, b, c). Size : 12×16. ...................................................... brachyphallus Barnard, 1955

Male abdomen with segment 1 only a little wider than segment 3 ..................................2

2 Male pleopod 1 short and sinuous, curving inwards half way along and outwards apically (no figure) Size : 10×12 ...................................................... moebii Richters, 1880

Male pleopod 1 long, straight, reaching base of third maxillipeds, far beyond telson ..........3

3 Male abdomen and pleopod in Tesch (1918, pl. 14, fig. 16, c); male pleopod in Campbell and Griffin (1969, fig. 6c) Size : 6.5×7.2 ...................................................... dolichophallus Tesch, 1918.

Male abdomen and pleopod not figured. Size : 5.3×6.8 .......... moersi Rathbun, 1923.

The genus *Xenophthalmodes* is closely related to *Typhlocarcinus* and belongs to the Goneplacidae with pilumnian characteristics of the male pleopods.

47. ?Lophoplax takakurai Sakai, 1935

*Lophoplax takakurai* Sakai, 1935 : 82, text-fg. 15, pl. 7, fig. 2.—1936 : 188, fig. 2.—1939 : 567, pl. 67, fig. 1.

**TYPE LOCALITY:** Sagami Bay, Japan, 50 m. depth

**TYPE SPECIMEN:** ? Sakai collection, Kamakura, Japan

**MATERIAL:** St. 1045-6, male 4. 2×5 with sacculina.

**OBSERVATIONS:** The specimen is closer to takakurai Sakai, 1935 than to any of the three other species of *Lophoplax*, which are : *sculpta* (Stimpson, 1858), *bicristata* Tesch, 1918, *teschi* Serène, 1971, and are well characterized by salient elevations on the dorsal surface of the carapace. Like takakurai the present specimen has no elevation, but it differs by its anterolateral teeth much less clearly separated one from the other. A doubt remains as to its appurtenance to *Lophoplax*. The four species of *Lophoplax* having been described for female specimens, no information are available on the male pleopods. However Guinot (1971) correctly guessed that *Lophoplax* was a Goneplacidae with pleopod of pilumnian type. Serène and Lohavanijaya (1972) briefly mentioned their observations on a male of *teschi*; we take this opportunity to illustrate the male pleopods of this specimen of *teschi* (fig. 20). Serène and Lohavanijaya (1972, fig. 186) illustrated the female abdomen of *teschi*. The pleopod shown here demonstrates that *Lophoplax* is a genus with the abdominal segment 1 covering all the space between the coxae of the last pair of pereiopods and a male pleopod of pilumnian type. These observations will help to situate *Lophoplax* more accurately in the Goneplacidae.
48. Mertonia lanka Laurie, 1906

Mertonia lanka Laurie, 1906: 424, pl.11, fig.11.—Rathbun, 1910: 342, pl.2, fig. 4.—Tesch, 1918: 217, pl.16, fig. 2a.—Sakai, 1936: 191, pl. 5, fig. 3.—1939: 573, pl.68, fig.3.—1965: 172, pl.85, fig. 2.—Yokoya, 1936: 144, text-fig.10.—Stephensen, 1945: 180, fig. 51.—Serène, 1964 : 234, fig. 18, pl. 21B.

TYPE LOCALITY: Gulf of Mannar, Ceylon


MATERIAL: Sta. 1008-2, male of 5 x 7.—Sta. 1018-1, female of 3 x 4.—Sta. 1018-2, male of 2 x 3.—Sta. 1018-3, male of 3 x 3.8.—Sta. 1018-4, male of 3 x 4.—Sta. 1018-9, 2 females of 3.8 x 5 and 2.5 x 4.—Sta. 1008-3, female of 4 x 5.—Sta. 1008-9, female of 5 x 6.—Sta. 1010-10, male of 4 x 5.5 and female of 4 x 5.5.—Sta. 1020-2, 2 males of 3 x 4.—Sta. 1024-1, male of 4 x 5. Ph.224/1

OBSERVATIONS: The species, recorded from Ceylon, Gulf of Thailand, Aru Island, Japan and Gulf of Iran, has a wide geographical distribution in the tropical Indo-Pacific region. The largest known specimen is a male of 6.2 x 8.4 (in Serène, 1964).

50. Hephthopelta mortenseni Serène, 1964

Hephthopelta mortenseni Serène, 1964: 243, fig. 16, pl. 22A.

TYPE LOCALITY: Java Sea

TYPE SPECIMEN: Copenhagen Zoological Museum.

MATERIAL: Sta. 1035-5, male of 3.2 x 4.—Sta. 1035-7, male of 2 x 3.—Sta. 1042-10, male of 3.9 x 4.5. Ph.223/1

OBSERVATIONS: The specimens are smaller than the type which is 5 x 7.5 in size; the long spinous process marking the internal border of the ischium of the greatest cheliped of the male is less developed, but very clear in the two largest males of the present collection. The species was only known in the Java Sea and Sunda Straits.

51. Chasmocarcinops gelasimoides Alcock, 1900

Chasmocarcinops gelasimoides Alcock, 1900: 334.—Illus. Invest, 1903 : pl.62, Fig.2, 3.—Rathbun, 1910 : 340, pl. 1, fig. 10; pl. 2, fig. 12.—Tesch, 1918 : 280.—Serène, 1964: 266, fig. 20, pl. 230.

TYPE LOCALITY: Madras, India

TYPE SPECIMEN: Zoological Survey of India, Calcutta

MATERIAL: Sta. 1046-2, male of 9.5 x 11.—Sta. 1025-6, male of 9 x 10.5. Ph. 225

OBSERVATIONS: In spite of its few records, the species is common in Southeast Asia from India to Australia. As has already been suggested by Serène (1964 : 186), we classify Chasmocarcinops in the Chasmocarcininae, as indicated by Serène (1964 b).

Chasmocarcininae, as indicated by Serène (1964 b).

50. Hephthopelta mortenseni Serène, 1964

Hephthopelta mortenseni Serène, 1964, p. 243, fig. 16, pl. 22A.

TYPE LOCALITY: Java Sea

TYPE SPECIMEN: Copenhagen Zoological Museum.

MATERIAL: Sta. 1035-5, male of 3.2 x 4.—Sta. 1035-7, male of 2 x 3.—Sta. 1042-10, male of 3.9 x 4.5. Ph.223/1

OBSERVATIONS: The specimens are smaller than the type which is 5 x 7.5 in size; the long spinous process marking the internal border of the ischium of the greatest cheliped of the male is less developed, but very clear in the two largest males of the present collection. The species was only known in the Java Sea and Sunda Straits.
bun (1910), recording 50 specimens from the Gulf of Thailand, mentioned only one of them as having been “in shell of living Amussium pleuronectes”. The crab gelasimoides and the mollusk pleuronectes inhabit the same grounds and are frequently mixed together in the trawl catches of the fishermen. The senior author has observed during the years several hundred specimens, but has never come across a gelasimoides in a shell of living A. pleuronectes and considers that Rathbun’s observation must be attributed to chance circumstances. Rathbun did not make her observation in the field, but on preserved material collected by Mortensen several years previously. We believe that the crab and mollusk observed by Rathbun were put alive in the same basket, after being caught; the mollusk having relaxed its muscle, as is usual, the crab penetrated the shell to eat the flesh. At the fixation time, the mollusk closed its shell and kept the crab inside. Our remark on the ethology of the species provides a new reason for removing Chasmocarcinops from the Pinnothoridae.

52. Camatopsis rubida Alcock and Anderson, 1899

(Fig. 21)

Camatopsis rubida Alcock and Anderson, 1899 : 13.—Alcock, 1899 : pl. 4 fig. 3.—1900 : 329.—Doflein, 1904 : 121.—Rathbun 1910 : 344.—Tesch, 1918 : 235, pl. 16, fig. 3a-i.—Yokoya, 1933 : 202.—Sakai, 1936 : 193, pl. 55, fig. 4.—1939 : 576, pl. 88, fig. 4.—1965 : 173, pl. 85, fig. 4.—Serene, 1964 : 268.

TYPE LOCALITY: Andaman Sea

TYPE SPECIMEN: Zoological Survey of India, Calcutta

MATERIAL: Sta. 1043-3, female of 5.5x6.8.—Sta. 1052-2, male of 6x7.—Sta. 1045-5, male of 4.5x5.—Sta. 1031-2, juvenile.—St. 1040-4, Juvenile. Ph. 227/1

OBSERVATIONS: The male pleopods of the species being insufficiently illustrated by Tesch (1918: pl. 16, fig. 31), we are giving the figure of the pleopods 1 and 2 of a specimen of 6x7. The type of these pleopods confirms the appurtenance of Camatopsis to the Chasmocarcininae.

53. Eucrate sp.

54. Heteroplax nitidas Miers, 1879

(Fig. 22 and Pl. VI, fig. D)

Heteroplax ? nitidus Miers, 1879 : 39, pl. 2, fig. 2.

Heteroplax nitidus Henderson, 1893 : 397.—Sakai, 1936 : 184, pl. 54, fig. 2.—1939 : 360, pl. 67, fig. 8.—1965 : 169, pl. 84, fig. 1.—Serene and Lohavanijaya, 1973 : 74, pl. 18 B-D.—Kim, 1973 : 410, 637, fig-164 a-c.

TYPE LOCALITY: Korean Straits

TYPE SPECIMEN: British Museum (N.H.), London

MATERIAL: Sta. 1001-9, male of 5x7.5.—Sta. 1018-2, female of 4x6.—Sta. 1019-1, male of 4x6.—Sta. 1019-7, male of 4x6.—Sta. 1019-4, 1 male, 2 females; the largest female 4x6.—Sta. 1020-9, ovigerous female of 3.8x5.5.—Sta. 1018-6, 1 male, 2 females; the largest female of 4x6.—Sta. 1047-8, 2 females.—Sta. 1010-7, 1 male.—Sta. 1008-5, 1 male.—Sta. 1019-9, 1 male. Ph. 216/1

OBSERVATIONS: The largest male of the collection has already been recorded and illustrated by Serène and Lohavanijaya (1973), who have used it for comparison with H. dentatus and H. transversus. However the outline of the carapace, the third maxilliped and the male pleopod 1 are figured here for the first time.

55. Thaumastoplax orientalis Rathbun, 1909

(Fig. 23 and Pl. VIII, fig. D)

Thaumastoplax orientalis Rathbun, 1909 : 113.—1910 : 346, pl. 2, fig. 1 and text-fig. 33.—Tesch, 1918 : 239 (no specimen).—Sakai, 1934 : 316, text-fig 24.—1936 : 193, text-fig. 100.—1939 : 579, pl. 102, fig. 3 and text-fig 69.

TYPE LOCALITY: Gulf of Thailand

TYPE SPECIMEN: Copenhagen Zoological Museum.
Material: Sta. 1020-8, juvenile.—Sta. 1022-2, male of 6 × 8.—Sta. 1023-7, female of 5 × 7.—Sta. 1024-6, 9, 10, small males.—Sta. 1025-5, male of 5 × 7.—Sta. 1036-2, male of 3.5 × 5.—Sta. 1036-7, male of 3.5 × 5.5.—Sta. 1036-10, male of 5 × 6.—Sta. 1044-8, male of 6 × 5.

Observations: The species is only known from the Gulf of Thailand (Rathbun) and Japan (Sakai); the type is a male of 9 × 12; the largest specimen recorded is a female of 12 × 17.1 (Sakai). Our material was compared with specimen of T. anomalipes, the differences do not justify, at least for the time being, the establishment of a distinct genus for the Indo-Pacific species. Anomalipes also has a filiform pleopod 1, but not longer than the abdomen as in orientalis. However spiralis Barnard, 1950 does not belong to Thaumastoplax but to a different and new genus, which will have to be described.

56. Hexapus? sexpes De Haan, 1835
(Fig. 24 and Pl. VII, fig. A)

Hewapus sexpes De Haan, 1835: 63, pl. 11, fig. 6.—De Man, 1888: 322, pl. 13, fig. 3.—Zehntner, 1894: 159.—Nobili, 1905: 146.—Tesch, 1918: 240, pl. 17, fig. 1.—Sakai, 1939: 571, fig. 69.—Griffin, 1972: 413, 637, fig. 165, pl. 86, fig. 127
Not Hewapus sexpes Stephensen, 1945 = stephenseni

Type Locality: Japan

Type Specimen: Leiden Museum

Material: Sta. 1010-9, male of 6 × 9.—Sta. 1022-2, male of 6 × 9. Ph. 229/1

Observations: Our specimens have the carapace pitted and generally agree with the characters of the species given in the key of Campbell and Stephenson (1970). In spite of the observations of Tesch (1918), who examined the type specimens, and taking into consideration the remarks of Stephensen (1945), Monod (1956), Campbell and Stephenson (1970), some uncertainty remains as to the specific characters of sexpes De Haan, 1835. We consider in particular that anfractus (Rathbun, 1910), is not a synonym of sexpes De Haan, 1835. The male abdomen and pleopod 1 of our specimen differ from those of anfractus as illustrated by Rathbun (1910) and Stephensen (1945). Moreover, according to Rathbun (1910), the merus of the ambulatory legs of anfractus are “longitudinally furrowed”. On the present specimens as well as on other specimens of sexpes it is not the case. In the Paris Museum, we have examined the specimen of sexpes from the Persian Gulf identified by Nobili (1906).

The male pleopod of sexpes having never been figured and the male abdomen of our specimens being different from that of sexpes illustrated by Tesch (1918) a reserve must be maintained regarding our identification. The type specimen of sexpes is a male of 6 × 10 and the largest specimens recorded are a male of 12.75 × 18 (De Man, 1888) and a female of 15 × 23.5 (Zehntner, 1894); the two were collected at Amboina in the tube of an annelid. Perhaps these large specimens could belong to a different species.

57. Hexapus stephenseni sp. n.
(Fig. 25 and Pl. VII, fig. B)

Hexapus sexpes Stephensen, 1945: 182, fig. 53A-D.
Not Hexapus sexpes De Haan, 1835.

Type Locality: Andaman Sea

Type Specimen: Phuket Marine Biological Center, Thailand.

Material: Sta. 1039-1, Holotype, male of 3 × 4.8; Paratype: female of 3 × 4.8 - Other paratypes: Sta. 1039-2, male of 3 × 4.8 - 1047-6, male of 3 × 4.8—Sta. 1031-2, ovigerous female of 3 × 4.8. Ph. 228/1

Diagnosis: Carapace wider than long; dorsal surface almost flat from side to side, slightly granular; antero-lateral margins rounded, convex, whole. Third maxilliped with ischium longer than merus, parallel sides along most of its length; merus broader than long; palp articulated at antero-internal angle of merus, with all segments subcylindrical; dactylus > propodus > carpus. Ambulatory legs compressed with
merus granulate and longitudinally furrowed. Male abdomen with telson trilobate and broader than long (1.2 times); segment 6 broader than long (1.3 times), broadest in middle of length; segments 3 - 4 - 5 fused. Male pleopod 1 with a line of a few (9) simple spines at preapical level.

Observations: Stephensen (1945) emphasized that his Iranian specimens differ from “L. anfractus” by the 7th segment of the male abdomen and in having simple spines, not bottlebrush setae, near the apex of pleopod 1 male. They differ from H. sexpes by the 7th segment of abdomen”. He concluded: “nevertheless I prefer to determine the Iranian specimens as H. sexpes”. Besides, Stephensen (1945) noticed that the third maxillipeds of his specimens were close to those of sexpes illustrated by Stebbing (1910) (now described as stebbingi) but different from those of sexpes, illustrated by Tesch (1918) and anfractus illustrated by Rathbun (1910). Our specimens agree with all the characters given by Stephensen (1945) for his Iranian specimens. Monod (1956) already indicated that sexpes of Stephensen (1945) was not conspecific with sexpes Tesch, 1918, nor anfractus (Rathbun, 1910). Our specimens are all small and it is noticeable that the Iranian specimens of Stephensen (1945) were also all small; the largest had a carapace of 4×6.5.

58. Hexapus ? granuliferus
Campbell and Stephenson, 1970
(Fig. 26 and Pl. VII, fig. C)

Hexapus sexpes Haswell, 1882:71
Not sexpes De Haan, 1835.
Hexapus granuliferus Campbell and Stephenson, 1970:286, fig. 49A-H.

Type locality: Queensland, Australia

Type specimen: Queensland Museum, Brisbane.

Material: Sta. 1025-9, female of 3.5×5.8.

Observations: The specimen generally agrees with granuliferus but our identification is given with some reserve. The species is only known by 3 specimens; the largest is a male of 15.5; the holotype is a female of 6.5. Ph. 230/1

59. Hexapus edwardsi sp. n.
(Fig. 27 and Pl. VII, fig. D)

Type locality: Andaman Sea

Type specimen: Phuket Marine Biological Center, Thailand.

Material: Sta. 1047-9, Holotype male of 3×4.8

Observations: The outline of the carapace is more or less hemicircular; the antero-lateral border being like an open continuous arch; the lateral borders converge regularly forward and are not subparallel. There are 4 - 6 oblique ridges across the pterygostomian region, as is usual with this genus. The third maxilliped is operculiform with merus broader than long and shorter than ischium, but the inner border of ischium is convex. The antero-lateral region and the external surface of the palm of chelipeds are ornamented with a covering of acute granules, disappearing under a short tomentum. The pleopod 1 being as yet undeveloped, the specimen is immature. It cannot be identified with any of the species of Hexapus described at present. The outline of its carapace is close to sexpes A. Milne-Edwards, 1873, who wrote: “La carapace est très large, surtout en arrière; ses bords antérieurs et latéraux forment un arc dont le bord postérieur serait la corde”. Campbell and Stephenson (1970) enumerated seven discrepancies between sexpes A. Milne-Edwards, 1873 and sexpes De Haan, 1835 and suggested that the A. Milne-Edwards specimen belonged to a distinct species. According to information received from Mme. Guinot, the specimen of A. Milne-Edwards no longer exists in the collection of the National Museum of Natural History in Paris. Our specimen generally agrees with the seven discrepancy characters given by Campbell and Stephenson (1970), although it differs by its narrower carapace (the specimen of A. Milne-
Edwards was a female of 3 x 6 from New Caledonia).

The following tentative key could serve as guideline for the separation of the species:

1. Male abdomen with telson trilobate much broader than long and segment 6 longitudinally divided, in Barnard (1950, fig. 56F). Size 10 x 15................. *stebbingi* Barnard, 1947

2. Carapace with lateral borders regularly arched from orbit to postero-lateral angle; front broad; one half of carapace length. Size 3 x 4.8....................... *edwardsi* sp. n.

3. Third maxilliped truly operculiform; ischium and merus with lateral side subparallel; merus much shorter than ischium, broader than long; inner border of ischium straight; palp articulated at antero-lateral angle. Carapace granulate.......................... 4

3. Third maxilliped loosely closing buccal cavity; merus nearly as long as ischiiums; merus piriform; ischium with inner border convex. Carapace punctate................. 5

4. Male abdomen with telson trilobate; male pleopod 1 in Stephensen (1945, fig. 53 B, C, D).

   Size 3 x 4........................................... *stephensi* sp. n.


5. Male abdomen with telson distally rounded, in Rathbun (1910, fig. 36a). male pleopod in Stephensen (1945, fig. 53 G) Size 4.7 x 7.3................. *rnfractus* (Rathbun, 1909)

   Male abdomen with telson and pleopod in the present paper (fig. 24 B, C, C') Size 6 x 10......................... *sexpes* De Haan, 1835.

**PINNOTHERIDAE** H. Milne-Edwards, 1852

**XENOPHTHALMINAE** Alcock, 1900

60. *Xenophthalmus pinnotheroides* White, 1846


Not *Xenophthalmus pinnotheroides* Stephensen, 1945: 186, fig. 54 = *Xenophthalmus wolffi* Takeda and Miyake 1970.

**TYPE LOCALITY**: Philippines

**TYPE SPECIMEN**: British Museum (N.H.), London

**MATERIAL**: Sta. 1027-5, juvenile male.—Sta. 1039-1, male of 8 x 9.—Sta. 1039-2, 2 females of 7 x 8, 1 male of 7 x 8, 1 juvenile.—Sta. 1039-4, female of 7 x 8.—Sta. 1039-6, male of 6 x 8, female of 5.5 x 7.—Sta. 1039-8, female of 2 x 7, juveniles.—Sta. 1039-9, female of 7 x 8, 1 juvenile.—Sta. 1039-10, male of 5 x 8, 2 females of 7 x 9, 1 female of 7 x 6.—Sta. 1046-4, juvenile male.—Sta. 1046-6, juvenile male.—Sta. 1046-7, juvenile male.—Sta. 1047-1, 2 males, 1 female.

61. *Neoxenophthalmus obscurus* (Henderson, 1893)

*Xenophthalmus obscurus* (Henderson), 1893: 394, pl. 36, fig. 18, 19.—Alcock, 1900: 333.—Rathbun, 1910: 338, text-fig. 23, pl. 2, fig. 13.—Tesch, 1918: 272 (no specimen).

*Neoxenophthalmus obscurus*, Serêne and Umali, 1972: 89, figs. 97, 110-116, pl. 9, fig. 3.

**TYPE LOCALITY**: Gulf of Martaban

**TYPE SPECIMEN**: British Museum (N.H.), London

**MATERIAL**: Sta. 1027-5, juvenile male.—Sta. 1039-1, male of 8 x 9.—Sta. 1039-2, 2 females of 7 x 8, 1 male of 7 x 8, 1 juvenile.—Sta. 1039-4, female of 7 x 8.—Sta. 1039-6, male of 6 x 8, female of 5.5 x 7.—Sta. 1039-8, female of 2 x 7, juveniles.—Sta. 1039-9, female of 7 x 8, 1 juvenile.—Sta. 1039-10, male of 5 x 8, 2 females of 7 x 9, 1 female of 7 x 6.—Sta. 1046-4, juvenile male.—Sta. 1046-6, juvenile male.—Sta. 1046-7, juvenile male.—Sta. 1047-1, 2 males, 1 female.
Sta. 1047-2, 3 males, 1 female.—Sta. 1047-4, 2 females of 7 x 8, 1 juvenile.

**ASTHENOGNATHINAE Stimpson, 1858**

*Asthenognathus* Stimpson, 1858


The aberrant situation of *Asthenognathus* in the Pinnotheridae suggests their transfer with the Asthenognathinae to the Goneplacidae s.l. Monod (1956) indicated a possible relation of *Asthenognathus* with genera of Goneplacidae such as *Chasmocarcinus*. We do not believe in a possible identity of the Asthenognathidae Stimpson, 1858 with the Chasmocarcininae Serène, 1964; but the situation of *Asthenognathus* must be taken into consideration for a revision of the Goneplacidae s.l.

62. *Asthenognathus gallardoi* sp. n.

(Fig. 28A, B and Pl. VIII, figs. A, B)

**TYPE LOCALITY**: Andaman Sea

**TYPE SPECIMEN**: Phuket Marine Biological Center, Thailand

**MATERIAL**: Sta. 1029-1. Holotype: ovigerous female of 3 x 6.

**DIAGNOSIS**: Carapace smooth and shining, with two glossy and light transversal rims on dorsal surface; anterior rim at the level of chelipeds, posterior at the level of contact between pereiopods 2 and 3; the lateral extremities of rims correspond to a marked angular inflexion of antero-lateral border of carapace. Carapace twice as broad as long; two slight transverse rim on dorsal surface. Size 3 x 6.

*Carapace less than one and a half times as broad as long; no transversal rim on dorsal surface* .......................... 2

1 Carapace twice as broad as long; two slight transverse rim on dorsal surface. Size 3 x 6. *Asthenognathus gallardoi* sp. n.

**OBSERVATIONS**: The genus, described for *Asthenognathus inaequipes* Stimpson, 1858 from Japan, includes *A. hexagonum* Rathbun, 1909 from the Gulf of Thailand and *atlanticus* Monod, 1933 from the African and European coast of the Atlantic Ocean. The present collection contains *gallardoi* sp. n. The three Indo-Pacific species can be distinguished by:

1 Carapace twice as broad as long; two slight transverse rim on dorsal surface. Size 3 x 6. *Asthenognathus gallardoi* sp. n.

*Carapace less than one and a half times as broad as long; no transversal rim on dorsal surface* .......................... 2

2 Posterior border of carapace one a half times as long as front-orbital width. Size 6.7 x 9.8.

*Posterior border of carapace subequal to front-orbital width. Size 5.6 x 7.8* .......................... *Asthenognathus hexagonum* Rathbun, 1909

The species differs from *inaequipes* and *hexagonum* by its much broader carapace ornamented with two transversal rims. We have indentified it with *gallardoi*, a female of the same size belonging to the collection of the Institute of Oceanography at Nhatrang and collected in Nhatrang Bay, Vietnam, ten years ago by Dr. Gallardo.

63. *Asthenognathus hexagonum* Rathbun, 1909

(Fig. 28C)

*Asthenognathus hexagonum* Rathbun, 1909: 11.—1910: 339, fig. 24a, b, c; pl. 2, fig. 14.

**TYPE LOCALITY**: Koh Kong, Gulf of Thailand

**TYPE SPECIMEN**: Copenhagen Zoological Museum

OBSERVATIONS: The specimen has been used for comparison with material of gallardoi; the species hexagonum is much closer to inaequipes, from which it differs mainly by the carapace being much broader behind. Hexagonum was known only by two females, the largest being ovigerous of 5.6 x 7.8, collected in a muddy bottom 12 m. deep. The present record extends its geographical distribution to the Philippines. A. inaequipes is only recorded in Japanese waters.

64. Pinnixa? hematostica Sakai, 1934
(Fig. 28D and Pl. VIII, fig. C)
Pinnixa hematostica Sakai, 1934: 42, text-fig. 3.—1936: 203, text-fig. 107, pl. 57, fig. 4.—1939: 600, text-fig. 85, pl. 70, fig. 4.

TYPE LOCALITY: Simoda, Japan


MATERIAL: Sta. 1026-6, ovigerous female of 2 x 5

OBSERVATIONS: By its carapace more than twice broader than long, our specimen is particularly close to balanoglossana a species only known in Japan, and host of Balanoglossus misakiensis; Sakai (1939) cited a female of 5.5 x 13. However the propodus of the third maxilliped is, on our specimen, much shorter than on that of balanoglossana as figured by Sakai (1936, fig. 2). Considering the length of the propodus and the width of the ischiomerus, the condition of our specimen is closer to that of penultiipedalis and hematostica. On these two species the carapace, according to the measurements given by the authors, is only twice broader than long; but the measurements taken on the figures of hematostica given by Sakai (1936, fig. 3) and of penultiipedalis given by Shen (1932, fig. 10a) show that the carapace is more than twice broader than long on the two species, as it is on our specimen. On penultiipedalis, at least as it is illustrated by Shen (1932), the merus of the pereiopod 4 is much broader (less than 1½ longer than broad) than on hematostica. It is above all in consideration of this character that our specimen is identified, with reserve, as hematostica.

65. Tetrias fischeri (A. Milne-Edwards, 1867)

Pinnixa fischeri, A Milne-Edwards, 1873: 319, pl. 18, fig. 3.—De Man, 1888: 385, pl. 17, fig. 2.

Pinnixa (Tetrias) fischeri, Alcock, 1900: 336.

Tetrias fischeri, Tesch, 1918: 268, pl. 18, fig. 1.—Balss, 1938: 75.—Serène, 1964: 278, pl. 24C.—Sakai, 1965: 181, pl. 87, fig. 5, 6.

TYPE LOCALITY: New Caledonia

TYPE SPECIMEN: Paris Museum

MATERIAL: Sta. 1010-9, male of 5 x 6, 1 juvenile.
—Sta. 1020-3, male of 4 x 5.—Sta. 1020-2, male of 3.9 x 5. Ph. 233/1

OCYPODIDAE Ortmann, 1894

66. Macrophthalmus sp. 1

MATERIAL: Sta. 1006-6, male of 3.5 x 6.5.—Sta. 1006-4, female of 2.5 x 4.5 and 1 juvenile.—Sta. 1006-7, female of 3 x 5.5, male of 2.8 x 4.—Sta. 1010-2, male of 4 x 7, ovigerous female of 4 x 6.

OBSERVATIONS: The specimens belong to the group of species with very long eye peduncles extending far over the tips of the external orbital angles. Originally the study of our specimens was abandoned because of their small size. Papers recently published on similar small species of Macrophthalmus, such as philippinensis and latipes, seem to indicate that it would be interesting to resume study of them.

67. Macrophthalmus sp. 2

MATERIAL: Sta. 1039-5, female of 13 x 17

OBSERVATIONS: The specimen is close to M. crinitus and M. pacificus, but provides insufficient information to identify it in the present state of our knowledge.
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REFERENCES


______, 1933 b, Further notes on Crustacea Decapoda in the Indian Museum. IV. On two new species of Oxystomous from the Bay of Bengal. *Rec. Ind. Mus. 35(1):77-86, fig. 1, pl. III.*


Mac GILCHRIST, A.C., 1905, Natural history Notes from the R.I.M.S. "Investigator", Capt. T.H. Hening, R.N. (retired) commanding, series III, No. 6. An account of the new and some of


------, 1890, Carcinological studies in the Leyden Museum No. 4. *Notes from the Leyden Museum*, 12 (13) : 49-126, pls. 3-6.


______, 1936 a, Crabs of Japan. 66 plates in life colours with descriptions, Tokyo. (in Japanese)


STEPHENSEN, W., 1972 b, Portunid crabs from the Indo-West Pacific and Western America in the Zoological Museum, Copenhagen (Decapoda, Brachyura, Portunidae). Steenstrupia, 2(9): 127-156, figs. 1-8.


STIMPSON, W., 1858 b, Idem Part VI Crustacea Oxystomata. Ibid. 10:158-163 (57-61).


(Manuscript received December, 1974)
Fig. 1—Cosmonotus grayi, male of 10 x 8. (A) abdomen. (B) pleopod 1. (C) pleopod 2.

Fig. 2—Drachiella morum, male of 5 x 6. (A) abdomen. (B) pleopod 1. (C) pleopod 2.
Fig. 3—*Nuciops modesta*, male of 3.8 x 4. (A) pleopod 1. (A') subproximal part. (A'') distal part. (B) pleopod 2. (B', B'') subproximal part. (B''') distal part. (C) distal part of pleopods 1 and 2 in natural position.
Fig. 4—*Nucia rosea*, male of 9.5 x 11.5 (A, A') pleopod 1. (B, B', B'') pleopod 2.

Fig. 5—*Paranursia abbreviata*, male of 6 x 6. (A, A', A'') pleopod 1. (B, B') pleopod 2.
Fig. 6—Cryptocnemus siamensis, holotype, male of 5 x 8. (A, A') pleopod 1. (B, C, D) pereiopods 3-5.

Fig. 7—Onychomorpha lamelligera, male of 6.5 x 6. (A, A', A'') pleopod 1.
Fig. 8—*Nursia tonsor*, male of $5 \times 6$ ($A,A'$) abdomen. ($B,B'$) pleopod 1.

Fig. 9—*Myra elegans*, male of $8 \times 16$ ($A,A'$) pleopod 1.
Fig. 10—Thalamita muusi, holotype, male of 6 x 8 (A) carapace. (A') antero-lateral teeth. (A'') frontal border. (B) abdomen. (C, C') pleopod 1. (D) pleopod 2.
Fig. 11—*Hellenus pulchricristatus* male of 10 × 19. (A) abdomen. (B, B') pleopod 1.

Fig. 12—*Thalamita parydens*, male of 4 × 6 (A) abdomen. (B, B') pleopod 1. (C, C') pleopod 2.
Fig. 13—*Goniohellenus vadorum*, male of 7 x 13. (A) outline of cheliped. (B) outline of carapace. (C) third maxilliped. (D) outline of pereiopod 5; (E) abdomen. (F, F') pleopod 1.

Fig. 14—*Libystes edwardsi*, male of 10 x 6. (A) abdomen, (B, B') pleopod 1. (C) pleopod 2.
Fig. 15—Singhaplax ockelmanni, holotype, male of 3 × 5. (A) abdomen (B,B') pleopod 1. (C) pleopod 2

Fig. 16—Notonyx vitreus, male of 3.9 × 4.3. (A) abdomen. (B,B') pleopod 1. (C,C') pleopod 2. (D) outline of the carapace (E) outline of the carapace of Notonyx nitidus, male of 5 × 7.5
Fig. 17—*Typhlocarcinodes hirsutus*, male of $5.8 \times 6.7$. (A, A', A'') pleopod 1. (B, B', B'') pleopod 2.

Fig. 18—*Ceratoplax fulgida*, male of $3 \times 5$. (A) third maxilliped. (B) abdomen. (C, C') pleopod 1. (D) cheliped. (E, E') outline of the carapace.
Fig. 19—*Xenophthalmodes dolichophallus*, male of 5 x 6. (A) abdomen. (B) third maxilliped. (C,C’) pleopod 1.

Fig. 20—*Lophoplax teschi*, male. (A,A’,A’’,A”’) pleopod 1. (B,B’,B’’) pleopod 2.
Fig. 21—*Camatopsis rubidus*, male of 4.5 × 5. (A, A') pleopod 1. (B) pleopod 2.

Fig. 22—*Heteroplax nitidus*, male of 5 × 7.5. (A) abdomen. (B, B') pleopod 1. (C) carapace. (D) pereiopod 5. (E) third maxilliped.
Fig. 23—*Thaumastoplax orientalis*, male of 6 x 8. (A) third maxilliped. (B) pleopod 1. (C) pleopod 2.

Fig. 24—*Hexapus sexpes*, male of 6 x 9. (A) third maxilliped. (B) abdomen. (C,C') pleopod 1.
Fig. 25—*Hexapus stephenseni*, holotype, male of 3 × 4. (A) third maxilliped. (B) abdomen. (C,C') pleopod 1

Fig. 26—*Hexapus granuliferus*, female of 4 × 5. (A) third maxilliped. (B) abdomen.
Fig. 27—*Hexapus edwardsi*, male of $4 \times 5$. (A) third maxilliped. (B) abdomen.

Fig. 28—*Asthenognathus gallardoi*, holotype, female of $3 \times 6$. (A) third maxilliped. (B) outline of the carapace. (C) outline of the carapace of *Asthenognathus hexagonum*, female of $6 \times 8$. (D) third maxilliped of *Pinnixa hematostica*, female of $2 \times 5$. 
Fig. A—Ethusa sp., male of 5 x 4.
Fig. B—Nuciops modesta, male of 3 x 3.75.
Fig. C—Nursia lar, female of 5 x 6.
Fig. D—Paranursia abbreviata, female of 3 x 3.

Fig. A—Nursilia tonsor, male of 5 x 6, carapace.
Fig. B—Nursilia tonsor, male of 5 x 6, chelipeds.
Fig. C—Nursilia dentata, male of 6.5 x 8.
Fig. D—Cryptocnemus stamensis, holotype, male of 5 x 8.
PLATE III

Fig. A—Onychomorpha lamelligera, female of 5 x 5, entire.
Fig. B—Onychomorpha lamelligera, female of 5 x 5, cheliped.
Fig. C—Randallia eburnea, female of 9 x 9.
Fig. D—Myra elegans, male of 16 x 8.

PLATE IV

Fig. A—Hellenus pulchricristatus, male of 19 x 10.
Fig. B—Goniohellenus vadornn, male of 13 x 7.
Fig. C—Hellenus aff. hastatoides, male of 16 x 5.
Fig. D—Thalamita munst, holotype, male of 6 x 8.
PLATE V

Fig. A—**Thalamita parvidens**, male of 6 x 4.
Fig. B—**Libystes edwardsi**, male of 3 x 4.
Fig. C—**Libystes edwardsi**, male of 6 x 10, carapace.
Fig. D—**Libystes edwardsi**, male of 6 x 10, chelipeds.

PLATE VI

Fig. A—**Singhaplax ockelmanni**, female of 3 x 6.
Fig. B—**Notonyx vitreus**, male of 3.2 x 4.
Fig. C—**Ceratoplax? fulgida**, male of 3 x 5.
Fig. D—**Heteroplax nitidus**, male of 5 x 7.5.
Fig. A—*Hexapus sexpes*, male of 6 x 9.
Fig. B—*Hexapus stephenseni*, male of 3 x 4.
Fig. C—*Hexapus granuliferus*, male of 4 x 5.
Fig. D—*Hexapus edwardsi*, female of 4 x 6.

Fig. A—*Asthenognathus gallardoi*, holotype, female of 3 x 6, entire.
Fig. B—*Asthenognathus gallardoi*, holotype, female of 3 x 6, cheliped.
Fig. C—*Pinnixa? hematostica*, female of 2 x 5.
Fig. D—*Thaumastoplax orientalis*, male of 6 x 8.