

GUIDE TO THE MARINE ISOPODS OF SOUTHERN AFRICA

By

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TRUSTEES OF THE
SOUTH AFRICAN MUSEUM
CAPE TOWN
1978

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ISBN 0 908407 43 2

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THE RUSTICA PRESS (PTY.) LTD., WYNBERG, CAPE

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INTRODUCTION

Serious investigation of the marine isopods of southern Africa began in the second half of the nineteenth century, with visits of ships from various expeditions. Stimpson collected in False Bay while the United States North Pacific Exploring Expedition's ship lay at anchor in Simon's Bay in 1853. The *Challenger*, German South Pole and German Deep-Sea expeditions also collected briefly in southern African waters.

The work of the Cape Government's research vessel, *Pieter Faure*, from 1897 to 1907 laid the foundation of much marine taxonomic work in South Africa. The isopods were dealt with in several papers by the Rev. T. R. R. Stebbing (1900, 1902, 1908, 1910), and later by Dr. K. H. Barnard (1914, 1920, 1924, 1925, 1940). Most of these papers were published in the *Annals of the South African Museum*.

Stebbing (1910) listed forty-one species of marine isopods in his general catalogue of the South African Crustacea, while Barnard (1940) increased the number to about 200. This increase in the number of species was due to concentrated collecting by Barnard himself, as well as by the Department of Zoology of the University of Cape Town. The latter institution has continued its collecting, especially in estuaries and on the continental shelf, with the aid of the R/V *John D. Gilchrist*, and later the R/V *Thomas B. Davie*. Additional records were slowly added to the faunal list by Barnard (1951, 1955, 1957, 1958, 1959) in several short papers, and by Kensley (1968, 1974, 1975, 1976, 1977).

The intertidal and shallow water marine isopod fauna of South Africa is quite well documented, with certain areas such as Lüderitz, Lambert's Bay, Saldanha Bay, Table Bay, False Bay and Still Bay having received considerable attention. With the advent of SCUBA diving, specific micro-environments can now be sampled and this technique has also added to the list of species. Beyond the 200-metre mark, because of a lack of collecting, relatively few species are known. The work of the South African Museum from the R/V *Meiring Naude* (1975, 1976) in deep water off Natal has shown that a rich and varied fauna remains to be sampled.

The present list contains about 275 species, and includes records published up to June 1977.

WHAT IS AN ISOPOD?

The isopods belong to the Class Crustacea of the Phylum Arthropoda. This implies that they all have to some degree the following features in common with the rest of the Crustacea:

They possess a jointed chitinous exoskeleton.

The body is divided into a cephalon (head), a pereon (thorax), and a pleon (abdomen), the latter always ending in a telson (see glossary).

Each segment typically bears a pair of jointed appendages.

The cephalon is composed of six segments, usually fused, and also sometimes fused to a varying number of pereon segments.

The second and third cephalon segments each bears a pair of antennae, the fourth segment a pair of mandibles.

A pair of uropods is usually present on the pleotelson.

The uropods may be uni- or biramous, but the rami are always a single article.

The telson is often fused to one or more pleonites (pleon segments) to form a pleotelson.

The following features separate the isopods from the rest of the Crustacea (Figs 1-2):

The body in the majority of forms is dorsoventrally depressed, although some forms are cylindrical or laterally compressed.

Two pairs of uniramous antennae are present.

Eyes, when present, are usually sessile.

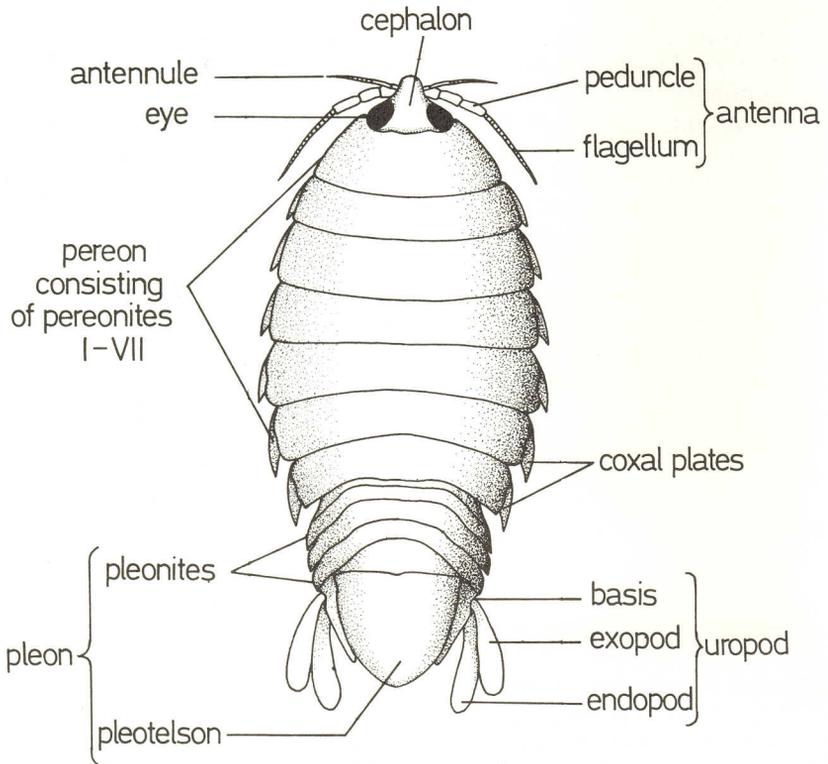


Fig. 1. Dorsal view of typical isopod.

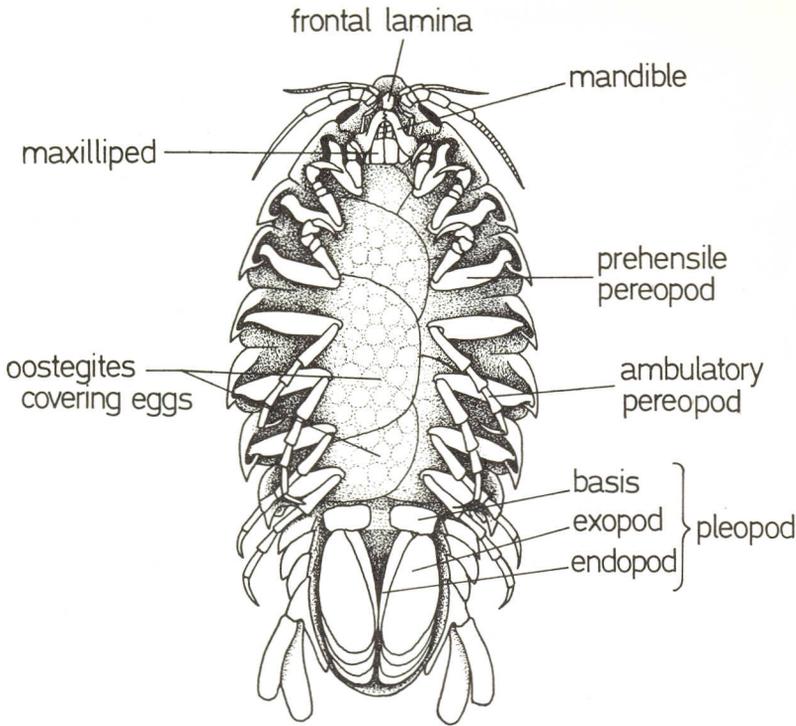


Fig. 2. Ventral view of typical ♀ isopod.

The mouthparts (Fig. 3) consist of one pair of mandibles, two pairs of maxillae, plus a pair of maxillipeds (the latter are actually appendages of the first thoracic segment, which is fused with the cephalon).

The lateral portions of the body segments are often extended to form coxal plates (coxae).

Seven pairs of ambulatory (walking) (Fig. 4), natatory (swimming), or prehensile (clinging) uniramous pereopods (legs) are usually present.

The brood pouch in females is formed by three to five pairs of oostegites.

The pleon usually bears five pairs of flattened pleopods. Some of these may be operculate. The second pair is often modified to perform a sexual function in males.

In addition to these external features, there are numerous anatomical features which are characteristic of the isopods. These may be obtained from such text works as Kaestner (1970).

The majority of isopods (of which there are more than 4 000 described species) are marine forms, but the Oniscoid group have successfully

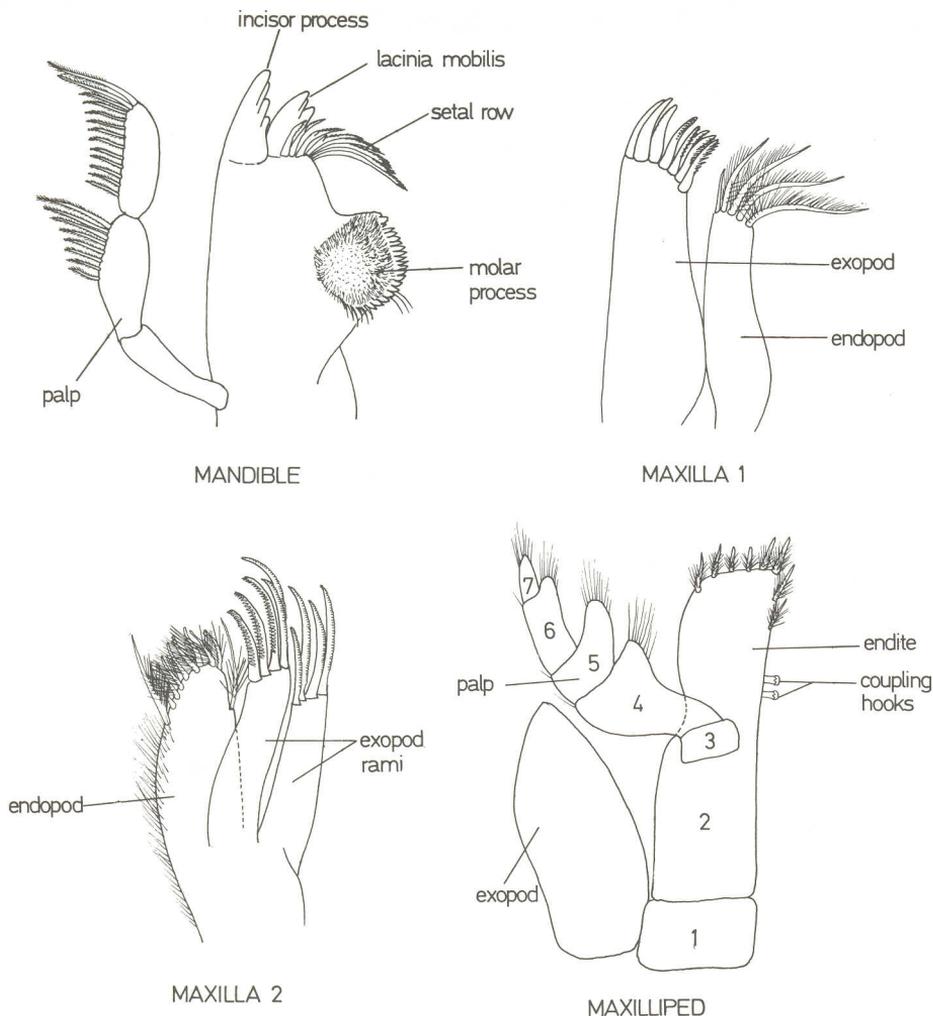


Fig. 3. Isopod mouthparts.

moved on to the land, and show related adaptations in their respiration and reproduction. The marine forms have exploited almost all possible ecological niches, from hadal and abyssal depths, to the sea-shore. In very deep water, the majority of isopods belong to the families of the large suborder Asellota. The species of this group show numerous adaptations for life in the depths, frequently on soft-sediment bottoms. Thus

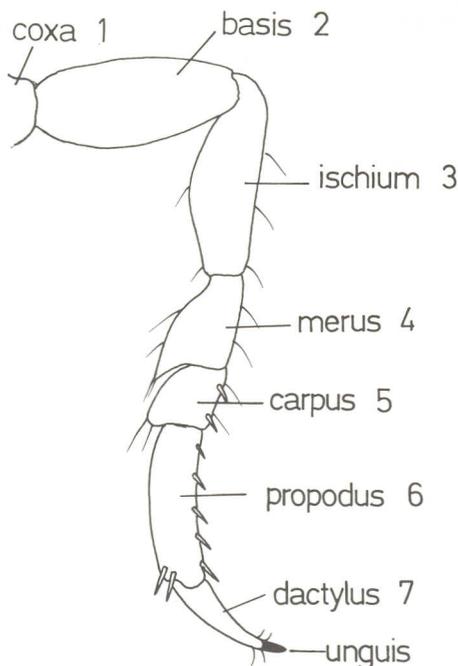


Fig. 4. Typical isopod ambulatory pereopod.

spindly elongate appendages are often found, while many forms feed on detrital matter in the sediments. On the continental shelf, isopods may be found in a variety of habitats, e.g. amongst coarse debris composed of coral, sponge, mollusc, and foraminiferal fragments; clinging to fan corals and hydroids; or burrowing into sponges. In the intertidal and shallow infratidal zones, a great variety of isopods may be found in a range of niches, e.g. in algal holdfasts; amongst algal fronds; on hydroids, sponges and bryozoans; under stones; in empty mollusc shells; burrowing into coarse or fine sand or mud, or into wooden pilings. On sandy beaches, and amongst the rocks and stones of the high tide area, some oniscoids may be found, either burrowing into the sand or sheltering in crevices. The pelagic area, especially of the deep sea, is poorly exploited by isopods. In shallow off-shore waters, isopods which spend most of their time on the bottom, may occasionally swim to the surface and be taken in nets. These forms are found amongst the cirrolanids, cymothoids, and sphaeromatids. Other forms such as *Pontogeloides latipes* burrow into intertidal sand and emerge to swim and feed on the incoming tide.

Amongst the forms which are parasitic on fish or crustaceans, the

adult female is often so distorted that only during post-embryonic development are their isopod connections revealed.

The freshwater Phreatoicidea are not dealt with in this work.

NOTES AND COMMENTS ON THE KEYS

The purpose of the following keys is to provide a single work from which the majority of southern African marine isopods may be identified with the minimum possible difficulty. (This is not to suggest that identification from these keys is always easy!)

Several warning notes must be sounded in the use of these keys:

1. The supplementary notes must not be regarded as complete diagnoses of the genera or species concerned.
2. The keys may not work for genera and species from outside the southern African region.
3. Should difficulty be experienced in identifying a species, three possibilities must be considered:
 - (i) The key is inefficient. In this case, if the figures or supplementary notes do not help, resort to more specialized reports.
 - (ii) An incorrect choice has been made, in which case, return to the point of doubt and take the alternate character.
 - (iii) The species is either undescribed or is a new record for the area. In this case, take the specimen to a crustacean taxonomist for further advice.
4. The taxonomy of several of the isopod groups included here is still in a state of flux. Changes of name and status will inevitably occur. The present work must therefore *not* be regarded as a final word. Groups especially prone to changes or which require work are the anthurids and asellotes.

The species included in this work are from the geographical area from the mouth of the Kunene River in the west to Inhambane, Mozambique, in the east, and the surrounding seas. Some records from Walter's Shoal (south-west Indian Ocean, 33°13'S 43°51'E), Gough and Marion Islands, and St Paul and Amsterdam Islands are also included. Species from abyssal and deep-water collections, as well as from the littoral and intertidal zones, are all included. A few oniscoid isopods which regularly occur in the intertidal area are also included.

Where possible, the figures were done from actual specimens, often from type specimens. Other sources of figures are acknowledged in the legends.

The families, genera, and species are arranged in alphabetical order in the diagnostic discussions.

In the supplementary paragraphs following the keys, the reference to the original description of each species (i.e. author and date) is given.

The features mentioned in the brief paragraph of each species must not be regarded as fully diagnostic, but merely as supplementary to the key characters, to aid identification.

The dimensions given are for the total mid-dorsal length of the largest recorded or available specimen.

The distribution records deal first with the southern African records, then extra-southern African records, if any.

GLOSSARY

AMBULATORY	(pereopod), walking appendage
ARTICLE	segment of flagellum
BASIS	second segment of pereopod; or, segment of appendage attached to body, except where coxa is present
BIRAMOUS	composed of two rami or branches
BIUNGUICULATE	(dactylus), armed with two claws
BRANCHIAE	(branchial tufts), respiratory gills
CARINATE	keeled
CARPUS	fifth segment of pereopod
CEPHALON	head
CHELATE	appendage in which dactylus folds against finger-like extension of propodus
CONTIGUOUS	touching or adjoining
COXA	first segment of pereopod, sometimes expanded to form coxal plate
DACTYLUS	seventh (terminal) segment of pereopod
DENTATE	armed with teeth
DENTICULATE	armed with small teeth
EMARGINATE	margin (e.g. of a segment) which is notched or excavated
ENDOPOD	inner ramus of appendage
ENTIRE	continuous, not notched or emarginate
EXOPOD	outer ramus of appendage
FLAGELLUM	portion of antenna beyond the peduncle, composed of varying number of articles
FRONTAL LAMINA	plate-like structure on cephalon anterior to mouthparts, often situated ventrally between antennae
GENICULATE	permanently flexed
INCISED	cut into
INCISOR	distal often toothed portion of mandible
INDURATED	hardened and rigid
ISCHIUM	third segment of pereopod
LACINIA MOBILIS	articulated tooth-plate of mandible, situated between incisor and spine row
MANDIBLE	most anterior, paired mouthpart appendage of cephalon
MAXILLA 1	paired mouthpart appendage immediately posterior to mandible
MAXILLA 2	paired mouthpart appendage immediately posterior to maxilla 1
MAXILLIPED	first paired appendage of pereon, usually filling mouthpart function
MERUS	fourth segment of pereopod
MOLAR PROCESS	grinding process of mandible, often elongate, ridged, dentate, or reduced
NATATORY	(pleopod or pereopod) swimming appendage
OBOVATE	egg-shaped, but with narrow end forming base

OOSTEGITES	ventral pereonal plates or lamellae forming brood-pouch
OPERCULATE	(pleopods) forming a cover or operculum
OVIGEROUS	egg-bearing
PALM	portion of chela posterior to finger-like extension of propodus
PALP	articulated and often segmented appendage of mandible or maxilliped
PEDUNCLE	basal portion of appendage, consisting of one or several segments in antennae and antennules, of single segment in uropods and pleopods
PENIS	paired or single ventral copulatory process on seventh pereonite in male
PEREON	tagma consisting of seven pereonites (thoracic segments)
PEREONITE	segment of the pereon
PEREOPOD	paired appendage of a pereonite (leg)
PLEON	posterior tagma consisting of six pleonites plus telson
PLEONITE	segment of pleon
PLEOPOD	paired appendage of a pleonite (abdominal segment) excluding the uropods
PLEOTELSON	fusion of a varying number of pleonites plus telson
PLUMOSE	(setae or spines), feathery
PREHENSILE	adapted for grasping or clinging
PROPODUS	sixth segment of pereopod
PYRIFORM	pear-shaped
ROSTRUM	anterior mediodorsal extension of cephalon
SERRATE	toothed like a saw
SERRULATE	finely and evenly toothed
SESSILE	not articulated, immobile
SETOSE	carrying setae (fine hairs)
SETULOSE	carrying setules (very fine hairs)
SINUOUS	S-shaped
SPATULATE	spoon-shaped
SPINOSE	armed with spines
STRIAE	impressed lines
SUB-	prefix meaning 'almost', e.g. subchelate, subapical
TAGMA	one of the major divisions of the body, e.g. head, pereon, pleon
TELSON	terminal segment of body, fused with pleon in almost all suborders except Anthuridea, to form pleotelson
TRISINUATE	(margin), having three rounded lobes or loops
TRIUNGUICULATE	(dactylus), ending in three claws
TRUNCATE	cut off
UNGUIS	(of dactylus), terminal claw-like portion
UNIRAMOUS	consisting of single ramus or branch
UROPOD	paired appendage of penultimate segment of pleon.

KEY TO THE ISOPOD SUBORDERS OCCURRING IN SOUTHERN AFRICA

1. Parasitic on crustaceans
 Body nearly always asymmetrical (Fig. 5F) .. EPICARIDEA (p. 148)
- Free-living, or parasitic on fish
 Body usually symmetrical 2

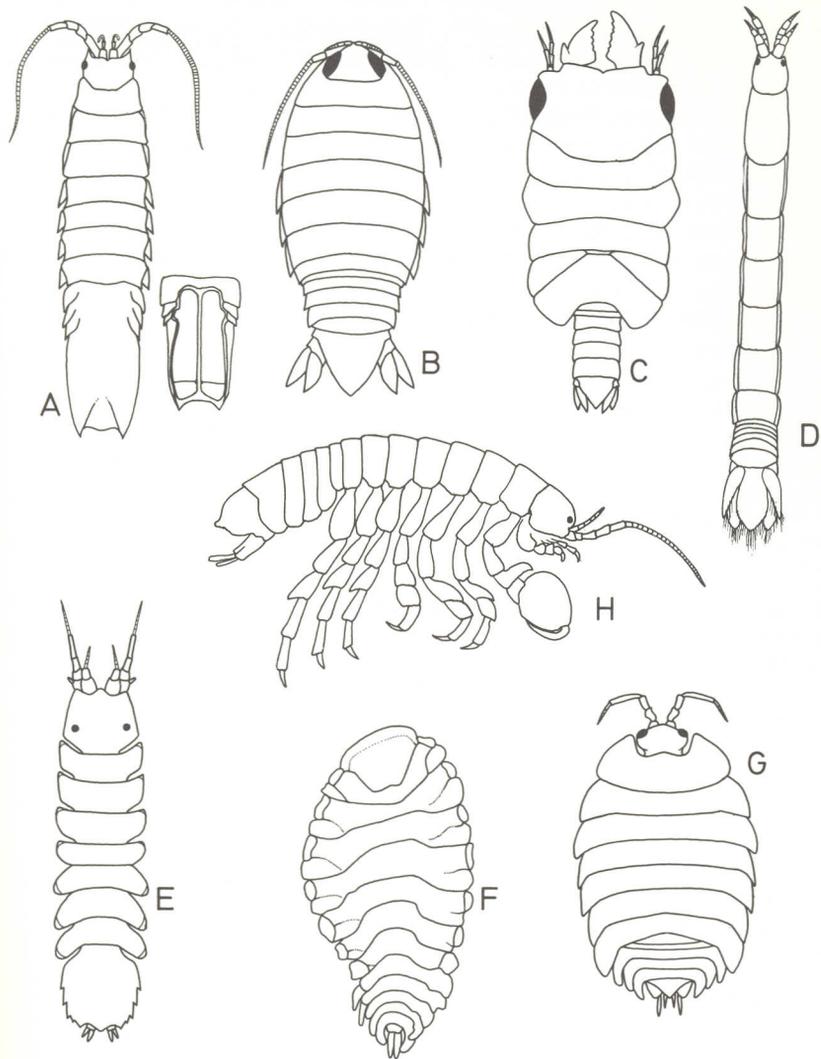


Fig. 5. Examples of the Isopod Suborders. A. Valvifera, with ventral view of pleon. B. Flabellifera. C. Gnathiidea. D. Anthuridea. E. Asellota. F. Epicaridea. G. Oniscoidea. H. Phreatoicoidea.

- | | | | |
|----|---|--------------|----------------------|
| 2. | Uropods lateral or ventral | .. .. . | 3 |
| - | Uropods terminal or dorsal | .. .. . | 5 |
| 3. | Uropods ventral, folded under pleotelson (Fig. 5A) operculate, covering the branchial chamber (Fig. 5A) | .. VALVIFERA | (p. 16) |
| - | Uropods lateral or absent | .. .. . | 4 |
| 4. | Body elongate/cylindrical | | |
| | Uropods often partially folded over telson or pleotelson (Fig. 5D) | .. .. . | ANTHURIDEA (p. 41) |
| - | Body never elongate/cylindrical | | |
| | Uropods flattened, not arched over pleotelson, forming a tail-fan with pleotelson (Fig. 5B) | .. .. . | FLABELLIFERA (p. 55) |
| 5. | Pleopods modified for air-breathing (Fig. 5G) | | |
| | Terrestrial or beach-dwellers | .. .. . | ONISCOIDEA (p. 158) |
| - | Pleopods not modified for air-breathing | | |
| | Marine forms | .. .. . | 6 |
| 6. | Operculate pleopods not present | | |
| | Pleon with at least five pleonites plus pleotelson | .. .. . | 7 |
| - | At least one pair of pleopods forming operculum covering rest of pleopods | | |
| | Pleon with at least three posterior pleonites and telson fused to form pleotelson; uropods often terminal (Fig. 5E) | ASELLOTA | (p. 120) |
| 7. | Pleon laterally compressed | | |
| | Mandibles not projecting beyond cephalon. Freshwater forms (Fig. 5H) | .. .. . | PHREATOICIDEA |
| - | Pleon not laterally compressed | | |
| | Mandibles in ♂ projecting beyond cephalon (Fig. 5C) | | |
| | Marine forms | .. .. . | GNATHIIDEA (p. 117) |

SUBORDER VALVIFERA

Key to the families of the Valvifera

- | | | | |
|----|--|---------|---------------------------|
| 1. | Body usually dorsoventrally depressed | | |
| | All pereopods ambulatory (Fig. 5A) | .. .. . | Idoteidae (p. 35) |
| - | Body seldom dorsoventrally depressed, often geniculate | | |
| | Pereopods differentiated, anterior four pairs setose, posterior three pairs ambulatory (Fig. 6A) | .. .. . | Arcturidae (p. 16) |

Family **Arcturidae**

Pereonite I often fused to cephalon. Pleonites usually fused, one to three pleonites often indistinctly indicated anterior to pleotelson. Flagellum of antennule always a single article. Two distal segments of antennal peduncle usually elongate. Eyes usually present. Pereopods II to IV generally modified with long setae for filter-feeding; pereopods V to VII usually ambulatory or modified for clinging.

The majority of species of this family are sublittoral, and are usually found clinging to algae, hydroids, horny corals, or echinoderm spines. A few species, such as *Austroarcturus foveolatus* and *Arcturinoidea sexpes* seem to live in the debris accumulated in the upper few centimetres of the sea-bed.

- | | |
|--|----|
| 1. Pereonite IV elongate, obviously longer than preceding pereonites | 7 |
| - Pereonite IV similar in length to preceding pereonites .. | 2 |
| 2. Eyes completely dorsal | 3 |
| - Eyes dorsolateral | 4 |
| 3. Two distinct pleonites anterior to pleotelson (Fig. 9D, F) | |
| <i>Austroarcturus</i> (p. 23) | |
| - No distinct pleonites anterior to pleotelson (Fig. 10A-B) | |
| <i>Holidotea unicornis</i> (p. 25) | |
| <i>Antarcturus</i> (p. 17) | |
| 4. Antennae at least as long as body (Fig. 6A, C) | |
| - Antennae shorter than body | 5 |
| 5. Lateral margins of cephalon incised (Figs 11-13) | |
| <i>Microarcturus</i> (p. 26) | |
| - Lateral margins of cephalon not incised | 6 |
| 6. Pleon with one free segment anterior to pleotelson (Fig. 15E) | |
| <i>Pleuropriion chuni</i> (p. 33) | |
| - Pleon with two indistinct segments anterior to pleotelson (Fig. 15F) | |
| <i>Spinarcturus natalensis</i> (p. 33) | |
| 7. Body strongly geniculate | 8 |
| - Body weakly- or non-geniculate | 9 |
| 8. Pereonite IV cylindrical in ♂ and ♀ | |
| Stylet on pleopod 2 ♂ with single apical spine (Figs 14-15) | |
| <i>Neastacilla</i> (p. 31) | |
| - Pereonite IV cylindrical in ♂, three- or four-sided in ♀ | |
| Stylet of pleopod 2 ♂ apically trifid (Fig. 8) .. | |
| <i>Arcturina</i> (p. 21) | |
| 9. Pereonite IV laterally expanded in ♀ | 10 |
| - Pereonite IV laterally not strongly expanded in ♀ (Fig. 10C) | |
| Animal narrow, sides almost parallel | |
| <i>Idarcturus platysoma</i> (p. 26) | |
| 10. Pereopods IV absent in ♂ and ♀ (Fig. 9A-C) | |
| <i>Arcturinoidea sexpes</i> (p. 22) | |
| - Pereopods IV present in ♂ and ♀ (Fig. 7) .. | |
| <i>Arcturella</i> (p. 19) | |

Antarcturus zur Strassen

Pereonite I fused with cephalon. Pleon with three fused segments anterior to pleotelson. Antenna at least as long as, often longer than, body length. Exopod of pleopod 1 ♂ furrowed.

- | | |
|--|-------------------|
| 1. Pair of long spines at distal end of pleotelson | |
| Dorsal spines of cephalon and pereonites I to III simple (Fig. 6A-B) | <i>beliaevaei</i> |

- Pleotelson lacking elongate distal spines
- Dorsal spines of cephalon and pereonites I to III branched
(Fig. 6C) *kladophorus*

Antarcturus beliaevi Kussakin, 1967

Fig. 6A-B

Cephalon with two pairs dorsal spines, anterior pair longer. Scattered short spines over entire dorsal integument. Bases of pereopods also spinose.

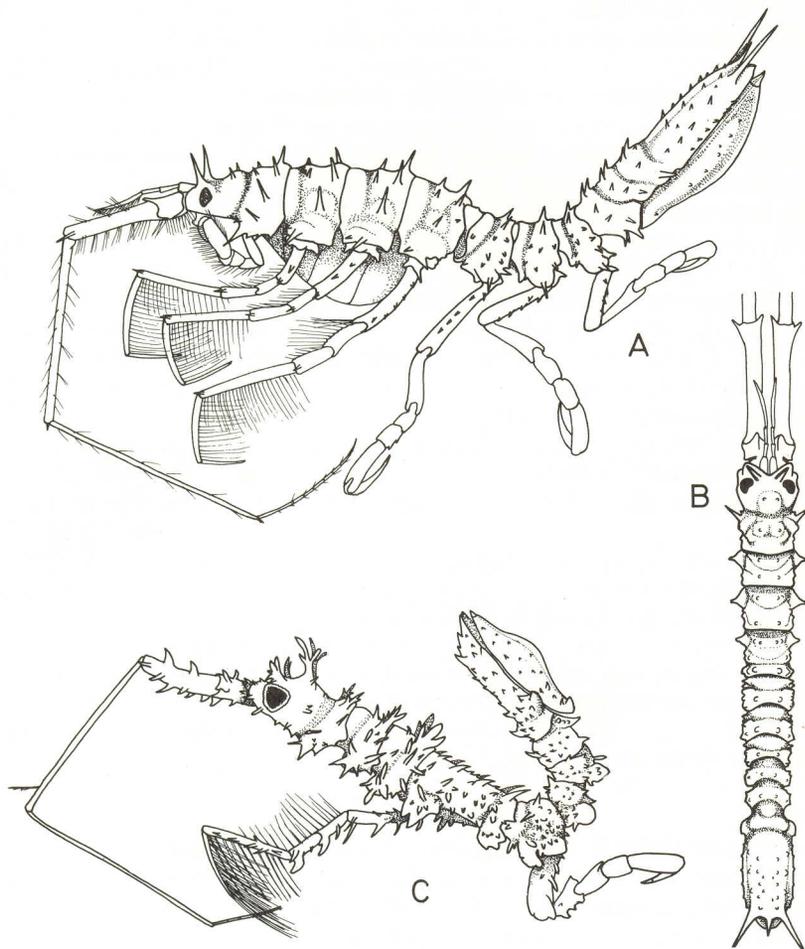


Fig. 6. A. *Antarcturus beliaevi* ♀. B. *A. beliaevi* ♂. C. *A. kladophorus* ♂.

♂ 29,5 mm ♀ 34,5 mm.

Off Cape Point, 3 000 m; off Kerguelen Is.; between Heard Is. and Davis Sea.

Antarcturus kladophoros Stebbing, 1908

Fig. 6C

Cephalon and anterior three pereonites with branched somewhat flattened dorsal spines. Numerous scattered spines over entire dorsal integument. Pereopods spinose.

18 mm.

Saldanha Bay to Natal coast, 12 to 150 m.

Arcturella Sars

Body dorsoventrally flattened, not strongly geniculate. Pereonite I fused with cephalon. Pereonite III often with ventral process in ♂. Pereonite IV longer than others, slender and cylindrical in ♂, broader and flattened in ♀. Pleon of three fused segments plus pleotelson. Species of this genus are frequently found clinging to gorgonaceans and hydroids.

- | | |
|---|------------------|
| 1. Pereonite IV ♀ wider than long | 2 |
| - Pereonite IV ♀ longer than wide | 5 |
| 2. Pereonite IV ♀ with two lateral lobes (Fig. 7E) .. | <i>lobulata</i> |
| - Pereonite IV ♀ unlobed | 3 |
| 3. Anterolateral corners of pereonite IV ♀ acute (Fig. 7F) .. | <i>longipes</i> |
| - Anterolateral corners of pereonite IV ♀ rounded | 4 |
| 4. Pereonite IV ♀ with two or three pairs posterior tubercles (Fig. 7G) | <i>pustulata</i> |
| - Pereonite IV ♀ smooth (Fig. 7A) | <i>brevipes</i> |
| 5. Body finely granular, non-setose (Fig. 7D) | <i>lineata</i> |
| - Body with prominent spines/tubercles, setose (Fig. 7B-C) .. | <i>corniger</i> |

Arcturella brevipes Barnard, 1920

Fig. 7A

Anterolateral corner of cephalon armed with small spine. Two teeth on outer margin of second antennal peduncle segment. All pereonites laterally rounded. Pereonite IV wider than long in ♀. No dorsal sculpturing present.

9,0 mm.

False Bay to Port Elizabeth, 22 to 40 m.

Arcturella corniger (Stebbing, 1873)

Fig. 7B-C

Cephalon with acute anterolateral corners. Second segment of antennal peduncle unarmed. All pereonites laterally acute in ♀. Pereonite IV with

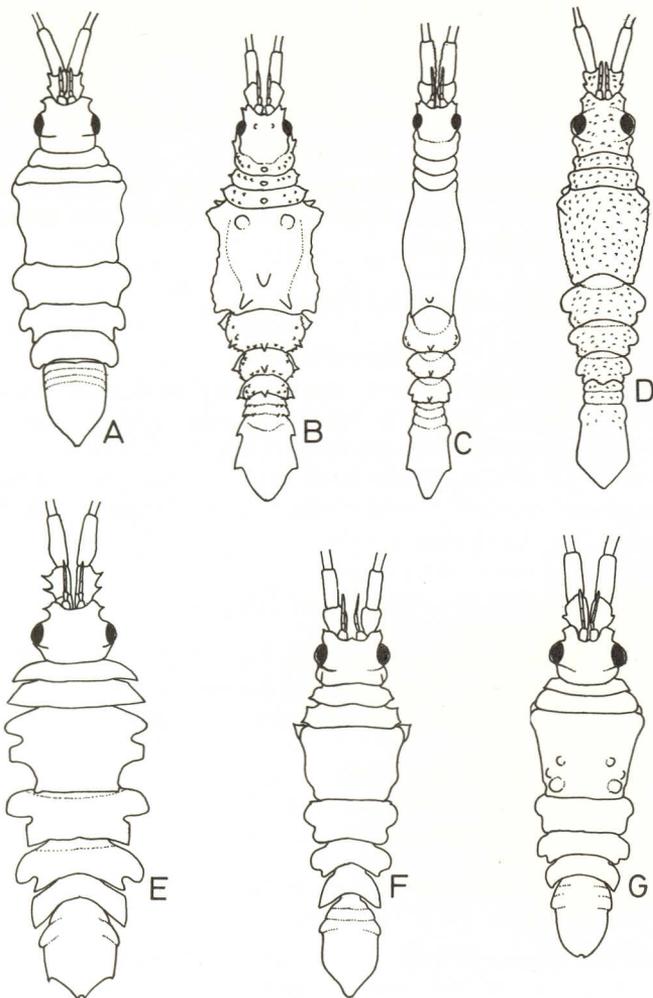


Fig. 7. A. *Arcturella brevipes*. B. *A. corniger* ♀. C. *A. corniger* ♂. D. *A. lineata*.
E. *A. lobulata*. F. *A. longipes*. G. *A. pustulata*.

two anterior and three posterior dorsal tubercles. Pereonites V to VII each with median dorsal spine in ♂ and ♀. The degree of setation and tuberculation in this species is very variable, hence the variety *subglaber* described by Barnard.

12,0 mm.

Saldanha to Port Elizabeth, 22 to 200 m.

Arcturella lineata (Stebbing, 1873)

Fig. 7D

Body minutely granular. Second segment of antennal peduncle armed with spine. All pereonites laterally rounded. Pereonite IV longer than wide in ♀ and ♂.

11,0 mm.

Lüderitz to East London, 20 to 200 m.

Arcturella lobulata Barnard, 1925b

Fig. 7E

Pereonite IV with two lateral lobes, pereonites V and VI with lobed anterior and truncate posterior portions when seen in dorsal view. Telson with small apical notch. Second segment of antennal peduncle with two spines on outer margin. Cephalon with small anterolateral spine.

10,5 mm.

False Bay to Natal, 80 to 120 m.

Arcturella longipes Barnard, 1920

Fig. 7F

Anterolateral corners of pereonite IV acute. Pereonites V and VI laterally rounded. Cephalon with anterolateral spine. Second segment of antennal peduncle unarmed.

10,0 mm.

Table Bay to Port Elizabeth, 40 to 150 m.

Arcturella pustulata Barnard, 1920

Fig. 7G

Anterolateral corner of cephalon acute. Second segment of antennal peduncle with single spine. Anterolateral corners of pereonite IV rounded. Pereonite IV with three pairs of rounded tubercles postero-dorsally. Pereonites V and VI with anterior half rounded.

10,0 mm.

Off Natal, 26 to 80 m.

Arcturina Koehler

Body geniculate. Anterior pereonites with dorsal ridges. Pereonite IV longer and broader than other pereonites. Pereopod I situated within buccal wall, pereopods II to IV short, reduced. Pleopod 1 ♂ with indentation on exopod; pleopod 2 ♂ stylet apically trifid.

- | | | | |
|---|-------|--------------------|---|
| 1. Dorsal ridges with fine felt of setules (Fig. 8A, B) | .. | <i>hexagonalis</i> | |
| - Dorsal ridges lacking felt of setules | .. .. | .. .. | 2 |

2. ♂ lacking truncate projection at anterolateral corner of pereonite IV
 Dorsal ridges converging on pereonites III and IV (Fig. 8G)
triangularis
- ♂ with truncate projection on pereonite IV
 Dorsal ridges more or less parallel, not converging (Fig. 8C-F)
scutula

Arcturina hexagonalis Barnard, 1925b

Fig. 8A-B

Body of ♀ widest at anterior pereonite IV. Body of ♂ narrow, parallel-sided. Dorsal ridges only visible on pereonite IV.

7,0 mm.

False Bay to Mossel Bay, 5 to 87 m.

Arcturina scutula Kensley, 1975b

Fig. 8C-F

Cephalon and pereonites I to IV lozenge-shapes in ♀. Dorsal ridges on cephalon and pereonites I to IV. Pereonite IV in ♂ slightly arched in lateral view, in ♀ strongly convex.

3,7 mm.

False Bay, 15 to 87 m.

Arcturina triangularis Barnard, 1957

Fig. 8G

Dorsal ridges on cephalon, and pereonites I to IV, and VI and VII, and anterior pleon. Ventrolateral margin of cephalon faintly scalloped.

3,6 mm.

Off Mossel Bay and Still Bay, 9 to 54 m.

Arcturinoides Kensley

Arcturinoides sexpes Kensley, 1977a

Fig. 9A-C

Body dorsoventrally flattened, non-geniculate. Pereonite I not fused with cephalon. Pereonites III and IV broader than long in ♀, IV, longer than other pereonites. Pereonites in ♂ subequal. Pereopod IV absent in ♂ and ♀. Brood pouch formed by three pairs of oostegites, those of pereonite IV covering entire pouch, meeting in midline. Pleon of two fused segments plus pleotelson, latter apically acute.

4,0 mm.

Off Natal, 26 to 60 m.

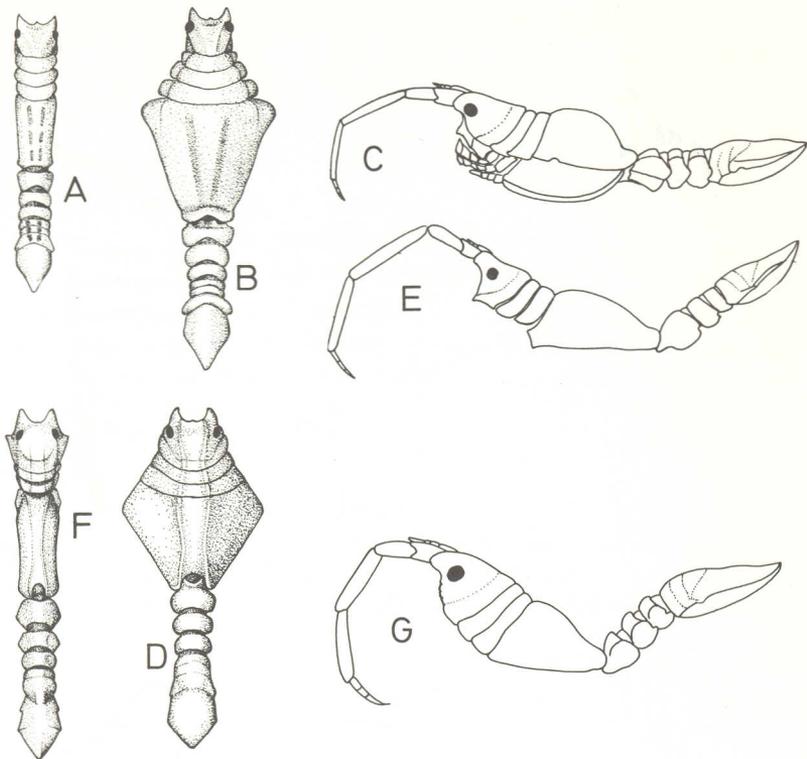


Fig. 8. A. *Arcturina hexagonalis* ♂. B. *A. hexagonalis* ♀. C. *A. scutula* ♀. D. *A. scutula* ♀. E. *A. scutula* ♂. F. *A. scutula* ♂. G. *A. triangularis* ♂.

Austroarcturus Kensley

Body dorsoventrally flattened. Eyes dorsal. Lateral margins of cephalon entire. Pleon of two free segments anterior to pleotelson. Exopod of pleopod 1 ♂ furrowed. Stylet of pleopod 2 ♂ apically simple.

1. Body pitted. Distal antennal segments slender (Fig. 9F-G) *foveolatus*
 - Body smooth. Distal antennal segments relatively robust
 (Fig. 9D-E) *africanus*

Austroarcturus foveolatus Kensley, 1975b

Fig. 9F-G

Dorsal integument finely pitted. Middorsal sloping crest between eyes, also present on pereonites II to IV.

9,0 mm.

False Bay, off Still Bay, 71 to 200 m.

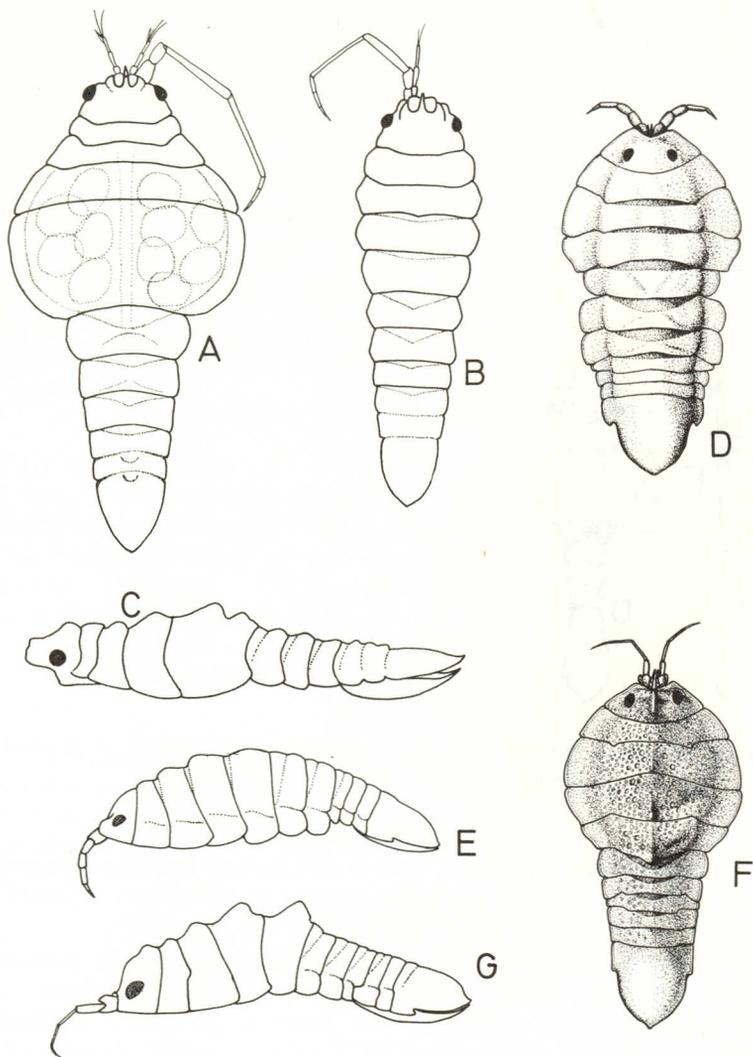


Fig. 9. A. *Arcturinooides sexpes* ♀. B. *A. sexpes* ♂. C. *A. sexpes* ♀. D. *Austroarcturus africana* ♂. E. *Austroarcturus africana* ♂. F. *A. foveolatus* ♀. G. *A. foveolatus* ♀.

Austroarcturus africanus Kensley, 1975b

Fig. 9D-E

Dorsal integument smooth. No dorsal crest on cephalon or anterior pereonites.

7,0 mm.

False Bay, 13 to 84 m.

Holidotea Barnard

Holidotea unicornis Barnard, 1920

Fig. 10A-B

Eyes dorsal. Lateral margins of cephalon entire. No pleonites distinguishable anterior to pleotelson. Strong middorsal flattened spine on

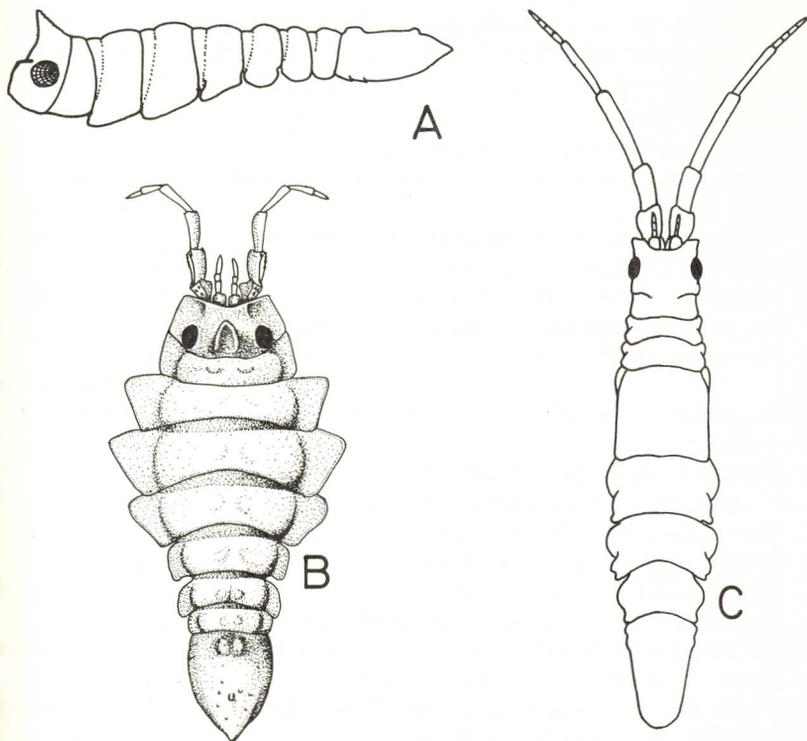


Fig. 10. A. *Holidotea unicornis* ♂. B. *H. unicornis* ♂. C. *Idarcturus platysoma*.

cephalon in ♂. Exopod of pleopod 1 ♂ less than half length of exopod; latter furrowed. Body covered with thick felt of short setules.

♂ 5,5 mm, ♀ 6,3 mm.

Saldanha Bay to Agulhas Bank, 60 to 240 m.

Idarcturus Barnard

Idarcturus platysoma Barnard, 1914b

Fig. 10C

Body flattened dorsoventrally, non-geniculate. Pereonite I fused with cephalon. Pereonite IV considerably longer than others in ♀, only slightly so in ♂. Individual segments of pleon not visible. Pleotelson apex rounded. 10,0 mm.

Cape Peninsula, intertidal.

Microarcturus Nordenstam

Lateral margins of cephalon incised. Eyes, when present, dorsolateral. Pereonite I fused with cephalon. Pleon of two or three fused segments anterior to pleotelson. Exopod of pleopod 1 ♂ furrowed. Antenna shorter than body length.

- | | |
|---|--------------------|
| 1. Eyes present, even if poorly pigmented | 2 |
| - Eyes absent. Double row of dorsal spines on pereon and pleon (Fig. 11A-B) | <i>biserialis</i> |
| 2. Eyes unpigmented. Integument finely granular (Fig. 13A) | <i>oudops</i> |
| - Eyes well pigmented. Integument smooth or granular | 3 |
| 3. Integument smooth (Fig. 12A-B) | <i>laevis</i> |
| - Integument sculptured, granular, or spinose | 4 |
| 4. Pereonites I to IV each with four conical tubercles (Fig. 13B-C) | <i>quadriconus</i> |
| - Pereonites I to IV lacking conical tubercles, often finely granular | 5 |
| 5. Flattened dorsal pair of tubercles present on some pereonites | 6 |
| - No flattened dorsal tubercles on pereonites | 7 |
| 6. Dorsal flattened tubercles on pereonite III. | |
| Strong median spine at base of pleotelson in ♂ and ♀ (Fig. 11C-E) | <i>dayi</i> |
| - Dorsal flattened tubercles on pereonites I to III | |
| No strong median spine at base of pleotelson (Fig. 12C-E) | <i>ornatus</i> |
| 7. Coxae of pereonites II and III rounded | |
| ♂ with strong conical boss at base of pleotelson (Fig. 13F-G) | <i>youngi</i> |
| - Coxae of pereonites II and III acute | |
| ♂ with small median dorsal spine at base of pleotelson (Fig. 13D-E) | <i>similis</i> |

Microarcturus biserialis Kensley, 1977b

Fig. 11A-B

Eyes absent. Double row of spinose tubercles on pereon and pleon. Coxae of pereonites II and III acute, of pereonites IV to VII with two or three smaller points.

5,9 mm.

Off Natal, 1 300 m.

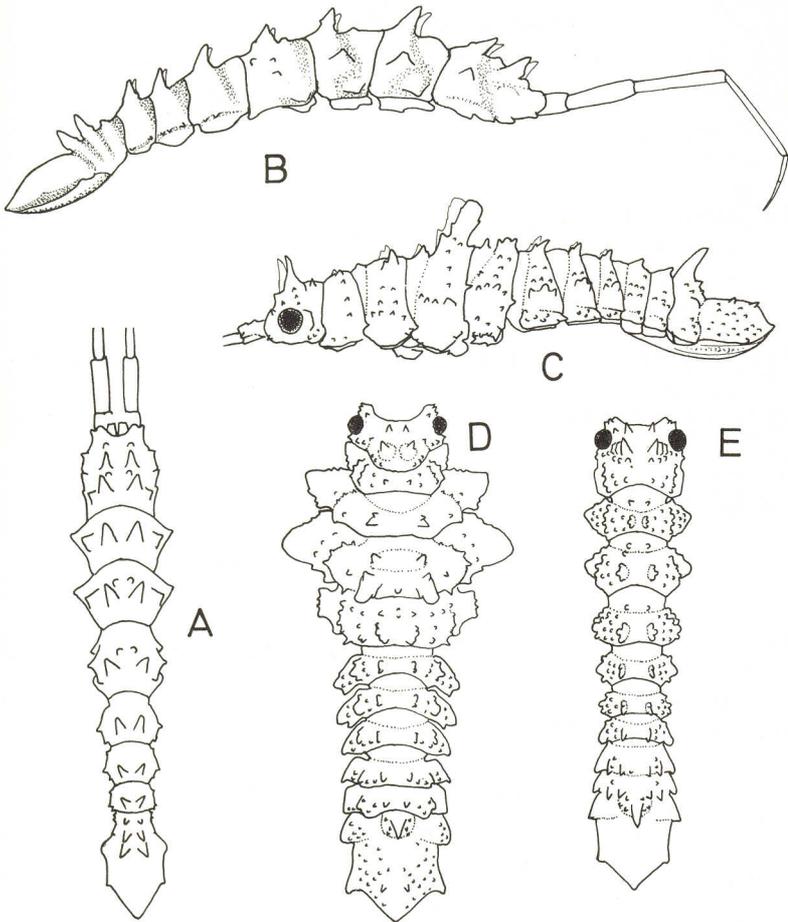


Fig. 11. A. *Microarcturus biserialis* ♂. B. *M. biserialis* ♂. C. *M. dayi* ♀. D. *M. dayi* ♀. E. *M. dayi* ♂.

Microarcturus dayi Kensley, 1977a

Fig. 11C-E

Integument with numerous scattered granules and low spines. Cephalon with pair of strong dorsal spines. Pereonite III in ♀ with pair of large flattened dorsal tubercles. Strong spine at base of pleotelson. Coxae of pereonite III rounded.

7,5 mm.

Off Saldanha Bay, 9 to 18 m.

Microarcturus laevis Kensley, 1975b

Fig. 12A-B

Integument smooth, entirely lacking sculpture. Cephalon with convex semicircular area between prominent eyes. Rounded low boss at base of pleotelson.

6,4 mm.

False Bay, 75 m.

Microarcturus ornatus Kensley, 1975b

Fig. 12C-E

Eyes well pigmented. Large flattened dorsal tubercles on pereonites II to IV in ♂ and ♀. Coxae of pereonites II to IV rounded. Integument with numerous granules. Pleotelson with strong acute lateral process and acute apex.

6,4 mm.

Off Still Bay, 200 m.

Microarcturus oudops (Barnard, 1914a)

Fig. 13A

Eyes unpigmented. Body finely granular, lacking prominent spines or tubercles. Granular integument in ♂, sometimes weaker than in ♀.

5,0 mm.

Off Cape Point, 1 400 m; off Natal, 680 m.

Microarcturus quadriconus Kensley, 1975b

Fig. 13B-C

Eyes pigmented. Pereonites I to IV each with four conical dorsal tubercles. Pereonites V to VII each with two smaller tubercles. Rounded boss at base of pleotelson.

5,6 mm.

Off Still Bay, 80 m.

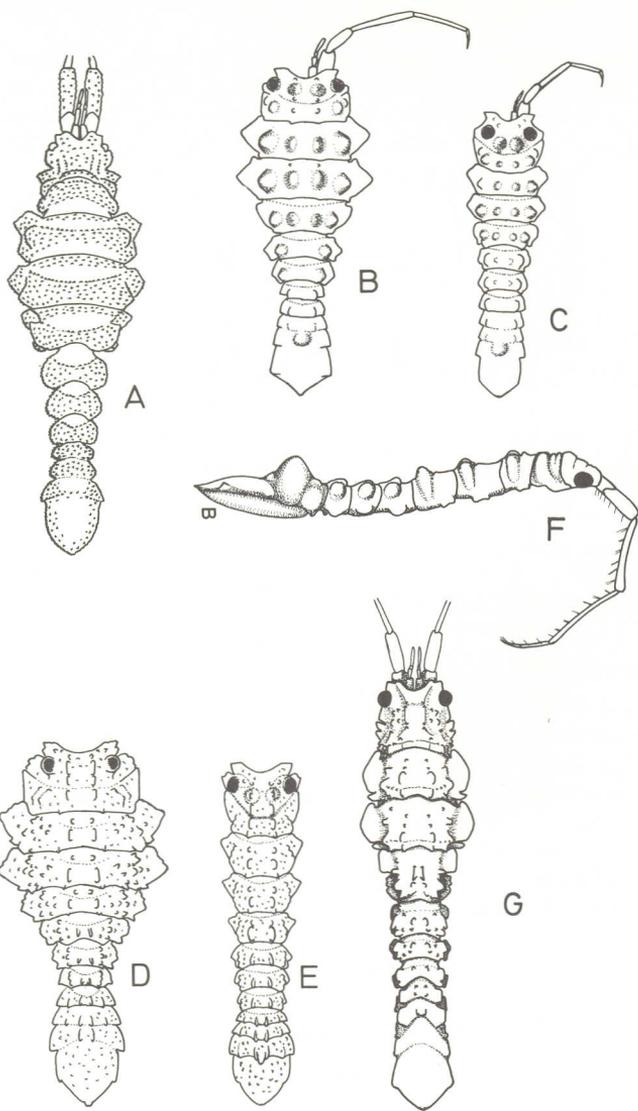


Fig. 13. A. *Microarcturus oudops* ♀. B. *M. quadriconus* ♀. C. *M. quadriconus* ♂.
 D. *M. similis* ♀. E. *M. similis* ♂. F. *M. youngi* ♂. G. *M. youngi* ♀.

Microarcturus similis (Barnard, 1925b)

Fig. 13D-E

Eyes well pigmented. Integument with numerous granules and low spines. Coxae of pereonites II to IV acute. Small spine at base of pleotelson in ♂.

9,0 mm.

Lüderitz to East London, 15 to 240 m.

Microarcturus youngi Kensley, 1977b

Fig. 13F-G

Eyes well pigmented. Integument with small granules and tubercles in ♀, less granular in ♂. Coxae of pereonites II and III rounded. Strong conical boss at base of pleotelson in ♂.

6,0 mm.

Off Natal, 550 to 680 m.

Neastacilla Tattersall

Body strongly geniculate. Pereonite I fused with cephalon, sometimes expanded anteroventrally, concealing mouthparts in lateral view. Pereonite IV cylindrical, considerably longer than the other pereonites, especially in ♂.

1. ♀ with dorsal spines on pereon 2
- ♀ lacking dorsal spines on pereon 3
2. ♀ with pair of spines at middorsal point of pereonite IV.
Antenna of ♂ longer than body length (Fig. 14C-D) .. *longispina*
- ♀ with single spine at middorsal point of pereonite IV. Antenna
in ♂ shorter than body length (Fig. 15A-B) .. *mediterranea*
3. Small lateral tubercles on pereonites V to VII. Pereonite V not
extended ventrally
Eye circular (Fig. 15C-D) *tranquilla*
- No lateral tubercles on pereonites V to VII but pereonite V
extended ventrally. Eye pear-shaped (Fig. 14A-B) .. *bacillus*

Neastacilla bacillus (Barnard, 1920)

Fig. 14A-B

Pereonite V extended ventrally in ♂ and ♀. Pereonite IV in ♂ considerably longer than rest of body. Antenna shorter than body length. Eye pear-shaped.

20,0 mm.

False Bay to Zululand, 5 to 400 m.

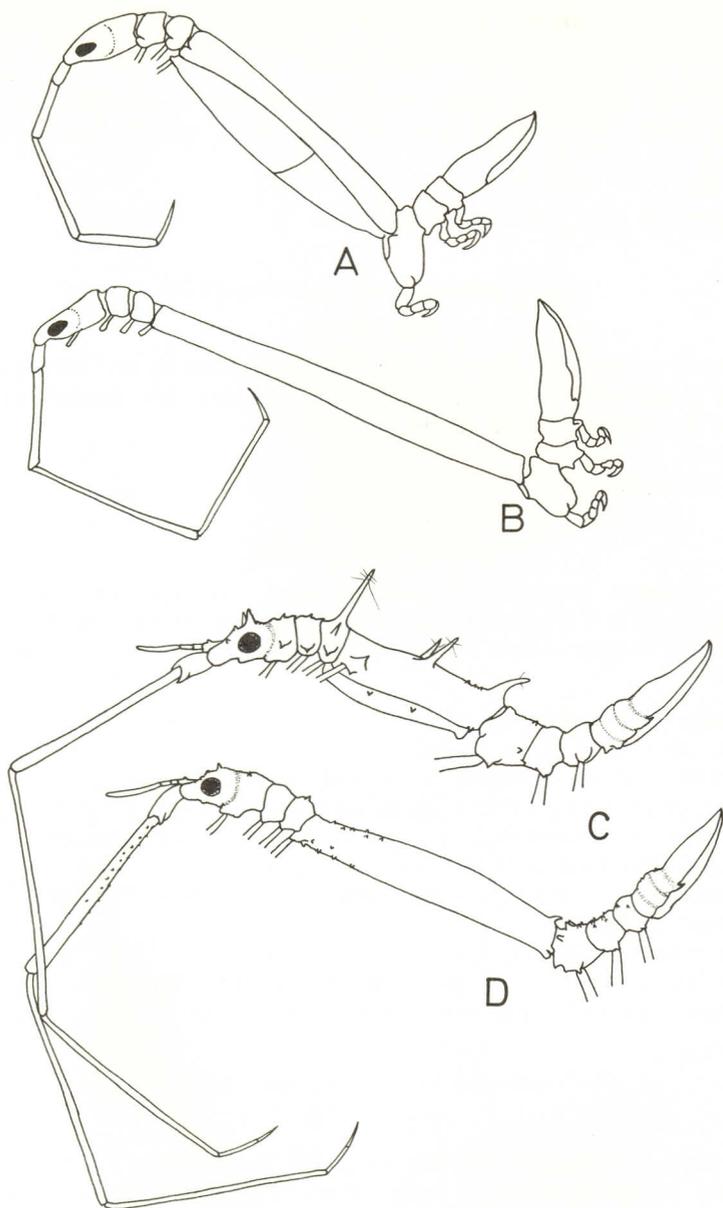


Fig. 14. A. *Neastacilla bacillis* ♀. B. *N. bacillis* ♂. C. *N. longispina* ♀.
D. *N. longispina* ♂.

Neastacilla longispina Kensley, 1977b

Fig. 14C-D

Numerous small spinose tubercles on cephalon and pereonites in ♂ and ♀, and on antennal base in ♂. Elongate spines on pereonites III and IV in ♀. Antennae longer than body length in ♂ and ♀. Eye circular. Cephalon in ♀ with pair of short spines much smaller in ♂.

10,5 mm.

Off Natal, 550 m.

Neastacilla mediterranea (Koehler, 1911)

Fig. 15A-B

Cephalon with two pairs of spines in ♀, none in ♂. Pereonites I, III, IV with middorsal spines in ♀, none in ♂. Antennae shorter than body length in ♂ and ♀. Eyes ovoid.

7,5 mm.

Off Umkomaas, Natal, 160 m; Mediterranean.

Neastacilla tranquilla Kensley, 1975b

Fig. 15C-D

Ventral margins of cephalon somewhat expanded. Pereonites V to VII each with three small lateral tubercles. Antenna shorter than body length. Eye circular.

6,3 mm.

Off Still Bay, 200 m.

Pleuopriion zur Strassen

Pleuopriion chuni (zur Strassen, 1902)

Fig. 15E

Cephalon with two pairs strong dorsal spines; anterolateral corners spinose. All pereonites having acute spinose coxae, and one pair of dorsal spines. Pleon of one free segment plus pleotelson. Pleotelson with pair of lateral spines, apically rounded, with two median dorsal spines proximally.

9,5 mm.

Off Agulhas Bank; Still Bay, 200 m.

Spinarcturus Kensley

Spinarcturus natalensis Kensley, 1977b

Fig. 15F

Body geniculate. Pereonite I not fused with cephalon. Pereonite IV not longer than other pereonites. Pereonite I with one pair dorsal spines, pereonites II to IV each with two pairs spines, pereonites V to VII each

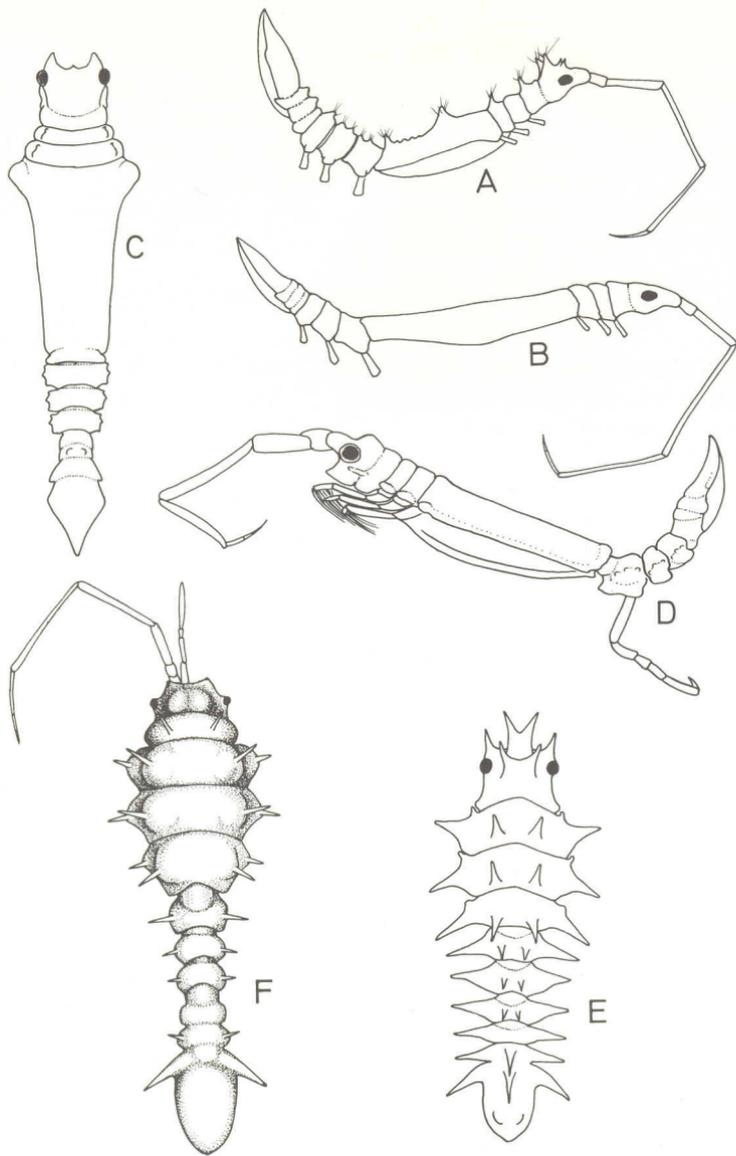


Fig. 15. A. *Neastacilla mediterranea* ♀ (from Koehler 1911). B. *N. mediterranea* ♂ (from Koehler 1911). C. *N. tranquilla* ♀. D. *N. tranquilla* ♀. E. *Pleuropriion chuni*. F. *Spinarturus natalensis*.

with one pair lateral spines. Pleon consisting of three fused segments plus pleotelson. Strong pair of spines at pleotelsonic base.

8,2 mm.

Off Natal, 680 m.

Family Idoteidae

Body elongate, flattened. Penis usually a double process. Uropod uniramous, ramus large. Pleonites variously fused to telson.

1. Eyes dorsal

Pleon with two complete and one incomplete sutures (Fig. 16A)

Cleantis natalensis (p. 35)

- Eyes lateral 2

2. Coxae not distinct (Fig. 18) *Synidotea* (p. 41)

- Coxae distinct 3

3. Maxilliped six-segmented (Fig. 16E) 4

- Maxilliped seven-segmented (Fig. 16F) 5

4. Pleon with one incomplete and two complete sutures (Fig. 17A-C) *Idotea* (p. 37)

- Pleon of three incomplete sutures (Fig. 16D) *Euidotea peroni* (p. 37)

5. Body with low median longitudinal keel

Pleon with three incomplete sutures (Fig. 16G)

Glyptidotea lichtensteini (p. 37)

- Body lacking median longitudinal keel

Pleon with one complete and two incomplete sutures 6

6. Coxae contiguous in ♂ and ♀ *Paridotea* (p. 38)

- Coxae widely separated in ♂, contiguous in ♀ (Fig. 16B-C)

Engidotea lobata (p. 35)

Cleantis Dana

Cleantis natalensis Barnard, 1925b

Fig. 16A

Eyes dorsal, body parallel-sided, elongate. Coxae narrow, distinct. Pleotelson with one incomplete and two complete sutures. Antennal peduncle with segments two and three ventrally produced, projection of second segment apically bifid. Maxilliped palp of five segments.

18,0 mm.

Durban Bay; India. Usually found in hollow plant stems.

Engidotea Barnard

Engidotea lobata (Miers, 1881)

Fig. 16B-C

Pleotelson with one complete and two incomplete sutures, distally

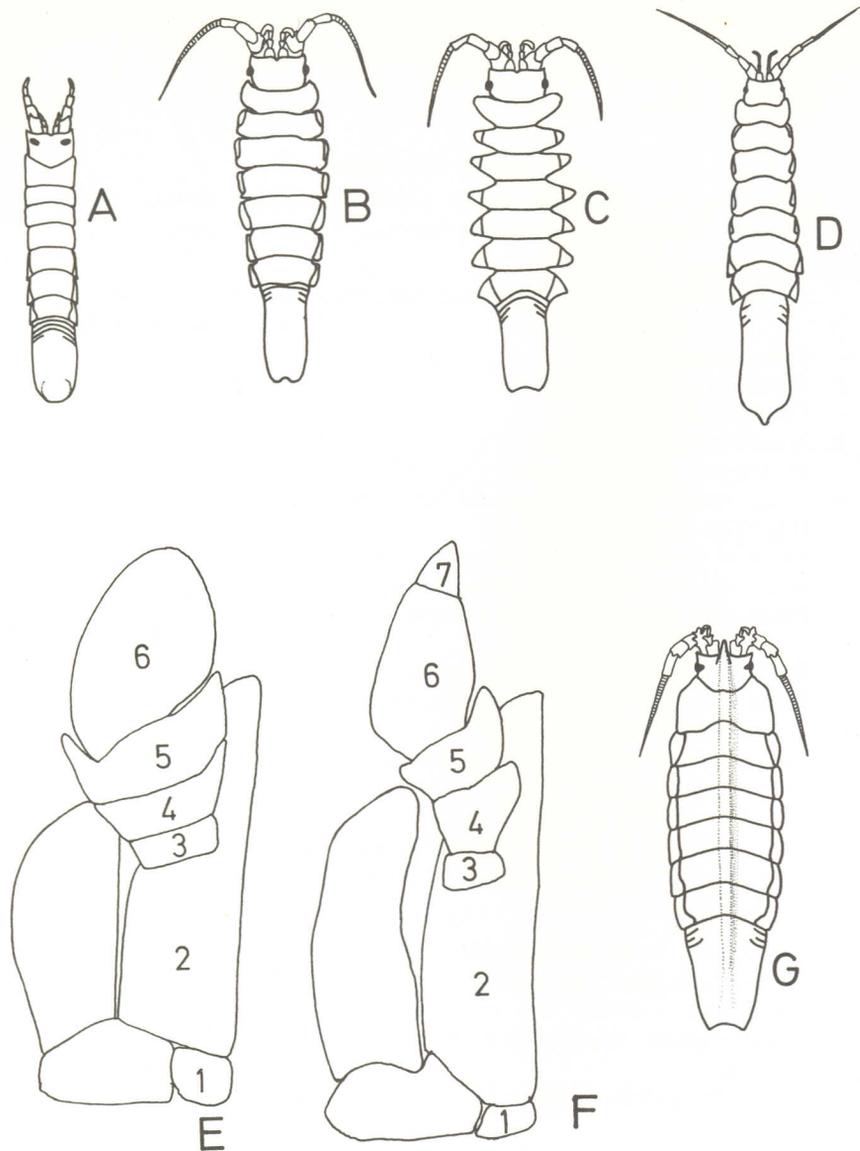


Fig. 16. A. *Cleantis natalensis*. B. *Engidotea lobata* ♀. C. *Engidotea lobata* ♂. D. *Euidotea peroni*. E. Six-segmented maxilliped (*Idotea*). F. Seven-segmented maxilliped (*Paridotea*). G. *Glyptidotea lichtensteini*.

notched in ♀, more emarginate in ♂. Coxae contiguous in ♀, widely separate in ♂.

17,0 mm.

Lüderitz to Port Elizabeth, intertidal.

Euidotea Collinge

Euidotea peroni (Edwards, 1840)

Fig. 16D

Body elongate, narrow. Anterior margin of cephalon emarginate, anterolateral angles rounded. Pleotelson equal to posterior four pereonites together; with one complete and two incomplete sutures. Pleotelson distally broadly triangular, apex subacute.

48,0 mm.

Recorded from the Cape of Good Hope and Australia, this species has not been seen since Guérin-Meneville's record of 1829.

Glyptidotea Stebbing

Glyptidotea lichtensteini (Krauss, 1843)

Fig. 16G

Body elongate, nearly parallel-sided. Cephalon with strong rostrum, extending backwards as a low rounded middorsal ridge. Eyes lateral. Pleotelson with three incomplete sutures.

40,0 mm.

Lüderitz to Transkei, intertidal.

Idotea Fabricius

Cephalon subquadrate, eyes prominent, lateral. Coxae well defined. Pleotelson with one incomplete and two complete sutures. Maxilliped palp with four segments.

- 1. Pleotelson apically truncate (Fig. 17B) *metallica*
- Pleotelson apically emarginate 2
- 2. Coxae distinct, not triangular
- Lateral angles of pleonites not markedly projecting (Fig. 17A) *indica*
- Coxae triangular
- Lateral angles of pleonites acute, projecting (Fig. 17C) *ziczac*

Idotea indica Edwards, 1849

Fig. 17A

Pleotelson distinctly narrower than pereon. Coxae of pereonite VII posteriorly acute. Posterior margin of pleotelson sinuous but not as much as *I. ziczac*.

27,0 mm.

Northern South West Africa to Table Bay, intertidal to shallow infratidal.

Idotea metallica Bosc, 1801

Fig. 17B

Body elongate, widest at pereonites IV and V. Cephalon with sinuous furrow behind. Posterior margin of pleotelson straight.

30,0 mm.

Cape to Mozambique. Cosmopolitan, usually found on drifting sea-weed.

Idotea ziczac Barnard, 1951

Fig. 17C

Anterior margin of cephalon emarginate with rounded, raised area behind eyes. Coxae short, triangular. Posterior margin of pleotelson tridentate.

19,0 mm.

Saldanha Bay, False Bay, 6 to 14 m.

Paridotea Stebbing

Eyes lateral. Coxae distinct, contiguous in both sexes. Penial process paired. Maxilliped of seven segments. Pleotelson with one complete and two incomplete sutures.

1. Uropod ramus longer than broad
Body elongate, narrow (Fig. 17E-F) *fucicola*
- Uropod ramus not longer than broad 2
2. Uropod peduncle with median keel
Lateral margin of pleotelson thick, grooved (Fig. 17G, J) *reticulata*
- Uropod peduncle lacking median keel
Lateral margin of pleotelson not grooved 3
3. Uropod ramus distinctly broader than long (Fig. 17H) *rubra*
- Uropod ramus only slightly broader than long 4
4. Posterolateral angle of coxae of pereonites V and VI quadrate
Posterolateral corners of pleotelson rounded (Fig. 17D) *apposita*
- Posterolateral angle of coxae of pereonites V and VI acute,
slightly produced
Posterolateral corners of pleotelson acute (Fig. 17I) .. *ungulata*

Paridotea apposita Barnard, 1965

Fig. 17D

Body elongate, nearly parallel-sided. Anterior margin of cephalon slightly sinuous with median notch. Pleotelson one-third total length.

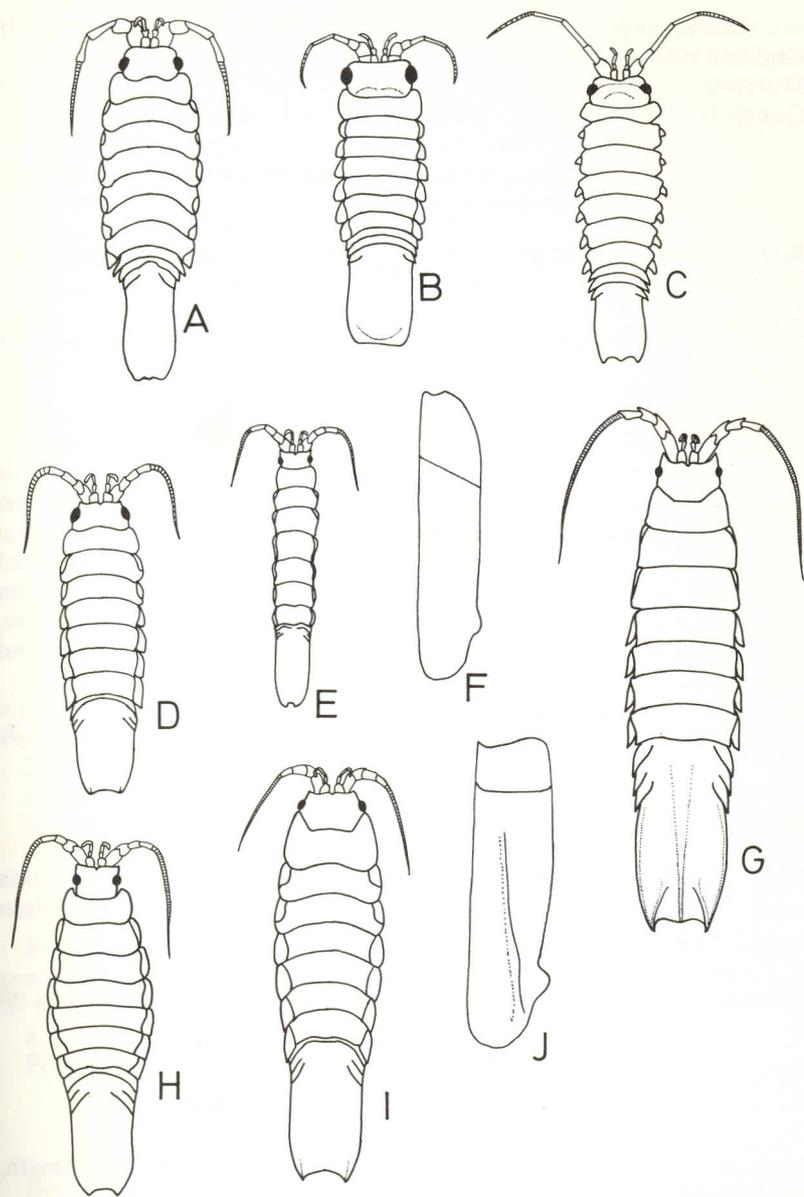


Fig. 17. A. *Idotea indica*. B. *I. metallica*. C. *I. ziczac*. D. *Pavidotea apposita*. E. *P. fucicola*. F. *P. fucicola*, uropod. G. *P. reticulata*. H. *P. rubra*. I. *P. unguolata*. J. *P. reticulata*, uropod.

Posterolateral angles of pleotelson rounded, with faint keels, slightly emarginate between corners.

31,0 mm.

Gough Is., South Atlantic, intertidal.

Paridotea fucicola Barnard, 1914b

Fig. 17E-F

Body narrow, parallel-sided. Pleotelson equal in length to pereonites IV to VII together, slightly tapering, with small apical notch.

22,0 mm.

Lüderitz to False Bay. Usually found amongst brown algae at low tide level.

Paridotea reticulata Barnard, 1914b

Fig. 17G, J

Body almost parallel-sided. Anterior margin of cephalon concave, with median notch. Pereonites I to III with rounded posterolateral corners, pereonites IV to VII angular. Pleotelson with low rounded median keel, margins thickened, distinct keel running obliquely from posterolateral corners, which are angular. Colour pattern distinctive, orange-brown with black reticulations and median stripe on pereon and pleotelson.

75,0 mm.

Lüderitz to Table Bay, intertidal.

Paridotea rubra Barnard, 1914b

Fig. 17H

Body widest at pereonites IV and V. Anterior margin of cephalon sinuous with slightly median notch. Posterolateral angles of pleotelson rounded. Colour deep red-brown.

47,0 mm.

Lüderitz to Table Bay, usually found amongst red algae growing on kelp.

Paridotea ungulata (Pallas, 1772)

Fig. 17I

Body elongate, sides slightly convex. Pleotelson two-fifths total length, posterolateral angles acute, with distinct keel.

55,0 mm.

Walvis Bay to East London. Usually found in rock pools, common in *Zostera* beds of lagoonal areas. Australia, New Zealand, Chile, Argentina.

Synidotea Harger

Eyes lateral. Coxae not distinct, completely fused with pereonites. Pleotelson with single incomplete suture. Maxilliped palp of five segments.

1. Coxae of pereonites II and III rounded
Posterolateral angles of pleotelson rounded 2
- Coxae of pereonites II and III angular
Posterolateral angles of pleotelson acute (Fig. 18B) .. *setifer*
2. Pereopods strongly setose
Two oblique ridges on uropod peduncle (Fig. 18A) .. *hirtipes*
- Pereopods not strongly setose
No oblique ridges on uropod peduncle (Fig. 18C) .. *variegata*

Synidotea hirtipes (Edwards, 1840)

Fig. 18A

Body distinctly broadened at pereonites II and IV. Pleotelson tapering slightly, posterior margin broadly emarginate, posterolateral corners rounded. Pereopods strongly setose.

25,0 mm.

Lüderitz to Port Elizabeth, 5 to 200 m.

Synidotea setifer Barnard, 1914a

Fig. 18B

Body almost parallel-sided, anterolateral angles of cephalon acute, anterior margin excavate. Coxae of pereonites II and III angular. Pereopods bearing long scattered setae.

23,0 mm.

Port Elizabeth and Agulhas Bank, 7 to 80 m.

Menzies & Miller (1956) place this species in the genus *Barnardidotea*.

Synidotea variegata Collinge, 1917

Fig. 18C

Body narrower than *S. hirtipes*, anterior four coxae rounded. Pleotelson posteriorly rounded. Frontal margin of cephalon straight. Pereonites II to IV with accurate depression in middorsal region.

8,0 mm.

Port Elizabeth to Mozambique, shallow infratidal; Suez, India, Ceylon.

SUBORDER ANTHURIDEA*

Family **Anthuridae**

Body elongate, cylindrical. Cephalon always free. Pereonites usually longer than wide, often with dorsal pores. Pleon relatively short, con-

* Two families, the Anthuridae and the Paranthuridae, are now recognized for the forms with biting and cutting, and piercing and sucking mouthparts, respectively.

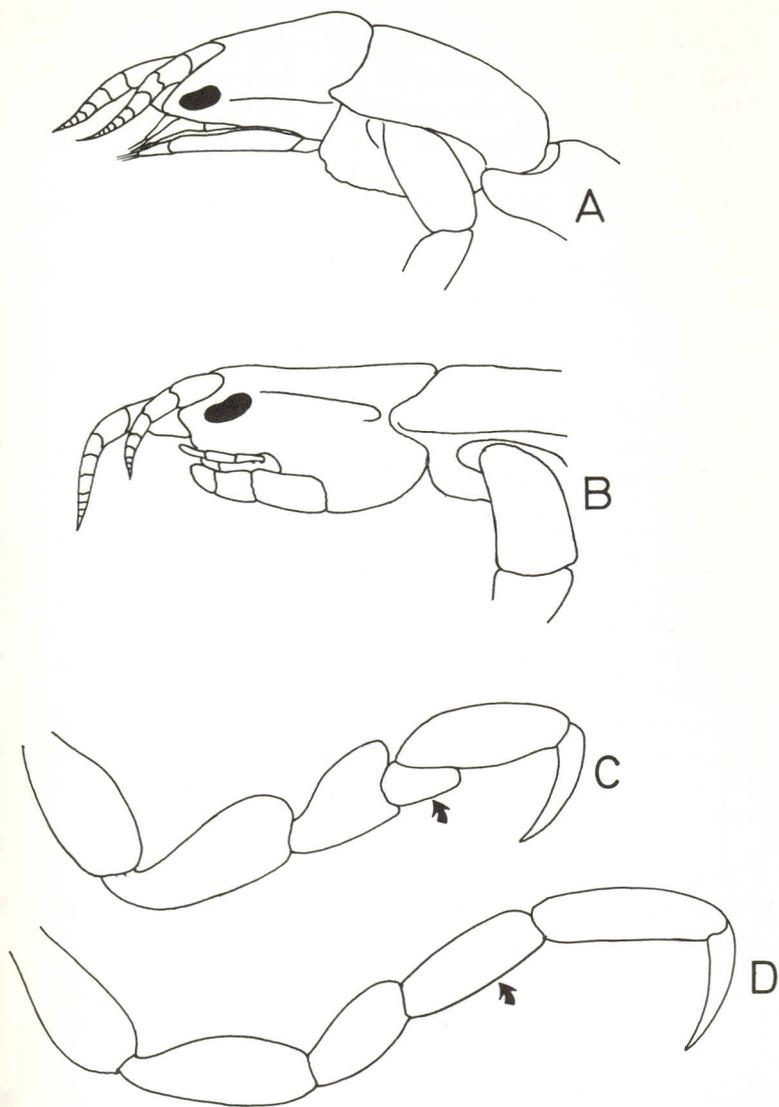


Fig. 19. A. Piercing and sucking mouthparts in lateral view. B. Biting and cutting mouthparts in lateral view. C. Pereopod with carpus underriding propodus. D. Pereopod with carpus not underriding propodus.

5. Uropodal and telsonic margins denticulate (Fig. 22E, G) *Horoloanthura capensis* (p. 50)
- Uropodal and telsonic margins not denticulate 6
6. Maxillipedal palp four-segmented (Fig. 20G) *Apanthura* (p. 46)
- Maxillipedal palp five-segmented (Fig. 23D–G) *Panathura* (p. 54)
7. Pleonites distinct (at least laterally) 8
- Pleonites indistinct 10
8. Eyes absent (Fig. 20F) *Anthelura remipes* (p. 46)
- Eyes present 9
9. Telson indurated, sculptured, thick (Fig. 21B–C) *Exanthura* (p. 47)
- Telson not indurated, unsculptured, not thickened
Malacanthura linguicauda (p. 52)
10. Carpus of pereopods IV to VII expanded, distal margin straight
Maxillipedal palp four-segmented
Telson smooth (Fig. 20B–E) *Agulanthura serenasinus* (p. 46)
- Carpus of pereopods IV to VII not expanded
Maxillipedal palp three- (sometimes four-) segmented
Telson often sculptured (Fig. 21F, H–I) *Haliophasma* (p. 47)
11. Pereopod VII present 12
- Pereopod VII absent (Fig. 22H–I) *Katanthura laevitelson* (p. 50)
12. Uropodal exopod reduced, much smaller than endopod (Fig. 23K–L) *Pseudanthura lateralis* (p. 55)
- Uropodal exopod normal, not reduced 13
13. Eyes present 14
- Eyes absent (Fig. 22J) *Leptanthura* (p. 52)
14. Telson lanceolate, apically acute
Pereonite VII posteriorly lobed (Fig. 20A) *Accalathura indica* (p. 44)
- Telson apically narrowly rounded
Pereonite VII not lobed posteriorly *Paranthura* (p. 54)

Accalathura Barnard
Accalathura indica (Nierstrasz, 1941)

Fig. 20A

Posterior lobes of pereonite VII extending to pleonite 2. Pleonites distinct. Antennae and antennules relatively elongate. Maxillipedal palp two-segmented.

19,0 mm.

Off Port Elizabeth, 100 m; Java Sea.

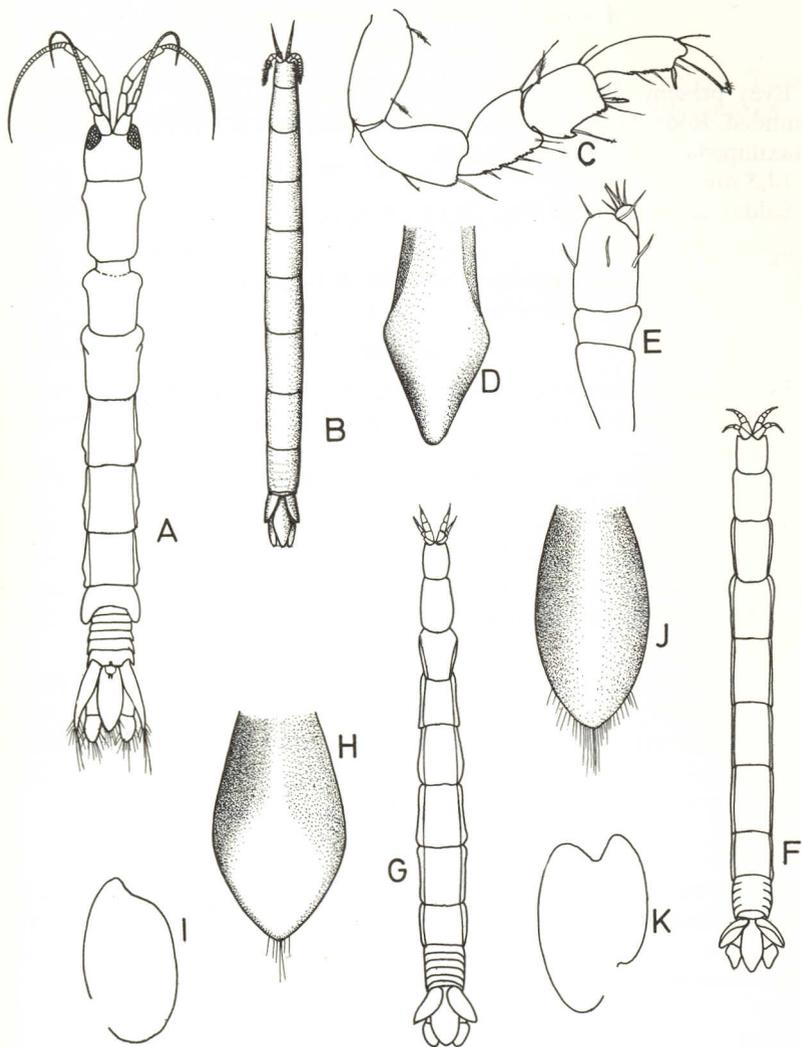


Fig. 20. A. *Accalathura indica*. B. *Agulanthura serenasinus*. C. *A. serenasinus*, pereopod VII. D. *A. serenasinus*, telson. E. *A. serenasinus*, maxilliped. F. *Anthelura remipes*. G. *Apanthura africana*. H. *A. africana*, telson. I. *A. africana*, uropodal exopod. J. *A. sandalensis*, telson. K. *A. sandalensis*, uropodal exopod.

Agulanthura Kensley
Agulanthura serenasinus Kensley, 1975b

Fig. 20B-E

Eyes present. Pleonites indistinct. Telson lanceolate, apex narrowly rounded. Body profile smooth, uninterrupted by articulations of segments. Maxillipedal palp four-segmented.

14,5 mm.

Saldanha Bay to Still Bay, 20 to 100 m.

Anthelura Norman & Stebbing
Anthelura remipes Barnard, 1914b

Fig. 20F

Eyes absent. Pleonites laterally distinct. Telson lanceolate, narrowing distally to narrowly rounded apex. Maxillipedal palp four-segmented.
30,0 mm.

Off Cape Peninsula and Lambert's Bay, 300 m.

Apanthura Stebbing

Eyes present or absent. Pleonites distinct. Telson thin, dorsally convex. Maxillipedal palp four-segmented. Female with four pairs of oostegites.

1. Eyes present

Uropodal exopod apically notched (Fig. 20J-K) *sandalensis*

- Eyes absent

Uropodal exopod apically rounded (Fig. 20G-I) .. *africana*

Apanthura africana Barnard, 1914b

Fig. 20G-I

Eyes absent. Telson lanceolate, proximally with rounded dorsal ridge, distally flattened. Uropodal exopod distally rounded.

17,0 mm.

Saldanha Bay to Port Elizabeth, 11 to 200 m.

Apanthura sandalensis Stebbing, 1900

Fig. 20J-K

Eyes present. Telson ovate, dorsally smoothly convex, apically pointed. Uropodal exopod with deep apical notch.

10,0 mm.

Lüderitz to Agulhas Bank, intertidal to shallow infratidal; Loyalty Islands.

Cyathura Norman & Stebbing
Cyathura estuaria Barnard, 1914b

Fig. 21A-B

Eyes present. Pereon dorsolaterally keeled, dorsal pits present. Telson ovate, distally converging to rounded apex, dorsally slightly convex.

27,0 mm.

Langebaan to Zululand, estuarine, sometimes fresh water.

Exanthura Barnard

Eyes present. Pleonites distinct, at least laterally. Telson indurated. Maxillipedal palp three-segmented. Uropods and telson splayed.

- | | | | |
|---|----|----|-------------------|
| 1. Telson broad, distally truncate (Fig. 21D) | .. | .. | <i>macrura</i> |
| - Telson narrow, distally rounded (Fig. 21C) | .. | .. | <i>filiformis</i> |

Exanthura filiformis (Lucas, 1849)

Fig. 21C

Body very slender, dorsolaterally keeled. Telson narrow, apically rounded, with strong medio-longitudinal rounded dorsal ridge.

23,0 mm.

Cape Peninsula to Port Elizabeth, 18 to 460 m; Mediterranean.

Exanthura macrura Barnard, 1914b

Fig. 21D

Body dorsoventrally keeled. Telson broad, widening distally, distal margin truncate.

22,0 mm.

Lüderitz to False Bay, intertidal.

Haliophasma Haswell

Eyes present or absent. Pereon with dorsal pits, sometimes with additional sculpturing. Pleonites fused. Telson indurated, often dorsally sculptured. Maxillipedal palp three- or four-segmented. Carpus of pereopods IV to VII not underriding propodus.

- | | | | |
|--|----|----|------------------|
| 1. Eyes present. Most of telson sculptured | .. | .. | 2 |
| - Eyes absent. Telson distally unsculptured (Fig. 21E-F) | | | <i>caecus</i> |
| 2. Telson obovate, with single median keel (Fig. 22A) .. | | | <i>hermani</i> |
| - Telson ovate or lanceolate, either lacking keels, or with more than one keel | | | 3 |
| 3. Telson apically narrowly rounded, dorsally tricarinate, and pitted (Fig. 21H-I) | | | <i>foveolata</i> |
| - Telson broadly rounded distally, dorsally carinate and/or pitted | | | 4 |
| 4. Telson dorsally carinate | | | 5 |
| - Telson dorsally non-carinate (Fig. 22B) | | | <i>ornatum</i> |

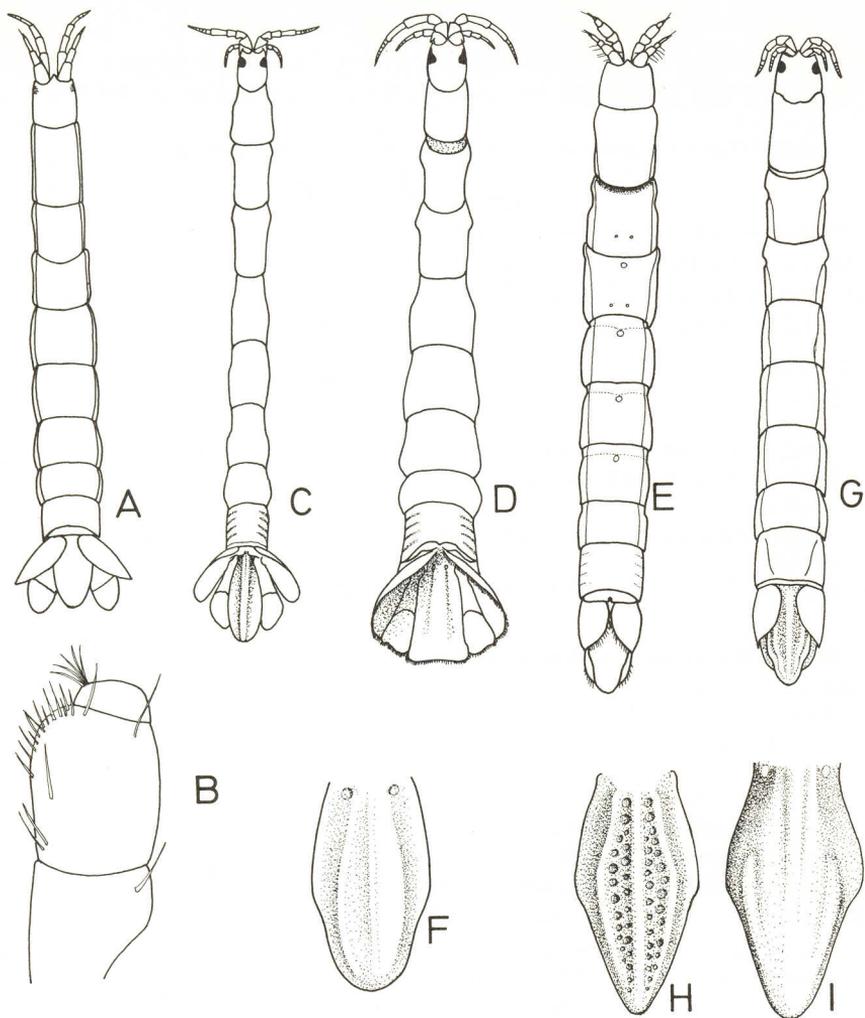


Fig. 21. A. *Cyathura estuaria*. B. *C. estuaria*, maxilliped. C. *Exanthura filiformis*. D. *E. macrura*. E. *Haliophasma caecus*. F. *H. coronicauda*, telson. G. *H. foveolata*. H. *H. foveolata*, telson ♀. I. *H. foveolata*, telson ♂.

5. Telson width more than half length
 Telson faintly tricarinate, dorsally pitted (Fig. 22C) *pseudocarinata*
 - Telsonic width less than half length 6
6. Telson distally narrowed, lacking dorsal pits
 Faintly tricarinate (Fig. 21F) *coronicauda*
 - Telson not distally narrowed, strongly tricarinate and pitted
 (Fig. 22D) *tricarinata*

Haliophasma caecus Kensley, 1975a

Fig. 21E

Eyes absent. Telson distally narrowed, apically broadly rounded, with low rounded proximal ridge. Maxillipedal palp indistinctly three-segmented. Palm of pereopod I ♂ with flat-topped tooth, sinuous in ♀. 21,0 mm.

Lambert's Bay, Langebaan Lagoon, shallow infratidal.

Haliophasma coronicauda Barnard, 1925a

Fig. 21F

Eyes present. Telson with median longitudinal keel and broad flange, distal half narrowed, apically rounded. Maxillipedal palp four-segmented. Palm of pereopod I sinuous.

16,0 mm.

Saldanha Bay to Port Elizabeth, 7 to 170 m.

Haliophasma foveolata Barnard, 1940

Fig. 21G-I

Eyes present. Integument indurated, with numerous pits, especially in ♀. Telson lanceolate, distal half narrowed, tricarinate with surrounding flange. Telsonic carinae strong in ♀. In ♂, median carina distally obsolete, pits not very obvious. Maxillipedal palp four-segmented. Palm of pereopod I ♂ strongly concave, with blunt distal protuberance.

26,0 mm.

Saldanha Bay to Port Elizabeth, shallow infratidal to 148 m.

Haliophasma hermani Barnard, 1940

Fig. 22A

Eyes present. Telson obovate, apex evenly rounded and upturned, with strong dorsal longitudinal ridge.

20,0 mm.

Hermanus, intertidal.

Haliophasma ornatum Barnard, 1957

Fig. 22B

Eyes present. Telson ovate, apically rounded. With lateral flange, dorsally gently convex, with small scattered pits. Maxillipedal palp four-segmented. Palm of pereopod I convex with rounded protuberance proximally.

10,0 mm.

Table Bay, intertidal.

Haliophasma pseudocarinata Barnard, 1940

Fig. 22C

Eyes present. Pleonite 6 apparently fused to telson. Telson broad, with shallow median pit basally, three feeble longitudinal keels and scattered pits. Maxillipedal palp four-segmented. Palm of pereopod I straight.

18,0 mm.

Table Bay to Port Elizabeth, shallow infratidal to 4 m.

Haliophasma tricarinata Barnard, 1925a

Fig. 22D

Eyes present. Telson narrow, apically rounded, strongly tricarinate, with scattered pits. Maxillipedal palp three- (indistinctly four-) segmented. Palm of pereopod I convex.

15,0 mm.

Saldanha Bay to East London, 48 to 100 m.

Horoloanthura Menzies & Frankenberg

Horoloanthura capensis Kensley, 1975b

Fig. 22E-G

Eyes absent. Telson broadly lanceolate, margins finely denticulate. Inner margin of uropodal endopod denticulate. Pleonites distinct. Maxillipedal palp five-segmented.

6,1 mm.

Off Lambert's Bay, 128 to 400 m.

Katanthura Nierstrasz

Katanthura laevitelson Kensley, 1975b

Fig. 22H-I

Eyes present. Mouthparts modified for piercing and sucking. Maxillipedal palp four-segmented. Pereonite VII short, lacking pereopods. Pleonites distinct. Palm of pereopod I slightly sinuous.

6,4 mm.

Off Still Bay, 30 m.

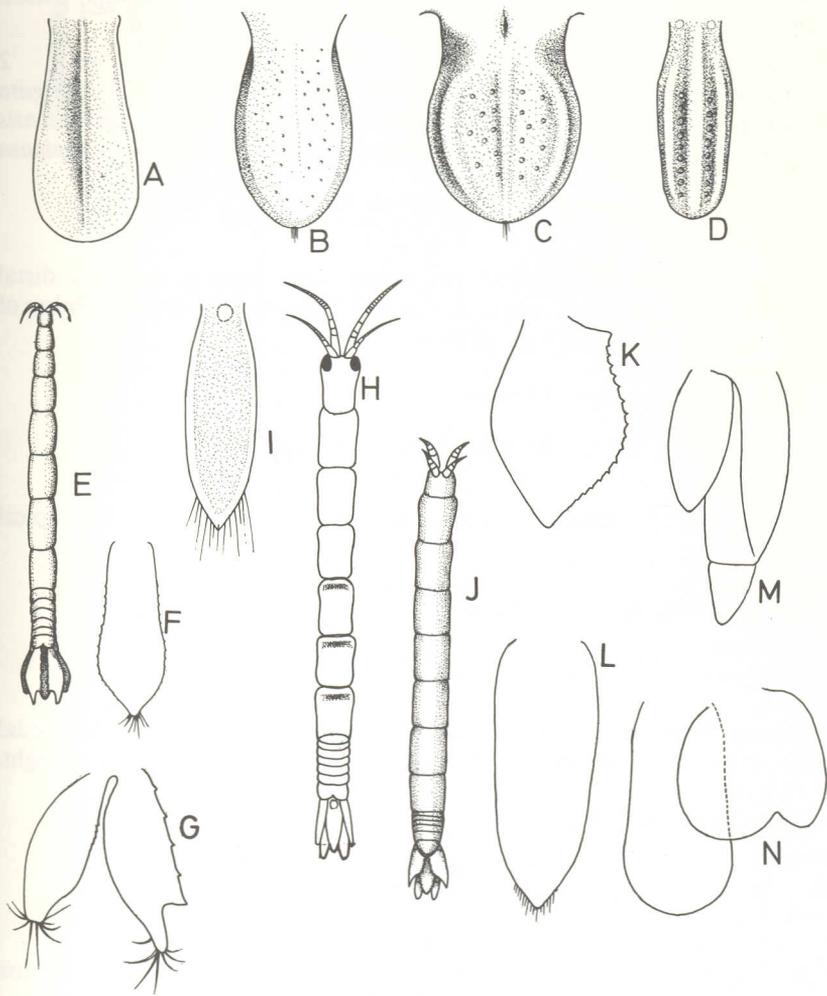


Fig. 22. A. *Haliophasma hermani*, telson. B. *H. ornatum*, telson. C. *H. pseudocarinata*, telson. D. *H. tricarinata*, telson. E. *Horoloanthurus capensis*. F. *H. capensis*, telson. G. *H. capensis*, uropod. H. *Katanthura laevitelson*. I. *K. laevitelson*, telson. J. *Leptanthurus urospinosa*. K. *L. urospinosa*, uropodal exopod. L. *L. urospinosa*, telson. M. *L. agulhasensis*, uropod. N. *L. laevigata*, telson and uropodal exopod.

Leptanthura Sars

Eyes absent. Mouthparts modified for piercing and sucking. Telson with single basal statocyst. Pleonites distinct.

- | | | | | | | | | |
|---|----|----|----|----|----|----|----|---------------------|
| 1. Telson lanceolate | .. | .. | .. | .. | .. | .. | .. | 2 |
| - Telson apically broadly rounded (Fig. 22N) | .. | .. | | | | | | <i>laevigata</i> |
| 2. Uropodal exopod leaf-shaped, margins entire (Fig. 22M) | | | | | | | | <i>agulhasensis</i> |
| - Uropodal exopod broad, margins denticulate (Fig. 22J-L) | | | | | | | | <i>urospinosa</i> |

Leptanthura agulhasensis Kensley, 1975b

Fig. 22M

Telson lanceolate, proximal two-thirds with margins parallel, distal third tapering to acute apex. Uropodal exopod leaf-shaped. Palm of pereopod I ♂ concave, with proximal tooth.

9,0 mm.

Saldanha Bay to Port Elizabeth, 66 to 320 m.

Leptanthura laevigata (Stimpson, 1855)

Fig. 22N

Telson apically broadly rounded. Uropodal exopod with deep apical notch.

26,0 mm.

Orange River Mouth to Natal, 9 to 200 m.

Leptanthura urospinosa Kensley, 1975b

Fig. 22K-L

Telson lanceolate, margins almost parallel, apex acute. Uropodal exopod broad, inner margin denticulate. Palm of pereopod I straight.

13,0 mm.

False Bay to Still Bay, 5 to 200 m.

Malacanthura Barnard

Malacanthura linguicauda (Barnard, 1920)

Fig. 23A

Eyes present. Pleon segments distinct in ♂, indistinct in ♀. Telson tongue-shaped dorsally smooth. Maxillipedal palp four-segmented.

10,5 mm.

Off Cape Peninsula; off Natal, 190 m.

Mesanthura Barnard

Mesanthura catenula (Stimpson, 1855)

Fig. 23B-C

Eyes present. Pereon lacking dorsal pits. Pleon sutures indistinct. Telson

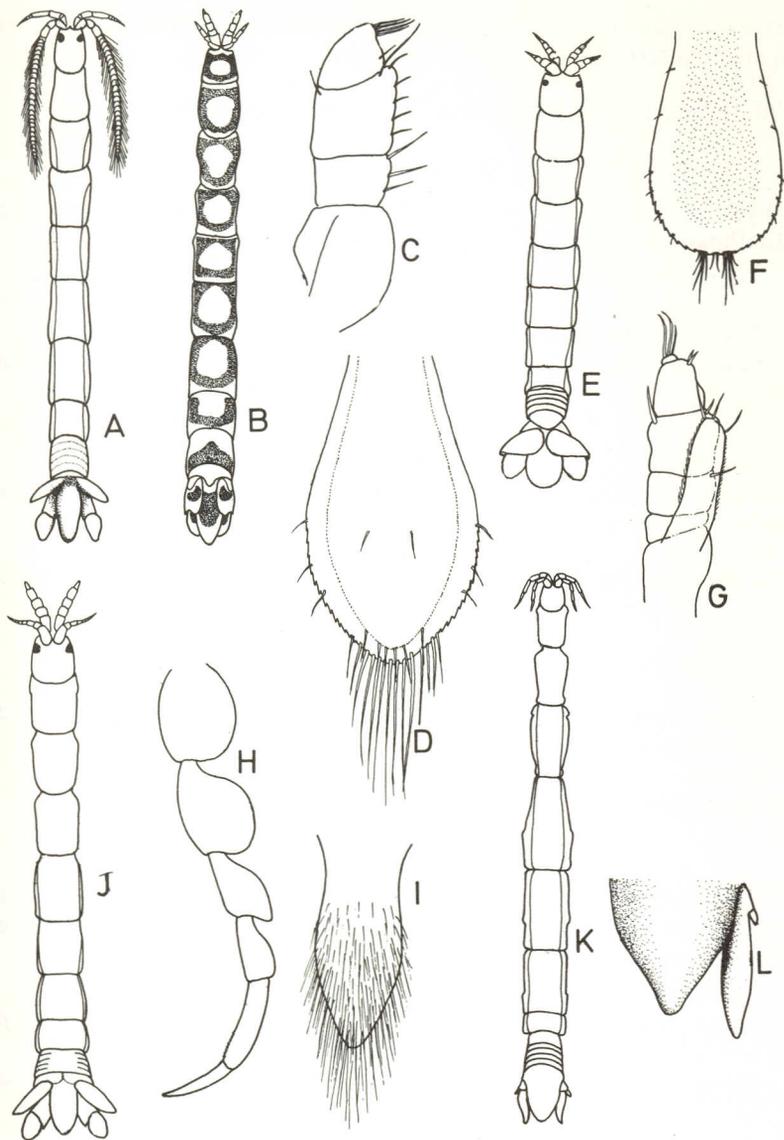


Fig. 23. A. *Malacanthura linguicauda*. B. *Mesanthura catenula*. C. *M. catenula*, maxilliped. D. *Panathura amstelodami*, telson. E. *P. serricauda*. F. *P. serricauda*, telson. G. *P. serricauda*, maxilliped. H. *Paranthura latipes*, pereopod V. I. *P. latipes*, telson. J. *P. punctata*. K. *Pseudanthura lateralis*. L. *P. lateralis*, telson and uropod.

narrowly ovate, dorsally smooth and slightly convex. Well defined dorsal pigment pattern.

20,0 mm.

St Helena Bay to Natal, intertidal, shallow infratidal to 4 m.

Panathura Barnard

Eyes present. Pleonites distinct. Maxillipedal palp five-segmented. Mouthparts modified for cutting and biting.

1. Telson and uropods indurated, telson apically broadly rounded (Fig. 23E–G) *serricauda*
- Telson and uropods thin, not indurated, telson distally slightly tapering (Fig. 23D) *amstelodami*

Panathura amstelodami Kensley, 1976

Fig. 23D

Telson widening distally, apically narrowly rounded, margin finely denticulate. Uropodal rami not serrate.

5,0 mm.

St Paul and Amsterdam Is., 50 to 80 m; Walter's Shoal, 38 to 46 m.

Panathura serricauda (Barnard, 1920)

Fig. 23E–G

Telson tongue-shaped, distally evenly rounded. Telsonic and uropodal margins finely serrate.

5,0 mm.

Lüderitz to False Bay, shallow infratidal to 50 m.

Paranthura Bate & Westwood

Eyes present. Pereon lacking dorsal pits. Mouthparts modified for piercing and sucking. Pleonites laterally distinct. Telson not indurated, thin, lacking statocyst.

1. Ischium and basis of pereopods IV to VII broadly oval
Telson densely setose (Fig. 23H, I) *latipes*
- Ischium and basis of pereopods IV to VII not very broad
Telson not densely setose (Fig. 23J) *punctata*

Paranthura latipes Barnard, 1955

Fig. 23H–I

Telson ovate-lanceolate, densely setose.

7,5 mm.

Mozambique, intertidal.

Paranthura punctata (Stimpson, 1855)

Fig. 23J

Telson ovate-lanceolate, apex narrowly rounded, with scattered setae.
16,0 mm.

Orange River Mouth to Natal, 7 to 200 m; Australia; New Zealand.

Pseudanthura Richardson

Pseudanthura lateralis Richardson, 1911

Fig. 23K-L

Eyes absent. Mouthparts modified for piercing and sucking. Pleonites distinct. Telson thin, dorsally convex, apically rounded. Uropodal exopod reduced to a small movable scale.

23,0 mm.

Off Cape Point, 1 800 to 2 000 m; west Africa.

SUBORDER FLABELLIFERA

Key to the families of the Flabellifera

1. Pleon composed of four or five free pleonites plus pleotelson (Figs 24K, 26A, E) 3
- Pleon composed of not more than three free pleonites plus pleotelson 2
2. Pleon of one free segment plus pleotelson (Fig. 37A-H)
Sphaeromatidae (p. 85)
- Pleon of three free segments plus pleotelson
Both uropodal rami movable (Fig. 35) **Serolidae** (p. 83)
3. Both uropodal rami flattened 4
- Uropod with one or both rami hook-like (Fig. 34B)
Limnoriidae (p. 83)
4. Maxillipedal palp free, apical article not armed with hook-like setae 5
- Maxillipedal palp embracing cone of mouthparts, apical article armed with hook-like setae (Fig. 24O) 6
- Often possessing prehensile pereopods for their parasitic habit
5. Mandible distally stout, conspicuous, molar prominent
All pereopods ambulatory **Cirolanidae** (p. 61)
- Mandible distally narrowed, molar reduced (Fig. 31F)
Corallanidae (p. 75)
6. Body symmetrical
Pleopods setose
Three anterior pereopods prehensile (Fig. 24N)
Posterior four pereopods ambulatory **Aegidae** (p. 56)

- Body often asymmetrical
Pleopods never setose
All pereopods prehensile **Cymothoidae** (p. 77)

Family **Aegidae**

Body symmetrical. Eyes usually distinct, often large. Pereonites well developed. Pleon consisting of five pleonites plus pleotelson. Pereopods I to III distinctly prehensile, hooked; pereopods IV to VII ambulatory. Maxillipedal palp usually tipped with spines or hooks. Members of this family are found as ectoparasites of fish, but are often also free-living.

1. Eyes present
Pleon not markedly narrower than pereon 2
- Eyes absent
Pleon markedly narrower than pereon .. *Syscenus infelix* (p. 59)
2. Anterior margin of cephalon more or less separating antennular bases
Frontal lamina large (Fig. 24) *Aega* (p. 56)
- Anterior margin of cephalon more or less covering antennular bases
Frontal lamina small (Fig. 25) *Rocinela* (p. 59)

Aega Leach

Median point of anterior margin of cephalon more or less separating antennular bases. Frontal lamina large. Eyes large. Maxillipedal palp of five segments.

1. Two basal antennular segments dilated, second segment distally produced 2
- Two basal segments of antennule not dilated, second segment not produced 5
2. Eyes contiguous 3
- Eyes not contiguous 4
3. Outer margin of uropodal endopod with notch
Rostrum partly separating antennular bases (Fig. 24A, B) *antillensis*
- Outer margin of uropodal endopod lacking notch
Rostrum completely separating antennular bases (Fig. 24G, H) *monophthalmus*
4. Pleotelson with two proximal dorsal concavities
Propodi of pereopods II and III with linguiform process (Fig. 24I, J) *semicarinata*
- Pleotelson lacking concavities
Propodi of pereopods II and III with linguiform process (Fig. 24K-M) *webbi*

5. Pereopods very slender
Uropodal endopod distally acute (Fig. 24C, D) .. *gracilipes*
- Pereopods not very slender
Uropodal endopod distally rounded/truncate (Fig. 24E, F) *monilis*

Aega antillensis Schioedte & Meinert, 1879

Fig. 24A-B

Eyes contiguous. Body narrowly ovate. Pleotelson tapering, apically narrowly rounded. Uropodal endopod with notch in outer margin.

45,0 mm.

Still Bay to Natal, 200 m.

Aega gracilipes Hansen, 1895

Fig. 24C-D

Basal antennular segments not dilated. Eyes not contiguous. Pleotelson as broad as long, apically acute. Both uropod rami apically acute.

25,0 mm.

Off Cape Point, 600 m; North Atlantic, Gulf of Mexico.

Aega monilis Barnard, 1914

Fig. 24E-F

Basal antennular segments not dilated. Eyes contiguous. Pereonites armed with transverse row of granules, more marked posteriorly. Pleotelson distally broadly rounded, margin finely crenulate. Uropodal exopod apically acute, margins dentate; endopod distally truncate/rounded, margins denticulate.

18,0 mm.

Table Bay to East London, 90 to 300 m.

Aega monophthalmus Johnston, 1834

Fig. 24G-H

Two basal antennular segments dilated. Eyes contiguous. Pleotelson as broad as long, distal margin armed with short spines, with rounded dorsal median ridge ending distally in small point. Uropod rami also armed with short spines.

23,0 mm.

Off East London, 800 m; North Atlantic.

Aega semicarinata Miers, 1875

Fig. 24I-J

Two basal antennular segments dilated. Eyes not contiguous. Pleotelson with two proximal dorsal concavities, distal margin truncate/concave.

52,0 mm.

Off Table Bay, 260 to 400 m.

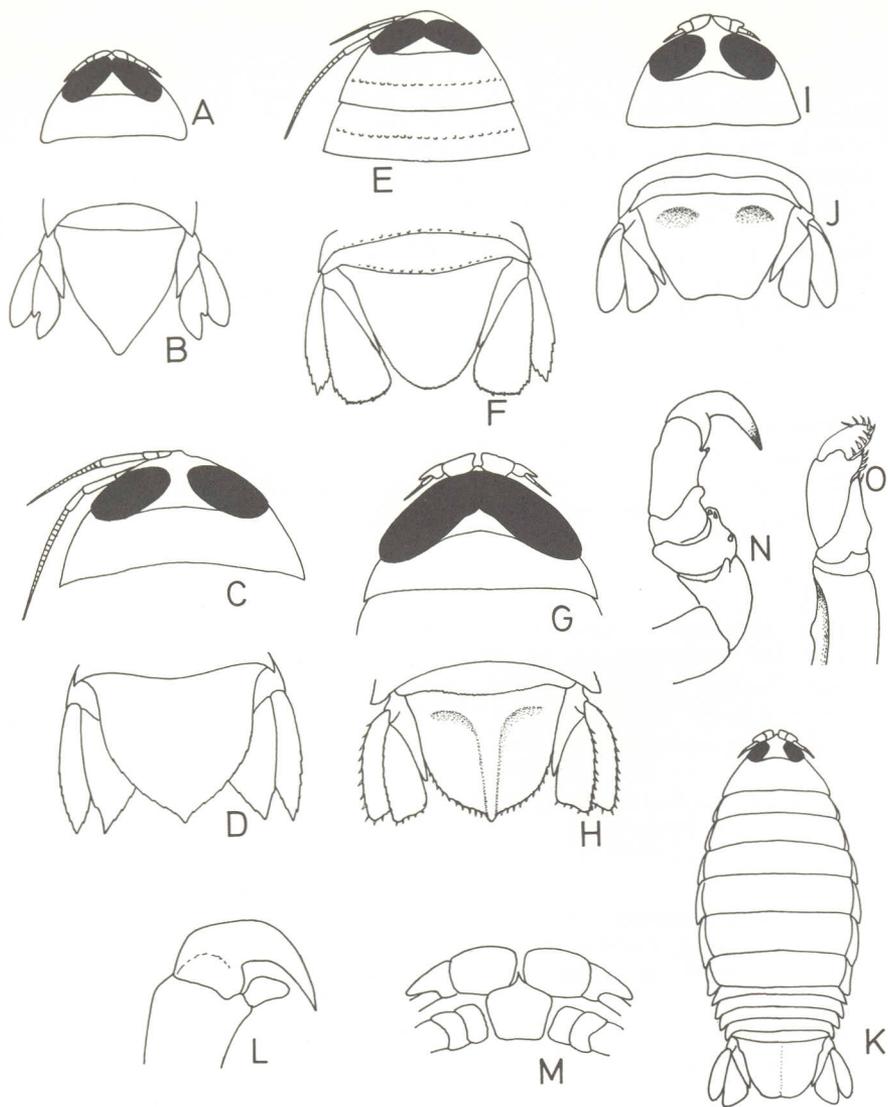


Fig. 24. A. *Aega antillensis*, cephalon. B. *A. antillensis*, pleotelson. C. *A. gracilipes*, cephalon. D. *A. gracilipes*, pleotelson. E. *A. monilis*, cephalon. F. *A. monilis*, pleotelson. G. *A. monophthalmus*, cephalon. H. *A. monophthalmus*, pleotelson. I. *A. semicarinata*, cephalon. J. *A. semicarinata*, pleotelson. K. *A. webbi*. L. *A. webbi*, dactylus of pereopod II. M. *A. webbi*, frontal lamina. N. Typical aegid prehensile pereopod. O. Typical aegid maxilliped.

Aega webbi (Guérin-Meneville, 1836b)

Fig. 24K-M

Body elongate-ovate. Eyes not contiguous. Two basal antennular segments dilated. Pleotelson distally bluntly bilobed. Propodi of pereopods II and III with distal linguiform process.

50,0 mm.

Off Cape Point to Natal, 100 to 300 m; off Florida; Portugal.

Rocinela Leach

Anterior cephalon margin more or less covering antennal bases. Frontal lamina small. Eyes present. Pereopods I to III usually with expanded propodus armed with hooks. Pleon not much narrower than pereon.

- | | | |
|---|----------------|-------------------|
| 1. Anterior margin of cephalon strongly produced between eyes
(Fig. 25A-B) | | <i>dumerilii</i> |
| - Cephalon not strongly produced | .. .. .. .. | .. 2 |
| 2. Uropodal exopod lanceolate, apically acute (Fig. 25C-D) | | <i>granulosa</i> |
| - Uropodal exopod apically rounded (Fig. 25E-F) | .. | <i>orientalis</i> |

Rocinela dumerilii (Lucas, 1849)

Fig. 25A-B

Frontal margin of cephalon prominently produced between eyes, with ventral knob in ♂.

29,0 mm.

South West Africa to False Bay, 60 to 500 m.

Rocinela granulosa Barnard, 1914

Fig. 25C-D

Frontal margin of cephalon triangular between eyes. Body minutely granular. Uropodal exopod lanceolate, outer margin denticulate; endopod distally rounded.

14,0 mm.

Off Natal, 80 to 200 m.

Rocinela orientalis Schioedte & Meinert, 1879

Fig. 25E-F

Frontal margin of cephalon rounded between eyes. Uropodal exopod distally rounded, outer margin serrate.

13,0 mm.

Off Natal, 100 to 500 m; off India, Ceylon, Philippines.

Syscenus Harger

Syscenus infelix Harger, 1883

Eyes absent. Pleon distinctly narrower than pereon. Propodi of pereopods I to III not expanded.

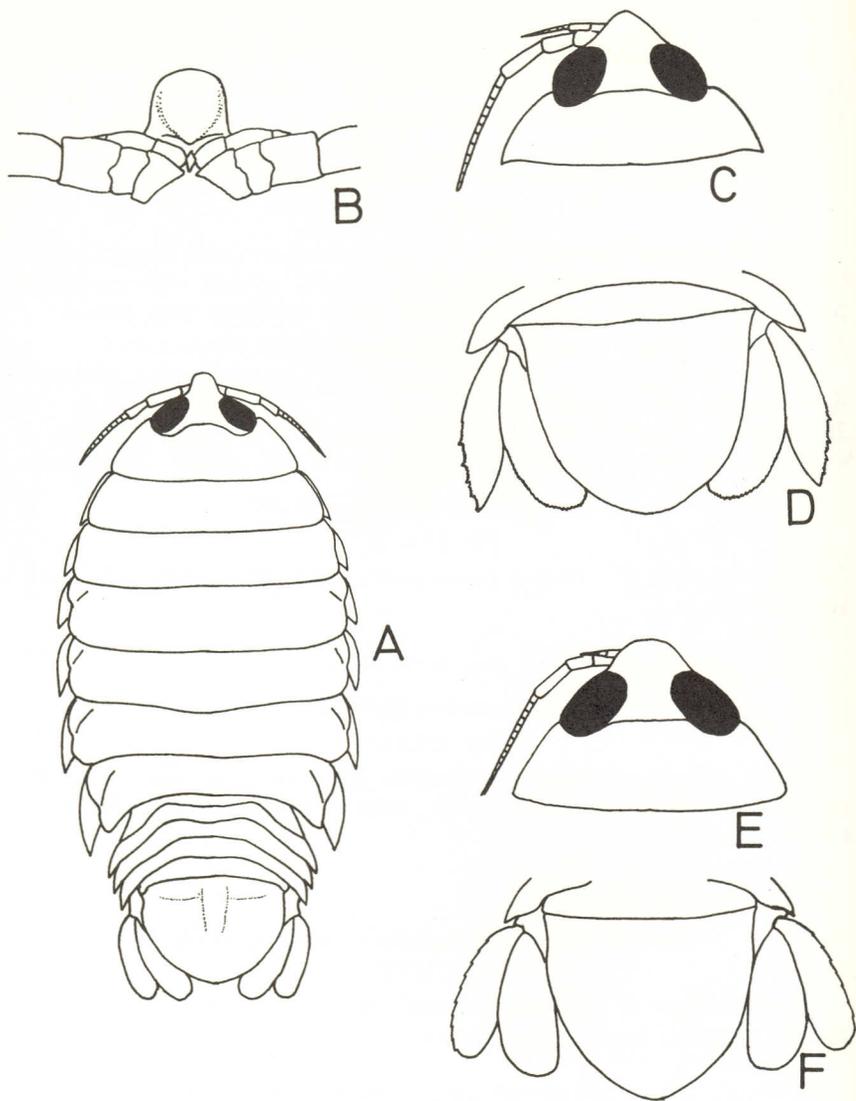


Fig. 25. A. *Rocinela dumerilii*. B. *R. dumerilii*, rostrum. C. *R. granulosa*, cephalon. D. *R. granulosa*, pleotelson and uropods. E. *R. orientalis*, cephalon. F. *R. orientalis*, pleotelson and uropods.

44,0 mm.

Natal; North Atlantic, Japan, Philippines.

This species was recorded from Natal by Stebbing (1923), but has not been seen since in South African waters.

Family Cirolanidae

Distinct coxae on pereonites II to VII. Pleon consisting of five free pleonites plus pleotelson. Uropods forming tail fan with pleotelson. Eyes usually present. Dactyls of pereopods I to III not distinctly larger than those of pereopods IV to VII.

Members of this family, especially species of *Cirolana*, are often very abundant in shallow subtidal habitats, e.g. *C. hirtipes* on the west coast. The mouthparts are well developed for cutting and biting, and most of the family are either carnivores or scavengers.

1. Branchial tufts present on pleopodal peduncles and exopods (Fig. 30G-H) *Parabathynomus* (p. 74)
– Branchial tufts not present on pleopods 2
2. Lateral margins of pleonite 5 overlapped by lateral margin of pleonite 4 3
– Lateral margin of pleonite 5 free, not overlapped by lateral margin of pleonite 4 5
3. Mandibles prominent and stout, projecting forward
Frontal lamina not distinct (Fig. 30F) *Gnatholana* (p. 74)
– Mandibles not prominent, not projecting forward
Frontal lamina distinct 4
4. Antennae distinctly longer than antennules
Frontal lamina not projecting anteriorly (Figs 26–29) *Cirolana* (p. 61)
– Antennae and antennules short
Frontal lamina projecting anteriorly (Fig. 30A–C) *Conilorpheus* (p. 72)
5. Mandibular palp two-segmented (Fig. 30I) *Pontogeloides* (p. 74)
– Mandibular palp three-segmented 6
6. Distal peduncular segments of antennule at right angle to basal segment
Inner apex of uropodal peduncle not produced (Fig. 30D) *Eurydice* (p. 72)
– Distal peduncular segments of antennule not at right angle to basal segment
Inner apex of uropodal peduncle produced (Fig. 30E) *Exciorolana* (p. 73)

Cirolana Leach

Cephalon lacking projecting rostrum. Frontal lamina distinct, but not projecting prominently. Antenna longer than antennule. Pleon consisting

of five free pleonites plus pleotelson (pleonite 1 often obscured by pereonite VII). Lateral margins of pleonite 5 overlapped by those of pleonite 4. Pleopods 1 and 2 similar, not operculiform. Inner apex of uropod peduncle produced.

1. Eyes lacking (Fig. 26E)	<i>caeca</i>
- Eyes present	2
2. Pleonites and pleotelson unsculptured, lacking ridges, tubercles or granules	3
- Pleonites or pleotelson or both armed with ridges, tubercles or granules	10
3. Pleotelson broadly rounded distally, almost semicircular (Fig. 28H)	<i>pilula</i>
- Pleotelson tapering distally to some extent	4
4. Frontal lamina distally rounded or truncate	5
- Frontal lamina distally acute	6
5. Pleotelsonic margin bearing short spines	
Frontal lamina proximally very slender (Fig. 26B) ..	<i>borealis</i>
- Pleotelsonic margin setose	
Frontal lamina proximally fairly broad (Fig. 28A-B)	<i>luciae</i>
6. Frontal lamina broadly pentagonal	7
- Frontal lamina slender, narrow	8
7. Pleotelsonic apex broadly rounded or truncate	
Uropodal exopod lacking spines (Fig. 28G)	<i>parva</i>
- Pleotelsonic apex subacute	
Uropodal exopod bearing short spines (Fig. 27B-C) ..	<i>cranchii</i>
8. Coxa of pereonite IV with posteroventral corner rounded (Fig. 28D)	<i>natalensis</i>
- Coxa of pereonite IV quadrate	9
9. Impressed line at hind margin of eyes continuous across cephalon (Fig. 27E-F)	<i>hirtipes</i>
- Impressed line at hind margin of eyes not continuous (Fig. 29I)	<i>virilis</i>
10. Pleotelson unarmed, lacking sculpture	11
- Pleotelson sculptured	12
11. Pleotelsonic apex a V-shaped notch (Fig. 27H) ..	<i>incisicauda</i>
- Pleotelsonic apex entire (Fig. 28C)	<i>meinerti</i>
12. Pleon unarmed	13
- Pleon bearing tubercles, etc.	15
13. Pleotelson bearing two submedian ridges, lacking granules ..	14
- Pleotelson bearing two submedian ridges and proximal granules (Fig. 28F)	<i>palifrons</i>
14. Pleotelson apically rounded and finely denticulate (Fig. 29D)	<i>theleceps</i>
- Pleotelson apically acute, margin entire (Fig. 28E) ..	<i>obtusispina</i>
15. Pleotelson with median longitudinal ridge (Fig. 29F)	<i>undulata</i>

- Pleotelson lacking median longitudinal ridge	16
16. Pleotelson bearing strong spine-like processes	17
- Pleotelson bearing rounded granules of tiny spines	19
17. Pleotelson armed with two strong submedian spines proximally (Fig. 26D)	<i>bovina</i>
- Pleotelson armed with single strong median spine or process	18
18. Margins of pleonites weakly denticulate Pleotelson lacking ridges and granules (Fig. 29G)	<i>venusticauda simplex</i>
- Margins of pleonites strongly denticulate Pleotelson with numerous ridges and granules (Fig. 29H)	<i>venusticauda venusticauda</i>
19. Pleotelson with slight median ridge flanked by two grooves, grooves uniting proximally	20
- Pleotelson lacking median ridge and flanking grooves	21
20. Pereonites with up to four strong transverse grooves (Fig. 27A)	<i>cingulata</i>
- Pereonites lacking transverse grooves (Fig. 27G)	<i>imposita</i>
21. Pleotelson with median longitudinal groove	22
- Pleotelson lacking median longitudinal groove	23
22. Groove on pleotelson strong, bounded by well-defined ridges Few scattered granules on pleotelson (Fig. 29C)	<i>sulcata</i>
- Groove on pleotelson shallow, ridges not well defined No granules on pleotelson (Fig. 26F)	<i>capitella</i>
23. Pleotelson apically truncate	24
- Pleotelson apically rounded or acute	25
24. Pleonite margins strongly denticulate Pleotelson bearing strong furrows and ridges Pereonites glabrous (Fig. 29B)	<i>saldanhae</i>
- Pleonite margins finely denticulate to entire Pleotelson bearing few scattered granules Pereonites each with strong transverse ridge (Fig. 29E)	<i>transcostata</i>
25. Pleotelson with two strong submedian ridges (Fig. 27I)	<i>fluviatilis</i>
- Pleotelson lacking submedian ridges	26
26. Pleotelsonic surface finely granular, with single median rounded tubercle (Fig. 29A)	<i>rugicauda</i>
- Pleotelsonic surface bearing fine irregular striae (Fig. 27I)	<i>littoralis</i>

Cirolana borealis Lilljeborg, 1851

Fig. 26B-C

Pleotelson triangular, apically rounded, margin armed with short spines. Frontal lamina slender, distally broadened, apically rounded.

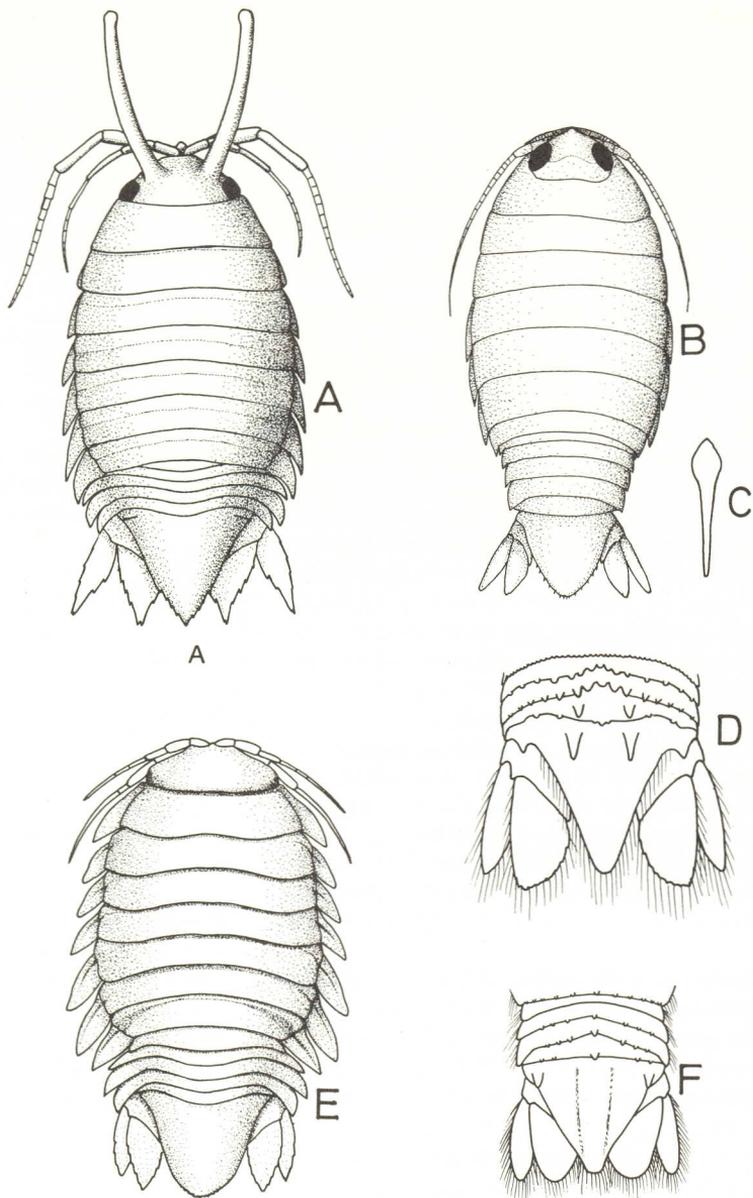


Fig. 26. A. *Excirolana bicornis*. B. *Cirolana borealis*. C. *C. borealis*, frontal lamina. D. *C. bovina*, pleotelson. E. *C. caeca*. F. *C. capitella*, pleotelson.

6,3 mm.

Off Still Bay, 30 m; North Atlantic, Mediterranean.

Cirolana bovina Barnard, 1940

Fig. 26D

Frontal lamina pentagonal. Pereon smooth. Pleotelson bearing dense fringe of plumose setae. Hind margins of pleonites 2 to 5 denticulate.

9,0 mm.

East London, intertidal.

Cirolana caeca Kensley, 1977b

Fig. 26E

Cephalon lacking eyes. Coxae prominent, acute. Pleotelson apically rounded, unsculptured. Uropod rami apically acute.

4,2 mm.

Off Natal, 750 m.

Cirolana capitella Barnard, 1955

Fig. 26F

Cephalon with upright median process between eyes, slightly bifid, flanked by low rounded tubercle. Pleon with very fine pile of setae. Frontal lamina obovate.

12,0 mm.

Mozambique, intertidal.

Cirolana cingulata Barnard, 1920

Fig. 27A

Body smooth, strongly convex. Cephalon with five transverse grooves. Pereonites with up to five transverse grooves. Frontal lamina as broad as long, anterior margin evenly rounded.

9,0 mm.

Still Bay to East London, 30 to 170 m.

Cirolana cranchii Leach, 1818

Fig. 27B-C

Frontal lamina pentagonal, longer than broad. Margins of posterior pereonites sparsely or not denticulate. Body minutely granular.

13,0 mm.

Southern Angola to Port Elizabeth, intertidal to 46 m; North Atlantic, Mediterranean.

Cirolana fluviatilis Stebbing, 1902

Fig. 27D

Hind margin of pereonite VII with eighteen tubercles. Hind margins of pleonites 3 to 5 tuberculate.

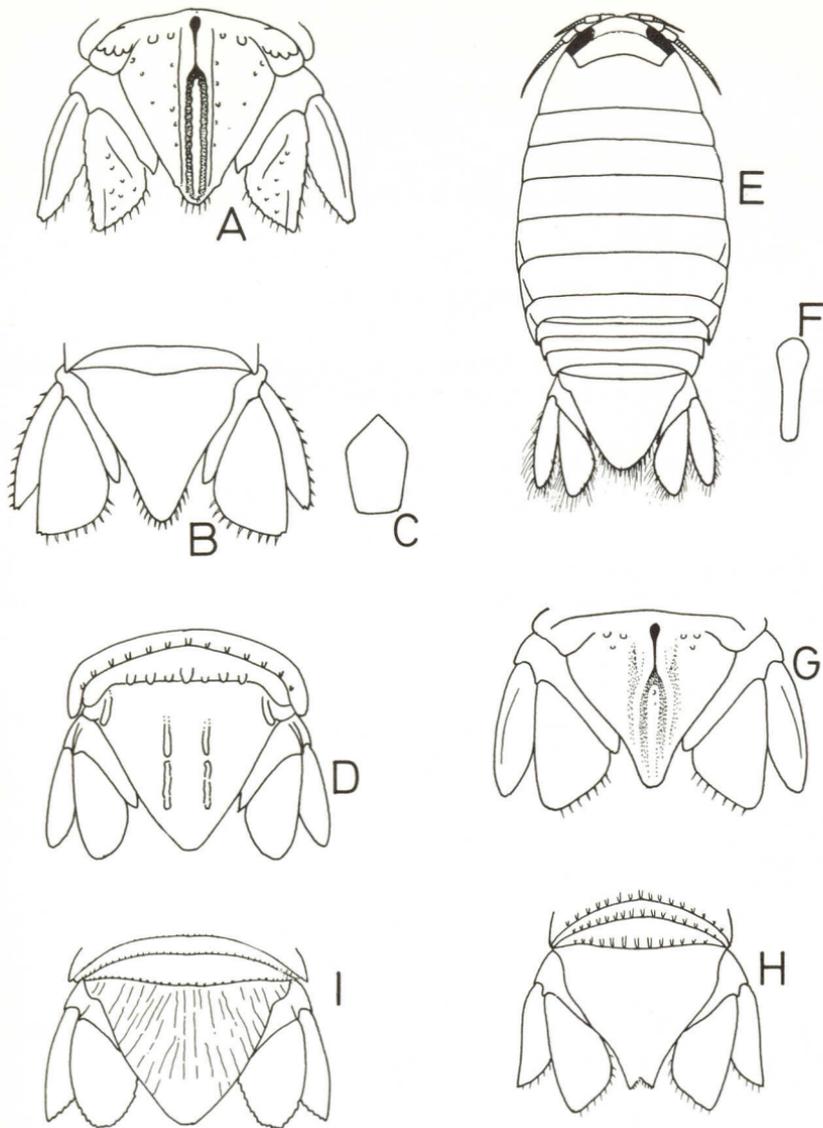


Fig. 27. A. *Cirolana cingulata*, pleotelson. B. *C. cranchii*, pleotelson. C. *C. cranchii*, frontal lamina. D. *C. fluviatilis*, pleotelson. E. *C. hirtipes*. F. *C. hirtipes*, frontal lamina. G. *C. imposita*, pleotelson. H. *C. incisicauda*, pleotelson. I. *C. littoralis*, pleotelson.

12,0 mm.

Knysna to Zululand, estuarine.

Cirolana hirtipes Edwards, 1840

Fig. 27E-F

Body glabrous. Frontal lamina slender, narrow, distally acute. Pereon and pleon unarmed. Pereopods bearing numerous stout setae and spines.

20,0 mm.

Lüderitz to East London, intertidal to 200 m.

Cirolana imposita Barnard, 1955

Fig. 27G

Cephalon, pereon and pleon with minute scattered granules. Frontal lamina pentagonal.

10,0 mm.

False Bay to Natal, 15 to 360 m.

Cirolana incisicauda Barnard, 1940

Fig. 27H

Anterior margin of frontal lamina broadly rounded. Coxae of pereonites IV to VII very prominent, acute.

17,0 mm.

Hermanus; Port Alfred, intertidal.

Cirolana littoralis Barnard, 1920

Fig. 27I

Body smooth. Frontal lamina as broad as long, subacute to rounded. Pleonites with hind margins weakly denticulate.

15,0 mm.

Saldanha Bay to East London, intertidal.

Cirolana luciae Barnard, 1940

Fig. 28A-B

Body glabrous. Frontal lamina oblong, distally widening, rounded. Coxae of pereonites IV to VII with oblique ridge. Uropodal endopod extending beyond pleotelsonic apex.

9,0 mm.

Zululand, St Lucia Estuary.

Cirolana meinerti Barnard, 1920

Fig. 28C

Body smooth, frontal lamina narrowly pentagonal. Pleonites 4 and 5 denticulate on posterior margin. Pleotelson with patch of setae some way behind apex.

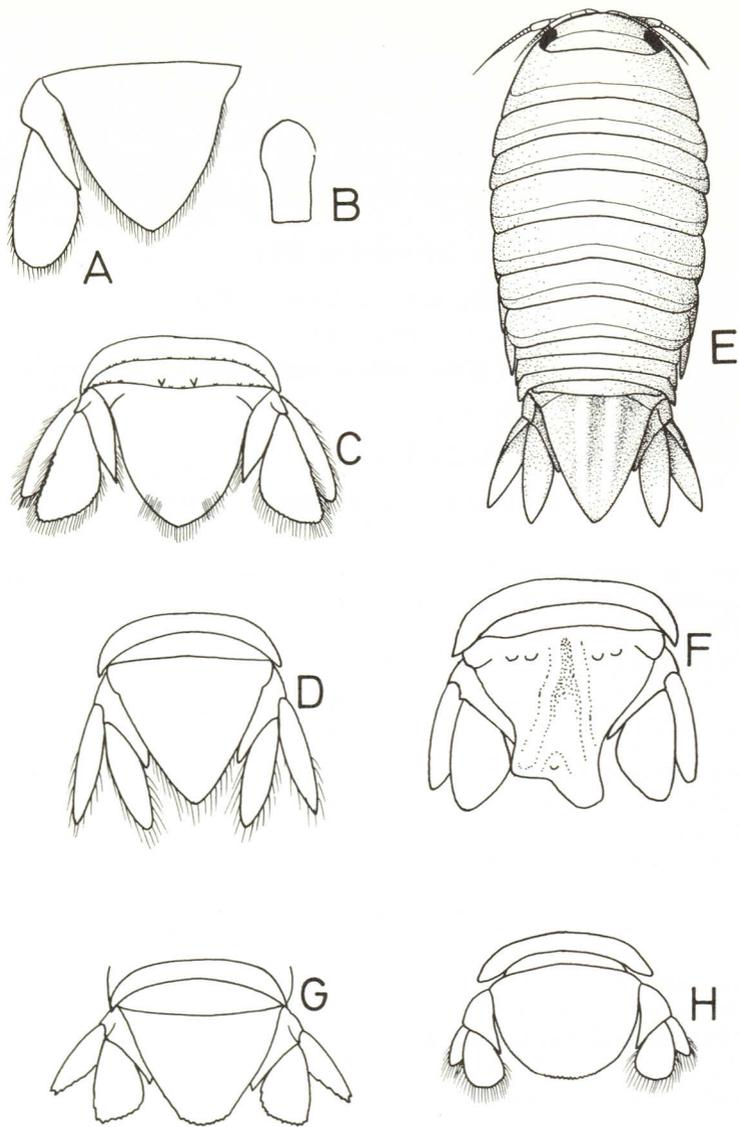


Fig. 28. A. *Cirolana luciae*, pleotelson. B. *C. luciae*, frontal lamina, C. *C. meinerti*, pleotelson. D. *C. natalensis*, pleotelson. E. *C. obtusispina*. F. *C. palifrons*, pleotelson. G. *C. parva*, pleotelson. H. *C. pilula*, pleotelson.

20,0 mm.

Off East London, 150 m.

Cirolana natalensis Barnard, 1940

Fig. 28D

Frontal lamina very slender, acute. Coxae I to IV with rounded postero-inferior angles. Impressed line at hind margin of eyes not continued across cephalon.

13,0 mm.

From Natal, shallow infratidal.

Cirolana obtusispina Kensley, 1975b

Fig. 28E

Frontal lamina distally rounded. Each pereonite with single impressed transverse line. Pleotelson with two rounded submedian ridges, apically acute. Pereopods I to III with knob-like spines.

8,0 mm.

Off Still Bay, 120 m.

Cirolana palifrons Barnard, 1920

Fig. 28F

Body smooth, frontal lamina pentagonal. Pereonites V to VII with shallow groove near posterior margin. Pleonites weakly granulose near posterior margin.

9,0 mm.

Off East London, 170 m. Known from single malformed ♂.

Cirolana parva Hansen, 1890

Fig. 28G

Frontal lamina pentagonal, widening distally. Pereon and pleon lacking ridges or tubercles.

8,0 mm.

Saldanha Bay, intertidal.

Cirolana pilula Barnard, 1955

Fig. 28H

Body glabrous, very convex. Pleotelsonic apex crenulate, with short plumose seta in each notch. Frontal lamina slender, lanceolate.

11,0 mm.

Lambert's Bay to Natal, 18 to 66 m.

Cirolana rugicauda Heller, 1861

Fig. 29A

Body coarsely pitted. Bristles on pleon. Pleonite 3 overlapping pleonites 4 and 5. Frontal lamina distally evenly rounded.

15,5 mm.

Port Nolloth to Saldanha Bay, shallow infratidal; St Paul and Amsterdam Is.

Cirolana saldanhae Barnard, 1951

Fig. 29B

Cephalon pitted. Frontal lamina pentagonal. Posterior margins of posterior pereonites and pleonites slightly crenulate.

10,0 mm.

Orange River Mouth to Saldanha Bay, 10 m.

Cirolana sulcata Hansen, 1890

Fig. 29C

Body strongly convex, smooth. Frontal lamina obovate.

13,0 mm.

Lüderitz to Natal, 5 to 84 m.

Cirolana theleiceps Barnard, 1940

Fig. 29D

Body smooth. Cephalon in ♂ with four rounded tubercles. Pereonite I with two tiny submedian tubercles. Frontal lamina narrowly pentagonal.

8,0 mm.

Off Natal, intertidal.

Cirolana transcostata Barnard, 1959

Fig. 29E

Cephalon with two or three faint transverse striae. Frontal lamina distally rounded, slightly projecting. Each pereonite with transverse costae near hind margin. Pleonites 2 to 5 with transverse series of small granules.

6,5 mm.

False Bay, 36 to 86 m.

Cirolana undulata Barnard, 1914b

Fig. 29F

Body glabrous. Frontal lamina quadrate. Posterior margins of pereonites finely crimped. Posterior margins of pleonites denticulate.

15,0 mm.

Lüderitz to Hermanus, intertidal.

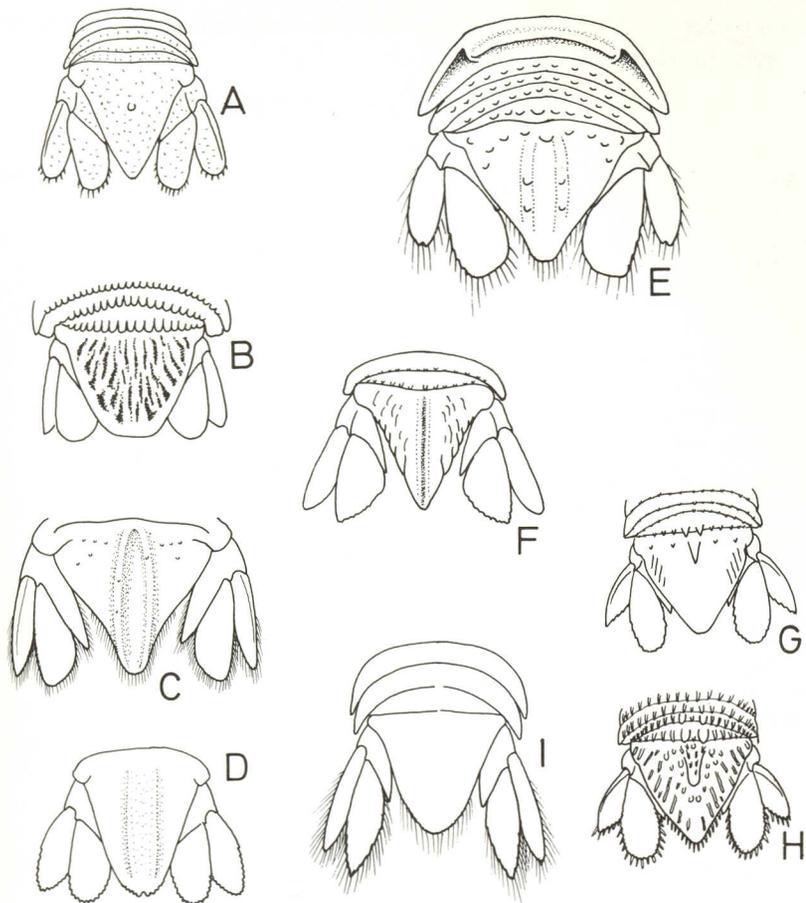


Fig. 29. A. *Cirolana rugicauda*, pleotelson. B. *C. saldanha*, pleotelson. C. *C. sulcata*, pleotelson. D. *C. theleceps*, pleotelson. E. *C. transcostata*, pleotelson. F. *C. undulata*, pleotelson. G. *C. venusticauda simplex*, pleotelson. H. *C. venusticauda*, pleotelson. I. *C. virilis*, pleotelson.

Cirolana venusticauda Stebbing, 1902

Fig. 29G-H

Pereonite VII bearing about eighteen tubercles on hind margin. Hind margins of pleonites 3 to 5 tuberculate.

12,0 mm.

Lambert's Bay to East London, 11 to 50 m.

The variety *simplex*, described by Barnard (1914b) possesses smaller

tubercles on pereonal hind margins and pleonites, and fewer ridges and tubercles on the pleotelson.

Cirolana virilis Barnard, 1940

Fig. 29I

Very similar to *C. hirtipes*, but oblique ridges on coxae more distinct. Frontal lamina narrow, acute. Posteroventral corner of coxa 4 quadrate. Stylet of pleopod 2 ♂ very stout, strongly curved.

13,5 mm.

Port Elizabeth, 66 to 80 m.

Conilorpheus Stebbing

Lateral margin of pleonite 5 overlapped by that of 4. Inner apex of uropodal peduncle produced. Frontal lamina distinct, projecting prominently in front. Both antennae and antennules short.

1. Pleotelson armed with numerous tubercles (Fig. 30B-C) *scutifrons*
- Pleotelson smooth, unarmed (Fig. 30A) *blandus*

Conilorpheus blandus Barnard, 1955

Fig. 30A

Body covered with fine short pile of setae, becoming thicker on pleotelson. Frontal lamina tridentate. Inner uropod ramus obovate. Pleotelsonic apex with six spines and numerous plumose setae.

8,5 mm.

Algoa Bay. ♂ unknown.

Conilorpheus scutifrons Stebbing, 1908

Fig. 30B-C

Cephalon narrow, frontal margin tridentate. Pereonites II to IV with transverse lines, V to VII with submarginal row of tubercles.

9,0 mm.

False Bay to Natal, 11 to 80 m.

Eurydice Leach

Eurydice longicornis (Studer, 1883)

Fig. 30D

First antennular segment directed forward, at right angle to rest of appendage. Antenna reaching back to pereonite VII. Pleonite 5 not reduced, lateral border contributing to margin. Distal pleotelsonic margin denticulate, with apical spines. Uropodal peduncle not produced along inner margin of inner ramus.

9,0 mm.

Lüderitz to Knysna, intertidal, shallow infratidal.

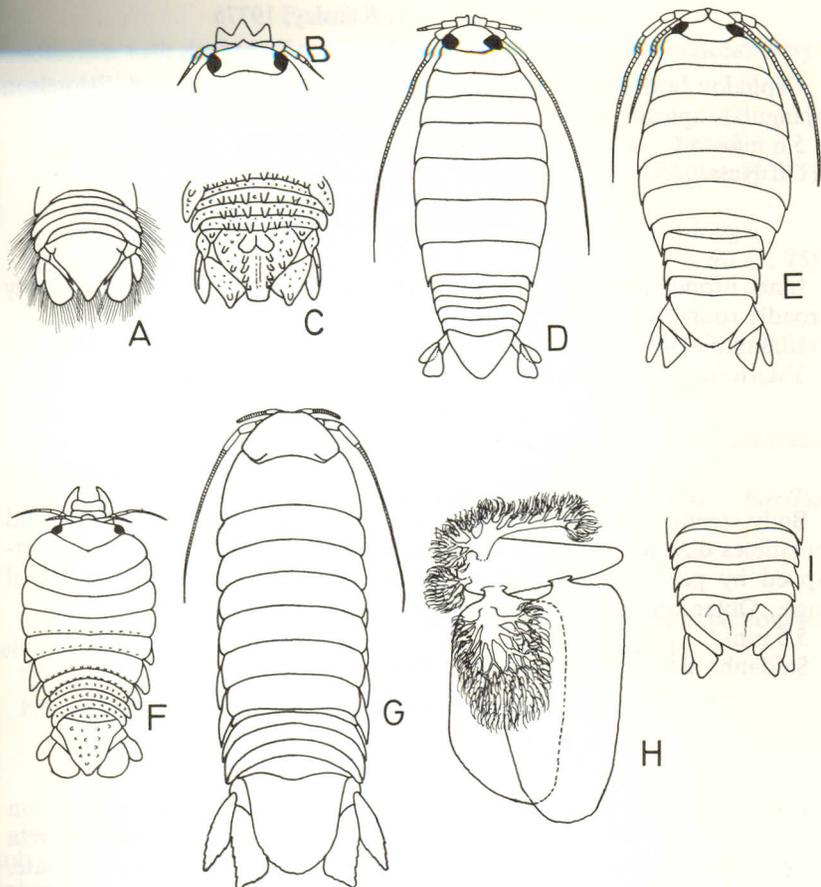


Fig. 30. A. *Conilorpheus blandus*, pleotelson and uropods. B. *C. scutifrons*, cephalon. C. *C. scutifrons*, pleotelson. D. *Eurydice longicornis*. E. *Excirolana natalensis*. F. *Gnatholana mandibularis*. G. *Parabathynomus natalensis*. H. *P. natalensis*, pleopod with branchial tufts. I. *Pontogeloides latipes*, pleotelson and uropods.

Excirolana Richardson

Mandibular palp three-segmented. Pleonite 1 not contributing to lateral margin. Pleonite 5 with free lateral margins. Uropodal peduncle produced along inner margin of inner ramus. Clypeus acute, projecting in lateral view.

1. Male with two elongate horns on cephalon, female lacking horns
Pleotelson apically acute (Fig. 26A) *bicornis*
- Male and female lacking horns on cephalon
Pleotelson apically rounded (Fig. 30E) *natalensis*

Excirolana bicornis Kensley, 1977b

Fig. 26A

Cephalon bearing two elongate apically rounded horns in ♂. Pleotelson triangular, apically acute, distal margins denticulate.

5,6 mm.

Off Natal, 550 m.

Excirolana natalensis (Vanhöffen, 1914)

Fig. 30E

Inner uropodal ramus with notch on outer margin. Pleotelson apically broadly rounded.

13,0 mm.

Ysterfontein to Table Bay, Plettenberg Bay to Natal, intertidal.

Gnatholana Barnard

Gnatholana mandibularis Barnard, 1920

Fig. 30F

Body strongly convex, cephalon narrow. Frontal lamina, labrum and mandibles directed forward, dorsally visible. Pleonite 1 completely overlapped by pereonite VII. Uropodal peduncle produced at inner distal angle. Outer uropod ramus much smaller than inner.

5,5 mm.

Saldanha Bay to East London, 170 m.

Parabathynomus Barnard

Parabathynomus natalensis Barnard, 1924

Fig. 30G-H

Body large, parallel-sided, finely pitted dorsally. Coxae present on pereonites II to VII. Five free pleonites, pleonite 1 overlapped by coxa of pereonite VII. Pleotelson evenly convex, distal margin faintly crenulate. Eyes elongate-oblong. Frontal lamina elongate-pentagonal. Branchial tufts present on peduncles and exopods of pleopods.

81,0 mm.

Off Natal, 766 m. Only ♂ known.

Pontogeloides Barnard

Pontogeloides latipes Barnard, 1914b

Fig. 30I

Mandibular palp two-segmented. Pleonite 1 not forming part of lateral margin. Pleonite 5 with free lateral margins. Pleotelson with two submedian concavities. Uropodal peduncle produced along inner margin of inner ramus.

9,0 mm.

Lüderitz to Mozambique, intertidal to 13 m.

Family Corallanidae

Mandible with distal half narrow (Fig. 31F), more or less concealed by upper and lower lips, molar process reduced.

1. Antennal bases dorsally visible.

Second segment of maxilliped much longer than broad

(Fig. 31A-B) *Corallana* (p. 75)

- Antennal bases hidden by rostrum in dorsal view

Second segment of maxilliped about as broad as long

(Fig. 31C-E) *Lanocira* (p. 75)

Corallana Dana

Maxilliped palp five-segmented. Mandible lacking lacinia, molar process reduced. Antennal bases dorsally visible.

1. Pleotelsonic apex entire

Pleon segment 5 with median dorsal tubercle (Fig. 31A) *africana*

- Pleotelsonic apex with notch flanked by two point

Pleon segment 5 with pair of submedian tubercles (Fig. 31B) *furcilla*

Corallana africana Barnard, 1914b

Fig. 31A

Body with scattered bristles, especially on coxae. Posterior pereonites with obscure tubercles. Pleonite 5 with low median tubercle.

7,0 mm.

Keurbooms River to Zululand, mainly estuarine to 80 m.

Corallana furcilla Barnard, 1955

Fig. 31B

Integument irregularly pitted. Pereonite V with four obscure lateral tubercles; VI with three; VII with five or six. Pleonites 3 to 5 with two submedian tubercles. Pleotelsonic apex with two short upturned points.

3,0 mm.

Inhambane, Mozambique, estuarine.

Lanocira Hansen

First maxilla strongly falcate. Antennal bases hidden by rostrum in dorsal view. Second segment of maxilliped very little longer than broad.

1. Rostrum a single rounded and upturned lobe (Fig. 31C-D) *gardineri*

- Rostrum axe-shaped, curved (Fig. 31E) *latifrons*

Lanocira gardineri Stebbing, 1904

Fig. 31C-D

Cephalon in ♂ with upturned rostrum and two low tubercles adjacent to eyes, with concavity between them. ♀ lacking rostrum and tubercles

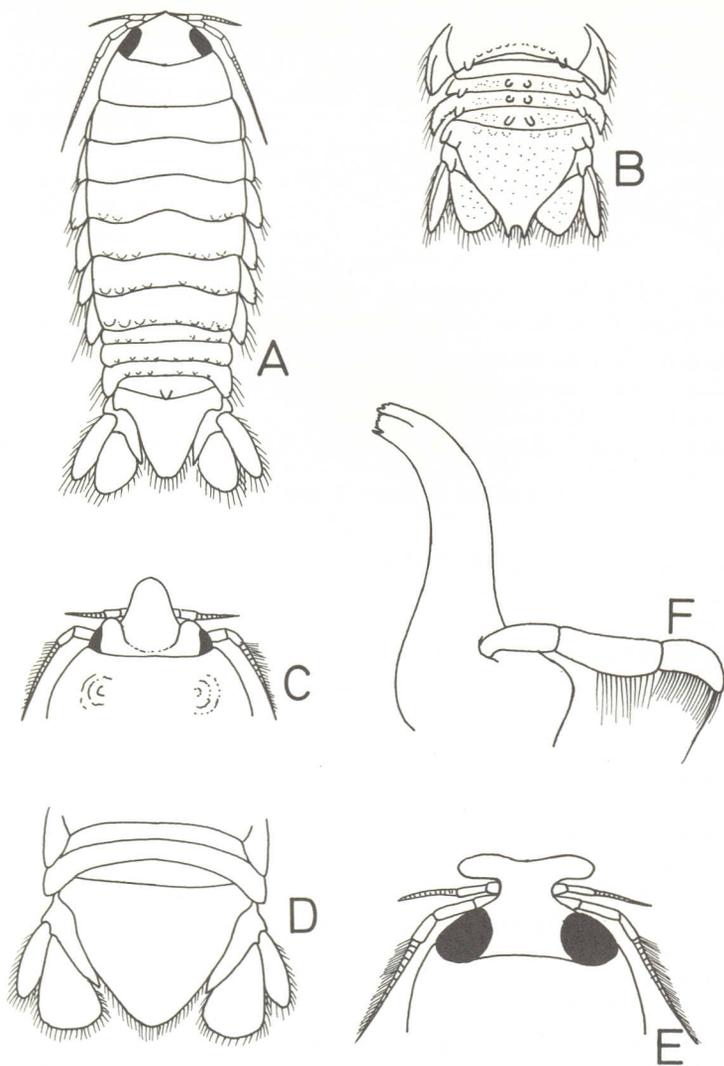


Fig. 31. A. *Corallana africana*. B. *C. furcilla*, pleotelson. C. *Lanocira gardineri*, cephalon. D. *L. gardineri*, pleotelson. E. *L. latifrons*, cephalon. F. *Corallana* mandible.

on cephalon, but concavity present. Posterior part of body strongly setose.

7,5 mm.

Lüderitz to Natal, 4 to 110 m.

Lanocira latifrons Stebbing, 1910

Fig. 31E

Cephalon in ♂ with axe-shaped upturned rostrum, truncate in dorsal view. ♀ with broad convex projection. Eyes large.

9,5 mm.

Mozambique.

Family Cymothoidae

Antennae and antennules usually reduced, flagella not distinct. Pereopods all prehensile, dactyli strongly curved and hook-like (Fig. 32E, G). Coxae visible on all except first pereonite. Pleopods never setose. Eyes often reduced. Mandibles with palps. Maxilliped bearing hooks on terminal palp segment (Fig. 32B).

These isopods are very similar to those of the family Aegidae, but lack the latter's large eyes and always symmetrical body. The cymothoids are generally more adapted for the parasitic mode of life, being not only ectoparasitic but also occurring in the buccal and branchial cavities of their fish hosts. This habit is often the cause of the distorted bodies of the adults. The juveniles, when first becoming attached to their host, are symmetrical and usually males. By the time they are adults, they have become large females with well-developed brood pouches.

1. Cephalon not immersed or sunken into pereonite I
Anterior margin of pereonite I faintly trisinate (Fig. 32A) .. 2
- Cephalon sunken into pereonite I
Anterior margin of pereonite I not trisinate 3
2. Anterior margin of cephalon broadly rounded (Fig. 33C-G)
Nerocila (p. 82)
- Anterior margin of cephalon narrowed (Fig. 32A-C) *Anilocra* (p. 78)
3. Antennular bases contiguous 4
- Antennular bases not contiguous 5
4. Antennules dilated
Pereopodal dactyls relatively short (Fig. 32E-F)
Codonophilus imbricata (p. 80)
- Antennules compressed
Pereopodal dactyls relatively elongate, strongly curved
(Fig. 32G-H) *Cteatessa retusa* (p. 80)
5. Pleon distinctly demarked from pereon 6
- Pleon continuous with and somewhat sunken into pereon .. 7

- 6. Antennular bases somewhat separate (Fig. 32I) *Cymothoa borbonica* (p. 80)
- Antennular bases almost contiguous (Fig. 32D) *Cinusa tetrodontis* (p. 78)
- 7. Pleon deeply sunken into pereon (Fig. 33A) *Irona melanosticta* (p. 80)
- Pleon only slightly sunken into pereon (Fig. 33B) *Lironeca raynaudi* (p. 80)

Anilocra Leach

Cephalon not sunken into pereonite I, anteriorly narrowed. Body symmetrical. Pereonite VII enveloping pleon to some degree.

- 1. Antennule with third peduncular segment distally enlarged clearly demarking the flagellum *leptosoma*
- Third antennular peduncular segment not enlarged .. *capensis*

Anilocra capensis Leach, 1818

Fig. 32A-B

Cephalon triangular, eyes well developed. Pleotelson evenly rounded. Uropodal exopod longer than endopod.

60,0 mm.

Walvis Bay to East London. Most commonly found externally on the Hottentot fish, *Pachymetopon blochi*.

Anilocra leptosoma Bleeker, 1875

Fig. 32C

Body usually more slender than *A. capensis*. Antennule geniculate due to third peduncular segment being distally produced. Pleotelson with slight median keel, margin evenly rounded.

34,0 mm.

St Lucia Bay; Delagoa Bay.

Cinusa Schioedte & Meinert

Cinusa tetrodontis Schioedte & Meinert, 1879

Fig. 32D

Cephalon partly sunken into pereonite I. Body sometimes slightly distorted. Antennular bases not dilated, narrowly separated. Pleon quite distinct from pereon.

27,0 mm.

False Bay, from mouth cavity of puffer fish, *Amblyrhynchotes honckenii*.

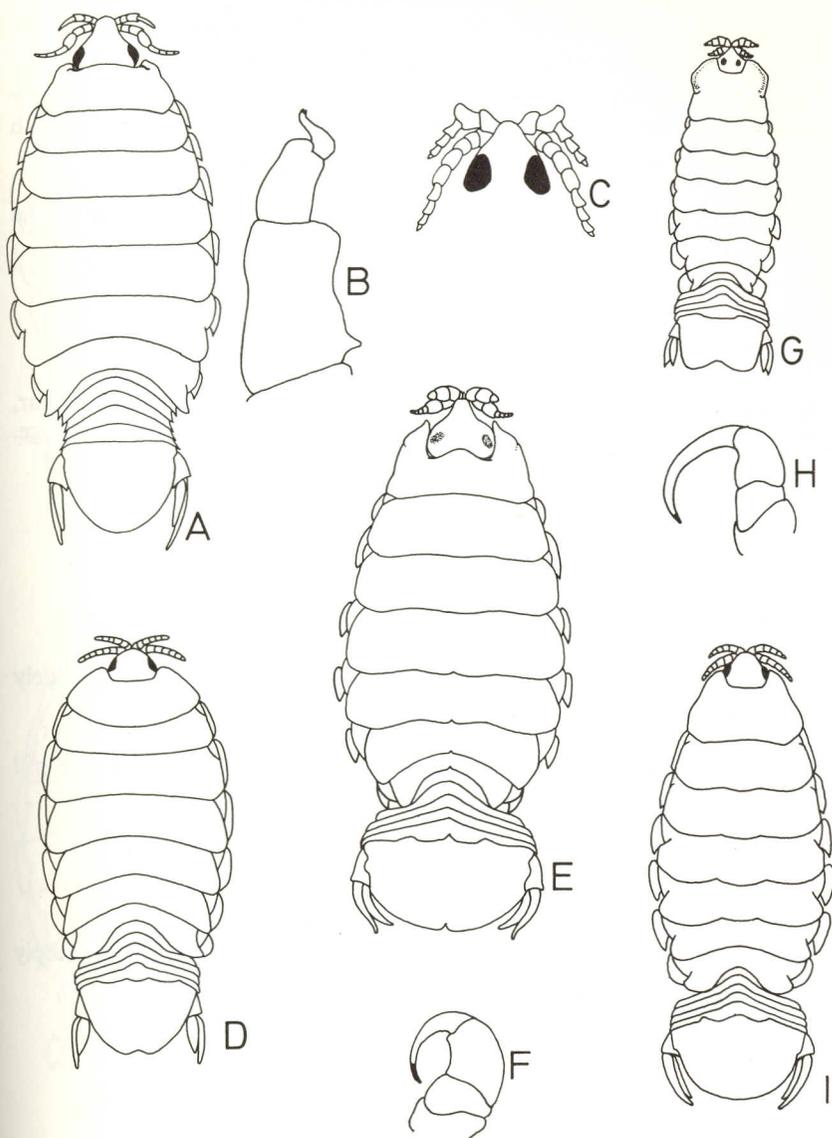


Fig. 32. A. *Anilocra capensis*. B. *A. capensis*, maxilliped. C. *A. leptosoma*, cephalon. D. *Cinusa tetrodontis*. E. *Codonophilus imbricata*. F. *C. imbricata*, dactylus of pereopod. G. *Cteatessa retusa*. H. *C. retusa*, dactylus of pereopod. I. *Cymothoa borbonica*.

Codonophilus Haswell
Codonophilus imbricata (Fabricius, 1787)

Fig. 32E-F

Cephalon somewhat sunken into pereonite I. Body sometimes slightly asymmetrical. Pleotelson broader than long, distal margin rounded, with median notch. Antennules dilated, basally contiguous.

57,0 mm.

Table Bay to Mozambique. Most often found in mouth cavity of the red roman fish, *Chrysolephus laticeps*.

Cteatessa Schioedte & Meinert
Cteatessa retusa Schioedte & Meinert, 1883

Fig. 32G-H

Cephalon small, sunken into pereonite I, anterior margin triangular, eyes distinct. Pereonite I about as long as broad with anterolateral ridge. Pleotelson broader than long, with deep median notch.

33,0 mm.

Durban, from mouth cavity of halfbeak fish, *Hemirhamphus far*.

Cymothoa Fabricius
Cymothoa borbonica Schioedte & Meinert, 1884

Fig. 32I

Cephalon sunken into pereonite I. Antennular bases not dilated, widely separated. Pleon obviously distinct from pereon.

27,0 mm.

Durban to Mozambique; Maldive Islands. Recorded from the gill chamber of parrot fish.

Irona Schioedte & Meinert
Irona melanosticta Schioedte & Meinert, 1884

Fig. 33A

Cephalon sunken into pereonite I. Body asymmetrical. Pleon deeply sunken into pereon.

22,0 mm.

Mozambique. Japan, from gill chamber of garfish.

Lironeca Leach
Lironeca raynaudi (Edwards, 1840)

Fig. 33B

Cephalon somewhat sunken into pereonite I. Body hardly distorted. Pleon hardly sunken into pereon. Uropodal rami short.

38,0 mm.

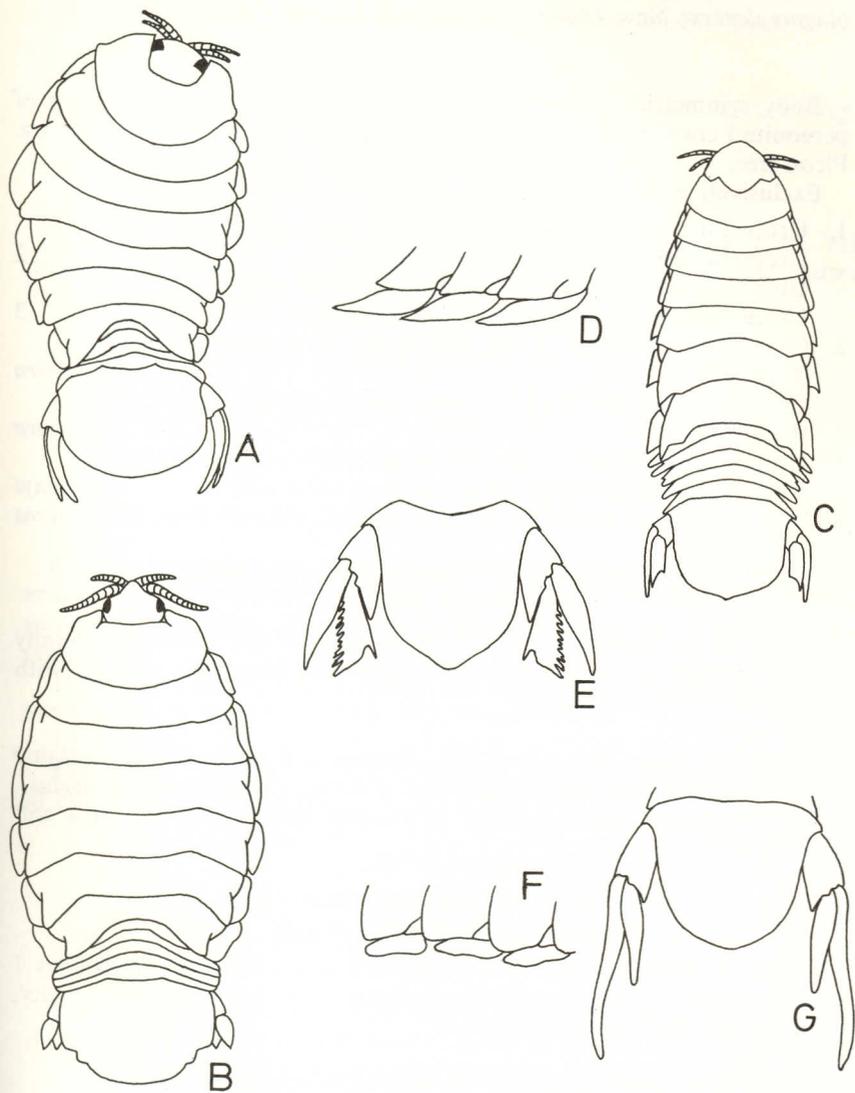


Fig. 33. A. *Irona melanosticta*. B. *Lironeca raynaudi*. C. *Nerocila orbignyi*. D. *N. phaeopleura*, coxae of pereonites V to VII. E. *N. serra*, pleotelson. F. *N. trichiura*, coxae of pereonites V to VII. G. *N. trichiura*, pleotelson.

Table Bay, Hout Bay, from mouth cavity of sucker fish, *Chorisochimus dentex*; New Zealand, Tasmania, Australia, Japan, Chile.

Nerocila Leach

Body symmetrical. Cephalon posteriorly trilobed, anterior margin of pereonite I correspondingly trisinate. Antennular bases almost touching. Pleon free.

Exclusively ectoparasitic on fish.

1. Uropodal exopod slender, much longer than endopod
 - Uropodal endopod narrow, unarmed 2
 - Uropodal exopod not much longer than endopod
 - Uropodal endopod armed with at least one tooth 3
2. Coxae of pereonites V to VII elongate, posteriorly acute (Fig. 33D) *phaeopleura*
 - Coxae of pereonites V to VII not elongate, posteriorly rounded (Fig. 33F-G) *trichiura*
3. Uropodal endopod armed with single tooth on inner margin, outer margin entire (Fig. 33C) *orbignyi*
 - Several teeth on outer margin of uropodal endopod (Fig. 33E) *serra*

Nerocila orbignyi (Guérin-Meneville, 1832)

Fig. 33C

Coxae of pereonites V to VII posteriorly acute. Pleonites laterally slender, incised. Uropodal endopod slightly broader than exopod, with single tooth on inner margin.

36,5 mm.

Table Bay, False Bay, Algoa Bay; Senegal and north Africa. Parasitic on Silver Fish (*Argyrozona argyrozona*), Panga (*Pterogymnus lanarius*), White Stumpnose (*Rhabdosargus globiceps*), Sole (*Synaptura* sp.) and Snoek (*Thyrsites atun*).

Nerocila phaeopleura Bleeker, 1857

Fig. 33D

Coxae of pereonites V to VII posteriorly acute. Pleurae of pleonites 1 and 2 well developed, elongate and slender. Uropodal exopod slender, much longer than narrow endopod.

21,0 mm.

Natal; East Indies. Parasitic on silkfish, *Chirocentrus dorab*.

Nerocila serra Schioedte & Meinert, 1881

Fig. 33E

Posterior corners of pereonites obviously produced and acute. Coxae of pereonites V to VII acute. Pleonites laterally produced and slender,

especially pleonites 1 and 2. Uropodal exopod as long as endopod, margins entire; endopod with single distal spine on inner margin, outer margin strongly serrate.

20,5 mm.

St Lucia Bay, Delagoa Bay; East Indies. Parasitic on *Rhabdosargus* sp.

Nerocila trichiura (Miers, 1877)

Fig. 33F-G

Posterior corners of pereonites and coxae of pereonites V to VII rounded. Uropodal exopod slender, much longer than endopod; latter narrow, margins entire.

23,0 mm.

Durban; Indo-Pacific. Parasitic on flying fish.

Family **Limnoriidae**

Limnoria Leach

Limnoria quadripunctata Holthuis, 1949

Fig. 34A-B

Antennular flagellum of four articles. Antennal flagellum of five articles. Pleonite 5 with Y-shaped median carina. Pleotelson with four submedian tubercles. Uropodal exopod with apical claw, shorter than endopod.

This species belongs to a family of wood borers capable of causing considerable damage to wooden wharfs and pilings.

3,5 mm.

Table Bay to Port Elizabeth; Britain, Holland, California, Chile, St Paul and Amsterdam Is.

Family **Serolidae**

Serolis Leach

Serolis brinki Kensley, 1977b

Fig. 35

Body strongly depressed. Eyes absent. Cephalon fused medially with pereonite I. Coxae demarked on pereonites II to IV. Coxa of pereonite VII not extending beyond pleurae of pleonites 2 and 3. Fourth and fifth pleopods large, operculiform.

8,6 mm.

Off Natal, 680 m.

Family **Bathynataliidae***

* Taxonomic position still unclear. See appendix, page 167.

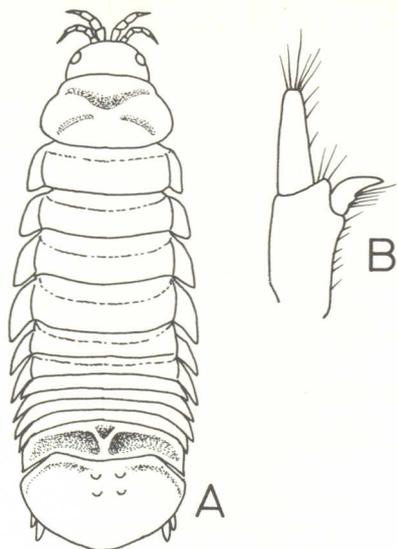


Fig. 34. A. *Limmoria quadripunctata*. B. *L. quadripunctata*, uropod.

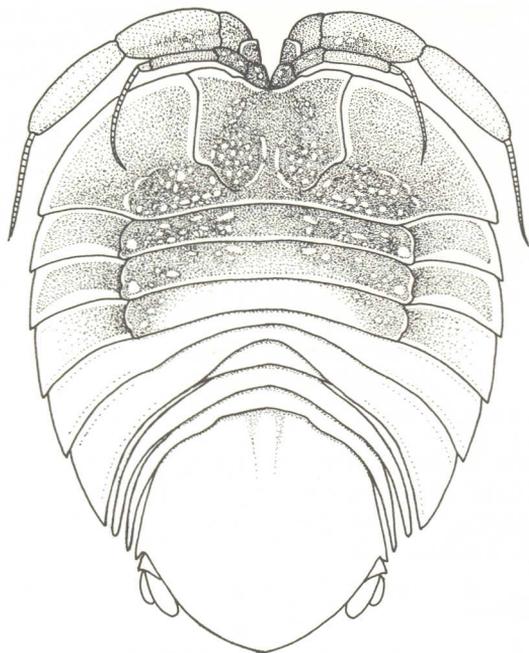


Fig. 35. *Serolis brinki*.

Family Sphaeromatidae

Body usually oval in outline, often capable of rolling into a ball. Five anterior pleonites fused, fusion often indicated by lateral sutures. Sixth pleonite fused with telson to form pleotelson. Latter variable, often sculptured. Cephalon free from pereonite I (except in *Bathycopea*). Pleotelson and uropoda forming tail-fan in most genera. Uropodal basis fused with endopod, exopod freely articulated.

The sphaeromatids are predominantly intertidal forms, but several are found in deeper water. Some species are found burrowing into sponges, corals, wooden pilings, or amongst the fronds of algae. Sexual dimorphism is marked in several genera, e.g. *Cymodoce* and *Parisocladus*, and the problem of correlating males and females is often encountered in this family. In several species, especially in the genus *Cymodoce*, only the males have been described.

The family can be divided into three groups on the basis of the structure of the fourth and fifth pair of pleopods:

Both rami of pleopods 4 and 5 pleated (Fig. 36A)	Eubranchiatae
Inner ramus of pleopods 4 and 5 pleated, outer ramus membranous (Fig. 36B)	Hemibranchiatae
Both rami of pleopods 4 and 5 thin and membranous (Fig. 36C)	Platybranchiatae

Eubranchiatae (p. 87)

1. Lateral margins of pleotelson bent ventrally forming a tube (Fig. 37C-H) *Cymodocella* (p. 87)
- Lateral margins of pleotelson not forming a tube 2
2. Both rami of uropods well developed (Fig. 38) *Dynamenella* (p. 89)
- Uropodal endopod in ♂ reduced, exopod elongate (Fig. 37A-B) *Cassidias africana* (p. 87)

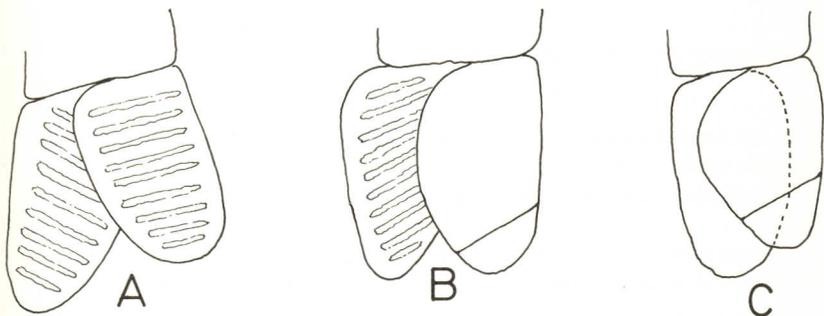


Fig. 36. A. Eubranchiate pleopod 4. B. Hemibranchiate pleopod 4. C. Platybranchiate pleopod 4.

Hemibranchiatae (p. 93)

1. Uropodal exopod serrate (Fig. 48A–D) .. *Sphaeroma* (p. 112)
- Uropodal exopod not serrate 2
2. Pleotelsonic apex entire in ♂ and ♀ 3
- Pleotelsonic apex entire in ♀, with slit in ♂, or with notch in ♂ and ♀ 6
3. Pereonite VII with median process in ♂, lacking in ♀ 4
- Pereonite VII lacking median process in ♂ and ♀ 5
4. Pleotelsonic apex somewhat produced in ♀, produced into peg-like process in ♂, hardly any ventral groove visible (Fig. 48E–F) *Zuzara furcifer* (p. 113)
- Pleotelsonic apex entire in ♂ and ♀, with ventral groove (Fig. 45) *Isocladus* (p. 107)
5. Uropodal exopod well developed, subequal to endopod (Fig. 44) *Exosphaeroma* (p. 103)
- Uropodal exopod much shorter than endopod (Fig. 47D) *Pseudosphaeroma barnardi* (p. 112)
6. Pleotelsonic apex with slit in ♂, entire in ♀ 7
- Pleotelsonic apex with notch in ♂ and ♀, often divided by median lobe 9
7. Slit in pleotelsonic apex not ending in foramen, sides of slit serrate (Fig. 43) *Dynoides serratisinus* (p. 103)
- Slit at pleotelsonic apex ending in foramen in ♂ 8
8. Pereonite VI in ♂ with median process, lacking in ♀
- Body not markedly tuberculate (Fig. 47A–C) *Parisocladus* (p. 110)
- Pereonite VII lacking process in ♂ and ♀
- Body covered with tubercles (Fig. 47E, F) *Sphaeramene* (p. 112)
9. Both uropod rami well developed in ♂ and ♀ (Figs 40–42) *Cymodoce* (p. 93)
- Uropodal endopod much shorter than outer in ♂ 10
10. Pleonite 4 with strong median process in ♂ (Fig. 39) *Cilicæa latreillei* (p. 93)
- Pleonite 4 lacking median process (Fig. 46A–D) *Paracilicæa* (p. 109)

Platybranchiatae (p. 115)

1. Uropodal exopod minute or absent 2
- Uropodal exopod well developed 4
2. Uropodal exopod absent. Eyes absent (Fig. 50) *Bathycopea typhlops* (p. 115)
- Uropodal exopod minute. Eyes dorsal 3
3. Frontal lamina broadened, dorsally visible (Fig. 49C) *Dies monodi* (p. 115)
- Frontal lamina slender, barely visible dorsally (Fig. 49A–B) *Artopoles* (p. 115)

4. Frontal lamina broad, dorsally visible
Two basal antennal segments broadened (Fig. 49E)
Stathmos coronatus (p. 117)
- Frontal lamina not dorsally visible
Basal antennal segments not broadened (Fig. 49D)
Parasphaeroma prominens (p. 116)

Eubranchiatae

Cassidias Richardson

Cassidias africana Barnard, 1920

Fig. 37A-B

Body strongly convex, anteriorly smooth. Pereonites becoming posteriorly minutely granulose. Pleonite 4 entire, granulose. Median pleotelsonic process smaller in ♀ than in ♂. Pleotelsonic apex with slit in ♀ and ♂. Uropodal endopod in ♂ reduced to tiny point on peduncle, exopod elongate, cylindrical inner surface somewhat flattened, distally widened. Uropodal rami not altered in ♀, both apically truncate.

5,5 mm.

Off Natal, 80 m.

Cymodocella Pfeffer

Pereonite VII lacking processes. Lateral pleotelsonic margins curved downward and inwards to form a tube, which may be dorsally flexed.

- | | |
|---|-------------------|
| 1. Pleotelson lacking tubercles or any processes (Fig. 37F) | <i>magna</i> |
| - Pleotelson armed with tubercles or granules | 2 |
| 2. Pleotelson bearing two triangular acute processes | |
| Pereonites each with transverse granular ridge (Fig. 37C) | <i>cancellata</i> |
| - Pleotelson bearing two or more tubercles, none triangular | |
| Pereon lacking ridges | 3 |
| 3. Pereon lacking tubercles or large granules | 4 |
| - Pereon armed with tubercles or large granules | 5 |
| 4. Posterior margin of pereonite VII bilobed | |
| Pleotelson bearing six rounded tubercles (Fig. 37G) .. | <i>pustulata</i> |
| - Posterior margin of pereonite VII not bilobed | |
| Pleotelson armed with two low rounded submedian tubercles (Fig. 37H) | <i>sublevis</i> |
| 5. Pleotelson armed with eight strong tubercles and several smaller granules (Fig. 37E) | <i>eutylos</i> |
| - Pleotelson armed with few granules and two feeble submedian ridges (Fig. 37D) | <i>diateichos</i> |

Cymodocella cancellata Barnard, 1920

Fig. 37C

Body with very fine honeycomb reticulations. Pereonite I armed with six large rounded tubercles anteriorly, ten tubercles posteriorly; pereonite

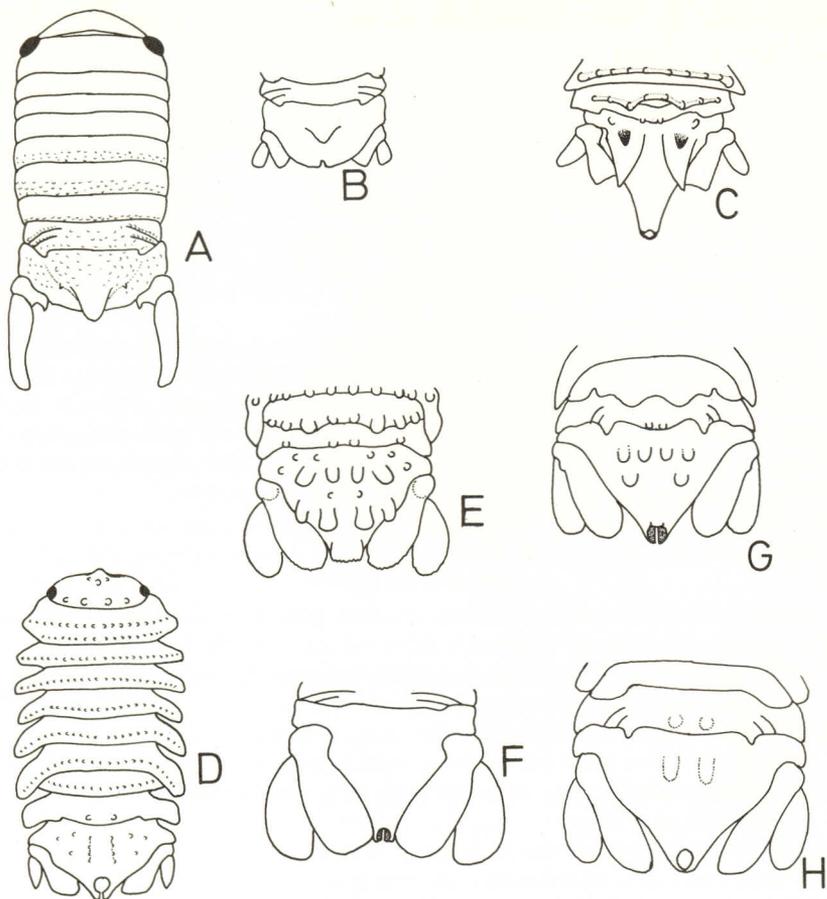


Fig. 37. A. *Cassidias africana* ♂. B. *C. africana*, pleotelson ♀. C. *Cymodocella cancellata*, pleotelson. D. *C. diateichos*. E. *C. eutylos*, pleon and uropod. F. *C. magna*, pleotelson. G. *C. pustulata*, pleotelson. H. *C. sublevis*, pleotelson.

II to VI with transverse ridge across centre, with ten tubercles; pereonite VII with ridge forming posterior margin.

5,0 mm.

Off East London, 44 m.

Cymodocella diateichos Barnard, 1959

Fig. 37D

Cephalon with scattered granules. Pereonite I with two rows of tiny granules; II to VII each with single transverse row of granules. Pleo-

telson with two submedian tubercles. Coxae narrow, separate.

4,5 mm.

Saldanha Bay, 43 m.

Cymodocella eutylos Barnard, 1954

Fig. 37E

Cephalon with two transverse tubercles anteriorly, three between eyes, five on hind margin. Pereonite I with two rows of tubercles, II to VI with single row of ten tubercles; pereonite VII with eight, submedian pair larger than rest in ♂. Pleotelsonic foramen not dorsally visible, posteriorly directed in ♂, directed dorsally and visible in ♀.

3,5 mm.

Hermanus to Jeffrey's Bay, intertidal.

Cymodocella magna Barnard, 1954

Fig. 37F

Pereon and pleon devoid of tubercles or granules. Uropods extending slightly beyond pleotelsonic apex.

10,0 mm.

Port Nolloth to Jeffrey's Bay, intertidal.

Cymodocella pustulata Barnard, 1914b

Fig. 37G

Body covered with granules, weak on cephalon, stronger on pereon. Pereonite VII posterior margin bilobed. Pleotelsonic apex upturned.

4,5 mm.

Lüderitz to East London; intertidal to 10 m.

Cymodocella sublevis Barnard, 1914b

Fig. 37H

Pleonite 4 with two small submedian tubercles. Pleotelson with two submedian tubercles; apex dorsally flexed, foramen dorsally visible. Uropodal rami not reaching pleotelsonic apex.

3,3 mm.

Lüderitz to East London, intertidal to 18 m.

Dynamenella Hansen

Rami of pleopods 4 and 5 similar, not jointed. Apex of pleotelson notched or with a narrow slit. Mouthparts of both sexes similar.

- | | |
|---|-----------------|
| 1. Pleotelsonic notch dorsally invisible | 2 |
| - Pleotelsonic notch dorsally visible | 3 |
| 2. Body boat-shaped, cephalon dorsally somewhat produced (Fig. 38G) | <i>navicula</i> |

- Body not boat-shaped, cephalon with two rounded bosses above eyes (Fig. 38J-K) *taurus*
- 3. Pereonite VII produced into two large submedian processes overlapping pleon (Fig. 38D) *dioxus*
- Pereonite VII lacking submedian processes 4
- 4. Pleotelson lacking tubercles or granules 5
- Pleotelson bearing tubercles, bosses, or granules 6
- 5. Body convex, almost parallel-sided (Fig. 38E) *huttoni*
- Body flattened, oval in outline (Fig. 38H) *ovalis*
- 6. Pleotelsonic notch a slit widening into a foramen (Fig. 38I) *scabricula*
- Pleotelsonic notch not widening into foramen 7
- 7. Tubercle present at base of pleotelsonic notch 8
- No tubercle at base of pleotelsonic notch 9
- 8. Uropodal endopod narrow, outer ramus broad (Fig. 38A) *australis*
- Uropodal rami of similar width (Fig. 38C) *bicolor*
- 9. Pleotelson bearing numerous tubercles
- Pleotelsonic apex with deep notch (Fig. 38B) *australioides*
- Pleotelson bearing two rounded bosses
- Pleotelson apex with shallow notch (Fig. 38F) *macrocephala*

Dynamenella australis Richardson, 1906

Fig. 38A

Pereonite VII with two rows of tubercles, submedian pair broadest. Uropods extending beyond pleotelsonic apex, endopod narrow, exopod broad. Pleotelsonic notch with rounded dorsal tubercle at its base.

9,0 mm.

Lüderitz to Hermanus, intertidal.

Dynamenella australioides Barnard, 1940

Fig. 38B

Cephalon, pereon and anterior pleon feebly granulose or rugose. granules stronger posteriorly. Pleotelsonic notch deep.

10,5 mm.

Ysterfontein to False Bay, intertidal.

Dynamenella bicolor Barnard, 1914b

Fig. 38C

Pereonites each with transverse row of eight tubercles, posteriorly more distinct. Uropodal rami extending slightly beyond pleotelsonic apex, both rami apically rounded.

8,0 mm.

Table Bay, intertidal.

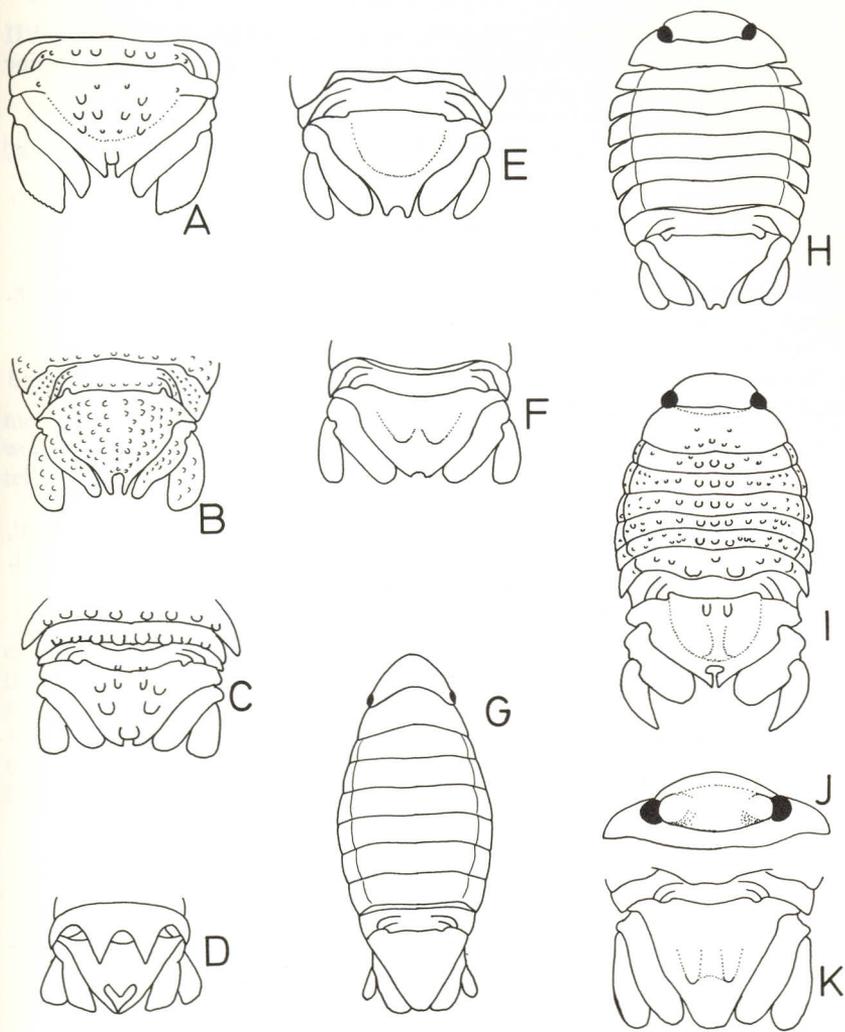


Fig. 38. A. *Dynamenella australis*, pleotelson. B. *D. australioides*, pleotelson. C. *D. bicolor*, pleotelson. D. *D. dioxus*, pleotelson. E. *D. huttoni*. F. *D. macrocephala*, pleotelson. G. *D. navicula*. H. *D. ovalis*. I. *D. scabricula*. J. *D. taurus*, cephalon. K. *D. taurus*, pleotelson.

Dynamenella dioxus Barnard, 1914b

Fig. 38D

Body finely granular. Coxae with long scattered setae. Pereonite VII ♂ with two large, acutely triangular submedian processes covering anterior pleonites. No pereonal processes in ♀.

3,5 mm.

Lüderitz to False Bay, Walter's Shoal, St Paul and Amsterdam Is., 22 to 60 m.

Dynamenella huttoni (Thomson, 1879)

Fig. 38E

Body smooth, pereon and pleon unarmed. Pleotelson dorsally convex. Uropodal rami apically rounded.

18,0 mm.

Lüderitz to Natal; New Zealand, subantarctic islands. Usually found amongst fronds of intertidal red algae.

Dynamenella macrocephala (Krauss, 1843)

Fig. 38F

Body very finely granular, pleotelson not as convex as in *D. huttoni*, with two pronounced tubercles. Cephalon broad, longer than pereonite I.

6,5 mm.

Table Bay to East London, intertidal, shallow infratidal.

Dynamenella navicula Barnard, 1940

Fig. 38G

Body boat-shaped, cephalon somewhat expanded dorsally. Only ♀♀ known.

5,0 mm.

Port Elizabeth, East London, intertidal.

Dynamenella ovalis Barnard, 1914b

Fig. 38H

Very similar to *D. huttoni* but smaller and more oval, flatter. Pleotelsonic notch shallower.

7,5 mm.

Lüderitz to East London, intertidal.

Dynamenella scabricula (Heller, 1865)

Fig. 38I

Pereonites with transverse rows of tubercles, median tubercles largest. Pleotelson with two broad strongly convex humps. Tubercles less developed in ♀.

16,0 mm.

Lüderitz to Keurbooms River, intertidal.

Dynamenella taurus Barnard, 1940

Fig. 38J-K

Cephalon with strong, rounded boss above each eye. Pleotelson notched, but notch not dorsally visible.

6,0 mm.

Port Nolloth, East London, intertidal.

Hemibranchiatae

Cilicæa Leach

Cilicæa latreillei Leach, 1818

Fig. 39A-B

Body covered with short, thick blunt setae. Pleonite 4 in ♀ with slight median boss, in ♂ with strong tapering apically rounded process reaching well beyond pleotelsonic apex, on either side of which, a submedian telsonic boss.

22,0 mm.

East London to Natal, 26 to 104 m; Australia, Ceylon, Philippine Is.

Cymodoce Leach

Pleotelsonic apex with notch in ♂ and ♀, usually stronger in ♂, often divided by median lobe. Both uropodal rami well developed. Mouthparts in adult ♀ often modified and blunt. Maxilliped palp segments four to six lobed. Outer ramus of pleopod 3 two-segmented.

Because of a considerable degree of sexual dimorphism, especially in the structure of the pleotelson, it is often difficult to correlate male and females of the same species, if not collected together.

- | | |
|--|-----------------|
| 1. Pleotelsonic apex notched, lobed or divided | 2 |
| - Pleotelsonic apex entire | |
| Uropodal exopod much longer than endopod (Fig. 41G) .. | <i>lis</i> |
| 2. Pleonite 4 armed with tubercles or spinose process, or posterior margin produced into lobes or spines | 3 |
| - Pleonite 4 unarmed, posterior margin not produced | 4 |
| 3. Median pleotelsonic lobe not obviously longer or larger than lateral lobes | 4 |
| - Median pleotelsonic lobe subequal to lateral lobes | 11 |
| 4. Median pleotelsonic lobe with hook-like dorsal tubercle (Fig. 42F-G) | <i>uncinata</i> |
| - Median pleotelsonic lobe lacking hook-like tubercle | 5 |
| 5. Median pleotelsonic lobe a flattened button (Fig. 42D-E) | <i>umbonata</i> |
| - Median pleotelsonic lobe not button-like | 6 |

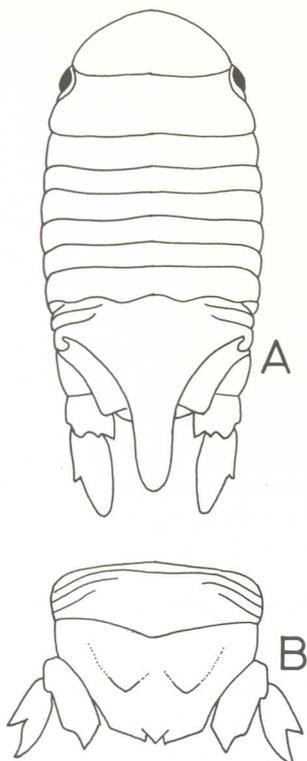


Fig. 39. A. *Cilicæa latreillei* ♂. B. *C. latreillei*, pleotelson ♀.

- | | | | |
|-----|--|---------|----------------------|
| 6. | Median pleotelsonic lobe trilobed (Fig. 40H-I) | .. | <i>amplifrons</i> |
| - | Median pleotelsonic lobe not trilobed | .. .. . | 7 |
| 7. | Median pleotelsonic lobe apically bifid | .. .. . | 8 |
| - | Median pleotelsonic lobe apically entire | .. .. . | 9 |
| 8. | Uropodal exopod lanceolate | | |
| | Large, rounded boss at base of median pleotelsonic lobe (Fig. 42K) | .. .. . | <i>zanzibarensis</i> |
| - | Uropodal exopod apically truncate | | |
| | No large rounded boss at base of median pleotelsonic lobe (Fig. 40L-M) | .. .. . | <i>comans</i> |
| 9. | Median pleotelsonic lobe broad, rounded (Fig. 41H-J) | | <i>natalensis</i> |
| - | Median pleotelsonic lobe narrow, distally slender | .. .. . | 10 |
| 10. | Pleonite 4 bearing two acute conical processes (Fig. 41E, F) | | <i>falcata</i> |
| - | Pleonite 4 bearing two denticulate processes (Fig. 40G) | | <i>alis</i> |

11. Pleonite 4 bearing two small submedian tubercles (Fig. 42A)		<i>setulosa</i>
– Pleonite 4 bearing two strong rounded or acute processes	12	
12. Submedian processes of pleonite 4 acute	13	
– Submedian processes of pleonite 4 rounded	14	
13. Uropodal exopod apically bifid (Fig. 42C)		<i>tuberculosa tripartita</i>
– Uropodal exopod apically acute (Fig. 40A–B)		<i>acanthiger</i>
14. Submedian pleotelsonic tubercles strong, conical (Fig. 40E–F)		<i>alia</i>
– Submedian pleotelsonic tubercles low, rounded (Fig. 40C–D)		<i>africana</i>
15. Uropodal exopod much shorter than inner	16	
– Uropodal exopod almost reaching level of inner	20	
16. Uropodal exopod apically trifid (Fig. 42B)		<i>tetrathele</i>
– Uropodal exopod not apically trifid	17	
17. Uropodal endopod not reaching pleotelsonic apex	18	
– Uropodal endopod extending beyond pleotelsonic apex	19	
18. Body covered by velvet-like pile of rounded setae		
Pleotelson lacking tubercles (Fig. 41K–L)		<i>velutina</i>
– Body lacking velvet-like rounded setae		
Pleotelson with two rounded tubercles (Fig. 40J–K)		<i>cavicola</i>
19. Pleotelson bearing two submedian apically acute bosses		
(Fig. 41C–D)		<i>excavans</i>
– Pleotelson bearing two submedian raised and ridged bosses		
(Fig. 41A–B)		<i>cryptodoma</i>
20. Uropodal exopod apically bifid, curved		
Median pleotelsonic lobe bearing hook-like tubercle (Fig. 42H)		<i>unguiculata</i>
– Uropodal exopod apically acute or rounded		
No hook-like tubercle on median pleotelsonic apex	21	
21. Pleotelson with two rounded apically subacute bosses		
(Fig. 42I–J)		<i>valida</i>
– Pleotelson with five radiating granulose ridges (Fig. 41J)		<i>radiata</i>

Cymodoce acanthiger Barnard, 1914b

Fig. 40A–B

♂ with two tubercles on pereonite VI, four on VII. Pleonite 4 produced into two large submedian processes. Pleotelson bearing two small tubercles beneath pleon processes, median lobe of apex shorter than lateral lobes.

♀ lacking pereon tubercles. Pleonite 4 with two triangular submedian processes. Pleotelson with two submedian tubercles; apical notch dorsally invisible, but with slight median tubercle.

18.0 mm.

East London, 600 m.

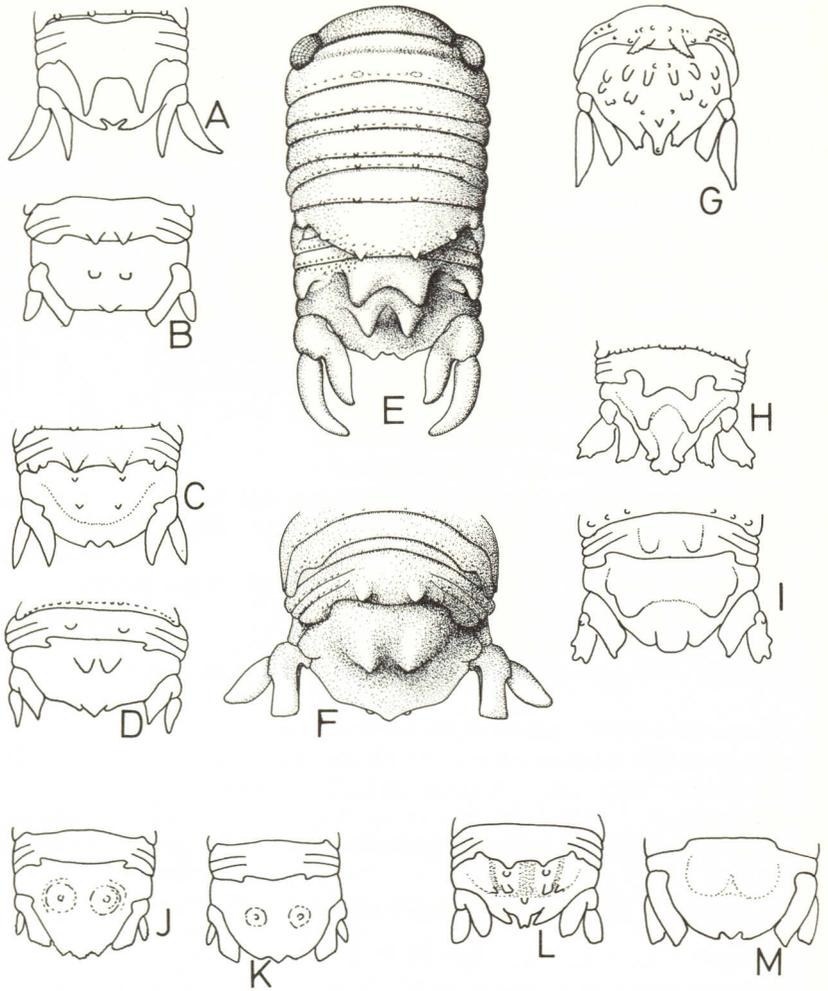


Fig. 40. A. *Cymodoce acanthiger*, pleotelson ♂. B. *C. acanthiger*, pleotelson ♀. C. *C. africana*, pleotelson ♂. D. *C. africana*, pleotelson ♀. E. *C. alia* ♂. F. *C. alia*, pleotelson ♀. G. *C. alis*, pleotelson ♂. H. *C. amplifrons*, pleotelson ♂. I. *C. amplifrons*, pleotelson ♀. J. *C. cavicola*, pleotelson ♂. K. *C. cavicola*, pleotelson ♀. L. *C. comans*, pleotelson ♂. M. *C. comans*, pleotelson ♀.

Cymodoce africana Barnard, 1914b

Fig. 40C-D

♂ pereonites bearing four small widely spaced tubercles. Pleon granular.
21,0 mm.

Saldanha to Cape Peninsula, 160 to 600 m.

Cymodoce alia Kensley, 1975b

Fig. 40E-F

♂ pereonite VII with six tubercles on posterior margin. Pleonite 4 with two large apically rounded submedian tubercles. Pleotelson with two similar tubercles. Median lobe of notch shorter than lateral lobes.

♀ similar to ♂, but pleon and pleotelsonic tubercles subacute.

9,0 mm.

Off Still Bay, 120 to 200 m.

Cymodoce alis Barnard, 1955

Fig. 40G

♂ pleotelson and uropods densely setose. Pereonites II to VII with transverse band of granules on posterior margin. Pleotelson bearing several conical and several bifid tubercles.

9,5 mm.

False Bay to Port Elizabeth, 15 to 36 m.

Cymodoce amplifrons (Stebbing, 1902)

Fig. 40H-I

Cephalon with high triangular expansion between eyes. Integument coarsely pitted. ♂ pereonites with transverse row of granules on posterior margin, becoming more prominent posteriorly. ♀ pereonites bearing transverse row of granules, more obvious laterally.

20,0 mm.

Port Elizabeth to Natal, 27 to 48 m.

Cymodoce cavicola Barnard, 1920

Fig. 40J-K

Posterior pereon and pleon covered with short sparse setae. Cephalon, pereon, and pleon finely pitted. Pleotelson in ♂ and ♀ with two submedian bosses, larger in ♂. Median apical lobe triangular. Pleotelson distally crenulate in ♂.

14,0 mm.

False Bay, 46 to 66 m.

Cymodoce comans Barnard, 1914b

Fig. 40L-M

♂ posterior pereon, and pleotelson and uropods covered with stiff bristles and hairs, lacking in ♀. Single row of tubercles on pereonite V, two rows on pereonites VI and VII. Tubercles lacking in ♀. Pleotelsonic apex deeply notched, trifold, median lobe apically bifid. Posterior margin of pleonite 4 bilobed. ♀ pleotelsonic apex trifid, lobes separated by shallow notches, pleotelson bearing two low rounded bulges.

18,0 mm.

False Bay to Natal, 5 to 19 m.

Cymodoce cryptodoma Barnard, 1920

Fig. 41A-B

Body strongly convex, minutely granulose. ♂ pleotelson with two submedian strong elongate ridges, convex in profile. ♀ pleotelson with two low submedian bosses. Uropodal exopod feebly denticulate, endopod lanceolate, apex deeply notched.

6,5 mm.

Mossel Bay to Natal, 36 to 80 m.

Cymodoce excavans Barnard, 1920

Fig. 41C-D

Body covered with short thick pile of setae. ♂ pleotelson with two submedian bosses topped with sharp tubercle; apical notch deep, median lobe tapering, rounded, same length as lateral lobes. Uropodal endopod reaching beyond pleotelsonic apex. Pleotelson in ♀ with two low rounded submedian bosses; apical notch very shallow, three lobes low, rounded.

10,0 mm.

False Bay to Still Bay, 49 to 150 m.

Cymodoce falcata Barnard, 1914b

Fig. 41E-F

♂ cephalon, pereon, pleotelson with numerous setae, those on coxae and pleon long, plumose. Uropodal exopod much longer than inner, extending well beyond pleotelsonic apex, lanceolate.

13,0 mm.

Off Cape Peninsula, Table Bay, 29 to 58 m. ♀ unknown.

Cymodoce lis Barnard, 1955

Fig. 41G

Body glabrous. Pleotelson apically rounded. Uropodal exopod longer than endopod, latter apically truncate.

11,0 mm.

Port Elizabeth, False Bay, 49 m. ♀ unknown.

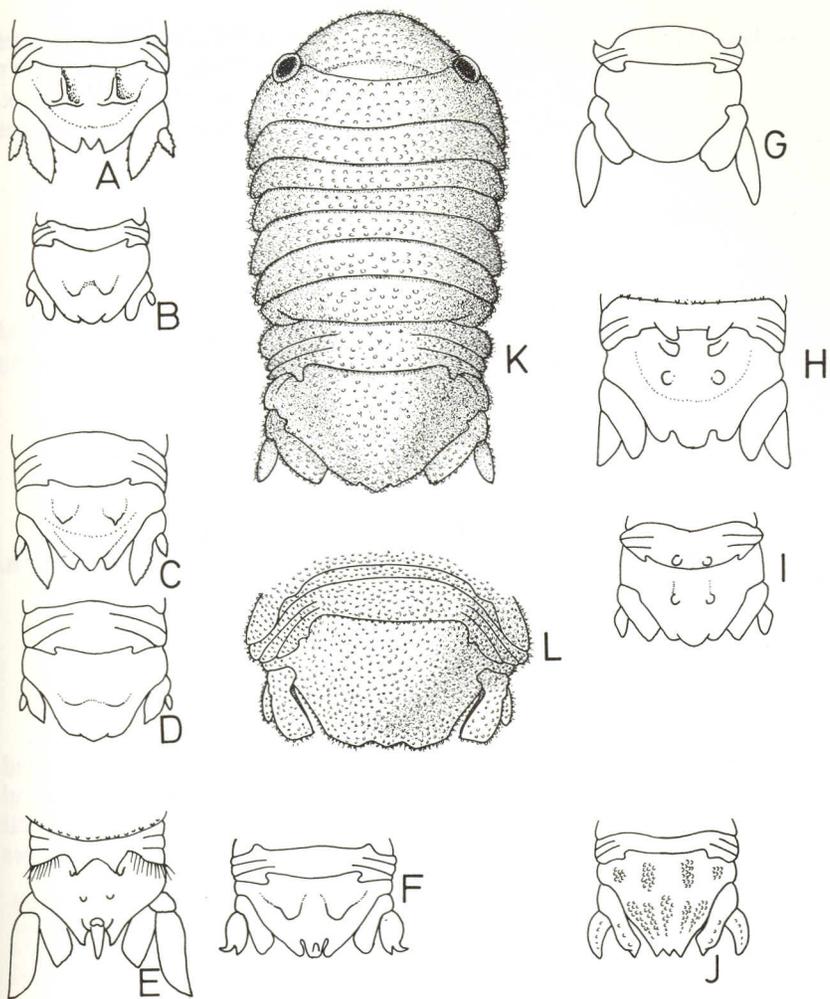


Fig. 41. A. *Cymodoce cryptodoma*, pleotelson ♂. B. *C. cryptodoma*, pleotelson ♀. C. *C. excavans*, pleotelson ♂. D. *C. excavans*, pleotelson ♀. E. *C. falcata*, pleotelson ♂. F. *C. falcata*, pleotelson ♀. G. *C. lis*, pleotelson ♂. H. *C. natalensis*, pleotelson ♂. I. *C. natalensis*, pleotelson ♀. J. *C. radiata*, pleotelson ♂. K. *C. velutina*, ♂. L. *C. velutina*, pleotelson ♀.

Cymodoce natalensis Barnard, 1920

Fig. 41H-I

Body covered with longish bristles in ♂, less so in ♀. Submedian tubercles on last pleonite and pleotelson, followed by two rounded submedian tubercles in ♂. Both uropodal rami projecting beyond pleotelsonic apex, latter with broadly rounded median lobe and two lateral rounded lobes in ♂; ♀ similar but lobes not as separated.

6,5 mm.

Port Elizabeth to Natal, 80 m.

Cymodoce radiata Barnard, 1957

Fig. 41J

Pereonites granulose on hind margins. Pleon granulose. Uropodal exopod strongly curved, apically acute. Pleotelson with five radiating granular ridges.

5,0 mm.

Off East London, 150 m.

Cymodoce setulosa (Stebbing, 1902)

Fig. 42A

♂ entire body finely setulose, especially on posterior pereon and pleon. Posterior pereonites with barely noticeable tubercles on hind margin.

11,0 mm.

Saldanha Bay to Natal, 7 to 42 m.

Cymodoce tetrathele Barnard, 1920

Fig. 42B

Posterior pereonites and pleonites bearing irregular, transverse band of granules. Body strongly convex. Pleotelson broader than long, central raised portion bearing two large bosses topped with acute point. Distal to these, two contiguous conical tubercles. Apex deeply notched, lobes somewhat serrate. Outer uropod ramus apically bifid.

15,0 mm.

Off East London, 19 to 100 m. ♀ unknown.

Cymodoce tuberculosa tripartita Richardson, 1910

Fig. 42C

Body minutely granular, setose. ♂ pereonites II to VII with two transverse rows of small tubercles, larger on posterior segments. Pleonite 4 with two widely separated elongate processes. Lateral pleotelsonic lobes apically bifid. Uropodal endopod extending well beyond pleotelsonic apex, with three apical spines, two being curved.

5,0 mm.

Off Natal, 36 m. ♀ unknown.

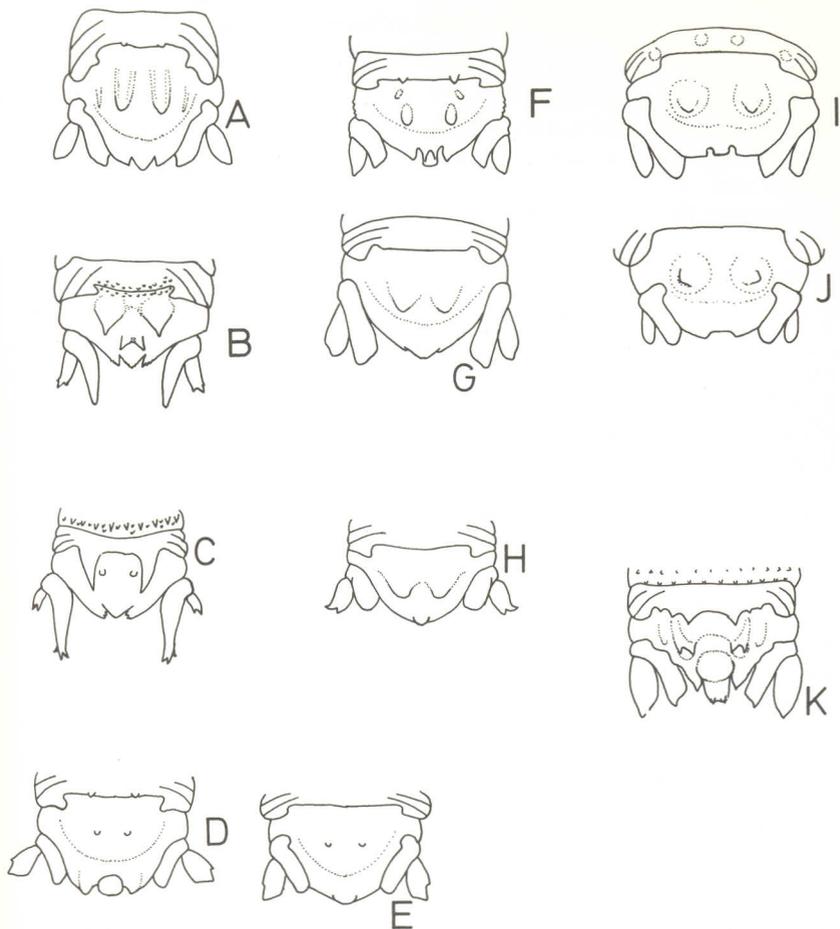


Fig. 42. A. *Cymodoce setulosa*, pleotelson ♂. B. *C. tetrathele*, pleotelson ♂. C. *C. tuberculosa tripartita*, pleotelson ♂. D. *C. umbonata*, pleotelson ♂. E. *C. umbonata*, pleotelson ♀. F. *C. uncinata*, pleotelson ♂. G. *C. uncinata*, pleotelson ♀. H. *C. unguiculata*, pleotelson ♂. I. *C. valida*, pleotelson ♂. J. *C. valida*, pleotelson ♀. K. *C. zanzibarensis*, pleotelson ♂.

Cymodoce umbonata Barnard, 1914b

Fig. 42D-E

Body granular, granules in two transverse rows on pereonites, irregular on pleon. Pleotelsonic apex trifold, median lobe a button-like process in ♂. Pleotelsonic apex in ♀ rounded, notch dorsally invisible.

12,0 mm.

Off Cape Point to Still Bay, 11 to 110 m.

Cymodoce uncinata Stebbing, 1902

Fig. 42F-G

Pleotelson bearing numerous granules. Median lobe of pleotelsonic apex in ♂ with hook-like dorsal, forwardly-directed tubercles. Pleotelsonic apex in ♀ rounded, notch dorsally invisible.

12,0 mm.

Saldanha Bay to False Bay, 42 to 110 m.

Cymodoce unguiculata Barnard, 1914b

Fig. 42H

♂ body with scattered setae, thick fringe on coxae and pleotelson. Pleotelsonic apex trifold, notch deep, median lobe with dorsal tubercle. Uropodal exopod ovate/lanceolate, apex acute, with tooth on inner margin. ♀ pleotelsonic apex with notch concealed by rounded projection. Uropodal exopod less acute than in ♂.

11,0 mm.

Lüderitz to False Bay, 5 to 30 m.

Cymodoce valida (Stebbing, 1902)

Fig. 42I-J

♂ pereon unarmed, pleonite 4 with two low submedian and two lateral tubercles. Median lobe of pleotelsonic apex blunt, flanked by two shallow notches. ♀ pleonite 4 with two low submedian tubercles. Pleotelsonic apex truncate, lacking median lobe, but with shallow broad notch.

22,0 mm.

Saldanha to Natal, 8 to 160 m.

Cymodoce velutina Kensley, 1975b

Fig. 41K-L

Body covered with velvet-like pile of rounded setae. Pereon and pleon lacking sculpture. Pleotelsonic apex in ♂ and ♀ with median lobe broad, subequal to lateral lobes. Uropodal exopod shorter than inner, latter just reaching pleotelsonic apex.

8,0 mm.

False Bay to Still Bay, 120 m.

Cymodoce zanzibarensis Stebbing, 1910

Fig. 42K

Body strongly setose and granulose, especially posterior pereonites and pleotelson. Pereonite VII bearing two transverse rows of tubercles.

12,0 mm.

Mozambique, 22 m; Zanzibar.

Dynoides Barnard
Dynoides serratisinus Barnard, 1914b

Fig. 43

Pleotelsonic apex of ♂ with deep, parallel-sided slit, margin of which armed with about seven teeth. Pleotelson with strongly convex central portion bearing numerous tiny sharp granules. Pereonite VII armed with triangular conical process.

5,0 mm.

Natal and Mozambique, intertidal.

Exosphaeroma Stebbing

Pleotelsonic apex entire in ♀, usually entire in ♂. Penultimate and two preceding segments of maxilliped palp lobed. Pereopods I to III lacking long setae. Outer ramus of pleopod 3 two-segmented. Uropodal exopod well developed. Pereonite VII unarmed.

1. Integument minutely setulose. Uropodal exopod fringed with setae 2
- Integument and uropods glabrous 3
2. Outer margin of uropodal exopod crenulate (Fig. 44D) *hylocoetes*
- Outer margin of uropodal exopod entire (Fig. 44C) .. *estuarium*
3. Pleotelson devoid of tubercles or ridges 4
- Pleotelson armed with tubercles or ridges 5
4. Pleotelson apically rounded/truncate (Fig. 44F) *truncatitelson*
- Pleotelson apically acutely rounded (Fig. 44G) .. *pallidum*
5. Pleotelson not extending beyond uropod rami 6
- Pleotelson extending beyond uropod rami 10
6. Pleotelson lacking ridges, but with small rounded granules in semicircle (Fig. 44F) *laeviusculum*
- Pleotelson with two proximal and single median distal ridge 7
7. Pleotelsonic ridges joined to form a 'Y' (Fig. 44H) .. *planum*
- Pleotelsonic ridges not joined 8
8. Uropodal exopod apically acute, curved outwards (Fig. 44A) *antikraussi*
- Uropodal exopod apically rounded 9
9. Pleotelson irregularly tuberculate, with single median distal and two proximal ridges (Fig. 44B) *brevitelson*
- Pleotelson lacking tubercles, but with single median distal and two proximal ridges (Fig. 44E) *kraussi*
10. Pleotelson tapering distally to narrow point, bearing numerous rounded tubercles (Fig. 44I) *porrectum*
- Pleotelson distally evenly rounded, bearing two low proximal ridges (Fig. 44K) *varicolor*

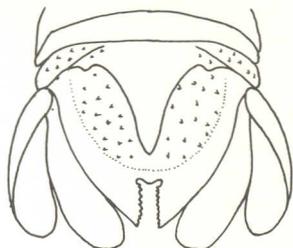


Fig. 43. *Dynoides serratisinus*, pleotelson ♂.

- 11. Pleotelson bearing Y-shaped ridge, lacking tubercles (Fig. 44H) *planum*
- Pleotelson granular or bearing tubercles 9
- 12. Pleotelson irregularly tuberculate, with two proximal submedian ridges and single distal median ridge (Fig. 44B) *brevitelson*
- Pleotelson with evenly convex raised area bearing tiny tubercles in semicircle, plus two submedian tubercles (Fig. 44F) *laeviusculum*

Exosphaeroma antikraussi Barnard, 1940

Fig. 44A

Integument granulate. Pereon and pleon lacking tubercles. Frontal lamina quadrate, flat. Pleotelson broader than long, triangular, medio-distal ridge indistinct.

8,0 mm.

Saldanha to Port Elizabeth, estuarine.

Exosphaeroma brevitelson Barnard, 1914b

Fig. 44B

Pereon and pleon lacking tubercles. Pleotelson triangular, broader than long, with longitudinal ridges sometimes broken up into separate tubercles. Frontal lamina pentagonal.

9,5 mm.

Saldanha Bay; Table Bay, intertidal to 11 m.

Exosphaeroma estuarium Barnard, 1951

Fig. 44C

Pleotelson with straight sides, apex narrowly rounded. Maxilliped palp segments feebly lobed. Margins of both uropodal rami furry.

4,0 mm.

From *Zostera* beds in Umgababa Estuary, Natal.

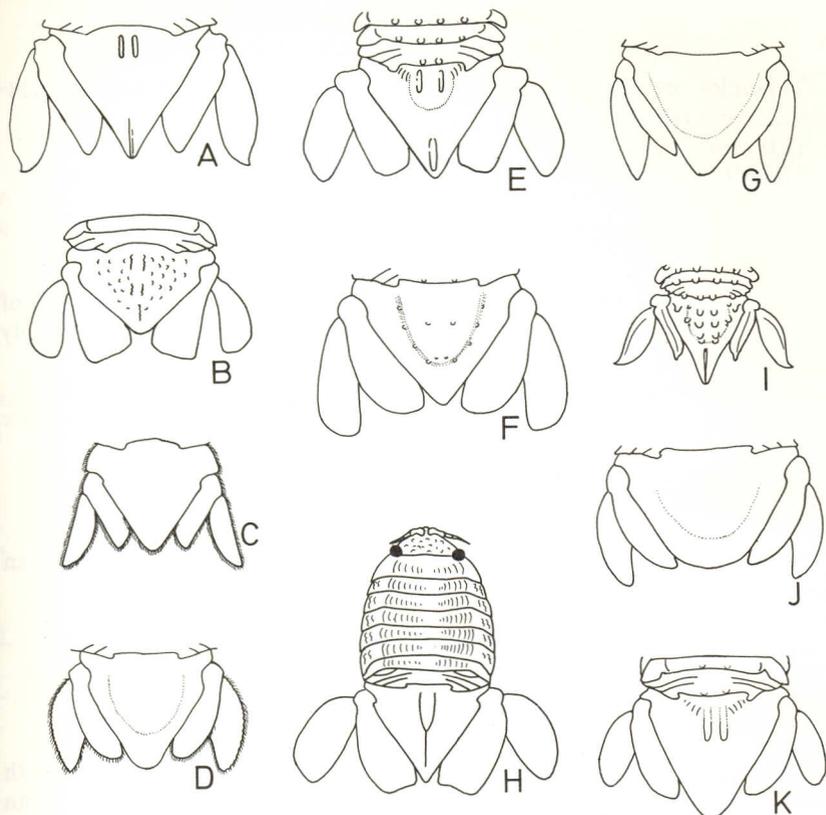


Fig. 44. A. *Exosphaeroma antikraussi*, pleotelson. B. *E. brevitelson*, pleotelson. C. *E. estuarium*, pleotelson. D. *E. hylocoetes*, pleotelson. E. *E. kraussi*, pleotelson. F. *E. laeviusculum*, pleotelson. G. *E. pallidum*, pleotelson. H. *E. planum*, pleotelson. I. *E. porrectum*, pleotelson. J. *E. truncatitelson*, pleotelson. K. *E. varicolor*, pleotelson.

Exosphaeroma hylocoetes Barnard, 1940

Fig. 44D

Pleotelson somewhat broader than long, more so in ♂ than in ♀, bearing a ventral low semicircular ridge, plus a shallow transverse groove in ♂. Frontal lamina triangular, evenly convex.

12,0 mm.

Table Bay to East London, estuarine.

Exosphaeroma kraussi Tattersall, 1913

Fig. 44E

Tubercles present on posterior pereon, and pleon. Pleotelson straight-sided, apex narrowly rounded.

12,0 mm.

Lüderitz to East London, intertidal, shallow infratidal, estuarine.

Exosphaeroma laeviusculum (Heller, 1868)

Fig. 44F

Frontal lamina triangular. Inconspicuous granules on hind margin of pereonites and pleonites in ♂, obsolete in ♀. Pleotelson triangular, apically subacute.

10,0 mm.

Northern South West Africa to Keurbooms River, intertidal, shallow infratidal.

Exosphaeroma pallidum Barnard, 1940

Fig. 44G

Frontal lamina pentagonal. Body smooth. Pleotelson broader than long, dorsally evenly convex. Uropodal rami apically subacute.

13,0 mm.

Lüderitz to Table Bay, intertidal to 50 m.

Exosphaeroma planum Barnard, 1914b

Fig. 44H

Body very depressed. Cephalon with irregular granules. Pereon with short longitudinal rugae. Pleotelson triangular, slightly broader than long, apex subacute. Uropodal exopod broadly ovate, endopod apically truncate.

15,0 mm.

Lüderitz to Port Alfred, 4 to 100 m.

Exosphaeroma porrectum Barnard, 1914b

Fig. 44I

Cephalon, pereon, pleon bearing rounded tubercles. Pleotelson with distal keel. Uropodal endopod straight-sided, exopod ovate/lanceolate.

5,0 mm.

Lüderitz to Port Elizabeth, intertidal to 5 m.

Exosphaeroma truncatitelson Barnard, 1940

Fig. 44J

Pereon and pleon lacking granules. Uropodal rami lanceolate. Pleotelsonic apex broadly truncate.

8,0 mm.

Northern South West Africa to Hermanus, intertidal to 40 m.

Exosphaeroma varicolor Barnard, 1914b

Fig. 44K

Pereon smooth, or occasionally with two obscure submedian tubercles in ♂. Frontal lamina pentagonal. Uropods three-quarter length of pleotelson, rami ovate, apically rounded.

10,5 mm.

Northern South West Africa to Hermanus, intertidal to 17 m.

Isocladus Miers

Maxilliped palp segments four- to six-lobed. Pereopods I to III lacking natatory setae. Pereonite VII with large median process in ♂, absent in ♀.

1. ♂ uropods distinctly longer than pleotelson median process on pereonite VII apically bifid (Fig. 45A-B) *mimetes*
♀ pleotelson granulate, with two submedian ridges
Pereon with two pairs longitudinal tubercles
- ♂ uropods equal to or shorter than telson
Median process on pereonite VII not bifid
♀ pleotelson not granulate 2
2. ♂ median process of pereonite VII apically rounded
♀ pleotelson unarmed, evenly convex (Fig. 45E-F) .. *tristensis*
- ♂ median process of pereonite VII apically rounded with basal tubercles
♀ pleotelson with two longitudinal ridges (Fig. 45C-D) *otion*

Isocladus mimetes Barnard, 1955

Fig. 45A-B

Cephalon and pereonite I in ♂ and ♀ granulate. Pereonites II to VI with two small submedian granules, also intervening minute granules. Median process of pereonite VII on ♂ with two flanking granules at base. Pleotelsonic apex in ♂ with open notch. Pleotelson in ♀ distinctly granulate.

5,0 mm.

False Bay, 14 m.

Isocladus otion Barnard, 1955

Fig. 45C-D

Body inconspicuously rugulose. Pereonites lacking tubercles. Pleotelson in ♀ with faint submedian tubercles. Uropods in ♂ and ♀ not quite reaching pleotelsonic apex.

6,5 mm.

False Bay, 11 to 20 m.

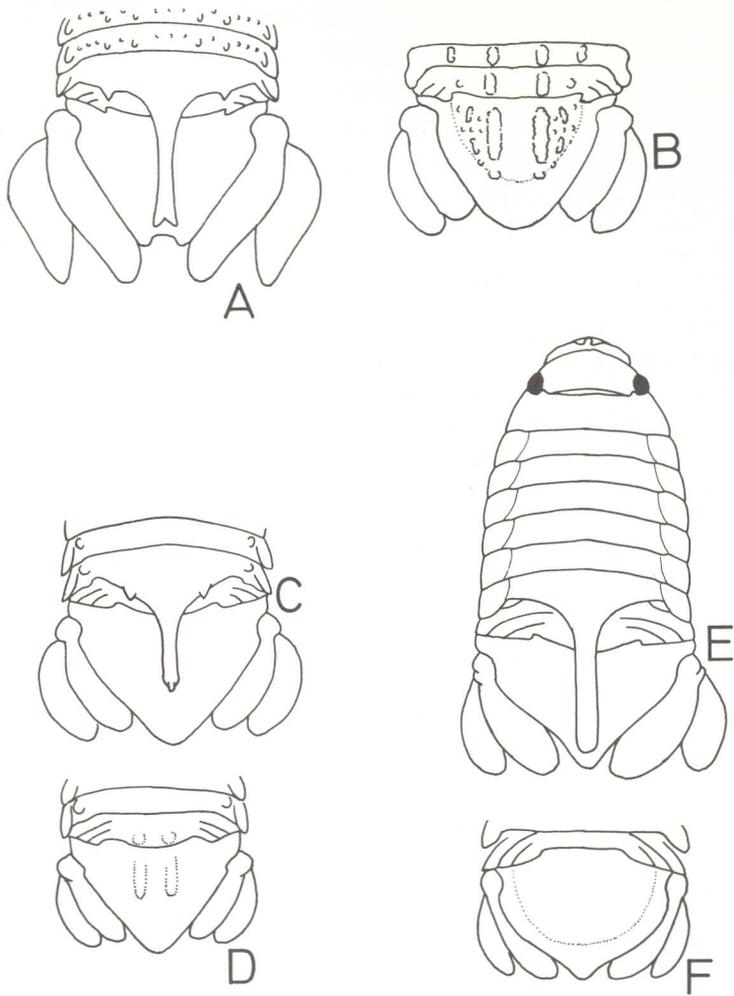


Fig. 45. A. *Isocladus mimetes*, pleotelson ♂. B. *I. mimetes*, pleotelson ♀. C. *I. otion*, pleotelson ♂. D. *I. otion*, pleotelson ♀. E. *I. tristensis* ♂. F. *I. tristensis*, pleotelson ♀.

Isocladus tristensis (Leach, 1818)

Fig. 45E-F

Body glabrous. Pleotelson more convex in ♀ than in ♂.
11,5 mm.

Tristan da Cunha, Gough Is.

Paracilicæa Stebbing

Pleotelsonic apex notched in ♂ and ♀, notch divided by median lobe. Maxilliped palp segments lobed. Outer ramus of pleopod 3 two-segmented. Uropodal endopod shorter than outer.

- | | | | | |
|---|----|----|----|--------------------|
| 1. Each of three pleotelsonic apical lobes notched | | | | |
| Uropodal rami apically notched (Fig. 46B) | .. | | | <i>mossambicus</i> |
| - Three pleotelsonic lobes apically acutely rounded | | | | |
| Uropodal rami apically subacute | .. | .. | .. | 2 |
| 2. Uropodal endopods parallel-sided | | | | |
| No tubercles on pleon (Fig. 46C-D) | .. | .. | .. | <i>teretron</i> |
| - Uropodal endopod curved | | | | |
| Pleon bearing two submedian tubercles (Fig. 46A) | .. | | | <i>clavus</i> |

Paracilicæa clavus Barnard, 1955

Fig. 46A

Body shallowly and coarsely pitted. Pleonite 4 with two submedian tubercles. Pleotelson with two large boss-like submedian tubercles.

11,0 mm.

Mozambique, intertidal. ♀ unknown.

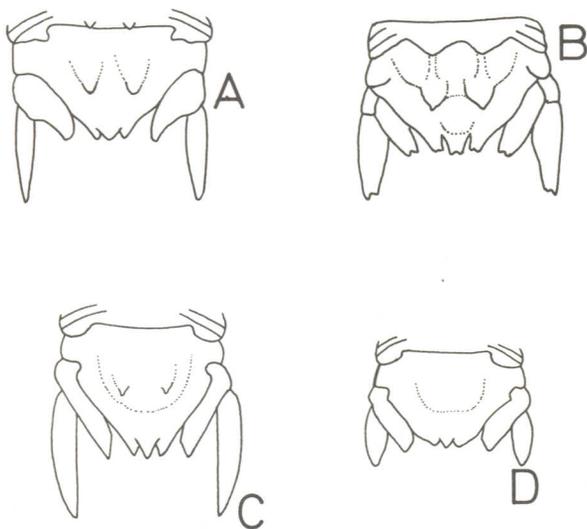


Fig. 46. A. *Paracilicæa clavus*, pleotelson ♂. B. *P. mossambicus*, pleotelson ♂. C. *P. teretron*, pleotelson ♂. D. *P. teretron*, pleotelson ♀.

Paracilicæa mossambicus Barnard, 1914b

Fig. 46B

Hind margin of last pleonite strongly bilobed. Sculpturing of pleotelson strong. Body with reticulate or eroded appearance.

8,0 mm.

Mozambique, intertidal. ♀ unknown.

Paracilicæa teretron Barnard, 1955

Fig. 46C-D

Body setulose. Cephalon, pereon, and pleon lacking tubercles or granules. Pleotelson in ♂ with strongly convex area bearing two submedian tubercles. Tubercles absent in ♀. Uropodal exopod in ♀ slightly longer than inner.

7,5 mm.

Mozambique, intertidal.

Parisocladus Barnard

Pleotelsonic apex entire in ♀, notched in ♂ and widening into foramen. Fourth to sixth segments of maxilliped palp lobed. Outer ramus of pleopod 3 two-segmented. Pereonite VII always armed with process in ♂, sometimes present in ♀.

1. ♂ Pereonite VII process short, apically bifid
- ♀ Pereonite VII process short (Fig. 47C) *stimpsoni*
- ♂ Pereonite VII process elongate, apically entire
- ♀ Pereonite VII lacking process (Fig. 47A, B) *perforatus*

Parisocladus perforatus (Edwards, 1840)

Fig. 47A-B

Coxae, uropods, and pleotelson with very short setae. Pereonite VII process in ♂ reaching to middle of pleotelson, notched on underside. Foramen in ♂ wide, circular. Pleotelsonic apex in ♀ upturned, making ventral groove just visible dorsally.

6,0 mm.

Northern South West Africa to East London, intertidal.

Parisocladus stimpsoni (Heller, 1868)

Fig. 47C

Transverse rows of six tubercles on pereon varying from obsolete to distinct. Pereonite VII process short, apically bifid in ♂, even shorter in ♀, apically entire. Pleotelson usually with four tiny tubercles; sub-apical foramen narrow, with two proximal submedian ridges. Inner angle of uropodal exopod slightly produced.

16,0 mm.

Lüderitz to East London, intertidal.

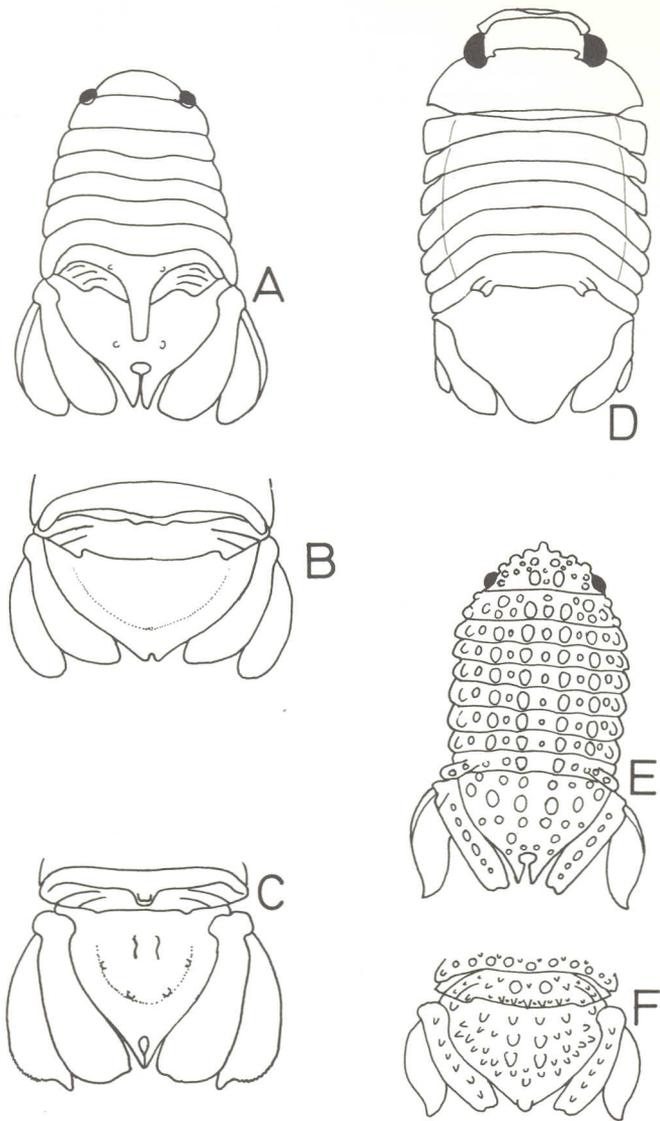


Fig. 47. A. *Parisocladus perforatus* ♂. B. *P. perforatus*, pleotelson ♀. C. *P. simpsoni*, pleotelson ♂. D. *Pseudosphaeroma barnardi*. E. *Sphaeramene polytylotos*. F. *S. microtylotos*, pleotelson ♂.

Pseudosphaeroma Chilton
Pseudosphaeroma barnardi Monod, 1931

Fig. 47D

Pleotelsonic apex entire, rounded. Maxilliped palp segments four to six lobed. Pereopods I to III lacking long setae. Pereonite VII unarmed in both sexes. Outer ramus of pleopod 3 two-segmented. Uropodal exopod much smaller than inner.

8,0 mm.

Hout Bay to Knysna, estuarine.

Sphaeramene Barnard

Pleotelsonic apex entire in ♀, with median slit in ♂. Fourth to sixth segments of maxilliped palp lobed. Outer ramus of pleopod 3 two-segmented. Pereonite VII unarmed in ♂ and ♀.

1. Tubercles on cephalon, pereon and pleon flat-topped, button-like (Fig. 47E) *polytylotos*
- Tubercles on cephalon, pereon and pleon conical (Fig. 47F) *microtylotos*

Sphaeramene microtylotos Barnard, 1955

Fig. 47F

Cephalon, pereon, and pleon bearing conical tubercles. Pleotelsonic apex narrowly rounded with dorsal tubercle.

7,0 mm.

False Bay, 7 to 19 m.

Sphaeramene polytylotos Barnard, 1914b

Fig. 47E

Cephalon, pereon, and pleon bearing flat-topped button-like tubercles. Pleotelson with apical slit, widening into foramen in ♂, entire in ♀.

17,0 mm.

Lüderitz to Plettenberg Bay, intertidal to 22 m.

Sphaeroma Latreille

Pleotelson of two segments, first segment showing signs of being the fusion of several segments. Pleotelson apically entire, usually rounded. Pereopods I to III slender, with long natatory setae. Outer ramus of pleopod 3 of one segment. Able to roll into a ball.

1. Pleotelson triangular, apex pointed, frontal lamina flat (Fig. 48C) *terebrans*
- Pleotelson spoon-shaped, apex broadly rounded 2
2. Pereon lacking tubercles (Fig. 48B) *serratum*
- Tubercles present on pereon 3

3. Pereonal tubercles circular
 Two submedian series of tubercles on pleotelson divergent,
 continuing almost to apex (Fig. 48D) *walkeri*
 - Pereonal tubercles transversely elongate
 Two submedian pairs of tubercles on pleotelson, followed by
 single median tubercle (Fig. 48A) *annandalei*

Sphaeroma annandalei Stebbing 1911

Fig. 48A

Anterior margin of cephalon with distinct, raised rim. Pereonites VI and VII with transversely elongate tubercles.

11,0 mm.

Natal, Zululand, intertidal; Indian coast.

Sphaeroma serratum (Fabricius, 1787)

Fig. 48B

Pleotelson spoon-shaped, unarmed. Pereon unarmed.

11,0 mm.

Natal, Mozambique, intertidal; North Atlantic, Mediterranean, Black Sea.

Sphaeroma terebrans Bate, 1866

Fig. 48C

Pleotelson triangular, bearing two submedian proximal tubercles and two low humps. Pleonite I also bearing two tubercles. Pereonites V to VII with four tubercles each. Pleotelson irregularly granular.

10,0 mm.

Knysna to Mozambique, intertidal.

Sphaeroma walkeri Stebbing, 1905

Fig. 48D

Circular tubercles present on pereon and pleotelson. Uropodal endopod with three median tubercles, exopod with four or five serrations on outer margin.

7,0 mm.

Natal, Mozambique, estuarine to 5 m.

Zuzara Leach

Zuzara furcifer Barnard, 1920

Fig. 48E-F

Pleotelsonic apex somewhat dorsally produced in ♀, with peg-like process in ♂. Pereonite VII in ♂ with elongate process, apically bifid. Pleotelson in ♀ with numerous small tubercles, plus two sub-median

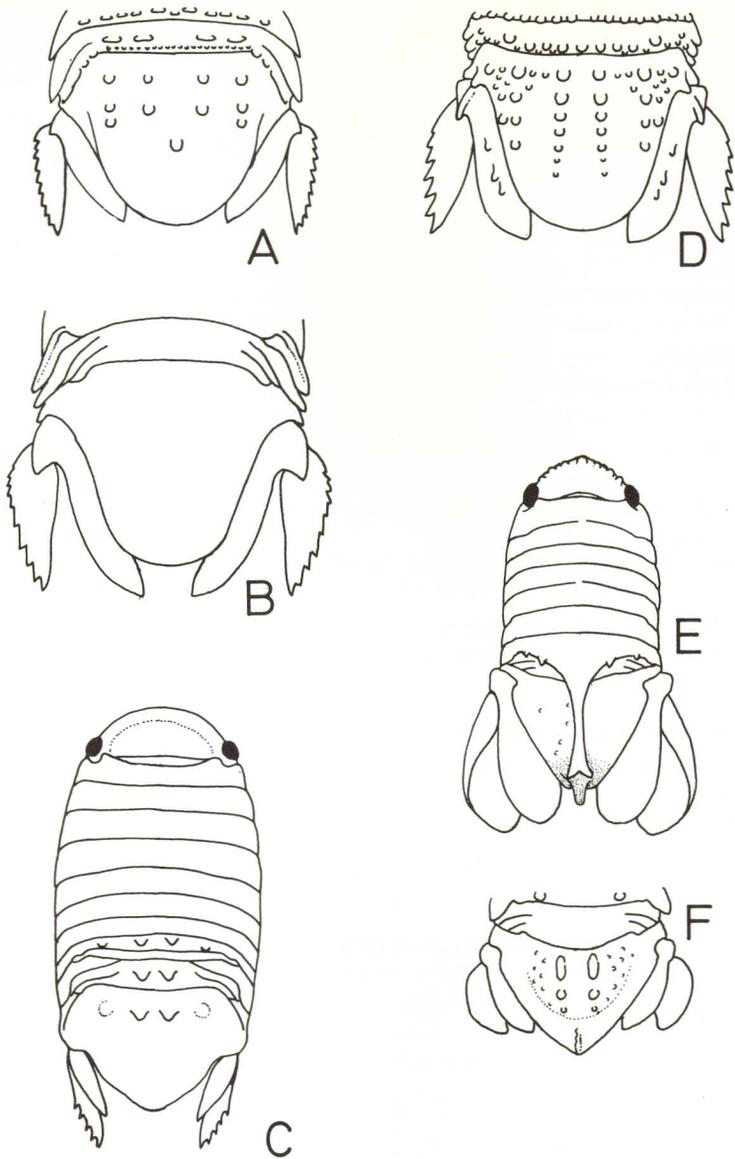


Fig. 48. A. *Sphaeroma annandalei*, pleotelson. B. *S. serratum*, pleotelson. C. *S. terebrans*. D. *S. walkeri*, pleotelson. E. *Zuzara furcifer* ♂. F. *Z. furcifer*, pleotelson ♀.

longitudinal ridges. Uropods large, lamellate in ♂, both rami reaching beyond pleotelsonic apex; short in ♀, not reaching pleotelsonic apex.
6,0 mm.

False Bay to Port Elizabeth, 7 to 14 m.

Platybranchiatae

Artopoles Barnard

Body elliptical, depressed, margins ciliate. Cephalon embraced by pereonite I. Eyes dorsal. Pereonite VII narrower than VI. Frontal lamina narrow, spiniform. First and second antennal segments expanded. Uropodal peduncle and endopod fused, exopod minute.

1. Pleotelson apically notched

Cephalon four times broader than long (Fig. 49A) *capensis*

– Pleotelson apically truncate

Cephalon twice broader than long (Fig. 49B) *natalis*

Artopoles capensis Barnard, 1955

Fig. 49A

Pleotelson with small apical notch. Uropodal endopod broad.

6,0 mm.

False Bay, 17 m.

Artopoles natalis Barnard, 1920

Fig. 49B

Pleotelson apically truncate. Two basal segments of antenna expanded. Uropodal endopod relatively narrow.

4,0 mm.

Off Natal, 12 m.

Bathycopea Tattersall

Bathycopea typhlops Tattersall, 1905

Fig. 50

Body dorsoventrally very flattened. Cephalon fused with pereonite I. Eyes absent. Pleotelson triangular, apically narrowly rounded, with raised central area. Uropod with single ramus extending well beyond pleotelsonic apex.

5,3 mm.

Off Natal, 680 m; off Ireland.

Dies Barnard

Dies monodi Barnard, 1951

Fig. 49C

Body oval, margins ciliate. Cephalon embraced by pereonite I. Eyes dorsal. Frontal lamina long, dorsally visible. Uropodal endopod reaching

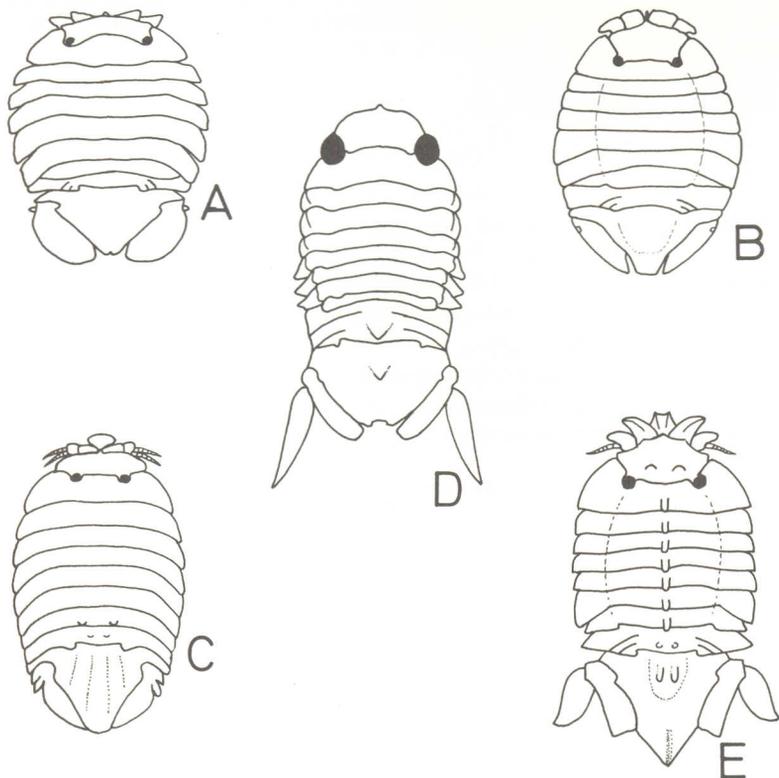


Fig. 49. A. *Artopoles capensis*. B. *A. natalis*. C. *Dies monodi*. D. *Parasphaeroma prominens*. E. *Stathmos coronatus*.

pleotelsonic apex, exopod small. Pleotelson apically bluntly rounded, with four low rounded keels.

3,5 mm.

Transkei to Zululand, estuarine.

Parasphaeroma Stebbing

Parasphaeroma prominens Stebbing, 1902

Fig. 49D

Body vaulted. Eyes large, lateral. Frontal lamina prominent. Coxae of pereonites V to VII projecting. Pleotelsonic apex a shallow notch. Uropodal endopod apically truncate, exopod narrowly lanceolate.

19,5 mm.

Off Cape Peninsula, 300 to 460 m.

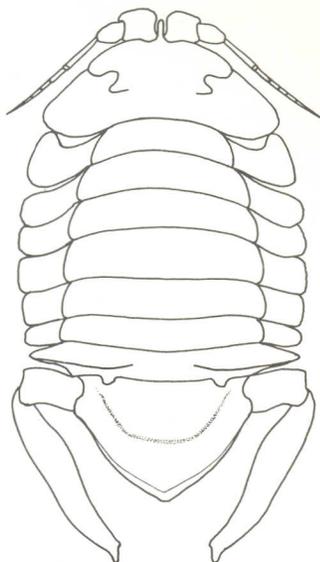


Fig. 50. *Bathycopea typhlops*.

Stathmos Barnard
Stathmos coronatus Barnard, 1940

Fig. 49E

Eyes dorsal. Cephalon laterally embraced by pereonite I. Pereonites with low median longitudinal ridge ending in posterior tubercle. Pleotelson apically acute. Uropodal endopod apically truncate, exopod ovate/lanceolate.

6,0 mm.

Cape Peninsula, intertidal to 19 m.

SUBORDER GNATHIIDEA

Family **Gnathiidae**

Only five pairs of pereopods present. ♂ cephalon fused with two anterior pereonites. Appendages of second fused pereonite modified to form flattened pylopods which cover the mouth. Last pereonite lacking pereopods. Mandibles in ♂ large, projecting forward. ♀ and praniza larva with pereonites II to V fused, inflated. Eggs are kept internally but are often visible through the thin integument. The adults are benthic dwellers, sometimes burrowing into sponges. The praniza larva, looking like a thin female gnathiid with large eyes, is sometimes ectoparasitic on fish.

Gnathia Leach

♂ pylopods of two or three segments. Anterior margin of cephalon usually truncate, without an elongate rostrum. Pereonites distinct, pleon much narrower than pereon. ♀ pereonites III to V fused, inflated. Cephalon small, narrow.

(Key to ♂♂ only)

1. Inner cutting edge of mandibles entire
Two pairs conical processes on posterior cephalon (Fig. 51D) *disjuncta*
- Inner cutting edge of mandible dentate
Cephalon lacking prominent processes 2
2. Fourth free pereonite, i.e. V, divided mediodorsally by
pereonite VI 3
- Fourth free pereonite not divided (Fig. 51A, B) .. *africana*
3. Anterior margin of cephalon convex
Cephalon and anterior pereonites granular (Fig. 51C) *cryptopais*
- Anterior margin of cephalon transverse
Cephalon granular, pereon glabrous (Fig. 51E) .. *spongicola*

Gnathia africana Barnard, 1914a

Fig. 51A-B

♂ cephalon with two diverging ridges running from middle of posterior margin to anterolateral angles, crenulate above the eyes. Anterior cephalon concave, anterior margin with two low, bifid submedian lobes. 4,0 mm.

Lambert's Bay to Port Elizabeth, 34 to 200 m.

Gnathia cryptopais Barnard, 1925c

Fig. 51C

♂ cephalon and anterior pereonites granular. Anterior margin of cephalon convex, medially crenulate, anterolateral angles acute. Mandible dentate on inner cutting edge. Pereonite V not separated into two halves by VI.

2,0 mm.

Saldanha Bay to Still Bay, 170 to 200 m.

Gnathia disjuncta Barnard, 1920

Fig. 51D

♂ anterior cephalon concave, anterior margin with two small submedian setiferous lobes. Two pairs of conical processes on posterior cephalon. Pereonite V completely separated into two lateral halves by pereonite VI. 3,5 mm.

Off Knysna, 80 m.

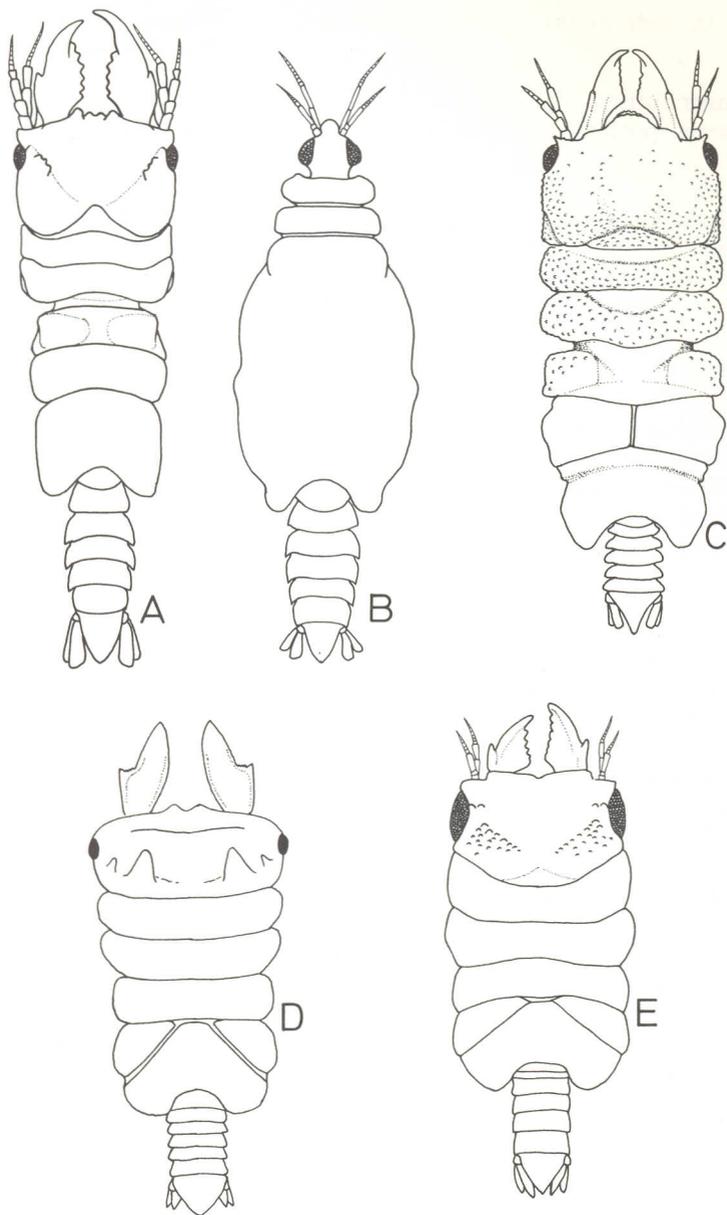


Fig. 51. A. *Gnathia africana* ♂. B. *G. africana* ♀. C. *G. cryptopais* ♂. D. *G. disjuncta* ♂.
 E. *G. spongicola* ♂.

Gnathia spongicola Barnard, 1920

Fig. 51E

♂ inner cutting edge of mandible dentate. Anterior margin of cephalon transverse, posterior cephalon granular. Pereonite V completely divided by VI.

5,0 mm.

Lüderitz to Still Bay, 200 to 400 m. Usually found in large Hexactinellid sponges. Barnard (1920) described the variety *minor*, the adult of which reaches 3,0 mm, from small, branching sponges from False Bay.

SUBORDER ASELLOTA

Key to the families of the Asellota

1. Pleopods 1 and 2 ♂, (Fig. 66 G-H) and pleopod 2 ♀, much smaller than pleopod 3
Pleopod 3 forms operculum over pleopods 4 and 5
Basal sympod of pleopod 1 ♂ fused
Pleopod 2 ♀ a small pyriform operculum **Stenetriidae** (p. 144)
- Pleopods 1 and 2 ♂, and pleopod 2 ♀ large, forming operculum over pleopods 3 to 5
Sympod of pleopod 1 ♂ elongate, coupled or fused along mid-line only covering median margin of pleopod 2 2
2. Cephalon fused with pereonite I. Eyes lacking
Pereonites IV and V elongate/cylindrical (Fig. 57) **Ischnomesidae** (p. 131)
Above three features not combined 3
3. Antennules terminal (Fig. 58)
Basis of pereopods I and II longer than basis of pereopods III and IV
Ischium of pereopods I and II shorter than basis of corresponding leg, ischium of pereopods III and IV longer than basis of corresponding leg
Pereopods V and VI oar-shaped
Uropods with large flattened peduncle, exopod minute or lacking **Ilyarachnidae** (p. 129)
- Antennules rarely terminal
Bases and ischia of pereopods I to IV not as above
Uropods never with flattened leaf-like setiferous peduncle .. 4
4. Basis of pereopods I and II much longer than pereopods III and IV
Pereopods V to VIII oar-shaped, lacking dactyls
Uropods uniramous (Fig. 64)
Pleopod 2 ♂ more or less fused **Munnopsidae** (p. 142)

4. Basis of pereopod II never much longer than that of pereopods III and IV
 Dactyls present on pereopods V to VII
 Rami of pleopod 2 ♂ separate 5
5. Eyes lacking
 Basal antennular segment expanded (except in *Syneurycope* (Fig. 55F))
 Pereopods V to VII oar-shaped, with long marginal setae
 Uropods biramous (except in *Acanthocope*) **Eurycopidae** (p. 125)
 - Above characters never combined
 Pereopods V to VII slender, ambulatory, similar to pereopods II to IV 6
6. Eyes, when present, on lateral processes
 Pleon longer than broad
 Segments 1 to 3 of maxillipedal palp broad
 Uropods minute, without peduncle, nearly always biramous (Fig. 63) **Munnidae** (p. 140)
 - Uropods with peduncle or totally absent 7
7. Pereonites I to III more or less fused, forming sub-quadrangular section (Fig. 62)
 Mandible lacking palp
 Uropods uniramous **Macrostylidae** (p. 140)
 - Pereonites I to III never forming separate section 8
8. Segments 1 to 5 of maxillipedal palp all narrow, less than half width of endite 10
 - Segments 1 to 3 of maxillipedal palp markedly broader than distal segments, at least as wide as endite .. **Janiridae** (p. 134)
9. Body strongly depressed, broadly oval, lateral margin of cephalon, pereon and pleon forming flattened lappets (Fig. 52)
Acanthaspidiidae (p. 122)
 - Body not strongly depressed or broadly oval
 Lateral margins of cephalon, pereon and pleon not forming flattened lappets 10
10. Coxae absent
 Molar process of mandible elongate, spiniform
 Uropods inserted in terminal incision of distal pleotelsonic margin
 Uropodal rami minute (Fig. 59) .. **Jaeropsidae** (p. 132)
 - Molar process of mandible subcylindrical, apically truncate
 Uropods not inserted in terminal incision 11
11. Coxae absent
 Pleon of one segment, having backward-pointing posterolateral processes (Fig. 56) **Haploniscidae** (p. 126)

- 11. Coxae at least present on pereonites V to VII
Pleon of two segments, no posteriorly directed processes .. 12
- 12. Flagellum of antennule with at most three articles
Pereopods with two apical claws (biunguiculate)
Uropods inserted laterally (Fig. 53) **Antiasidae** (p. 123)
- Flagellum of antennule with at least six articles
Pereopods with single apical claw
Uropods inserted dorsally or dorsolaterally (Fig. 54)
Dendrotionidae (p. 124)

Family Acanthaspidiidae

Paracanthaspidia Menzies & Schultz

Paracanthaspidia natalensis Kensley, 1977a

Fig. 52

Body oval, cephalon with rostrum apically bifid, lateral margin with two lappets. Pereonite I with single lateral lappet; pereonites II to IV

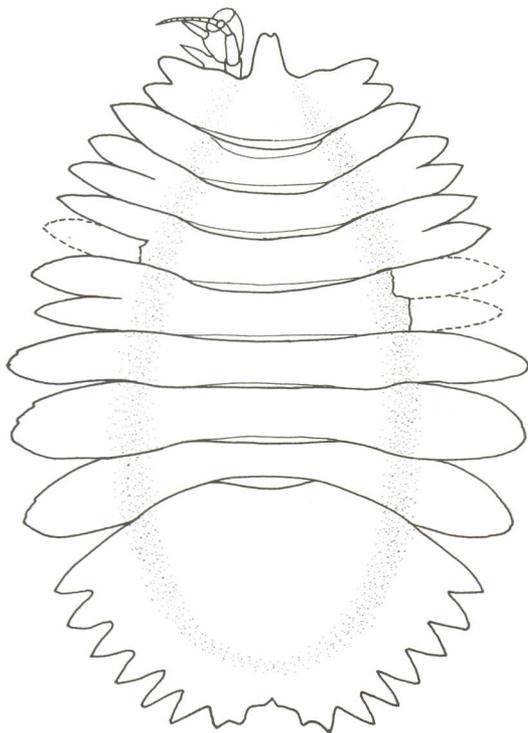


Fig. 52. *Paracanthaspidia natalensis*.

with double lappets; V to VII with single lappets. Pleotelson with six lateral lappets.

8,0 mm.

Off southern Mozambique, 1 360 m.

Family **Antiasidae**

Maxillipedal palp segments all narrow, half width of endite. Pereopods similar, dactyls biunguiculate. Pereonites usually of similar length. Molar process of mandible normal. Uropods with stout peduncle.

1. Cephalon with well-developed rostrum (Fig. 53B)

Kuphomunna rostrata

- Cephalon lacking rostrum (Fig. 53A) *Antias uncinata*

Antias Richardson

Antias uncinata Vanhöffen, 1914

Fig. 53A

Body with numerous short spines. Coxae visible in dorsal view on all pereonites except I. Pleon of two segments, distal segment with five or six lateral hooked spines.

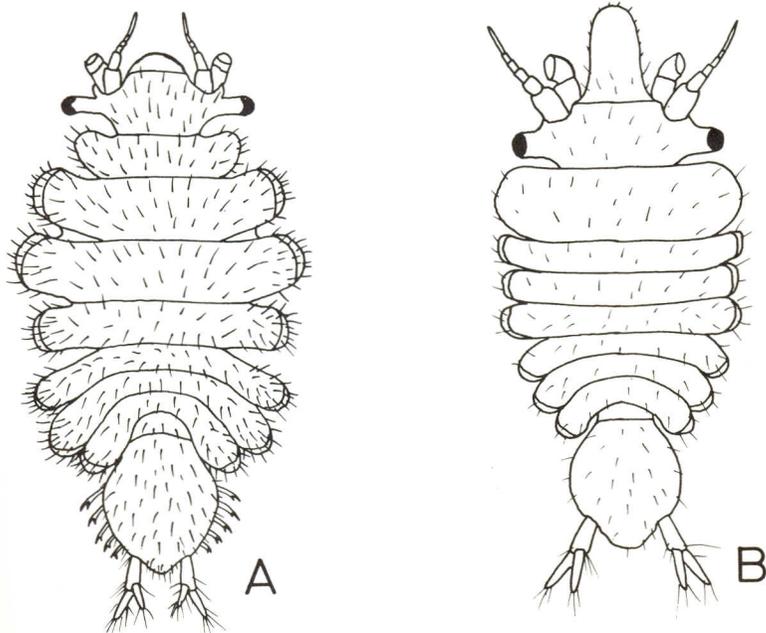


Fig. 53. A. *Antias uncinata*. B. *Kuphomunna rostrata*.

1,5 mm.

False Bay, Langebaan, intertidal.

Kuphomunna Barnard

Kuphomunna rostrata Barnard, 1914b

Fig. 53B

Rostrum elongate, distally rounded, longer than length of cephalon. Pereonite I twice length of remaining pereonites. Coxae visible in dorsal view on all pereonites except I. Pleon of two segments.

2,0 mm.

False Bay, intertidal.

Family **Dendrotionidae**

Acanthomunna spinipes (Vanhöffen, 1914)

Fig. 54

Body oval. Eyes present. Cephalon, pereon, and pleon bearing numerous long and short spines. Prominent row of four spines on pere-

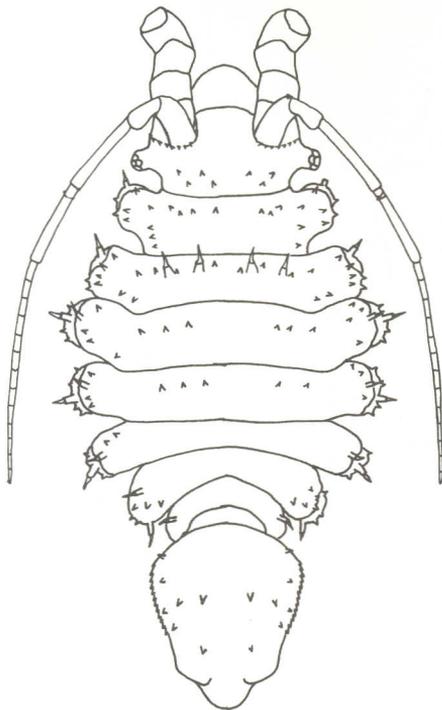


Fig. 54. *Acanthomunna spinipes*.

onite II. Coxae visible on all pereonites. Uropods massive, biramous, spinose.

4,4 mm.

Off Natal, 680 m; Antarctic.

Family Eurycopidae

Body usually oval in outline, occasionally elongate. Cephalon free, eyes absent. Anterior four pereonites similar, free; posterior three pereonites with anterior margins convex, posterior margins concave, often fused. Antennules dorsal, first segment broad, often with projection at inner distal angle. Pereopods I to IV elongate; pereopods V to VII natatory. Uropods ventral, uni- or biramous.

1. Body oval in outline
Maxilliped palp segments lacking denticles on inner margins 2
- Body elongate, slender
Inner margin of maxilliped palp segments denticulate
(Fig. 55F-G) *Syneurycope capensis* (p. 126)
2. Basal antennular segment distally strongly produced
Mandibular incisor reduced to single tooth (Fig. 55D-E)
Munnopsurus mimus (p. 126)
- Basal antennular segment hardly or slightly produced at inner
distal angle
Mandibular incisor normally toothed (Fig. 55A-C) *Eurycope* (p. 125)

Eurycope Sars

Body glabrous, lacking spines. Uropods biramous. Mandibular incisor normally dentate. Pleon of one segment. Maxilliped palp segment not dentate on inner margins.

1. Coxae of pereonites I to IV acute
Anterior margin of cephalon not strongly produced into broad
process 2
- Coxae of pereonites I to IV rounded
Anterior margin of cephalon produced into broad apically
rounded process (Fig. 55C) *sulcifrons*
2. Pereonite V as long as VII
Anterior margin of cephalon narrowly rounded (Fig. 55A) *glabra*
- Pereonite V shorter than VII
Anterior margin of cephalon quadrate (Fig. 55B) *quadrata*

Eurycope glabra Kensley, 1977b

Fig. 55A

Frontal margin of cephalon produced into triangular distally rounded process. Coxae of pereonites I to IV acute. Pereonite V as long as VII. Pleon broader than long.

3,6 mm.
Off Natal, 800 m.

Eurycope quadrata Barnard, 1920

Fig. 55B

Anterior margin of cephalon produced into quadrate process. Coxae of anterior pereonites acute. Pereonite VII as long as V and VI together. Pleon as broad as long.

4,0 mm.
Off Cape Point, 1 400 m.

Eurycope sulcifrons Barnard, 1920

Fig. 55C

Cephalon produced anteriorly into broad, slightly grooved, distally rounded/truncate process. Coxae of pereonites rounded. Pereonite VI longer than V or VII. Pleon broader than long.

4,0 mm.
Off Cape Point, 1 400 m.

Munnopsurus Richardson

Munnopsurus mimus Barnard, 1914a

Fig. 55D-E

Cephalon broader than long, dorsally convex, anteriorly descending abruptly. Pereonite I as broad as cephalon. Pereonites I to IV free, loosely articulated; pereonites V to VII free, more closely articulated. Pleon slightly longer than wide, distally broadly rounded. Antennules dorsal, basal segment distally produced into broadly rounded process. Mandibular incisor process reduced to single rounded tooth.

14,0 mm.
Off Cape Point, 1 400 m.

Syneurycope Hansen

Syneurycope capensis (Barnard, 1920)

Fig. 55F-G

Body relatively elongate, smooth. Cephalon and anterior pereonites free, posterior three pereonites fused. Pereonites laterally rounded. Pleon proximally globose, distally narrowed to rounded apex.

5,0 mm.
Off Cape Point, 1 400 m.

Family **Haploniscidae**

Haploniscus Richardson

Body oval/oblong, flattened or vaulted. Last three pereonites laterally well demarked, sometimes dorsally fused. Coxae not dorsally visible.

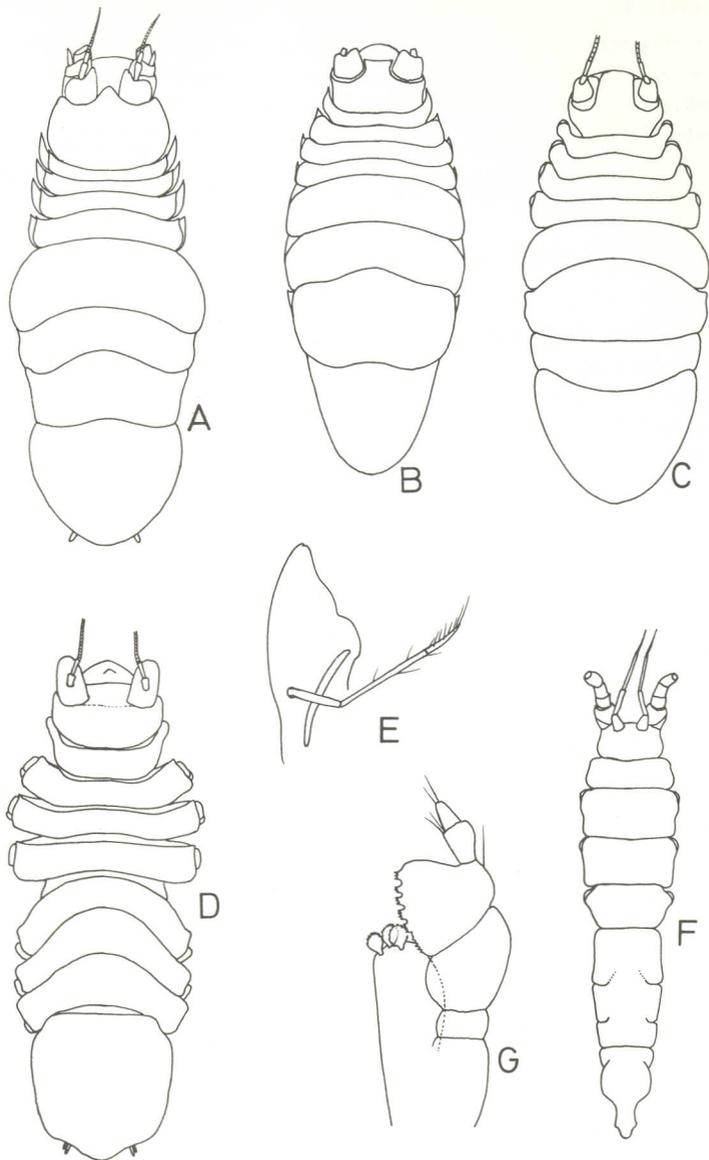


Fig. 55. A. *Eurycope glabra*. B. *E. quadrata*. C. *E. sulcifrons*. D. *Munnopsurus mimus*.
 E. *M. mimus*, mandible. F. *Syneurycope capensis*. G. *S. capensis*, maxilliped.

Posterolateral processes of pleon dorsally visible. Uropods uniramous.

1. Posterolateral angles of pleon reaching well beyond midpoint of pleon

Rostrum a slight convexity (Fig. 56A) *dimeroceras*

- Posterolateral angles of pleon not reaching beyond midpoint of pleon

Rostrum well developed, almost tridentate (Fig. 56B) *gernekei*

Haploniscus dimeroceras Barnard, 1920

Fig. 56A

Pereonites V to VII clearly demarked, posterolateral angles of pleon spinose, reaching well beyond midpoint of pleon. Anterolateral margins of pereonite V smooth. (Menzies (1962) placed this species in the genus *Antennuloniscus*.)

2,5 mm.

Off Cape Point, 1 400 m.

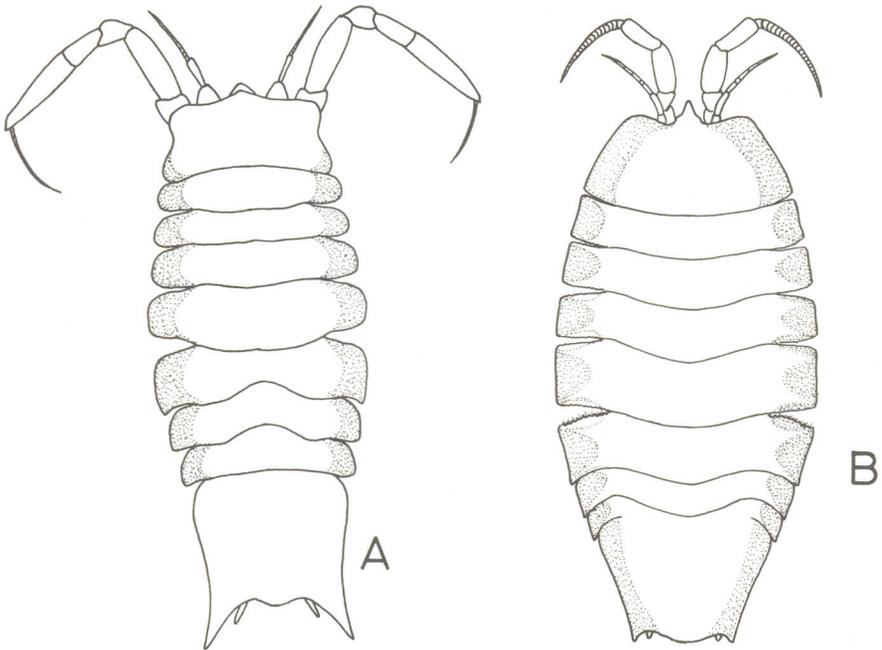


Fig. 56. A. *Haploniscus dimeroceras*. B. *H. gernekei*.

Haploniscus gernekei Kensley, 1977b

Fig. 56B

Pereonite VII fused with pleon, not clearly demarked. Posterolateral angles of pleon acute, not reaching beyond midpoint of pleon. Anterolateral margin of pereonite V dentate.

2,8 mm.

Off Natal, 680 m.

Family **Ilyarachnidae**

Ilyarachna Sars

Antennules close together, basal segment subquadrangular, outer distal corner often produced. Pereopods I and II prehensile, III and IV longer

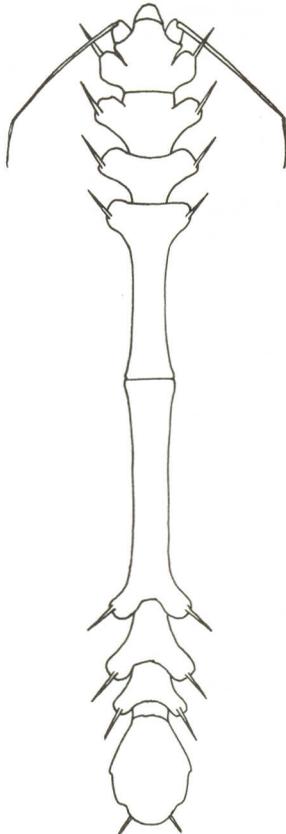


Fig. 57. *Ischnomesus bacillopsis*.

than preceding ones, V and VI with carpus expanded, VII narrower than VI. Pleopod 1 ♂ elongate, curved longitudinally.

- | | |
|---|-------------------|
| 1. Anterolateral corners of pereonites I and II acute | 2 |
| – Anterolateral corners of pereonites I and II rounded | <i>crassiceps</i> |
| 2. Anterolateral corners of pereonites I to IV acute | 3 |
| – Anterolateral corners of pereonites I and II acute, III and IV rounded (Fig. 58B) | <i>wolffi</i> |
| 3. Pleon slightly longer than pereonites VI and VII together | <i>affinis</i> |
| – Pleon shorter than pereonite VII (Fig. 58A) | <i>fusiformis</i> |

Ilyarachna affinis Barnard, 1920

Body smooth. Pereonites I to III subequal in length, pereonite IV slightly longer; pereonite V narrower than IV. Pleon slightly longer than pereonites VI and VII together, apex subacute. Basal antennular segment with spine on inner and outer margin.

5,0 mm.

Off Cape Point, 2 400 m.

Ilyarachna crassiceps Barnard, 1920

Body smooth. Pereonite I narrower than cephalon. Pleon as long as broad, apically rounded. Basal antennular segment with inner distal corner not produced.

2,8 mm.

Off Cape Point, 1 400 m.

Ilyarachna fusiformis (Barnard, 1920)*

Fig. 58A

Body smooth. Pereonites I to III increasing slightly in length. IV equal to I in length. Posterior margins of pereonites V and VI concave. Pleon shorter than pereonite VII, about as long as wide.

3,5 mm.

Off Cape Point, 1 400 m.

Ilyarachna wolffi Kensley, 1977b

Fig. 58B

Body smooth. Pereonite IV almost equal in length to pereonites I to III together. Posterior margin of pereonite V concave. Pereonite VI triangular. Pleon longer than wide, equal in length to pereonites VI and VII together. Basal antennular segment with outer distal corner produced.

2,9 mm.

Off Natal, 550 m.

* Thistle & Hessler (1977) now place this species in the genus *Betamorpha* Hessler and Thistle, intermediate between the Ilyarachnidae and the Eurycopidae.

Family **Ischnomesidae**

Ischnomesus Richardson

Ischnomesus bacillopsis (Barnard, 1920)

Fig. 57

Body elongate. Cephalon and pereonite I fused. Eyes absent. All pereopods ambulatory, elongate. All pereonites with single lateral spine. Pereonites IV and V much longer than wide, cylindrical. Pleon consisting of short segment plus pleotelson. Latter apically rounded. Uropods uniramous, terminal.

7,0 mm.

Off Cape Point, 1 400 m.

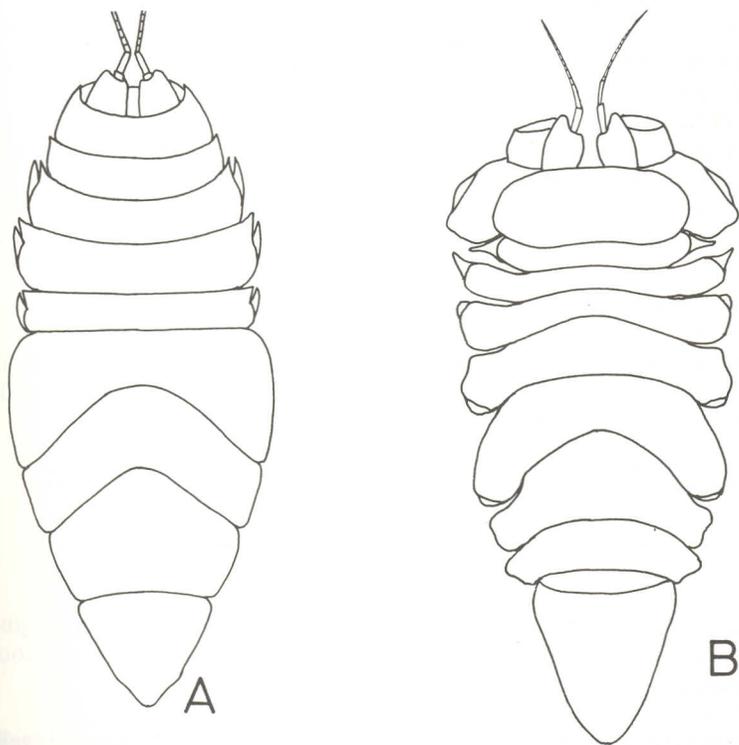


Fig. 58. A. *Ilyarachna fusiformis*. B. *I. wolffii*.

Family Jaeropsidae

Jaeropsis Koehler

Molar process of mandible reduced, elongate. Maxilliped palp segments all of similar width. Antenna short, peduncle dilated, flagellum reduced. Cephalon free. Pereonites similar, wider than long. Uropods with peduncle, rami reduced. Pereopods similar, ambulatory, usually biunguiculate.

1. Lateral margin of pleotelson lacking teeth
 - Rostrum evenly convex (Fig. 59C) *paulensis*
 - Lateral margin of pleotelson with at least one tooth
 - Rostrum variable, convex, pointed or concave 2
2. Rostrum with median point
 - Lateral margin of pleotelson with single strong tooth (Fig. 59B)
 - curvicornis*
 - Rostrum rounded or slightly concave
 - Lateral margin of pleotelson with more than one tooth, dentition often very fine 3
 - 3. Rostrum slightly concave
 - Uropods lacking spine at inner distal angle (Fig. 59E) *waltervadi*
 - Rostrum broadly or narrowly rounded
 - Uropod with spine at inner distal angle 4
 - 4. Apex of pleotelson narrow, acute
 - Uropods reaching well beyond pleotelson apex (Fig. 59A) *beuroisi*
 - Apex of pleotelson broadly rounded
 - Uropods hardly reaching beyond pleotelson apex (Fig. 59D)
 - stebbingi*

Jaeropsis beuroisi Kensley, 1975c

Fig. 59A

Rostrum rounded. Lateral margin of cephalon with four or five spinules. Lateral margin of pleotelson with two small teeth. Uropods extending beyond apex of pleotelson, with spine at inner distal angle.

6,0 mm.

St Paul and Amsterdam Is., intertidal and shallow infratidal.

Jaeropsis curvicornis (Nicolet, 1849)

Fig. 59B

Rostrum wider than long, with small median point. Lateral margin of cephalon entire. Lateral margin of pleotelson with single strong tooth. Uropods extending well beyond apex of pleotelson.

5,0 mm.

Marion Is., Patagonia, Falkland Is., Macquarie Is., Chile, Magellan Straits, Fuegian Archipelago, intertidal.

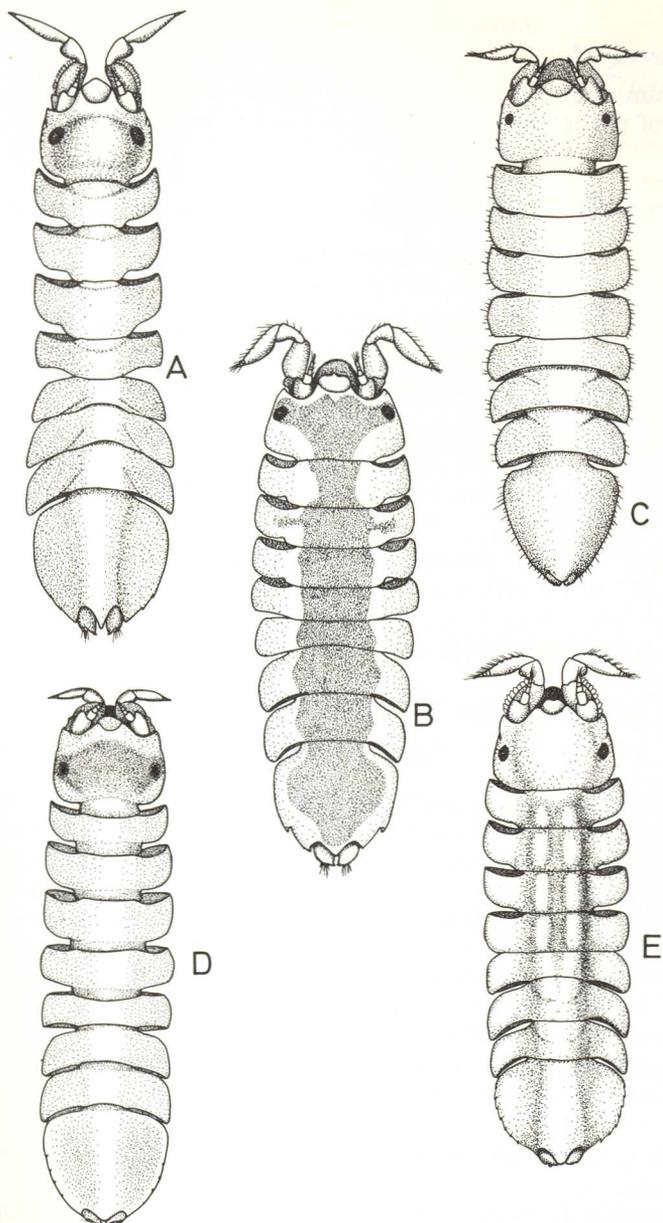


Fig. 59. A. *Jaeropsis beuroisi*. B. *J. curvicornis*. C. *J. paulensis*. D. *J. stebbingi*.
E. *J. waltervadi*.

Jaeropsis paulensis Vanhöffen, 1914

Fig. 59C

Rostrum evenly rounded. Lateral margin of cephalon entire. Lateral margin of pleotelson entire. Uropods hardly reaching beyond pleotelson apex.

5,0 mm.

Gough Is., St Paul and Amsterdam Is., intertidal, shallow infratidal.

Jaeropsis stebbingi Kensley, 1975c

Fig. 59D

Rostrum evenly convex. Lateral margin of cephalon entire. Lateral margin of pleotelson with few fine serrations. Uropods hardly extending beyond apex of pleotelson, with spine at inner distal angle.

5,0 mm.

Lüderitz to False Bay, intertidal.

Jaeropsis waltervadi Kensley, 1975c

Fig. 59E

Rostrum slightly concave. Lateral margin of cephalon entire. Pereonites I to IV with double rounded dorsal ridge. Lateral margin of pleotelson with seven teeth. Uropods hardly reaching beyond apex of pleotelson, lacking spine at inner distal angle.

2,9 mm.

Walter's Shoal, south-west Indian Ocean, 38 to 46 m.

Family **Janiridae**

Body oblong-elongate, depressed. Cephalon and pereonites free. Pleon consisting of one short pleonite plus pleotelson. Eyes usually present. Antenna with six-segmented peduncle, usually considerably longer than antennule. Third segment of maxilliped 3 usually expanded. Pereopod I often prehensile. Dactyls of pereopods either bi- or triunguiculate. Uropods terminal or lateral, pedunculate, usually biramous.

The generic status of several of the southern African species is in doubt, and still requires considerable taxonomic attention.

- 1. Uropods at least half length of pleotelson 4
- Uropods much less than half length of pleotelson 2
- 2. Distinct rostrum present (Fig. 61E)

Pseudojanira stenetrioides (p. 140)

- No distinct rostrum. Anterior cephalon margin either straight or slightly convex 3

- 3. Eye weakly developed, consisting of two ocelli
- Body covered with fine, short setules (Fig. 60C)

Iais pubescens (p. 135)

3. Eye well developed and pigmented
 Body not markedly setulose (Fig. 60D-E) .. *Neojaera* (p. 139)
4. Pleopod I ♂ Y-shaped (Fig. 60A) *Ectias* (p. 135)
- Pleopod I ♂ not Y-shaped 5
5. Pleotelsonic margins serrate (Fig. 61D) *Notasellus capensis* (p. 139)
- Pleotelsonic margins entire (Fig. 61A-C, F)
Ianiropsis & *Janira* (p. 135)

Ectias Richardson
Ectias angusta (Barnard, 1920)
 Fig. 60A-B

Body elongate, parallel-sided. No distinct rostrum. Eyes dorsal. Coxae visible on all pereonites. Pleon longer than wide. Pereopod I subchelate, propodus broad, dactyl biunguiculate. Remaining pereopods triunguiculate. Pleopod I ♂ slender, Y-shaped. Uropods more than half length of pleotelson, relatively broad. Three basal segments of maxilliped palp broad.

3,0 mm.

False Bay, intertidal; Amsterdam Is., intertidal.

Iais Bovallius
Iais pubescens (Dana, 1853)
 Fig. 60C

Body covered with short pile of setules. Anterior cephalon margin straight. Eye consisting of two ocelli. Pleotelson almost circular. Uropods short.

This species is found both free-living and living commensally with sphaeromatid isopods such as *Exosphaeroma*, *Parisocladus*, *Sphaeroma*, *Dynamenella* and *Sphaeramene*.

2,5 mm.

Lüderitz to Natal, intertidal to 5 m; Antarctic, Falkland Is., Tristan da Cunha, Marion and Gough Is., New Zealand, Tasmania, Ceylon, Kerguelen Is.

Ianiropsis Sars *Janira* Leach

Confusion has arisen in the definitions of the southern African representatives of these two genera, which are thus dealt with together. The generic position of each species is by no means settled. Wolff (1962) placed *Janira extans* in the genus *Iolella* but the species does not agree with this generic diagnosis.

1. Cephalon with rostrum

Strong band of pigment down middorsal part of body

(Fig. 61A) *Ianiropsis bisbidenis*

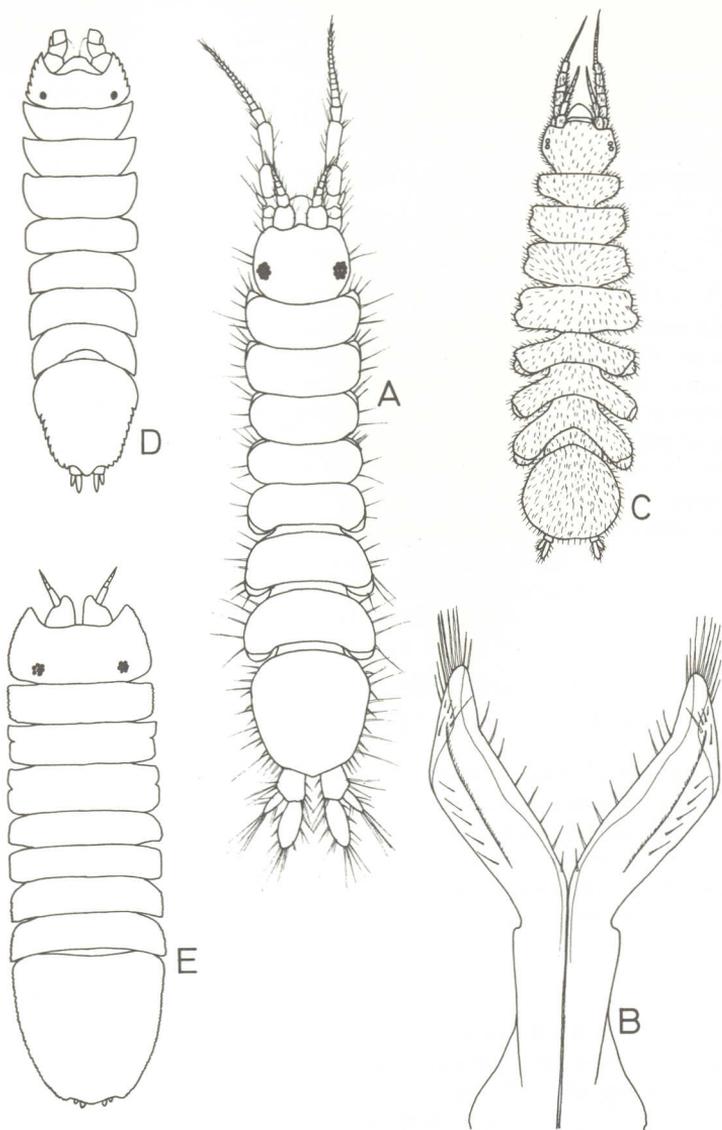


Fig. 60. A. *Ectias angusta*. B. *E. angusta*, pleopod 1 ♂. C. *Iais pubescens*. D. *Neojaera serrata*. E. *N. pusilla*.

- Anterior margin of cephalon may be convex but not rostrate
No distinct dorsal band of pigment 2
- 2. Pereopod I ♂ with two spines on propodus (Fig. 61C) *Janira falcifera*
- Propodus of pereopod I ♂ lacking spines 3
- 3. Eyes lateral
Pereopod I ♂ twice length of following pereonites (Fig. 61F) *Janira extans*
- Eyes dorsal
Pereonite I ♂ of similar length to following pereonites
(Fig. 61B) *Ianiropsis palpalis*

Ianiropsis bisbidens Barnard, 1955

Fig. 61A

Cephalon with strong rostrum. Coxae visible on all pereonites dorsally. Pleotelson with marked median point. Broad band of pigment mid-dorsally, dividing on cephalon and extending on to antennal bases, and dividing on pleotelson and extending on to uropods. Latter almost as long as pleotelson.

7,5 mm.

False Bay, 6,5 m.

Ianiropsis palpalis Barnard, 1914a

Fig. 61B

Cephalon lacking rostrum. Eyes dorsal. Coxae visible on all pereonites. Pleotelson distally evenly convex. Uropods slender, almost as long as pleotelson.

4,0 mm.

Swakopmund to East London, intertidal to 40 m; St Paul and Amsterdam Is.

Janira extans Barnard, 1914b

Fig. 61F

Cephalon with anterior margin strongly convex, anterolateral corner acute. Eyes lateral. Pereonite I ♂ twice length of following pereonites of equal length in ♀. Coxae visible dorsally on pereonites II to VII. Pereopod I ♂ dactyl biunguiculate, propodus curved, with small spines on inner distal margin, carpus with two spines on extended distal margin. Uropods about half length of pleotelson. Latter longer than broad, distal margin convex.

2,5 mm.

Möwe Bay (South West Africa) to East London, intertidal.

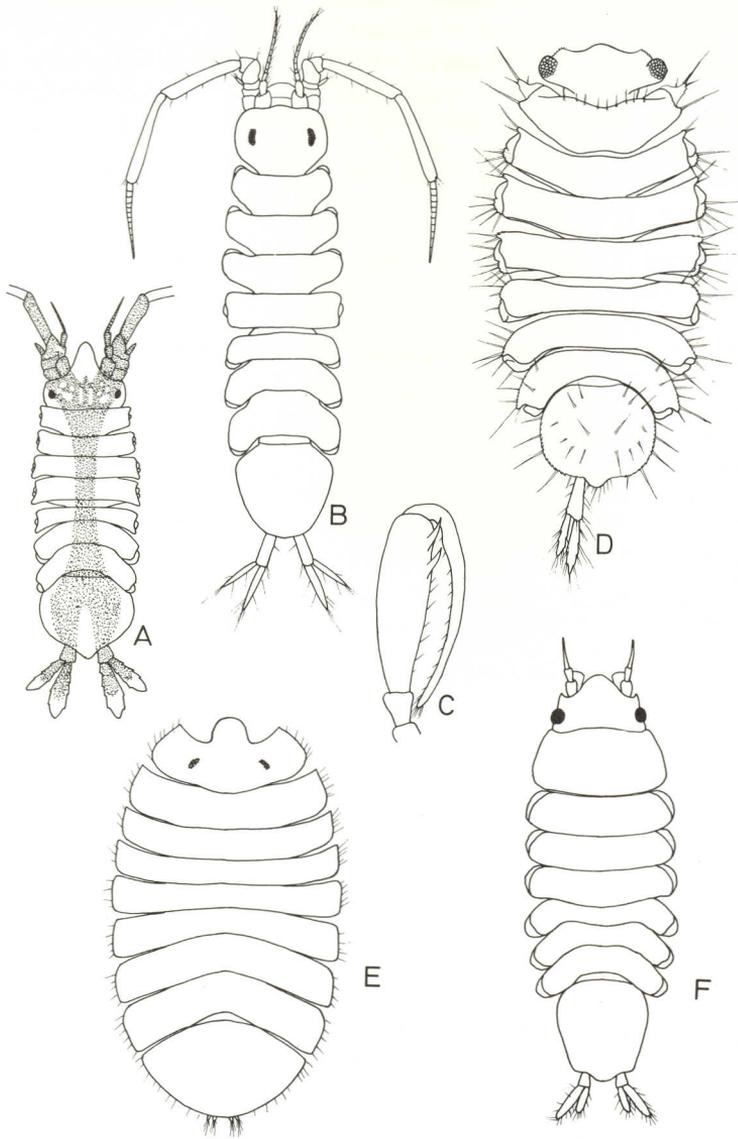


Fig. 61. A. *Ianiropsis bisbidens*. B. *I. palpalis*. C. *Janira falcifera*, pereopod I ♂ (from Barnard 1962). D. *Notasellus capensis*. E. *Pseudojanira stenetrioides*. F. *Janira extans*.

Janira falcifera Barnard, 1962

Fig. 61C

Anterior margin of cephalon convex. Pleotelson oval, little longer than wide. Pereopod I ♂ with dactylus and propodus elongate, with two spines on inner margin of propodus. Pereopods II to VII biunguiculate.

2,3 mm.

Inhaca Is., intertidal.

Neojaera Nordenstam

Coxae not visible in dorsal view. Eyes dorsal. Pereopods biunguiculate. Pleopod 1 ♂ with broad endopod, narrow styliform exopod. Uropods short, fitting into incisions in posterior margin of pleotelson.

1. Lateral margins of cephalon and pleotelson finely serrulate
Uropodal peduncles not visible in dorsal view (Fig. 60E) *pusilla*
- Lateral margins of cephalon and pleotelson strongly serrate
Uropodal peduncles visible in dorsal view (Fig. 60D) .. *serrata*

Neojaera pusilla Barnard, 1925b

Fig. 60E

Anterior margin of cephalon slightly convex; anterolateral corners reaching well beyond anterior margin; lateral margins finely serrulate. Anterolateral corner of pereonite I not acute. Lateral margins of posterior pereonites and pleotelson finely serrulate.

3,2 mm.

Off Cape Peninsula, 190 m.

Neojaera serrata (Barnard, 1914b)

Fig. 60D

Anterolateral corners of cephalon extending well beyond anterior margin; lateral margins with about six teeth. Anterolateral corner of pereonite I acute, spinose. Lateral margins of pleotelson serrate, slight median distal point. Pereopod I with single claw on dactylus, remaining pereopods biunguiculate.

2,0 mm.

Orange River Mouth to Port Elizabeth, intertidal to 320 m.

Notasellus Pfeffer

Notasellus capensis (Barnard, 1914a)

Fig. 61D

Anterior margin of cephalon convex; lateral margins anterior to prominent eyes finely serrate. Bilobed coxae visible on all pereonites. Pleotelson with margins finely serrate, with small, rounded median point.

Uropods almost as long as pleotelson. Small, scattered spines over entire body. Pereopod I biunguiculate, remaining pereopods triunguiculate.
4,0 mm.

Lüderitz to Port Elizabeth, 13 to 84 m; St Paul and Amsterdam Is.

Pseudojanira Barnard
Pseudojanira stenetrioides Barnard, 1925b

Fig. 61E

Body oval in outline. Cephalon with distinct rounded rostrum. Eyes dorsal. Coxae not visible in dorsal view. Pereopod I subchelate, dactylus and palm of propodus with numerous dentate spines. Pleopod 1 ♂ with rami distally truncate, distolateral angles narrowed.

3,0 mm.

Zululand, Mozambique, 55 m.

Family **Macrostylidae**

Macrostylis Sars
Macrostylis spiniceps Barnard, 1920

Fig. 62

Cephalon free, posterolateral corners acute. Eyes absent. Marked division between pereonites II and IV. Anterior three pereonites less mobile than posterior four pereonites. Lateral corners of all pereonites acute. Pereopod IV shorter than other pereopods. Uropods elongate, uniramous. Distolateral angles of pleotelson subacute, distal margin gently convex.

3,0 mm.

Off Cape Point, 1 400 m.

Family **Munnidae**

Body usually ovate. Cephalon and pereonites free. Anterior four pereonites usually demarked from posterior three. Pleon usually longer than broad. Eyes, when present, on lateral processes. Molar process of mandible broad and truncate, or narrow. Pereopod I prehensile, remaining pereopods ambulatory. Uropods small, peduncle not visible.

1. Coxae visible in dorsal view

Lateral margin of pleon entire 2

– Coxae not visible in dorsal view

Lateral margin of pleon serrate (Fig. 63D)

Paramunna capensis (p. 142)

2. Coxae spine-like (Fig. 63C) .. *Pleurosignum capensis* (p. 142)

– Coxae rounded, not spine-like (Fig. 63A, B) .. *Munna* (p. 141)

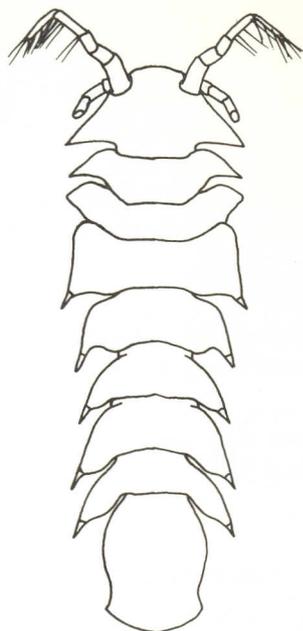


Fig. 62. *Macrostylis spiniceps*.

Munna Kröyer

Coxae visible on pereonites II to VII. Body lacking spines. Eyes lateral on short immobile stalks. Uropods lacking visible peduncles.

- | | | | |
|---|----|----|---------------------|
| 1. Anterior margin of cephalon concave | | | |
| Eyes poorly developed (Fig. 63A) | .. | .. | <i>concavifrons</i> |
| - Anterior margin of cephalon straight | | | |
| Eyes prominent, well developed (Fig. 63B) | .. | .. | <i>sheltoni</i> |

Munna concavifrons (Barnard, 1920)

Fig. 63A

Eyes of few ocelli. Small preocular lobe present. Anterior margin of cephalon concave.

1,5 mm.

Saldanha to Durban, intertidal.

Munna sheltoni Kensley, 1977a

Fig. 63B

Eyes well developed. Anterior cephalon margin straight. Body dorsally pigmented, with cross-shaped pale area.

1,4 mm.

Sandvlei Estuary, False Bay, intertidal.

Paramunna Sars

Paramunna capensis Vanhöffen, 1914

Fig. 63D

Pereonites lacking dorsal or lateral spines. Mandible with palp; molar process strong, subcylindrical, distally transversely cut off.

1,0 mm.

False Bay, intertidal.

Pleurosignum Vanhöffen

Pleurosignum capensis Kensley, 1977a

Fig. 63C

Coxae spine-like. Pereon and pleon with few scattered spines. Pleon distally rounded, uropods dorsal.

2,0 mm.

False Bay, 183 m.

Family **Munnopsidae**

Munnopsis Sars

Pereonites I to IV much broader than V to VII and pleon. Mandibles with up to three teeth on incisor process; spine row and molar process reduced or absent. Carpus of pereopods V to VII oval, at least four times longer than broad.

1. Body smooth, lacking spines (Fig. 64A) *beddardi*

– Body tubercular, with two strong spines on cephalon (Fig. 64B)

bispinosis

Munnopsis beddardi (Tattersall, 1905)

Fig. 64A

Body smooth. Pereonite V cylindrical, elongate; pereonites VI and VII short, indistinct. Pleon longer than pereonite V, distally rounded.

4,0 mm.

Off Cape Point, 1 400 m; off Ireland, Davis Strait, and Faroe Is.

Munnopsis bispinosis Kensley, 1977a

Fig. 64B

Cephalon with two strong dorsal spines. Pereonites I to IV with low lateral tubercles. Spines present on pereonites V to VII and on pleon.

5,6 mm.

Off Cape Peninsula, 158 m.

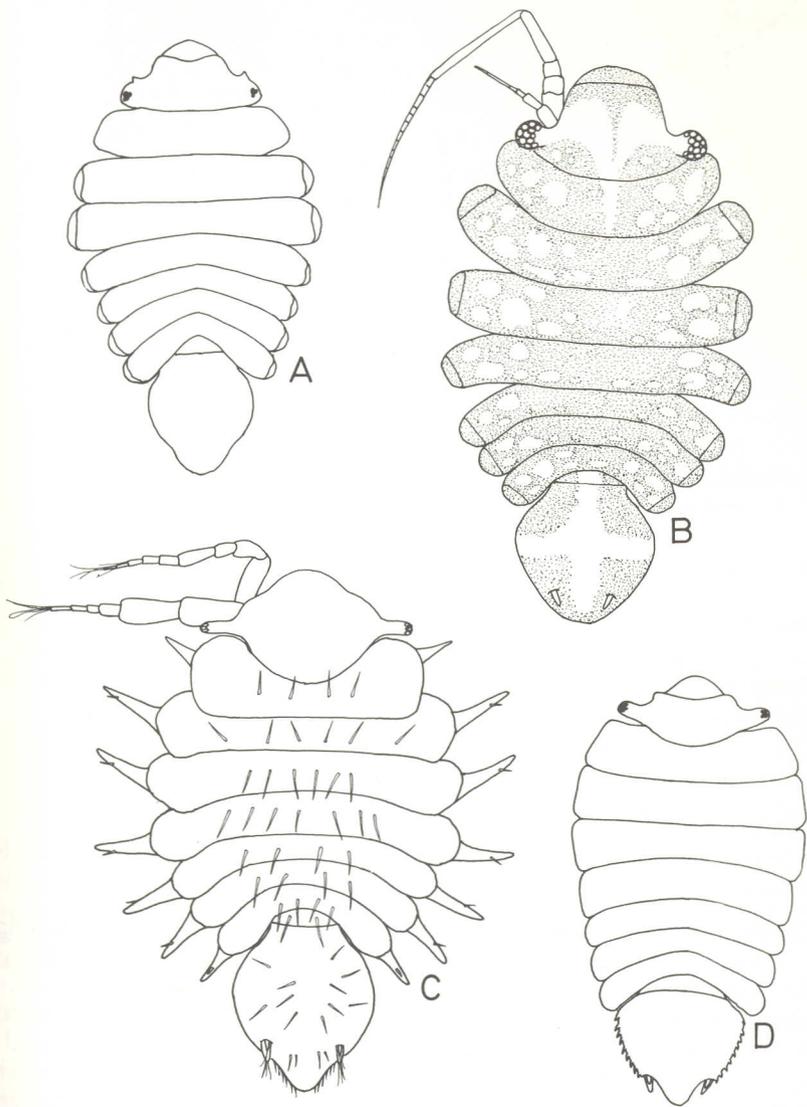


Fig. 63. A. *Munna concavifrons*. B. *M. sheltoni*. C. *Pleurosignum capensis*.
D. *Paramunna capensis*.

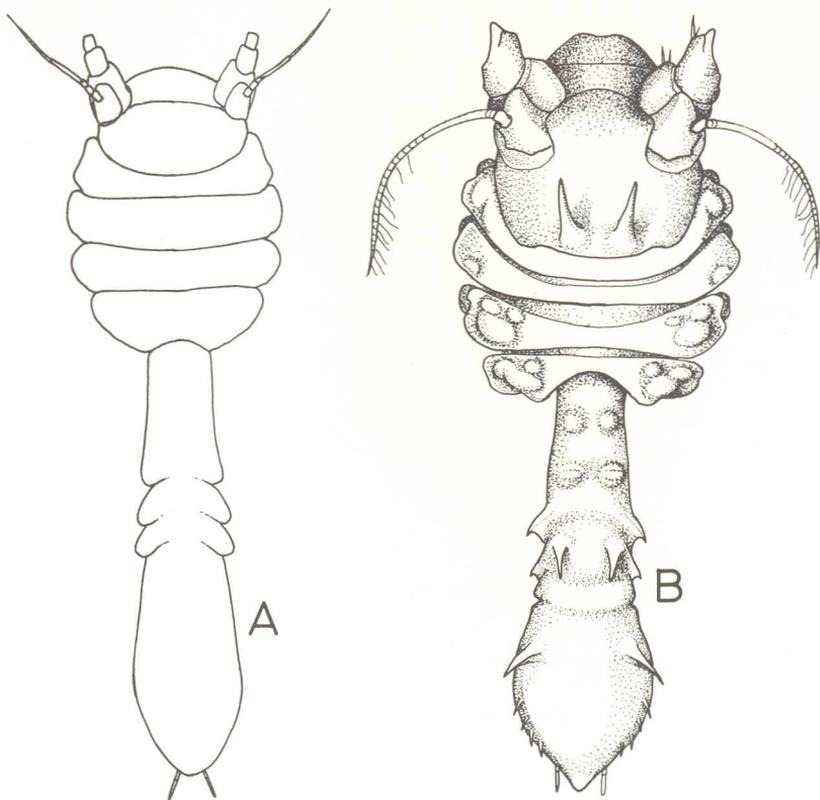


Fig. 64. A. *Munnopsis beddardi*. B. *M. bispinosus*.

Family Stenetriidae

Stenetrium Hansen

Body depressed, elongate, parallel-sided, cephalon broader than long. Eyes usually present. Pleon consisting of two or three segments plus large pleotelson. Pleotelson usually with posterolateral tooth and notch. First segment of antennal base with outer distal corner sometimes produced. Distinct setose scale on outer corner of third antennal segment. Pereopod I subchelate, larger in adult ♂ than in adult ♀, often showing sexual differences. Pleopods 1 and 2 ♂ shorter than pleopod 3 which forms operculum over pleopods 4 and 5. Pleopod 1 ♂ consisting of two short, usually oval, rami on fused basal sympod.

1. Eyes reniform, well pigmented	..	..	..	..	..	2
– Eyes circular, poorly pigmented	..	..	..	..	..	7

- | | |
|---|--------------------|
| 2. Rostrum distally truncate | 3 |
| - Rostrum distally acute or narrowly rounded | 4 |
| 3. Basal antennal segment produced into spinose process
(Fig. 66C-D) | <i>diasi</i> |
| - Basal antennal segment not produced (Fig. 65G-H) .. | <i>dagama</i> |
| 4. Rostrum distally acute | |
| Body markedly setose (Fig. 65E-F) | <i>crassimanus</i> |
| - Rostrum distally narrowly rounded | |
| Body not markedly setose | 5 |
| 5. Rostral margin finely serrulate | |
| Single tooth on palm of propodus of pereopod I ♂ (Fig. 66 E-H) | <i>saldanha</i> |
| - Rostral margin entire | |
| More than one tooth on palm of propodus of pereopod I ♂ | 6 |
| 6. Outer distal angle of basal antennal segment produced into
spinose process | |
| Rostrum as wide as, or slightly wider than long (Fig. 65C-D) | <i>bartholomei</i> |
| - Outer distal angle of basal antennal segment acute but not
produced into spinose process | |
| Rostrum distinctly wider than long (Fig. 66A-B) .. | <i>dalmeida</i> |
| 7. Rostrum narrowly acute | |
| Eye consisting of four ocelli (Fig. 66I-J) | <i>syzygus</i> |
| - Rostrum leaf-shaped, distally rounded | |
| Eye weakly pigmented, ocelli not distinct (Fig. 65A-B) | <i>abyssale</i> |

Stenetrium abyssale Wolff, 1962

Fig. 65A-B

Rostrum longer than wide, distally rounded. Eyes circular, feebly pigmented. Basal segment of antenna not produced. Propodus of pereopod I ♂ about as long as broad, with spine at outer corner of palm, latter straight with hyaline margin and several slender dentate spines. Dactylus with several short, simple spines on inner edge.

♂ 5,8 mm ♀ 5,4 mm.

Off Natal, 680 m; Kermadec Trench and Tasman Sea, 4 540 m.

Stenetrium bartholomei Barnard, 1940

Fig. 65C-D

Rostrum as long as wide, distally narrowly rounded. Eyes reniform, well pigmented. Basal antennal segment produced into spinose process. Propodus of pereopod I ♂ longer than broad, outer angle of palm formed by broad triangular tooth, palm armed with one elongate and three

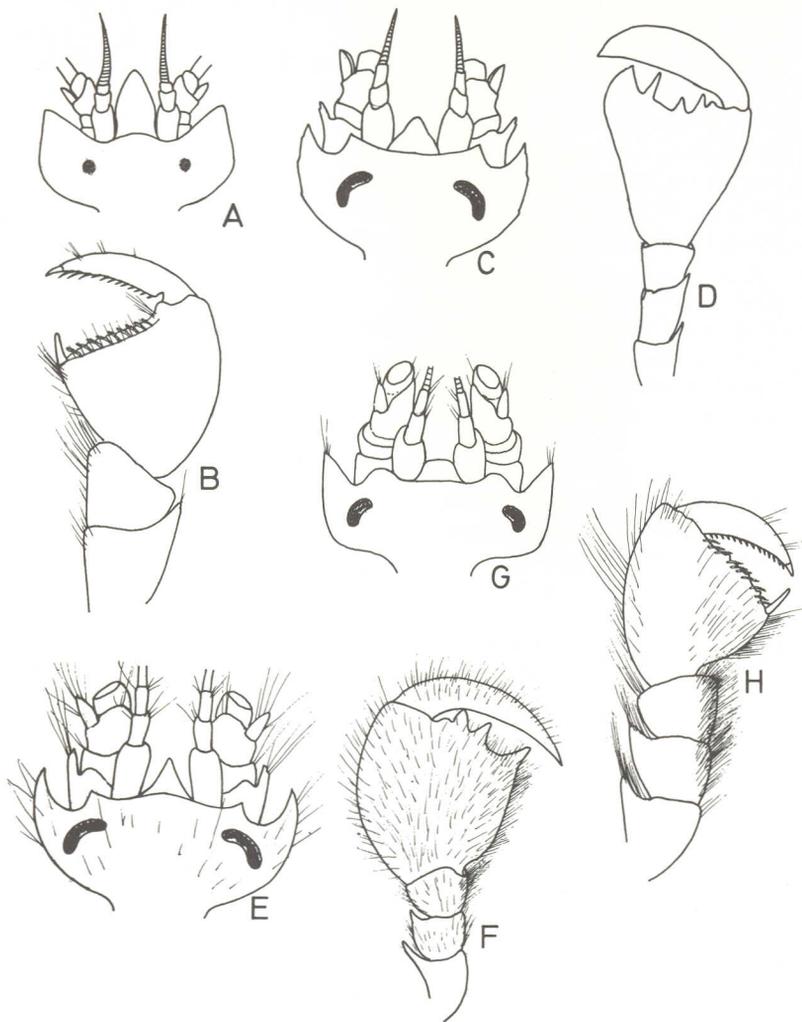


Fig. 65. A. *Stenetrium abyssale*, cephalon. B. *S. abyssale*, pereopod I ♂. C. *S. bartholomei*, cephalon. D. *S. bartholomei*, pereopod I ♂. E. *S. crassimanus*, cephalon. F. *S. crassimanus*, pereopod I ♂. G. *S. dagama*, cephalon. H. *S. dagama*, pereopod I ♂

shorter teeth. Dactylus broad, overreaching IV and V, with backwardly directed point on VI and VII.

♂ 5,5 mm ♀ 6,5 mm.

False Bay to Natal, intertidal to 22 m.

Stenetrium crassimanus Barnard, 1914a

Fig. 65E-F

Rostrum slightly longer than broad, distally acute. Body and pereopod I markedly setose. Eyes reniform, well pigmented. Basal antennal segment with outer distal angle produced into spinose process. Propodus of pereopod I ♂ about as long as wide, with strong tooth at outer angle, two strong teeth at about midpoint. Dactylus extending beyond palm. Ventral keel in ♂ raised into spiniform forwardly-directed process on pereonites I and II, only feebly raised in ♀; on pereonites V to VII in both sexes, posterior apices of keel feebly dentiform.

♂ and ♀ 7,0 mm.

False Bay to Mossel Bay, 27 to 120 m; St Paul and Amsterdam Is.

Stenetrium dagama Barnard, 1920

Fig. 65G-H

Rostrum broader than long, truncate. Eyes reniform, well pigmented. Basal antennal segment not produced into spinose process. Propodus of pereopod I ♂ as broad as long, with strong spine at outer angle, three tiny tubercles and several dentate spines on palm. Dactylus with several short spines on cutting edge. Ventral keel raised and acute on pereonite I, raised and rounded on II to IV, with posterior angles acute on V to VII.

♂ and ♀ 7,5 mm.

Off Table Bay to Mossel Bay, 200 to 460 m; off Natal, 680 m.

Stenetrium dalmeida Barnard, 1920

Fig. 66A-B

Rostrum distinctly broader than long, distally rounded. Eyes reniform, well pigmented. Basal antennal segment with outer distal angle acute but not produced into spinose process. Propodus of pereopod I ♂ with spine at outer angle of palm, and two strong teeth on palm. Dactylus slender, not overreaching palm. Ventral keel on pereonites III and IV forming blunt process, on VII forming backwardly pointed spine, obsolete on other pereonites.

♂ and ♀ 7,5 mm.

Off Cape Point, 270 to 460 m.

Stenetrium diazi Barnard, 1920

Fig. 66C-D

Rostrum broader than long, truncate. Eyes well developed, reniform,

pigmented. Basal antennal segment with outer distal angle produced into spinose process. Propodus of pereopod I ♂ longer than broad, palm bearing two strong teeth at outer corner, and conical tooth at midpoint. Ventral keel on pereonites I to IV low and rounded, with small acute denticle; on pereonites V to VII with posterior angles acutely produced.

♂ 6,0 mm ♀ 5,0 mm.

False Bay to Port Elizabeth, 27 to 80 m.

Stenetrium saldanha Barnard, 1920

Fig. 66E-H

Rostrum longer than broad, margins finely serrulate. Eyes reniform, well pigmented. Basal antennal segment produced into spinose process. Propodus of pereopod I ♂ longer than broad, with strong dentate spine at outer corner, small tooth at midpoint of palm and several dentate spines. Dactylus broad, with several dentate spines on inner edge. Ventral keel on pereonites I to IV high, anterior angles dentiform, posterior angles of pereonites V to VII acute, that of VI prominent and curved backwards.

♂ and ♀ 6,0 mm.

Saldanha Bay to Mossel Bay, 50 to 250 m; St Paul and Amsterdam Is.

Stenetrium syzygus Barnard, 1940

Fig. 66I-J

Rostrum longer than wide, distally acute. Eye consisting of four ocelli, feebly pigmented. Basal antennal segment not produced. Propodus of pereopod I ♂ as broad as long, dentate spine at outer corner of palm, latter straight, bearing several slender dentate spines. Dactylus with several short dentate spines on inner edge. Ventral keel only distinct and pereonites I and II.

♂ and ♀ 6,5 mm.

Still Bay, intertidal.

SUBORDER EPICARIDEA

Key to the families of the Epicaridea

1. Parasitic on shrimps, prawns, crabs and hermit crabs 2
- Parasitic on isopods, ostracodes, cirripedes **Cryptoniscidae** (p. 158)
2. Seven pairs of pereopods present, although except for pereopod I, the pereopods are sometimes suppressed on one side
- Pleopods usually present **Bopyridae** (p. 150)
- Five pairs of pereopods present
- Pleopods absent of rudimentary **Dajidae***

* Not dealt with.

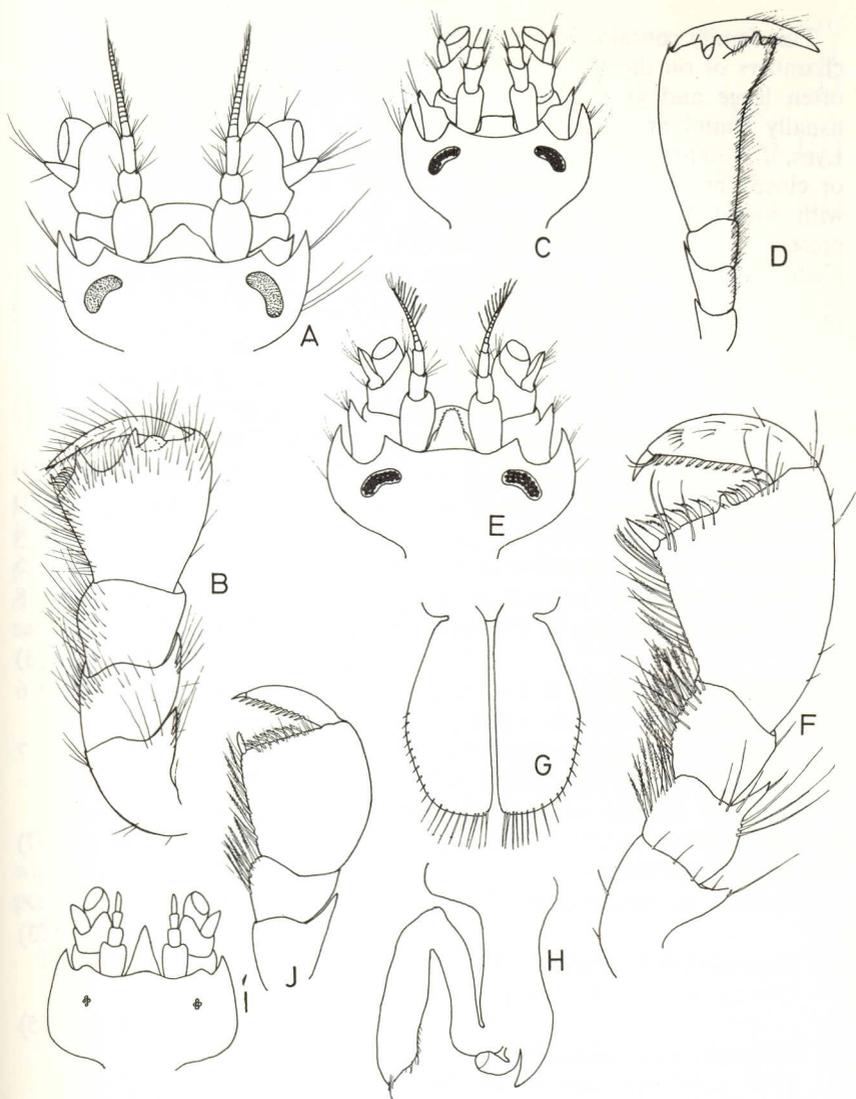


Fig. 66. A. *Stenetrium dalmeida*, cephalon. B. *S. dalmeida*, pereopod I ♂. C. *S. diazi*, cephalon. D. *S. diazi*, pereopod I ♂. E. *S. saldanha*, cephalon. F. *S. saldanha*, pereopod I ♂. G. *S. saldanha*, pleopod 1 ♂. H. *S. saldanha*, pleopod 2 ♂. I. *S. syzygus*, cephalon. J. *S. syzygus*, pereopod I ♂.

Family Bopyridae

This family contains isopods which are parasitic either in the branchial chambers or on the abdomens of decapod crustaceans. The females are often large and asymmetrical. The males are small, symmetrical, and usually found attached to the pleopods or oostegites of the females. Eyes, if present, are small. Five pairs of oostegites in female form an open or closed brood pouch. Coxae are usually demarked on the pereonites, with rounded bosses just median to them. Distinct telson sometimes present, but often fused with pleonites to form a pleotelson. All the pleonites are sometimes fused in the male to form a single segment.

- | | |
|--|--|
| 1. ♀ very asymmetrical, very inflated on one side | 2 |
| - ♀ asymmetrical, but not very inflated on one side | 3 |
| 2. Pleon of ♀ with four pairs of broad lamellar pleurae (Fig. 68C) | |
| <i>Hemiarthrus nematocarcini</i> (p. 155) | |
| - Pleon of ♀ with two pairs of lamellar pleurae (Fig. 68D-E) | |
| <i>Miophrixus latreutidis</i> (p. 155) | |
| 3. Uropods absent in ♀ (Fig. 67 D-E) | |
| <i>Bopyrella hodgarti</i> (p. 153) | |
| - Uropods present in ♀ | 4 |
| 4. Uropods of ♀ biramous | 5 |
| - Uropods of ♀ uniramous | 8 |
| 5. Pleurae of pleonites in ♀ tapering, tuberculate (Fig. 68A-B) | |
| <i>Gigantione sagamiensis</i> (p. 153) | |
| - Pleurae of pleonites in ♀ lamellar, rounded | 6 |
| 6. Five pleonites dorsally visible in ♀ | |
| Anterior margin of cephalon in ♀ broadly lamellar | 7 |
| - Six pleonites dorsally visible in ♀ | |
| Anterior margin of cephalon in ♀ not broad or lamellar
(Fig. 69H-I) | <i>Paragigantione papillosa</i> (p. 157) |
| 7. Pleonites in ♂ fused | |
| Pleurae of pleonites in ♀ tuberculate (Fig. 67F-H) | |
| <i>Epipenaeon</i> (p. 153) | |
| - Pleonites of ♂ separate | |
| Pleurae of pleonites in ♀ not tuberculate (Fig. 68F-G) | |
| <i>Nikione natalensis</i> (p. 155) | |
| 8. Pleon elongate, markedly narrower than pereon | |
| Four pairs biramous pedunculate appendages on pleon of ♀
(Fig. 67C) | <i>Athelges caudalis</i> (p. 151) |
| - Pleon not markedly elongate or narrower than pereon in ♀ | |
| More than four pairs of pleonal appendages | 9 |
| 9. ♀ with middorsal pereonal processes | |
| Pleurae of pleonites elongate, tapering, tuberculate
(Fig. 69F-G) | <i>Scyracepon levis</i> (p. 157) |

9. ♀ lacking middorsal pereonal processes
 Pleurae of pleonites not usually tuberculate 10
10. Coxae reduced in ♀ 11
 - Coxae in ♀ not markedly reduced 12
11. Cephalon in ♀ longer than broad, oral cone dorsally visible
 (Fig. 67A) *Anathelges mossambica* (p. 151)
 - Cephalon in ♀ broader than long, oral cone not dorsally visible
 (Fig. 67B) *Argeiopsis inhacae* (p. 151)
12. Pleurae of pleon usually elongate, apically acute in ♀
 (Fig. 69A, B, C) *Pseudione* (p. 157)
 - Pleurae of anterior pleonites rounded, not elongate
 (Fig. 69D, E) *Palaegyge plesionikae* (p. 155)

Anathelges Bonnier

Anathelges mossambica Barnard, 1958

Fig. 67A

♀ cephalon longer than wide, oral cone dorsally visible. Pleopods broad, semicircular. Anterior pleopods biramous, pleopod 5 uniramous. Uropods lamellar, similar to pleopods, non-pedunculate. Pleura of pleonite 1 semicircular, forming posterior margin of brood pouch. ♂ pleonites fused, elongate/triangular, with slight basal projection on each side.

♀ 12,0 mm ♂ 2,3 mm.

Delagoa Bay, from hermit crab.

Argeiopsis Kensley

Argeiopsis inhacae Kensley, 1974

Fig. 67B

♀ cephalon broader than long. No anterior lamina, posterior lamina with two pairs of hook-like processes. Pleon of six pleonites. Coxae of pereon reduced. Pleopods biramous, lamellar.

♀ 6,0 mm.

Inhaca Island, Mozambique, from shrimp *Stenopus hispidus*.

Athelges Gerstaecker

Athelges caudalis Barnard, 1955

Fig. 67C

♀ first pair of oostegites projecting beyond cephalon. Pleonites distinct, each with biramous lamellar pleopods. Pleotelson relatively elongate, with two terminal semicircular uropods.

♂ pleonites fused.

♀ 9,0 mm ♂ 1,3 mm.

Mozambique, intertidal; on hermit crab *Diogenes senex*.

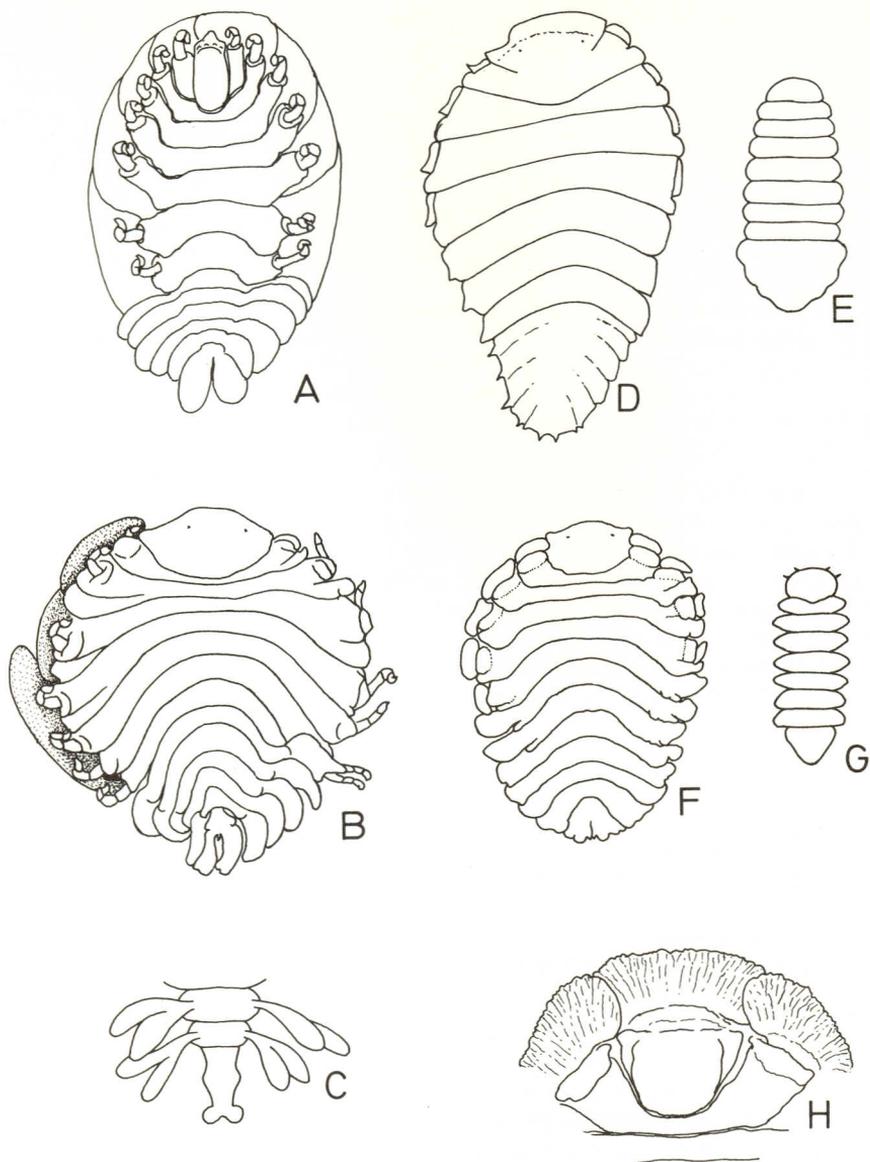


Fig. 67. A. *Anathelges mossambica* ♀. B. *Argeiopsis inhacae* ♀. C. *Athelges caudalis*, pleon ♀ (from Barnard 1955). D. *Bopyrella hodgarti* ♀. E. *B. hodgarti* ♂. F. *Epipenaeon fissurae* ♀. G. *E. fissurae* ♂. H. *E. japonicum*, cephalon and pereonite I ♀.

Bopyrella Bonnier 1908
Bopyrella hodgarti Chopra, 1923

Fig. 67D-E

♀ coxae on left side acute. Pleonites fused, with acute marginal points. Uropods absent.

♂ pleonites fused, pleon proximally wider than pereon.

♀ 7,0 mm ♂ 1,6 mm.

Natal and Mozambique, 200 m; from cracker shrimps, *Alpheus* spp.

Epipenaeon Nobili

♀ anterior lamina of cephalon well developed. Coxae well developed. Pleopods and uropods biramous.

♂ pleon triangular, pleonites fused.

1. Anterior lamina of cephalon, and coxae frilly, margins crenulate (Fig. 67H) *japonicum*
- Anterior lamina of cephalon and coxae in ♀ broad, but not frilly or crenulate (Fig. 67F-G) *fissurae*

Epipenaeon fissurae Kensley, 1974

Fig. 67F-G

♀ anterior lamina well developed. Coxae well developed on anterior five pleonites.

♂ pleon of single segment, triangular.

♀ 10,4 mm ♂ 3,0 mm.

Off Natal, 70 m; on penaeid prawn *Parapenaeus fissuris*.

Epipenaeon japonicum Thielmann, 1910

Fig. 67H

♀ anterior lamina of cephalon, and coxae irregularly crenulate. Pleonite 6 obsolete in dorsal view.

♀ 16,0 mm ♂ 4,3 mm.

Delagoa Bay, on penaeid prawn *Penaeopsis monoceros*; Japan.

Gigantione Kossman

Gigantione sagamiensis Shiino, 1958

Fig. 68A-B

♀ body strongly asymmetrical. Cephalon as long as wide, lacking lamina. Coxae well developed, lamellar. Pleon of six segments, lateral plates well developed, tuberculate on one side, smaller and smooth on other. Last pleonite distally truncate, lacking pleura. Pleopods biramous; uropods biramous.

♂ pleon of six free segments.

♀ 5,0 mm ♂ 1,8 mm.

Off Mozambique, 42 m; from xanthid crab *Paratergatis longimanus*.

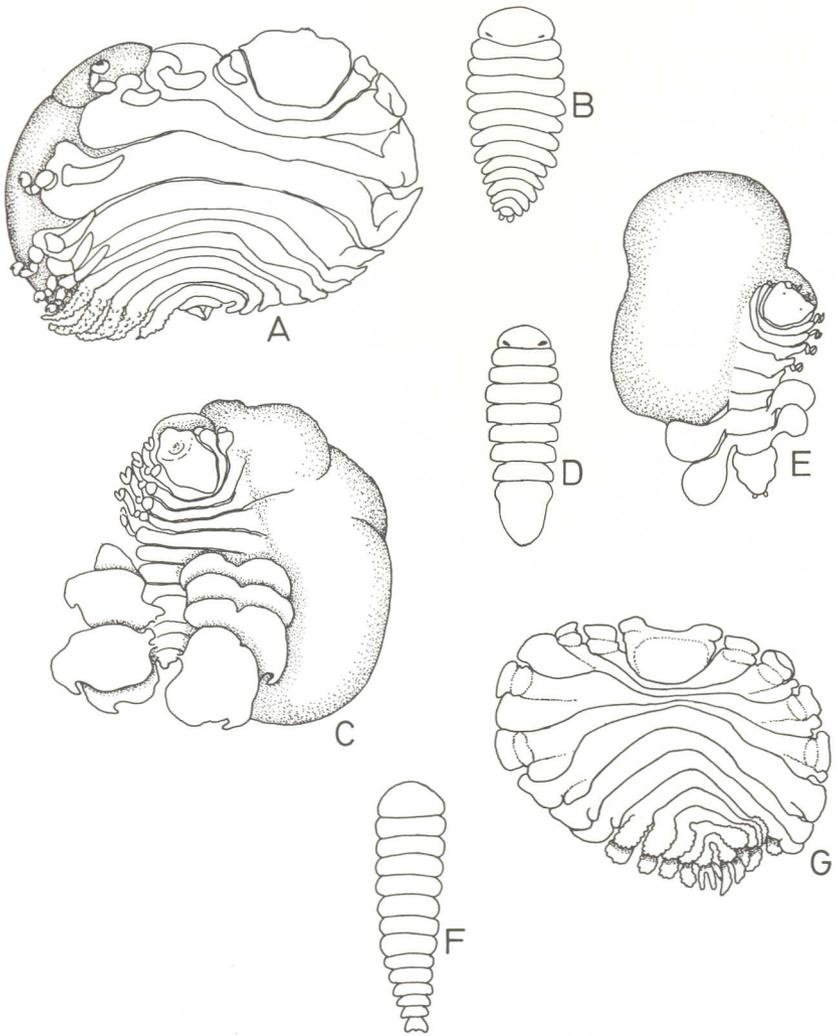


Fig. 68. A. *Gigantione sagamiensis* ♀. B. *G. sagamiensis* ♂. C. *Hemiarthrus nemato-carcini* ♀. D. *Miophrixus latreutidis* ♂. E. *M. latreutidis* ♀. F. *Nikione natalensis* ♂. G. *N. natalensis* ♀.

Hemiarthrus Giard & Bonnier
Hemiarthrus nematocarcini Stebbing, 1914

Fig. 68C

♀ body strongly asymmetrical, one side very inflated. Only pereopod I present on inflated side. Pleon of four pleonites plus pleotelson; pleurae very broad, lamellar. Pleon subacute, entire.

♀ 13,0 mm ♂ 5,0 mm.

Off Cape Peninsula, 1 800 m; on the shrimp *Nematocarcinus longirostris*.

Miophrixus Barnard
Miophrixus latreutidis Barnard, 1955

Fig. 68D-E

♀ with one side of body strongly inflated, with only pereopods I and II present, seven pereopods on non-inflated side. Pleon three-segmented; pleonites 1 and 2 each with pair of bilobed lamellae, larger dorsal lamella hiding ventral lamella; rest of pleon consisting of fused segment. Uropods short, rounded.

♂ pleonites fused. Eyes distinct.

♀ 3,5 mm ♂ 0,75 mm.

Mozambique, intertidal; on shrimp *Latreutes pygmaeus*.

Nikione Kensley
Nikione natalensis Kensley, 1974

Fig. 68F-G

♀ strongly asymmetrical. Cephalon broader than long. Anterior lamina well developed, posterior lamina with two pairs of lateral and one pair of median processes. Coxae lamellar. Pleopods biramous; uropods biramous. Pleon of five segments.

♂ five free pleonites.

♀ 4,0 mm ♂ 1,1 mm.

Off Natal, 43 m; from the shrimp *Nikoides danae*.

Palaegyge Giard & Bonnier
Palaegyge plesionikae Barnard, 1920

Fig. 69D-E

♀ cephalon wider than long. Anterior four pereonites laterally bilobed. Coxae well defined. Pleon of six segments, pleurae entire, not concealing pleopods. Pleopods increasing in length posteriorly, exopods longer than endopods. Uropods uniramous, tapering, apically blunt.

♂ pleonites separate, sixth segment triangular.

♀ 15,0 mm ♂ 4,0 mm.

Off Cape Peninsula, 940 m; on shrimp *Plesionika martia*.

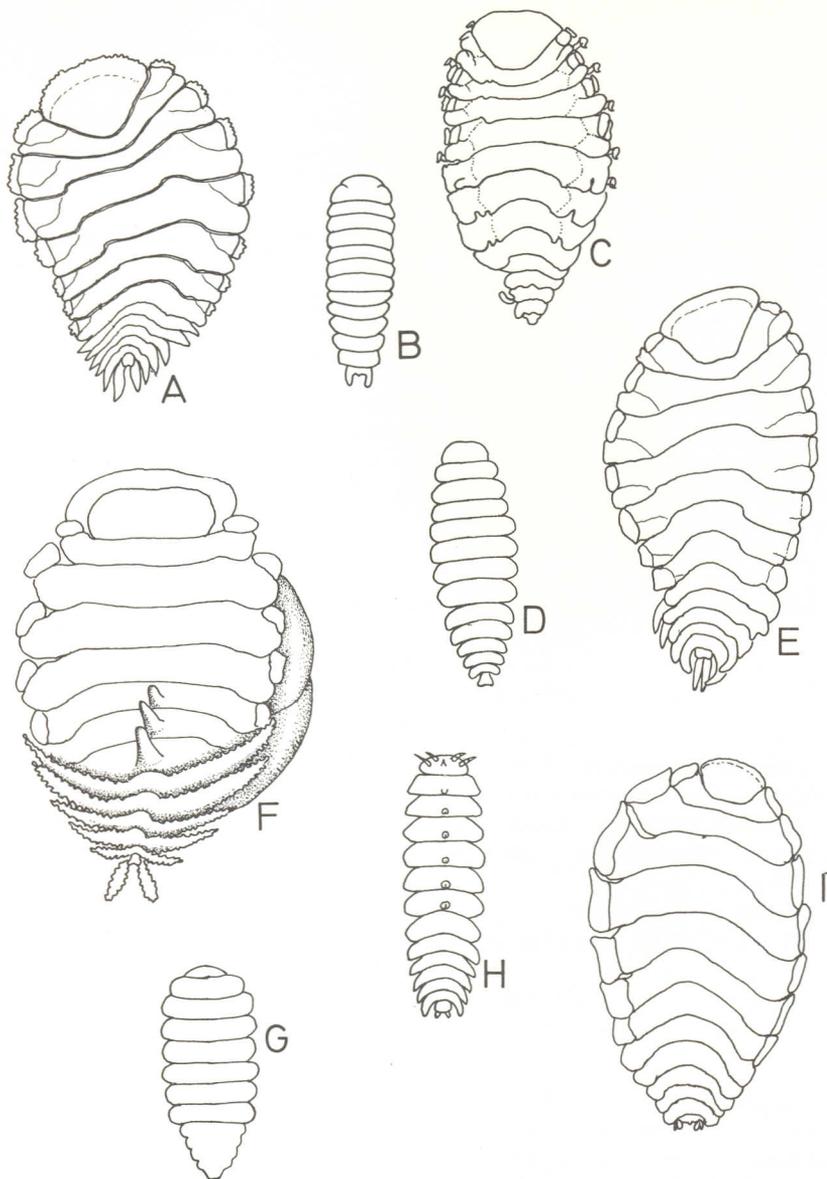


Fig. 69. A. *Pseudione crenulata* ♀. B. *P. elongata africana* ♂. C. *P. elongata africana* ♀. D. *Palaegyge plesionikae* ♂. E. *P. plesionikae* ♀. F. *Scyracepon levis* ♀. G. *S. levis* ♂. H. *Paragigantione papillosa* ♂. I. *P. papillosa* ♀.

Paragigantione Barnard
Paragigantione papillosa Barnard, 1920

Fig. 69H-I

♀ cephalon broader than long, anterior margin convex. Coxae well defined; pleon of six segments, pleurae lamellar, rounded. Pleopods biramous, endopod larger than exopod; uropods biramous, ovate, subequal.

♂ pleonites separate. Midventral papilla present on pereonites I to VI.

♀ 7,5 mm ♂ 3,0 mm.

Off East London, 600 m; on the anomuran *Munida sanctipauli*.

Pseudione Kossman

♀ body oval or pyriform, asymmetrical. Cephalon with distinct anterior margin. Pereonites laterally bilobed. Coxae well defined. Pleurae of pleonites lamellar. Pleopods biramous, rami lanceolate. Uropods usually lanceolate.

♂ pleonites free, distinct.

1. Anterior margin of cephalon and coxae irregularly crenulate (Fig. 69A) *crenulata*
- Anterior margin of cephalon and coxae entire (Fig. 69B-C) *elongata africana*

Pseudione crenulata Sars, 1898

Fig. 69A

Anterior margin of cephalon, and coxae irregularly crenulate. Pleopods biramous, lanceolate, rami subequal. Uropods lanceolate, apically acute.

♀ 9,0 mm ♂ 4,0 mm.

East London and Natal, 600 m; on the anomurans *Galathea dispersa* and *Munida sanctipauli*.

Pseudione elongata africana Kensley, 1968

Fig. 69B-C

♀ cephalon sunken in to pereonite I. Coxae well developed. Pleotelson and uropods rather reduced.

♀ 15,2 mm ♂ 5,5 mm.

Off Cape Peninsula; from shrimp *Nematocarcinus longirostris*.

Scyracepon Tattersall

Scyracepon levis Barnard, 1940

Fig. 69F-G

♀ broadly oval. Pereonites with middorsal boss becoming elongate posteriorly. Anterior five pleurae of pleonites elongate, digitiform, crenulate, decreasing in length posteriorly. Pleopods biramous, outer rami

elongate, crenulate, inner rami short and ovate. Uropods uniramous, elongate.

♂ pleonites fused, pleon triangular. Pereonites each with midventral boss.

♀ 9,0 mm ♂ 3,5 mm.

Off Table Bay and Cape Point; from crab *Scyramathia hertwigi*.

Family **Cryptoniscidae**

Aegoniscus Barnard

Aegoniscus gigas Barnard, 1924

Fig. 70

♀ body ovoid, lateral portions consisting of six large bilobed ovigerous lobes, extending almost from middorsal line to midventral line, covering six pairs of ventral valvular lamellae. No caudal projections present.

23,0 mm.

Off Cape Point, 360 m; parasitic on the isopod *Aega semicarinata*.

Barnard (1940) mentions the following cryptoniscids, but as neither material nor figures of these are available, they are not dealt with in this work:

Clypeoniscus stenetrii parasitic on isopods

Cyproniscus crossophori parasitic on ostracodes

Liriopsis sp. parasitic on parasitic cirripedes of hermit crabs

SUBORDER ONISCOIDEA

As the number of these usually terrestrial forms occurring on beaches in South Africa is small, the following superficial key ignores the various families involved and runs straight to the genera and species. The nine

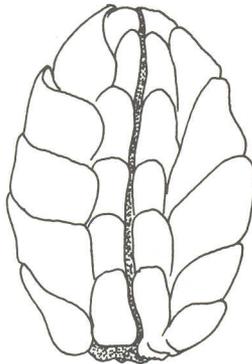


Fig. 70. *Aegoniscus gigas* ♀ (from Barnard 1924).

species dealt with occur regularly on beaches. Other forms which are occasionally found in an estuarine or lagoonal environment, e.g. *Niambia* spp., are not covered.

- | | | |
|---|---------|--|
| 1. Uropods ventral, opercular (Fig. 71F-H) | .. | <i>Tylos</i> (p. 162) |
| - Uropods terminal, dorsally visible, not opercular | .. .. | 2 |
| 2. Uropodal peduncle extending well beyond pleotelsonic apex (Fig. 71C-D) | .. .. . | <i>Ligia</i> (p. 161) |
| - Uropodal peduncle hardly extending beyond pleotelsonic apex | | 3 |
| 3. Anterior margin of cephalon with oval spatulate lobe (Fig. 71E) | | <i>Marioniscus spatulifrons</i> (p. 161) |
| - Anterior margin of cephalon not produced into spatulate lobe | | 4 |
| 4. Cephalon and pereon with short (♀) or long (♂) tubercles (Fig. 71B) | .. .. . | <i>Deto echinata</i> (p. 159) |
| - Cephalon and pereon lacking tubercles (Fig. 71A) | | <i>Alloniscus marinus</i> (p. 159) |

Family Oniscidae

Alloniscus Dana

Alloniscus marinus Collinge, 1920

Fig. 71A

Body ovate. Frontal margin of cephalon convex. Coxae indistinctly demarked, with black pigment spot at fusion with pereonite. Pleura of pleonite 5 reaching to level of pleotelsonic apex. Pleotelson broader than long, triangular.

12,0 mm.

Port St Johns to Natal, intertidal and supratidal.

Alloniscus pigmentatus Budde-Lund has been recorded from Mozambique.

Family Detonidae

Deto Guérin-Meneville

Deto echinata Guérin, 1836a

Fig. 71B

Cephalon with two pairs short tubercles. Pereonites each with single pair of tubercles, elongate and curved in ♂, short in ♀. Pleon lacking tubercles in South African form, but present in the St Paul and Amsterdam Is. population.

30,0 mm.

Northern South West Africa to Knysna, St Paul and Amsterdam Is., intertidal, on and under rocks and stones.

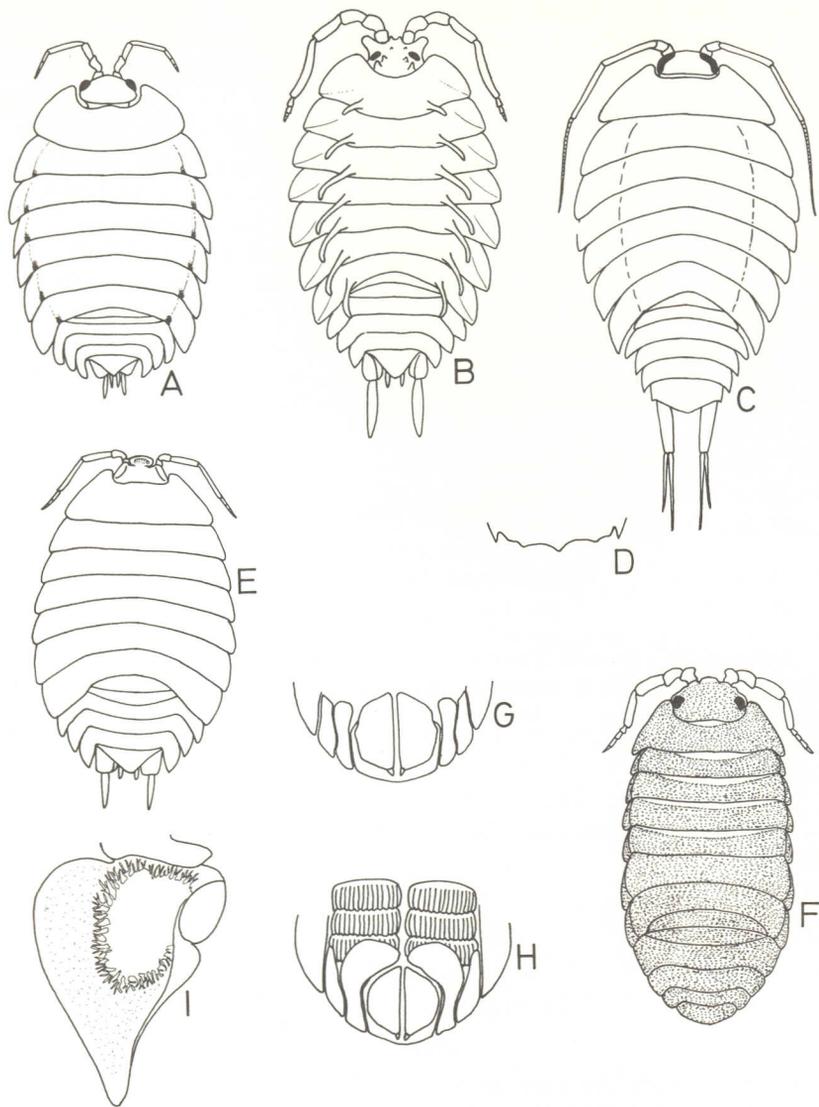


Fig. 71. A. *Alloniscus marinus*. B. *Deto echinata*. C. *Ligia dilatata*. D. *L. exotica*, distal margin of pleotelson. E. *Marioniscus spatulifrons*. F. *Tylos granulatus*. G. *T. capensis*, ventral view of distal pleon. H. *T. granulatus*, ventral view of distal pleon. I. Typical oniscoid pleopod, with pseudotrachea for terrestrial breathing.

Family **Ligiidae**

Ligia Fabricius

Eyes large. Antennule three-segmented. Flagellum of antenna multi-articulate. Pleotelson with distolateral corners angular, sometimes produced. Penis consisting of two separate rami. Pleopod 2 ♂ with elongate stylet. Uropods fully exposed, rami arising together.

These beach lice are to be found in large numbers on and under rocks at the high-water mark.

- | | | | |
|--|----|----|-------------------|
| 1. Pleotelson evenly convex between uropodal bases | .. | .. | 2 |
| - Pleotelson with median point (Fig. 71D) | .. | .. | <i>exotica</i> |
| 2. Body broadly oval | | | |
| Stylet of pleopod 2 ♂ apically acute (Fig. 71C) | .. | | <i>dilatata</i> |
| - Body elongate-oval | | | |
| Stylet of pleopod 2 ♂ apically spatulate | .. | .. | 3 |
| 3. Antenna reaching backwards to end of pereon | .. | | <i>glabrata</i> |
| - Antenna reaching backwards to end of pleon | .. | .. | <i>natalensis</i> |

Ligia dilatata Brandt, 1833

Fig. 71C

22,0 mm.

Lüderitz to Hermanus.

Ligia exotica Roux, 1828

Fig. 71D

30,0 mm.

Natal and Mozambique.

Ligia glabrata Brandt, 1833

18,00 mm.

Lüderitz to Cape Peninsula.

Ligia natalensis Collinge, 1920

12,0 mm.

Knysna to Natal.

Family **Oniscidae**

Marioniscus Barnard

Marioniscus spatulifrons Barnard, 1932

Fig. 71E

Body very depressed. Integument minutely granulate. Cephalon with lateral ridge over eye, frontal margin on ovate dorsally hollowed lobe. Antenna reaching to end of pereonite II.

16,0 mm.

Hout Bay and Dyers Island.

Often found under stones with *Deto echinata*.

Family Tylidae

Tylos Latreille

Body strongly convex, able to roll into ball. Cephalon with raised shield-like frontal lamina. Coxae demarked on pereonites II to VII. Pleotelson short and broad. Pleopod 1 rudimentary. Uropodal peduncles ventral, opercular, terminal ramus minute.

These omnivorous isopods inhabit sandy beaches around the high tide mark. They remain buried up to 40 cm below the sand during the day, and emerge to feed at night.

1. Body dorsally granulate

Ventral processes of pleonite 5 meeting in midline (Fig. 71F, H)

granulatus

– Body dorsally smooth

Ventral processes of pleonite 5 not meeting in midline (Fig. 71G)

capensis

Tylos capensis Krauss, 1843

Fig. 71G

34,0 mm.

False Bay to Port Elizabeth.

Tylos granulatus Krauss, 1843

Fig. 71F, H

50,0 mm.

Northern South West Africa to Port Elizabeth.

ACKNOWLEDGEMENTS

My sincere thanks are due to Dr G. Branch, Mrs J. Day, Dr J. G. Field, and Dr C. Griffiths, all of the Department of Zoology, University of Cape Town, who read the manuscript and made many useful criticisms and suggestions. My thanks are also due to Mrs Cora Coetzee for the cover design, Mr R. Downes for some of the Cymothoid figures, Mr V. Branco for assistance with lettering, Mrs P. Eedes who typed the manuscript and Mrs I. Rudner who prepared the manuscript for press.

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APPENDIX

Family **Bathynataliidae**

Bathynatalia Barnard

Bathynatalia gilchristi Barnard, 1957

Fig. 72

Integument indurate, finely tuberculate. Cephalon anterolaterally expanded, fused medially with pereonite I. Pereonites II to VII free with articulating coxae. Pleon of five pleonites, only 2 and 3 with lateral extensions. Mandible lacking molar process; lacinia present only on right side. Maxilliped with 3-segmented palp, broad endite, triangular exopod.

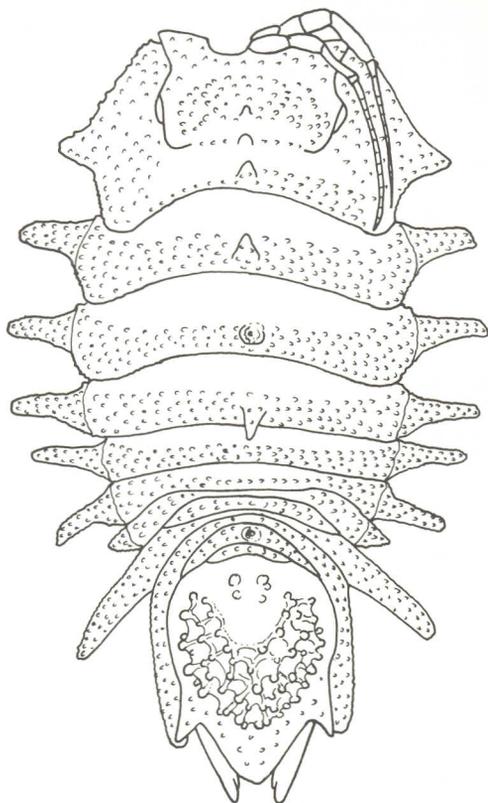


Fig. 72. *Bathynatalia gilchristi*.

Pereopod I subchelate, remaining pereopods ambulatory. Pleopod 1 indurate, operculate. Uropod consisting of single segment.
6,9 mm.

Off Natal, 850–880 m.

This species represents the only endemic marine isopod family in the waters round southern Africa. Its taxonomic position is still unclear, but is probably related to the Serolidae. (See Kensley 1978.)

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