BIODIVERSITY PROJECT ON GULF OF MANNAR BIOSPHERE RESERVE

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BRACHYURAN CRABS OF GULF OF MANNAR

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GENERAL INTRODUCTION

Coral reef ecosystems are tropical, shallow water marine ecosystems, largely restricted to the area between the latitudes 30°N and 30°S of equator. Even though, they occupy less than 0.2 % of the ocean floor, they contain perhaps 25% of the ocean's species (IUCN/UNEP, 1985). Thus the coral reef ecosystems are well known for their species richness and also complexity. It is quite remarkable that an environment with so small an area, has so much life and so many species and thus diversity. Typically they contain number of specialised species representing almost all the groups of marine animals. One of the reasons attributed for the great diversity of life in coral reef is the great diversity of habitats. The great number of holes and crevices in the reef, provides abundant shelter for fishes and invertebrates and reefs are important fish nurseries. Coral reefs thus are in a way a store house of species.

Coral reef ecosystems offer benefits to mankind beyond those realized for food production, as tourism, recreation, aesthetics and shoreline protection. The world conservation strategy (IUCN/UNEP/WWF, 1980) identifies coral reefs as one of the "essential life support systems" necessary for food production, health and other aspects of human survival and sustainable development. Increasing numbers of reef species are being found to contain bioactive compounds with antimicrobial, antileukemic, anticoagulant and cardioactive properties. These facts were recognised at the 1992 United Nations Conference on Environment and Development, where coral reefs and associated systems were accorded high priority for protection in Agenda 31.

Coral reefs around the world are deteriorating rapidly. Human activities are the primary cause for coral degradation. More than 60 percent of earth's 5.6 billion people live in coastal areas and many coral reef ecosystems are easily accessible. Some sources estimated that 10 percent of all reefs has been degraded beyond recovery and another 20 to 30 percent may be lost by 2010. The widespread perception of coral reef decline has led to increasing demands for documenting patterns of coral reef diversity and ecological processes essential for effective conservation and management.

The Gulf of Mannar which is situated on the southeast coast of India, is a coral dominated environment extending from the Adams bridge to the Cape Comorin (Fig.1). This area is remarkable for its richness and variety of fauna and the inshore sea bottom forms an ideal habitat for the growth of shellfishes which sustain a good fishery. Impressed by the array of organisms, Henderson (1893) aptly remarked that "no collection ground in the Indian seas can show greater profusion of animal life than the Gulf of Mannar".

The Indian part of the Gulf of Mannar covers approximately an area of 10,500 square kilometres along latitude 8°35'N-9°25'N and longitude 78° 08'E-79°30'E. There are about 21 islands covering an area of 625 hectares and the coral reefs of fringing and patch types extend from Rameshwaram to Tuticorin (lat. 8°50'-9°10'N and long. 78°10'-79°10'E) covering a distance of 140 kms. The 21 islands are occurring in 4 groups. The reefs are mostly fringing type arising from the shallow seafloor and are not more than 6 metres depth. Some colonies are seen in pearl bank beds at depths of 12 to 27 metres.

The Gulf of Mannar environment is influenced by the seasonal monsoon wind. During the northeast monsoon season from October to December and then upto March the sea is very calm and clear. During the southwest monsoon season from June to September water is more turbid and most of the coral colonies are affected by sedimentation. The maximum tidal amplitude of 0.81m is during spring tides and the minimum of 0.2m during neap tides. During the formation of low pressure, depression and deep depression and the associated cyclonic weather, waves of 5 metres high are encountered.

The Gulf of Mannar was declared as the Marine National Park by the State Government under the Wildlife Act of 1972. Gulf of Mannar Biosphere Reserve has been set up by the Government of India in 1987 and is the first Marine Biosphere Reserve in India (Biosphere document, 1987). The main set of activities envisaged for Biosphere and research priorities of biosphere reserve are base-line inventories on fauna, completion of information on fauna and preservation of genetic diversity through suitable management practices.

Good taxonomy is essential for understanding ecology and evolutionary patterns and processes of coral reefs. Studies relating to taxonomy and systematics of Indian crabs are limited. Taxonomy is relatively an unexciting, but supremely an important function of ordering nature into a practical and generally useful system. Systematics in the wide sense also has the more challenging task of understanding the mechanisms of phylogeny (Sneath and Sokal, 1973).

During the past two centuries, the classification of decapods, particularly crabs passed through a series of changes. First, Latreille's (1802) divided Decapoda into the long tailed Macrura and short tailed Brachyura. Later, Hentri Milne Edwards (1834) created a third decapodan division the Anomura. Brachyuran crabs were then divided by Milne Edwards into 4 great divisions 1. Oxyrhynques (spider crabs), 2. Cyclometopes (round fronted crabs),

3.Catometopes (square fronted crabs) and 4. Oxystomes (sharp fronted crabs). Based on mouth parts de Haan (1833-49) regrouped the brachyurans into 2 main divisions Oxystomata and Brachygnatha. Later Dana (1852 a, b, c) modified the Milne Edwards divisions and classified Brachyura into 5 sub-tribes namely 1.Maioidea, 2. Cancroidea, 3. Corystoidea, 4. Grapsoidea and 5.Leucosoidea. A completely new decapod classification was proposed by Boas (1880) and this was followed by Ortmann (1892). Then Miers (1886) grouped Brachyura into 4 sub-tribes as 1. Oxystomata or Leucosiidea, 2. Oxyrhyncha or Maioidea, 3.Cyclometopa or Cancroidea and 4. Catometopa or Ocypodiidea. The above classification had been followed with slight modification by Alcock (1895-1900). In the meantime Bouvier (1896) classified Brachyura into 5 tripes as 1.Dromiacea, 2.Oxystomata, 3. Corystoidea, 4. Brachyrhyncha and 5.Oxyrhyncha. Later Borradaile (1907) classified the Tribe Brachyura into 3 sub-tribes as 1. Dromiacea, 2. Brachygnatha and 3. Oxystomata. Borradaile's general scheme had been widely accepted by zoologists and his classification with slight modification was followed by Balss (1957). In his classification, the Tribe Brachyura had 4 sub-tribes as 1. Dromiacea, 2. Oxystomata, 3.Brachygnatha and 4. Hapalocarcinoidea.

Glaessner's (1969) classification included 5 sections namely 1.Dromiacea, 2.Oxystomata, 3. Oxyrhyncha, 4. Cancridea and 5. Brachyrhyncha. Later Sakai (1976) classified Brachyura into 7 sub-sections as 1. Dromiacea, 2.Gymnopleura, 3. Oxystomata, 4. Oxyrhyncha, 5. Corystoidea, 6. Brachyrhyncha and 7. Hapalocarcinidea. Guinot (1977, 1978) proposed a new classification of adult Brachyura based primarily on the position of female and male genital openings. In her classification, she proposed Brachyura under 3 sections as

1. Podotremata: Families in which both female and male openings are coxal.
2. Heterotremata: Families in which the female genital openings are all sternal, whereas atleast some representatives have the male openings coxal.
3. Thoracotremata: Families in which both the female and male openings are always sternal.

Rice (1980) proposed brachyuran classification based on larval characteristics. Nowadays, Guinot's classification is widely followed and it received much support from Rice (1980) also. In the present study, brachyuran crabs of Gulf of Mannar are given as per the classification of Guinot (1977, 1978).

Studies on brachyuran fauna of Indian seas were initiated by Milne Edwards (1834), Henderson (1882) and de Man (1887-88 a, b, c) and they mostly dealt with deep sea species. The Gulf of Mannar is well known for its faunistic richness and diversity. However, a comprehensive study on the brachyuran fauna of this area has not been attempted and this area received only cursory attention in the works of Alcock (1895-1900), Laurie (1906), Southwell (1911), Kemp (1919), Gravely (1927), Chopra (1931) and Balss (1935), the exception being Sankarankutty (1965). However after Sankarankutty (1965) quite a lot of changes have come into being in the face of increased exploitation and illegal mining. The present attempt is a stock taking one.

At present the emphasis is on the formulation of figurative keys. Such keys will become a valuable tool in studies that will be initiated in future. These keys will be very widely used in research and educational institutes for identification purposes. Therefore figurative keys have been formulated based on the adult morphological characters for easy field identification.

MATERIALS AND METHODS

The brachyuran crabs occurring in the Gulf of Mannar were caught by the gearlocally known as 'Nandu valai' or crab net. It resembles the small gill net or thewall net. The deep sea crabs were collected from the landings of trawlers. The crabs inhabiting the coral reefs were collected by breaking the coral colony with a hammer and chisel. Corals were collected by skin and SCUBA divings. The collected crabs were preserved in 7 % formalin. Later the specimens were examined in detail and identified. The schematic drawings showing different regions of crabs which are of diagnostic value are shown in Plates 1-3. The dimension of crabs in figures is of life size.

CHECK LIST OF BRACHYURAN CRABS OF GULF OF MANNAR

Superclass : **CRUSTACEA** Pennant, 1777

Class : **MALACOSTRACA** Latreille, 1806

Subclass : **EUMALACOSTRACA** Calman, 1904

Order : **DECAPODA** Latreille, 1803

Suborder : **PLEOCYEMATA** Burken Road, 1963

Infraorder : **BRACHYURA** Latreille, 1802

SECTION I : **PODOTREMATA** Guinot, 1977

Sub-Section : **DROMIACEA** de Haan, 1833

Superfamily : **DROMIOIDEA** de Haan, 1833

Family : **DROMIIDAE** de Haan, 1833

Genus : *Dromia* Weber, 1795
Dromia dehaani Rathbun, 1923

Genus : *Cryptodromia* Stimpson, 1858
Cryptodromia hilgendorfi de Man, 1887

Sub-Section : **ARCHAEOBRACHYURA** Guinot, 1977

Superfamily : RANINOIDEA de Haan, 1839

Family : RANINIDAE de Haan, 1839

Subfamily : Ranininae Sakai, 1976

Genus : *Ranina* Lamarck, 1801
Ranina ranina (Linnaeus, 1758)

SECTION II : HETEROTREMATA Guinot, 1977

Superfamily : **DORIPPOIDEA** White, 1847

Family : **DORIPPIDAE** White, 1847

Genus : *Dorippe* Weber, 1795
Dorippe (Dorippe) frascone (Herbst,1785)

Genus : *Paradorippe* Serene and Romimohtarto,1969
Paradorippe granulata (de Haan, 1841)

Superfamily : **CALAPPOIDEA** de Haan, 1833

Family : **CALAPPIDAE** Dana, 1852

Subfamily : **CALAPPINAE** Alcock, 1896

Genus : *Calappa* Weber, 1795
Calappa lophos (Herbst, 1782)
Calappa philargius (Linnaeus, 1758)
Calappa gallus (Herbst, 1803)
Calappa gallus capellonis Laurie, 1906
Calappa bicornis Miers, 1884

Superfamily : **PORTUNOIDEA** Rafinesque, 1815

Family : **PORTUNIDAE** Rafinesque, 1815

Subfamily : **PORTUNINAE** Stephenson and Campbell, 1960

Genus : *Scylla* de Haan, 1833
Scylla serrata (Forskal, 1755)

Genus : *Portunus* Weber, 1795

Subgenus : *Portunus* Weber, 1795
Portunus (Portunus) sanguinolentus (Herbst, 1783)
Portunus (Portunus) pelagicus (Linnaeus, 1758)
Portunus (Portunus) pubescens (Dana, 1852)

Subgenus : *Monomia* Gistel, 1848
Portunus (Monomia) gracilimanus (Stimpson, 1858)
Portunus (Monomia) gladiator Fabricius, 1798
Portunus (Monomia) petreus (Alcock, 1899)

Genus : *Charybdis* de Haan, 1833

Subgenus : *Charybdis* de Haan, 1833
Charybdis (Charybdis) lucifera (Fabricius, 1798)
Charybdis (Charybdis) helleri (MilneEdwards, 1867)
Charybdis (Charybdis) annulata (Fabricius, 1798)
Charybdis (Charybdis) feriata (Linnaeus,1758)
Charybdis (Charybdis) riversandersoni Alcock, 1899
Charybdis (Charybdis) rostratum A.Milne Edwards, 1861
Charybdis (Charybdis) natator (Herbst, 1794)

Subgenus : *Goniosupradens* Leene, 1938
Charybdis (Goniosupradens) acutifrons (de Man,1879)

Subgenus : *Goniohellenus* Alcock, 1899
Charybdis (Goniohellenus) edwardsi Leene and Buitendijk, 1952

Genus : *Thalamita* Latreille, 1829
Thalamita crenata (Latreille, 1829)
Thalamita danae Stimpson, 1858
Thalamita prymna (Herbst, 1803)
Thalamita integra Dana, 1852
Thalamita admete (Herbst, 1803)
Thalamita parvidens (Rathbun, 1907)

Subfamily : **PODOPHTHALMINAE** Borradaile, 1907

Genus : *Podophthalmus* Lamarck, 1801
Podophthalmus vigil (Fabricius, 1798)

Superfamily : **XANTHOIDEA** MacLeay, 1838

Family : **CARPILIIDAE** Ortmann, 1893

Genus : *Carpilius* Leach, 1823
Carpilius convexus (Forskal, 1775)
Carpilius maculatus (Linnaeus, 1758)

Genus : *Liagore* de Haan, 1835
Liagore rubromaculata de Haan, 1835

Family : **MENIPPIDAE** Ortmann, 1893

Genus : *Menippe* de Haan, 1833
Menippe rumphii Fabricius, 1798

Family : **XANTHIDAE** MacLeay, 1838

Subfamily : **XANTHINAE** MacLeay, 1838

Genus : *Halimede* de Haan, 1835
Helimede ochtodes (Herbst, 1783)

Genus : *Galene* de Haan, 1833
Galene bispinosa (Herbst, 1783)

Genus : *Macromedaeus* Ward, 1942
Macromedaeus bidentatus A.Milne Edwards, 1867

Genus : *Demania* Laurie, 1906
Demania splendida Laurie, 1906
Demania baccalipes (Alcock, 1898)

Genus : *Leptodius* A. Milne Edwards, 1863
Leptodius euglyptus Alcock, 1898
Leptodius gracilis (Dana, 1852)
Leptodius exaratus (H. Milne Edwards, 1834)

Subfamily : **ZOSIMINAE** Alcock, 1898

Genus : *Atergatis* de Haan, 1835
Atergatis floridus (Linnaeus, 1767)
Atergatis subdentatus de Haan, 1835
Atergatis integerrimus (Lamarck, 1801)
Atergatis frontalis de Haan, 1835
Atergatis roseus (RÜppell, 1830)

Genus : *Zosymus* Leach, 1818
Zosymus aeneus (Linnaeus, 1758)

Genus : *Platipodia* Bell, 1835
Platipodia cristata (A. Milne Edwards, 1865)

Subfamily : **ETISINAE** Ortmann, 1893

Genus : *Etisus* H. Milne Edwards, 1834
Etisus laevimanus Randall, 1839

Subfamily : **CHLORODINAE** Alcock, 1898

Genus : *Pilodius* Dana, 1852
Pilodius areolatus (H. Milne Edwards, 1834)

Genus : *Phymodius* A. Milne Edwards, 1863
Phymodius monticulosus (Dana, 1852)
Phymodius granulosus (de Man, 1888)
Phymodius ungulatus (H. Milne Edwards, 1834)
Phymodius nitidus (Dana, 1852)

Genus : *Chlorodiella* Rathbun, 1897
Chlorodiella nigra (Forskal, 1775)

Subfamily : **CYMOINAE** Alcock, 1898

Genus : *Cymo* de Haan, 1833
Cymo melanodactylus de Haan, 1833
Cymo andreossyi (Audouin, 1826)

Subfamily : **ACTAEINAE** Alcock, 1898

Genus : *Pseudoliomera* Odhner, 1925
Psuedoliomera speciosa (Dana, 1852)

Genus : *Paractaea* Guinot, 1969
Paractaea ruppelli orientalis (Odhner, 1925)

Family : **PILUMNIDAE** Samouelle, 1819

Genus : *Pilumnus* Leach, 1815
Pilumnus vespertilio (Fabricius, 1793)
Pilumnus tomentosus Latreille, 1825
Pilumnus minutes de Haan, 1835

Family : **TRAPEZIIDAE** Miers, 1886

Genus : *Tetralia* Dana, 1851
Tetralia cavimana Heller, 1861

Genus : *Trapezia* Latreille, 1825
Trapezia cymodoce (Herbst, 1801)
Trapezia areolata Dana, 1852
Trapezia ferruginea Latreille, 1825

Superfamily : **MAJOIDEA** Samouelle, 1819

Family : **MAJIDAE** Samouelle, 1819

Subfamily : **INACHINAE** MacLeay, 1838

Genus : *Composcia* Latreille, 1829
Composcia retusa Latreille, 1829

Subfamily : **OPHTHALMIINAE** Balss, 1929

Genus : *Ophthalmias* Rathbun, 1897
Ophthalmias cervicornis (Herbst, 1803)

Subfamily : **PISINAE** Alcock, 1895

Genus : *Naxioides* A. Milne Edwards, 1865
Naxioides hirta A. Milne Edwards, 1865

Genus : *Phalangipus* Latreille, 1825
Phalangipus hystrix (Miers, 1886)

Genus : *Tylocarcinus* Miers, 1879
Tylocarcinus styx (Herbst, 1803)

Genus : *Hyastenus* White, 1847
Hyastenus pleione (Herbst, 1803)
Hyastenus oryx A. Milne Edwards, 1872

Genus : *Doclea* Leach, 1814
Doclea alcocki Laurie, 1906
Doclea hybrida (Fabricius, 1793)
Doclea ovis (Herbst, 1788)
Doclea canalifera Stimpson, 1857

Subfamily : **MAJINAE**

Genus : *Schizophrys* White, 1848
Schizophrys aspera (H. Milne Edwards, 1834)

Genus : *Cyclax* Dana, 1851
Cyclax suborbicularis (Stimpson, 1858)

Superfamily : **PARTHENOPOIDEA** MacLeay, 1838

Family : **PARTHENOPIDAE** Miers, 1879

Subfamily : **PARTHENOPINAE** Miers, 1879

Genus : *Parthenope* Weber, 1795

Subgenus : *Platylambrus* Stimpson, 1871
Parthenope (Platylambrus) prensor (Herbst, 1803)
Parthenope (Platylambrus) echinatus (Herbst, 1803)

Subgenus : *Rhinolambrus* A. Milne Edwards, 1878
Parthenope (Rhinolambrus) contrarius (Herbst, 1796)

Genus : *Daldorfia* Rathbun, 1906
Daldorfia horrida (Linnaeus, 1758)

Subfamily : **AETHRINAE** Dana, 1852

Genus : *Aethra* Leach, 1816
Aethra scruposa (Linnaeus, 1764)

Superfamily : **LEUCOSIOIDEA** Samouelle, 1819

Family : **LEUCOSIIDAE** Samouelle, 1819

Subfamily : **PHILYRINAE** Rathbun, 1937

Genus : *Arcania* Leach, 1817
Arcania heptacantha (de Haan, 1861)
Arcania erinaceus (Fabricius, 1798)
Arcania novemspinosa (Adams and White,1848)

Genus : *Myra* Leach, 1817
Myra fugax (Fabricius, 1798)

Genus : *Ixa* Leach, 1815
Ixa cylindrus (Fabricius, 1798)

Genus : *Philyra* Leach, 1817
Philyra syndactyla Ortmann, 1892

Subfamily : **LEUCOSIINAE** Miers, 1886

Genus : *Leucosia* Weber, 1795
Leucosia anatum (Herbst, 1783)
Leucosia craniolaris (Linnaeus, 1758)

Subfamily : **MATUTINAE** Alcock, 1896

Genus : *Matuta* Weber, 1795
Matuta lunaris (Forskal, 1775)
Matuta planipes Fabricius, 1798
Matuta miersi Henderson, 1887

SECTION III : THORACOTREMATA Guinot, 1977

Family : **GONEPLACIDAE** Dana, 1851

Subfamily : **CARCINOPLACINAE** Miers, 1886

Genus : *Eucrate* de Haan, 1835
Eucrate alcocki Serene, 1971

Superfamily : **OCYPODOIDEA** Rafinesque, 1815

Family : **OCYPODIDAE** Rafinesque, 1815

Subfamily : **MACROPHTHALMINAE** Dana, 1852

Genus : *Macrophthalmus* Latreille, 1829

Subgenus : *Mareotis* Barnes, 1967
Macrophthalmus (Mareotis) depressus Ruppell, 1830

Subfamily : **OCYPODINAE** Dana, 1851

Genus : *Ocypode* Weber, 1795
Ocypode ceratophthalma (Pallas, 1772)

Superfamily	:	**GRAPSOIDEA** MacLeay, 1838
Family	:	**GRAPSIDAE** MacLeay, 1838
Subfamily	:	**GRAPSINAE** Dana, 1851
Genus	:	*Grapsus* Lamarck, 1801 *Grapsus albolineatus* Lamarck, 1818
Genus	:	*Metopograpsus* H. Milne Edwards, 1853 *Metopograpsus messor* (Forskal, 1775)
Family	:	**PLAGUSIIDAE** Dana, 1851
Genus	:	*Plagusia* Latreille, 1806 *Plagusia depressa tuberculata* Lamarck, 1818
Genus	:	*Percnon* Gistel, 1848 *Percnon planissimum* (Herbst, 1804)

KEY TO FAMILIES OF BRACHYURAN CRABS

Carapace usually broad or not longer than broad or as long as broad with well marked side edge; fourth and fifth legs small, subdorsal and usually prehensile (Plate 4a)

DROMIIDAE

Carapace longer than broad, greatest width in anterior third; chelipeds robust, hand usually broad and flat (Plate 30)

RANINIDAE

Carapace short and squarish; abdomen not fully hidden beneath carapace;last 2 pairs of legs reduced and subdorsal (Plate 4b);antennule larger

DORIPPIDAE

Carapace round, spherical or hemispherical (Plate 4c); antennae small; inhalent branchial openings in front of basal segment of cheliped

CALAPPIDAE

Carapace usually round or oval;right chela larger than left, last leg flattened, adapted for swimming (Plate 5a); usually a small lobe at inner angle of endopodite of first maxilliped

PORTUNIDAE

Carapace broad, transversely oval (Plate 5b), dorsal surface of carapace markedly convex, smooth not areolated; ambulatory legs sub-cylindrical

CARPILIIDAE

Carapace broad, transversely oval, dorsal surface of carapace not markedly convex (Plate 5c), front one fourth, or less than one fourth of greatest breadth of carapace; basal antennal joint not nearly reaching front; abdomen of male with 7 separate and distinct segment

MENIPPIDAE

Legs not adapted for swimming (Plate 6a);branchial regions not swollen, carapace anteriorly broadened;no inner lobe on endopodite of first maxilliped

XANTHIDAE

Carapace moderately broad, anterolateral borders of carapace not longer than, and often shorter than posterolateral (Plate 6b); basal antennal joint does not touch, or only just touches front

PILUMNIDAE

Carapace depressed and nearly quadrilateral (Plate 6c), its dorsal surface perfectly smooth; arms long or very long, projecting in large part or entirely beyond carapace in repose

TRAPEZIIDAE

Carapace usually pyriform (conical shaped); basal segment of antenna fused with epistome, also with front, orbits incomplete; chelipeds shorter than legs (Plate 6d)

MAJIDAE

Carapace triangular or pentagonal; basal segment of antenna small not fused with epistome or front;chelipeds stouter than legs (Plate 6e)

PARTHENOPIDAE

Carapace round (Plate 7a), spherical or hemispherical; antennae small; inhalent branchial openings at base of external maxillipeds

LEUCOSIIDAE

Legs not adapted for swimming; branchial region not swollen, carapace squarish (Plate 7b)

GONEPLACIDAE

Body squarish;carpus of third maxilliped not articulating with merus;last legs not dorsally placed front;very narrow, orbits very elongate and oblique covering almost anterior portion of carapace (Plate 7c)

OCYPODIDAE

Last legs not dorsally placed; a gap between third maxillipeds; sides of body straight or arched, front broad (Plate 7d); rarely true land crabs

GRAPSIDAE

Antenullary fossets deeply divided into lobes (Plate 7e); infraorbital border curved; external maxillipeds incompletely close buccal cavern

PLAGUSIIDAE

KEY TO SUBFAMILIES, GENERA AND SPECIES

FAMILY: DROMIIDAE

KEY TO GENERA AND SPECIES OF FAMILY DROMIIDAE

Cheliped with an epipodite on its coxa (Plate 8a); sternal sulci of female end apart (Plate 8b)

Dromia

Carapace broader than long, 4 subequal anterolateral teeth; dactyli as long as propodi in anterior ambulatory legs (Plate 8c)

D. dehaani

Fourth pair of legs shorter than first two pairs (Plate 8d), legs nodular, meropodites not specially dilated; tomentum much shorter and velvet like, all species small in size

Cryptodromia

Carapace smooth (non granular); anterolateral borders of carapace with a single tooth at their anterior end (Plate 8e)

C. hilgendorfi

FAMILY : RANINIDAE

KEY TO SUBFAMILY, GENUS AND SPECIES OF FAMILY RANINIDAE

Eyestalks folded almost transversely or longitudinally, posterior pleopod of male distally cut slant and acuminate at apex, shorter than anterior pleopod (Plate 30)

Subfamily Raninae

Crab of large size, carapace very broad, ratio between length and width being 6:5; sternal thoracic shield reaches only to level between bases of first ambulatory legs; eyestalks three segmented; all four pairs of legs similar in form and size (Plate 30)

Ranina ranina

FAMILY: DORIPPIDAE

KEY TO GENUS, SUBGENUS AND SPECIES OF FAMILY DORIPPIDAE

Front consisted of 2 median teeth; anterior extremity of buccal cavern extends as for as tip of front; anterior pleopod of male strong and nearly straight and a rounded lobe on proximal third of shaft

Dorippe

Anterior pleopod of male with shaft regularly tapering towards apical chitinous process (Plate 8f)

Dorippe (Dorippe)

Carapace nodular and wrinkled; spine of inner canthus of orbit ponderous, curved and serrated along under surface; fourth pair of true legs less than half of second pair (Plate 8g)

D.(D.) frascone

Anterior pleopod of male with strong swollen constricted at its median length; distal chitinous process tricuspid; roof of endostomial canal projected and dorsally visible between bases of frontal teeth

Paradorippe

Carapace hardly pubescent; last 2 pairs of legs very slightly hairy; first and second legs perfectly devoid of hair (Plate 9a)

P. granulata

FAMILY: CALAPPIDAE

KEY TO SUBFAMILY, GENUS AND SPECIES OF FAMILY CALAPPIDAE

Merus of external maxillipeds not elongate or acute, never concealing flagellum in repose; ambulatory legs gressorial (Plate 9b)

Subfamily Calappinae

Carapace with a posterolateral shield like expansion or series of broad serrations, forming a vault beneath which 4 ambulatory legs concealed in flexion; basal joint of antennae much dilated

Calappa

Length of carapace about two thirds of its width, free margins of clypeiform expansions cut into 6 teeth, posterior border of carapace beaded and bounded on either side by an indistinct tooth (Plate 9c)

C. lophos

Posterior border armed with 3 prominent spines, one in middle and one on either side; upper orbital margins marked by an incomplete loop of chocolate red (Plate 9d)

C. philargius

Front thick and obtusely truncate, carapace covered with coarse tubercles, which become squamiform towards posterior surface, hepatic regions strongly depressed (Plate 10a)

C. gallus

Front thin and slightly emarginate, carapace covered with wart-like tubercles on anterior half, hepatic regions not remarkably depressed (Plate 10b)

C. gallus capellonis

Carapace much coarser than in *C. gallus*, tubercles found on carapace being mounted with granules and sometimes with hair, large wart-like tooth immediately behind external orbital angle (Plate 10c)

C. bicornis

FAMILY: PORTUNIDAE

KEY TO SUBFAMILIES OF FAMILY PORTUNIDAE

4 to 9 anterolateral teeth; interorbital distance broader (Plate 10d); basal joint of antenna usually broad and its anteroexternal angle lobulate; legs shorter than cheliped, last pair typically paddle shaped

Portuninae

2 lateral teeth; interorbital distance narrow (Plate 10e); eyestalks strikingly long, orbits occupying whole anterior border of carapace

Podophthalminae

KEY TO GENERA OF SUBFAMILY PORTUNINAE

A. Anteroexternal angle of basal antennal segment not appreciably produced, flagellum thus standing in orbital hiatus.

1. Anterolateral carapace cut into 9 teeth of equal size; propodus of chelipeds inflated (Plate 10f)

Scylla

2. Anterolateral carapace cut into 9 teeth with last one enlarged as a long spine (Plate 10g); propodus of cheliped costate

Portunus

B. Anteroexternal angle of basal antennal segment pronouncedly dilated into a lobule which completely fills orbital hiatus, flagellum being completely excluded from orbit (Plate 11a)

1. Anterolateral border of carapace oblique and arched, cut into 6 teeth (Plate 11b); no spine on posterior border of arm of chelipeds

Charybdis

2. Anterolateral border not markedly convergent posteriorly, cut into 5 subequal teeth (Plate 11c)

Thalamita

SUBFAMILY: PORTUNINAE

KEY TO SPECIES OF GENUS *SCYLLA*

Front lobe pointed and anteriorly projected (Plate 11d); one stout spine on outer angle of carpus of cheliped (Plate 11e)

S. serrata

KEY TO SUBGENERA AND SPECIES OF GENUS *PORTUNUS*

A. Propodus of cheliped thicker than merus (Plate 11f); anteroexternal angle of merus of external maxillipeds not produced laterally (Plate 11g)

Subgenus *Portunus*

1. No spine on posterior border of merus of cheliped (Plate 12a); carapace marked with 3 large blood red spots (Plate 12b)

P.(P.) sanguinolentus

2. A spine at distal end of posterior border of merus of cheliped (Plate 12c); front composed of 4 teeth

P.(P.) pelagicus

3. Entire animal covered with soft hair;length of carapace distinctly more than half of greatest width; epistome not developed into a long spine (Plate 12d)

P.(P.) pubescens

B. Entire animal usually covered with very short downy fur; carapace with areolated patches of granules (Plate 36b)

1. Lateral angle of posterior border of carapace rounded and not armed with a spine (Plate 12e)

Subgeneus *Monomia*

i. Propodus and dactylus of cheliped much slender than merus, dactylus distinctly outcurved

(a) Front cut into four lobes of which middle two not prominent (Plate 12f), transverse ridge relatively not distinct

P.(M.) gracilimanus

ii. Propodus and dactylus of cheliped not slender than merus, dactylus not outcurved (Plate 12g)

a. No spot on dactylus of last ambulatory legs (Plate 12h);crest of second abdominal segment and of propodus of chelipeds moderately prominent

P.(M.) gladiator

b. Dorsal surface of carapace uneven; areolae of granules being respectively well marked and convex; spine at inner angle of wrist, two thirds as long as palm (Plate 12i)

P. (M.) petreus

KEY TO SUBGENERA OF GENUS *CHARYBDIS*

A. Posterior border of carapace curved (Plate 13a)

1. Anterolateral border divided into 6 teeth of which atleast 5 larger

Subgenus *Charybdis*

2. Anterolateral border divided into 5 large and 2 very small teeth (Plate 13b)

Subgenus *Goniosupradens*

B. Posterior border of carapace straight and forming an angular junction with posterolateral borders (Plate 13c)

Subgenus *Goniohellenus*

KEY TO SPECIES OF SUBGENUS *CHARYBDIS*

1. No transverse ridge on carapace behind level of last anterolateral teeth

i. First anterolateral tooth acuminate, not truncated on outer border (Plate 13d); palm with 5 stout spines in all

a. Sharp median lobule on lower border of orbit, no spine on posterior margin of carpus of natatory leg (Plate 13e)

Ch.(Ch.) lucifera

b. Posterior border of propodus of last leg serrated; spine on posterior margin of carpus of natatory leg (Plate 13f)

Ch.(Ch.) helleri

c. Carapace glossy, last anterolateral tooth small and not projecting sideways (Plate 13g); ambulatory legs banded with purplish red colour

Ch.(Ch.) annulata

ii. First tooth of anterolateral borders obliquely truncate on outer border (Plate 13h); palm with 4 sharp spine in all

a. Anterolateral teeth broad at base, first anterior lobe bifid; 3 spine on anterior borders of arm; a cross on carapace (Plate 14a)

Ch.(Ch.) feriata

b. First anterolateral teeth not distinctly bifid, frontal teeth acuminate at tip a large pale yellowish mottle on either posterior branchial region (Plate 14b)

Ch.(Ch.) riversandersoni

2. A transverse ridge on cardiac region, but none on posterior half of branchial region (Plate 14c)

i. Carapace convex; 2 spines on anterior border of arm, 2 spines on hand (Plate 14d); 2 middle frontal teeth remarkably prominent

Ch.(Ch.) rostratum

3. A transverse ridge on cardiac region and also 2 on posterior half of either branchial region (Plate 14e)

i. Species of a good size; frontal teeth rounded at tip; first and second anterolateral teeth truncate at tip, last one not larger than preceding one (Plate 14e); chelipeds tuberculated, palm with 5 teeth in all

a. Dorsal surface of carapace even and uniformly covered with soft tomentum; penultimate segment of male abdomen not convex on lateral borders; under

surface of palm uniformly covered with squamiform ridges (Plate 40), marked with longitudinal sulcus

Ch.(Ch.) natator

KEY TO SPECIES OF SUBGENUS *GONIOHELLENUS*

Anterolateral spines square cut and serrated (Plate 14f); posterior border of carapace chracteristically reduplicated (Plate 14f)

Ch.(Gh.) edwardsi

KEY TO SPECIES OF SUBGENUS *GONIOSUPRADENS*

A. Carapace tomentose, a transverse ridge on cardiac region and one on mesobranchial region

1. Front with very acuminate, triangular teeth; basal antennal joint with 2 spines (Plate 15a)

Ch.(Gs.) acutifrons

KEY TO SPECIES OF GENUS *THALAMITA*

A. Front cut into 6 truncate lobes exclusive of the broad supraorbital tooth; anterolateral borders cut into 5 teeth of equal size, fourth being not markedly smaller than others (Plate 15b)

1. Transverse ridges of carapace faint; outer surface of propodus of chelipeds almost smooth; basal segment of antenna with several indistinct granules (Plate 15b)

T. crenata

2. Transverse ridges of carapace very distinct; outer surface of propodus costate; basal segment of antenna with a longitudinal ridge marked with about 10 tubercles (Plate 15c)

T. danae

B. Anterolateral borders cut into 5 teeth, of which fourth rudimentary (Plate 15d)

1. Frontal teeth well separated; supraorbital tooth convex and not very broad; basal antennal segment with 4 to 5 spinules (Plate 15d)

T. prymna

C. Front cut into 2 broad lobes exclusive of broad supraorbital tooth (Plate 15e)

1. Edge of frontal lobes and of broad supraorbital tooth almost transverse and straight; chelipeds smooth, propodus with often 4 wornout teeth in all (Plate 15e); no transverse ridge on cardiac and postbranchial region

T. integra

2. Chelipeds dorsally granulated,propodus with about 6 teeth in all (Plate 15f); crest of basal antennal segment with 9 to 10 spinules

T. admete

D. Frontal lobes somewhat convex; surface of sternum and abdomen generally smooth; propodus ventrally smooth, penultimate segment of male abdomen with outer borders almost parallel; anterolateral teeth arcuate in their posterior borders (Plate 15g)

T. parvidens

SUBFAMILY: PODOPHTHALMINAE

KEY TO GENUS AND SPECIES OF SUBFAMILY PODOPHTHALMINAE

Eyes borne on basal stalks of enormous length and orbit extends along entire length of anterolateral border of carapace (Plate 15h)

Podophthalmus

Front entire and deflexed; eyestalks slender and simple (Plate 15h); a spinule near distal portion of inner surface of palm

P. vigil

FAMILY: CARPILIIDAE

KEY TO GENERA AND SPECIES OF FAMILY CARPILIIDAE

Chelipeds massive, smooth, unequal in both sexes (Plate 16a); fingers bluntly pointed, larger cheliped with a pair of molariform teeth, those of smaller cheliped with a blunt cutting edge

Carpilius

Carapace irregularly marbled with chocolate red, front strongly deflexed and its median lobe feebly bilobed (Plate 16b)

C. convexus

Carapace with symmetrically disposed 11 large red blots (Plate 45), front deflexed and its median lobe definitely bilobed (Plate 16c)

C. maculatus

Carapace perfectly smooth, without trace of regions, anterolateral borders entire (Plate 16d)

Liagore

Front faintly bilobed, little pimple like thickenings on outer angle of orbit; borders of arm hairy, upper borders with a blunt denticle, dactyli of leg elegantly plumed; reddish spots on carapace as well as on legs (Plate 16d)

L. rubromaculata

FAMILY : MENIPPIDAE

KEY TO GENUS AND SPECIES OF FAMILY MENIPPIDAE

Carapace convex, anterolateral borders longer than posterolateral (Plate 16e), front less than a fifth of greatest breadth of carapace(Plate 16e); orbital hiatus open

Menippe

Front strongly bilobed (Plate 16f); antenna in open orbital hiatus

M. rumphii

FAMILY: XANTHIDAE

KEY TO SUBFAMILIES OF FAMILY XANTHIDAE

Carapace usually much broader than long, transversely oval, some times transversely hexagonal, front narrow, one third to one fifth of greatest breadth of carapace (Plate 17a)

Xanthinae

Carapace broad, transversely oval, anterolateral border in form of a sharp crest which may be either thin and entire or cut into 4 teeth; legs with atleast upper border of merus, carpus and propodus sharply cristiform (Plate 17b)

Zosiminae

Anterolateral borders not cristiform, cut into several strong teeth, either upper and lower inner angles of orbit in contact (Plate 17c); or outer angle of basal antennal joint prolonged into and completely fills orbital hiatus

Etisinae

Carapace hexagonal or transversely oval, front one third or a little less than one third of greatest breadth of carapace (Plate 17d)

Chlorodinae

Carapace subcircular, flat, front about half of greatest breadth of carapace; chelipeds remarkably unequal (Plate 17e)

Cymoinae

Carapace usually much broader than long and usually very profusely and profoundly lobulated, anterolateral border either divided into 4 blunt lobes or crenated (Plate 17f), front about one third of greatest breadth of carapace, little more or less, divided into 2 rather prominent usually round pointed lobes

Actaeinae

SUBFAMILY: XANTHINAE

KEY TO GENERA AND SPECIES OF SUBFAMILY XANTHINAE

Front square cut and narrow, 2 lobes not strongly convex dorsally (Plate 17g), carapace rugose and granular

Halimede

Tubercles of carapace and chelipeds ill isolated and their surface rounded and smooth (Plate 17h), anterolateral teeth obtusely angular

H. ochtodes

Carapace granular marginally, regions vaguely defined; basal antennal joint not reaching front; anterolateral border with lobes or teeth (Plate 17i)

Galene

Carapace pentagonal, surface lumpy and scabrous near borders, pterygostomian region almost hairy, anterolateral borders indistinctly 4 lobed of which 2 distinct, posterolateral border longer than anterolateral border (Plate 17i); inner and outer angles of wrist spiniform

G. bispinosa

Carapace broader and front - orbital region narrower; anterior border of ambulatory legs free from serrations or spines (Plate 18a)

Macromedaeus

Chelipeds unequal in both sexes; length of carapace two thirds or a little more than two thirds, first 2 teeth of anterolateral margin faint, obsolescent; carapace and chelipeds smooth (non granular) (Plate 18b)

Macromedaeus bidentatus

Anterolateral borders of carapace lobed, first 2 indistinct, carapace regions and subregions well defined

Demania

Chelipeds of equal size, arm, wrist, hand subdivided by pubescent grooves, upper border of hand armed with a row of 6 or 7 blunt teeth or tubercles (6 on right hand 7 on left hand) (Plate 18c)

D. splendida

Carapace and chelipeds covered with large depressed tubercles; anterolateral teeth well defined and marked with large tubercles; anterior border of ambulatory legs marked with wart-like tubercles (Plate 18d)

D. baccalipes

Anterolateral border not prolonged beyond orbit; fingers of cheliped blunt hollowed at tip, anterolateral border cut into 4 or more teeth (Plate 18e)

Leptodius

5 teeth on anterolateral margin (Plate 18f), carapace cut into numerous strongly convex lobules; upper surface of wrist and hand strongly and sharply rugose and nodular

L. euglyptus

A. Anterolateral borders armed with 4 teeth exclusive of external orbital angle

1. Near *L. exaratus*, but carapace moderately convex from before backwards and also from side to side

L. gracilis

2. Carapace convex from before backwards but almost flat from side to side (Plate 18g)

L. exaratus

SUBFAMILY: ZOSIMINAE

KEY TO GENERA AND SPECIES OF SUBFAMILY ZOSIMINAE

Carapace transversely sub-elliptical, anterolateral borders rimmed with narrow crest (Plate 18h), almost entire with traces of closed fissures; ambulatory legs depressed and crested along anterior and posterior borders

Atergatis

A. Dorsal surface of carapace non granular; anterolateral borders cristate

1. Lateral epibranchial angle of carapace forming an obtuse tooth (Plate 19a)

i. Carapace narrow, being 1.4 times as broad as long, its dorsal surface convex and regions fairly well defined; upper inner border of palm sharply crested (Plate 19a)

A. floridus

ii. Carapace very broad, being more than 1.6 times as broad as long, regions of carapace ill defined; upper inner border of palm not sharply crested (Plate 19b)

A. subdentatus

2. Lateral epibranchial angle of carapace not forming a tooth but it represents a mere ridge turning toward branchial region

i. Dorsal surface of carapace even and regions ill defined

a. Frontal margin weakly sinuate (Plate 19c), dorsal surface of carapace excepting middle and posterior part, distantly pitted

A. integerrimus

b. Frontal lobes markedly sinuate and median sinus deeper (Plate 19d), entire surface of carapace thickly eroded with pits of various sizes

A. frontalis

c. Front as in *A. integerrimus*, edge of anterolateral borders of carapace thick and blunt (Plate 19e)

A. roseus

Carapace semicircular in outline; fingers of chelipeds slightly hollowed at tip; body and appendages covered with flat and confluent tubercles (Plate 56b)

Zosymus

Carapace naked, crest like anterolateral lobes well separated , last of which being dentiform (Plate 19f); palm crested and its outer surface rugose

Z. aeneus

Carapace semicircular in outline; fingers of cheliped acuminate at tip; regions of carapace well aerolated, each areola granulated or tomentose; anterolateral lobes broad and not toothed (Plate 20a)

Platypodia

Hand sharply crested along upper border (Plate 20b), pearly granules over whole carapace, and over outer surface of carpus and propodus of walking legs

P. cristata

SUBFAMILY: ETISINAE

KEY TO GENUS AND SPECIES OF SUBFAMILY ETISINAE

Anterolateral borders normal; chelipeds long, hands very massive, fingers with broad hollowed out (hoof like) extremities (Plate 20c)

Etisus

Anterolateral borders armed with 4 obtuse teeth exclusive of external orbital angle (Plate 20d), upper and lower inner orbital angles in contact (Plate 17c); carapace and chelipeds smooth

E. laevimanus

SUBFAMILY: CHLORODINAE

KEY TO GENERA AND SPECIES OF SUBFAMILY CHLORODINAE

Basal antennal joint prolonged into orbital hiatus; regions and subregions of carapace well defined, granular or hairy or both, carapace less than three fourths as long as broad (Plate 58a)

Pilodius

Carapace covered with a coat of very short pubescence, lobules of carapace deeply demarcated and convex, covered with pearly granules of equal size; ambulatory legs thickly bordered with stiff hair (Plate 20e)

P. areolatus

Carapace moderately flat, hexagonal (Plate 20f), all regions and areolae of carapace well sculptured

Phymodius

A. Carapace less than 1.5 times as broad as long; 2M is longitudinally divided;wrist and palm of cheliped nodular

1. Sculpture of carapace worn; chelipeds with irregular nodules (Plate 20g), that do not usually reach more than half way along hand

P. monticulosus

2. Anterolateral teeth sharply pointed (Plate 20h) and their tip slightly curved forward, areolae of carapace with sharp granules

P. granulosus

3. Anterolateral teeth of full grown specimens obtuse (Plate 20i), areolae of carapace smooth or sparingly eroded

P. ungulatus

B. Carapace approximately 1.6 times as broad as long, areolae of carapace smooth, 2M entire; wrist and palm of adult smooth (Plate 58e)

P. nitidus

Carapace depressed, flat, hexagonal, regions faintly or not at all demarcated, front almost straight, faintly emarginate in middle line, extremely broad; chelipeds unequal (Plate 21a), legs never spiny

Chlorodiella

All 4 anterolateral teeth distinctive (Plate 21a); areolae of carapace indistinct; in most cases colouration deep blackish

C. nigra

SUBFAMILY: CYMOINAE
KEY TO GENUS AND SPECIES OF SUBFAMILY CYMOINAE

Carapace sub-circular or elongate-pentagonal, leaving 2 or 3 abdominal terga always uncovered (Plate 21b); one cheliped enormously larger than other

Cymo

Anterolateral borders divided into 3 lobules and edge of front somewhat regularly denticulated; fingers of chelipeds black except at tip (Plate 21c)

C. melanodactylus

Carapace narrower, anterolateral borders somewhat granular, edge of front irregularly denticulated; fingers white (Plate 21d)

C. andreossyi

SUBFAMILY: ACTAEINAE
KEY TO GENERA AND SPECIES OF SUBFAMILY ACTAEINAE

Legs and cheliped lobulated in same style as carapace (Plate 59d)

Pseudoliomera

Lobules of carapace not remarkably isolated, grooves with a short almost invisible fur (Plate 59d)

P. speciosa

Carapace granular, length of carapace rather more than two thirds of breadth, posterolateral borders slightly concave (Plate 21e)

Paractaea

Carapace and legs with numerous light brown short hair; wrist and hand sublobular (Plate 21f), corresponding joints of legs only a little dimpled

P. ruppelli orientalis

FAMILY: PILUMNIDAE
KEY TO GENUS AND SPECIES OF FAMILY PILUMNIDAE

A. Carapace and appendages set with longish hair; regions of carapace moderately defined, posterolateral borders not concave

1. Carapace moderately convex, anterolateral, borders armed with sharp teeth, front bilobate with preorbital tooth distinct (Plate 21g)

Pilumnus

i. Dorsal surface of carapace, on denudation, roughened by sparingly distributed granules or pits and regions fairly well demarcated

a. Entire animal covered with a thick coat of long hair (Plate 60a) and appendages not perceptible unless completely denuded, external orbital tooth with accessory subhepatic tooth

P. vespertilio

b. Entire animal covered with yellowish hair but outline of carapace and appendages perceptible in natural condition, external orbital tooth with no accessory tooth; teeth on anterolateral borders (Plate 21h), and also on fingers longer and stronger; hair uniformly distributed on carapace and chelipeds

P. tomentosus

ii. Dorsal surface of carapace not granulated and regions ill-defined, three anterolateral teeth spine tipped

a. External orbital tooth small but distinctly spine tipped;lower outer surface of palm of larger cheliped smooth (Plate 21i) and glabrous, merus of ambulatory legs unarmed, carpus with a sharp distal spine; inner angle of intraorbital margin not armed with a long spine

P. minutes

FAMILY: TRAPEZIIDAE

KEY TO GENERA AND SPECIES OF FAMILY TRAPEZIIDAE

Chelipeds very markedly unequal, arm short, half visible beyond carapace, front nearly straight, finely denticulate (Plate 21j)

Tetralia

Frontal margin sinous, dentate, prominent beyond conspicously crenulate supraorbital angle; distal margin of endopod of first maxilliped obliquely cut (Plate 21k), fringed with long setae

T. cavimana

Chelipeds not very greatly unequal; arm long, depressed (Plate 22a), two third visible beyond carapace;front lobed or dentate

Trapezia

A. A distinct spine at junction of anterolateral and posterolateral borders of carapace (Plate 22c)

1. Lower border of hand cristate and entire; frontal border rather undulate, frontal teeth being not deeply separated

i. Outer surface of hand of chelipeds covered with very fine downy hair (Plate 22b); transverse series of red spots transverses carapace between epibranchial spines

T. cymodoce

ii. Outer surface of hand smooth and bold; no transverse series of red spots on carapace

a. Carapace and chelipeds covered with an elegant meshwork of deep reddish lines (Plate 60f)

T. areolata

b. Carapace and appendages uniformly yellowish or light brownish

T. ferruginea

FAMILY: MAJIDAE

KEY TO SUBFAMILIES OF FAMILY MAJIDAE

Eyes without orbits, eyestalks generally long, either non retractile or retractile against sides of carapace (Plate 22d), or against and acute postocular spine that affords no concealment; basal joint of antenna extremely slender throughout its extent, and usually long

Inachinae

Carapace elongate, somewhat truncate in front and posteriorly produced; rostral spines widely divergent or subparallel and sometimes exceedingly long; orbits incomplete but supraocular eaves very often laterally dilated and ventrally hollowed, sometimes armed with antler shaped spines; no intercalated spine

Ophthalminae

Eyes with large commencing orbits, large blunt usually isolated and cupped postocular tooth or lobe, into which eye retractive; anterior angle of supraocular eave produced forward as a spine; legs often very long

Pisinae

Carapace elongate-pyriform or suborbicular, its dorsum or margins usually armed with spines; rostral spines very long and divergent, usually horizontal in some cases upturned; orbits roofed above by arched supraocular eave, intercalated spine and postocular cup;abdomen of both sexes distinctly seven segmented

Majinae

SUBFAMILY: INACHINAE

KEY TO GENUS AND SPECIES OF SUBFAMILY INACHINAE

A. Carapace of a typical maioid shape, it being elongate, triangular or pyriform;abdomen of both sexes distinctly seven-segmented or at- least all suture lines distinct

1. No rostral spines (Plate 22e); antennulary septum very low;no preocular spine; intercalated spine obsolescent and postocular spine small; basal segment of antenna immovable

Composcia

i. Whole body and most of appendages thickly setaceous, and densely encrusted with sponges, zoophytes, algae etc. (Plate 61a)

C. retusa

SUBFAMILY : OPHTHALMINAE

KEY TO GENUS AND SPECIES OF SUBFAMILY OPHTHALMINAE

Rostral spines extremely long (Plate 22f) and styliform, divergent; supraocular eave developed into a long spine similar to rostral ones; eyestalks extremely long (Plate 22f); no spines on carapace besides hepatic and posterior prolongations; thoracic legs very slender and long

Ophthalmias

Two large conical elevations on sides of either hepatic region; antennae shorter than rostrum (Plate 22g)

O. cervicornis

SUBFAMILY: PISINAE
KEY TO GENERA OF SUBFAMILY PISINAE

A.Intercalated spine between supraocular eave and postocular cup present

1. Carapace covered with well defined spines or spinules; ambulatory legs extremely long and thin, cylindrical

i. Rostral spines armed with an accessory spinule either at tip or in their distal half (Plate 22h)

Naxioides

ii. No accessory spinule on rostral spines; in chelipeds, carpus very short and propodus markedly swollen (Plate 22i)

Phalangipus

2. Carapace covered with flat or distant tubercles; rostral spines more or less proximally coalesced, very short and widely separated from each other;ambulatory legs relatively short and stout

i. Rostral spines coalesced at proximal two thirds, only their tips being widely divergent and acuminate, divided by median v-shaped sinus; preocular spine distinct (Plate 22j)

Tylocarcinus

ii. No intercalated spine between supraocular eave and postocular cup

a. Rostral spines very long and slender, separated from base; supraocular eave not in close contact with postocular cup; carapace smooth or covered with tubercles of various sizes; preocular spine indistinct (Plate 22k), if present it may be not very prominent; sinus between supraocular eave and postocular cup more or less U-shaped or keyhole shaped slit

Hyastenus

3. Rostral spines very short; carapace round or rounded pyriform in outline, posterolateral angle of carapace being not armed with tooth or prolongation

i. Carapace subcircular or discoidal, marked with processes or spines of a regular arrangement; no preocular spine (Plate 23a)

Doclea

KEY TO SPECIES OF GENERA OF SUBFAMILY PISINAE

Genus: *Naxioides*

Spines of rostrum parallel to near tip; (Plate 62a); supraocular spine obsolete; meropodites of trunk-legs without a terminal spine

N. hirta

Genus:*Phalangipus*

Rostral spines armed with a subdistal, accessory spinule;among spines of carapace, intestinal one very prominent and projecting horizontally backwards; palm of cheliped cylindrical and slender (Plate 23b)

P. hystrix

Genus: *Tylocarcinus*

Ambulatory legs short and stout, first pair considerably longest, rather longer than carapace and rostrum, merus and carpus in all nodose on dorsal surface, dactyli strong and claw like (Plate 23c)

T. styx

Genus: *Hyastenus*

Numerous tubercles forming a cross on gastric region (Plate 63b), a median transverse tubercle in groove between gastric and cardiac region

H. pleione

Carapace elongate closely covered with granules and tubercles, without spines;legs slender, meropodite smooth (Plate 23d)

H. oryx

Genus: *Doclea*

Carapace sub - pyriform, numerous tubercles, 8 of these in median longitudinal line (Plate 23e) and increase in size from before backwards

D. alcocki

Pterygostomian region not canaliculated; carapace globular;second pair of trunk legs hardly twice length of carapace (Plate 23f); tubercles, not spines on carapace

D. hybrida

Carapace with no spine in median line, intestinal region unarmed, branchial region with 3 short spines on anterolateral margin (Plate 23g), last of which very small and tubercliform

D. ovis

Carapace with 3 spines in middle line, one each of posterior gastric, cardiac and intestinal, last one prominent and horizontally produced backwards, anterolateral border armed with 4 spines, last one being largest (Plate 23h)

D. canalifera

SUBFAMILY: MAJINAE

KEY TO GENERA AND SPECIES OF SUBFAMILY MAJINAE

Carapace nearly orbicular, dorsal surface with granules and spinules; rostral spines and postocular spines marked with an accessory spinule; tip of fingers of chelipeds hollowed (Plate 24a)

Schizophrys

Anterolateral border armed with 6 equidistant spines last of which smallest and situated on a rather higher level than others (Plate 24b); merus and carpus of chelipeds either spiny or granular, palm longer than fingers

S. aspera

Carapace rounded quadrangular; rostral spines very short and simple; basal segment of antenna very broad (Plate 24c)

Cyclax

Surface of carapace closely beaded with some larger spinules regularly interspersed; ambulatory legs hairy, with short claw-like dactyli which decrease gradually in length (Plate 24d)

C. suborbicularis

FAMILY : PARTHENOPIDAE

KEY TO SUBFAMILIES OF FAMILY PARTHENOPIDAE

Carapace subpentagonal, ovate-pentagonal or equilaterally triangular in outline, dorsal surface exceedingly uneven and covered with tubercles of various sizes, gastric and cardiac regions usually deeply trenched, from branchial regions; chelipeds monstrous in size (Plate 68), ambulatory legs slender

Parthenopinae

Carapace transversely elliptical, pentagonal or octagonal in outline, lateral margins cristate, more or less expanded to form a vault, below which ambulatory legs concealed (Plate 71a)

Aethrinae

SUBFAMILY: PARTHENOPINAE

KEY TO GENERA, SUBGENERA AND SPECIES OF SUBFAMILY PARTHENOPINAE

A. Basal segment of antenna very short and not reaching inner canthus of orbit;fingers of cheliped strongly incurved (Plate 67b)

Parthenope

1.Carapace carinated or tuberculated, broadly triangular, with rounded sides and projecting rostrum but with no postocular constriction (Plate 24e)

Subgenus *Platylambrus*

i.Carapace broader than long, having sides rounded, median and branchial regions strongly prominent, anterolateral margin armed with 7 to 8 compressed teeth, a large spine at lateral epibranchial angle (Plate 24f)

P. (P.) prensor

i. Carapace covered with great mushroom-like or paxilliform tubercles; chelipeds with their surfaces very strongly spinate or tuberculate; ambulatory legs strongly spiniferous (Plate 24g)

P.(P.) echinatus

2. Carapace granulated or spiny, usually as long as broad, with projecting rostrum and very distinct postocular constriction (Plate 24h)

Subgenus *Rhinolambrus*

i. Carapace almost as long as broad or slightly longer than broad; carapace and chelipeds thickly covered with large, jagged tubercles and sharp ramose spines; rostrum longer than width at base, its lateral borders furnished with a few spinules (Plate 24h) *P.(R.) contrarius*

B. Basal segment of antenna long and nearly but not completely reaching inner canthus of orbit; carapace rough, tuberculated; merus of cheliped trigonous, not tapering distally (Plate 70)

Daldorfia

Species of a large size; carapace obtusely pentagonal in outline; anterior border of merus of ambulatory legs armed with 4 to 6 obtuse spines (Plate 24i)

D. horrida

SUBFAMILY: AETHRINAE

KEY TO GENUS AND SPECIES OF SUBFAMILY AETHRINAE

A. Carapace transversely elliptical, laterally expanded, and its margins somewhat upturned, dorsal surface strikingly depressed (Plate 71a)

Aethra

1. Anterolateral borders divided into 6 or 7 indistinct lobes by deep narrow sutures (Plate 25a)

A. scruposa

FAMILY: LEUCOSIIDAE

KEY TO SUBFAMILIES OF FAMILY LEUCOSIIDAE

Carapace almost hemispherical, surface only slightly uneven, innerorbital angles often well developed as frontal teeth, a median frontal tooth may be present; epistome mostly reduced, margins of mouth and of pterygostome chiefly or entirely in same transverse plane

Philyrinae

Frontal region of carapace narrowed and produced anteriorly; a thoracic sinus developed, i.e., a shallow pit in front of bases of chelipeds and above

Leucosiinae

Merus of external maxillipeds elongate and pointed at tip, completely concealing flagellum in repose; ambulatory legs (walking legs) natatorials (swimming) (Plate 25b)

Matutinae

SUBFAMILY : PHILYRINAE

KEY TO GENERA AND SPECIES OF SUBFAMILY PHILYRINAE

Carapace circular in outline; dactylus of chelipeds as long as palm (Plate 25c), fingers slender or rather filiform

Arcania

Margins of carapace armed with 7 spines, of which lateral 2 most prominent (Plate 25d); colouration uniformly pale vermilion

A. heptacantha

Upper surface of carapace densely covered with sharp spinules (Plate 25e); frontal lobes markedly produced beyond orbital regions; fingers shorter than palm; marginal spines markedly long and covered with secondary spinules

A. erinaceus

9 spines on margins of carapace, 3 large and 6 smaller (Plate 25f); regions of carapace very ill-defined

A. novemspinosa

Pterygostomian region always puffed out beyond level of true anterolateral margin of carapace; 3 spines on posterior border of carapace (Plate 25g)

Myra

Spines on posterior margin of carapace long and acute, carapace finely granular, granules hardly visible to naked eye; chelipeds slender, hand long (Plate 26a)

M. fugax

Sides of carapace sausage shaped, channels and grooves separating median and lateral regions of carapace; fingers not half length of hand (Plate 26b)

Ixa

Lateral processes of carapace having abruptly acuminate tip (Plate 26b); buccal frame triangular

I. cylindrus

Carapace convex or subglobular (Plate 26c); chelipeds massive; front truncated remarkably, buccal cavern broad, seen dorsally; exopodite of external maxillipeds broad

Philyra

Carapace usually discoidal, its dorsal surface smooth and nongranular at least to naked eye; chelipeds slender, more than twice length of carapace, hepatic facets ill-defined; fingers longer than palm, their cutting edges sharply denticulated (Plate 26d)

P. syndactyla

SUBFAMILY : LEUCOSIINAE

KEY TO GENUS AND SPECIES OF SUBFAMILY LEUCOSIINAE

Carapace convex or subglobular; chelipeds massive; front narrow forming a snout; a deep depression on ventral surface above base of cheliped (Plate 26e)

Leucosia

Anterior edge of thoracic sinus deeply invaginated, postorbital neck long and slender, edge of front obtusely triangular and thin; merus of chelipeds slender in whole its length (Plate 26f)

L. anatum

Margin of front with a median tooth, carapace slightly longer than broad, being broadly rhomboidal in outline, carapace longitudinally striped by dark brownish colouration

L. craniolaris

SUBFAMILY : MATUTINAE

KEY TO GENUS AND SPECIES OF SUBFAMILY MATUTINAE

Carapace circular and with a strong spine at junction of anterolateral and posterolateral border (Plate 26g)

Matuta

A. Longitudinal ridge of dactylus of cheliped well striated

1. A distinct spine at angle of hand where it comes in contact with external angle of arms (Plate 27a); carapace uniformely coloured with less red spots

M. lunaris

2. Only a tubercle at angle of hand where it touches external angle of arms (Plate 27b); carapace coloured with more red spots, rings and vermiculated lines

M. planipes

B. Longitudinal ridge of dactylus of chelipeds smooth and not at all striated; carapace uniformely covered with reddish spots and marked by irregular and vermiculated whitish mottles; lower surface of hand very rough in adult of both sexes (Plate 27c)

M. miersi

FAMILY : GONEPLACIDAE

KEY TO SUBFAMILY, GENUS AND SPECIES OF FAMILY GONEPLACIDAE

Base of third segment of male abdomen broad enough to cover all space between last pair of ambulatory legs; carapace xanthoid in general aspect, widest junctions of anterolateral and posterolateral borders (Plate 27d); eyes and orbits of normal size and shape

Carcinoplacinae

SUBFAMILY : CARCINOPLACINAE

Flagellum of antenna excluded from orbit by a lobular projection from distal external angle of basal antennal segment; front bilobate, anterolateral borders gently divergent posteriorly, bearing 3 to 4 lobules (Plate 27d)

Eucrate

Anterolateral borders armed with only 3 teeth, of which last one spine shaped (Plate 27d), anterior half of dorsal surface of carapace covered with purplish spots

E. alcòcki

FAMILIY : OCYPODIDAE

KEY TO SUBFAMILES OF FAMILY OCYPODIDAE

Carapace broad, rectangular; eyestalk remarkably long (Plate 75b); external maxillipeds leave more or less wide median hiatus

Macrophthalminae

Carapace quadrangular, orbits deep and large; chelipeds unequal (Plate 27f); antennular flagella rudimentary, completely hidden beneath front

Ocypodinae

SUBFAMILY : MACROPHTHALMINAE

KEY TO GENUS, SUBGENUS AND SPECIES OF SUBFAMILY MACROPHTHALMINAE

Eyestalks extremely long and slender; external maxillipeds leave a narrow median gap, merus broader than long (Plate 27e)

Macrophthalmus

Epistome with marked concavity in central region

Subgenus *Mareotis*

Carapace broader than long, tooth at anterolateral angle of carapace truncate and square cut (Plate 27g); inner surface of palm of male smooth (Plate 27g)

M.(M.) depressus

SUBFAMILY : OCYPODINAE

KEY TO GENUS AND SPECIES OF SUBFAMILY OCYPODINAE

Carapace not very broadened anteriorly; eye stalk thick, cornea swollen and occupy whole ventral part of eye stalk; chelipeds unequal in both sexes (Plate 27f).

Ocypode

A stridulating ridge on inner surface of palm; eye stalks in adults prolonged beyond eyes to form a horn or style, eye stalks distally prolonged into a long slender style (Plate 27f); stridulating ridge composed of fine tubercles gradually passing into striae

O. ceratophthalma

FAMILY: GRAPSIDAE

KEY TO SUBFAMILY, GENERA AND SPECIES OF FAMILY GRAPSIDAE

Front broad and deflexed; flagellum of antenna very short;external maxilliped leaving rhomboidal gap (Plate 77a)

Subfamily Grapsinae

Front less than half of extreme width of carapace; merus of external maxillipeds longer than broad; finger of chelipeds spoon shaped at tip; exognath of external maxillipeds well developed (Plate 28a)

Grapsus

Subacute and keeled tooth at inner angle of orbit; tooth at inner angle of wrist of cheliped straight (Plate 28b); first and last pair of legs equal in their length, distal part of posterior margin of last leg dentate

G. albolineatus

Front more than half of extreme width of carapace; merus of external maxillipeds broader than long (Plate 28c); antennae completely excluded from orbit

Metapograpsus

Walking legs shorter, dactylus nearly as long as propodus; lateral margin markedly convergent posteriorly (Plate 28d); last segment of male abdomen triangular (Plate 28e)

M. messor

FAMILY : PLAGUSIIDAE

KEY TO GENERA AND SPECIES OF FAMILY PLAGUSIIDAE

Carapace thick; merus of external maxillipeds as broad as ischium (Plate 28f)

Plagusia

3 teeth behind external orbital angle; antennules fold longitudinally in deep notches in front, visible dorsally; spiniform tubercles on carapace; merus of pereopods with one subterminal tooth on upper margin (Plate 28g); outer palm of cheliped longitudinally costate

P. depressa tuberculata

Carapace much flattened (Plate 28h); merus of external maxillipeds much smaller and narrower than ischium

Percnon

Front, antennular and supraorbital angles, and epistome all acutely spinous; anterolateral border armed with 4 acute spines (Plate 28g)

P. planissimum

DETAILS OF BRACHYURAN CRABS OF GULF OF MANNAR
FAMILY : DROMIDAE

Dromia Weber, 1795

Dromia dehaani Rathbun, 1923 (Plate 29a)

Dromia rumphii de Haan 1839, Fauna Japonica, Vol.V, p.107, pl.32.
Dromia rumphii Alcock 1899, J.Asiatic Soc. Bengal, Vol.68(3), p.137.
Dromia dormia Rathbun 1902, Proc. U.S. Nat. Mus. Vol. 26, p.32.
Dromia dehaani Rathbun 1923, Endeavour, Vol.5, p.68.
Dromia dehaani Sakai 1976, Crabs of Japan and Adjacent Seas, p.8.

Distribution : Indo - Pacific from Red sea to Japan

Habitat : Sandy mud or muddy substrata, marine, 50-150 metres deep

Remarks : Collected from the trawl catches. Finger tips of chelae rose coloured.

Cryptodromia Stimpson, 1858
Cryptodromia hilgendorfi de Man, 1888 (Plate 29b)

Cryptodromia hilgendorfi de Man 1888 a, Archiv. f. Naturgesch, Vol.53, p.404, fig. 3.
Dromia (Cryptodromia) hilgendorfi Alcock 1899, J. Asiatic Soc. Bengal, Vol. 68(3), p.145.

Distribution : East Coast of Africa, Indo-Malayan coasts

Habitat : Sandy or Muddy substrata

Remarks : Crabs always carry a mass of sponge or compound ascidians.

FAMILY : RANINIDAE

Ranina Lamarck, 1801
Ranina ranina (Linnaeus, 1758) (Plate 30)

Cancer raninus Linnaeus 1758, Syst. Nat. ed. 10, p. 625.
Ranina dentata H. Milne Edwards 1837, Histoire Naturelle des Crustaces, p.194, pl.21, figs.1-5.
Ranina serrata Lamarck, Ortmann 1892, Zool. Jahrb., Syst. Bd., p.575, pl.26, fig.11g.
Ranina ranina Rathbun 1902, Bull. Mus. Comp. Zool., Vol.39.
Ranina scabra (Fabricius), Stebbing 1910, Ann. S. African Mus., 6, p.339,
Ranina ranina Sakai 1976, Crabs of Japan and Adjacent Seas, p. 48.

Distribution : Indo-Pacific, South and East Africa, Mauritius, Sandwitch Island, Reunion, however not reported so far in India.

Habitat : Sandy bottoms, 20-50 metres deep.

Remarks : Collected off Tuticorin from the trawl catches.

FAMILY: DORIPPIDAE

***Dorippe* Weber, 1795**
***Dorippe (Dorippe)* Weber, 1795**
***Dorippe (Dorippe) frascone* (Herbst, 1785)** (Plate 31c)

Cancer frascone Herbst 1785, Krabben Und Krebse, Vol.1, p.192.
Dorippe dorsipes Alcock 1896, J. Asiatic Soc. Bengal, Vol.65(2), p.277.
Dorippe (Dorippe) frascone Serene and Romimohtarto 1969, Marine Research in Indonesia, No.9, p.6.
Dorippe (Dorippe) frascone Sakai 1976, Crabs of Japan and Adjacent Seas, p.60.

Distribution : East Coast of Africa, Indo-Pacific region

Habitat : Sandy or muddy bottoms, 15-50 metres deep

Remarks : Mostly seen beneath the dead shells.

Paradorippe Serene and Romimohtarto, 1969
Paradorippe granulata (de Haan, 1841) (Plate 32a)

Dorippe granulata de Haan 1841, Fauna Japonica, Vol.V, p.122, pl.31, fig. 2.
Dorippe granulata Alcock 1896, J.Asiatic Soc. Bengal, Vol.65(2), p.279.
Paradorippe granulata Serene and Romimohtarto 1969, Marine Research in Indonesia, No.9, p.15.
Paradorippe granulata Sakai 1976, Crabs of Japan and Adjacent Seas, p.62.

Distribution : India, China, Taiwan, Korea, Japan

Habitat : Sandy or shelly bottoms, 30-100 metres deep

Remarks : Collected from the trawl catches.

FAMILY: CALAPPIDAE

SUBFAMILY : CALAPPINAE

Calappa Weber, 1795
Calappa lophos (Herbst, 1782) (Plate 32b)

Cancer lophos Herbst 1782, Krabben Und Krebse, Vol.V.1.p.201, pl.13, fig.77.
Calappa lophos de Haan 1837, Fauna Japonica,Vol.V. p.72, pl.20, fig.1.
Calappa lophos Alcock 1896, J. Asiatic Soc. Bengal, Vol.65(2), p.144.
Calappa lophos Sakai 1976, Crabs of Japan and Adjacent seas, p.129.

Distribution : Tanzania, Persian Gulf, India, Sri Lanka, Thailand, Celebes, China, Japan

Habitat : Soft sandy substratum, 30 - 50 metres deep

Remarks : Collected from the trawl catches.

Calappa philargius (Linnaeus, 1758) (Plate 32c)

Cancer philargius Linnaeus 1758, Syst. Nat. ed., 22, p.1042.
Calappa philargius de Haan 1837, Fauna Japonica, Vol.5, p.71, pl.19, fig.1.
Calappa philargius Alcock 1896, J. Asiatic Soc. Bengal, Vol.65(2), p.145.
Calappa philargius Sakai 1976, Crabs of Japan and Adjacent seas, p. 130.

Distribution : India, Sri Lanka, Singapore, China, Korea, Japan

Habitat : Sand or broken shells and pearl banks substrata, 6-50 metres deep

Remarks : Collected from the trawl catches.

***Calappa gallus* (Herbst, 1803)** (Plate 33a)

Cancer gallus Herbst 1803, Krabben Und Krebse, Vol. III, p.46, pl.58, fig. 1.
Calappa gallus H. Milne Edwards 1837, Histoire Naturelle des Crustaces, Paris, Vol. II.p.105.
Calappa gallus Alcock 1896, J. Asiatic Soc. Bengal, Vol. 65(2), p. 146.
Calappa gallus Sakai 1976, Crabs of Japan and Adjacent Seas, p.131.

Distribution : Florida keys to Bahia, Brazil, Bermuda, Atlantic Coasts of Africa, Red Sea, India, Japan

Habitat : Coral reefs, sandy or shelly bottoms, 3-40 metres deep

Remarks : First time recorded from the waters on the Indian side of Gulf of Mannar region. This species mostly occurs in coral reefs at the depth of 3-6 metres.

***Calappa gallus capellonis* Laurie, 1906 (Plate 33b)**

Calappa gallus var. *capellonis* Laurie 1906, Ceylon Pearl Oyster Fisherie Report, London, Vol.5, p.355.
Calappa gallus capellonis Sakai 1976, Crabs of Japan and Adjacent Seas, p.131.

Distribution : India, Sri Lanka, Japan

Habitat : Coral reefs, sandy or pebble substrata, 3 - 50 metres deep

Remarks : Reported for the first time from Indian waters. Mostly found in 3-6 metres deep coral reefs.

***Calappa bicornis* Miers, 1884** (Plate 33c)

Calappa gallus bicornis Miers 1884, Report. H.M.S. "Alert", London, p.550.

Calappa bicornis Rathbun 1911, Trans. Linn.Soc., London, Zool., Vol.14, p.197, pl.17, fig. 8.
Calappa bicornis Sakai 1976, Crabs of Japan and Adjacent Seas, p.132.

Distribution : Seychelles, India, Japan

Habitat : Pearl banks, soft sand or pebbles substrata, 15 - 60 metres deep

Remarks : Reported for the first time from Indian waters. Specimens were collected from the pearl banks of Tuticorin.

FAMILY : PORTUNIDAE

SUBFAMILY: PORTUNINAE

Scylla de Haan, 1833
Scylla serrata (Forskal, 1755) (Plate 34)

Cancer serratus Forskal 1755, Descr. Anim., p.90.
Scylla serrata de Haan 1833, Fauna Japonica, Vol.5, p.44.
Scylla serrata Alcock 1899, J. Asiatic Soc. Bengal, Vol.68(1), p.27.
Scylla serrata Sakai 1976, Crabs of Japan and Adjacent Seas, p.335.

Distribution : South Africa, India, Indonesia, Philippines, China, Japan, Australia, Hawaii

Habitat : Estuary, mangrove, nearshore muddy substratum

Remarks : Collected from the trawl catches and from the catches of small gill nets (nandu valai).

Portunus Weber, 1795
Portunus (Portunus) Weber, 1795
Portunus (Portunus) sanguinolentus (Herbst, 1783) (Plate 35a)

Cancer sanguinolentus Herbst 1783, Krabben Und Krebse, Vol.I, ii, p.161, pl.8.
Neptunus sanguinolentus de Haan 1833, Fauna Japonica, Vol.5,p.38.
Neptunus sanguinolentus Alcock 1899, J. Asiatic Soc.Bengal, Vol.68(1), p.32.
Portunus sanguinolentus Rathbun 1906, Bull.U.S. Fish. Comm., Vol.23, p.870.
Portunus (Portunus) sanguinolentus Sakai 1976, Crabs of Japan and Adjacent Seas, p.338.

Distribution : Indo-Pacific from South Africa through Japan to Australia, Hawaii

Habitat : Marine, from littoral line to 30 metres deepsand, mud or broken shelly substrata

Remarks : Collected from the trawl catches.

***Portunus (Portunus) pelagicus* (Linnaeus, 1758)** (Plate 35b)

Cancer pelagicus Linnaeus 1758, Syst. Nat. 10th ed., I, p.626.
Portunus pelagicus Fabricius 1798, Suppl. Ent. Syst., p.364.
Neptunus pelagicus A. Milne Edwards 1861, Arch. Mus. Hist. Nat. Paris, vol. 10, p.320.
Neptunus pelagicus Alcock 1899, J. Asiatic Soc. Bengal, Vol.68(1), p.34.
Portunus (Portunus) pelagicus Sakai 1976, Crabs of Japan and Adjacent Seas, p.339.

Distribution : East Africa, Red Sea, India, Philippines, Japan, Australia, Tahiti

Habitat : Sandy mud or sand substrata, 10-30 metres deep

Remarks : Collected from the trawl catches and from thecatches of small gill nets (nandu valai).

***Portunus (Portunus) pubescens* (Dana, 1852)** (Plate 36a)

Lupa pubescens Dana 1852, U.S. Exp. Expedition, Vol.13, p.274, pl.16, fig.9.
Neptunus tomentosus Haswell 1882 a, Proc. Linn. Soc. N.S.W., 6, p.547.
Portunus pubescens Rathbun 1906, Bull. U.S. Fish Comm., Vol. 23, P.870, pl.14 fig.1.
Neptunus (Neptunus) pubescens Sakai 1934, Sci. Rep. Tokyo Bunrika Daigaku, Sec.B, Vol.2, no.32, p.303.
Portunus (Portunus) pubescens Sakai 1976, Crabs of Japan and Adjacent Seas, p.340.

Distribution : India, Japan to Hawaii, Australia, Sandwich Islands

Habitat : Sandy, muddy or weedy rock substrata 10 - 30 metres deep

Remarks : Collected from the trawl catches.

Portunus (Monomia) Gistel, 1848
Portunus (Monomia) gracilimanus (Stimpson, 1858) (Plate 36b)

Amphitrite gracilimanus Stimpson 1858, Proc. Acad. Nat. Sci. Philad., p.38.
Portunus gracilimanus Stephenson and Campbell 1959, Aust. J. Mar. Fresw. Res., Vol.10, p.115.

Distribution : India, Malaysia, Hong Kong, New Guinea, Australia

Habitat : Sandy, muddy substrata, 20-30 metres deep

Remarks : Collected from the trawl catches.

Portunus (Monomia)gladiator Fabricius, 1798 (Plate 36c)

Portunus gladiator Fabricius 1798, Ent. Syst. Suppl., p.368.
Cancer menestho Herbst 1803, Krabben Und krebse, Vol. III, pl.55, fig. 2.
Portunus (Amphitrite) gladiator de Haan 1835, Fauna Japonica, Vol.V, p.39, Pl.1, fig.5.
Neptunus (Amphitrite) gladiator Alcock 1899, J.Asiatic Soc. Bengal, Vol.68(1), p.35.
Portunus gladiator Stephenson and Campbell 1959, Aust.J.Mar.Freshw. Res., Vol.10(1), p.110, figs 2J,3J.
Portunus (Monomia) gladiator Sakai 1976, Crabs of Japan and Adjacent Seas, p.341.

Distribution : Madagascar, Mauritius, India, Sri Lanka, Mergui Archipelago, Indonesia, China, New Guinea, Australia

Habitat : Bottom of sand, broken shells or pebbles, 30-100 metres deep

Remarks : Collected from the trawl catches.

Portunus (Monomia) petreus (Alcock, 1899) (Plate 37a)

Neptunus (Amphitrite) petreus Alcock 1899, J. Asiatic Soc. Bengal, Vol.68(1), p.37.
Portunus (Achelous) petreus Rathbun 1911, Trans. Linn. Soc., London, Zool., Vol.14, p.204.
Portunus petreus Crosnier 1962, Fauna de Madagascar, Vol.16, p.54, figs. 73 and 74.

Portunus (Monomia) petreus Sakai 1976, Crabs of Japan and Adjacent Seas, p.342.

Distribution : Madagascar, India, Japan

Habitat : Coral reefs, shallow sandy bottoms, 3 - 30 metres deep

Remarks : New record to the Indian region of Gulf of Mannar. Mostly found in 3 - 6 metres deep coral reefs of Tuticorin.

Charybdis de Haan, 1833
Charybdis (Charybdis) de Haan, 1833
Charybdis (Charybdis) lucifera (Fabricius, 1798) (Plate 37b)

Portunus lucifer Fabricius 1798, Suppl. Ent. Syst., p.64.
Charybdis lucifera Rathbun 1910, Mem. Acad. Sci. et. Let. Denmark, Ser.7., Vol.5, p.301.
Charybdis (Charybdis) lucifera Stephenson, Hundson and Campbell 1957, Aust. Jour. Mar. Freshw. Res., Vol.8, p.500.

Distribution : India to Australia through Japan

Habitat : Sandy or muddy substratum

Remarks : Collected from the trawl catches.

Charybdis (Charybdis) helleri (A. Milne Edwards, 1867) (Plate 38a)

Goniosoma helleri A. Milne Edwards 1867, Ann. Soc. Entmol. France, Vol.7, p.263.
Charybdis helleri Edmondson 1954, Occ. Pap. Bernice P. Bishop Mus., Vol.21, no.12, p.217.
Charybdis (Charybdis) helleri Stephenson, Hudson and Campbell 1957, Aust. Journ. Mar. Freshw. Res., Vol.8, p.506.

Distribution : Indo-Pacific from Mediterranean to Hawaii, West Indies

Habitat : Intertidal to 14 metres deep, rocks and stones, coral reefs

Remarks : Crabs occur among live corals up to 6 metres depth.

***Charybdis (Charybdis) annulata* (Fabricius, 1798)** (Plate 38b)

Portunus annulatus Fabricius 1798, Syst. Ent. Suppl., p.364.
Charybdis annulata Alcock 1899, J. Asiatic Soc. Bengal, Vol. 68(1), p. 54.
Charybdis (Goniosoma) annulata Leene 1938, Siboga Exped, Monogr., 39C, Leiden, p.167.
Charybdis (Charybdis) annulata Crosnier 1962, Faune de Madagascar, Vol.16, p.78, figs. 136-139, pl.5.
Charybdis (Charybdis) annulata Sakai 1976, Crabs of Japan and Adjacent Seas, p.356.

Distribution : South Africa, Madagascar, India, Malay Archipelago, Thailand, Japan

Habitat : Sandy or muddy, rocky bottoms, 30 - 50 metres deep

Remarks : Collected from the trawl catches.

***Charybdis (Charybdis) feriata* (Linnaeus, 1758)** (Plate 39a)

Cancer feriatus Linnaeus 1758, Syst. Nat. ed. 10, p.627.
Charybdis (Goniosoma) crucifera Alcock 1899, J. Asiatic Soc. Bengal, Vol.68(1), p.51.
Charybdis (Charybdis) cruciata Leene 1938, Siboga Exped Monogr., 39C, p.24.
Charybdis (Charybdis) feriata Sakai 1976, Crabs of Japan and Adjacent Seas, p.357.

Distribution : East Coast of Africa, Madagascar, India, Japan, Australia

Habitat : Rocks, stones, sandy muddy substratum

Remarks : Collected from the trawl catches

***Charybdis (Charybdis) riversandersoni* Alcock, 1899** (Plate 39b)

Charybdis (Goniosoma) riversandersoni Alcock 1899, J. Asiatic Soc. Bengal, Vol.68(1), p.53.
Charybdis riversandersoni Balss 1922, Arch.8. Naturg. Bd;Vol.90, p.105.
Charybdis (Charybdis) riversandersoni Leene 1938, Siboga Exped., Monogr., 39C, p.28.

Charybdis (Charybdis) riversandersoni Sakai 1976, Crabs of Japan and Adjacent Seas, p.358.

Distribution : India, Japan

Habitat : Sandy mud or sandy bottom, 30 - 100 metres deep

Remarks : Collected from the trawl catches.

***Charybdis (Charybdis) natator* (Herbst, 1794)** (Plate 40)

Cancer natator Herbst 1794, Krabben Und Krebse, Vol. II, p.156, pl.40, fig.1.
Charybdis natator de Haan 1833, Fauna Japonica,Vol.V. p.10.
Charybdis (Goniosoma) natator Alcock 1899, J. Asiatic Soc. Bengal, Vol.68(1), p.61.
Charybdis (Charybdis) natator Leene 1938, Siboga Exped. Monogr., 39C, p.28.
Charybdis (Charybdis) natator Sakai 1976, Crabs of Japan and Adjacent Seas, p.360.

Distribution : East Coast of Africa, Madagascar, India, South China, Taiwan, Japan, Australia

Habitat : Rocky, muddy sandy substrata, 15-35 metres deep

Remarks : Collected from the trawl catches.

***Charybdis (Charybdis) rostratum* (A. Milne Edwards, 1861)** (Plate 41a)

Goniosoma rostratum A. Milne Edwards 1861, Arch. Mus. Hist. Nat. Paris, Vol.10, p.379, pl.35, fig.2.
Charybdis (Goniosoma) rostrata Alcock 1899, J. Asiatic Soc. Bengal, Vol.68(1), p.59.

Distribution : India, Sri Lanka, Thailand

Habitat : Sandy or muddy substrata, 15-50 metres deep

Remarks : Collected from the trawl catches.

***Charybdis (Goniohellenus)* Alcock, 1899**
***Charybdis (Goniohellenus)edwardsi* Leene and Buitendijk, 1952**
(Plate 41b)

Charybdis (Goniohellenus) edwardsi Leene and Buitendijk 1952, Zool. mededlingen. Deel., Vol.31, p.213.

Distribution : India, Mianmar (Burma)

Habitat : Sandy bottom and coral reefs, 3 - 20 metres deep

Remarks : Collected from the trawl catches.

***Charybdis (Goniosupradens)* Leene, 1938**
***Charybdis (Goniosupradens) acutifrons* (de Man, 1879)** (Plate 42a)

Goniosoma acutifrons de Man 1879, Notes from the Leyden Mus., Vol. 1, p.60.
Charybdis (Goniosupradens) acutifrons Leene 1938, Siboga Exped. Monogr., 39C, p.138.
Charybdis (Goniosupradens) acutifrons Sakai 1976, Crabs of Japan and Adjacent Seas, p.365.

Distribution : India, Japan

Habitat : Coral reefs and rocky substratum, 5 - 30 metres deep

Remarks : New record to Indian waters. Collected from the trawl catches.

***Thalamita* Latreille, 1829**
***Thalamita crenata* (Latreille, 1829)** (Plate 42b)

Portunus crenata Latreille 1829, Collection du Museum. fide H. Milne Edward 1834
Thalamita crenata H. Milne Edwards 1834, Histoire Naturelle des Crustaces, Paris, 1, p.461.
Thalamita crenata Alcock 1899, J. Asiatic Soc. Bengal, Vol.68(1),p.76.
Thalamita crenata Sakai 1976, Crabs of Japan and Adjacent Seas, p.369.

Distribution : Entire tropical Indo - Pacific from Red sea to Hawaii

Habitat : Mudflat, sandy beach, mangrove

Remarks : Collected from the trawl catches.

***Thalamita danae* Stimpson, 1858** (Plate 43a)

Thalamita danae Stimpson 1858, Smiths. Miscell. Collections, Vol.49, p.39.
Thalamita danae Alcock 1899, J. Asiatic Soc. Bengal, Vol.68(1), p.77.
Thalamita danae Sakai 1976, Crabs of Japan and Adjacent Seas, p.369.

Distribution : Japan, Hong Kong to North Australia, East Coast of Africa

Habitat : Coral reefs, mud flat

Remarks : These crabs are mostly seen under the dead corals of exposed reef.

***Thalamita prymna* (Herbst, 1803)** (Plate 43b)

Cancer prymna Herbst 1803, Krabben Und Krebse, Vol.1, p.41, pl.57, fig.2.
Thalamita prymna H. Milne Edwards 1834, Histoire Naturelle des Crustaces, Paris, I, p.461.
Thalamita prymna Alcock 1899, J. Asiatic Soc. Bengal, Vol.68(1), p.78.
Thalamita prymna Sakai 1976, Crabs of Japan and Adjacent Seas, p.372.

Distribution : South Africa, Red Sea, Japan to Australia

Habitat : Coral reefs, stony or rocky beach, from lowtide mark to a depth of 20 metres

Remarks : Abundantly seen in coral reefs at the depth of 0.5 - 1 metre deep. Large numbers of this crab are seen in corals thickly covered with seaweeds.

***Thalamita integra* Dana, 1852** (Plate 44a)

Thalamita integra Dana 1852 a, Proc. Ac. Sci. Philad, V.6, p.85.
Thalamita integra Alcock 1899, J. Asiatic Soc. Bengal, vol.68(1),p.85.
Thalamita integra Sakai 1976, Crabs of Japan and Adjacent Seas, p.377.

Distribution : Tahiti, Africa, Madagascar, India, Japan, Australia, Hawaii

Habitat : Shallow waters, sandy bottoms and coral reefs

Remarks : Numerous crabs of this species are seen in both live and dead corals at the depth of 0.5-2 metres deep.

***Thalamita admete* (Herbst, 1803)** (Plate 44b)

Cancer admete Herbst 1803, Krabben Und Krebse, III, iii, p.40,pl.57, fig.1.
Thalamita admete A. Milne Edwards 1861, Arch. Mus. Hist. Nat. Paris, Vol.10, p.356.
Thalamita admete Alcock 1899, J.Asiatic Soc. Bengal, Vol.68(1), p.82.
Thalamita admete Sakai 1976, Crabs of Japan and Adjacent Seas, p.977.

Distribution : Tahiti, Africa, Red Sea, India to Australia, Japan, Hawaii

Habitat : Coral reef or rocky beach

Remarks : Mostly seen in fringing type reef.

***Thalamita parvidens* (Rathbun, 1907)** (Plate 44c)

Thalamonyx parvidens Rathbun 1907, Mem.Mus. Comp. Zool., Vol.35(2), p.62, pl.5, fig.2.
Thalamita parvidens Sakai 1976, Crabs of Japan and Adjacent Seas, p.380.

Distribution : Madagascar, India, Japan, Carolines, Western Australia

Habitat : 10 - 30 metres deep, soft bottoms

Remarks : New record to Indian waters. Collected from the trawl catches.

SUBFAMILY: PODOPHTHALMINAE

***Podophthalmus* Lamarck, 1801**
***Podophthalmus vigil* (Fabricius, 1798)** (Plate 45)

Portunus vigil Fabricius 1798, Suppl. Entom. Syst., p.368.
Podophthalmus vigil A. Milne Edwards 1861, Arch. Mus. Hist. Nat. Paris, Vol.10, p.420.
Podophthalmus vigil Sakai 1976, Crabs of Japan and Adjacent Seas, p.383.

Distribution : Madagascar, Red Sea, India, Singapore, Philippines, Japan, Australia, Hawaii

Habitat : Sandy mud or sand substrata, 10-35 metres deep

Remarks : Collected from the trawl catches.

SUPERFAMILY: XANTHOIDEA MacLeay, 1838
FAMILY : CARPILIDAE Ortmann, 1893

Carpilius Leach, 1823
Carpilius convexus (Forskal, 1775) (Plate 46)

Cancer convexus Forskal 1775, Descr. Anim., p.88.
Carpilius convexus H. Milne Edwards 1834, Histoire Naturelle des Crustaces, Paris, Vol.1, p.382, pl.16, figs. 9,10.
Carpilius convexus Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.80.
Carpilius convexus Sakai 1976, Crabs of Japan and Adjacent Seas, p.389.

Distribution : Indo-Pacific region, East Coast of Africa, Red Sea, India, Hawaii

Habitat : Coral reefs and rocky substratum, 3 - 30 metres deep

Remarks : First time recorded from the Indian side of Gulf of Mannar. Specimens were collected from the coral reef of Manauli island at the depth of 6 metres.

Carpilius maculatus (Linnaeus, 1758) (Plate 47)

Cancer maculatus Linnaeus 1758, Syst. Nat., (xii), p.1042.
Carpilius maculatus H. Milne Edwards 1834, Histoire Naturelle des Crustaces, Paris, Vol.1, p.382.
Carpilius maculatus Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.79.
Carpilius maculatus Sakai 1976, Crabs of Japan and Adjacent Seas, p.388.

Distribution : Indo-Pacific region, East Coast of Africa, Red Sea

Habitat : Rocky beaches or coral reefs, 3 - 30 metres deep and mostly found in 3-6 metres deep coral reefs

Remarks : Collected from the coral reef of Manauli island at the depth of 5 metres. Very rare occurrence.

***Liagore* de Haan, 1835**
***Liagore rubromaculata* de Haan, 1835** (Plate 48)

Cancer (Liagore) rubromaculata de Haan 1835, Fauna Japonica, Vol.V. 1, p.49.
Liagore rubromaculata Alcock 1898, J.Asiatic Soc. Bengal, Vol.67(1),p.9.
Liagore rubromaculata Sakai 1976, Crabs of Japan and Adjacent Seas, p.389.

Distribution : India, Hong Kong, Japan

Habitat : Rocky or strong substrata, 15 -30 metres deep

Remarks : Collected from the trawl catches.

FAMILY: MENIPPIDAE

***Menippe* de Haan, 1833**
***Menippe rumphii* Fabricius, 1798** (Plate 49a)

Cancer rumphii Fabricius 1798, Supple. Entom. Syst., p.336.
Pseudocarcinus bellangeri H. Milne Edwards 1834, Histoire Naturelle des Crustaces, Paris, p.409.
Menippe rumphii Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.178.

Distribution : Indo-Pacific region, South Africa

Habitat : Rocky or sandy substrata below low tide mark

Remarks : Mostly seen beneath the dead corals exposed at low tides.

FAMILY : XANTHIDAE

SUBFAMILY : XANTHINAE

***Halimede* de Haan, 1835**
***Halimede ochtodes* (Herbst, 1783)** (Plate 49b)

Cancer ochtodes Herbst 1783, Krabben Und Krebse, Vol.1, p.158.
Polycremnus ochtodes Alcock 1898, J.Asiatic Soc. Bengal, Vol.67(1), p.135.

Halimede ochtodes Rathbun 1910, Danish Exped., p.353.
Halimede ochtodes Sakai 1976, Crabs of Japan and Adjacent Seas, p.387.

Distribution : India, Mianmar, Singapore, Gulf of Thailand, Hong Kong, Japan

Habitat : Muddy, sandy substrata

Remarks : Collected from the trawl catches.

***Galene* de Haan, 1833**
***Galene bispinosa* (Herbst, 1783)** (Plate 50a)

Cancer bispinosus Herbst 1783, Krabben Und Krebse, Vol. I, ii, p.144.
Galene bispinosa Alcock 1898, J. Asiatic Soc. Bengal, Vol. 67(1), p.441.
Galene bispinosa Sakai 1976. Crabs of Japan and Adjacent Seas, p.441.

Distribution : India, Singapore, Hong Kong, South China, Taiwan, Australia

Habitat : Sandy, muddy substrata, 3 - 50 metres deep

Remarks : Collected from the trawl catches.

***Macromedaeus* Ward, 1942**
***Macromedaeus bidentatus* (A. Milne Edwards, 1867)** (Plate 50b)

Xantho bidentatus A. Milne Edwards 1867, Ann. Soc. Ent. France, Vol.7(4), p.266.
Xantho bidentatus Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.114.

Distribution : Indo - Pacific region

Habitat : Coral reefs and hard bottom substrata, 1-10 metres deep

Remarks : Large numbers of this species were collectedfrom the branching corals at the depth of 0.5 - 2 metres. Mostly seen in dead coralscovered byseaweeds.

Demania Laurie, 1906
Demania splendida Laurie, 1906 (Plate 50c)

Demania splendida Laurie 1906, Ceylon Pearl Oyster Fisheries Report, London, Vol.5, p.397.

Distribution : India, Sri Lanka

Habitat : Pearl banks, rocky bottoms

Remarks : First time recorded from the Indian side of Gulf of Mannar. Collected from the trawl catches.

Demania baccalipes (Alcock, 1898) (Plate 51a)

Xantho (Lophoxanthus) scaberrimus var. *baccalipes* Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.117.
Demania scaberrima baccalipes Guinot 1971, Bull. Mus. Hist. Nat., Paris (2):42(5); p.1074.
Demania baccalipes Sakai 1976, Crabs of Japan and Adjacent Seas, p.421.

Distribution : India, Sri Lanka, Japan

Habitat : Coral reefs and rocky bottoms, 6 - 30 metres deep

Remarks : Collected from the trawl catches of pearl banks.

Leptodius A. Milne Edwards
Leptodius euglyptus Alcock, 1898 (Plate 51b)

Xantho (Leptodius) euglyptus Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.121.

Distribution : India

Habitat : Coral reefs , rocky beaches

Remarks : Recorded for the first time in Gulf of Mannar. Mostly seen in branching corals at a depth of 0. 5 - 1 metre.

***Leptodius gracilis* (Dana, 1852)** (Plate 51c)

Chlorodius gracilis Dana 1852 a, Proc. Acad. Nat. Sci. Philad., Vol.6, p.79.
Xantho exaratus gracilis Miers 1884, Report of the collections of H.M.S. "Alert", London, p.214.
Leptodius gracilis de Man 1887, Archive fur Naturgeschichte, Vol.53, p.287, pl.11, figs.2,2a.
Leptodius gracilis Sakai 1976, Crabs of Japan and Adjacent Seas, p.424.

Distribution : Japan, Hawaii, Carolines, Marshall, Tahiti and Cocos keeling

Habitat : Coral reefs and rocky beaches

Remarks : Found in large numbers in the coral reefs having thick vegetation of seaweeds like *Sargassum* and *Turbinaria* species.

***Leptodius exaratus* (H. Milne Edwards, 1834)** (Plate 51d)

Chlorodius exaratus H. Milne Edwards 1834, Histoire Naturelle des Crustaces, Paris, Vol.1, p.402.
Xantho (Leptodius) exaratus Alcock 1898, J. Asiatic Soc. Bengal, 67(1), p.118.
Leptodius exaratus Forest et Guinot 1961, Editions de la Foundation Singer - Polignac, Vol.9 & 10, p.62.
Leptodius exaratus Sakai 1976, Crabs of Japan and Adjacent Seas, p.423.

Distribution : East Coast of Africa, Red Sea, India, Japan, Hawaii

Habitat : Coral reefs, crevices of rocks or under stones between low and high tide marks

Remarks : Mostly occurs in the crevices of dead corals and live branching corals.

SUBFAMILY : ZOSIMINAE

***Atergatis* de Haan 1835**
***Atergatis floridus* (Linnaeus, 1767)** (Plate 52)

Cancer floridus Linnaeus 1767, Syst. Nat., XII, p.1041.
Atergatis floridus de Haan 1835, Fauna Japonica, Vol.V, p.46.
Atergatis floridus Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.98.

Atergatis floridus Sakai 1976, Crabs of Japan and Adjacent Seas, p.409.

Distribution : Indo-Pacific regions, East coast of Africa, Red Sea

Habitat : Coral reefs, hard beaches below low tide mark

Remarks : Large numbers of this species are found in coral reefs exposed at low tides.

***Atergatis subdentatus* de Haan, 1835** (Plate 53)

Cancer (Atergatis) subdentatus de Haan 1835, Fauna Japonica, p.49, pl.3, fig.1.
Atergatis subdentatus A. Milne Edwards 1865, Nauv. Arch. Mus. d'Hist. Nat, Paris, Vol.1, p.236.
Atergatis subdentatus Sakai 1976, Crabs of Japan and Adjacent Seas, p.409.

Distribution : India, Japan

Habitat : Coral reefs, rocky beaches, 3 to 30 metres deep

Remarks : New record to Indian waters. Very rare in occurrence and found in coral reefs at a depth of 3 - 6 metres.

***Atergatis integerrimus* (Lamarck, 1801)** (Plate 54)

Cancer integerrimus Lamarck 1801, Hist. Nat. Anim. Sans Vert., p.272.
Cancer (Atergatis) integerrimus de Haan 1835, Fauna Japonica, Vol.V, p.45, pl.14, fig.1.
Atergatis integerrimus Dana 1852, Crustacea, Vol.13, p.158.
Atergatis integerrimus Alcock 1898, J. Asiatic Soc. Bengal, Vol. 67(1), p.95.
Atergatis integerrimus Sakai 1976, Crabs of Japan and Adjacent Seas, p.410.

Distribution : Mauritius, Zanzibar, India to Philippines, Hong Kong, Japan

Habitat : Coral reefs, sandy or rocky bottoms, 6 - 30 metres deep

Remarks : Mostly seen in coral reefs at a depth of 4 - 6 metres deep and very rare in occurrence.

Atergatis frontalis de Haan, 1833 (Plate 55)

Cancer (Atergatis) frontalis de Haan 1835, Fauna Japonica, Vol.V, p.46, pl.14, fig.3.
Atergatis latissimus frontalis de Man 1887, Journ. Linn. Soc. London, Vol.22, p.24.
Atergatis frontalis Sakai 1976, Crabs of Japan and Adjacent Seas, p.410.

Distribution : India, Sumatra, China, Japan

Habitat : Coral reefs, shallow waters

Remarks : New record to India. Mostly seen beneath the corals exposed during low tides.

Atergatis roseus (Ruppell, 1830) (Plate 56a)

Carpilius roseus and *marginatus* RÜppell 1830, Krabben roth. Meer., p.13, pl.3, fig.3.
Atergatis roseus and *marginatus* de Haan 1835, Fauna Japonica, Vol.V, p.17.
Atergatis roseus Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.97.

Distribution : India, Sri Lanka, Hong Kong

Habitat : Coral reefs and rocky substrata, low tide mark to 30 metres deep

Remarks : Large numbers of this species occur in Krusadai island and in other islands, the occurrence is very rare.

Zosymus Leach, 1818
Zosymus aeneus (Linnaeus, 1758) (Plate 56b)

Cancer aeneus Linnaeus 1758, Syst. Nat. Per. Reg. Tral Nat., Sec. Cl. ed., 10, p.630.
Zosymus aeneus Alcock 1898, J. Asiatic Soc. Bengal, Vol. 67(1), p.104.
Zosymus aeneus Sakai 1976, Crabs of Japan and Adjacent Seas, p.402.
Zosimus aeneus Galil and Vannini 1990, Tropical Zoology, Vol.3, p.36.

Distribution : South Africa, Red Sea, Japan, Australia, Hawaii

Habitat : Coral reefs

Remarks : Recorded for the first time in the Gulf of Mannar. Species found only in 3 - 6 metres deep coral reefs. Very rare in occurrence.

***Platypodia* Bell, 1835**
***Platypodia cristata* (A. Milne Edwards, 1865)** (Plate 57a)

Lophactaea cristata A. Milne Edwards 1865, Nouv. Archiv. du. Mus. Vol.1, p.246, pl.16, fig. 4.
Lophactaea cristata Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.100.
Platypodia cristata Rathbun 1911, Trans. Linn Soc. London, Vol.14(2), p.214.
Platypodia cristata Galil and Vannini 1990, Tropical Zoology, Vol.3, p.39.

Distribution : Western Indian Ocean islands, Tanzania, Kenya, Somalia, Red Sea, India

Habitat : Coral reefs

Remarks : Mostly found in coral reefs at a depth of 0.5 - 1 metre.

SUBFAMILY:ETISINAE

***Etisus* H. Milne Edwards, 1834**
***Etisus laevimanus* Randall, 1839** (Plate 57b)

Etisus laevimanus Randall 1839, Journ. Acad. Nat. Sc. Philad., Vol.8, p.115.
Etisus (Etisus) laevimanus Holthuis 1954, Journ. Soc. Bibliography Nat. Hist., Vol.3, pl.1; p.21.
Etisus laevimanus Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.131.
Etisus laevimanus Sakai 1976, Crabs of Japan and Adjacent Seas, p. 455.

Distribution : East Coast of Africa, Red Sea, India, Japan, Hawaii

Habitat : Coral reefs

Remarks : This species occurs in both live and dead corals in large numbers. Multitudes of this crab can be seen in exposed reefs during low tide, 6 morphs (polymorphism) were observed in this species.

SUBFAMILY : CHLORODINAE

Pilodius Dana, 1852

Pilodius areolatus (H. Milne Edwards, 1834) (Plate 58a)

Chlorodius areolatus H. Milne Edwards 1834, Histoire Naturelle des Crustaces, Paris, Vol.1, p.400.
Chlorodopsis areolata Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.166.
Pilodius areolatus Forest et Guinot 1961, Editions de la Foundation Singer - Polignac, Vol.9 & 10, p.90.
Pilodius areolatus Sakai 1976, Crabs of Japan and Adjacent Seas, p.460.

Distribution : East coast of Africa, Red Sea, India, Japan, Australia, Hawaii

Habitat : Coral reefs

Remarks : Large numbers of this species occur in dead *Acropora* corals thickly covered with seaweeds *Sargassum* and *Turbinaria* species

Phymodius A. Milne Edwards, 1863

Phymodius monticulosus (Dana, 1852) (Plate 58b)

Chlorodius monticulosus Dana 1852 a, Proc. Acad. Nat. Sci. Philad., Vol.6, p.79.
Phymodius monticulosus A. Milne Edwards 1873 a, Nauvelles Archives du Museum d' Histoire Naturelle, Paris, Vol.9, p.220.
Phymodius monticulosus Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.163.
Phymodius monticulosus Galil and Vannini 1990, Tropical Zoology, Vol.3, p.45.

Distribution : Indo-West Pacific, Western Indian Ocean islands, South Africa, Kenya, Red Sea

Habitat : Coral reefs

Remarks : Large numbers of this species found in *Acropora* corals. Mostly found in live corals and rarely seen in dead branching corals.

Phymodius granulosus (de Man,1888) (Plate 58c)

Cyclodius granulosus de Man 1888, Notes from the Leyden Museum, Vol.12, p.283, pl.11, figs.1,1a.

Phymodius granulosus Guinot 1964, Mem. Mus. Hist. Nat., Ser.A, Zool., 32(1), p.76, figs. 39-41.
Phymodius granulosus Sakai 1976, Crabs of Japan and Adjacent Seas, p.463.

Distribution : Madagascar, India, Japan

Habitat : Coral reefs

Remarks : Found in coral reefs at depths of 0.5 - 3 metres. Mostly occurs in branching corals.

***Phymodius ungulatus* (H. Milne Edwards, 1834)** (Plate 58d)

Chlorodius ungulatus H. Milne Edwards 1834, Histoire Naturelle des Crustaces, Paris, Vol.1, p.400, pl.16, figs.6, 8.
Phymodius ungulatus A. Milne Edwards 1873 a, Mus. Godeffroy. Journ. Bd., 1. Hest. 4, p.218.
Phymodius ungulatus Alcock 1898, J. Asiatic Soc. Bengal, Vol. 67(1), p. 162.
Phymodius ungulatus Sakai 1976, Crabs of Japan and Adjacent Seas, p. 463.

Distribution : East Coast of Africa, Red Sea, India, Singapore, Japan, Australia, Hawaii

Habitat : Coral reefs

Remarks : Mostly found in live corals of *Acropora* and *Montipora* species and also in the dead corals of *Pocillopora damicornis*.

***Phymodius nitidus* (Dana, 1852)** (Plate 58e)

Pilodius nitidus Dana 1852 a, Proc. Acad. Natur. Sci. Philad., Vol.6, p.80.
Phymodius sculptus Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.104.
Phymodius nitidus Rathbun 1906, Bull. U.S. Fish. Comm., Vol. 23, p.858.
Phymodius nitidus Sakai 1976, Crabs of Japan and Adjacent Seas, p.464.

Distribution : East Coast of Africa, Red Sea, Japan, Hawaii

Habitat : Coral reefs and shallow waters

Remarks : Mostly seen in the coral reefs at a depth of 0.5 - 1 metre.

Chlorodiella Rathbun, 1897
Chlorodiella nigra (Forskal, 1775) (Plate 59a)

Cancer niger Forskal 1775, Descr. Anim., p.89.
Chlorodius niger Alcock 1898, J. Asiatic Soc. Bengal, Vol. 67(1), p.160.
Chlorodiella nigra Rathbun 1897, Proc. Biol. Soc. Washington, Vol.11, p.157.
Chlorodiella nigra Sakai 1976, Crabs of Japan and Adjacent Seas, p.465.

Distribution : Indo - Pacific from East Coast of Africa through Red Sea to Hawaii

Habitat : Coral reefs and rocky beaches

Remarks : This is the most abundant coral reef crab occurring in large numbers. Mostly found in branching corals of the species *Acropora, Montipora* and *Echinopora*. Abundantly seen in dead corals than in live.

SUBFAMILY: CYMOINAE

Cymo de Haan, 1833
Cymo melanodactylus de Haan, 1833 (Plate 59b)

Cymo melanodactylus de Haan 1833, Fauna Japonica, Vol.V, p.22.
Cymo melanodactylus Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.174.
Cymo melanodactylus Sakai 1976, Crabs of Japan and Adjacent Seas, p.467.

Distribution : Indo - West Pacific, Red Sea, Japan, Australia, Tahiti, Tall Tuamotu

Habitat : Coral reefs

Remarks : First time recorded from the Indian side of Gulf of Mannar. It is an obligate symbiont mostly seen in the live corals of *Pocillopora, Acropora* and *Montipora* species and very rarely in dead corals.

Cymo andreossyi (Audouin, 1826) (Plate 59c)

Pilumnus andreossyi Audouin 1826, in Savignyi's Descr. de 1' Egypte, p.86, pl.5, fig. 5.
Cymo andreossyi de Haan 1833; Fauna Japonica, Vol.V, p.22.
Cymo andreossyi Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.173.

Cymo andreossyi Sakai 1976, Crabs of Japan and Adjacent Seas, p.467.

Distribution : Madagascar, Seychelles, Somalia, Red Sea, Fiji, Japan, Coetivy

Habitat : Coral reefs

Remarks : This species is found both in the live and dead branching corals of species *Pocillopora, Acropora* and *Montipora*. Compared to the occurrence of its compatriot *C.melanodactylus*, this species is found in large numbers.

SUBFAMILY: ACTAEINAE

Pseudoliomera Odhner, 1925
Pseudoliomera speciosa (Dana, 1852) (Plate 59d)

Actaeodes speciosa Dana 1852b, Proc. Acad. Nat. Sci. Philad., Vol.8, p.198, pl.11.
Actaea speciosa Alcock 1898, J. Asiatic Soc. Bengal, Vol. 67(1), p.143.
Pseudoliomera speciosa Guinot 1969, Cabiers du pacifique, Vol.13, p.230.
Pseudoliomera speciosa Sakai 1976, Crabs of Japan and Adjacent Seas, p.453.

Distribution : East Coast of Africa, Red Sea, Japan, Hawaii

Habitat : Coral reefs

Remarks : This crab occurs in the corals of 3 - 6 metres deep and its occurrence is rare.

Paractaea Guinot, 1969
Paractaea ruppelli orientalis (Odhner, 1925) (Plate 59e)

Actaea ruppelli orientalis Odhner 1925, Gisteborgs Kungle Vetoch Vitterh Samh. Handle., 4. foljd, Vol.29, no.1, p.46, pt.3, fig.7.
Paractaea ruppelli orientalis Guinot 1969, Cabiers du pacifique, Vol.13, p. 244.
Paractaea ruppelli orientalis Sakai 1976, Crabs of Japan and Adjacent Seas, p.452.

Distribution : North and South China, Japan

Habitat : Coral reefs and rocky weedy coasts

Remarks : This species is mostly seen in the corals of *Acropora* and *Montipora* species thickly covered by seaweeds *Sargassum* and *Turbinaria* species.

FAMILY:PILUMNIDAE

Pilumnus Leach, 1815

Pilumnus vespertilio (Fabricius, 1793) (Plate 60a)

Cancer vespertilio Fabricius 1793, Ent. Syst., II, p.463.
Pilumnus vespertilio Alcock 1898, J. Asiatic Soc. Bengal, Vol. 67(1), p. 198.
Pilumnus vespertilio Sakai 1976, Crabs of Japan and Adjacent Seas, Vol. 67(1), p.484.

Distribution : South Africa, Red Sea, Thailand,Singapore,Japan,Hawii

Habitat : Coral reefs, rocky beach

Remarks : This crab is mostly seen in the dead coral beds of *Acropora* and *Montipora* species. Large numbers of this species are seen in corals of 0.5 - 1 metre depth.

Pilumnus tomentosus Latreille, 1825 (Plate 60b)

Pilumnus tomentosus Latreille 1825, Encyc. Meth. Hist. Nat. Entom., Vol.10, p.125.
Pilumnus tomentosus Sakai 1976, Crabs of Japan and Adjacent Seas, p.485.

Distribution : India, Japan, Australia

Habitat : Rocky beach, littoral to 25 metres deep

Remarks : New record to India. This species was caught from the pearl banks of Tuticorin area.

Pilumnus minutes de Haan, 1835 (Plate 60c)

Pilumnus minutes de Haan 1835, Fauna Japonica, Vol.V, p.50, pl.3, fig.2.
Pilumnus haberérimus Doflein 1902, Abh. Bayer. Akad. Wiss. II, p.629, pl.5, fig.5.
Pilumnus minutes Sakai 1976, Crabs of Japan and Adjacent Seas, p.487.

Distribution : India, Malay Archipelago, Japan

Habitat : Coral reefs, crevices of rock and seaweed

Remarks : First time recorded from India. Mostly seen in crevices of dead corals. Occurrence of this species is very limited.

FAMILY:TRAPEZIIDAE

Tetralia cavimana Heller, 1861 (Plate 60d)

Tetralia cavimana Heller 1861, Akad. Wiss. Wien, Bd; 43, 1, Abt., p.353, pl.3, figs. 24, 25.
Cancer glaberrimus Herbst 1790, Krabben Und Krebse, Vol.I, ii, p.262, pl.20, fig.115.
Tetralia glaberrima Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.223.
Tetralia glaberrima Sakai 1976, Crabs of Japan and Adjacent Seas, p.511.
Tetralia cavimana Galil 1988, Crustaceana, Vol.54, p.59.

Distribution : South Africa, Madagascar, Red sea ,India, Jawa, Hong Kong, Japan, New Caledonia, Palau, Tahiti, Paumotu

Habitat : Coral reefs and shallow waters

Remarks : Found only in the live corals of *Acropora* species and *Pocillopora damicornis*. Found in pairs in the central part of the coral colony.

Trapezia Latreille, 1825
Trapezia cymodoce (Herbst, 1801) (Plate 60e)

Cancer cymodoce Herbst 1801, Krabben Und Krebse, Vol. III, ii, p.22, pl.51, fig.5.
Trapezia cymodoce Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.219.
Trapezia cymodoce Sakai 1976, Crabs of Japan and Adjacent Seas, p.507.

Distribution : East Coast of Africa, Red Sea, India, Japan, Polynesia, Hawaii

Habitat : Coral reefs

Remarks : Obligate symbiont, mostly seen in the corals *Pocillopora damicornis* and very rarely in *Acropora* corals.

Trapezia areolata Dana, 1852 (Plate 60f)

Trapezia areolata Dana 1852 a, Proc. Acad. Nat. Sci. Philad., Vol.6, p.83.
Trapezia reticulata Stimpson 1858, Proc. Acad. Nat. Sci. Philad., Vol. 10(4), p.37.
Trapezia ferruginea areolata Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.221.
Trapezia cymodoce areolata Rathbun 1907, Mem. Mus. Comp. Zool., Vol.35(2), p.59.
Trapezia areolata Sakai 1976, Crabs of Japan and Adjacent Seas, p.508.

Distribution : India, Sri Lanka, Japan, New Guinea, Australia, Tahiti, Fiji, Samoa, New Caledonia, Mergui Archipelago

Habitat : Coral reefs

Remarks : Obligate symbiont, found only in the corals of *Pocillopora domicornis* occurring in hard bottoms free from sedimentation.

Trapezia ferruginea Latreille, 1825 (Plate 60g)

Trapezia ferruginea Latreille 1825, Encyc. Meth., Vol.10, p.696.
Trapezia ferruginea Alcock 1898, J. Asiatic Soc. Bengal, Vol.67(1), p.220.
Trapezia ferruginea Sakai 1979, Crabs of Japan and Adjacent Seas, p.507.

Distribution : Red Sea, India, Japan, Hawaii, Tahiti, Paumotu

Habitat : Coral reefs

Remarks : Obligate symbiont, found only in the corals of *Acropora* and *Pocillopora damicornis* corals

SUPERFAMILY : MAJOIDEA
FAMILY : MAJIDAE
SUB FAMILY : INACHINAE

Composcia Latreille, 1829
Composcia retusa Latreille, 1829 (Plate 61a)

Composcia retusa Latreille 1829, Cuvier's Regne Animal, Vol.4, p.60.
Composcia retusa Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2), p.184.
Composcia retusa Sakai 1976, Crabs of Japan and Adjacent Seas, p.170.

Distribution : Indo-Pacific regions

Habitat : Coral reefs, rocky weedy bottoms

Remarks : It is commonly called as the decorator crab. Mostly found in dead coral beds. Large numbers are found in the corals of Palk Bay than in the corals of Gulf of Mannar.

SUBFAMILY : OPHTHALMIINAE

Ophthalmias Rathbun, 1897
Ophthalmias cervicornis (Herbst, 1803) (Plate 61b)

Cancer cervicornis Herbst 1803, Krabben Und Krebse, Vol. III, iii, p.49, Pl.58.
Stenocionops cervicornis Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2), p.248.
Ophthalmias cervicornis Rathbun 1906, Bull. U.S. Fish. Comm., Vol.23, p.882.
Ophthalmias cervicornis Sakai 1976, Crabs of Japan and Adjacent Seas, p.190.

Distribution : East coast of Africa, India, Sri Lanka, Singapore, Indonesia, Japan, Hawaii

Habitat : Pearl banks, rocky bottoms, 6 - 30 metres deep

Remarks : Collected from the trawl catches.

SUBFAMILY: PISINAE

Naxioides A. Milne Edwards, 1865
Naxioides hirta A. Milne Edwards, 1865 (Plate 62a)

Naxioides hirta A. Milne Edwards 1865, Nouv. Arch. Mus. d'Hist. Nat., Paris, Vol.1, p.143, pl.4, fig.1.
Naxia hirta Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2), p.218.
Naxioides hirta Sakai 1976, Crabs of Japan and Adjacent Seas, p.218.

Distribution : Mozambique, Zanzibar, Red Sea, Philippines, Japan

Habitat : Rocky, weedy bottoms, pearl banks, 10-35 metres deep
Remarks : Collected from the trawl catches.

Phalangipus Latreille, 1825
Phalangipus hystrix (Miers, 1886) (Plate 62b)

Naxia hystrix Miers 1886, Report. H.M.S. "Challenger", Vol.17, p.60, pl.6.
Naxia hystrix Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2), p.220
Naxioides hystrix Rathbun 1897, Proc. Biol. Soc. Washington, Vol.11,p.157.
Phalangipus hystrix Griffin 1973, J. Nat. Hist., Vol.7, p.175, figs 5(a - e), 7(i).
Phalangipus hystrix Sakai 1976, Crabs of Japan and Adjacent Seas, p.219.

Distribution : Red Sea, India, Sri Lanka, Malay Archipelago, Philippines, China, Japan, Australia

Habitat : Sandy or sandy mud, broken shells bottoms; 30 - 100 metres deep

Remarks : Collected from the trawl catches.

Tylocarcinus Miers, 1879
Tylocarcinus styx (Herbst, 1803) (Plate 63a)

Cancer styx Herbst 1803, Krabben Und Krebse, Vol. III, iii, p.53, pl.8, fig.6.
Pisa styx H. Milne Edwards 1834, Histoire Naturelle des Crustaces, Paris, Vol.1, p.308.
Tylocarcinus styx Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2), p.235.
Tylocarcinus styx Sakai 1976, Crabs of Japan and Adjacent seas, p.221.

Distribution : Indo-Pacific, Africa, Red Sea

Habitat : Coral reefs and rocky beaches

Remarks ; Seen in live corals of *Acropora* species and mostly in the crevices of dead corals.

Hyastenus White, 1847
Hyastenus pleione (Herbst, 1803) (Plate 63b)

Cancer pleione Herbst 1803, Krabben Und Krebse,Vol. III, iii.p.52.
Naxia pleione Gerstaeckar 1856, Archiv. fur Naturgesch, Vol.22, p.114.
Hyastenus pleione A. Milne Edwards 1872, Nouv. Archiv. du Mus., Vol.8, p.250.
Hyastenus pleione Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2),p.208

Distribution : Sri Lanka, Singapore, Gulf of Thailand, Australia

Habitat : Sandy mud and weedy rock, pearl banks, 15 - 90 metres deep

Remarks : Large number of crabs found in the coral reef densely covered by seaweeds.

***Hyastenus oryx* A. Milne Edwards, 1872** (Plate 63c)

Hyastenus oryx A. Milne Edwards 1872, Nouv. Archiv. du Mus., Vol.8, p.250.
Hyastenus oryx Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2),p.214.

Distribution : India, Sri Lanka, Singapore, Gulf of Thailand

Habitat : Pearl banks, sandy mud, weedy rock or sand bottoms; 10 - 100 metres deep

Remarks : Found in corals thickly covered with sea weeds. It is mostly seen in the oyster culture cages and the carapace is covered by ascidians.

***Doclea* Leach, 1814**
***Doclea alcocki* Laurie, 1906** (Plate 63d)

Doclea alcocki Laurie 1906, Ceylon Pearl Oyster Fisheries Report, London, Vol.5, p.403.

Distribution : India, Sri Lanka

Habitat : Pearl banks, mud or sandy bottom, 15 - 90 metres deep

Remarks : Collected from the trawl catches.

***Doclea hybrida* (Fabricius, 1793)** (Plate 64)

Inachus hybridus Fabricius 1793, Ent. Syst. Suppl., p.355.
Doclea hybrida Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2), p.231.

Distribution : India, Singapore, Hong Kong

Habitat : Sandy mud or muddy bottoms, down to 50 metres deep

Remarks : Collected from the trawl catches

Doclea ovis (Herbst, 1788) (Plate 65)

Cancer ovis Herbst 1788, Krabben Und Krebse, Vol. I, ii, p.210, pl.8, fig.82.
Doclea ovis H. Milne Edwards 1834, Histoire Naturelle des Crustaces, Paris, Vol.1,p.294.
Doclea ovis Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2), p.227.
Doclea ovis Sakai 1976, Crabs of Japan and Adjacent Seas, p.231.

Distribution : India, Sri Lanka, Hong Kong, Japan

Habitat : Mud, sand and broken shell bottoms, 30 - 100 metres deep

Remarks : Collected from the trawl catches.

Doclea canalifera Stimpson, 1857 (Plate 66a)

Doclea canalifera Stimpson 1857, Smiths. Miscell. Collections, Vol.49, p.217.
Doclea canalifera Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2),p.228
Doclea canalifera Sakai 1976, Crabs of Japan and Adjacent Seas, p.231.

Distribution : India, Sri Lanka, Singapore, Hong Kong, Japan

Habitat : Muddy bottoms down to 50 metres deep

Remarks : Collected from the trawl catches.

SUBFAMILY: MAJINAE

Schizophrys White, 1848

Schizophrys aspera (H. Milne Edwards, 1834) (Plate 66b)

Mithrax asper H. Milne Edwards 1834, Histoire Naturelle des Crustaces, Paris, Vol.1,p.320.
Maja (Dione) affinis de Haan 1839, Fauna Japonica, Vol.V, p.94.
Schizophrys aspera A. Milne Edwards 1872, Nouv. Arch. Mus.d' Hist. Nat., Paris, Vol.4, p.231.
Schizophrys aspera Sakai 1976, Crabs of Japan and Adjacent Seas,p.246.

Distribution : Japan, Hawaii, South and East Africa, Australia, Hawaii

Habitat : Pearl banks, rocky bottoms

Remarks : Found in dead coral beds and oyster culture cages in Tuticorin. Dorsal surface of carapace some - times covered with ascidians.

Cyclax Dana, 1851
Cyclax suborbicularis (Stimpson, 1858) (Plate 67a)

Mithrax suborbicularis Stimpon 1858, Smiths Miscell. Collections, Vol. 49, p.218.
Cyclomaia margaritata A. Milne Edwards 1872, Nouv. Arch. Mus. d' Hist. Nat., Paris, Vol.8, p.286.
Cyclax (Cyclomaia) suborbicularis Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2), p.245.
Cyclax suborbicularis Sakai 1976, Crabs of Japan and Adjacent seas, p.247.

Distribution : Zanzibar, Red Sea, India, Japan, Australia, Hawaii

Habitat : Coral reefs, weedy rock substrata

Remarks : Common in dead coral beds with dense vegetation of seaweeds.

SUPERFAMILY: PARTHENOPOIDEA
FAMILY : PARTHENOPIDAE

Parthenope Weber, 1795
Parthenope (Platylambrus) Stimpson, 1871
Parthenope (Platylambrus) prensor (Herbst, 1803) (Plate 67b)

Lambrus prensor Herbst 1803, Krabben Und Krebse Vol.II, ii, p.170.
Lambrus prensor A. Milne Edwards 1872, Nouv. Archiv. de Mus., Vol.8, p.260.
Lambrus (Platylambrus) prensor Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2), p.262.

Distribution : Singapore, China, Korea, Japan, Australia

Habitat : Sandy, muddy and broken shell substrata, 6 - 35 metres deep

Remarks : Collected from the trawl catches.

***Parthenope (Platylambrus) echinatus* (Herbst, 1796)** (Plate 68)

Cancer echinatus Herbst 1796, Krabben Und Krebse, Vol. I, ii, p.255.
Parthenope giraffa Fabricius 1798, Suppl. Ent. Syst., p.353.
Lambrus echinatus H. Milne Edwards 1834, Histoire Naturelle des Crustaces, Paris, Vol.1, p.356.
Lambrus (Platylambrus) echinatus Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2), p.264.

Distribution : India, Sri Lanka, Singapore, Korea, Australia, Samoa

Habitat : Sandy or sandy mud substrata, 10 - 30 metres deep

Remarks : Collected from the trawl catches.

***Parthenope (Rhinolambrus)* A. Milne Edwards, 1878**
***Parthenope (Rhinolambrus) contrarius* (Herbst, 1796)** (Plate 69)

Cancer contrarius Herbst 1796, Krabben Und Krebse, Vol.1. iii, p.8, pl.60, fig. 3.
Lambrus (Rhinolambrus) contrarius Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(2), p.266.
Parthenope (Rhinolambrus) contrarius Sakai 1976, Crabs of Japan and Adjacent Seas, p.273.

Distribution : India, Sri Lanka, Japan, Australia, Hawaii

Habitat : Rocky bottoms, 10 - 30 metres deep

Remarks : Collected from the trawl catches.

***Daldorfia* Rathbun, 1906**
***Daldorfia horrida* (Linnaeus, 1758)** (Plate 70)

Cancer horridus Linnaeus 1758, Syst. Nat., Vol. 10, p.1047.
Parthenope horrida Fabricius 1798, Suppl. Ent. Syst., p.353.
Parthenope horrida Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(1), p.283.
Daldorfia horrida Rathbun 1904, Nouv. Arch. Mus. d'Hist Nat. Paris, Vol. 4(7), p.171.
Daldorfia horrida Sakai 1976, Crabs of Japan and Adjacent Seas, p.283.

Distribution : Mauritius, Red Sea, Sri Lanka, Malaysia, Singapore, Philippines, Japan, New Caledonia, Hawaii

Habitat : Sandy, muddy and rocky substrata, 20 - 100 metres deep

Remarks : First time recorded from the Indian side of Gulf of Mannar. Collected from the trawl catches.

SUBFAMILY : AETHRINAE

Aethra Leach, 1816 (Linnaeus, 1764)
Aethra scruposa (Linnaeus,1764) (Plate 71a)

Cancer scruposus Linnaeus 1764, Mus. Lud. Ulr., p.450.
Cancer polynome Herbst 1804, Krabben Und Krebse, Vol. III, ii, p.23.
Oethra depressa Lamarck, Hist. Anim. Sas. Vert., Vol.5, p.265.
Oethra scruposa Alcock 1895, J. Asiatic Soc. Bengal, Vol.64(1), p.289.
Aethra scruposa Guinot 1966, Bull. Mus. Hist. Nat., Vol. 38(5), p. 7 & 8.
Aethra scruposa Sakai 1979, Crabs of Japan and Adjacent Seas, p.289.

Distribution : East Coast of Africa, India, Sri Lanka, Malay Archipelago, Japan, New Caledonia

Habitat : Rocky bottoms, 30 - 200 metres deep

Remarks : Collected from the trawl catches.

SUPERFAMILY : LEUCOSIIOIDEA
FAMILY : LEUCOSIIDAE
SUBFAMILY : PHILYRINAE

Arcania Leach, 1817
Arcania heptacantha (de Haan, 1861) (Plate 71b)

Iphis heptacantha de Haan 1861, Etudes Sur la Classe des Crustacees, Leyde, p.27.
Arcania heptacantha de Man 1907, Trans. Linn. Soc. Lond. Zool., (2), Vol. 9, p.398, pl.31, figs. 8-10.
Arcania siamensis Rathbun 1909, Proc. Biol. Soc. Washington, Vol.25, p.108.
Arcania heptacantha Sakai 1976, Crabs of Japan and Adjacent Seas, p.94.

Distribution : Singapore, Gulf of Thailand, Japan

Habitat : Sandy or sandy muddy substrata, 50 - 150 metres deep

Remarks : Collected from the trawl catches.

***Arcania erinaceus* (Fabricius, 1798)** (Plate 71c)

Leucosia erinaceus Fabricius 1798, Ent. Syst. Suppl., p.352.
Arcania erinaceus Leach 1814 - 17, Zool. Miscell. III, p.24.
Arcania erinaceus Alcock 1896, J. Asiatic Soc. Bengal, Vol.65(2), p.268.
Arcania erinaceus Sakai 1976, Crabs of Japan and Adjacent Seas, p.92.

Distribution : India, Sri Lanka, Singapore, Japan

Habitat : Sandy, muddy substrata, 30 - 85 metres deep

Remarks : Collected from the trawl catches.

***Arcania novemspinosa* (Adams and White, 1848)** (Plate 71d)

Iphis novemspinosa Adams and White 1848, 'Samarang' Crust., p.51, pl.8, fig.1.
Arcania novemspinosa Bell 1855, Trans. Linn. Soc., Vol.21, p.309.
Arcania novemspinosa Alcock 1896, J. Asiatic Soc. Bengal, Vol. 65(2), p.267.

Distribution : India, Sri Lanka

Habitat : Sandy and sandy muddy substrata, 20 - 80 metres deep

Remarks : Collected from the trawl catches.

***Myra* Leach, 1817**

***Myra fugax* (Fabricius, 1798)** (Plate 72a)

Leucosia fugax Fabricius 1798, Ent. Syst. Suppl., p.351.
Myra fugax Leach 1817, Zool. Misc., III, p.24.
Persephona fugax Rathbun 1902, Proc. U.S. Nat. Mus., Vol.26, p.30.
Myra fugax Alcock 1896, J. Asiatic Soc. Bengal, Vol.65(2), p.202.
Myra fugax Sakai 1976, Crabs of Japan and Adjacent Seas, p.101.

Distribution : Throughout Indo-Pacific region, East Coast of Africa, Madagascar, Red Sea, Japan

Habitat : Sandy, muddy, rocky substrata, 30-150 metres deep

Remarks : Collected from the trawl catches.

Ixa Leach, 1815
Ixa cylindrus (Fabricius, 1798) (Plate 72b)

Cancer cylindrus Fabricius 1798, Ent. Syst. Suppl., II. p.456.
Ixa cylindrus Leach 1815, Trans. Linn. Soc., Vol.11, p.334.
Ixa megaspis Adams and White 1848, "Samarang" Crust., p.55, pl.xii, fig.1.
Ixa cylindrus Alcock 1896, J. Asiatic. Soc. Bengal, Vol.65(2), p.276.

Distribution : India, Sri Lanka

Habitat : Sandy, sandy muddy substrata, 10 - 90 metres deep

Remarks : Collected from the trawl catches.

Philyra Leach, 1817
Philyra syndactyla Ortmann, 1892 (Plate 72c)

Philyra syndactyla Ortmann 1892, Zool. Jahrb., Syst., Bd., 6, p.583.
Philyra syndactyla Sakai 1976, Crabs of Japan and Adjacent Seas, p.109.

Distribution : India, Japan

Habitat ; Sandy muddy substrata, shallow waters

Remarks : Collected from the trawl catches.

SUBFAMILY : LEUCOSIINAE

Leucosia Weber, 1795
Leucosia anatum (Herbst, 1783) (Plate 73a)

Cancer anatum Herbst 1783, Krabben Und Krebse, Vol.1, p.93.
Leucosia anatum Leach 1815, Zool. Misc., II, p.334.
Leucosia ornata Miers 1877, Proc. Zool. Soc. London, p.236, pl.38.

Leucosia longifrons var. *putcherrima* Alcock 1896, J. Asiatic Soc. Bengal, Vol.65(2), p.218.
Leucosia anatum Sakai 1976, Crabs of Japan and Adjacent seas, p.116.

Distribution : Mauritius, Iranian Gulf, India, Indonesia, Japan, Australia, New Caledonia

Habitat : Sandy soft substratum, 10 - 8 metres deep

Remarks : Collected from the trawl catches.

***Leucosia craniolaris* (Linnaeus, 1758)** (Plate 73b)

Cancer craniolaris Linnaeus 1758, Syst. Nat. ed., 10, Vol.1, p.626.
Leucosia craniolaris H. Milne Edwards 1837, Histoire Naturelle des Crustaces, Paris, Vol.2, p.122.
Leucosia craniolaris var. *laevimana* Miers 1884, Report of Zoological Collections of H.M.S. "Alert", London, p.250, pl.26.
Leucosia craniolaris Alcock 1896, J. Asiatic Soc. Bengal, Vol.65(2), p.231.
Leucosia craniolaris Sakai 1976, Crabs of Japan and Adjacent Seas, p.122.

Distribution : India, Gulf of Thailand, China, Hong Kong, Taiwan, Japan, Australia

Habitat : Sandy soft bottoms, 15 - 60 metres deep

Remarks : Collected from the trawl catches.

SUBFAMILY : MATUTINAE

***Matuta* Weber, 1795**

***Matuta lunaris* (Forskal, 1775)** (Plate 73c)

Cancer lunaris Forskal 1775, Desc. Anim., p.91.
Matuta victor Fabricius 1793, Ent. Syst. Suppl., p.369.
Matuta lunaris Rathbun 1902, Proc. U.S. Nat. Mus., Vol.26, p.30.
Matuta victor Alcock 1896, J. Asiatic Soc. Bengal, Vol.65(2), p.160.
Matuta lunaris Sakai 1976, Crabs of Japan and Adjacent Seas, p.140.

Distribution : South Africa,Red sea, India, China, Japan, Australia

Habitat : Shallow sandy substratum, 10 - 15 metres deep

Remarks : Collected from the trawl catches.

***Matuta planipes* Fabricius, 1798** (Plate 74a)

Matuta planipes Fabricius 1798, Ent. Syst. Suppl., p.369.
Matuta lunaris Alcock 1896, J. Asiatic Soc. Bengal, Vol.65(2), p.161.
Matuta flagra Shen 1936, Contr. Inst. Zool. Nat. Acad. Peiping, Vol.3(3), 64 - 66.
Matuta planipes Sakai 1976, Crabs of Japan and Adjacent Seas, p.41.

Distribution : China, Japan, Australia

Habitat : Shallow sandy beach, between high and low tide marks to a depth of 10 - 15 metres

Remarks : Collected from the trawl catches.

***Matuta miersi* Henderson, 1887** (Plate 74b)

Matuta miersii Henderson 1887, Madras Journ. Lit. Sci., 1886 - 87, p.66, figs.1 - 4.
Matuta miersii Alcock 1876, J. Asiatic Soc. Bengal, Vol.65(2), p.163.
Matuta miersii Sakai 1976, Crabs of Japan and Adjacent Seas, p.142.

Distribution : India, Japan, Sri Lanka

Habitat : Soft sandy substrata, 30 - 85 metres deep

Remarks : Collected from the trawl catches.

FAMILY : GONEPLACIDAE

SUBFAMILY : CARCINOPLACINAE

***Eucrate* de Haan, 1835**

***Eucrate alcocki* Serene, 1971** (Plate 75a)

Eucrate alcocki Serene 1971, Researches on Crustacea, nos. 4,5, pp.71-74, figs. A-D.
Eucrate formosensis Sakai 1974, Proc. Jap. Soc. Syst. Zool., no.10, pp.10-14.

Eucrate alcocki Sakai 1976, Crabs of Japan and Adjacent Seas, p.536.

Distribution : India, Taiwan, Japan

Habitat : Inhabits the bottoms of sand or broken shells, 30 - 50 metres deep

Remarks : New record to Indian seas, collected from the trawl catches.

SUPERFAMILY : OCYPODOIDEA

FAMILY : OCYPODIDAE

SUBFAMILY : MACROPHTHALMINAE

***Macrophthalmus* Latreille, 1829**
***Macrophthalmus (Mareotis)* Barnes, 1967**
***Macrophthalmus (Mareotis) depressus* RÜppell, 1830** (Plate 75b)

Macrophthalmus depressus RÜppel 1830, Krabben Roth Meer., 24, p.19.
Macrophthalmus depressus Alcock 1900, J. Asiatic Soc. Bengal, Vol.69(3), p.380.
Macrophthalmus (Mareotis) depressus Barnes 1970, Bull. Br. Mus. Nat. Hist. (Zool.), 20(7):205-251, figs 1-10.

Distribution : Gulf of Aden, India

Habitat : Mud flats of shallow waters

Remarks : Collected from the trawl catches.

SUBFAMILY : OCYPODINAE

***Ocypode* Weber, 1795**
***Ocypode ceratophthalma* (Pallas, 1772)** (Plate 76)

Cancer ceratophthalmus Pallas 1772, Specilegia Zool., Vol.IX, p.83
Ocypode ceratophthalma Alcock 1900, J. Asiatic Soc. Bengal, Vol.69(3), p.345.
Ocypode ceratophthalma Sakai 1976, Crabs of Japan and Adjacent Seas, p.600.

Distribution : South and East Africa, Red Sea, Japan, Hawaii

Habitat : Sandy beaches of warmer regions

Remarks : Collected from the trawl catches.

SUPERFAMILY : GRAPSOIDEA

FAMILY : GRAPSIDAE

SUBFAMILY : GRAPSINAE

Grapsus Lamarck, 1801

Grapsus albolineatus Lamarck, 1818 (Plate 77a)

Grapsus albolineatus Lamarck 1818, Hist. Nat. Anim. Sans Vert., Vol.5, p.249.
Cancer strigosus Herbst 1803, Krabben Und Krebse, Vol. III, i, p.55, pl.47.
Grapsus strigosus Alcock 1900, J. Asiatic Soc. Bengal, Vol. 69(3), p.393.
Grapsus albolineatus Sakai 1976, Crabs of Japan and Adjacent seas, p.630.

Distribution : Throughout the Indo-Pacific region, East Coast of Africa, Red Sea, Japan, Australia, Hawaii

Habitat : Coral reefs and rocky beach

Remarks : Found in coral reefs at 0.5 - 1 metre depth. Abundantly seen in Appa island. Mostly seen under the dead corals in exposed reef.

Metopograpsus H. Milne Edwards

Metopograpsus messor (Forskal, 1775) (Plate 77b)

Cancer messor Forskal 1775, Descrip. Anim. in itin. Orient, p.88.
Grapsus messor H. Milne Edwards 1837, Histoire Naturelle des Crustaces, Paris, Vol.2, p.88.
Metopograpsus messor Alcock 1900, J. Asiatic Soc. Bengal, Vol.69(3), p.397.
Metopograpsus messor Sakai 1976, Crabs of Japan and Adjacent Seas, p.633.

Distribution : East Coast of Africa, Red Sea, Japan, Hawaii

Habitat : Coral reefs, stones near high tide mark

Remarks : Found in dead coral blocks of exposed reefs.

FAMILY : PLAGUSIIDAE

Plagusia Latreille, 1806
Plagusia depressa tuberculata Lamarck, 1818 (Plate 78a)

Plagusia tuberculata Lamarck 1818, Hist. Nat. Anim. Sans Vert., Vol.5, p.247.
Plagusia orientalis Stimpson 1858, Proc. Acad. Nat. Sci. Philadelphia, Vol. 10(4), p.103.
Plagusia depressa squamosa Alcock 1900, J. Asiatic. Soc. Bengal, Vol.69(3), p.437.
Plagusia depressa tuberculata Rathbun 1918, Bull. U.S. Nat. Mus., Vol.97, p.334.
Plagusia depressa tuberculata Sakai 1976, Crabs of Japan and Adjacent Seas, p.676.

Distribution : Chile, Africa, Japan, Hawaii

Habitat : Coral reefs, rocky beaches

Remarks : Found in coral reefs exposed during low tides.

Percnon Gistel, 1848
Percnon planissimum (Herbst, 1804) (Plate 78b)

Cancer planissimus Herbst 1804, Krabben Und Krebse, Vol. III, iv, p.3.
Plagusia clavimana Latreille 1806, Gen. Crust., p.34.
Plagusia serripes Lamarck 1818, Hist. Nat. Anim. Sans Vert. Crust., p.247.
Liolophus planissimus Alcock 1900, J. Asiatic Soc. Bengal, Vol.69(3), p.439.
Percnon planissimum Tesch 1918, Siboga Exped., Monogr., 39c, Leiden, p.130.
Percnon planissimum Sakai 1976, Crabs of Japan and Adjacent Seas, p.676.

Distribution : Red Sea,India, East Coast of Africa, Japan, Hawaii

Habitat : Rocky beaches and coral reefs

Remarks : Mostly seen beneath the dead corals of exposed reefs. Abundantly seen in Krusadai and Manauli islands.

GLOSSARY

Abdomen	:	segmented hindmost part of the body flexed forward under thorax consisting of six somites and telson
Aereolated	:	bronzy
Afferent branchial channels	:	openings through which water passes to branchiae, usually situated in front of chelipeds and behind pterygostomian regions, except in some of Oxystomata, where they open anteriorly, at sides of endostome
Ambulatory	:	capable of walking
Antennae or 2nd pair of antennae	:	second pair of appendages situated between antennules and orbits
Antennal flagellum	:	narrow terminal part of the 2nd antenna composed of several segments
Antennal peduncle	:	five basal segments of 2nd antenna; first segment usually fused to epistome, second and third segments fused together
Antennal spine	:	a spine on frontal margin of carapace dorsal to antennae
Antennules or 1st pair of antennae	:	first pair of appendages situated close together under front on either side of median line
Antennular pits	:	cavities into which antennules may be folded
Antero-lateral margin	:	antero-lateral border of carapace
Antero-lateral teeth	:	teeth on antero-lateral margin, postorbital tooth included
Antero-orbital spine	:	spine at postero-lateral corner of supraorbital eave
Arm	:	merus of cheliped
Basal antennal article	:	fused second and third segments of 2nd antennae

Basis	:	second segment of a pereiopod or maxilliped counted from body, or sixth segment counted from distal end, immovably united with ischium
Branchial region	:	large paired lateral areas on carapace behind cervical groove
Buccal cavern	:	cavity or area on ventral surface of body in which mouth parts situated, bounded anteriorly by epistome, laterally by pterygostomian regions and posteriorly by thoracic sternum
Buccal cavity or mouth-field	:	cavity or area on ventral surface of body in which mouth parts situated, bounded anteriorly by epistome, laterally by pterygostomian regions and posteriorly by thoracic sternum
Callosity	:	a round polished tubercle of a greyish-white colour on thoracic sternum immediately in front of apex of abdomen
Carapace	:	exoskeleton which covers dorsal surface and lateral portions of ventral surface of cephalothorax
Cardiac region	:	median area on carapace behind cervical groove
Carinated	:	keeled
Carpus	:	fifth segment of a pereiopod or maxilliped, counted from body, or third segment counted from distal end
Cephalothorax	:	fused head and thorax
Cervical groove	:	complex groove running across dorsal surface of carapace, being transverse at middle and turning obliquely forward on each side to lateral margins, it separates hepatic and gastric regions from branchial and cardiac regions
Chela, claw or hand	:	two last segments of a cheliped, dactylus being movable finger

Cheliped	:	first pair of pereiopods or ninth pair of appendages, usually stouter than other pereiopods, two last segments forming a claw
Clypeiform	:	shield like expansion
Concealing	:	from being seen or known about
Coxa	:	first segment of a pereiopod or maxilliped, counted from body
Crenated	:	having a notched or scalloped edge
Cressorial	:	adapted for walking
Cristiform	:	crested / a ridge or fold resembling a crest
Dactylus	:	seventh or terminal segment of a pereiopod or maxilliped, counted from body
Deflexed	:	turn from its direction of movement
Dentiform	:	having a shape of teeth
Dilated	:	expanded and flattened
Discoid	:	circular
Downy	:	a soft covering of fluffy hair
Efferent branchial channels	:	channels through which water passes from branchiae, they open at sides of endostome except in Oxystomata where they open at middle of endostome
Elliptical	:	regular oval
Emarginate	:	having a margin that is notched or slightly forked
Endopod or endopodite	:	inner branch of a biramous body appendage
Endostome	:	skeletal area posterior to epistome forming roof of buccal cavity

Enstomial canal	:	comb form meaning a 'sword'
Epistome	:	transverse plate forming anterior border of buccal cavity; lateral sides fused with carapace; mid-anteriorly plate extends forward in a slender process, which is usually fused with front
Eve	:	decline or end
Excretory glands	:	open on first segment of antennae
Exognath	:	outside or beyond exoskeleton
Exopod or expodite	:	outer branch of a biramous body appendage, suppressed in all pereiopods
Filiform	:	thread like / strung on a thread
Fingers	:	scissor-like part of claw of chelipeds, movable finger being dactylus, immovable or fixed finger being terminal part of propodus
Fossets	:	pipe like structure
Front or frontal region	:	foremost median area on carapace between orbital regions
Frontal teeth	:	teeth on frontal margin exclusive of inner orbital teeth
Gastric region	:	large median area on carapace anterior to cervical groove, divisible into several subregions, bounded laterally by hepatic regions, anteriorly by front and orbital regions
Gressorial	:	walking
Glossy	:	smooth and shining, high by polished
Hand	:	***see*** chela
Hepatic region	:	small antero-lateral area on carapace anterior to branchial regions Inner suborbital tooth : see infraorbital lobe

Infraorbital lobe, spine or tooth	:	innermost lobe, spine or tooth on ventral margin of orbit
Inner orbital tooth	:	innermost tooth on dorsal margin of orbit
Interantennular septum	:	plate which separates two antennular cavities from each other, formed by union of a slender anterior process of the epistome and front
Interantennular spine	:	a median downgrowth of front on anterior part of interantennular septum
Intercalary spine	:	a spine on dorsal margin of orbit lying between postorbital spine and supraorbital eave
Intestinal region	:	small hindmost median area on carapace behind cardiac region
Ischium	:	third segment of a pereiopod or maxilliped, counted from body, or fifth segment counted from distal end
Jagged	:	habitual intoxication
Linea homolica	:	a groove running from behind and forward on either side of carapace
Lobe	:	any blunt prominente arising from a surface
Lobulated	:	having a lobe or lobulated
Lumpy	:	protuberance / swelling
Mandible	:	third pair of appendages, or first pair of mouth parts
Manus or palm	:	proximal part of propodus of cheliped
Maxillipeds	:	sixth to eighth pair of appendages, fourth to sixth or three posteriormost pairs of mouth parts
Maxillae	:	fourth and fifth pairs of appendages, or second and third pairs of mouth parts

Merus	:	fourth segment of a pereiopod or maxilliped counted from body, and also fourth segment counted from distal end
Mouth-field	:	***see*** buccal cavity
Natatory	:	adapted or used for swimming
Nodose	:	having nodes, knots or swelling
Nodular	:	occurring in form of small rounded lumps
Orbit	:	eye cavities
Orbital hiatus	:	gap in ventral margin of orbit at its inner angle
Orbital region	:	narrow area bordering dorsal margin of orbit; not always distinguishable
Oblique	:	not horizontal or vertical, sloping, slanting
Oval	:	shaped like an egg
Palm	:	***see*** manus
Palm	:	three inches, a planter surface
Palpus or palp	:	distal two or three segments of maxillipeds following merus
Paxilliform	:	An osculatory, truce, peace
Pearly	:	like pearl
Pectinated	:	a comb like structure
Penultimate segment	:	next to and before last one
Pereiopods	:	ninth to thirteenth pair of appendages, or chelipeds and four pairs of walking legs

Pleopods	:	fourteenth to eighteenth pair of appendages on first to fifth abdominal somites
Portuberance	:	bulge or swelling
Postero-lateral margin	:	postero-lateral border of carapace
Postoculur	:	behind
Postorbital spine or tooth	:	outermost or hindmost spine or tooth on orbital margin, also referred to as first antero-lateral tooth
Pouch	:	area of baggy loose skin
Prehensile	:	to grasp and hold things
Preorbital spine	:	a spine on anterior part of supraorbital eave (when eave is developed in its most prominent form
Propodus	:	sixth segment of a pereiopod or maxilliped, counted from body, or second segment counted from distal end
Pterygostomian region	:	area on ventral surface of the carapace on either side of buccal cavity
Pubescent	:	hairy
Punctate	:	dotted
Pyriform	:	pear shaped
Quadridentate	:	having four parts
Quadrilateral	:	four sided, a group of four fortresses, a plane figure bounded by four straight lines
Ramose	:	branched
Repose	:	calm / settled
Rhomboidal	:	like a rhombus/nearly square with petiole at one of acute angles

Rhomboidal gap	:	lozenge-shapped or whirling (four sided figure in shape of diamond)
Rostrum	:	a median outgrowth anteriorly on carapace forming a single or two distinct spines or horns
Rugose	:	wrinkled, covered with sunken lines
Sausage	:	length of an object
Scabrous	:	rough with projecting points
Segment	:	separate rings of appendages
Sinuate	:	bent / having a wavy edge or margin
Somite	:	a body segment
Squamiform	:	like a scale
Squarish	:	approximately square
Statocyst	:	a balance organ lying in basal segment of antennules
Subacute	:	slightly or moderately severe
Subbranchial region	:	paired areas on ventral surface of carapace, below branchial regions
Subglobose	:	slightly or moderately globose
Subhepatic region	:	paired area on ventral surface below hepatic regions
Sublaminar	:	slightly or moderately plate like / leaf like
Suborbital region	:	narrow area bordering ventral margin of orbit
Supraorbital eave	:	lateral part of orbital region above eye-stalks projecting laterally to form an eave

Supraorbital spine	:	single spine on supraorbital eave, when eave is a very narrow structure leaving eye-stalk completely visible in dorsal view
Telson	:	unpaired appendix on hindmost abdominal somite
Thoracic sternum	:	ventral, segmented wall of thorax with all sternites fused
Thorax	:	seventh to fourteenth somites, in Brachyura always fused with six head somites
Tricuspid	:	having three cusps or points as a tooth
Trigonous	:	triangular in section
Tubercliform	:	tube shaped
Urinal article	:	opening of excretory organ, situated on first segment of antennae
Uropod	:	last pair of abdominal appendages on sixth abdominal somite, almost always lacking in adult Brachyura few species have vestiges of uropods
Walking legs	:	second to fifth pereiopods
Wart	:	a protuberant growth which occurs singly or in groups on skin surface
Wrist	:	carpus of cheliped, joint on which hand moves

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FIGURE

AND

PLATES

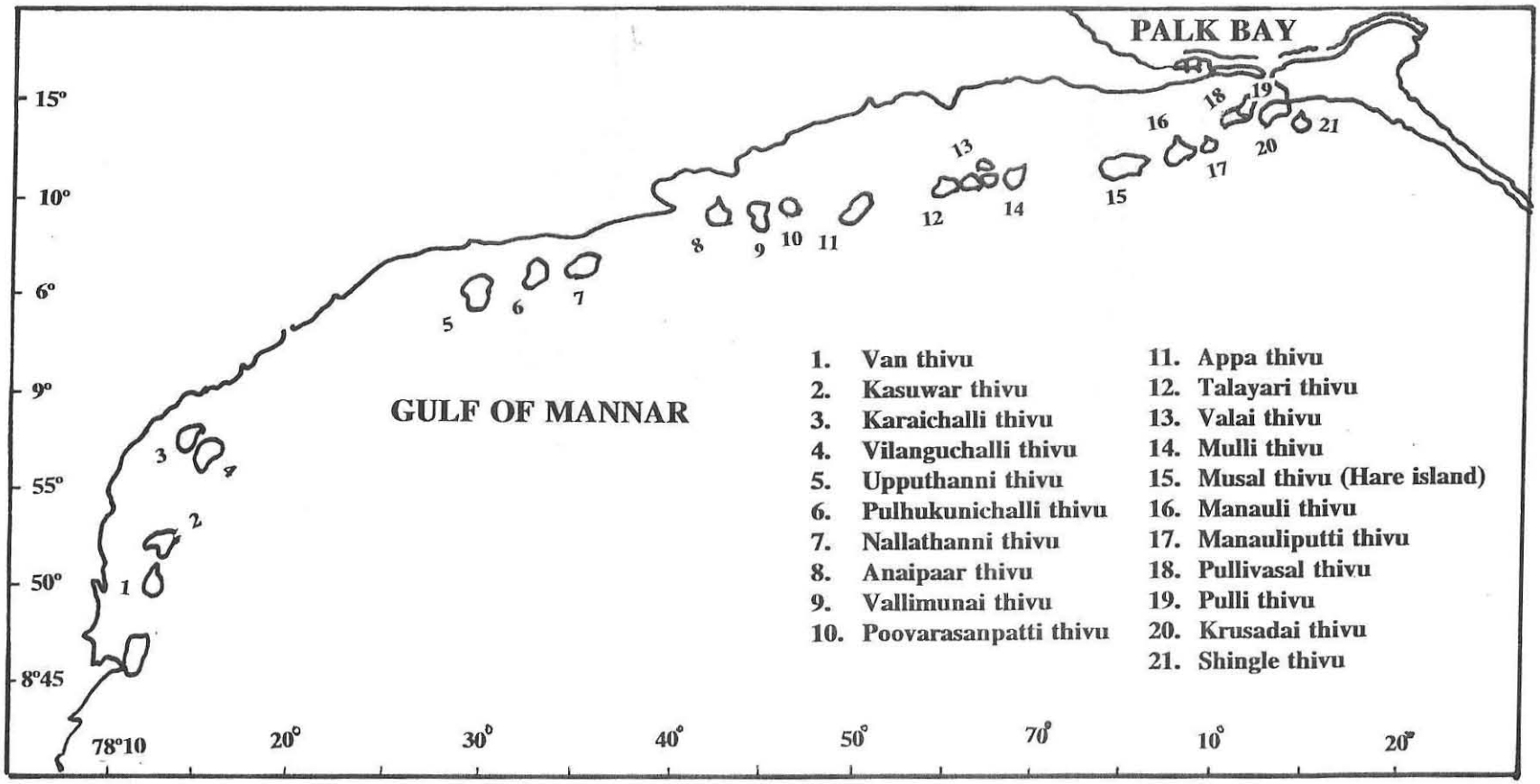
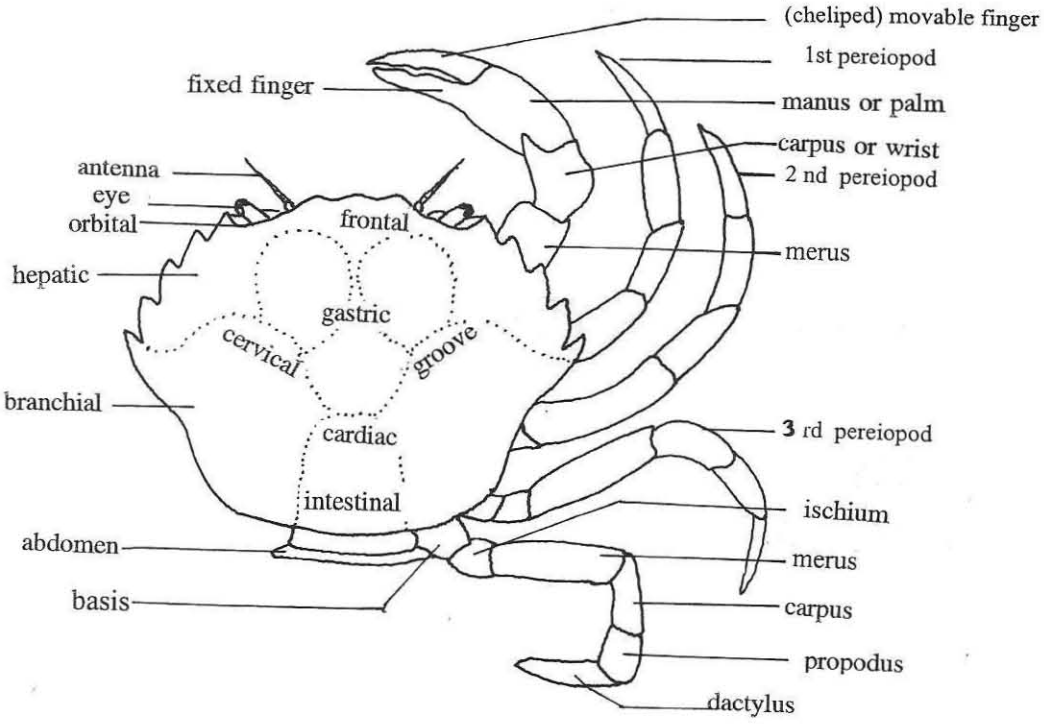
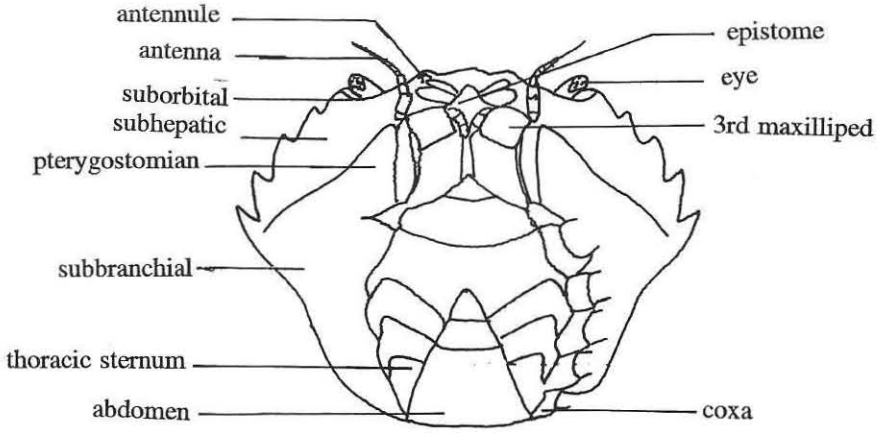


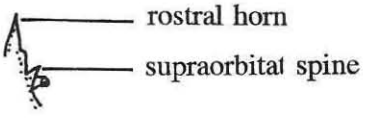
Fig.1 Map showing Gulf of Mannar islands

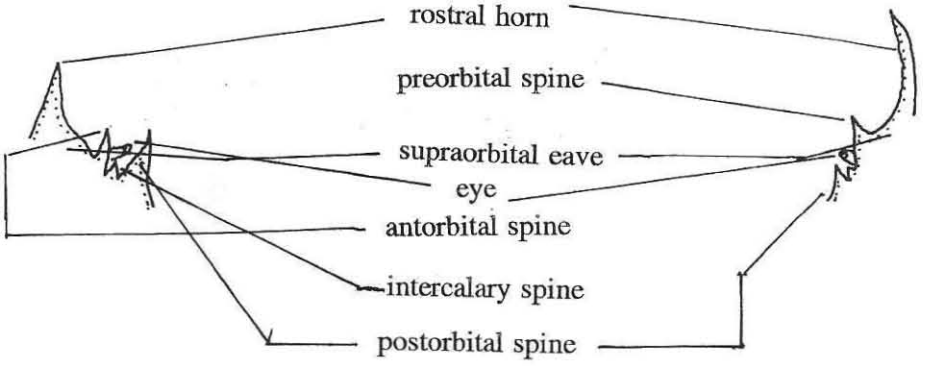


Schematic drawing of a crab (dorsal view)

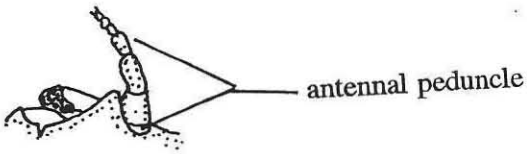


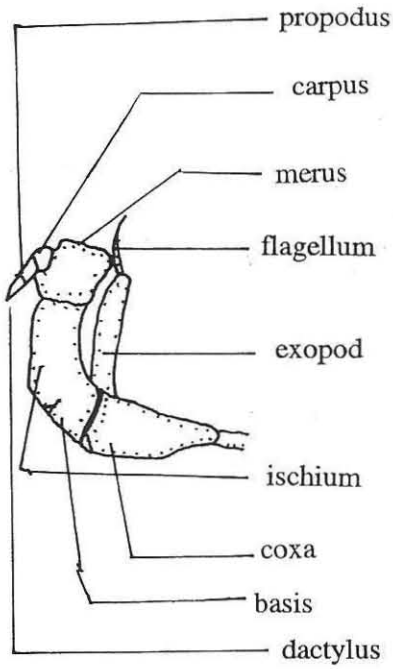
Schematic drawing of a crab (ventral view)



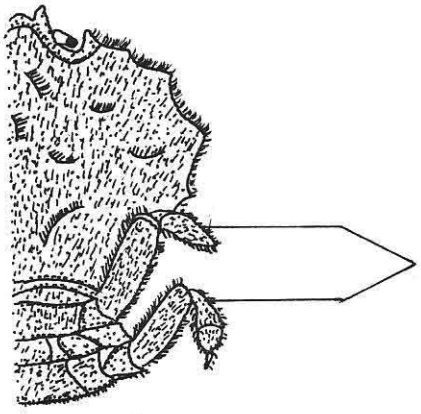


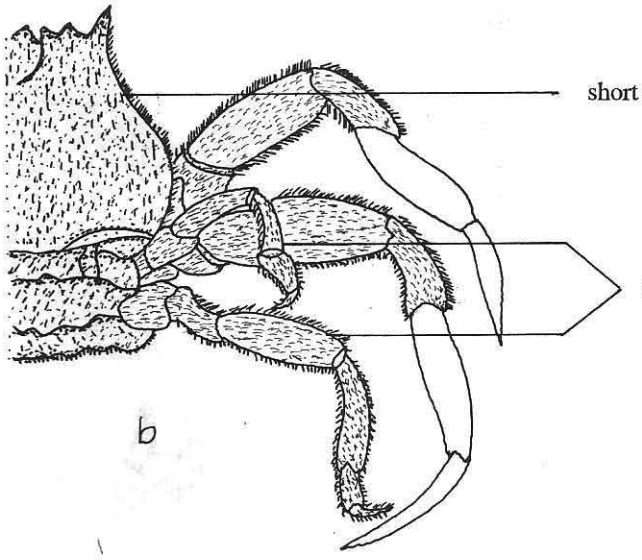
Orbital region of the crab

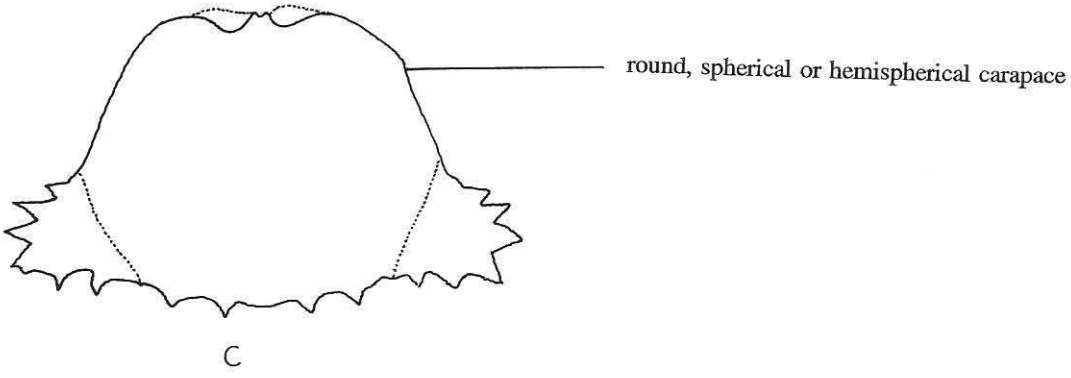




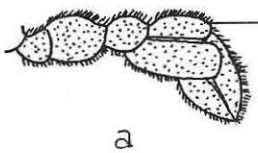
3th maxilliped of the crab





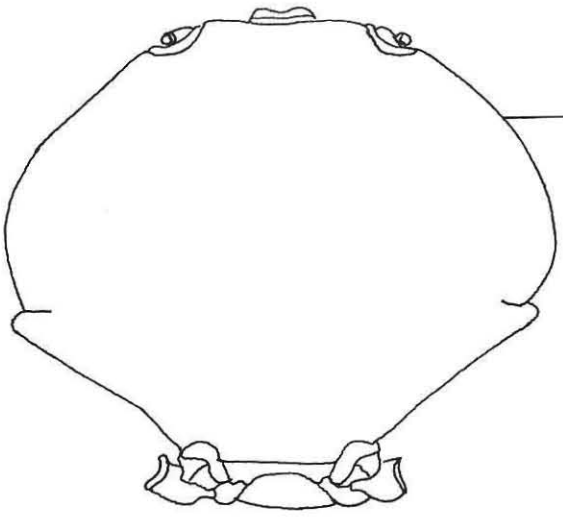


Figurative keys



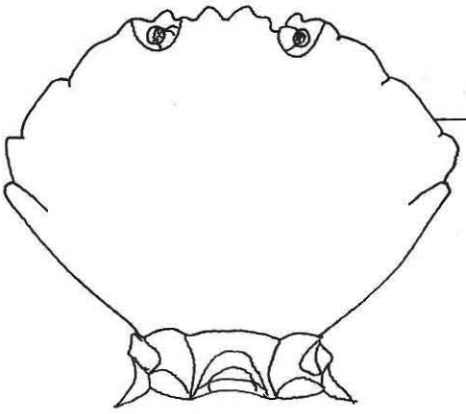
flattened last leg adapted for swimming

a



broad and transversely oval carapace

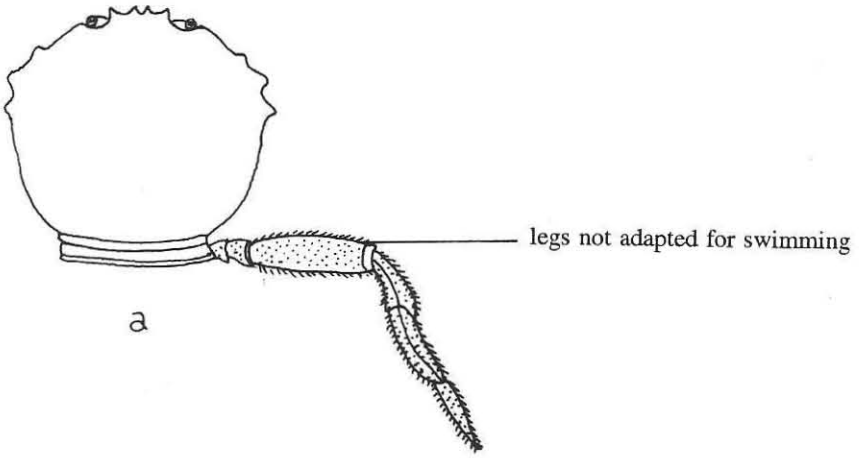
b



not markedly convex dorsal surface of carapace

c

Figurative keys



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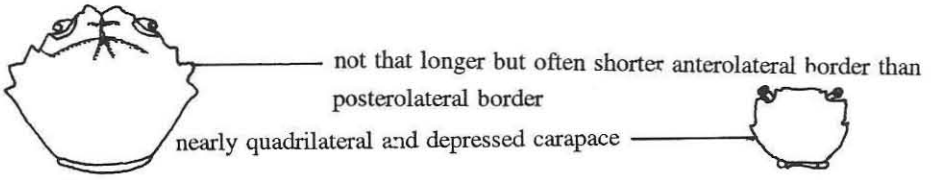

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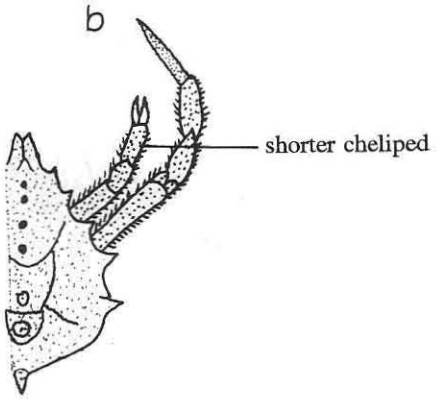
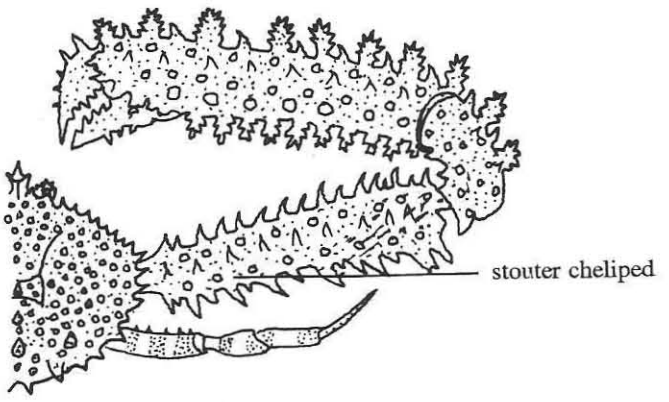
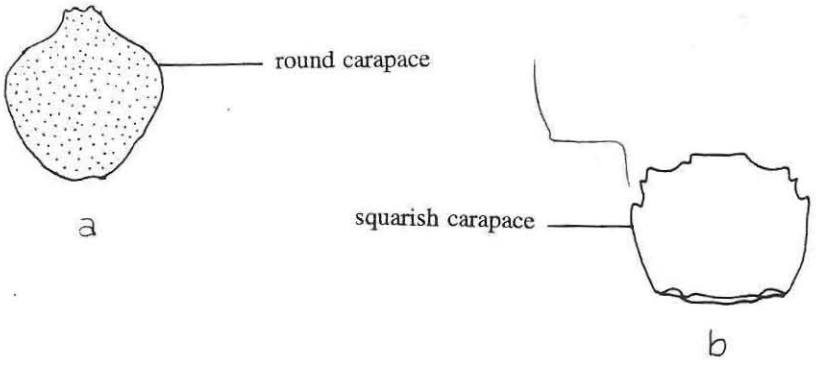


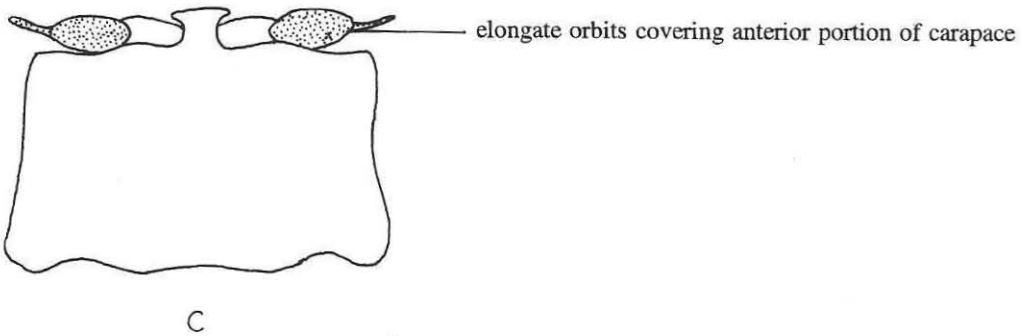
d

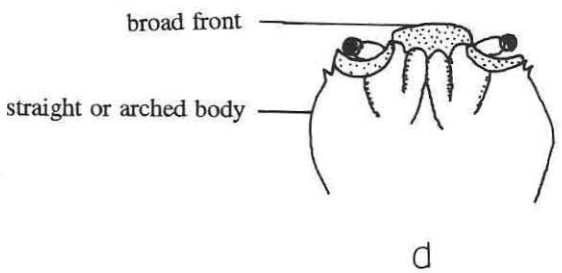


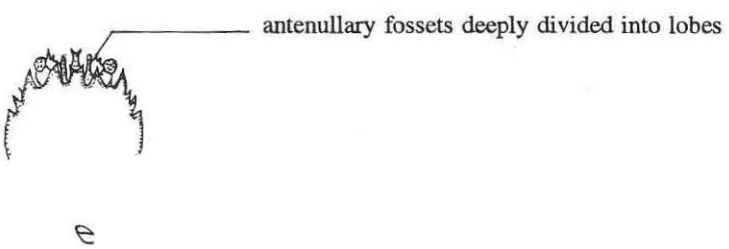
e

Figurative keys









Figurative keys

cheliped with epipodite on coxa

a

sternal sulcus of female ending apart

b

dactylus as long as propodus in anterior ambulatory leg

c

shorter fourth pair of leg

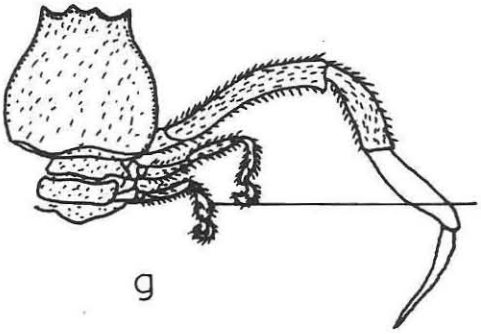
d

single tooth at anterolateral border of carapace

anterior pleopod of male with shaft regularly tappering towards apical chitinous process

e

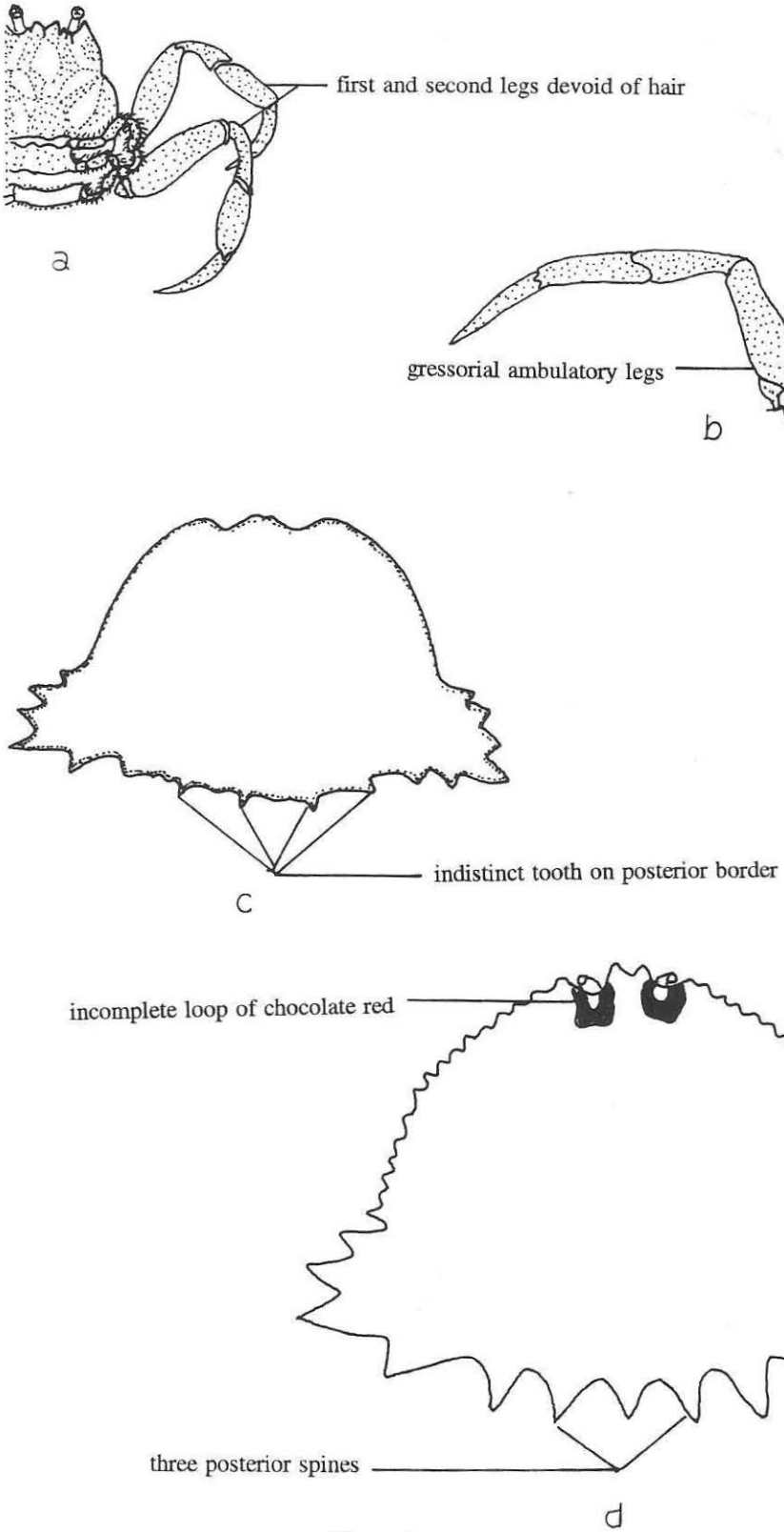
f



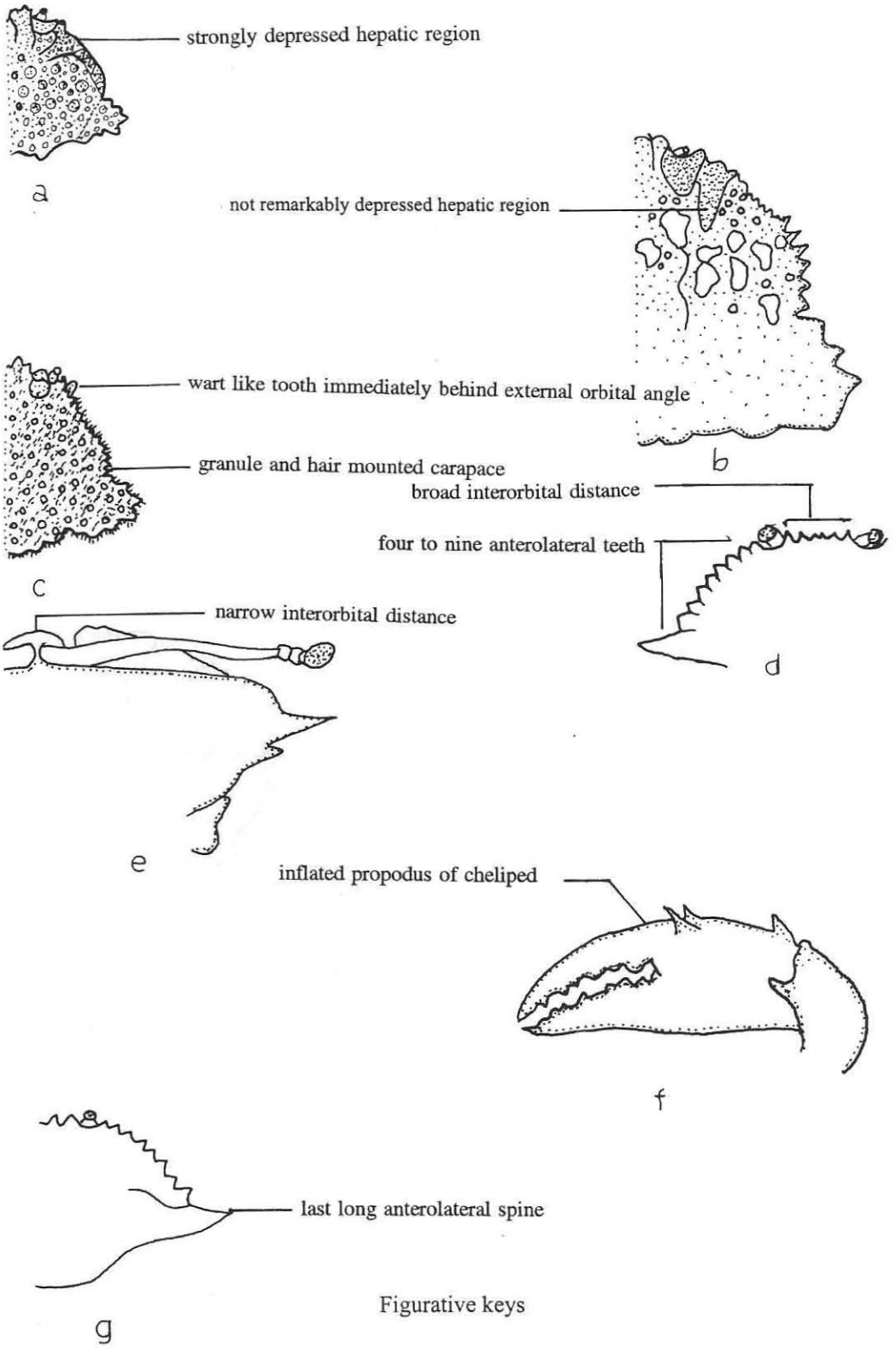
fourth pair of true legs less than half of second leg

g

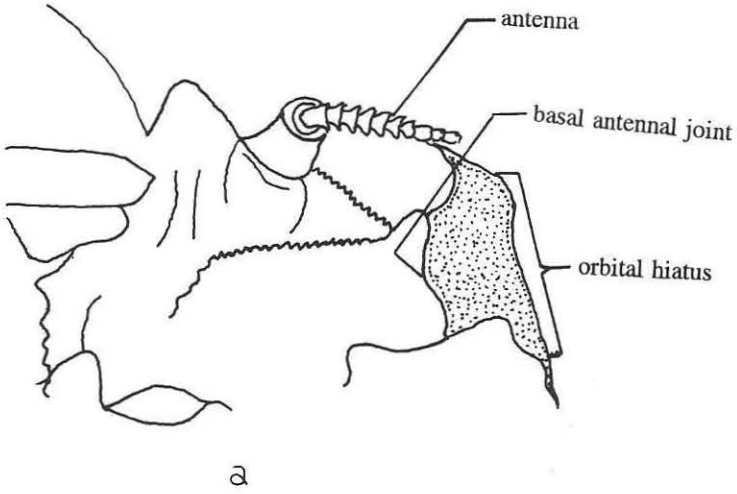
Figurative keys



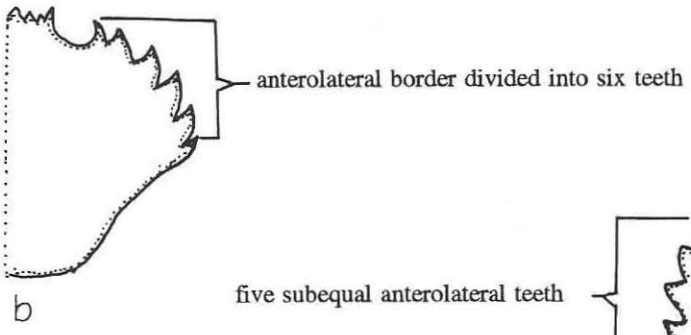
Figurative keys



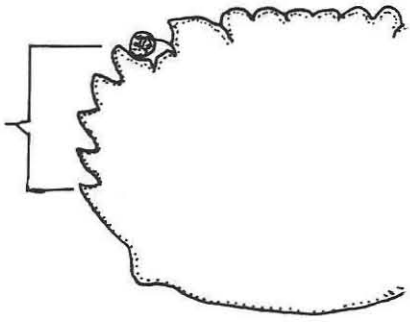
Figurative keys



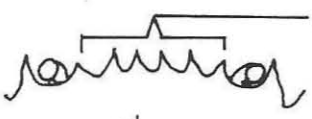
a



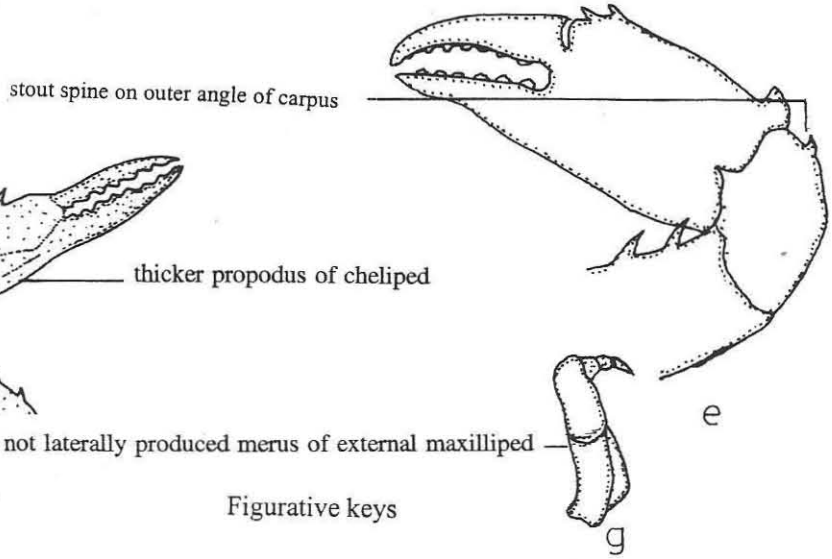
b



c



d

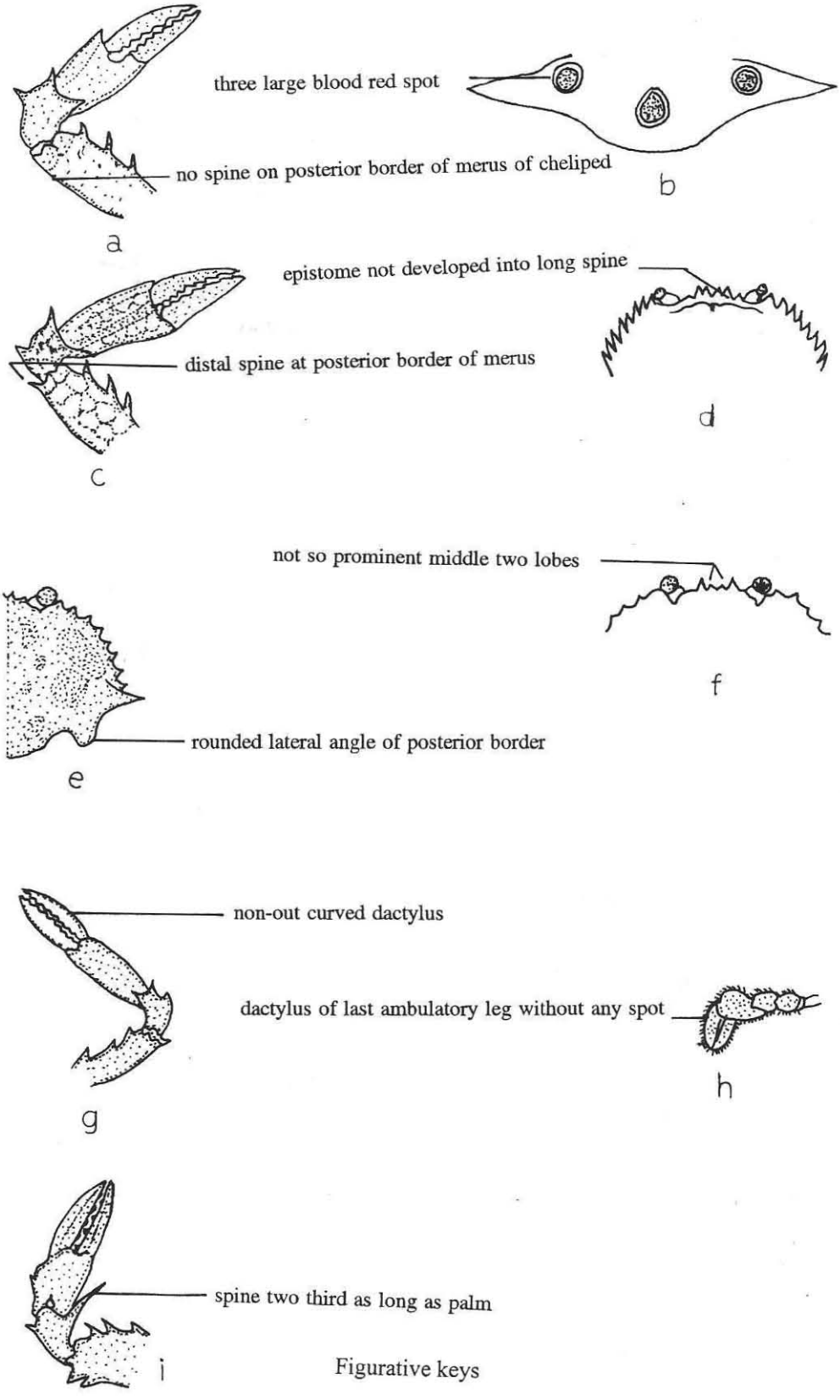


e

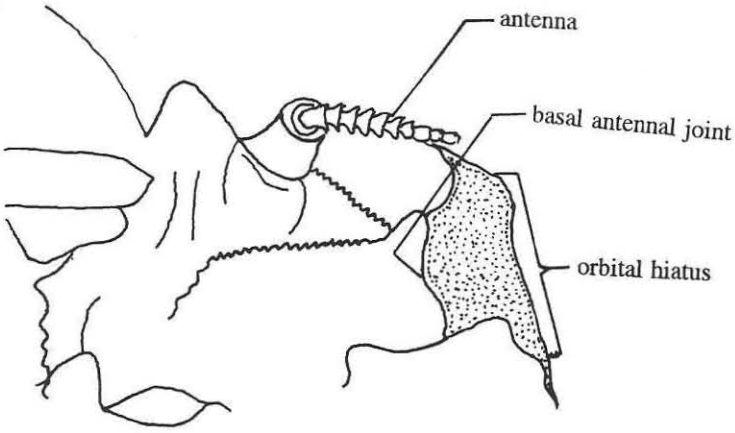
f

g

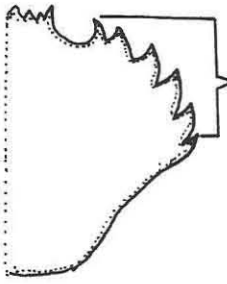
Figurative keys



Figurative keys

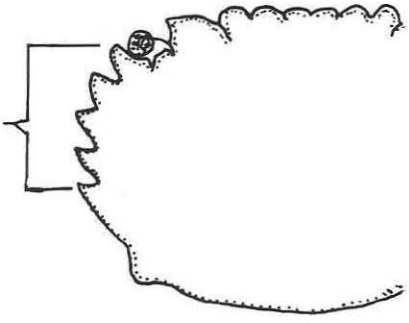


a



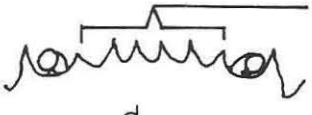
b

five subequal anterolateral teeth



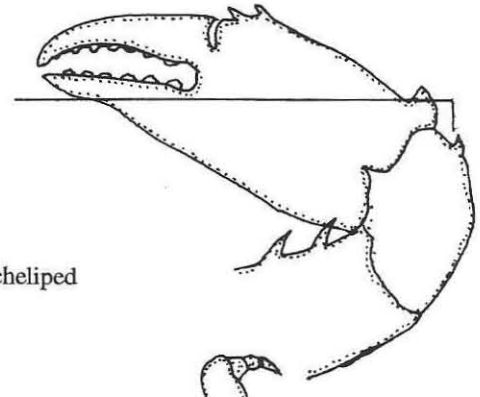
c

pointed frontal lobe



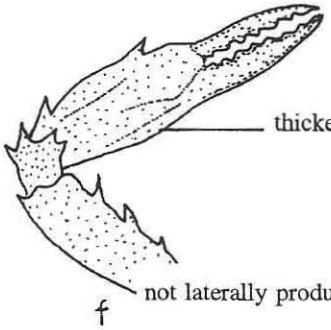
d

stout spine on outer angle of carpus



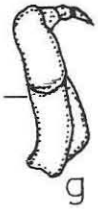
e

thicker propodus of cheliped



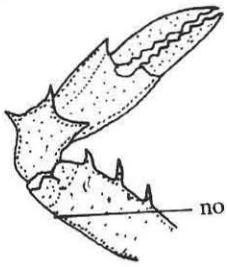
f

not laterally produced merus of external maxilliped



g

Figurative keys



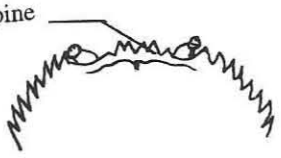
three large blood red spot

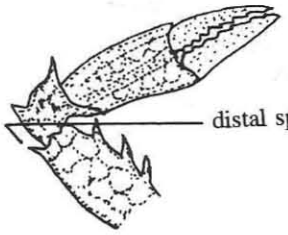
no spine on posterior border of merus of cheliped

b

a

epistome not developed into long spine





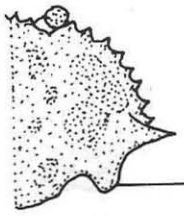
distal spine at posterior border of merus

d

c

not so prominent middle two lobes

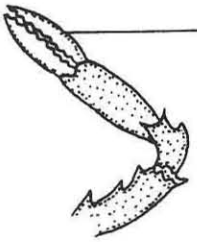
f



rounded lateral angle of posterior border

e

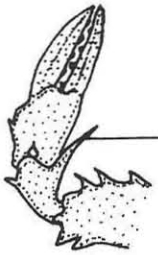
non-out curved dactylus



dactylus of last ambulatory leg without any spot

h

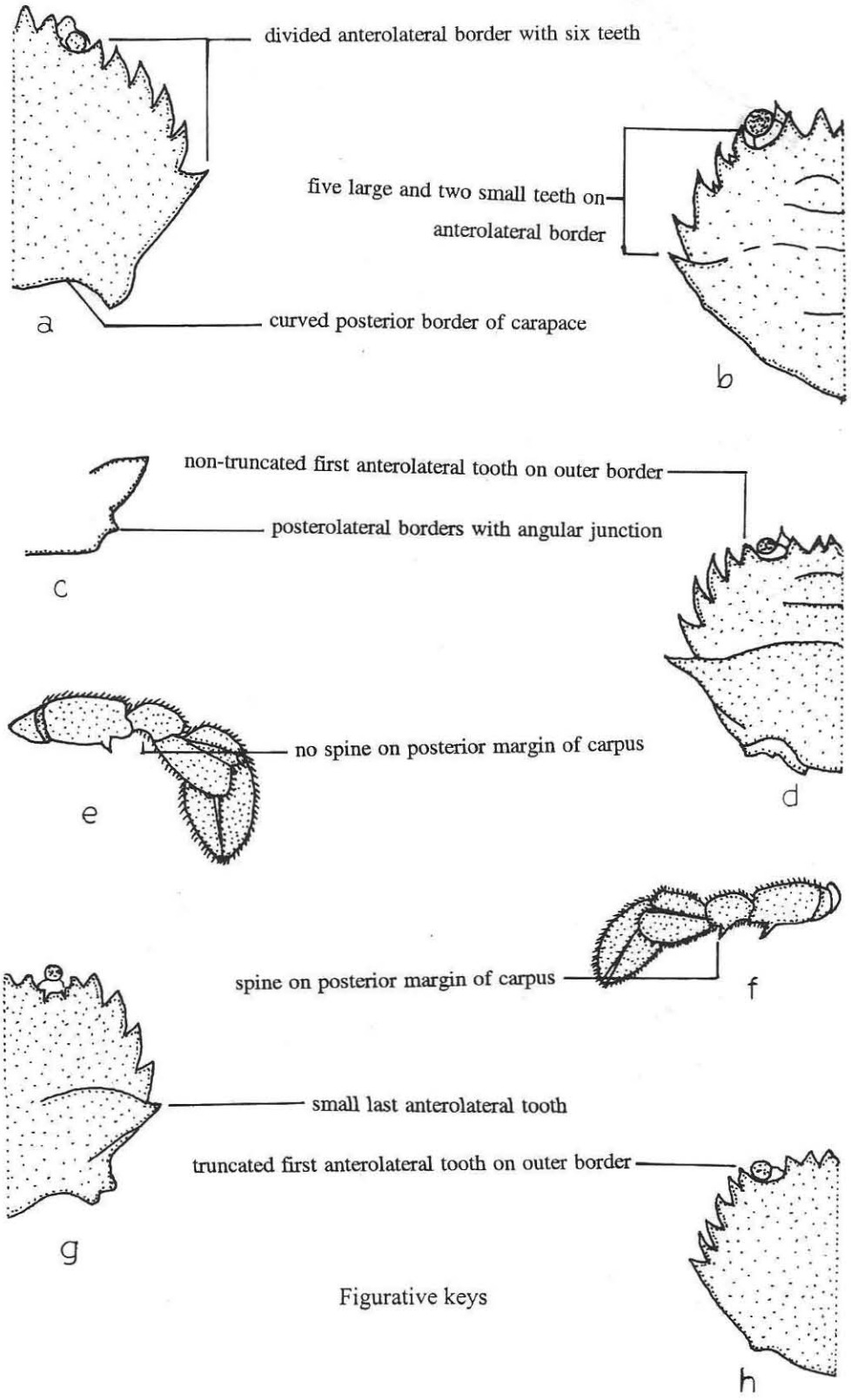
g



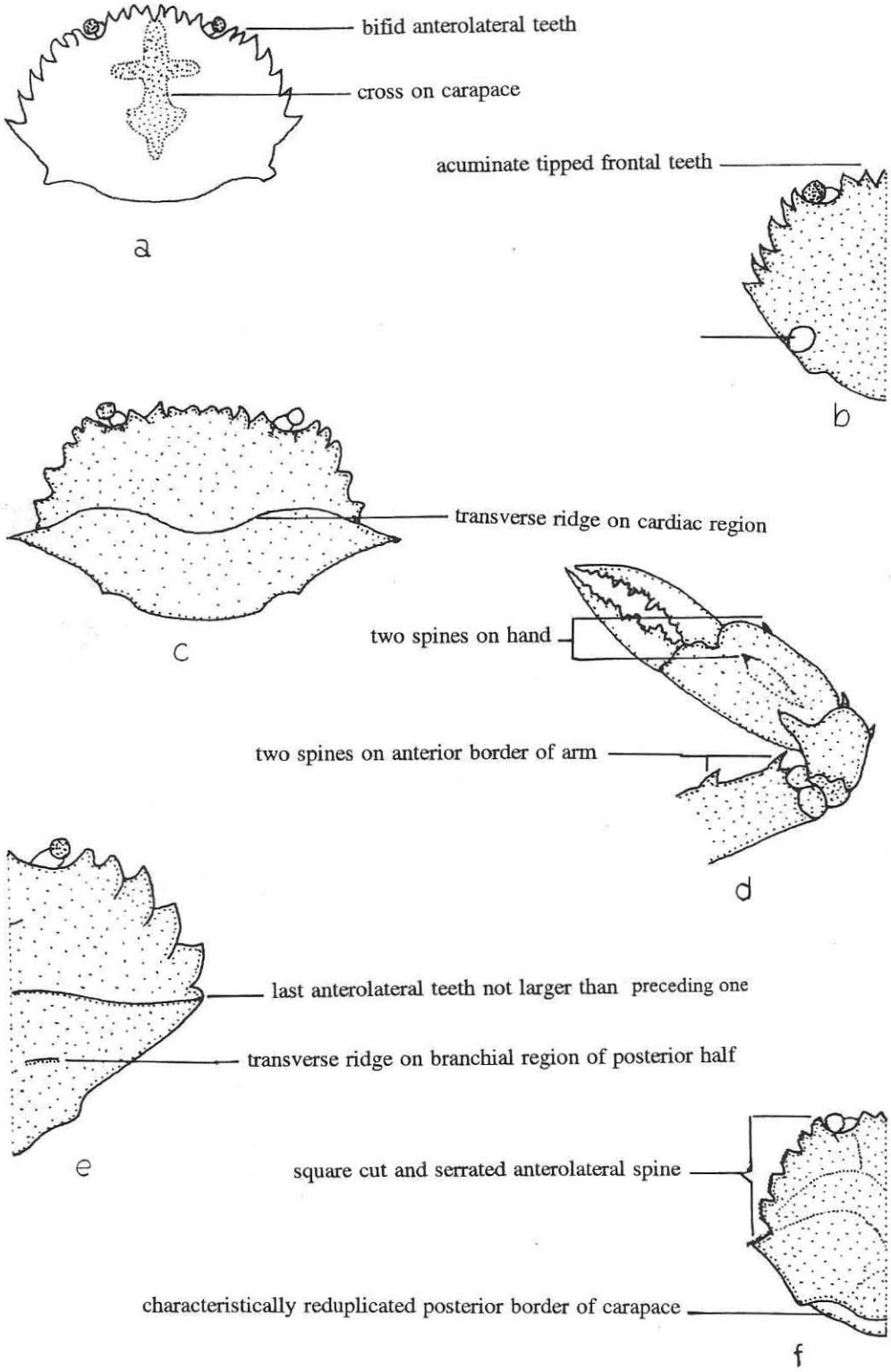
spine two third as long as palm

i

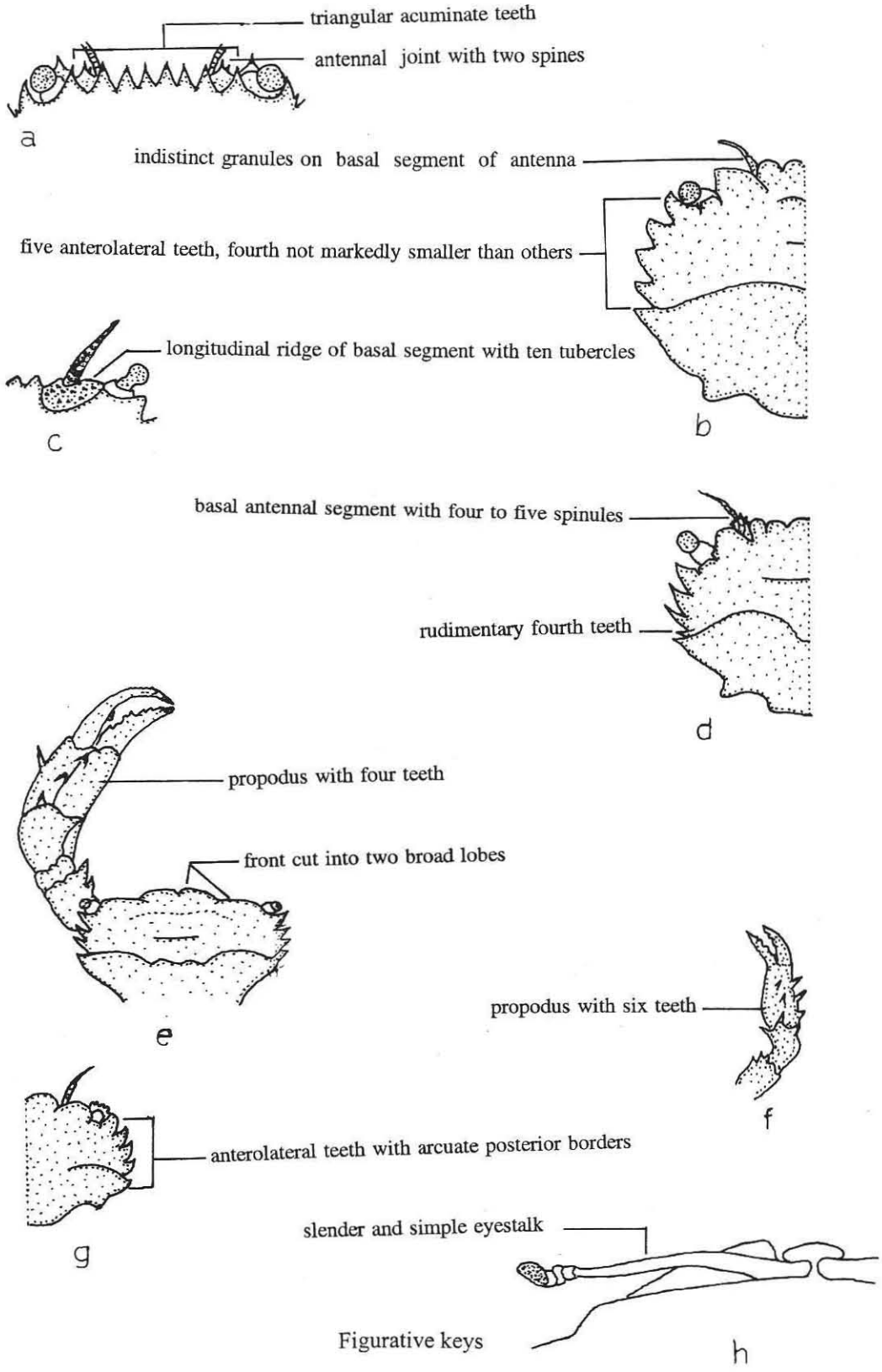
Figurative keys



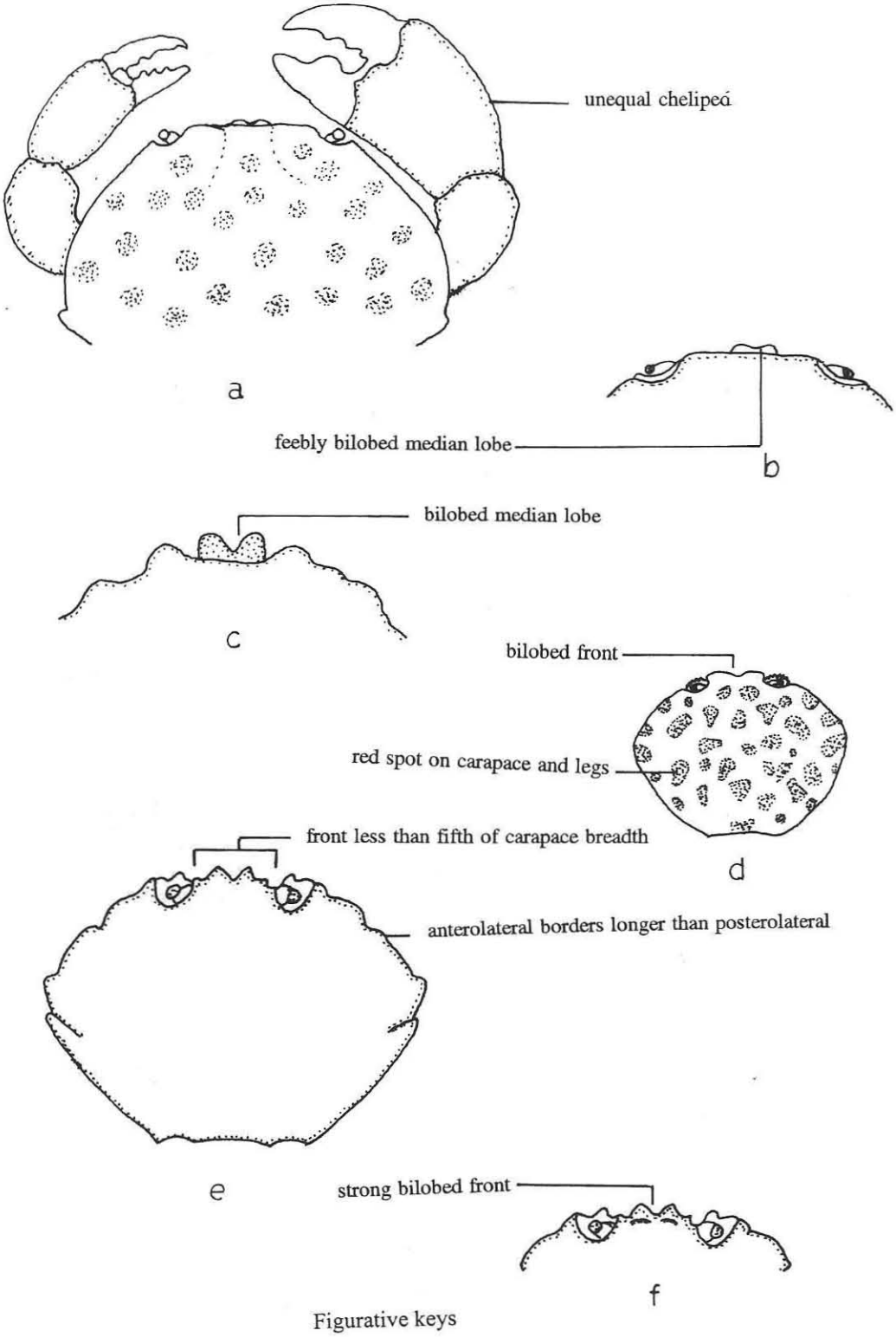
Figurative keys



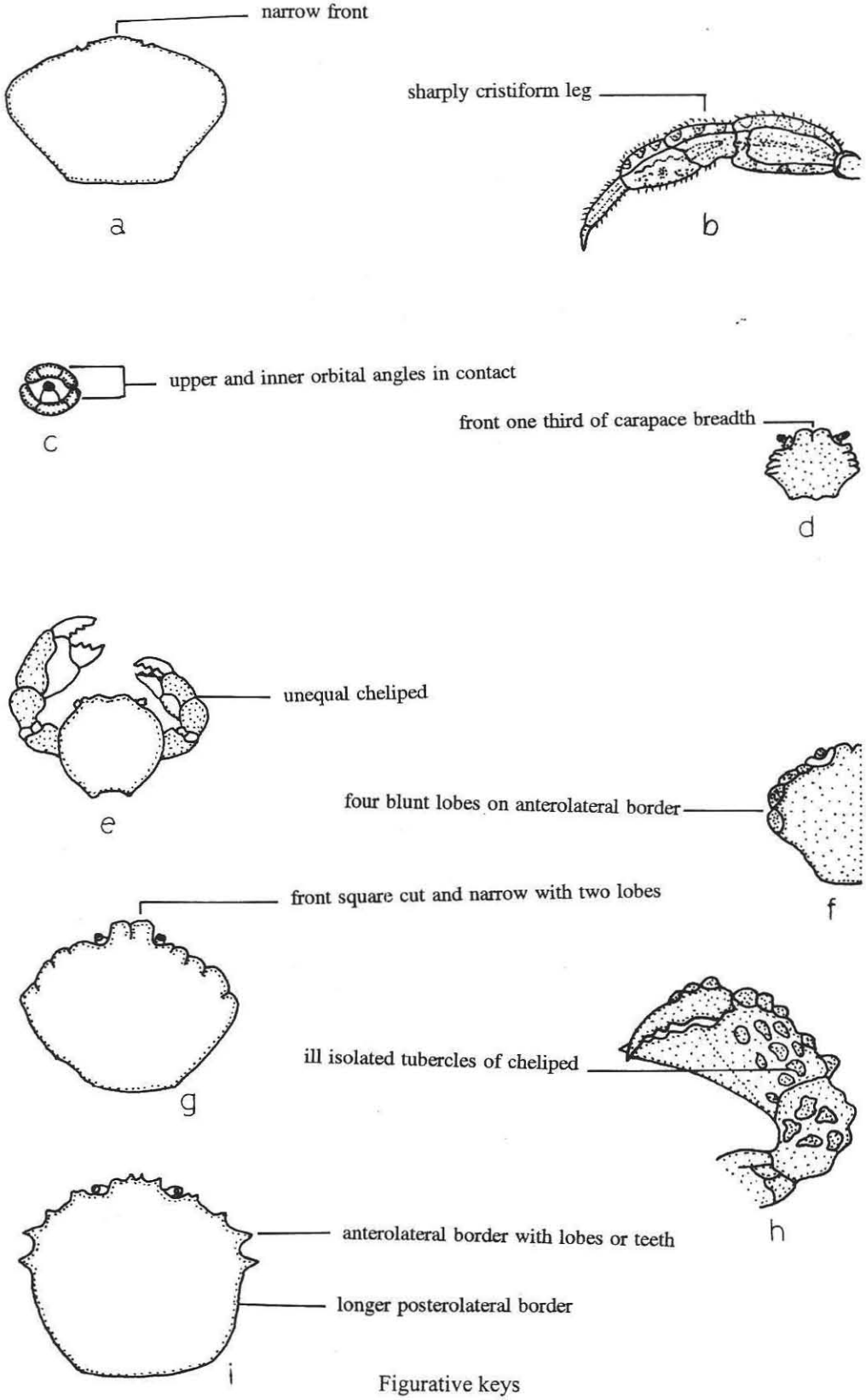
Figurative keys



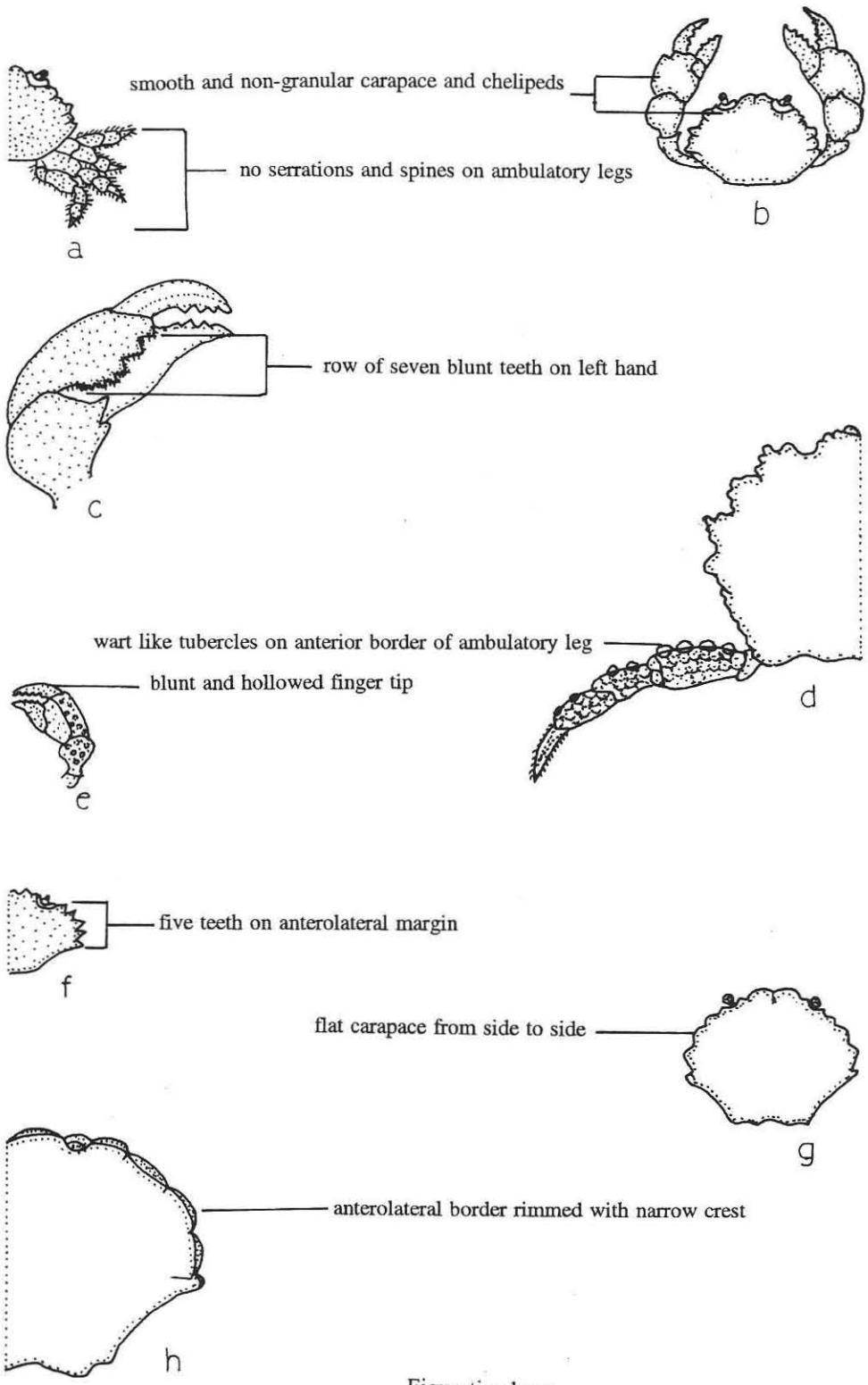
Figurative keys



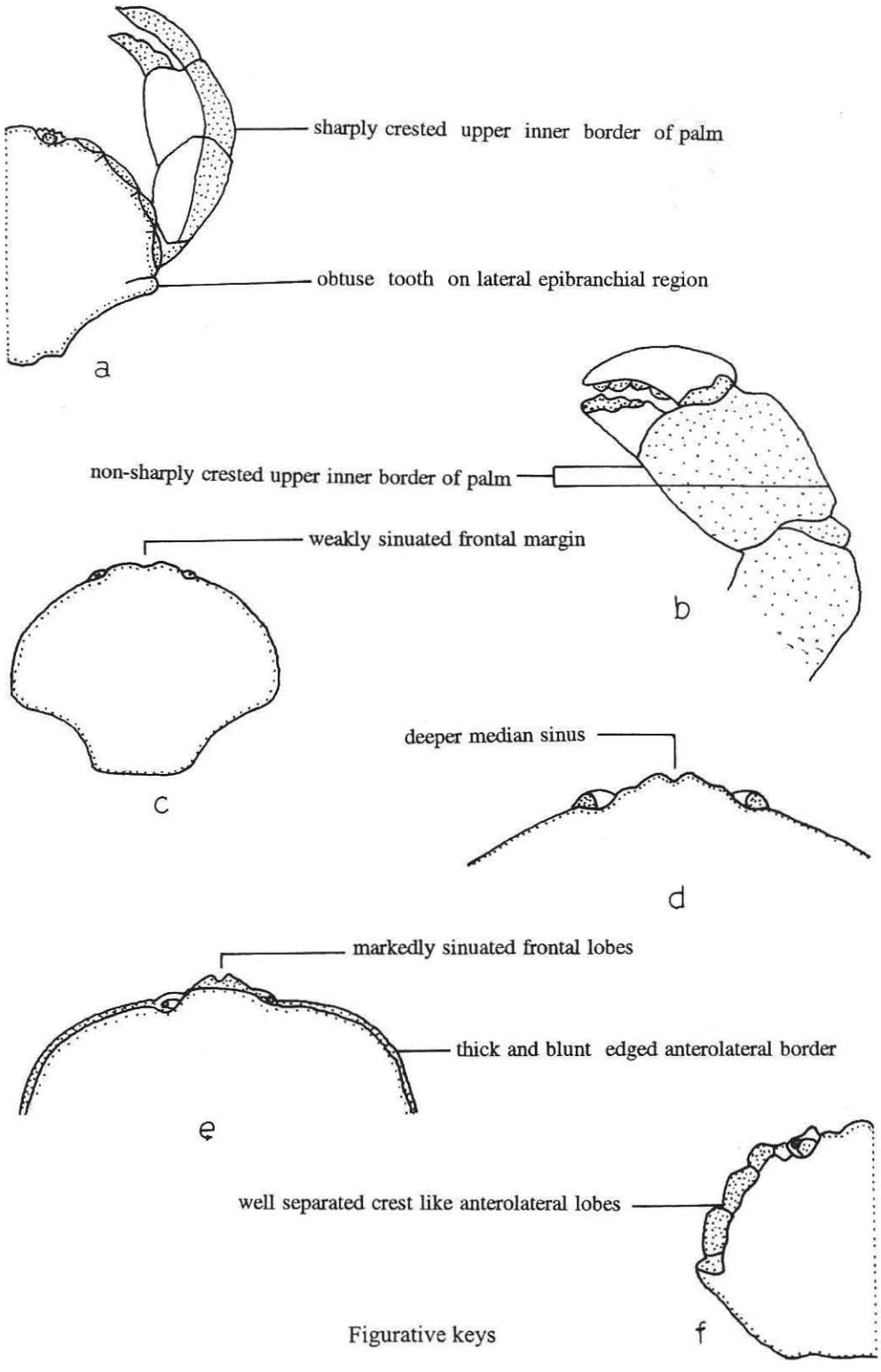
Figurative keys



Figurative keys



Figurative keys



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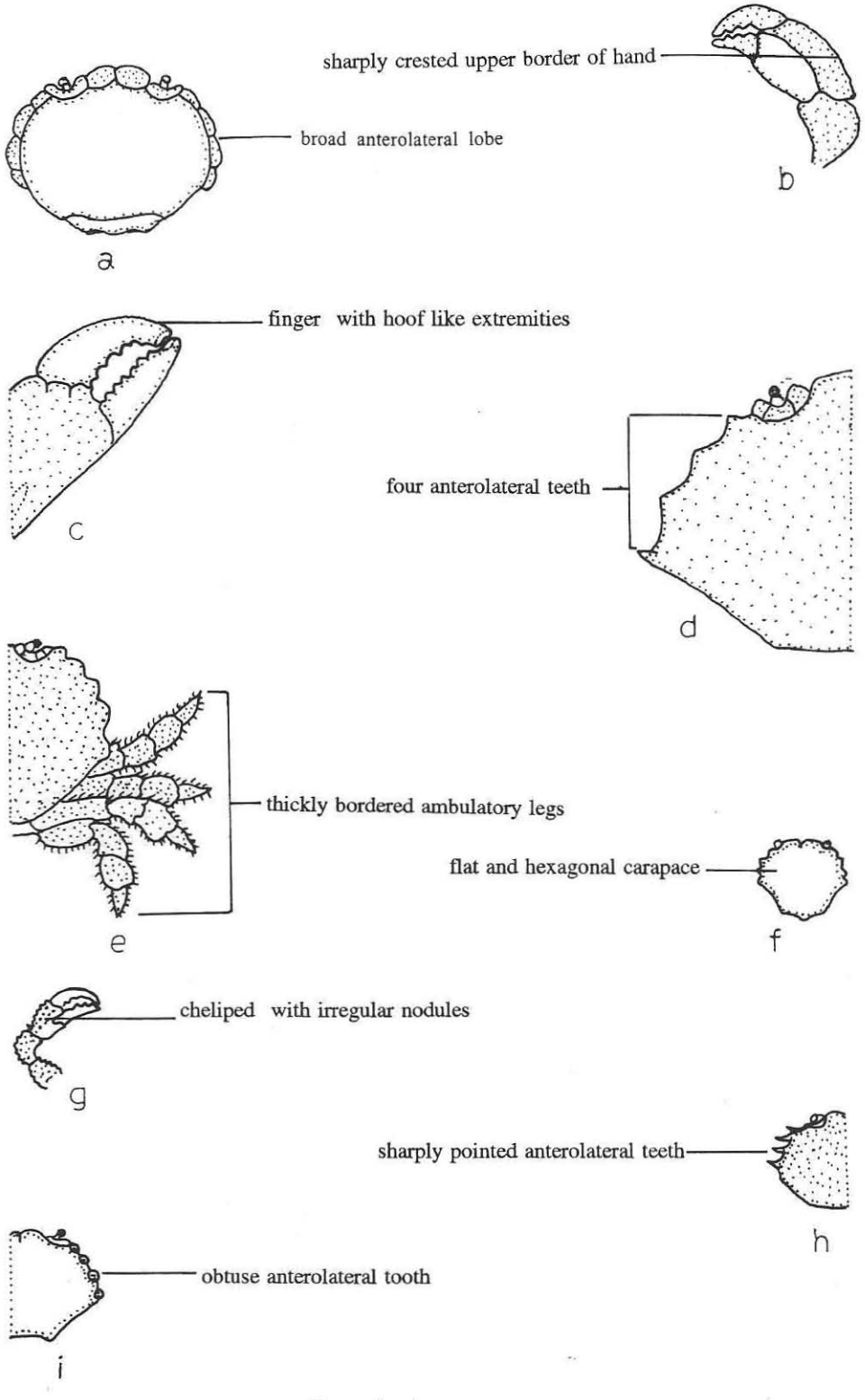

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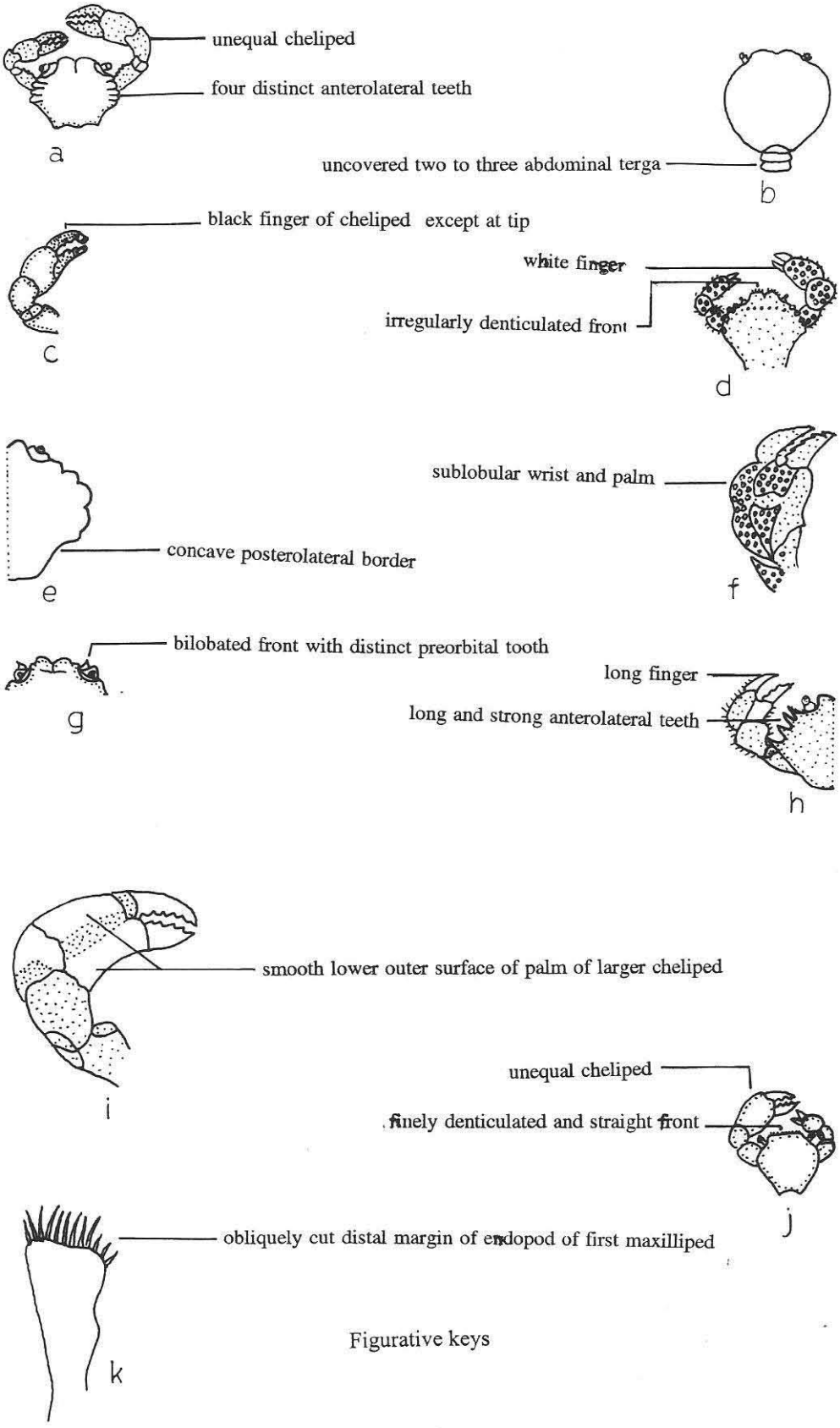
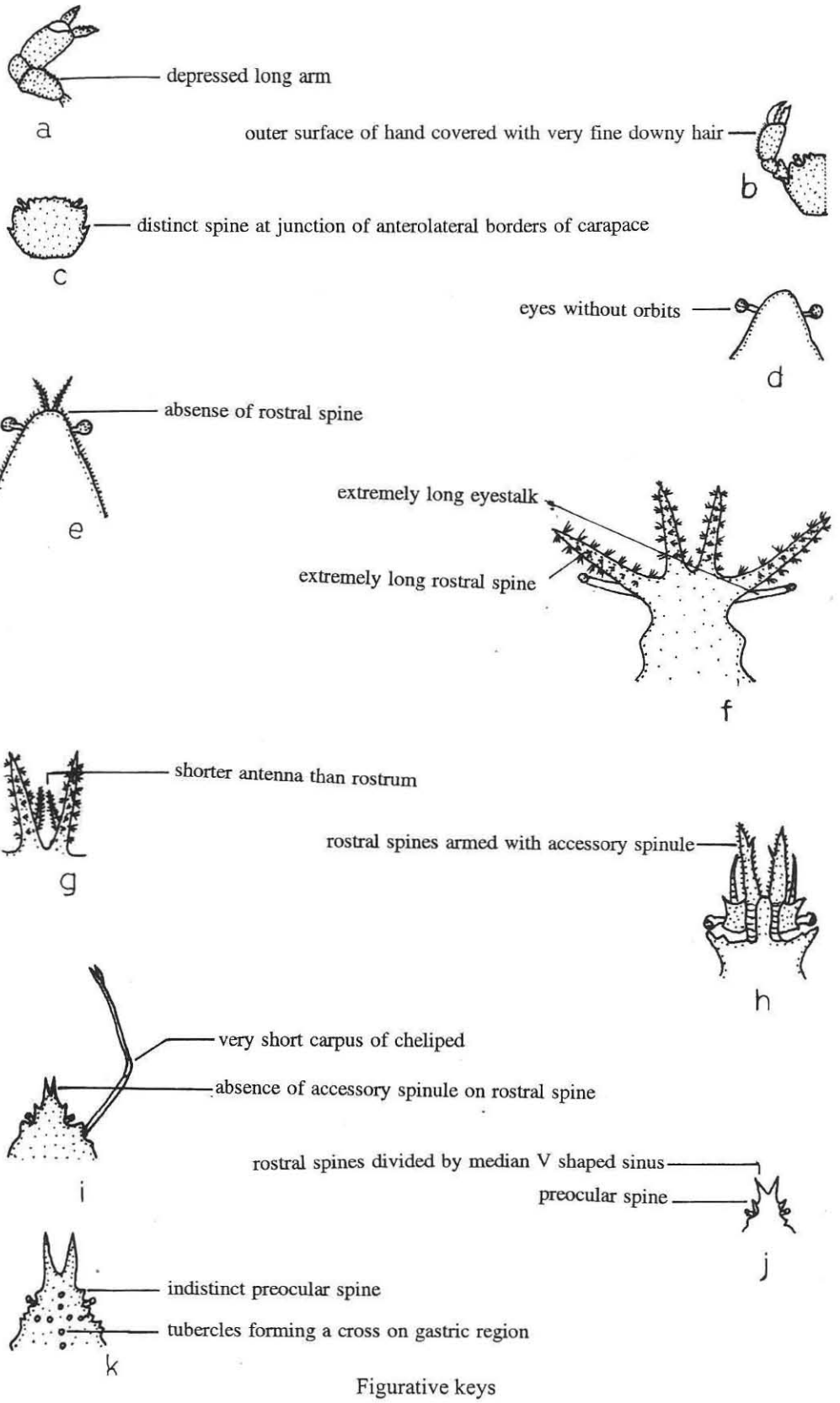
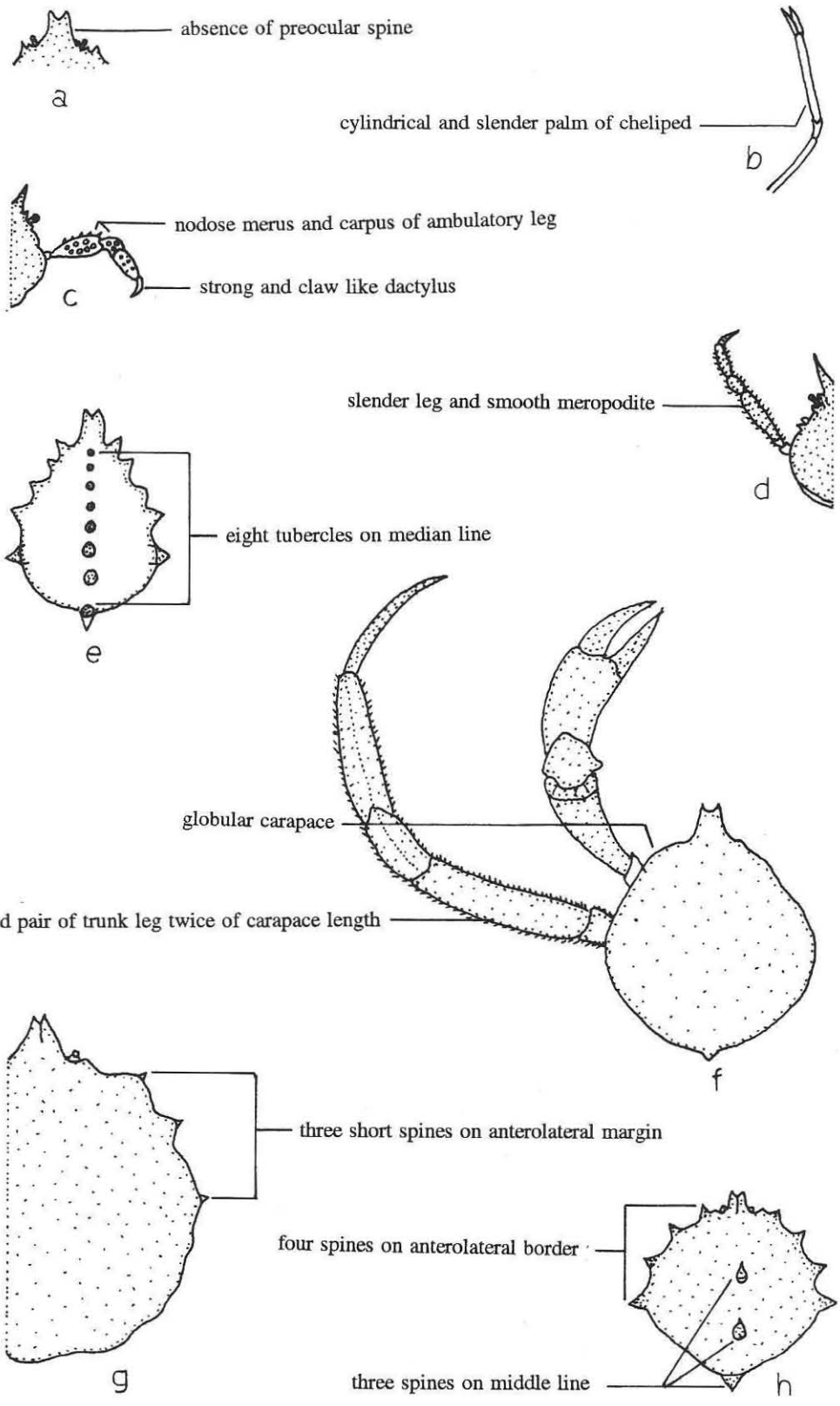


Figurative keys



Figurative keys



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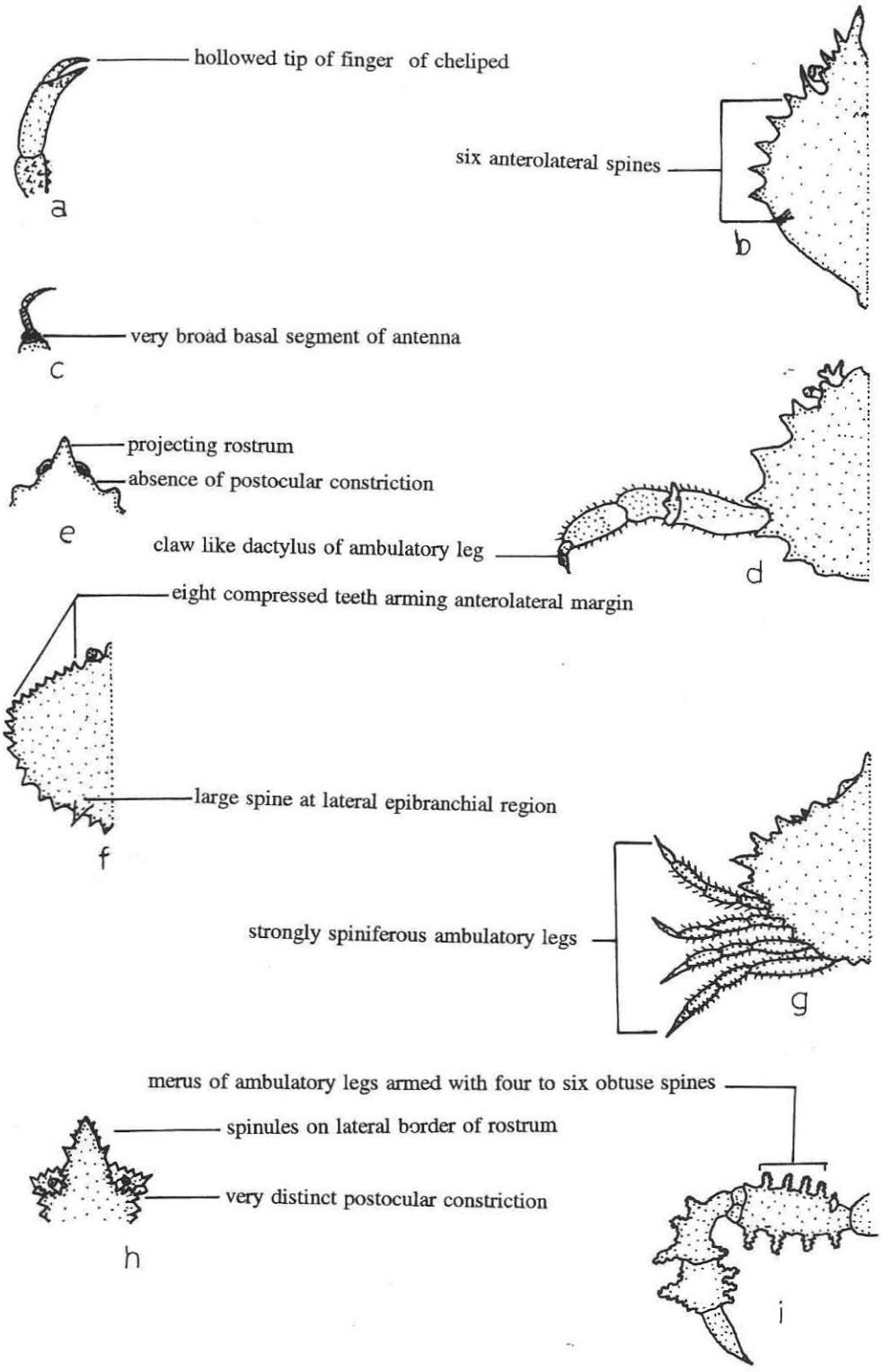

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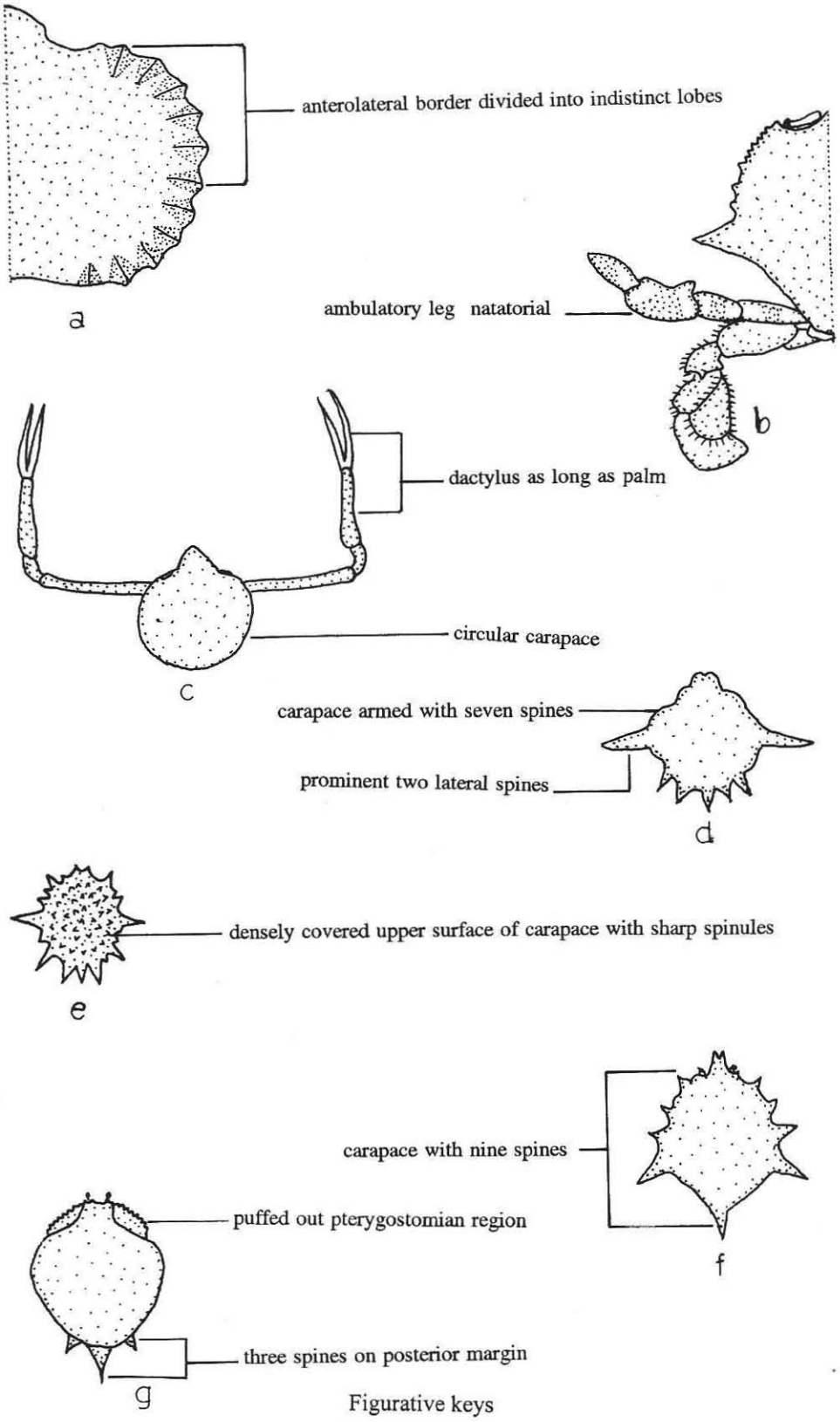

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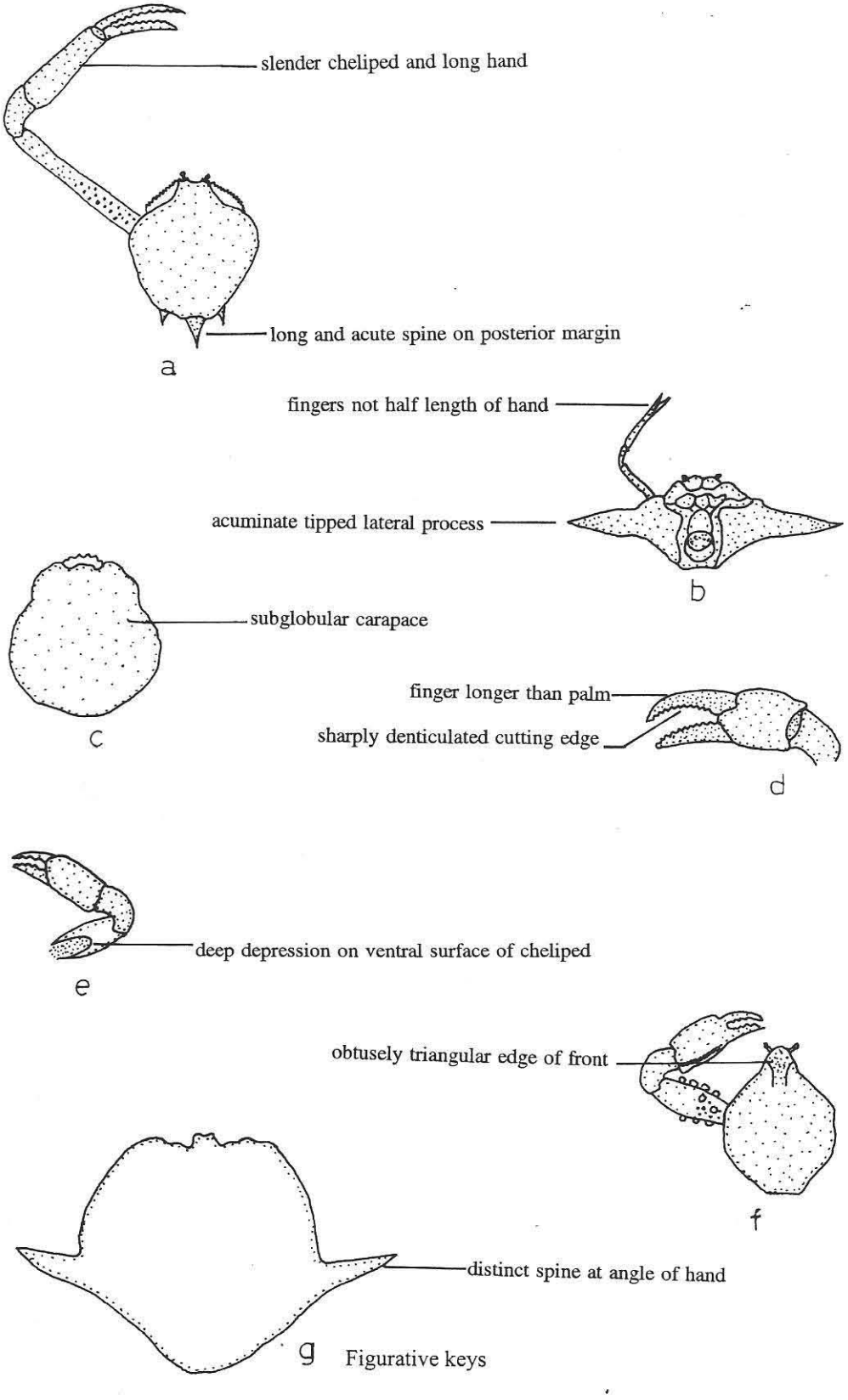

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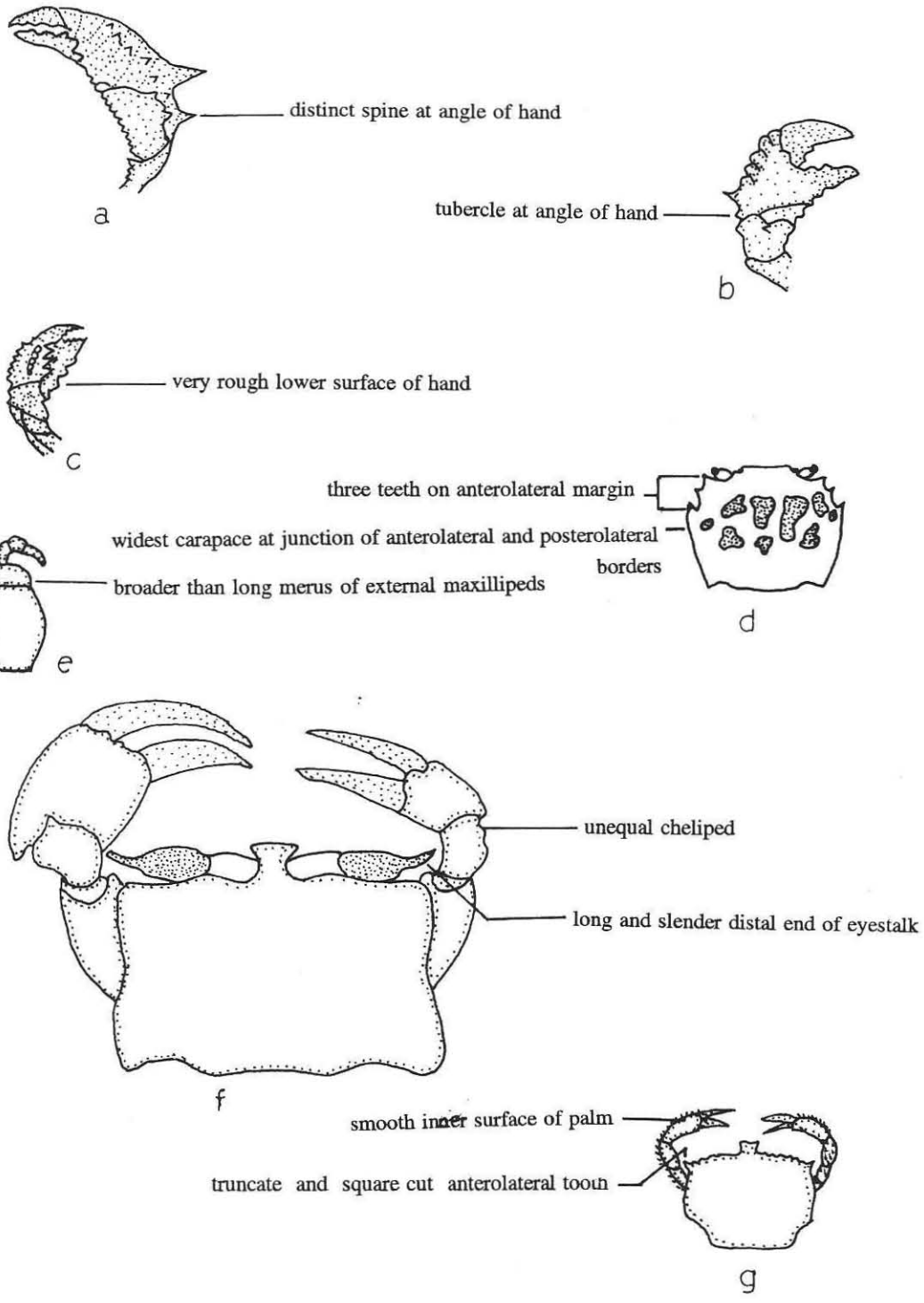

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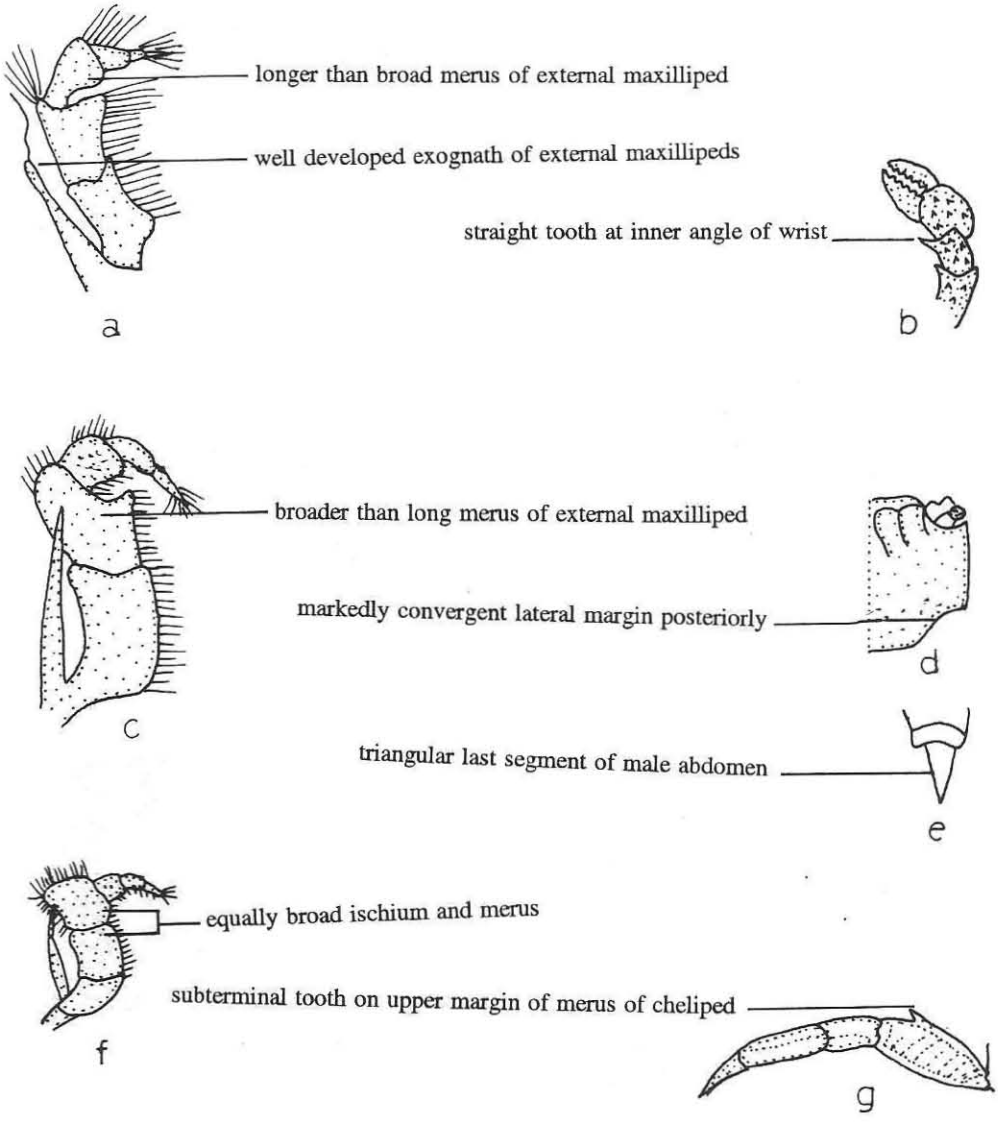

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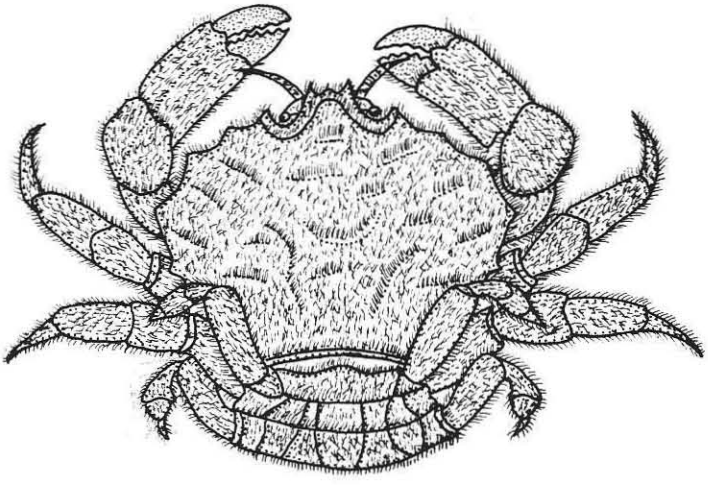
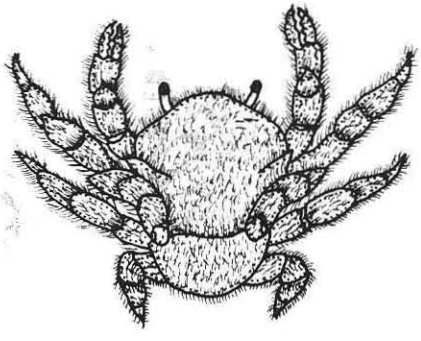
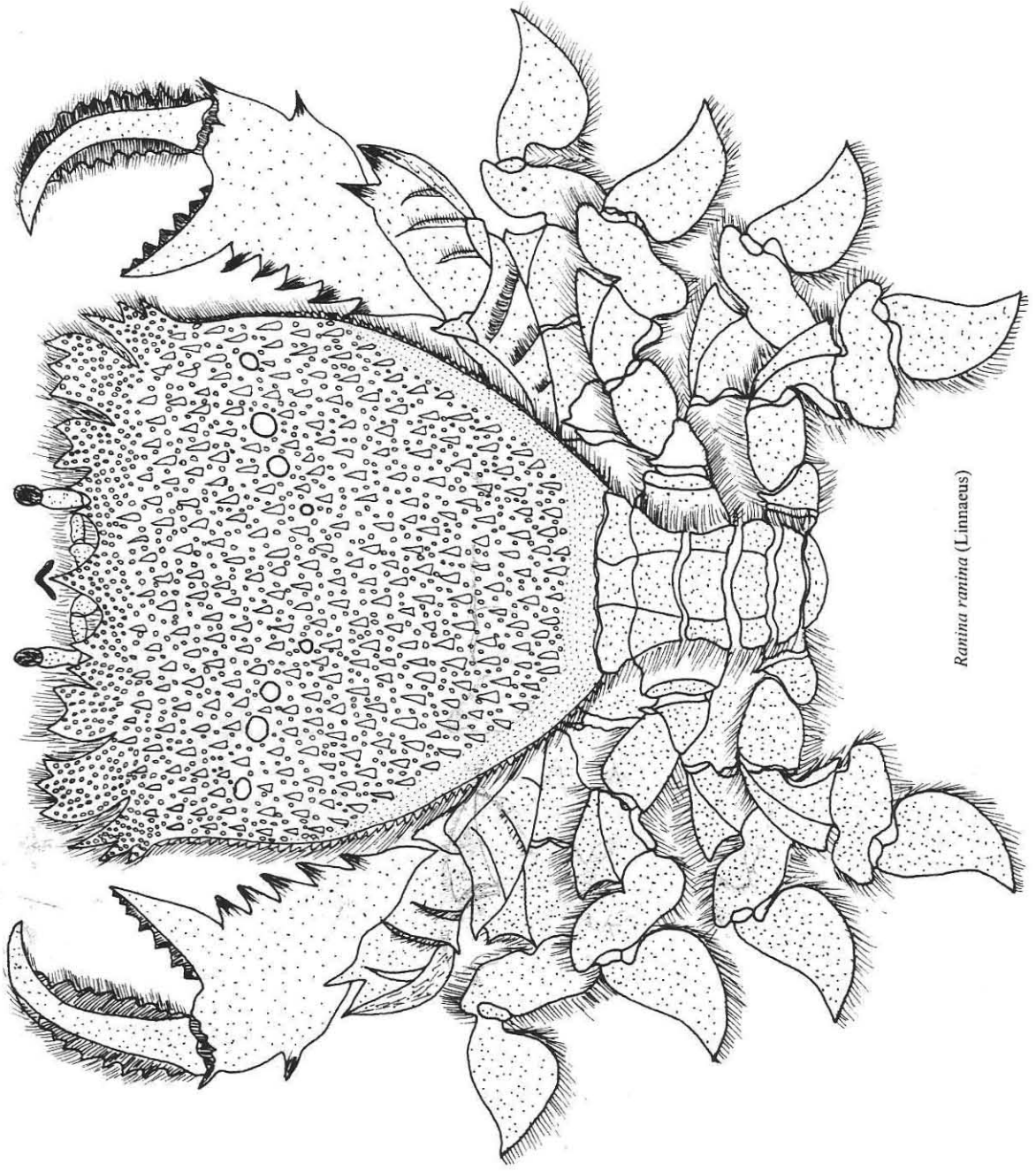


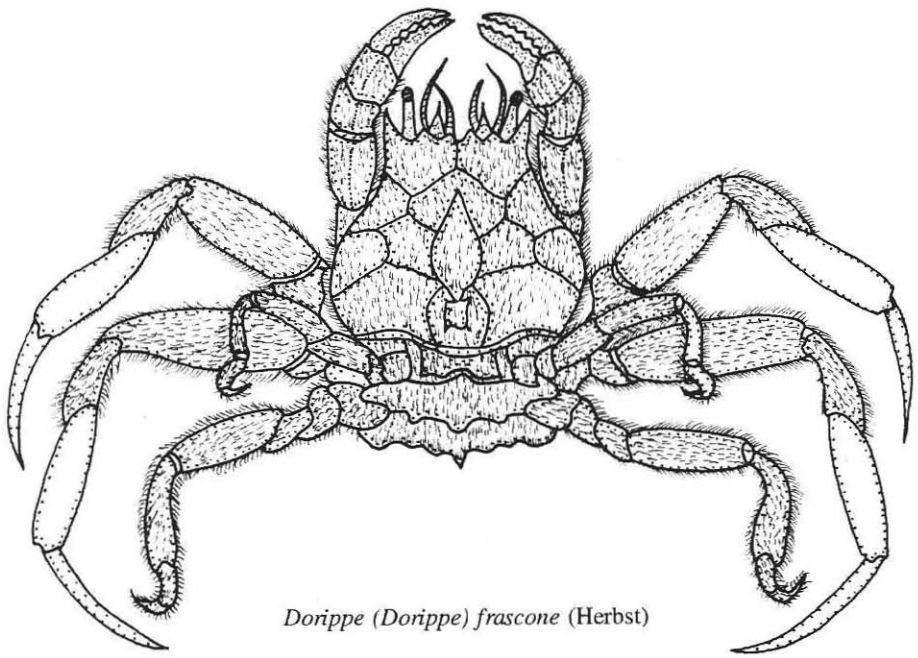
a. *Dromia dehaani* Rathbun



b. *Cryptodromia hilgendorfi* de Man

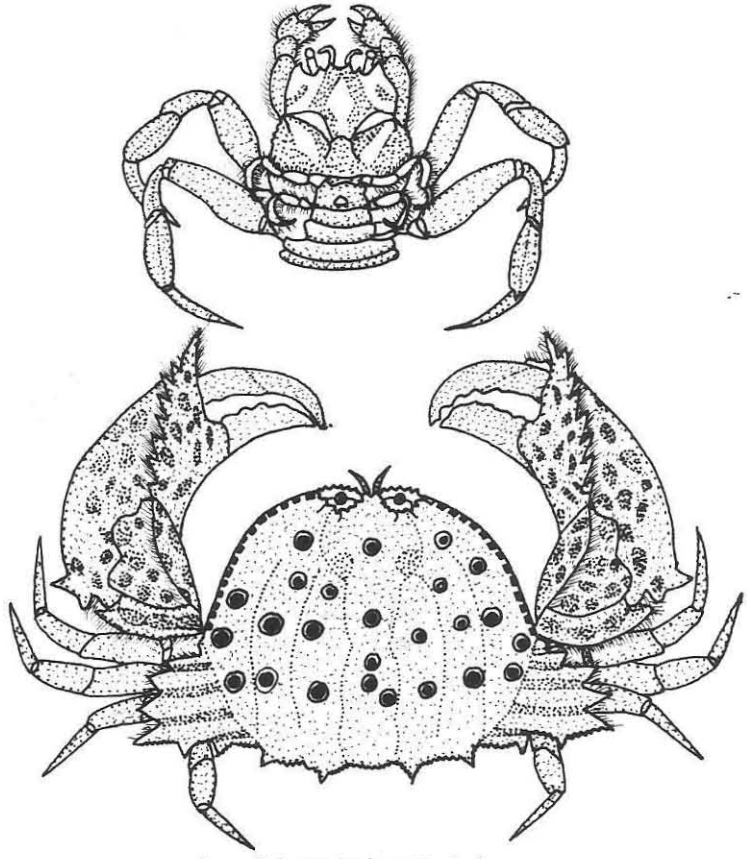


Ranina ranina (Linnaeus)

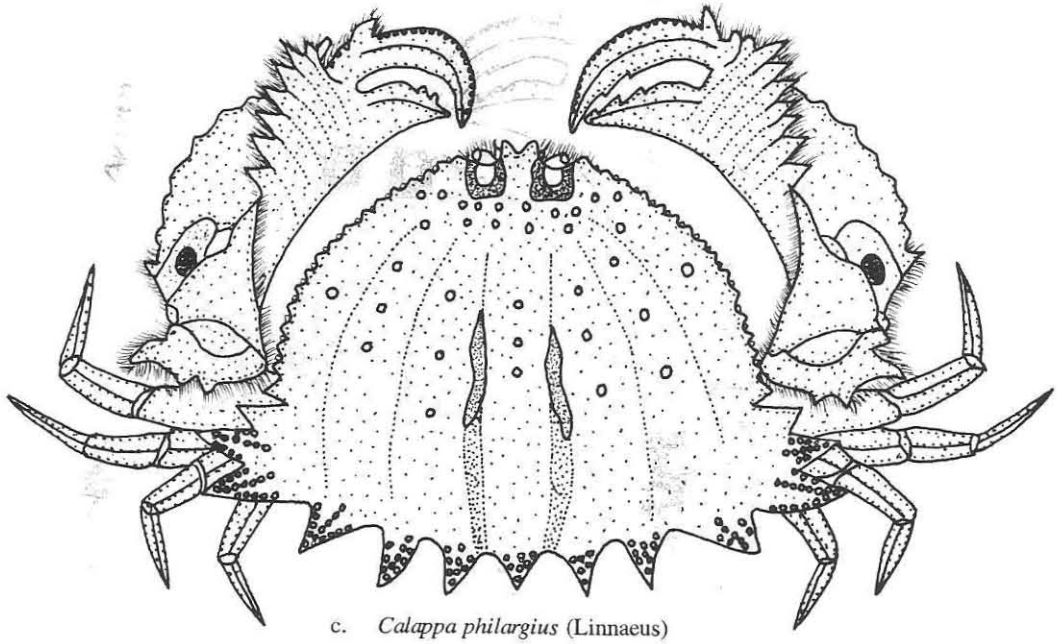


Dorippe (Dorippe) frascone (Herbst)

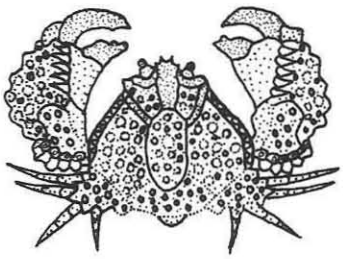
a. *Paradorippe granulata* (de Haan)



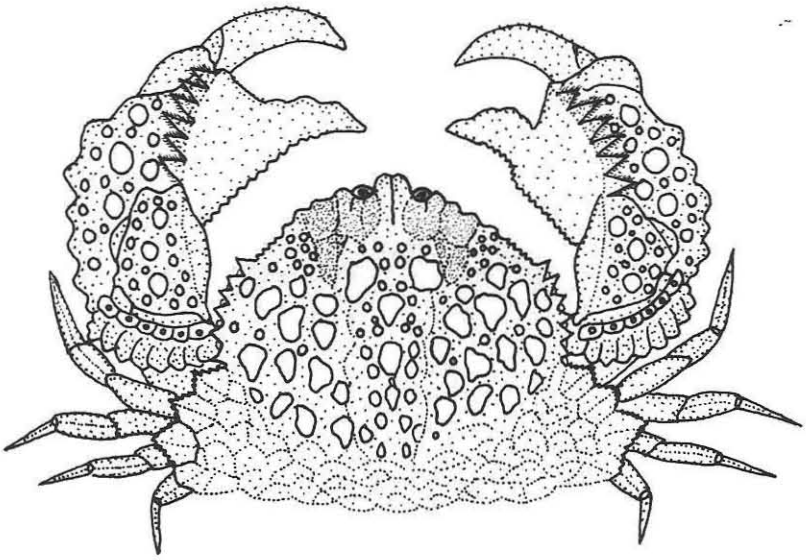
b. *Calappa lophos* (Herbst)



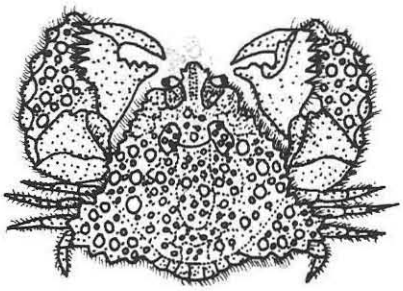
c. *Calappa philargius* (Linnaeus)



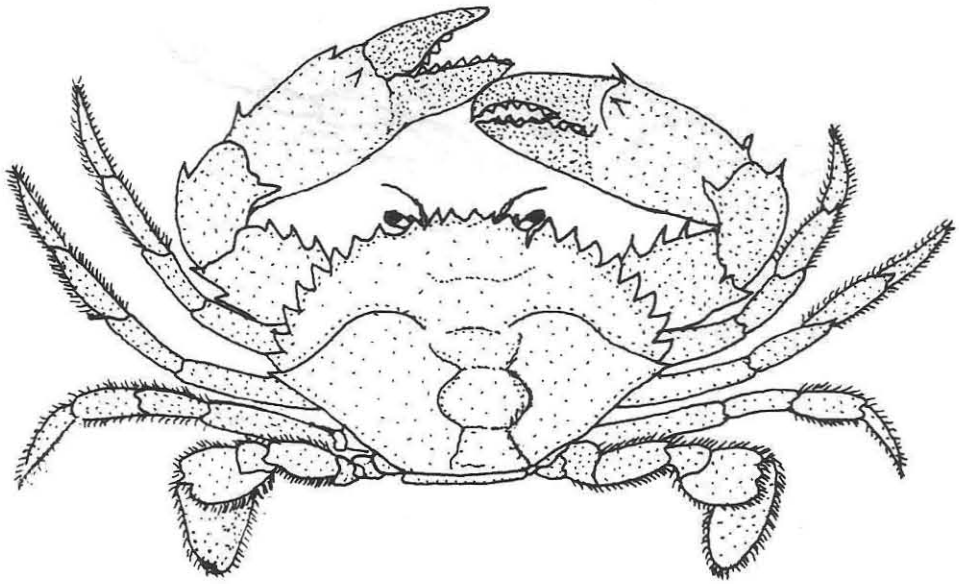
a. *Calappa gallus* (Herbst)



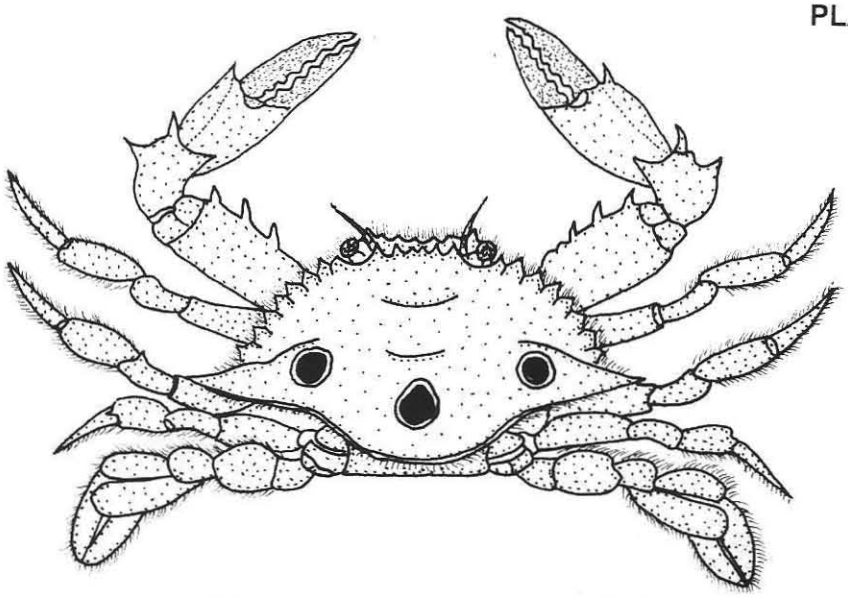
b. *Calappa gallus capellonis* Laurie



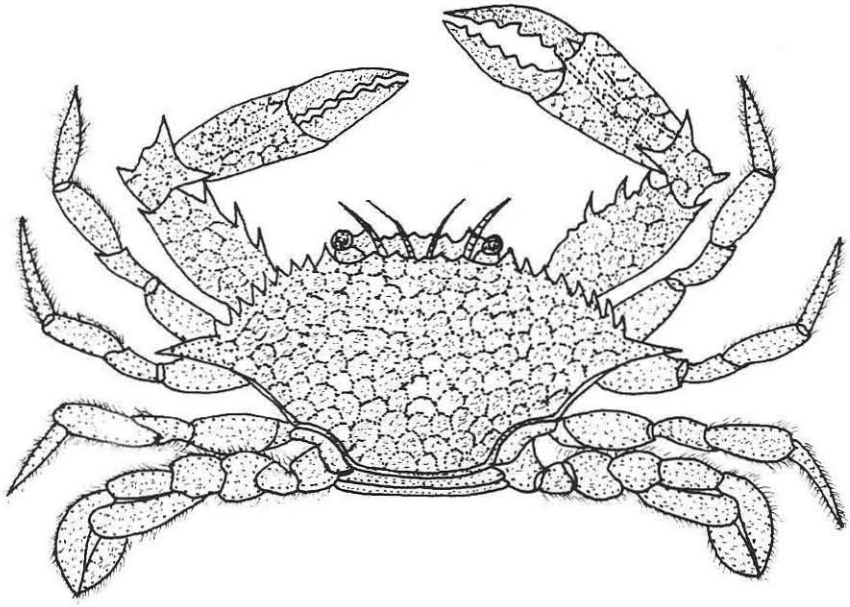
c. *Calappa bicornis* Miers



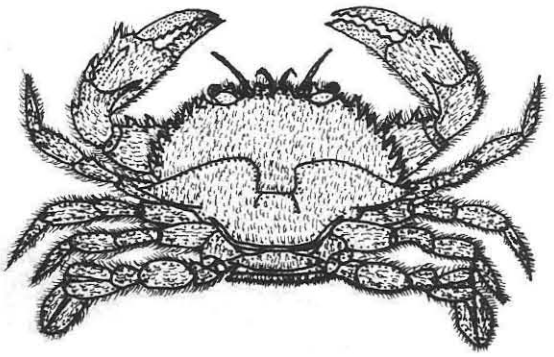
a. *Scylla serrata* (Forskal)



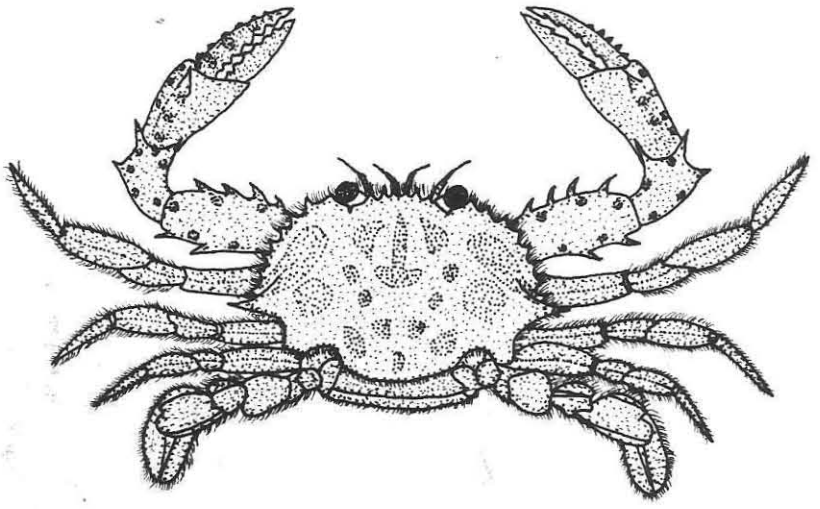
a. *Portunus (Portunus) sanguinolentus* (Herbst)



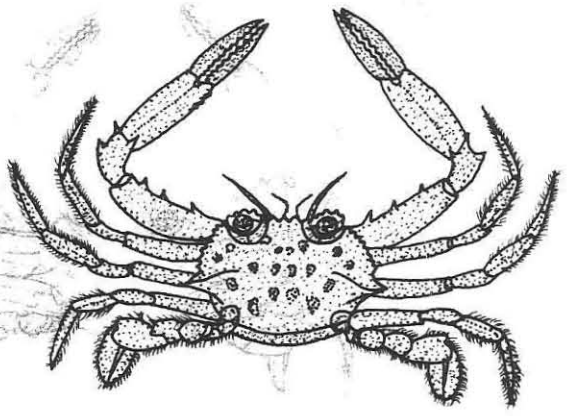
b. *Portunus (Portunus) pelagicus* (Linnaeus)



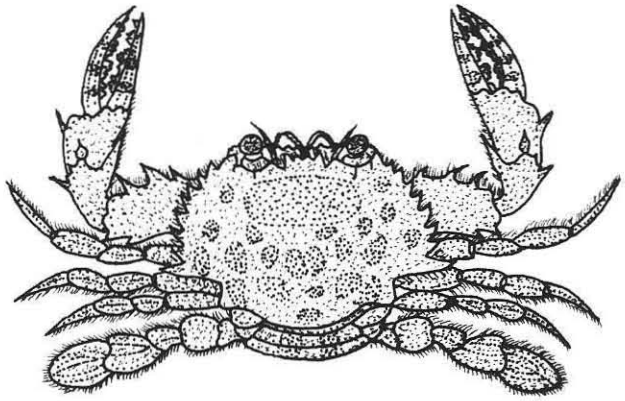
a. . *Portunus (Portunus) pubescens* (Dana)



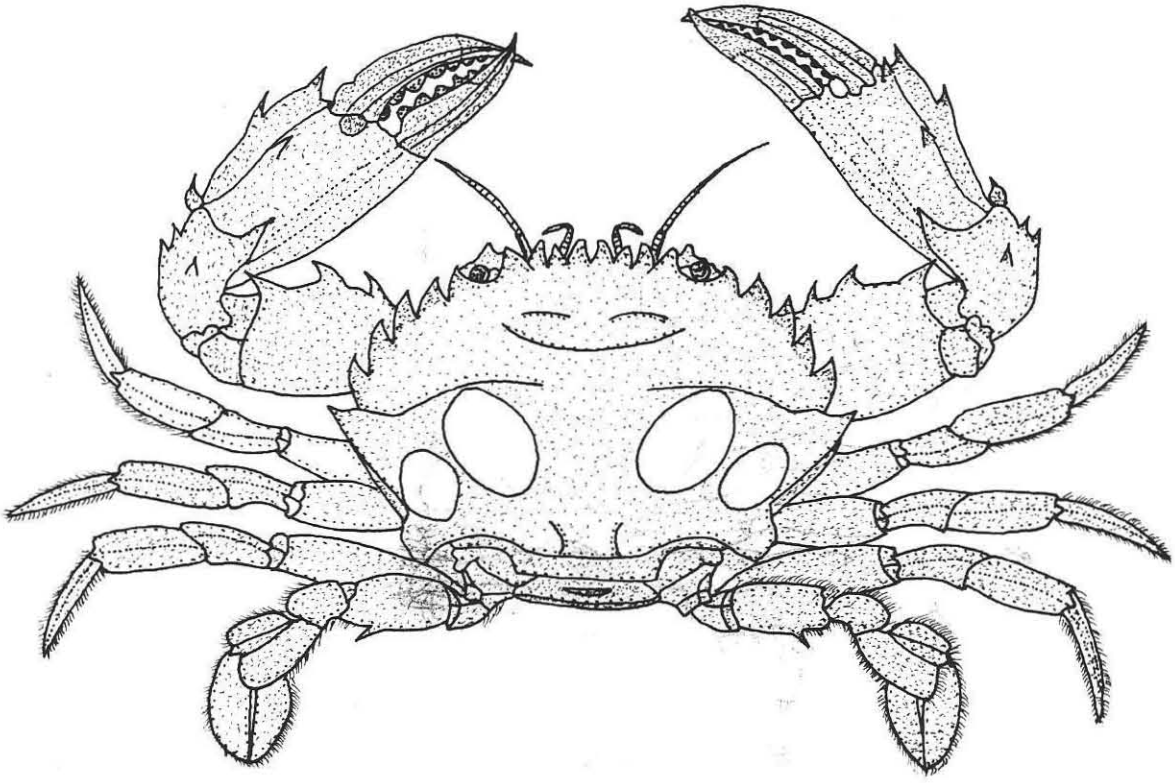
b. *Portunus (Monomia) gracilimanus* (Stimpson)



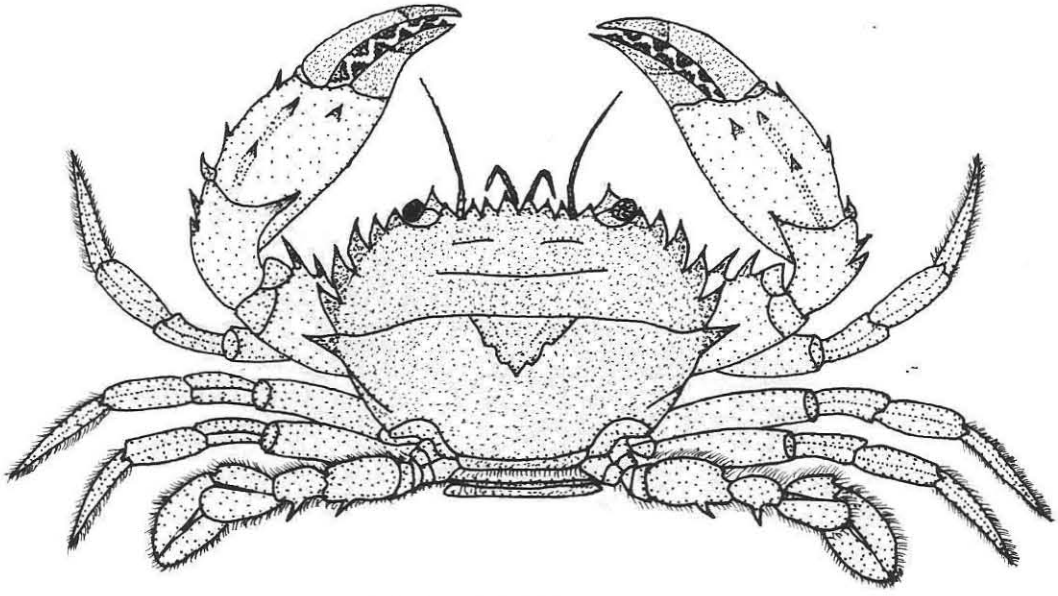
c. *Portunus (Monomia) gladiator* Fabricius



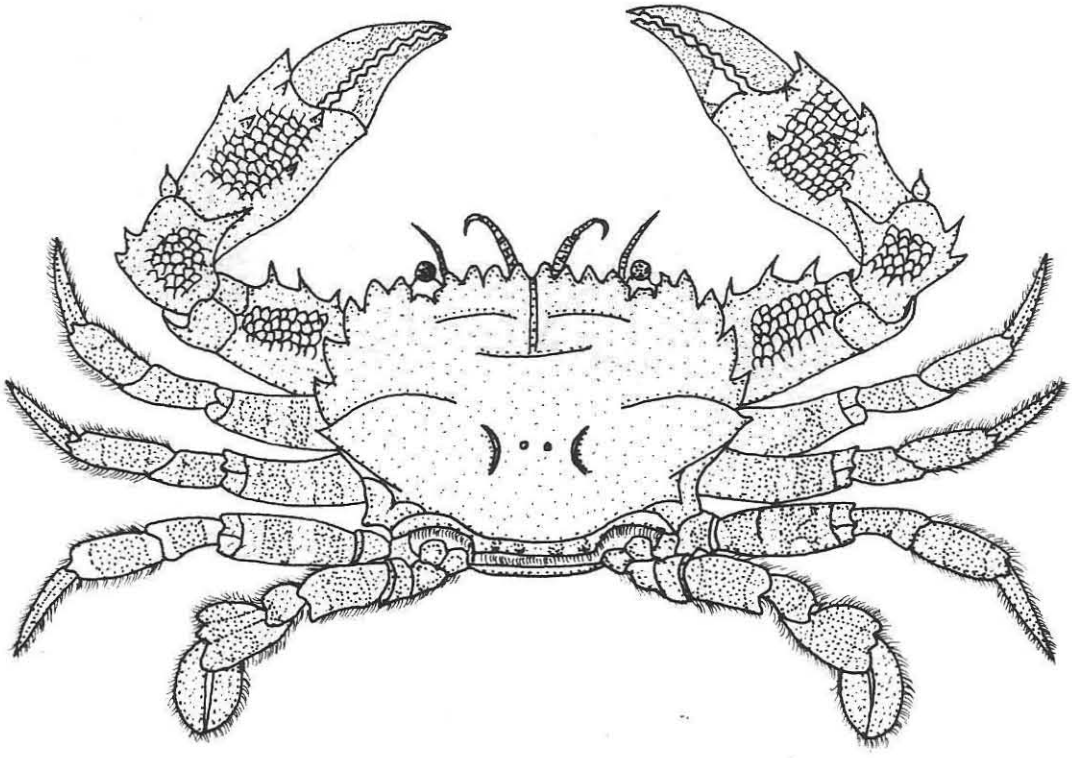
a. *Portunus (Monomia) petreus* (Alcock)



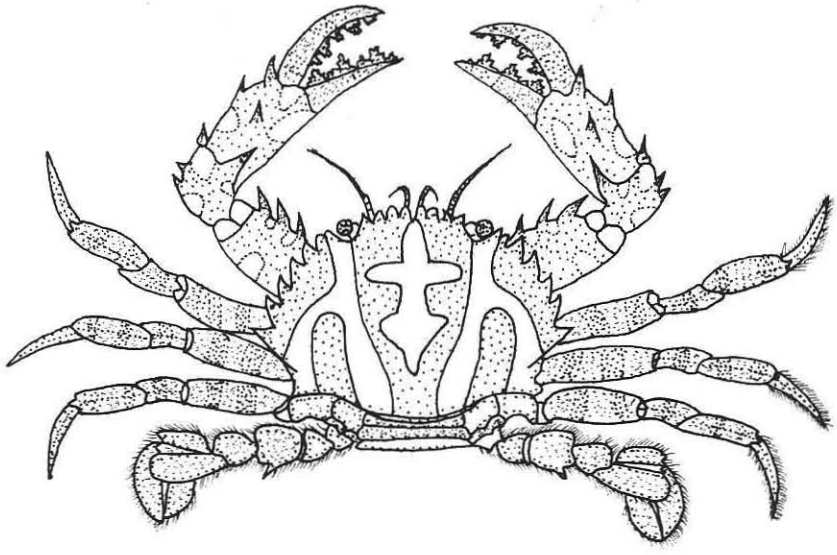
b. *Charybdis (Charybdis) lucifera* (Fabricius)



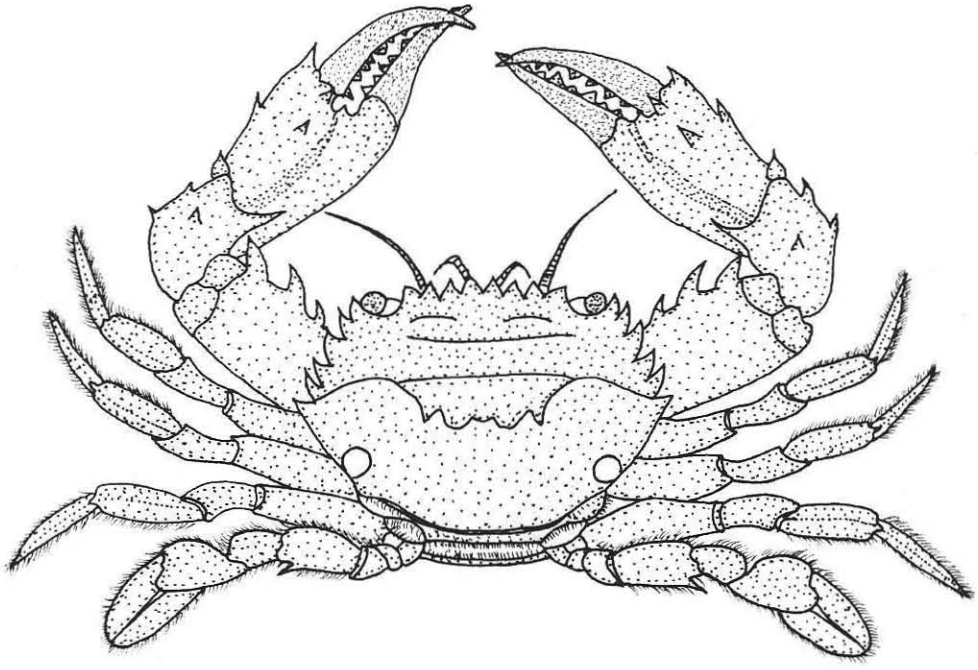
a. *Charybdis (Charybdis) helleri* (A. Milne Edwards)



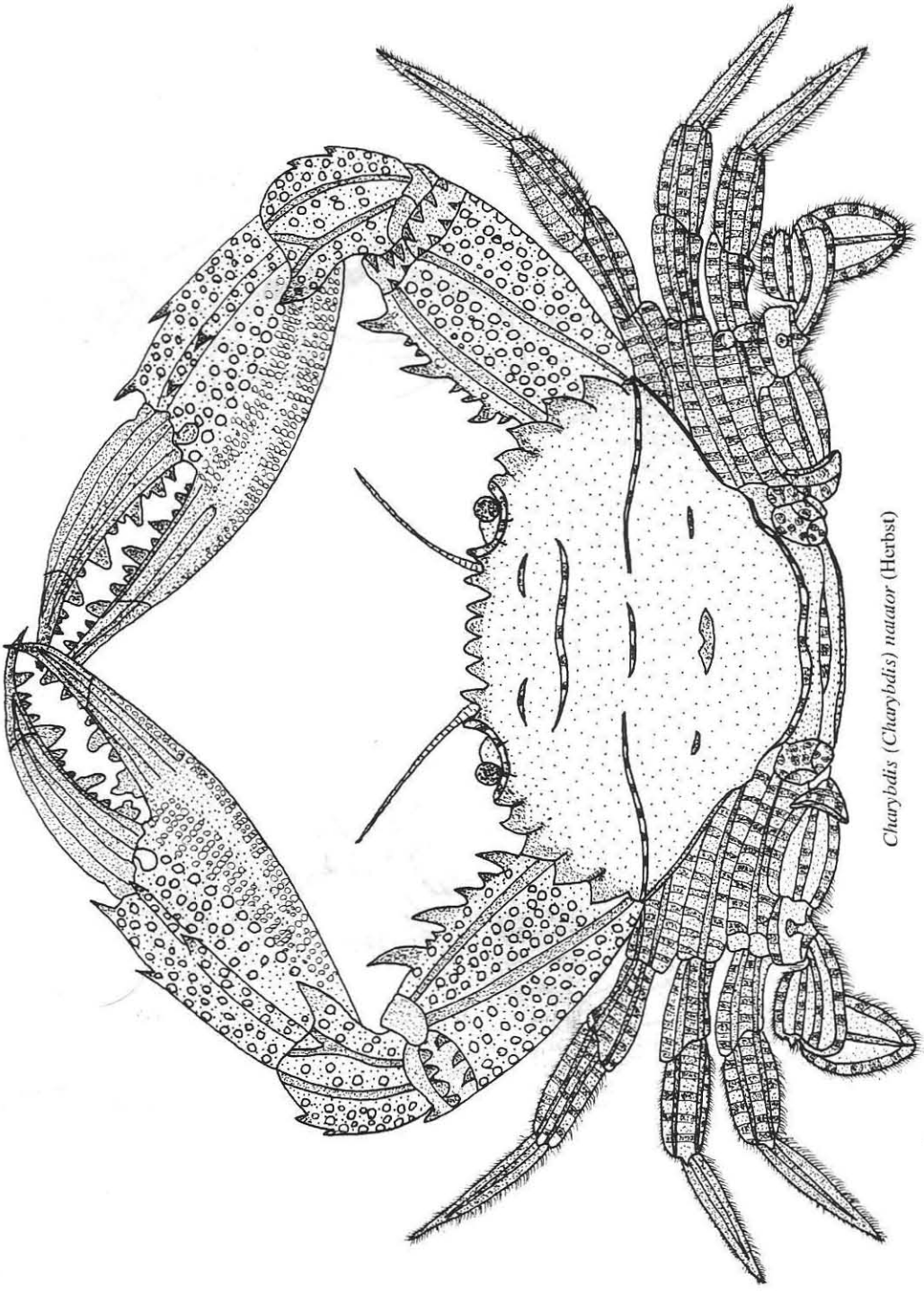
b. *Charybdis (Charybdis) annulata* (Fabricius)



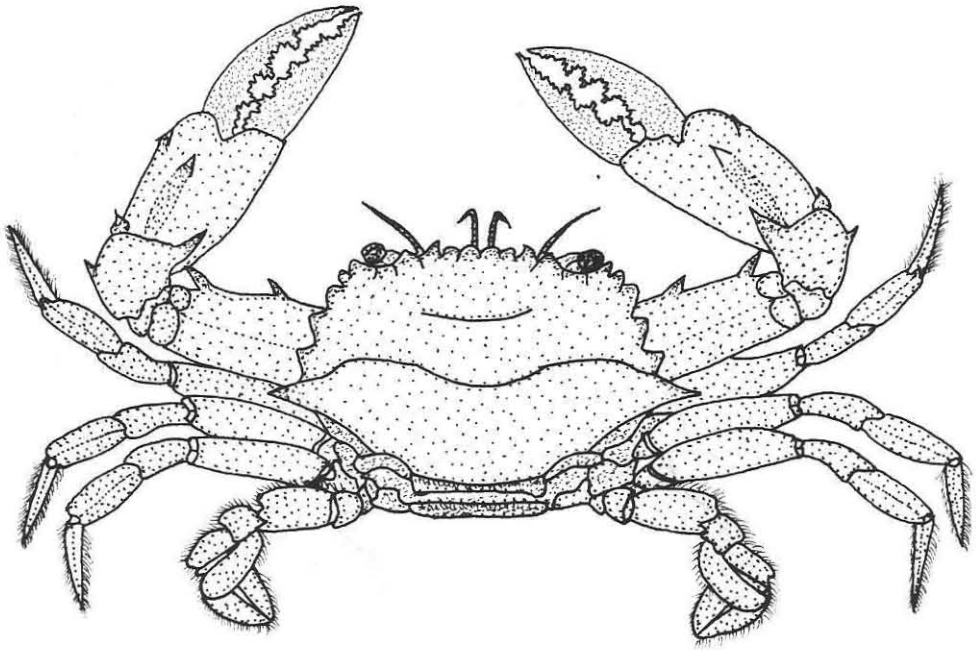
a. *Charybdis (Charybdis) feriata* (Linnaeus)



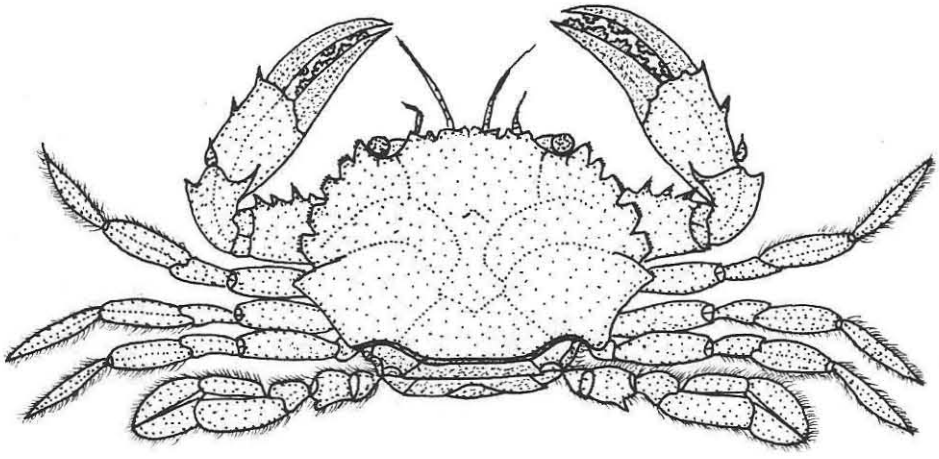
b. *Charybdis (Charybdis) riversandersoni* Alcock



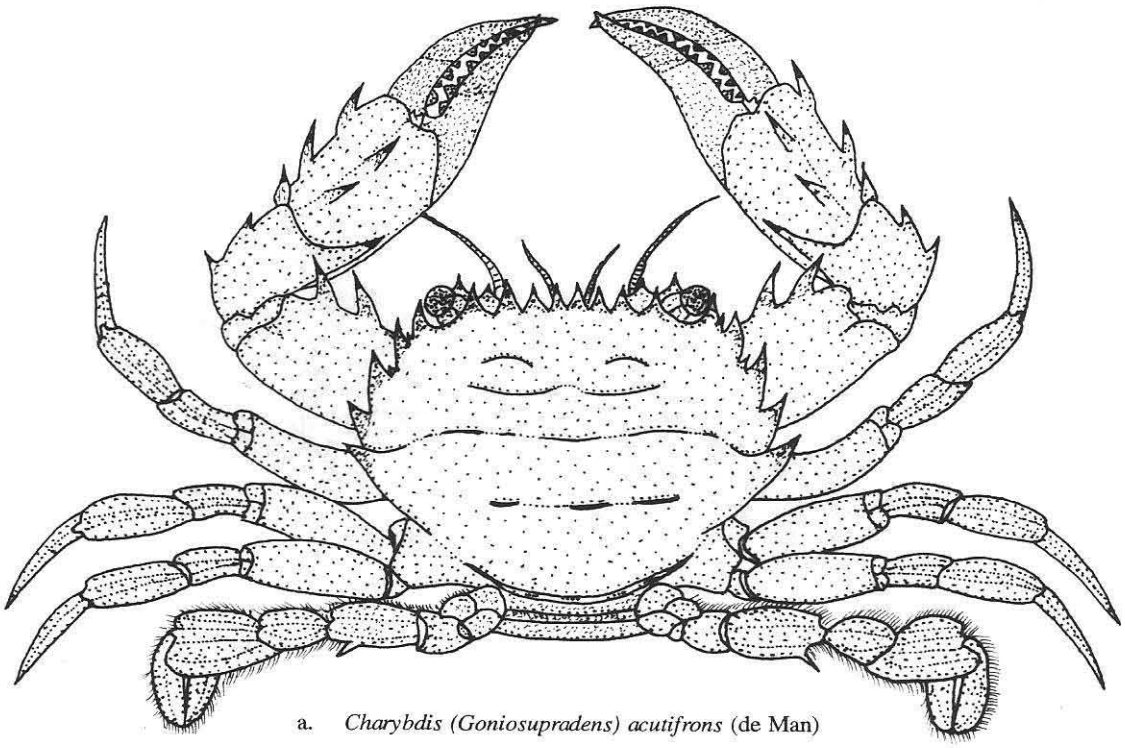
Charybdis (Charybdis) natator (Herbst)



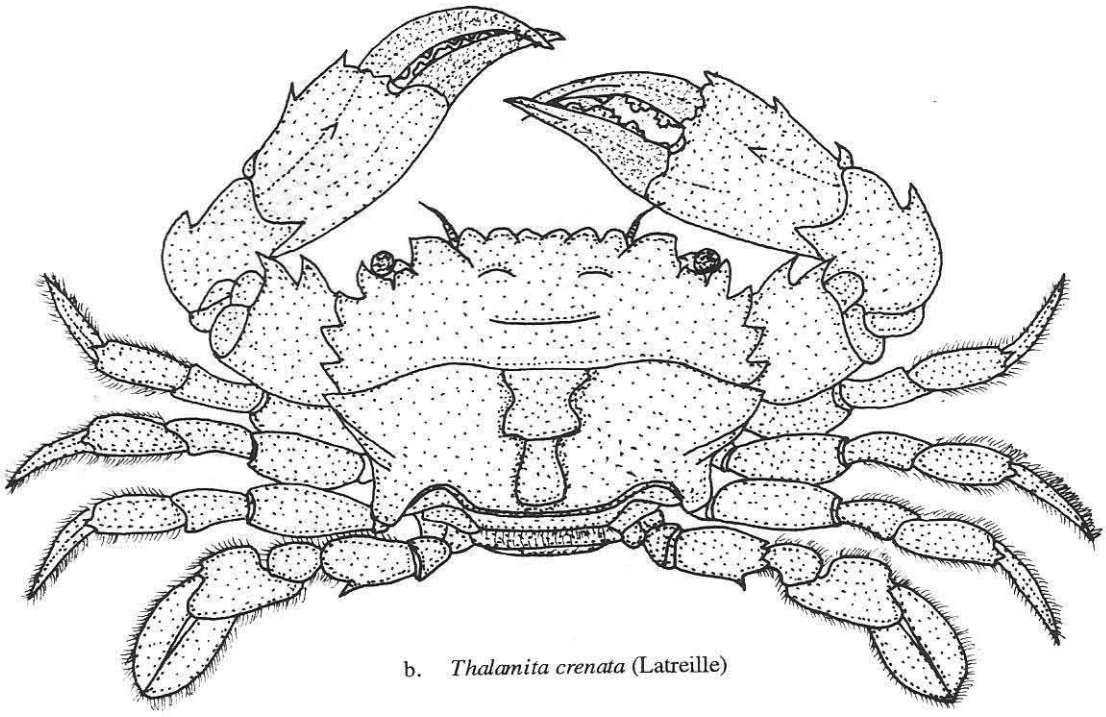
a. *Charybdis (Charybdis) rostratum* A.Milne Edwards



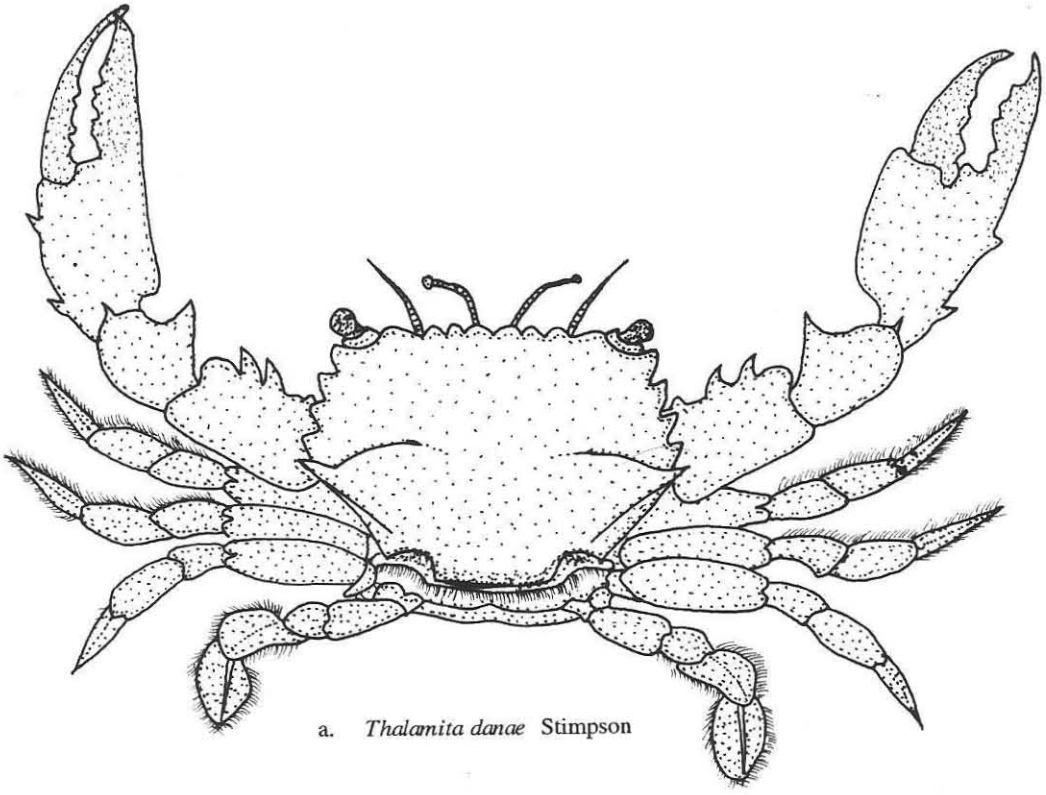
b. *Charybdis (Goniohellenus) edwardsi* Leene and Buitendijk



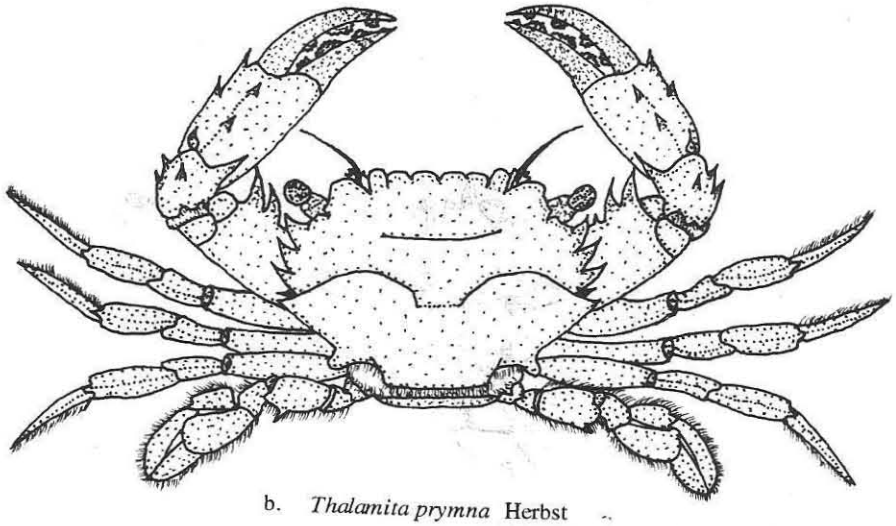
a. *Charybdis (Goniosupradens) acutifrons* (de Man)



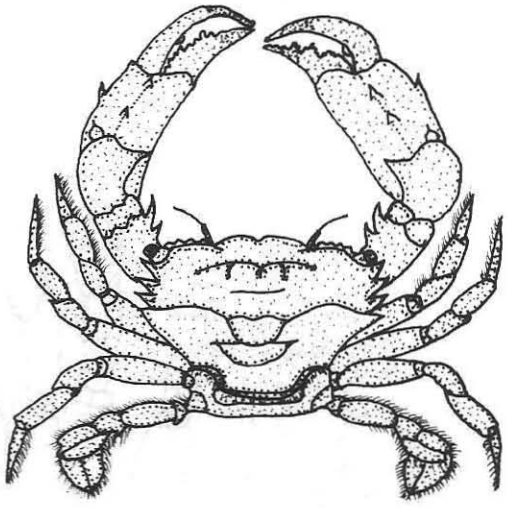
b. *Thalamita crenata* (Latreille)



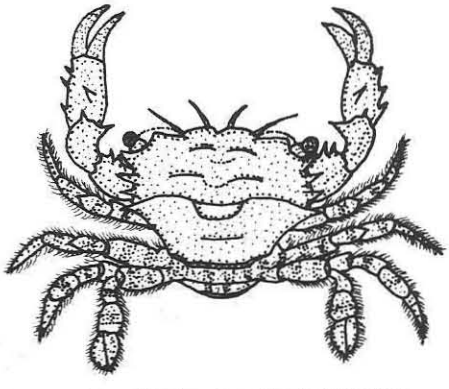
a. *Thalamita danae* Stimpson



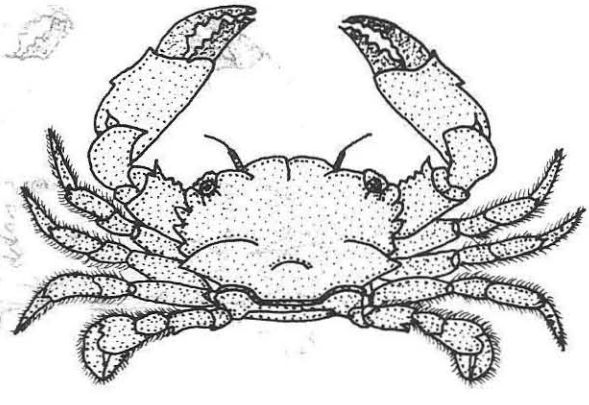
b. *Thalamita prymna* Herbst



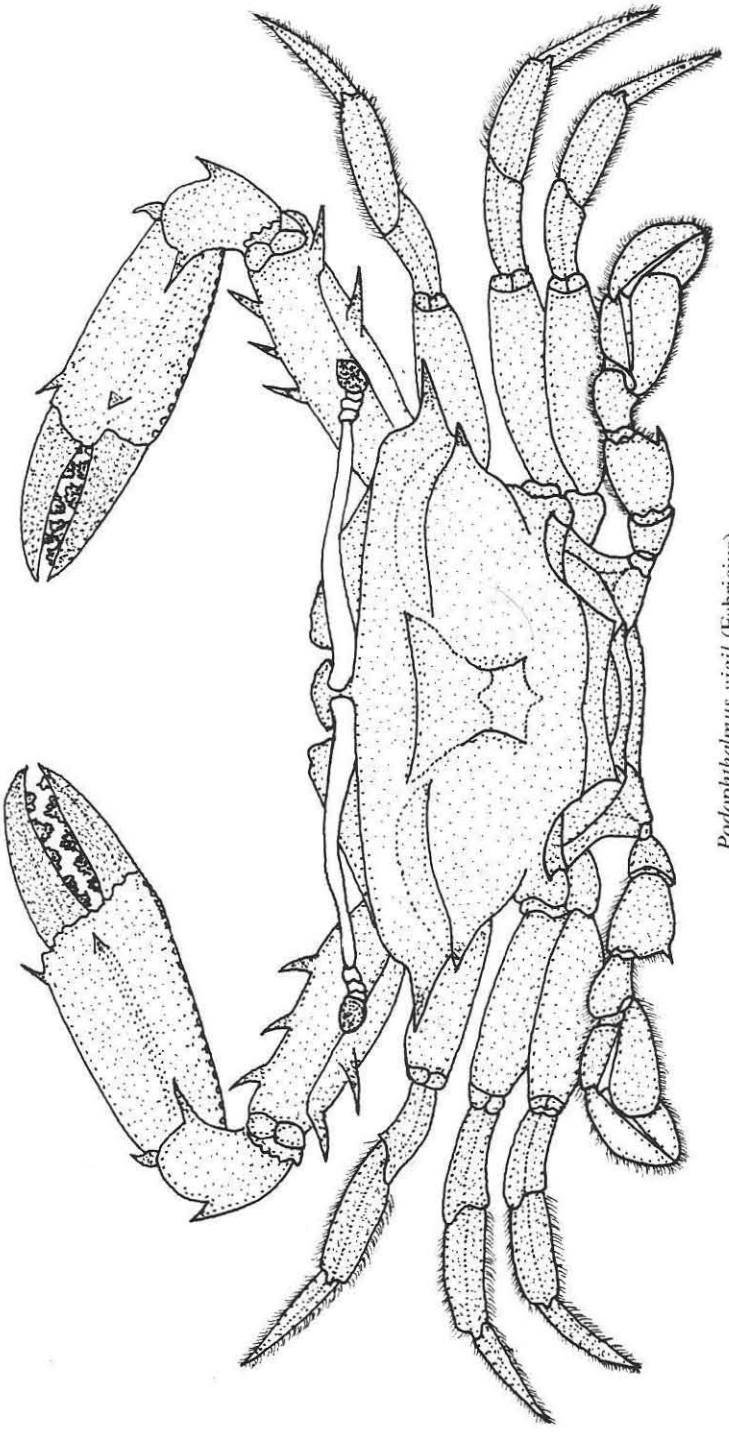
a. *Thalamita integra* Dana



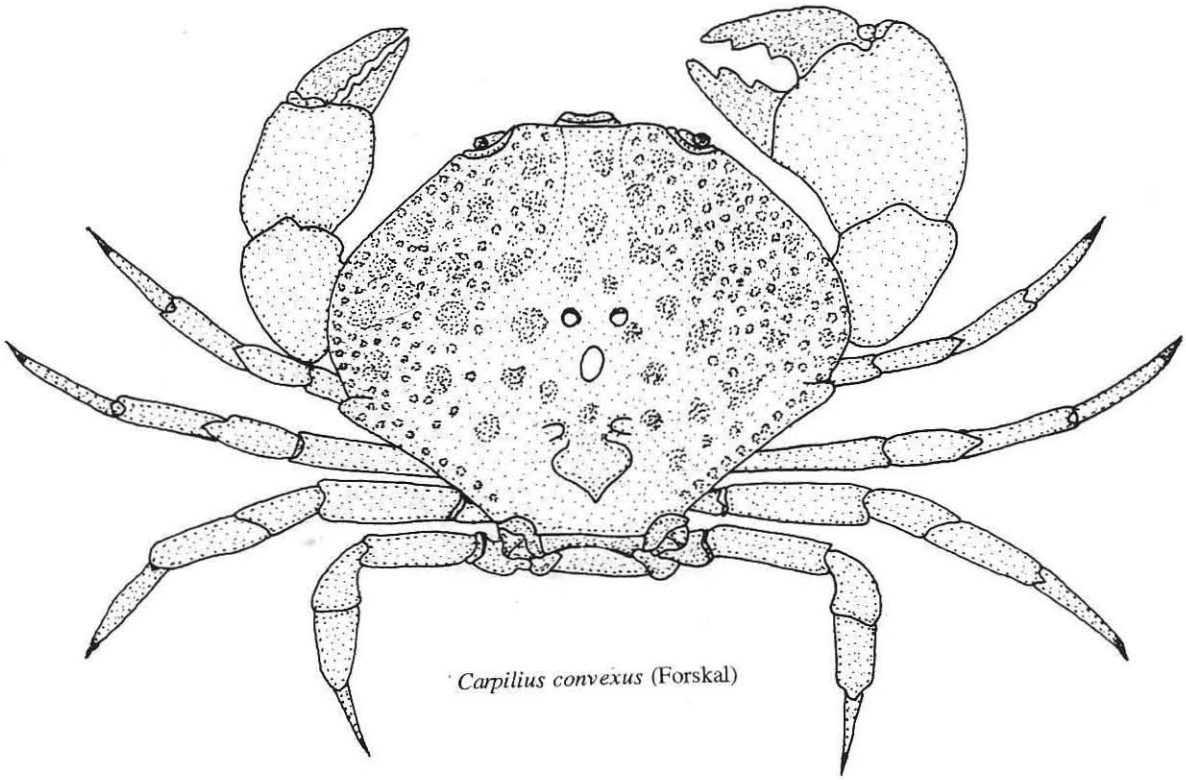
b. *Thalamita admete* (Herbst)



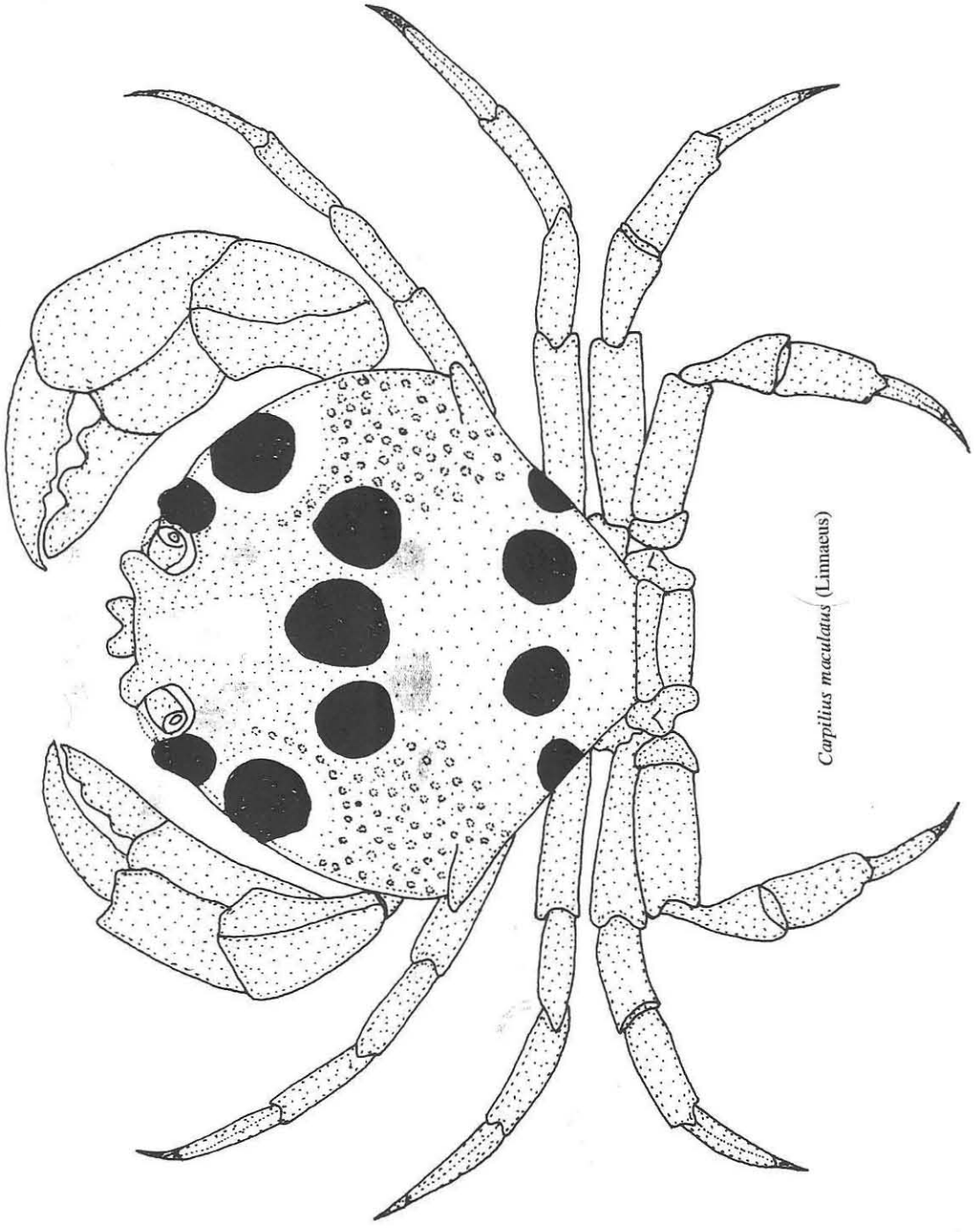
c. *Thalamita parvidens* (Rathbun)



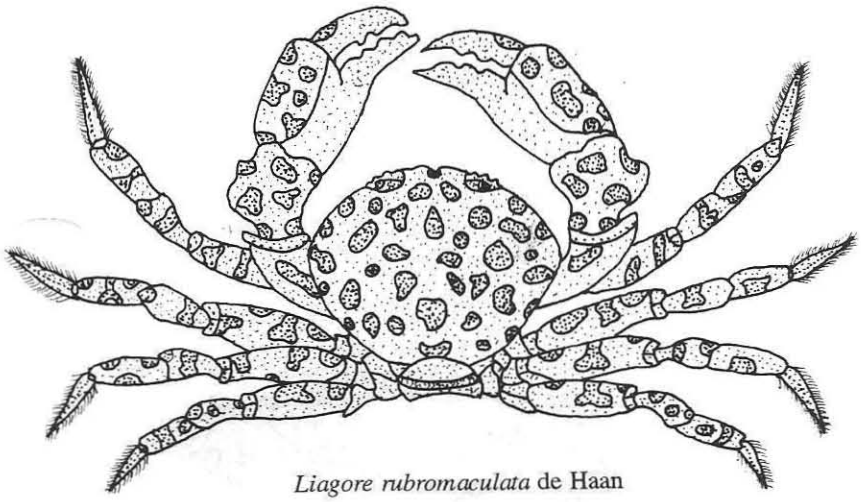
Podophthalmus vigil (Fabricius)



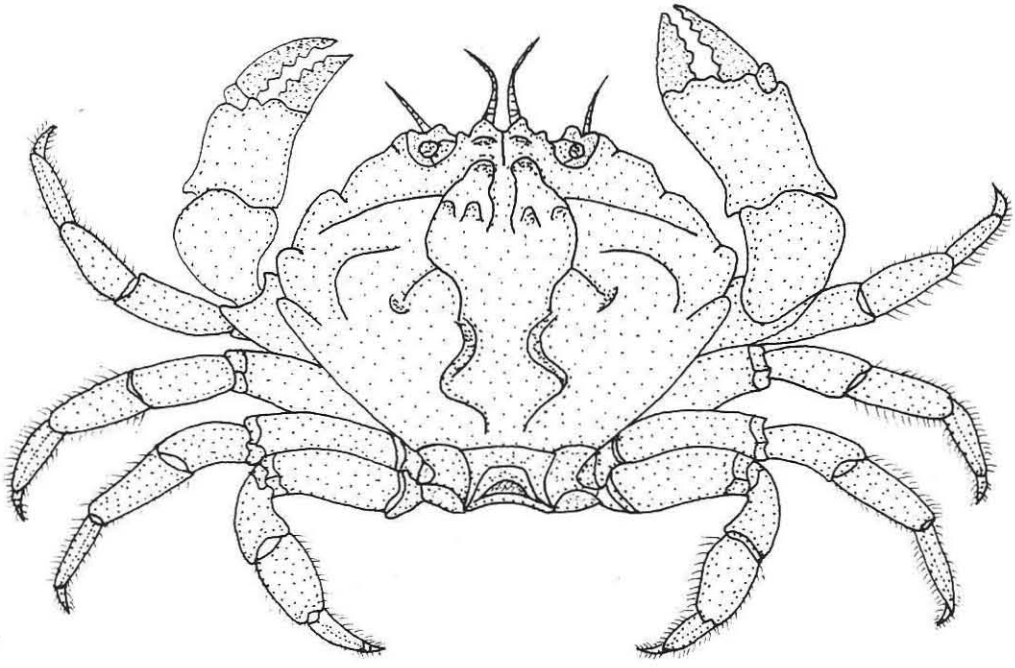
Carpilius convexus (Forskal)



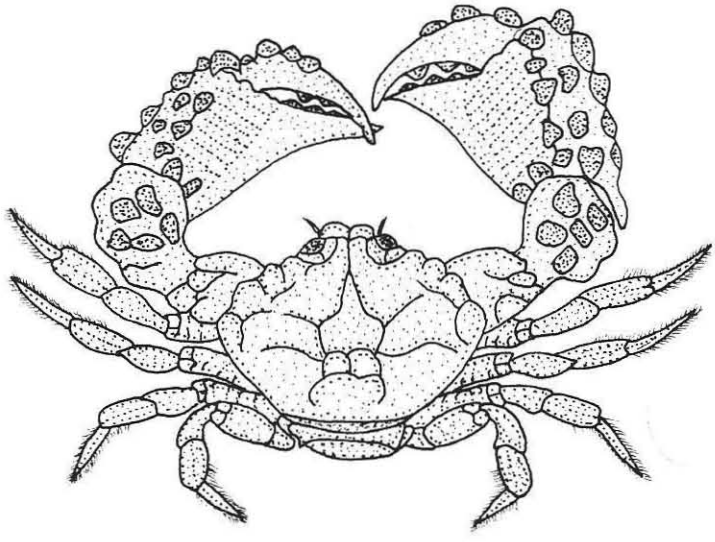
Carpilius maculatus (Linnaeus)



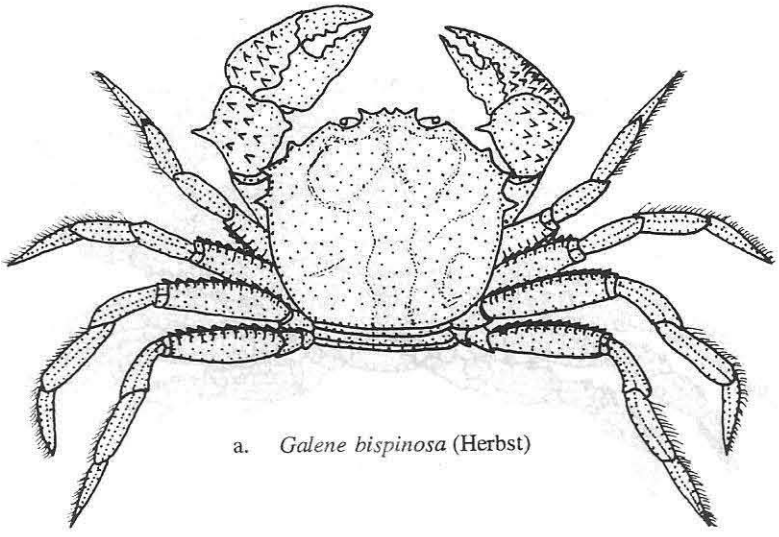
Liagore rubromaculata de Haan



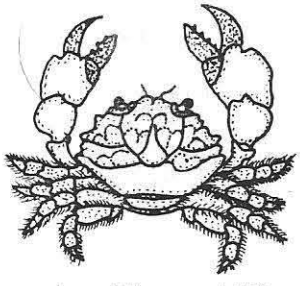
a. *Menippe rumphii* Fabricius



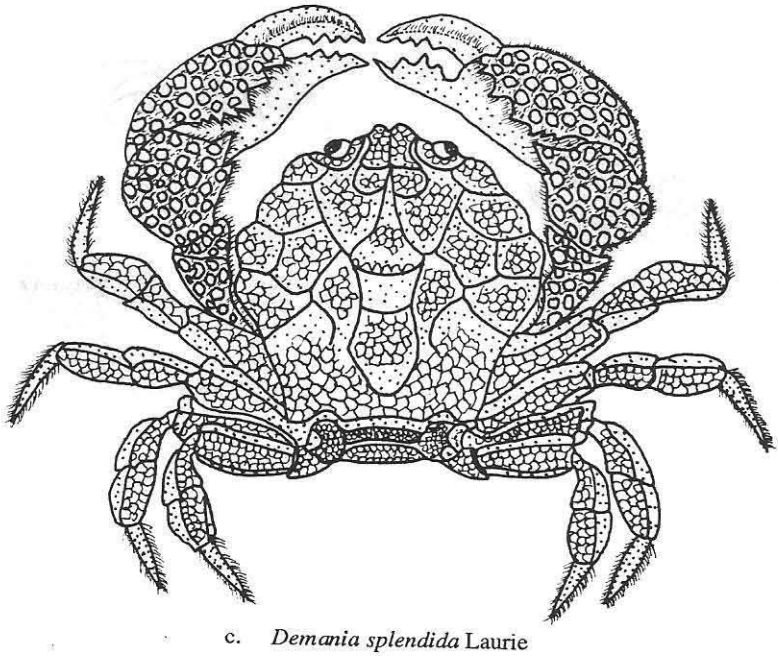
b. *Halimede ochtodes* (Herbst)



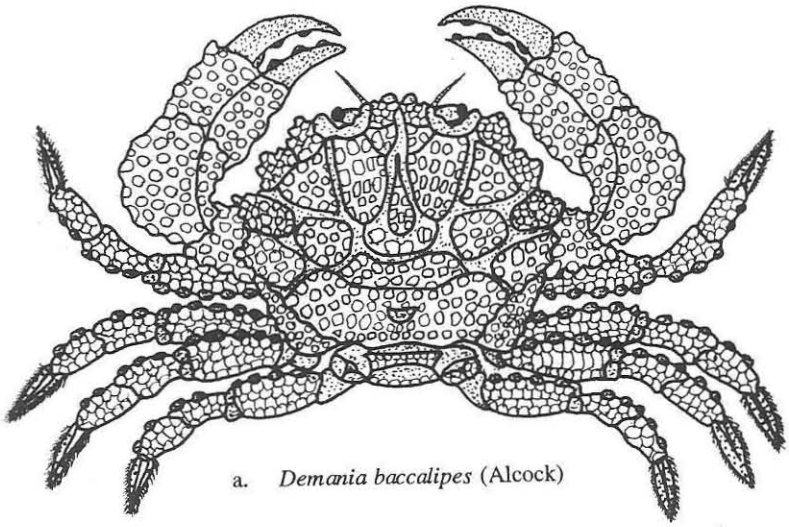
a. *Galene bispinosa* (Herbst)



b. *Macromedaeus bidentatus* A.Milne Edwards

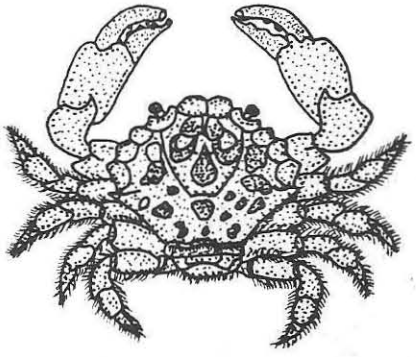


c. *Demania splendida* Laurie

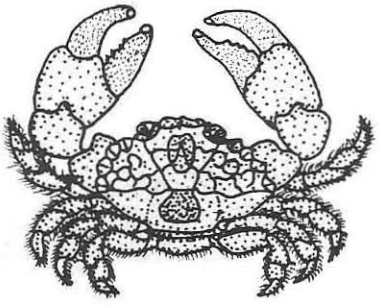


a. *Demania baccalipes* (Alcock)

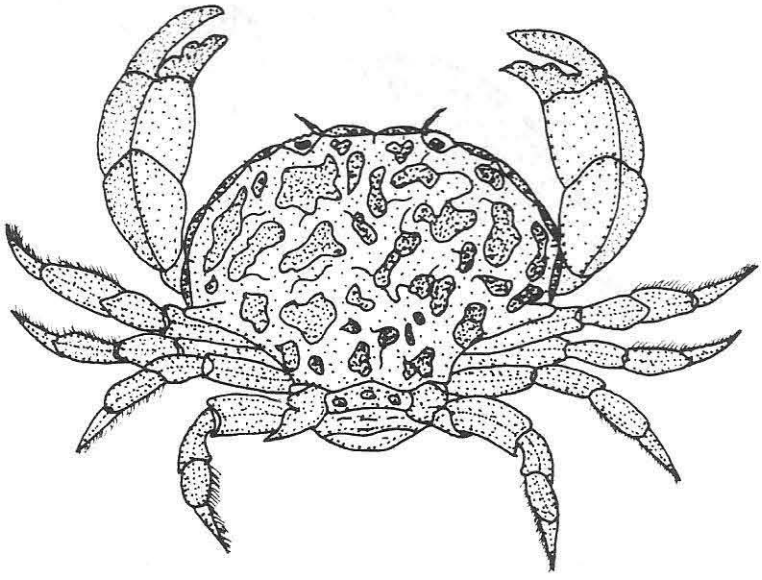
b. *Leptodius euglyptus* Alcock



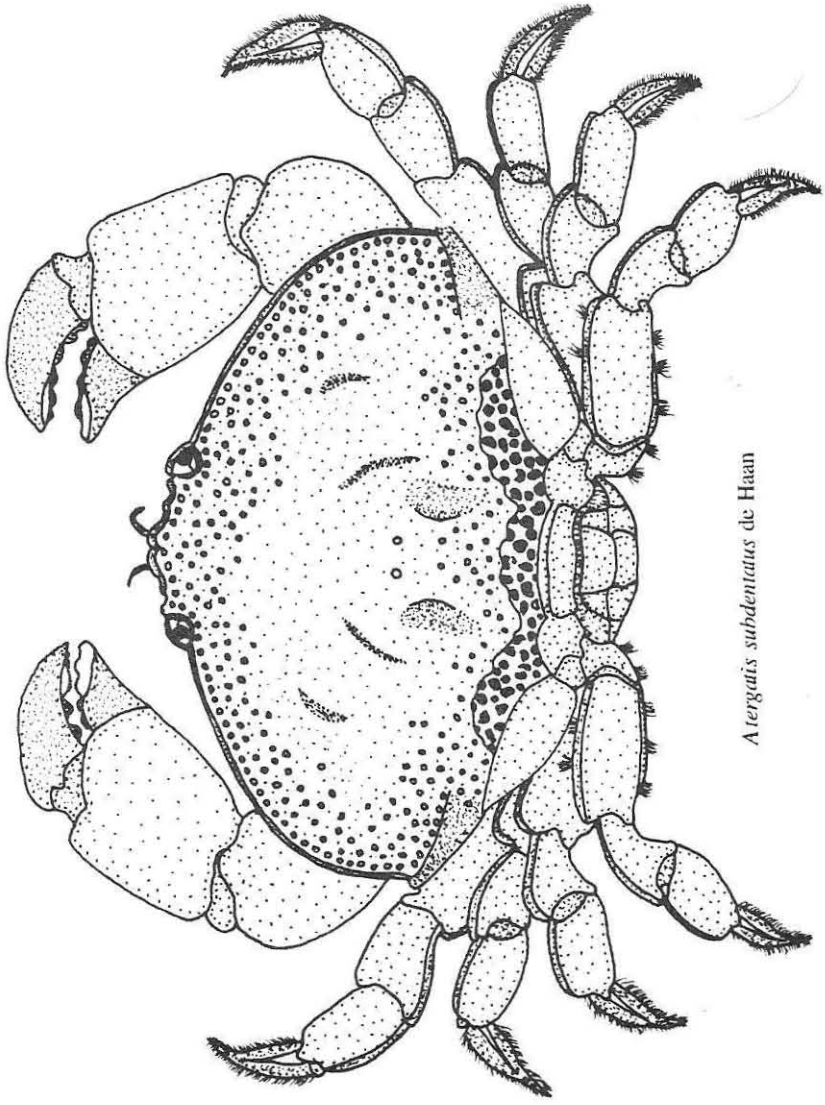
d. *Leptodius exaratus* (H.Milne Edwards)



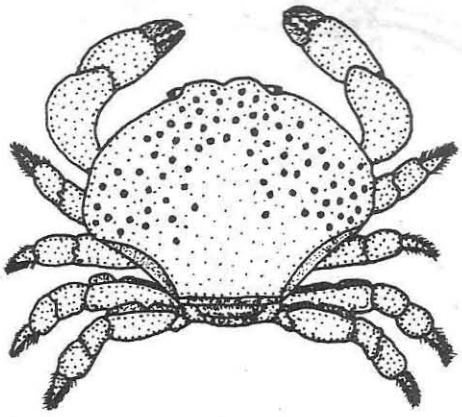
c. *Leptodius gracilis* (Dana)



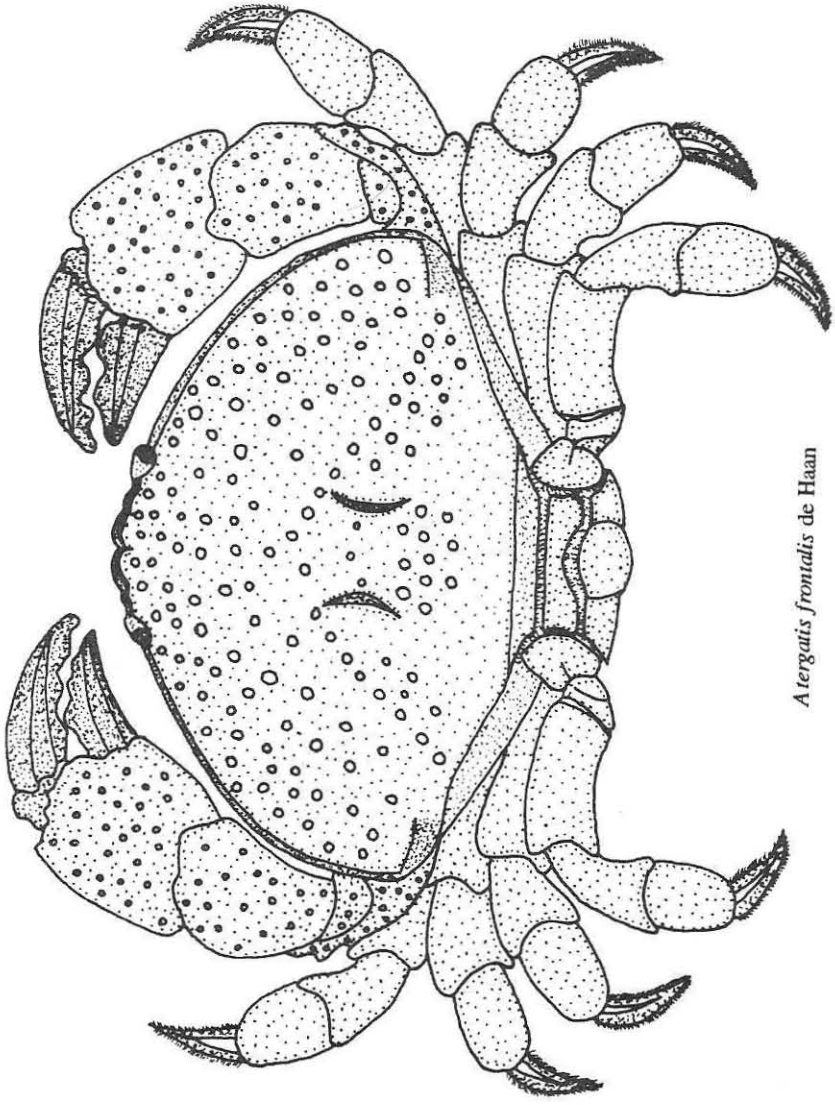
Atergatis floridus (Linnaeus)



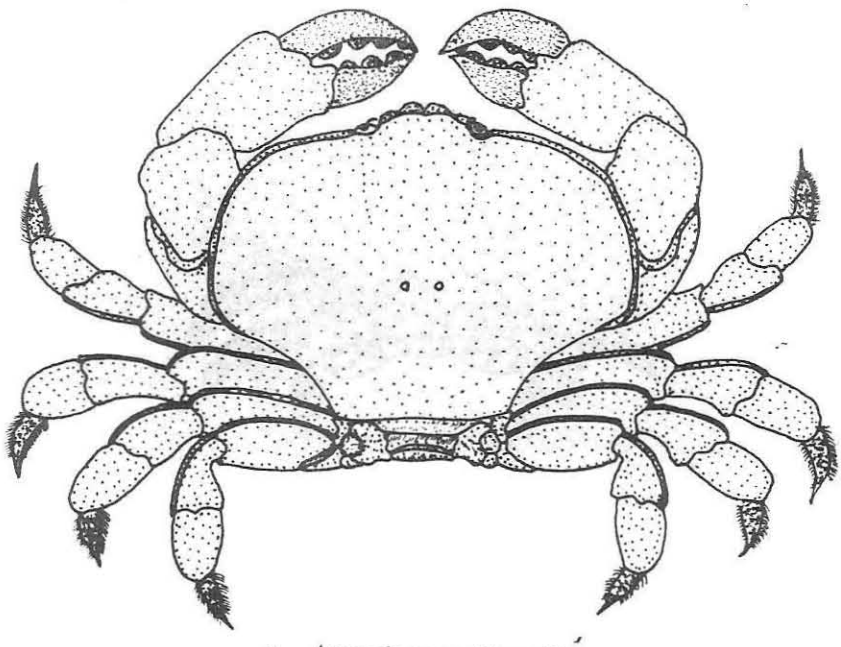
Atergatis subdentatus de Haan



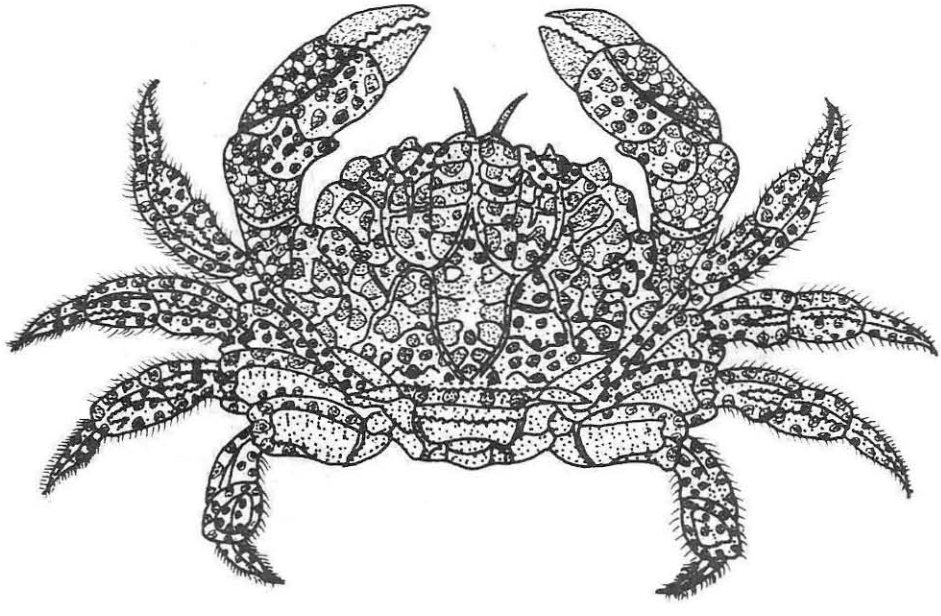
Atergatis integerrimus Lamarck



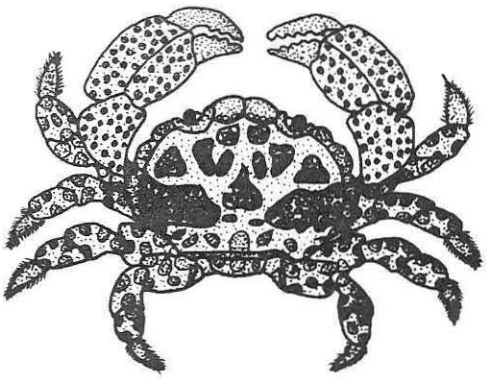
Atergatis frontalis de Haan



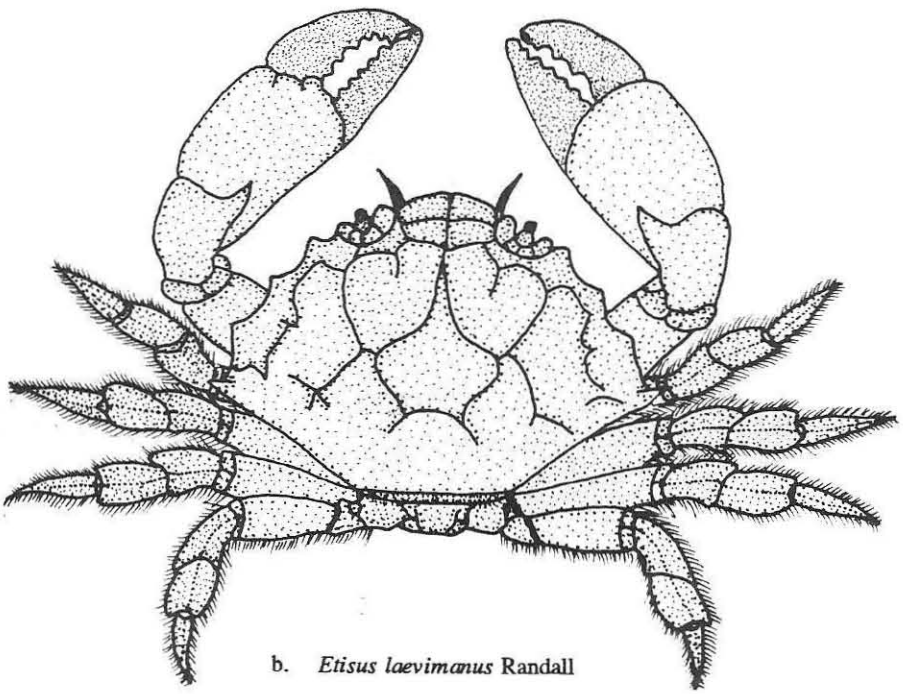
a. *Atergatis roseus* (Ruppell)



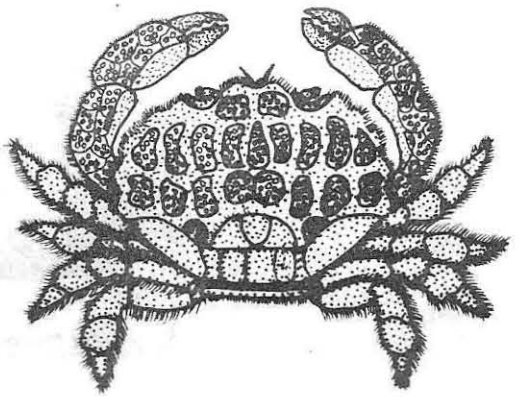
b. *Zosymus aeneus* (Linnaeus)



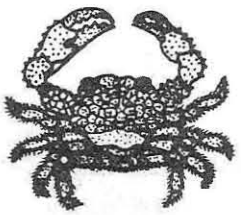
a. *Platypodia cristata* A. Milne Edwards



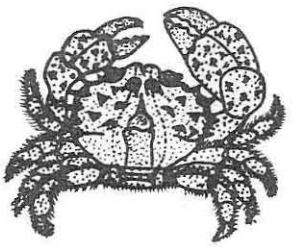
b. *Etisus laevimanus* Randall



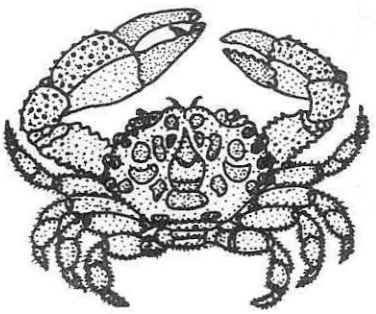
a. *Pilodius areolatus* (H. Milne Edwards)



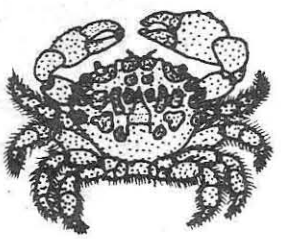
b. *Phymodius monticulosus* (Dana)



c. *Phymodius granulosus* (de Man)

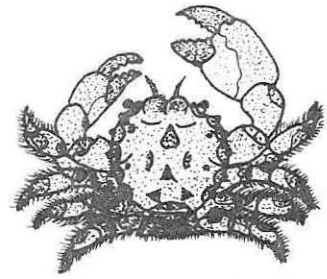


d. *Phymodius ungulatus* (H. Milne Edwards)



e. *Phymodius nitidus* (Dana)

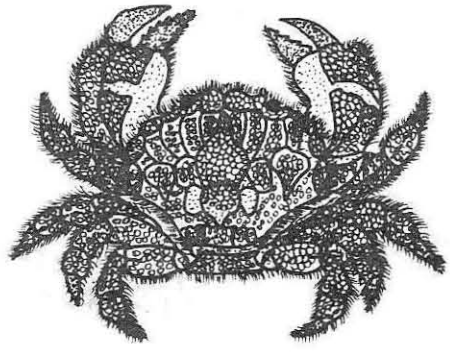
a. *Chlorodiella nigra* (Forskal)



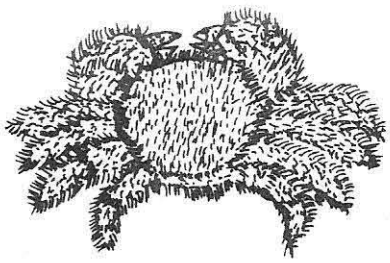
b. *Cymo melanodactylus* de Man

c. *Cymo andreossyi* (Audouin)

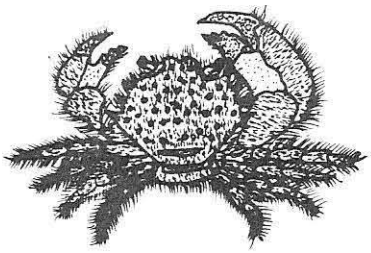
d. *Pseudoliomera speciosa* (Dana)



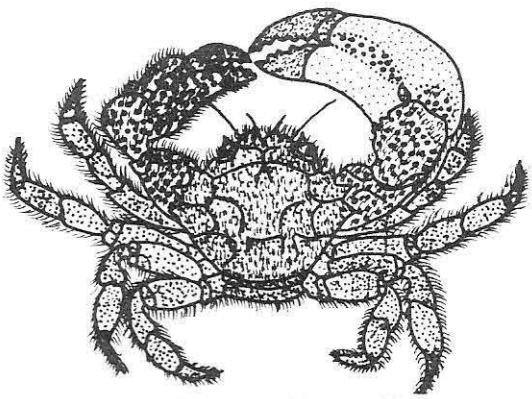
e. *Paractaea ruppelli orientalis* (Odhner)



a. *Pilumnus vespertilio* (Fabricius)

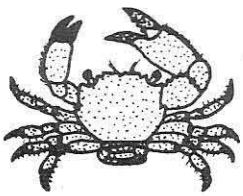


b. *Pilumnus tomentosus* Latreille

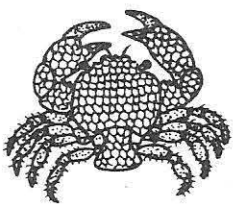


c. *Pilumnus minutes* de Haan

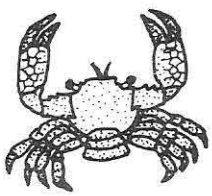
d. *Tetralia cavimana* Heller



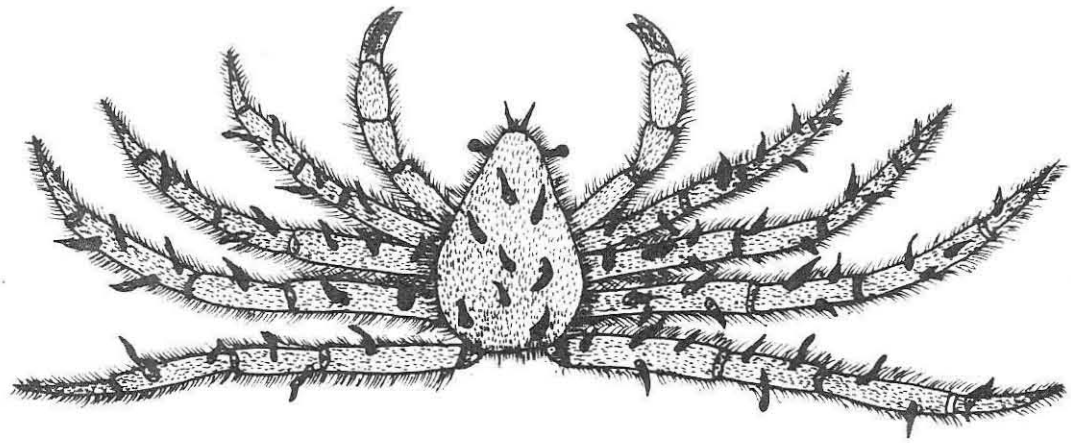
e. *Trapezia cymodoce* (Herbst)



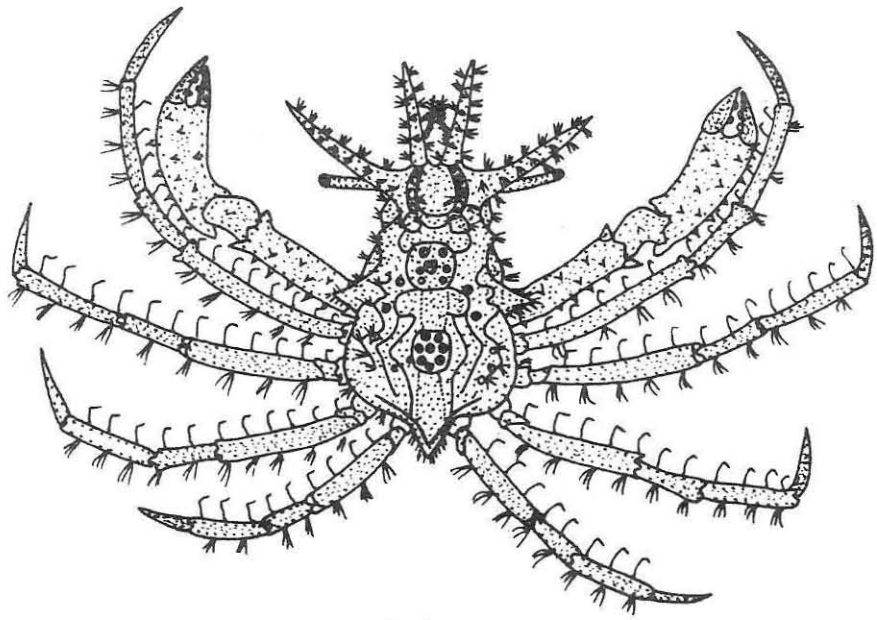
f. *Trapezia areolata* Dana



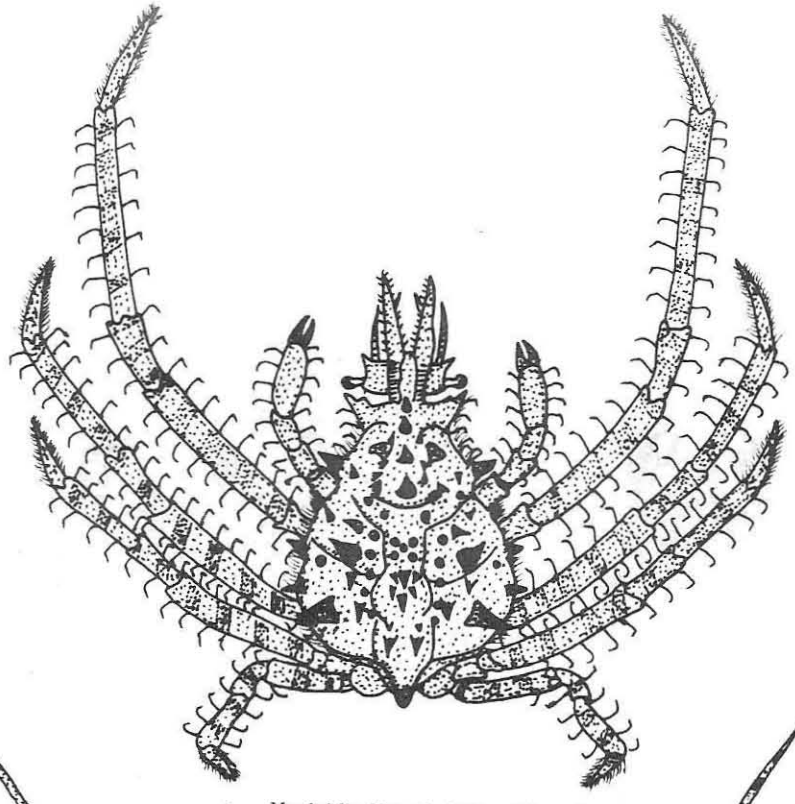
g. *Trapezia ferruginea* Latreille



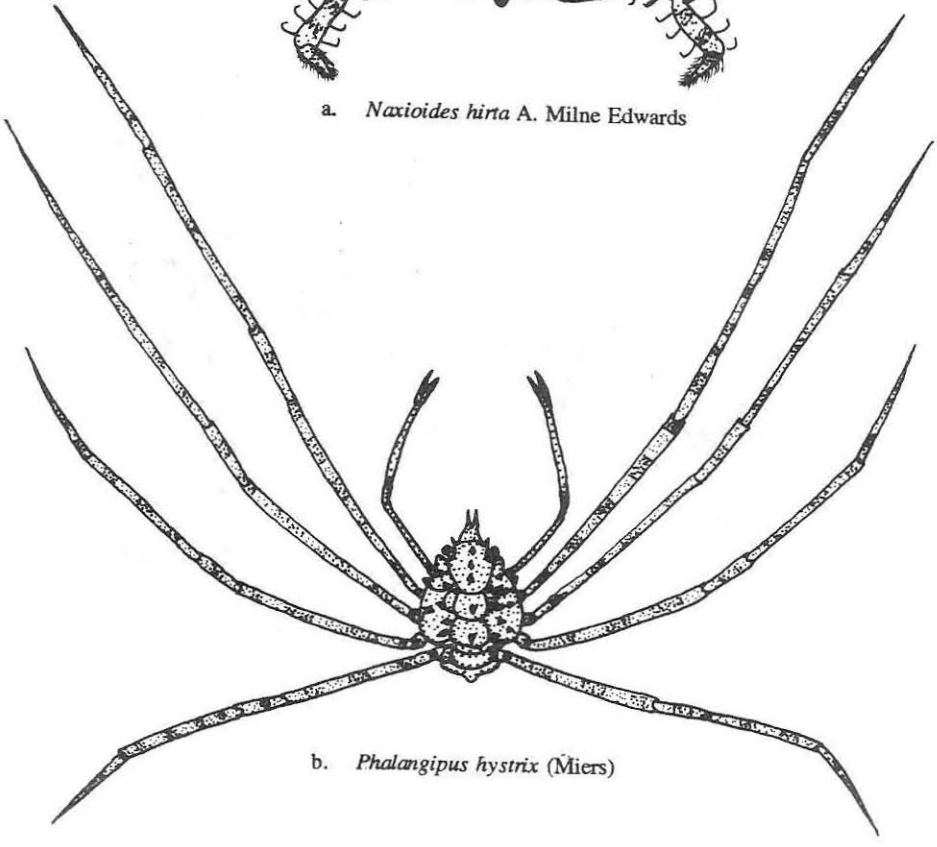
a. *Composcia retusa* Latreille



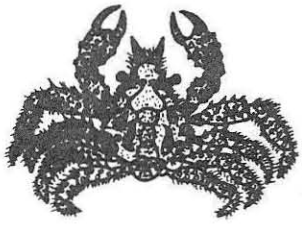
b. *Ophthalmias cervicornis* (Herbst)



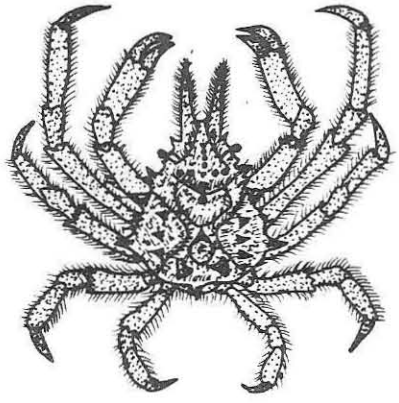
a. *Naxioides hirta* A. Milne Edwards



b. *Phalangipus hystrix* (Miers)

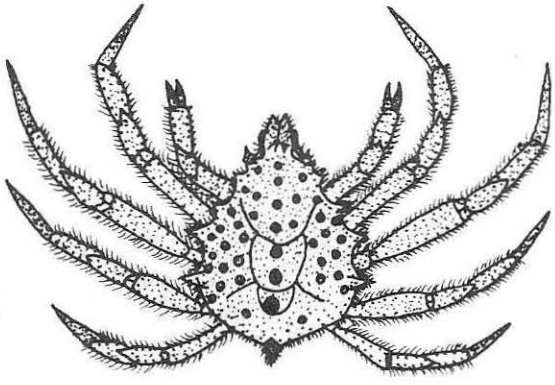


a. *Tylocarcinus styx* (Herbst)

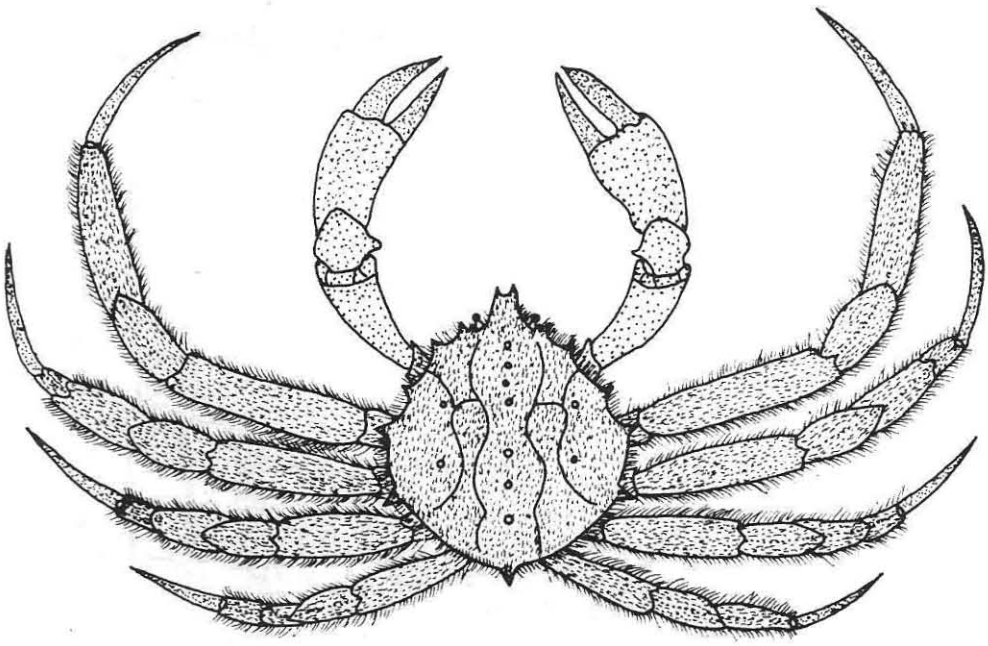


b. *Hyastenus pleione* (Herbst)

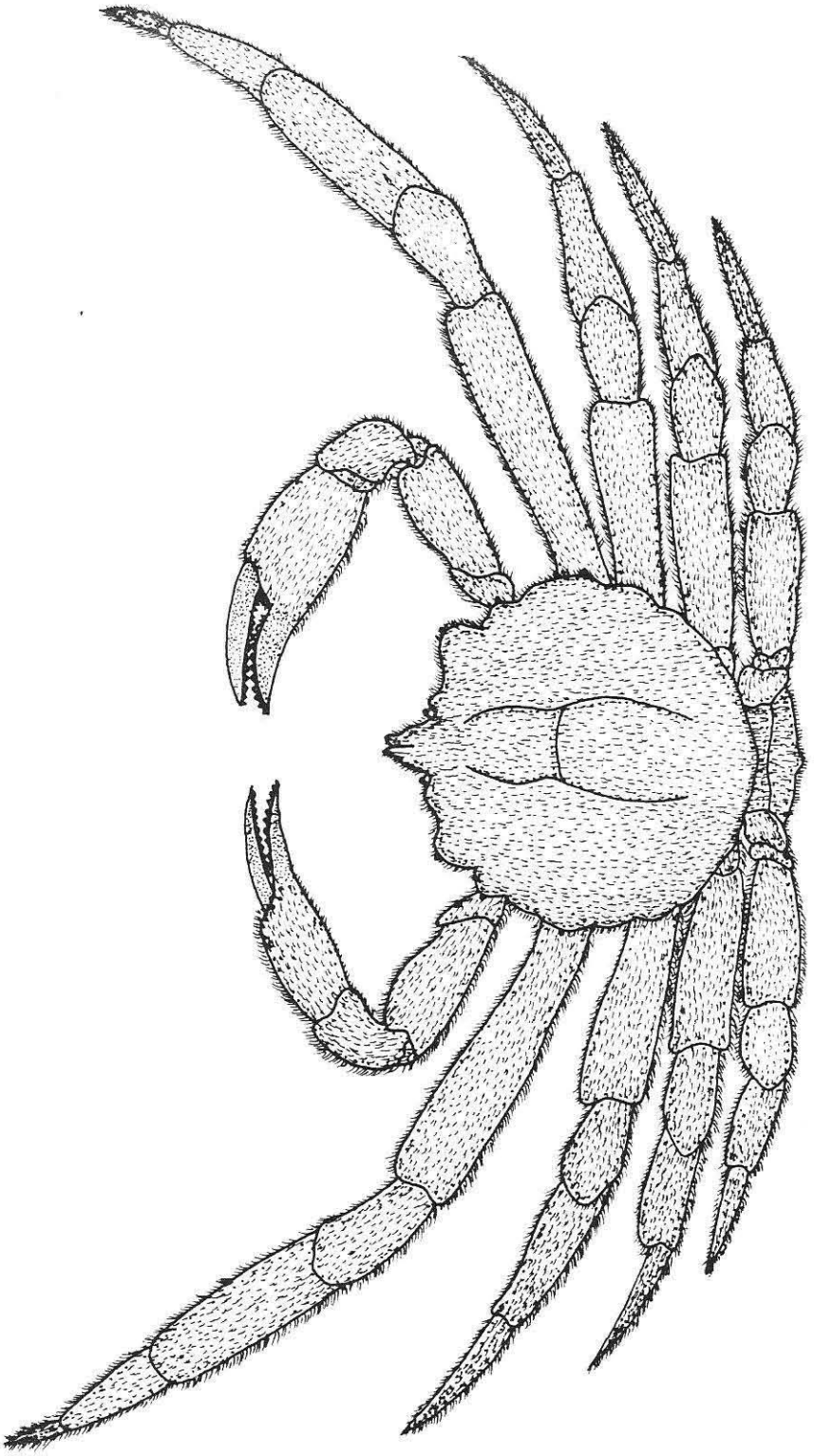
c. *Hyastenus oryx* A. Milne Edwards



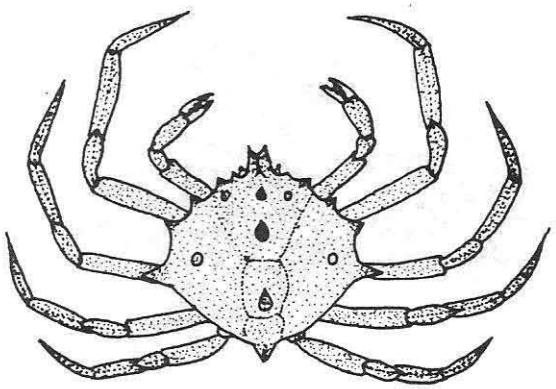
d. *Doclea alcocki* Laurie



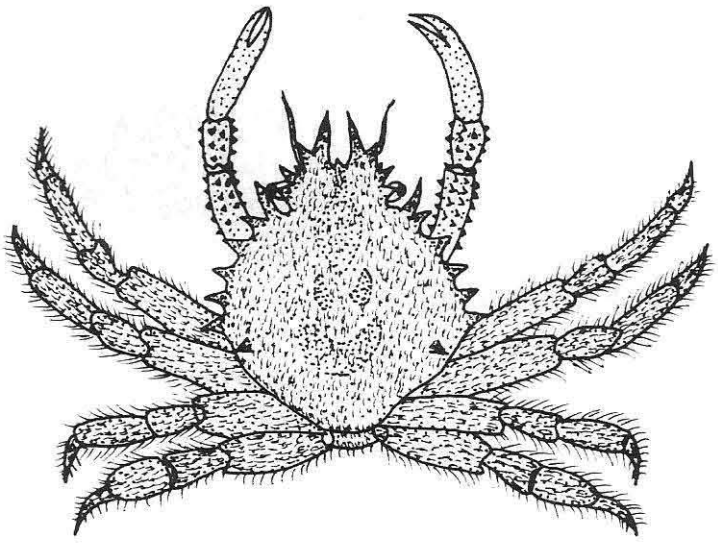
Doclea hybrida (Fabricius)



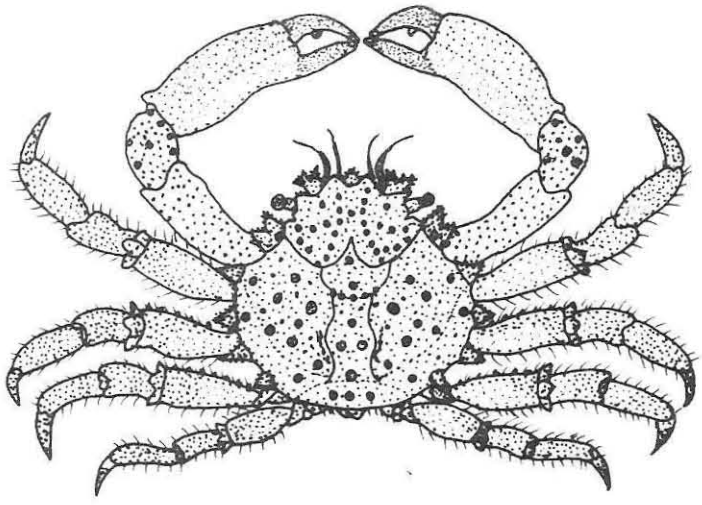
Doclea ovis (Herbst)



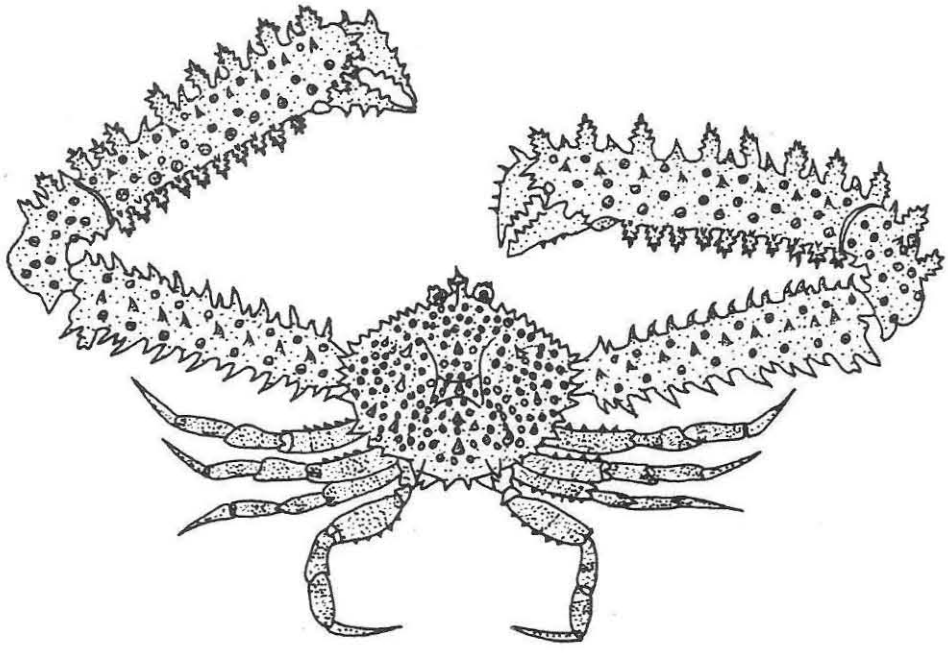
a. *Doclea canalifera* Stimpson



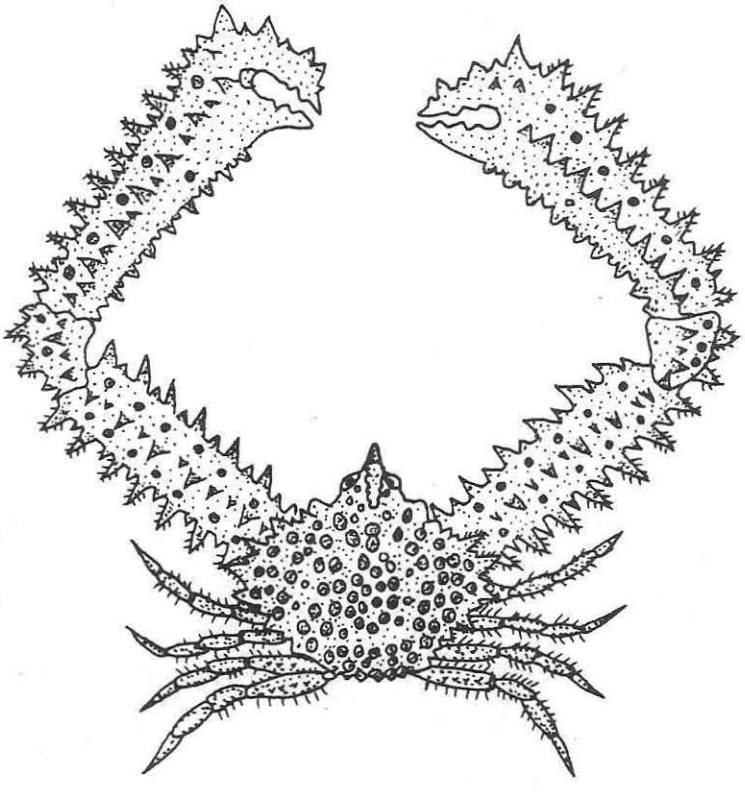
b. *Schizophrys aspera* (H.Milne Edwards)



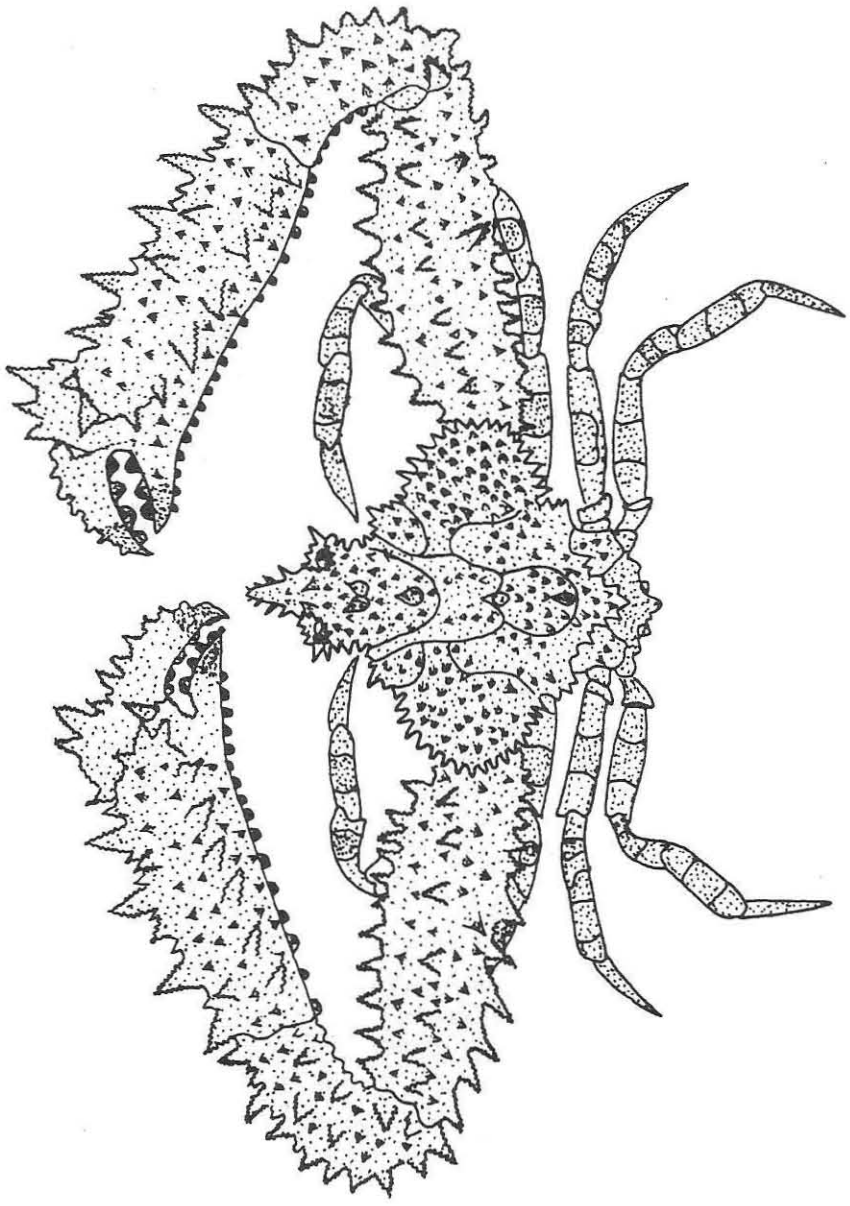
a. *Cyclax suborbicularis* (Stimpson)



b. *Parthenope (Platylambrus) prensor* Herbst

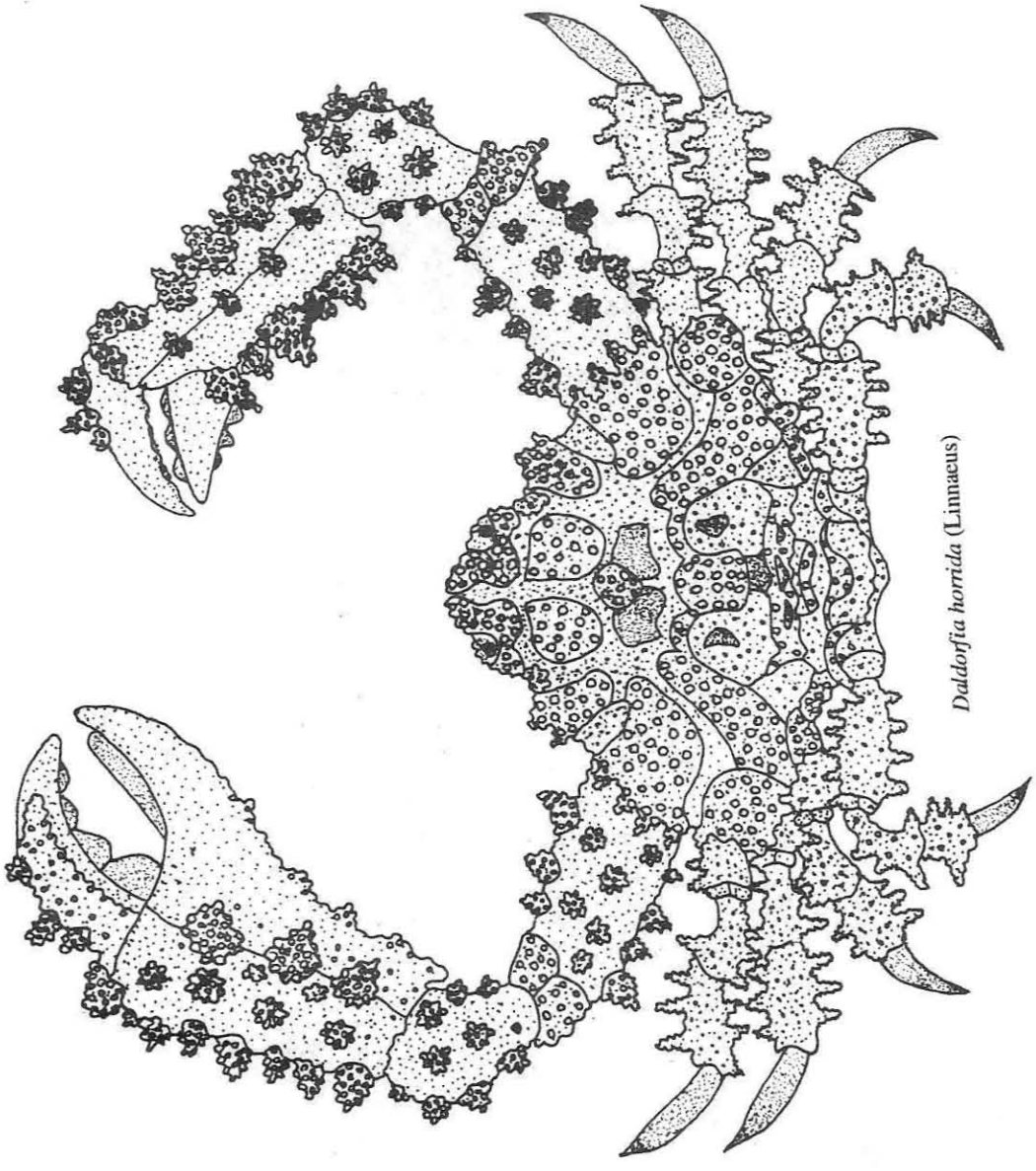


Parthenope (Platylambrus) echinatus Herbst

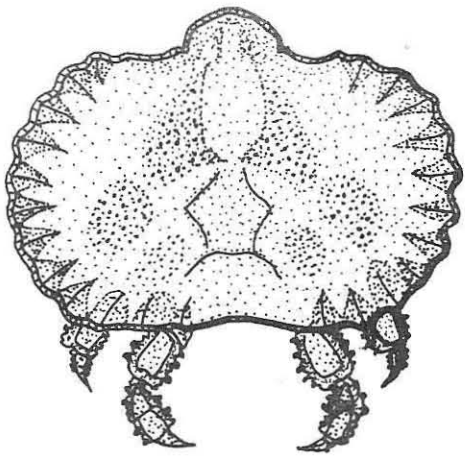


Parthenope (Rhinolambrus) contrarius (Herbst)

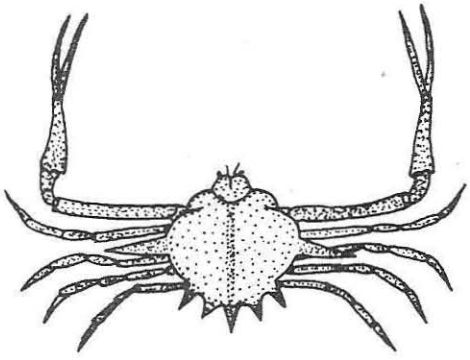
PLATE 70



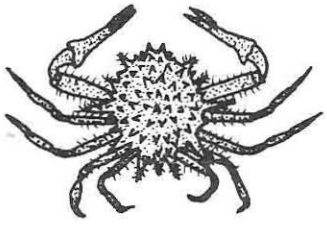
Daldorfia horrida (Linnaeus)



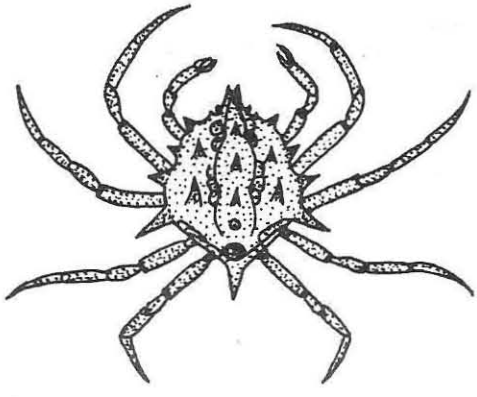
a. *Aethra scruposa* (Linnaeus)



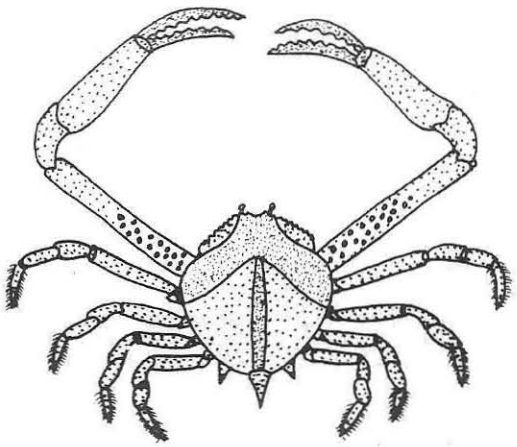
b. *Arcania heptacantha* (de Man)



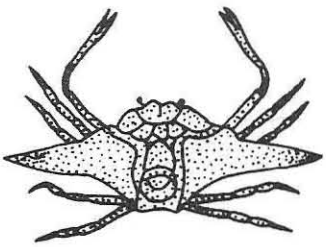
c. *Arcania erinaceus* (Fabricius)



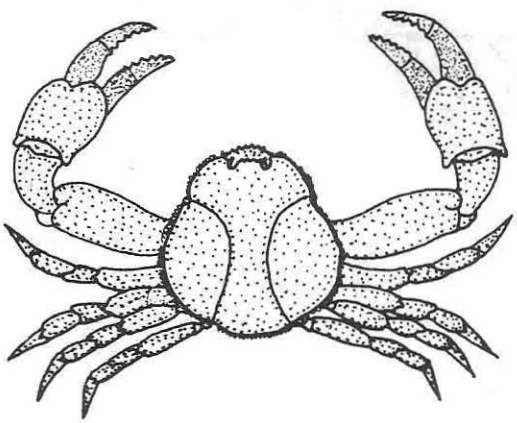
d. *Arcania novemspinosa* (Adams and White)



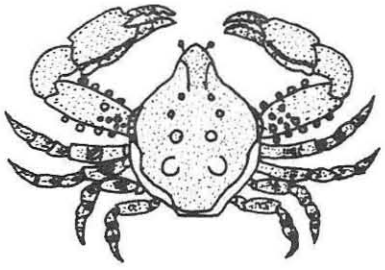
a. *Myra fugax* (Fabricius)



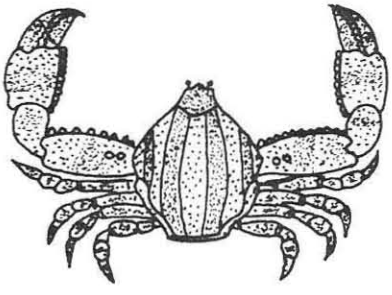
b. *Ixa cylindrus* (Fabricius)



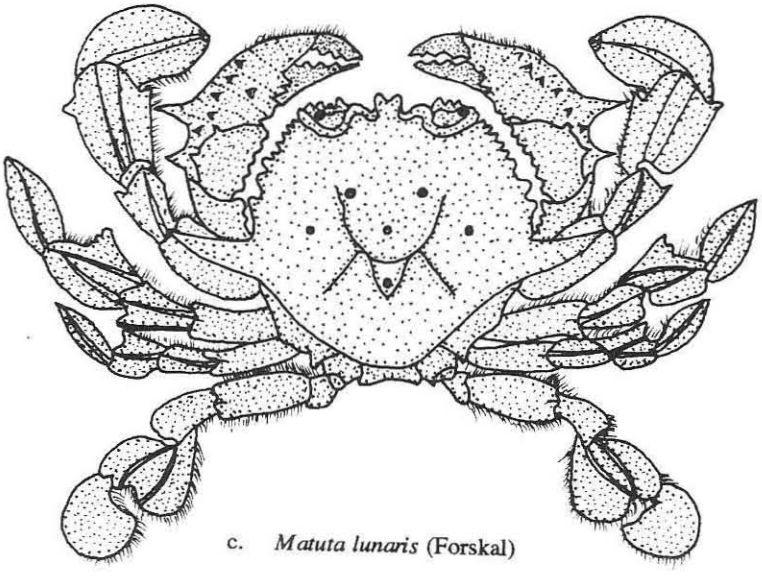
c. *Philyra syndactyla* Ortmann



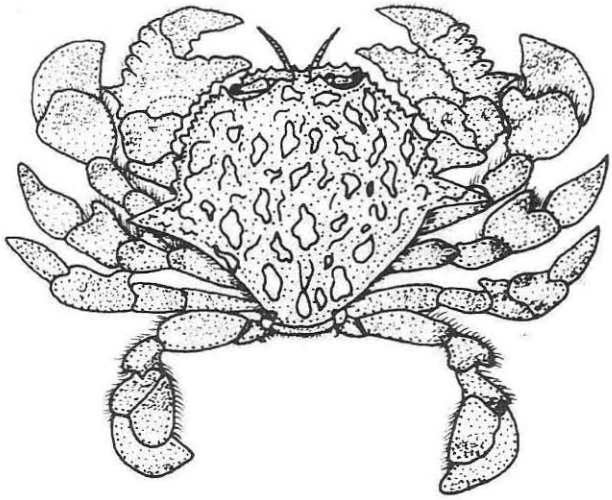
a. *Leucosia anatum* (Herbst)



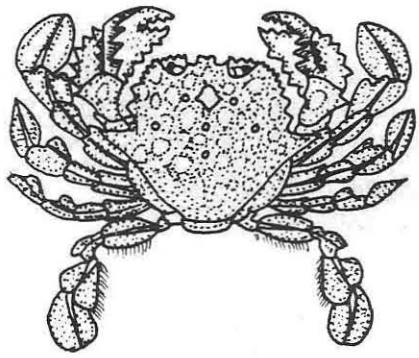
b. *Leucosia craniolaris* (Linnaeus)



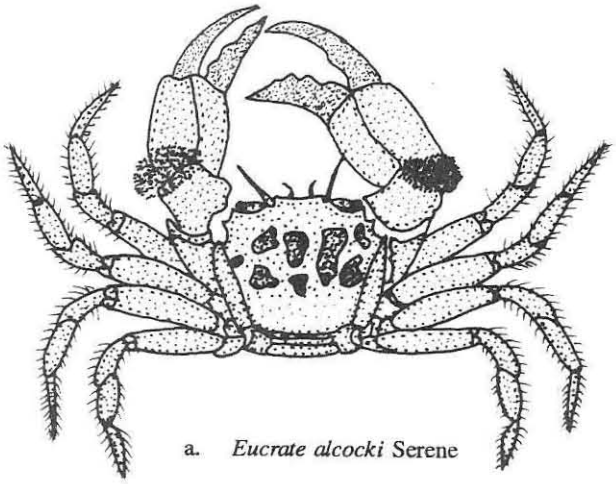
c. *Matuta lunaris* (Forskal)



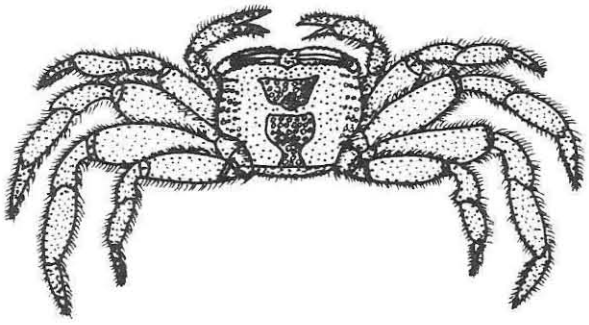
a. *Matuta planipes* Fabricius



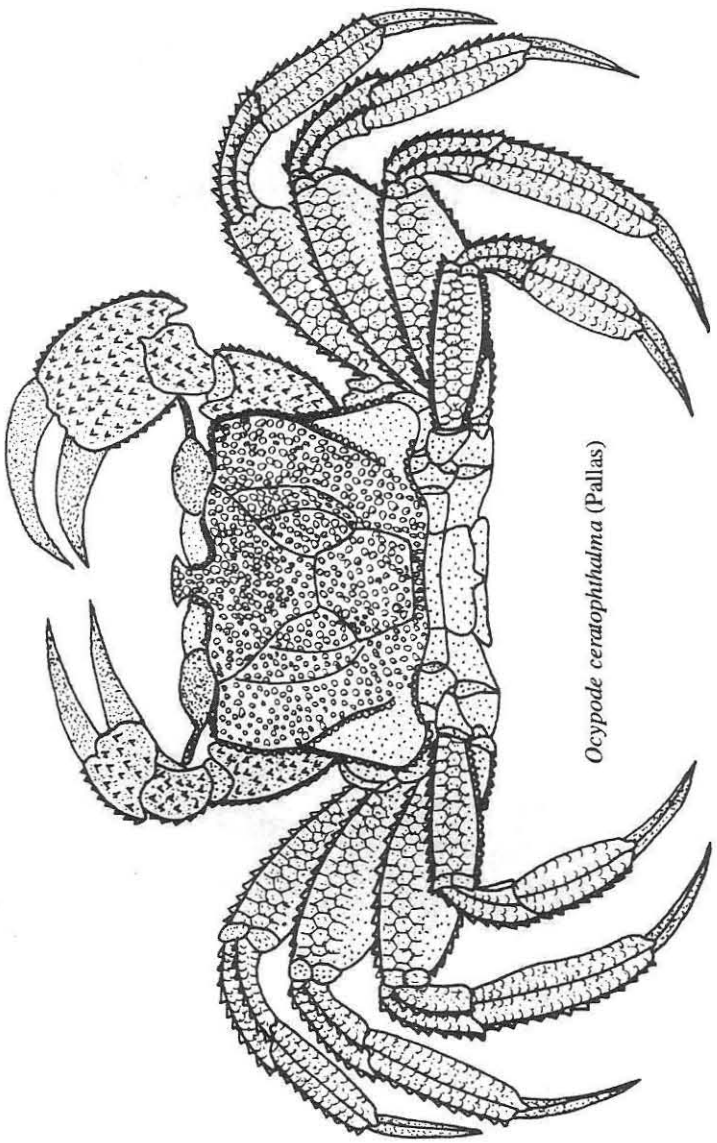
b. *Matuta miersi* Henderson



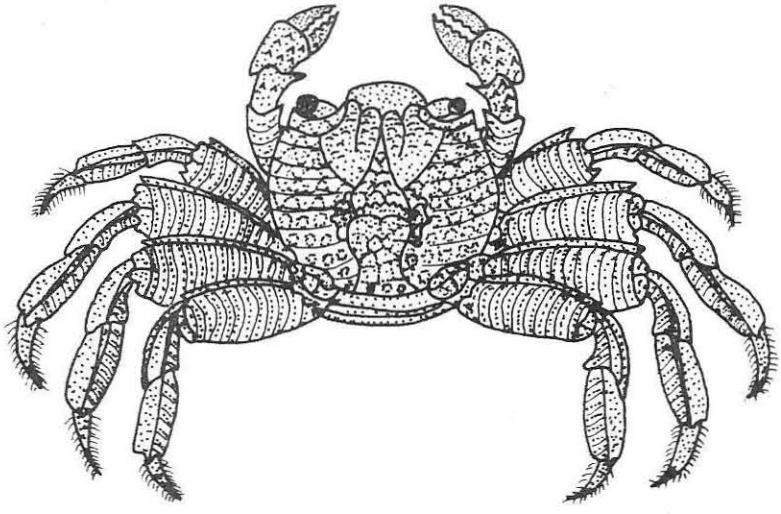
a. *Eucrate alcocki* Serene



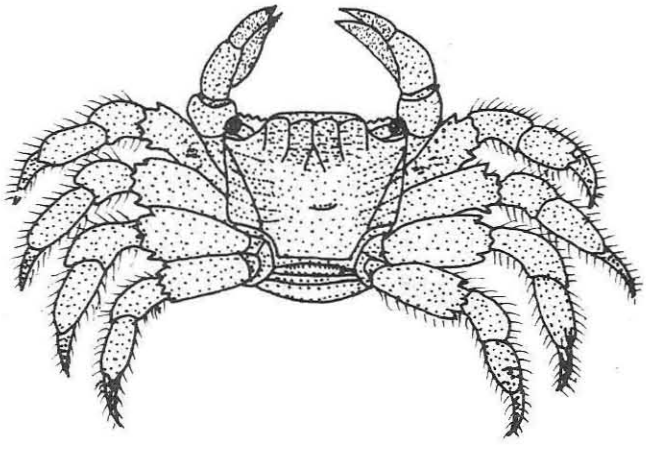
b. *Macrophthalmus (Mareotis) depressus* Ruppell



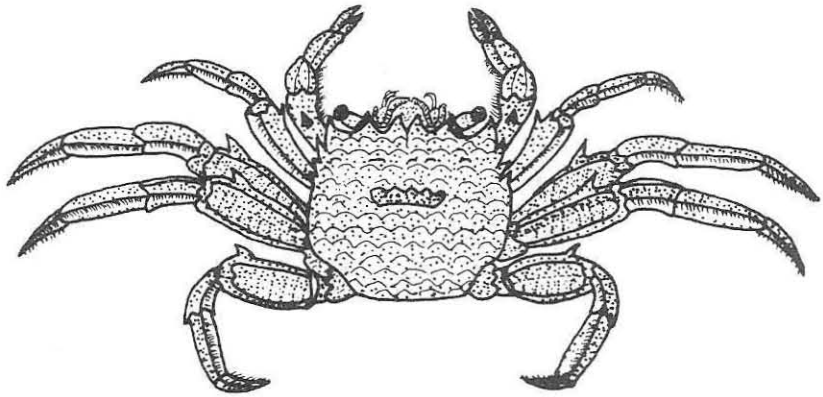
Ocypode ceratophthalma (Pallas)



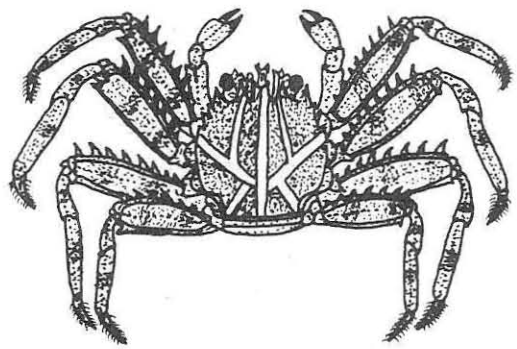
a. *Grapsus albolineatus* Lamarck



b. *Metopograpsus messor* (Forskal)



a. *Plagusia depressa tuberculata* Lamarck



b. *Percnon planissimum* (Herbst)