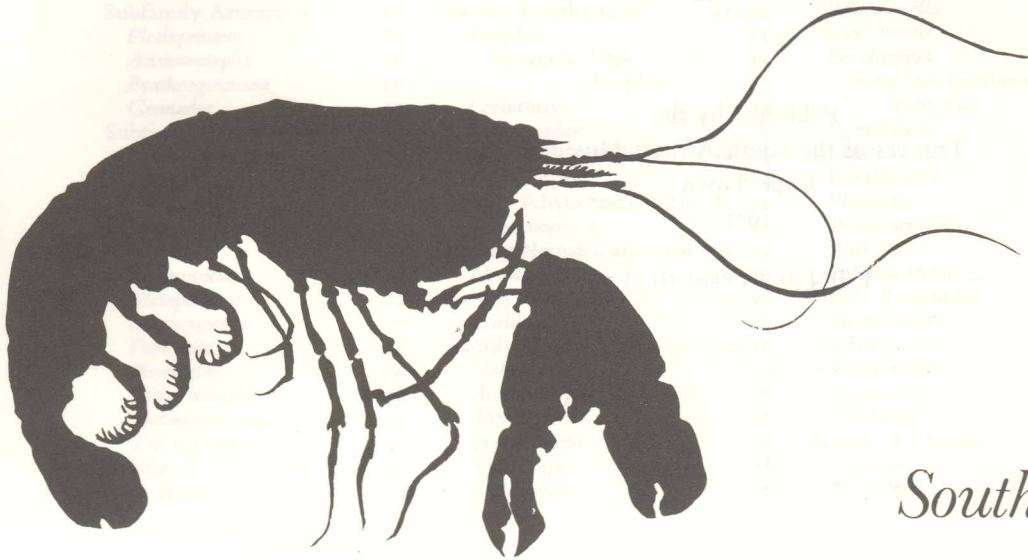
Shrimps & Prawns of Southern Africa

Brian Kensley



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Contents

The terms 'shrimp' and 'prawn' do not reflect any zoological division, prawns being merely large shrimps. The group Natantia, i.e. the swimming forms of the decapod Crustacea may, however, be divided into three sections, the Penaeids, the Carids, and the Stenopodids. All are characterized by the possession of a carapace fused dorsally to the thorax, five pairs of walking legs (pereiopods) and a well-developed abdomen, which together with its appendages, the five pairs of pleopods or swimmerets and the tail fan, forms the main swimming organ. In this the shrimps and prawns differ from the crayfish and lobsters, which usually crawl on the bottom and can only swim backwards for short distances.

Eggs are produced in all the forms; in the carids and stenopodids, these are attached to the pleopods of the female, where they undergo development. In the penaeids the eggs are released into the surrounding water. The penaeids are further distinguished from the other groups in the male possessing a plate-like and often complicated copulatory organ, the petasma. The two halves of this organ are outgrowths of the first pair of pleopods, and are usually joined in the midline by a row of hooklets.

The Natantia are strictly confined to water. The vast majority are found in the sea, where they fill numerous ecological niches. Many forms are planktonic during their larval stages, but the tiny and delicate *Lucifer* of the Penaeidea remains planktonic when adult. A great many species are bathypelagic, inhabiting the middle and deep water masses. These forms are characteristically coloured a bright red, or are wholly or partially transparent, and often possess some form of light organ, either photophores or modified gastro-hepatic glands. Some forms such as the penaeid *Solenocera* and the carid *Nematocarcinus* are bottom dwelling, while a great many inhabit the shallower regions of the sea. The edible prawns of the genus *Penaeus* are usually taken in relatively shallow waters, the developing forms often entering estuaries and lagoons to feed. The intertidal region has numerous examples of the shrimps, many being found in sea-weeds, and often taking on the

colour of their surroundings, e.g. *Hippolyte*. Several forms, especially amongst the pontoniids, have entered into a commensal relationship with other invertebrates such as corals, sponges, sea anemones, and clams, while amongst the alpheids, some species live with gobiid fish. Some forms such as the very common sand shrimp *Palaemon pacificus* are tolerant of varying salinities, and may be found in truly marine habitats, as well as in estuaries. True fresh-water forms are found amongst two families, the Atyidae and the Palaemonidae, the latter including the large river prawns.

Amongst the penaeids, several forms are of commercial importance, being used as food and occasionally as fishing bait. In southern Africa, the genus *Penaeus* is of greatest importance, while *Hymenopenaeus*, *Plesiopenaeus*, and *Trachypenaeus* are of lesser importance.

As far as possible, the keys and their accompanying figures have been drawn from actual specimens. Many of the terms used are explained in figures 2 and 14 of a generalized carid and penaeid prawn. Records of the species have been taken from several sources, the most important being Barnard, 1950 (*Annals of the South African Museum*, vol. 38). As with most keys, the present one does not make provision for new species or records, and this must be borne in mind when the keys are used. Animals included have been taken in the South African region, i.e. south of the Kunene River mouth (17.15S., 11.45E.) on the west, and south of Inhambane, Moçambique (23.51S., 35.29E.) on the east.

Where a key character ends with a generic name only, and no specific name, this indicates that the genus contains more than one species in the southern African region, and that a key to the species is provided. If a genus contains a single species, this specific name is given with the generic name, e.g. *Macropetasma africana*.

Where either a character in the key, or a specific name is followed by a digit and letter in parentheses, these refer to illustrations, e.g. *Hippolyte palliola* (29K, L) refers to figure 29.

My sincere thanks are due to Mrs C. Coetzee for assistance with the lay-out of this work, and for executing the cover and full-page illustrations.

Key to the divisions of the Macrura Natantia

1. 3rd pair of pereiopods chelate
   Pleurae of 2nd abdominal segment not overlapping those of 1st and 3rd
   Abdomen lacking sharp bend or hump 2
— 3rd pair of pereiopod non-chelate
   Pleurae of 2nd abdominal segment overlapping 1st and 3rd
   Abdomen usually with bend or hump .. .. .. *caridea* (14)
2. One or both of 3rd pereiopods larger than 1st and 2nd pair
   Male lacking petasma
   Eggs carried by female .. .. *stenopodidea* (1)
— 3rd pereiopods not larger than 1st or 2nd pair
   Petasma present in male
   Eggs not carried by female .. .. *penaeidea* (2)

Division STENOPODIDEA

Family STENOPODIDAE

Genus STENOPUS

1. Carapace and abdomen spinose, carpi of 4th and 5th pereiopods multiarticulate .. .. *hispidus* (1)

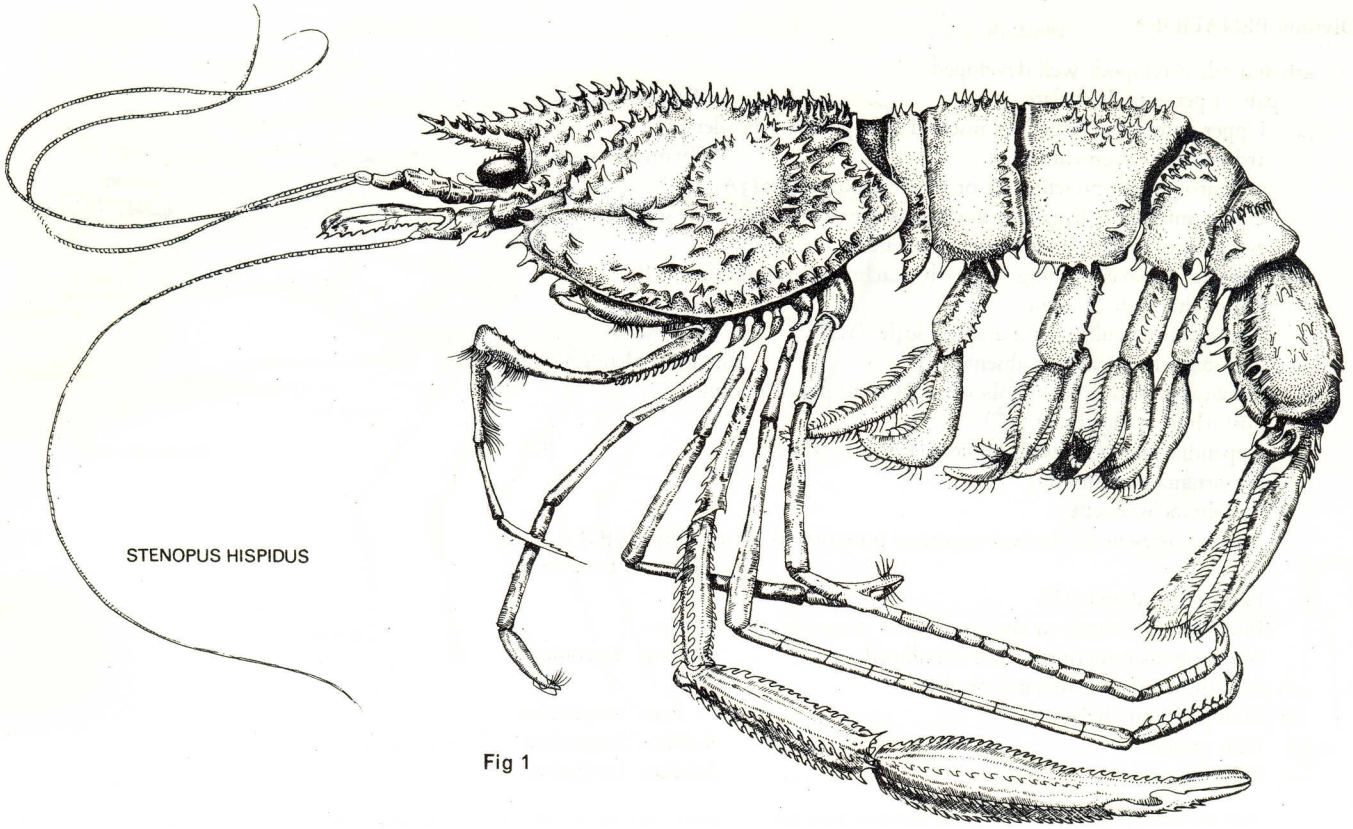


Fig 1

Division PENAEIDEA

1. 4th and 5th pereiopods well developed
   1st pair of pereiopods chelate .. .. Fam. Penaeidae
   (*a*) Upper antennular flagellum inserted near posterior border of 3rd peduncle segment (3A) .. .. Subfam. Aristaeinae
   7 pleurobranchs present, one or more podobranchs (3A)
   — Upper antennular flagellum inserted at apex of 3rd peduncle segment (B)
   2–6 pleurobranchs, podobranchs present or absent
   (*b*) Cervical groove reaching or nearly reaching dorsal midline (3B)
   Postorbital spine present
   Appendix masculina with 2 apical scales (3G)
   Podobranchs present or absent .. .. .. Subfam. Solenocerinae
   — Cervical groove reaching about halfway to dorsal midline (3C)
   Postorbital spine absent (3C)
   Appendix masculina with single apical scale (3F) .. .. .. (C)
   (*c*) Prosartema present (3D)
   Podobranchs absent
   Exopods present on thoracic segments posterior to 1st maxilliped (3C)
   Subfam. Penaeinae
   — Prosartema absent (3E)
   Podobranch present on 2nd maxilliped
   No exopods posterior to 2nd maxilliped .. Subfam. Sicyoninae
— 4th and 5th pereiopods reduced or absent
   1st pereiopod non-chelate .. .. Fam. Sergestidae
   (*a*) Gills present .. .. Subfam. Sergestinae
   — Gills absent .. .. Subfam. Luciferinae

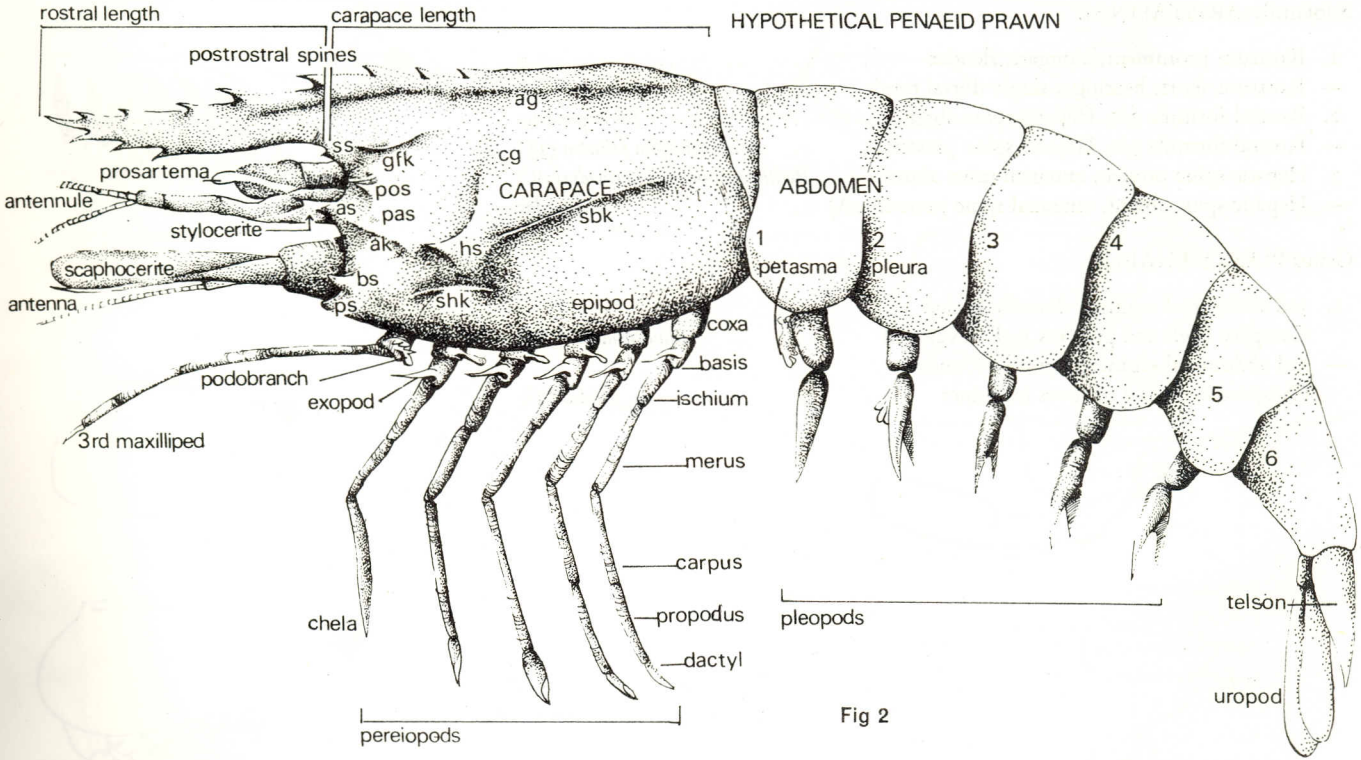


Fig 2

Abbreviations used

ag adrostral groove
ak antennal keel
as antennal spine
bs branchiostegal spine
cg cervical groove
gfk gastro-frontal keel
hk hepatic keel
pas post-antennal spine
pos post-orbital spine
ps pterygostomial spine
sbk supra-branchial keel
shk sub-hepatic keel
ss supra-orbital spine

Subfamily ARISTAEINAE

1. Rostrum prominent, elongate, slender 2
— Rostrum short, bearing a single dorsal tooth 3
2. Rostral formula 3/0. Hepatic spine absent .. .. *Plesiopenaeus*
— Rostral formula 9/0. Hepatic spine present .. .. *Aristeomorpha foliacea* (3J)
3. Hepatic spine present, antennal spine absent *Bentheogennema intermedia* (3K)
— Hepatic spine absent, antennal spine present (4A) .. .. .. *Gennadas*

Genus PLESIOPENAEUS

1. 3rd abdominal segment dorsally keeled
   Carapace keels and grooves well developed .. .. *edwardsianus* (3H)
— 3rd abdominal segment dorsally rounded
   Carapace keels and grooves indistinct .. .. *nitidus* (3I)

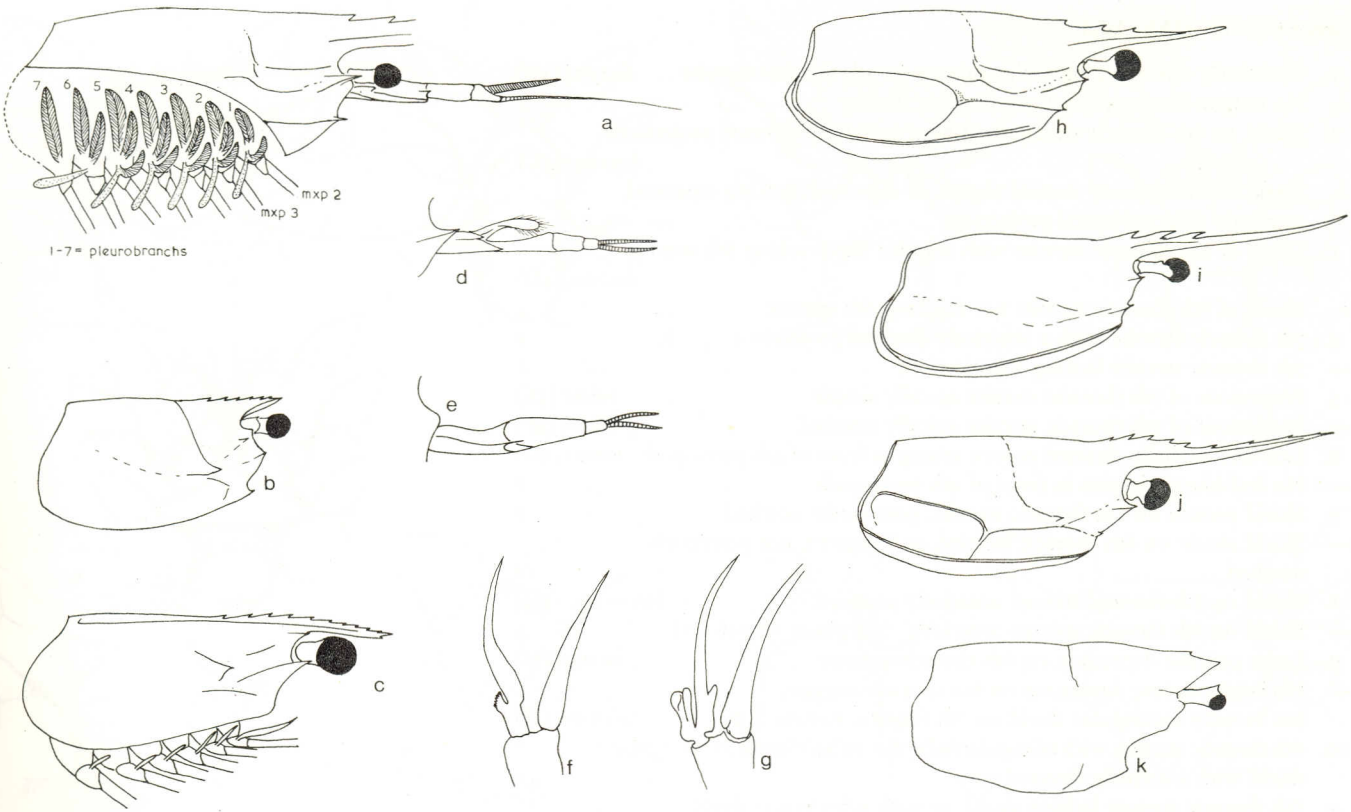
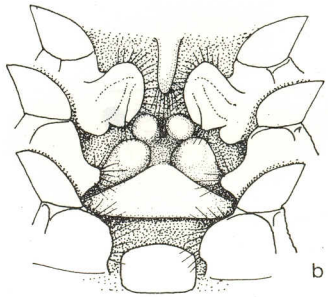


Fig 3

Genus GENNADAS (Adult Females)

1. Posteriorly directed tongue-like process on 5th thoracic sternite .. *tinayrei* (4B)
— No tongue-like process on 5th thoracic sternite 2
2. Shield on 8th thoracic sternite bearing 2 anteriorly directed projections *bouvieri* (4C)
— Shield on 8th thoracic sternite absent, or if present, lacking separated, anteriorly directed lateral projections 3
3. Shield of 8th thoracic sternite with anterior flap reaching 6th sternite *scutatus* (4D)
— Shield of 8th thoracic sternite not reaching 6th sternite 4
4. 7th thoracic sternite with 2 anteriorly directed projections 5
— 7th thoracic sternite lacking 2 projections 6
5. Projections of 7th thoracic sternite apically simple .. .. *valens* (4E)
— Projections of 7th thoracic sternite apically notched .. .. *gilchristi* (4F)
6. Leaf-like medially directed process arising in front of 4th pereiopods *parvus* (4G)
— No leaf-like projection in front of 4th pereiopods 7
7. Shield present on 8th thoracic sternite, posteriorly notched 8
— Shield absent on 8th thoracic sternite, or if present, not posteriorly notched 10
8. Shield on 8th thoracic sternite anteriorly rounded .. *brevirostris* (4H)
— Shield on 8th thoracic sternite anteriorly emarginate or notched .. 9
9. Large concave depression on 6th thoracic sternite .. .. .. *incertus* (4I)
— No large concave depression on 6th thoracic sternite, but broadly rectangular shield on 7th thoracic sternite .. *talismani* (4J)
10. 6th thoracic sternite with triangular/sub-triangular/truncated triangular shield with anteriorly directed apex 11
— 6th thoracic sternite lacking shield, or with sub-circular shield 12



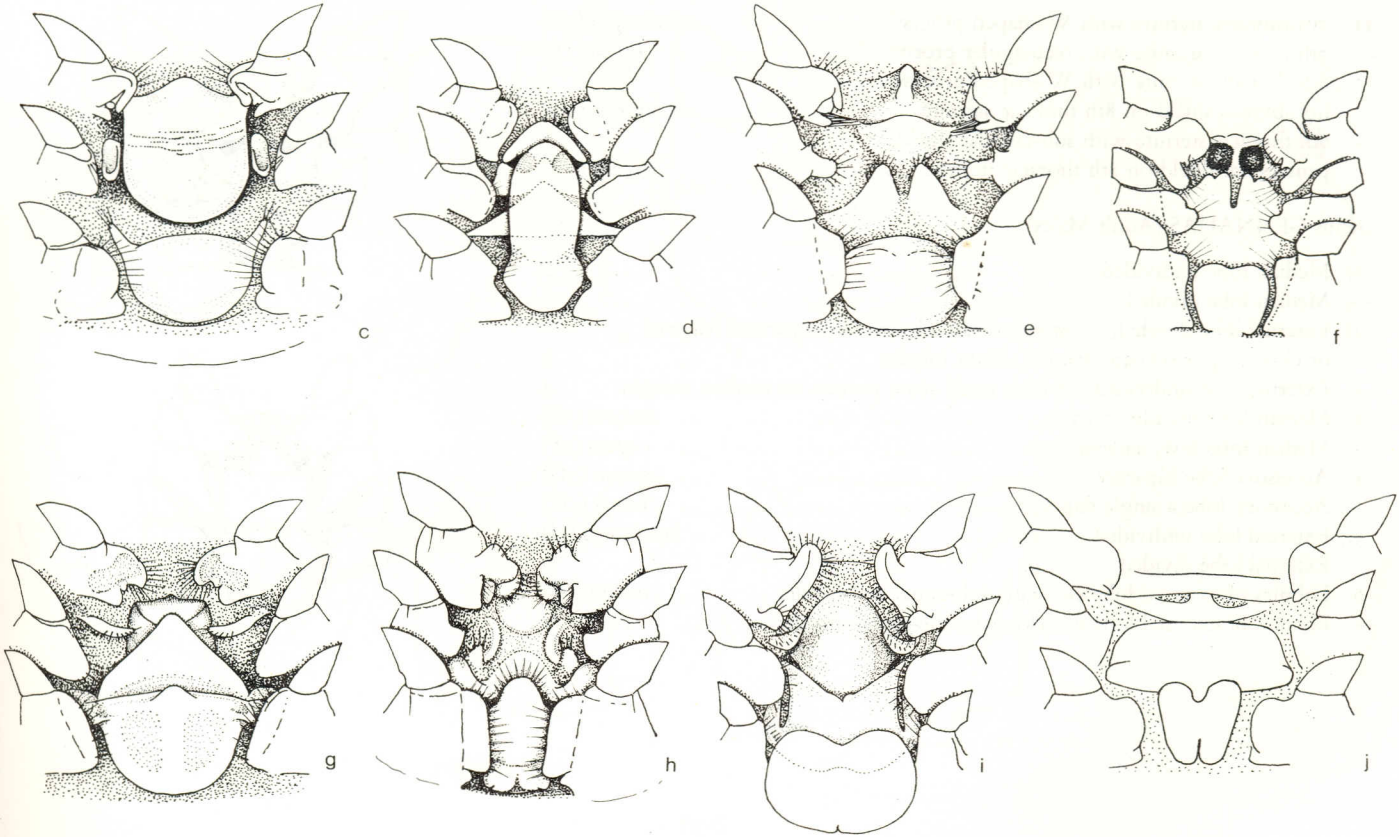
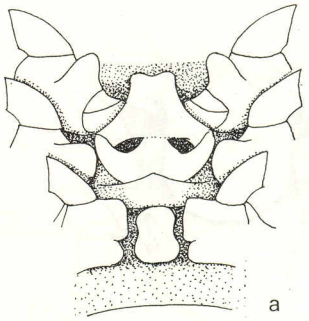


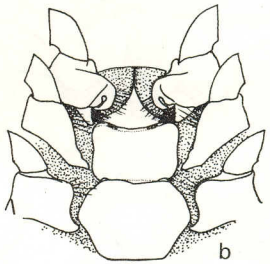
Fig 4

11. 7th thoracic sternite with W-shaped process .. .. *clavicarpus* (5A)
— 7th thoracic sternite with rectangular process .. .. .. *kempi* (5B)
12. 6th thoracic sternite with W-shaped process, no obvious shield on 8th thoracic sternite .. .. *capensis* (5C)
— 6th thoracic sternite with sub-circular shield, pentagonal shield on 8th thoracic sternite .. .. *elegans* (5D)

Genus GENNADAS (Adult Males)

1. Median lobe undivided 2
— Median lobe divided 5
2. External lobe divided, division indicated by widely separated (*elegans*) or closely approximate (*tinayrei*) blunt lobules 3
— External lobe undivided, or with small acute process on median margin 4
3. Median lobe broadly convex .. .. *tinayrei* (5E)
— Median lobe low, narrow .. .. *elegans* (5F)
4. Accessory lobe bipartite .. .. *capensis* (5G)
— Accessory lobe a single flap .. .. *kempi* (5H)
5. External lobe undivided .. .. *brevirostris* (5I)
— External lobe divided 6
6. Lobules of external lobe elongate, sub-equal and slender .. .. *incertus* (5J)
— Lobules of external lobe not elongate, sub-equal, slender 7





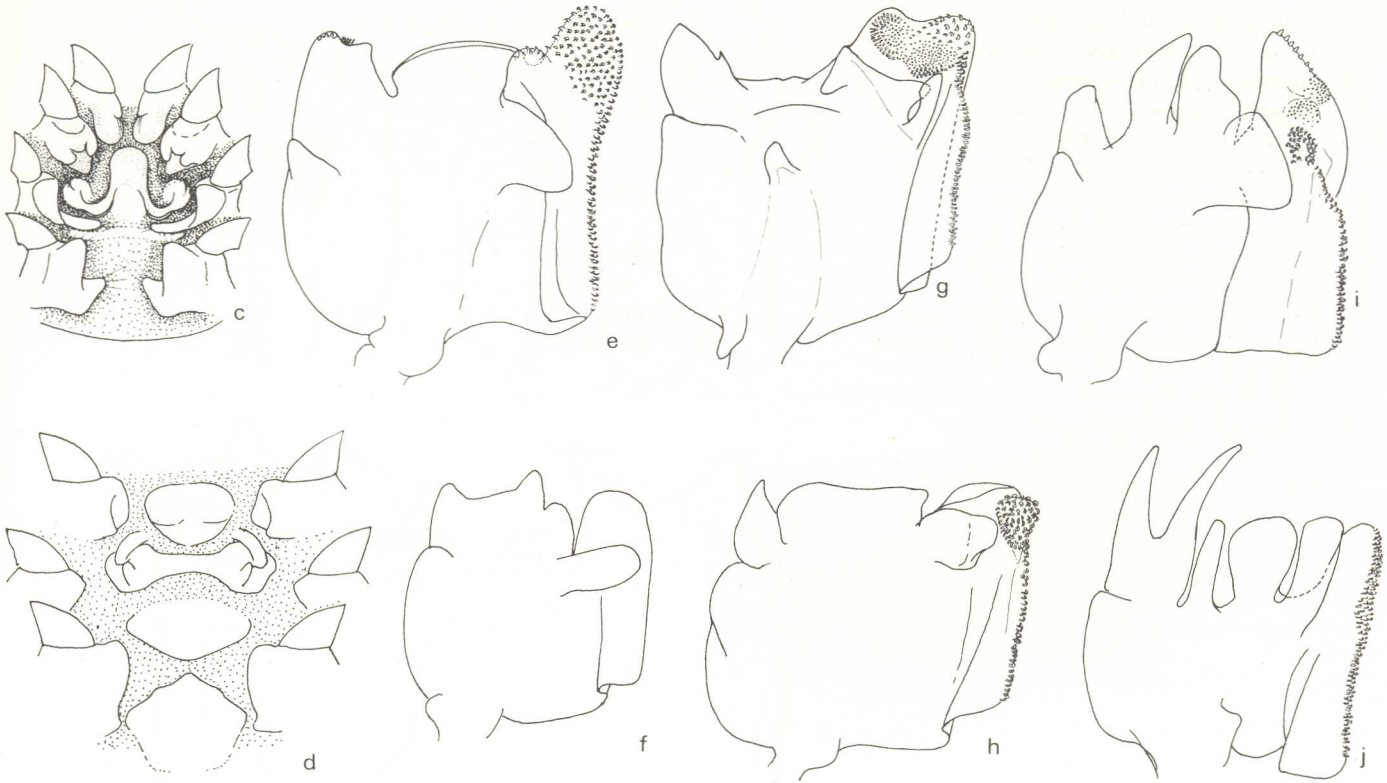
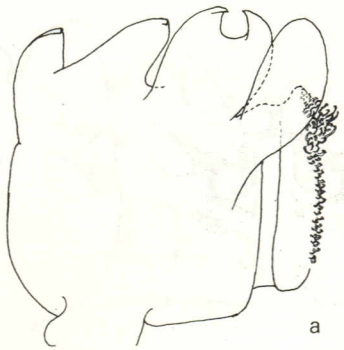
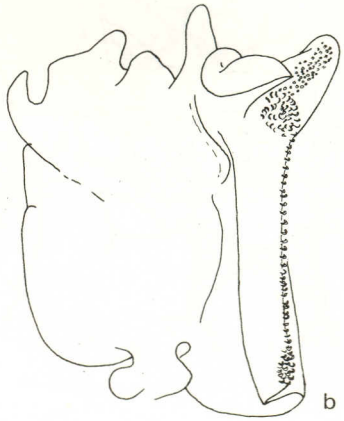


Fig 5

7. Lobules of median lobe hooked .. .. *bouvieri* (6A)
— Lobules of median lobe not hooked 8
8. Accessory lobe a mere ridge .. .. *parvus* (6B)
— Accessory lobe well developed 9
9. External lobule of median lobe slender 10
— External lobule of median lobe not slender 11
10. Apex of internal lobe acute .. .. *gilchristi* (6C)
— Apex of internal lobe rounded 12
11. Inner lobule of median lobe slender .. .. *talismani* (6D)
— Inner lobule of median lobe blunt .. .. *valens* (6E)
12. Inner lobule of median lobe apically acute .. .. .. *clavicarpus* (6F)
— Inner lobule of median lobe apically truncate .. .. .. *scutatus* (6G)





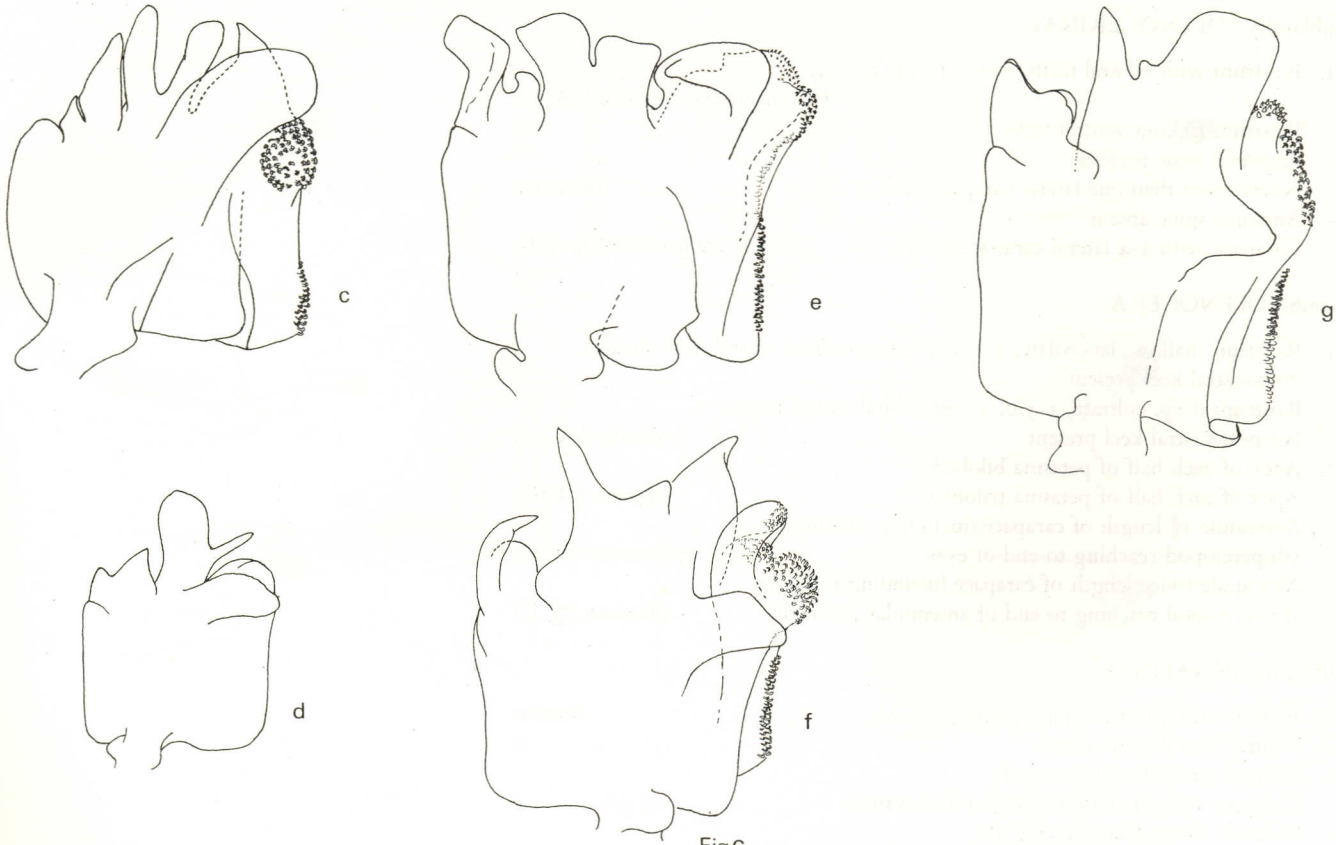


Fig6

Subfamily SOLENOCERINAE

1. Rostrum with ventral teeth (rostral formula 10/2)
Hymenopenaeus triarthrus (7A, D)
— Rostrum lacking ventral teeth 2
2. Antennal spine present
Never more than one lateral carapace keel .. .. *Solenocera*
— Antennal spine absent
Carapace with 3–4 lateral carapace keels .. .. *Haliporus villosus* (7B)

Genus SOLENOCERA

1. Rostrum shallow, lanceolate, 5–7/0, 3–4 post-orbital rostral teeth present
Post-rostral keel present 2
— Rostrum deep, cultrate, 4–5/0, 2 post-orbital rostral teeth
No post-rostral keel present .. .. *comatum* (7C, E)
2. Apex of each half of petasma bilobed 3
— Apex of each half of petasma trilobed .. .. .. *algoense* (7F, G)
3. Antennule $1\frac{2}{3}$ length of carapace (including rostrum)
5th pereiopod reaching to end of eyes .. .. .. *siphonoceros* (7H, I)
— Antennule twice length of carapace (including rostrum)
5th pereiopod reaching to end of antennular peduncle .. *africanum* (7J, K)

Subfamily PENAEINAE

1. Ventral rostral teeth usually present .. .. *Penaeus*
— Ventral rostral teeth absent 2
2. Exopods present on pereiopods
Carapace with or without longitudinal sutures 3
— Exopods absent from pereiopods
Carapace with longitudinal sutures .. .. *Parapenaeus*

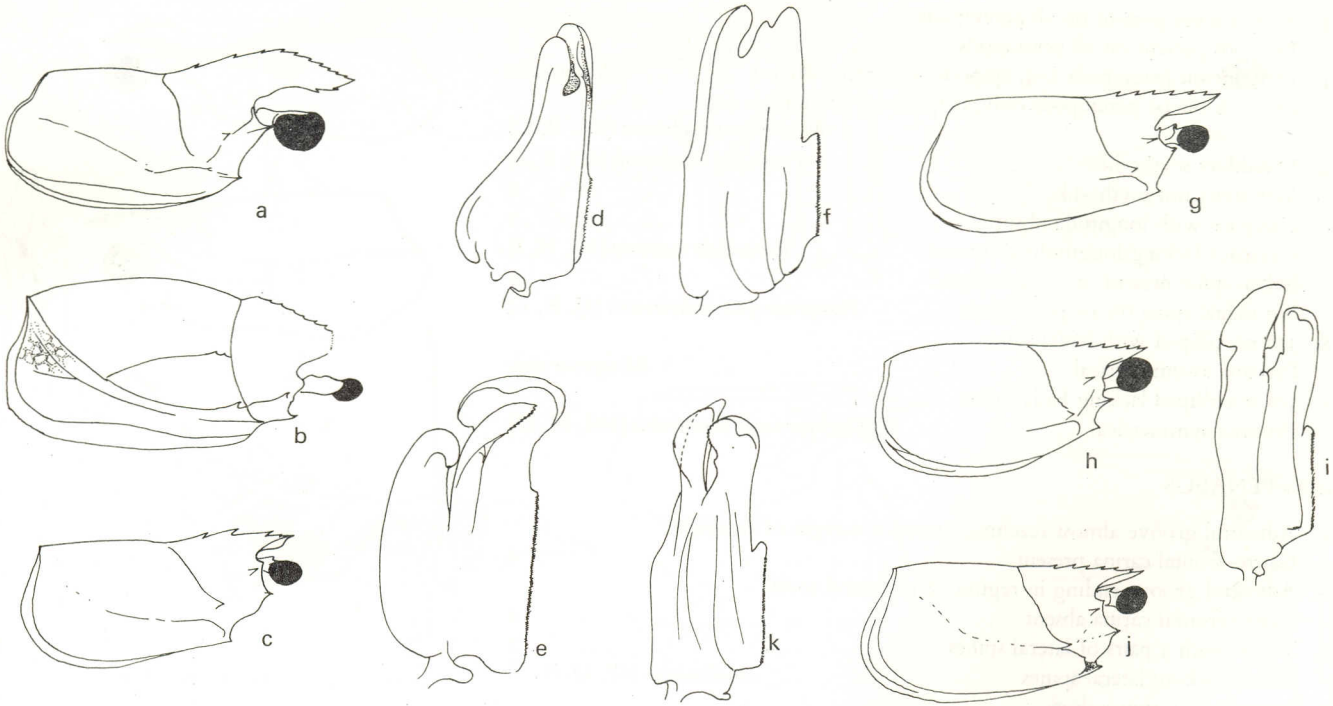
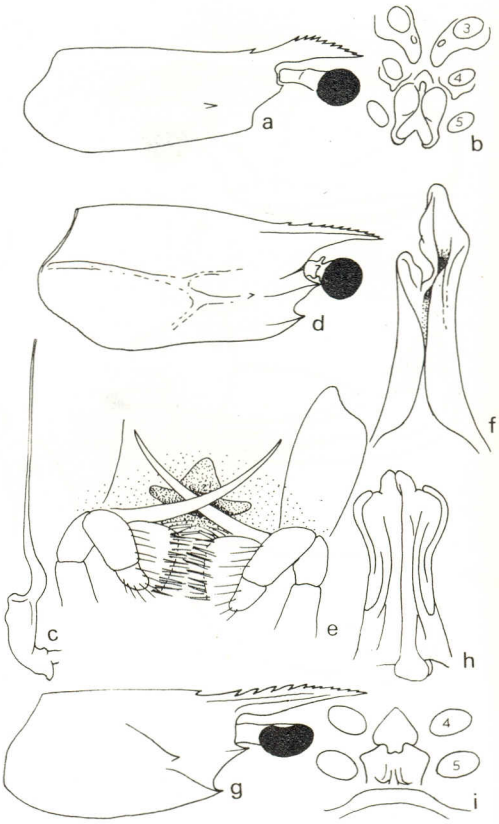


Fig7

3. Exopods not present on all pereiopods 4
— Exopods present on all pereiopods 5
4. Exopods on pereiopods 1–4, epipods on pereiopods 1–3 .. .. *Metapenaeus*
— Exopods on 1st pereiopods only, epipods on pereiopods 1–3
Macropetasma africana (8A, B, C)
5. Mandibles scythe-like .. .. *Funchalia woodwardi* (8D, E, F)
— Mandibles not scythe-like 6
6. Carapace with longitudinal sutures 7
— Carapace lacking longitudinal sutures .. *Penaeopsis rectacuta* (8G, H, I)
7. Ischial spine present on 1st pereiopod 8
— No ischial spine on 1st pereiopods .. *Parapenaeopsis acclivirostris* (8J, K, L)
8. 3rd maxilliped with basial spine
Petasma assymmetrical .. .. *Metapenaeopsis*
— 3rd maxilliped lacking basial spine
Petasma symmetrical .. .. .. *Trachypenaeus curvirostris* (8M, N, O)

Genus PENAEUS

1. Adrostral groove almost reaching posterior margin of carapace
Gastro-frontal carina present 2
— Adrostral groove ending in region of 1st rostral tooth
Gastro-frontal carina absent 4
2. Telson with 3 pairs of lateral spines 3
— Telson lacking lateral spines .. .. *canaliculatus* (8P, Q, R, S)
3. Lateral telson spines short
Rostral formula 8–10/1–2, anterior portion of thelycum rounded
japonicus (8T, U, V, W)
— Lateral relson spines long, easily visible
Rostral formula 9–12/1, anterior portion of thelycum bifurcate
latisulcatus (8X, Y, Z, AA)



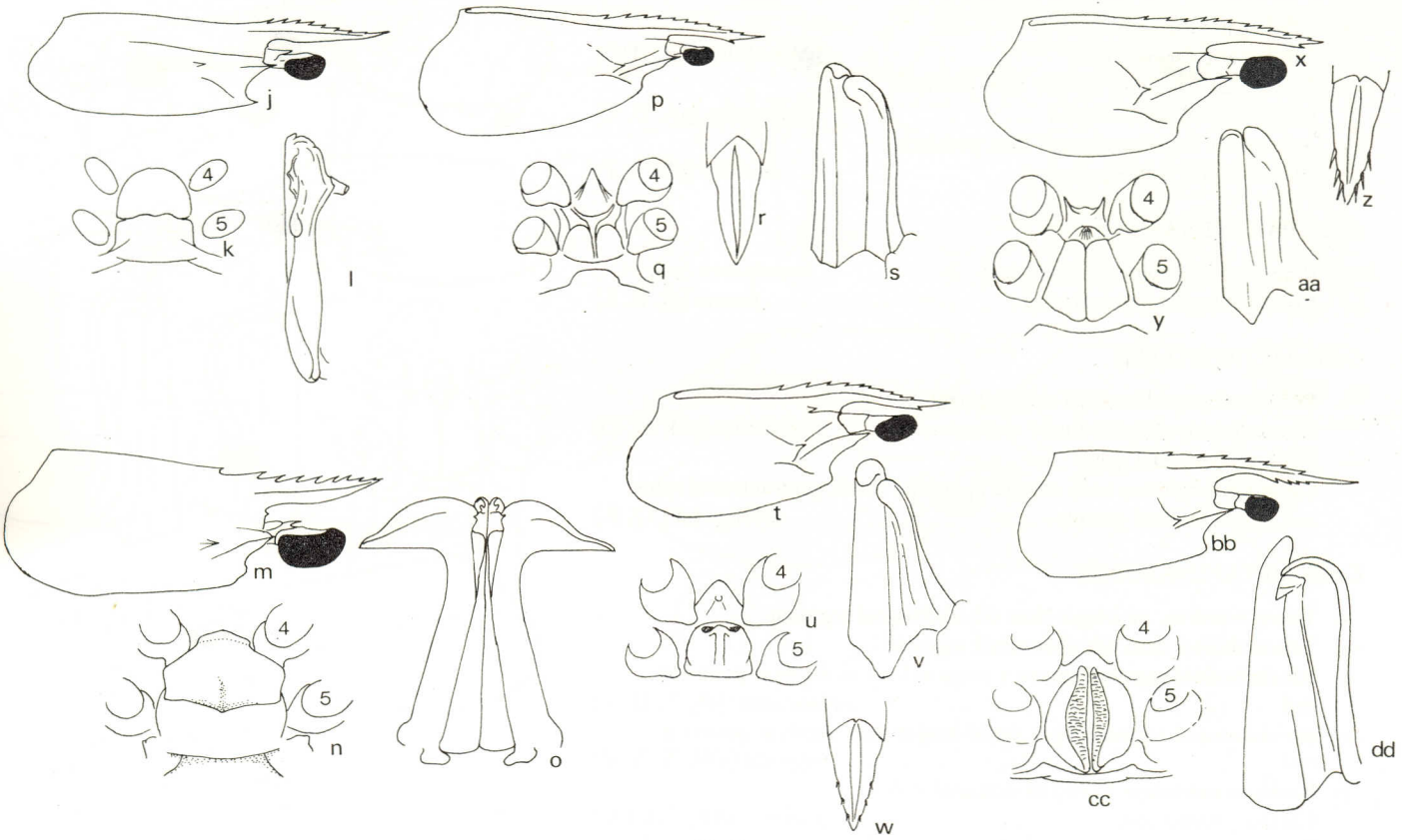


Fig 8

4. Sub-hepatic carina present 5
— Sub-hepatic carina absent .. .. .. *indicus* (8BB, CC, DD)
5. Antennular flagellum shorter than peduncle
5th pereiopod with exopod .. .. .. *semisulcatus* (9A, B, C)
— Antennular flagellum longer than peduncle
5th pereiopod lacking exopod .. .. .. *monodon* (9D, E, F)

Genus PARAPENAEUS

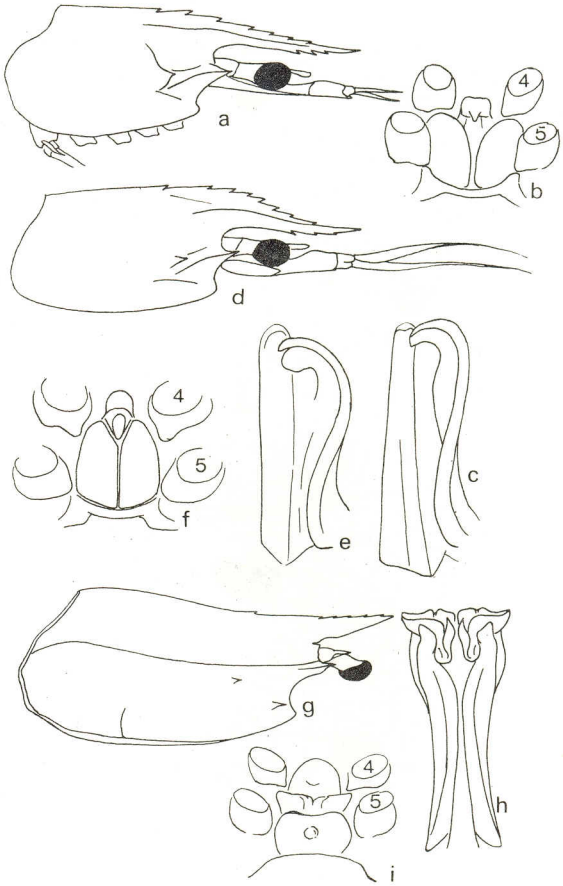
1. Branchiostegal spine sub-marginal .. .. *investigatoris* (9G, H, I)
— Branchiostegal spine marginal .. .. .. *fissurus* (9J, K, L)

Genus METAPENAEUS

1. Prominent suprabranchial ridge present
Almost entire carapace finely tomentose .. *monoceros* (9M, N, O)
— No suprabranchial ridge
Carapace tomentose only around epigastric tooth, post-antennal spine, and in post-orbital groove .. .. .. *stebbingi* (9P, Q, R)

Genus METAPENAEOPSIS

1. Telson equal to, or longer than 6th abdominal segment 2
— Telson shorter than 6th abdominal segment 3
2. 6th abdominal segment almost 3 times as long as depth at posterior end .. .. *andamanensis* (9S, T, U, V)
— 6th abdominal segment $1\frac{1}{2}$–2 times longer than depth at posterior end .. .. *mogiensis* (9W, X, Y, Z)
3. Rostrum extending to end of antennal scale
Carapace tomentose .. .. *philippi* (9AA, BB, CC)
— Rostrum not reaching to end of antennal scale
Carapace tomentose .. .. .. *quinquedentatus* (9DD, EE, FF)



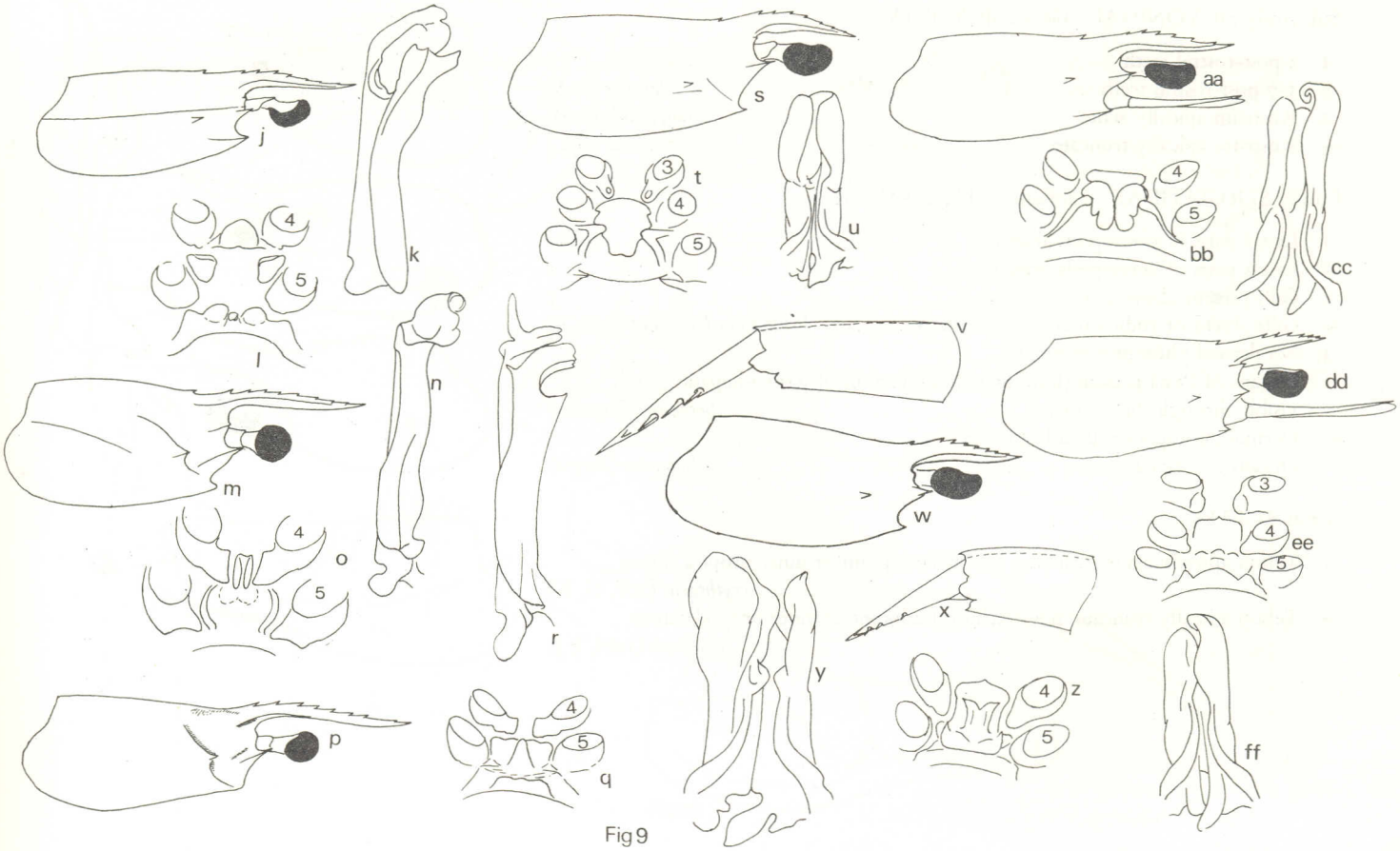


Fig 9

Subfamily SICYONINAE Genus SICYONIA

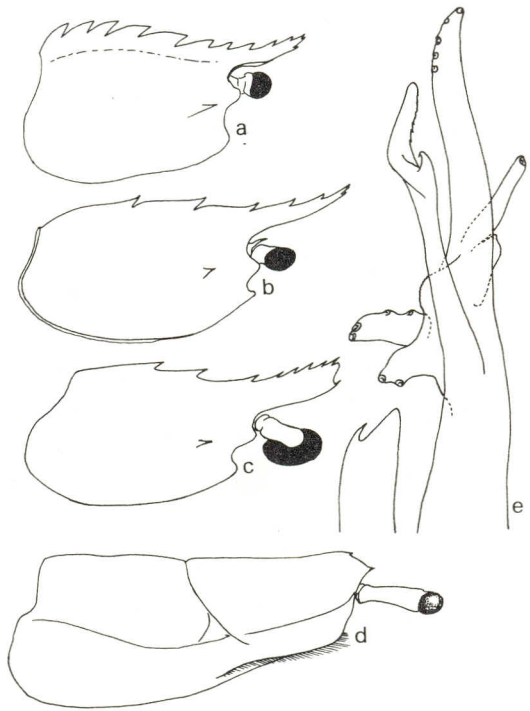
1. 2 post-rostral teeth 2
— 5–7 post-rostral teeth .. .. *lancifer* (10A)
2. Rostrum apically acute .. .. *longicauda* (10B)
— Rostrum apically truncate .. .. *truncata* (10C)

Family SERGESTIDAE Subfamily SERGESTINAE

1. Last 2 pairs of pereiopods absent .. .. *Acetes*
— Last 2 pairs of pereiopods present 2
2. Gills present above 4th pereiopods 3
— Gills absent or rudimentary above 4th pereiopods *Petalidium foliaceum* (10D, E)
3. No dermal photophores present
Organs of Pesta present (luminous modifications of gastro-hepatic gland, visible through the carapace) .. .. *Sergestes* (*Sergestes*)
— Dermal photophores usually present
Organs of Pesta absent .. .. *Sergestes* (*Sergia*)

Genus ACETES

1. Telson apically acute, reaching beyond midpoint of inner uropod ramus *erythraeus* (10F, G, K)
— Telson apically truncate, not reaching midpoint of inner uropod ramus *natalensis* (10H, I, J)



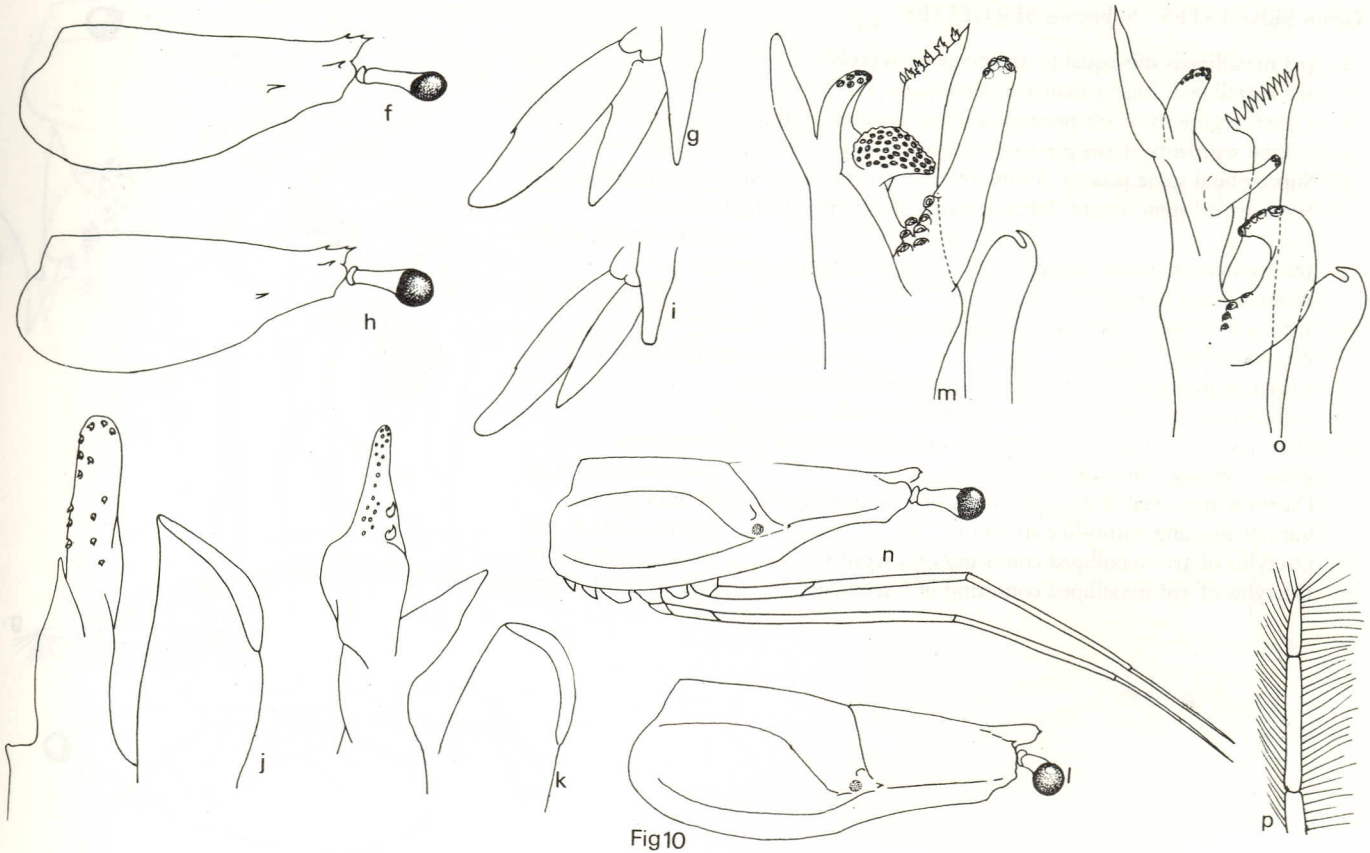
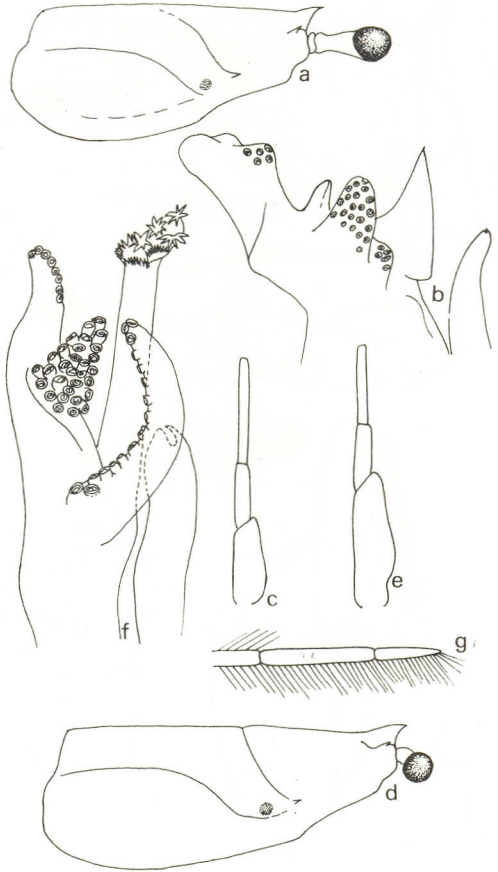


Fig10

Genus SERGESTES Subgenus SERGESTES

1. 3rd maxillipeds sub-equal to 3rd pereiopods (10N) 2
— 3rd maxillipeds longer than 3rd pereiopods (11N) 5
2. 2 distal segments of 5th pereiopod setose on both margins (10P) .. 3
— 2 distal segments of 5th pereiopod setose on only one margin (11G) .. 4
3. Supraorbital spine present, lobus armatus of petasma straight *disjunctus* (10L, M)
— Supraorbital spine absent, lobus armatus of petasma strongly curved *corniculum* (10N, O, P)
4. 3rd segment of antennular peduncle equal to or longer than 1st
Petasma lobes short, stumpy .. .. *atlanticus* (11A, B, C)
— 3rd segment of antennular peduncle shorter than 1st
Petasma lobes elongate .. .. *arcticus* (11D, E, F, G)
5. 2 distal segments of 5th pereiopod setose on both margins 6
— 2 distal segments of 5th pereiopod setose on only one margin 7
6. Dactylus and distal half of propodus of 3rd maxilliped with numerous spines forming comb-like structure .. .. .. *pectinatus* (11H, I, J)
— Dactylus and distal half of propodus of 3rd maxilliped armed with spines but not forming comb-like structure .. .. .. *sargassi* (11K, L, M)
7. Dactylus of 3rd maxilliped consisting of 4 segments .. *armatus* (11N, O, P)
— Dactylus of 3rd maxilliped consisting of 6 segments *orientalis* (11Q, R, S)



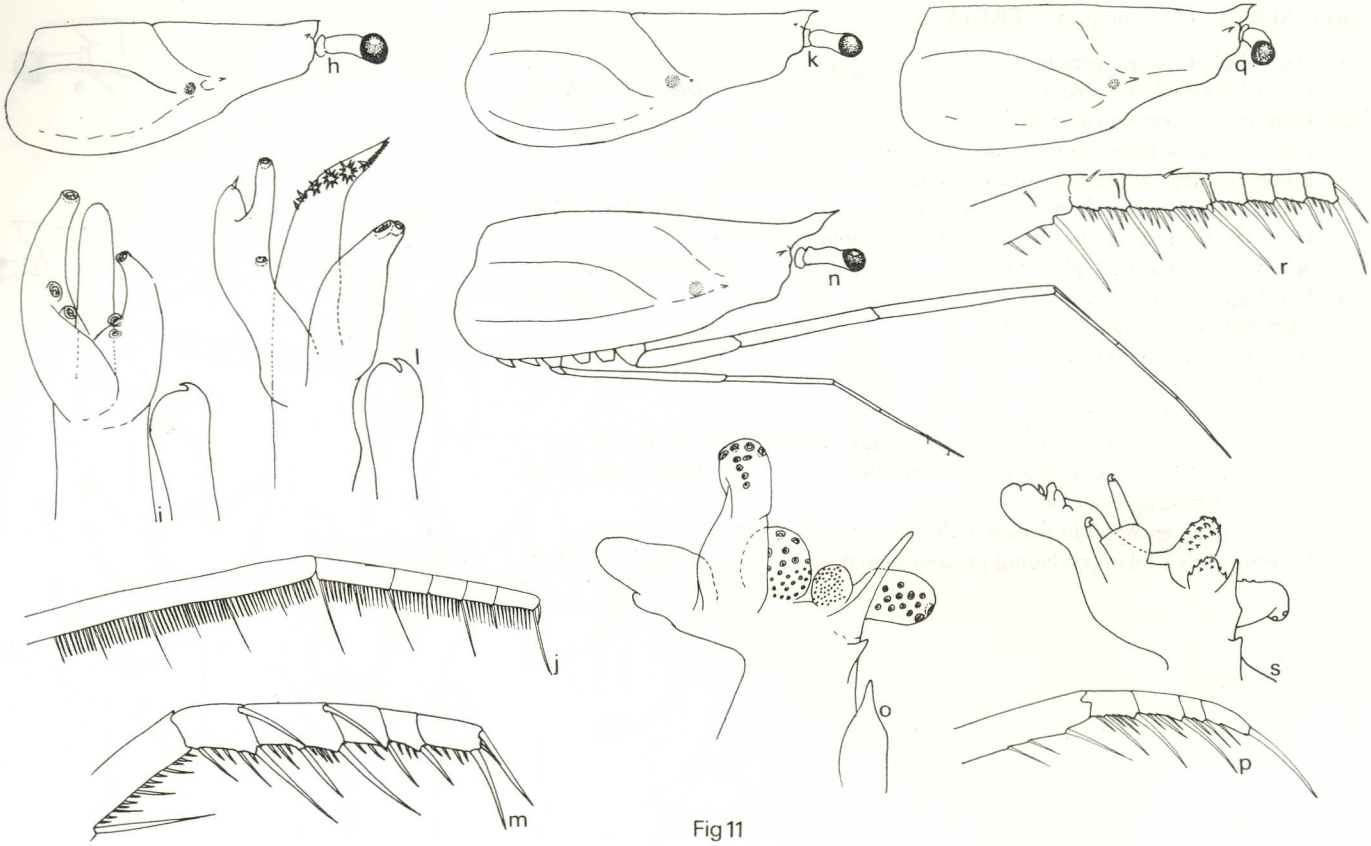
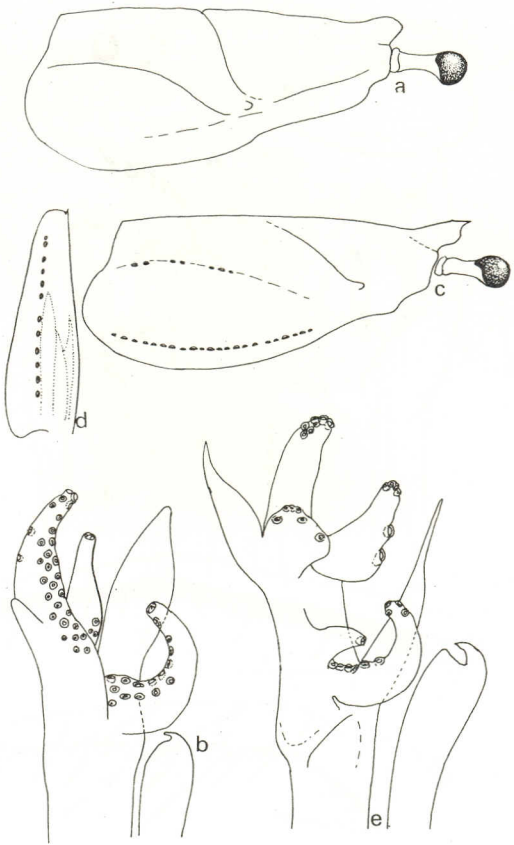


Fig 11

Genus SERGESTES Subgenus SERGIA

1. Dermal photophores present 2
— Dermal photophores absent .. .. *laminatus* (12A, B)
2. Photophores bearing cuticular lenses 3
— Photophores lacking lenses, of the opaque-spot type 4
3. Lower branchiostegite bearing row of at least 18 photophores
Scaphocerite bearing about 12 photophores .. *prehensilis* (12C, D, E)
— Lower branchiostegite bearing row of 9–10 minute photophores
Scaphocerite bearing 7 photophores .. .. *scintillans* (12F, G, H)
4. Rostrum elongate/lanceolate .. .. *creber* (12I, J)
— Rostrum not elongate/lanceolate 5
5. Rostrum strongly bidentate or bifid 6
— Rostrum with single apical tooth 7
6. Strong post-cervical groove present
Coxa of 3rd pereiopod in female with apically acute leaf-shaped process
Petasma of 6 lobes (excluding processus uncifer) .. .. *regalis* (12K, L, M)
— No post-cervical groove present
Coxa of 3rd pereiopod in female with blunt process
Petasma with 8 lobes (excluding processus uncifer) .. *potens* (12N, O, P)



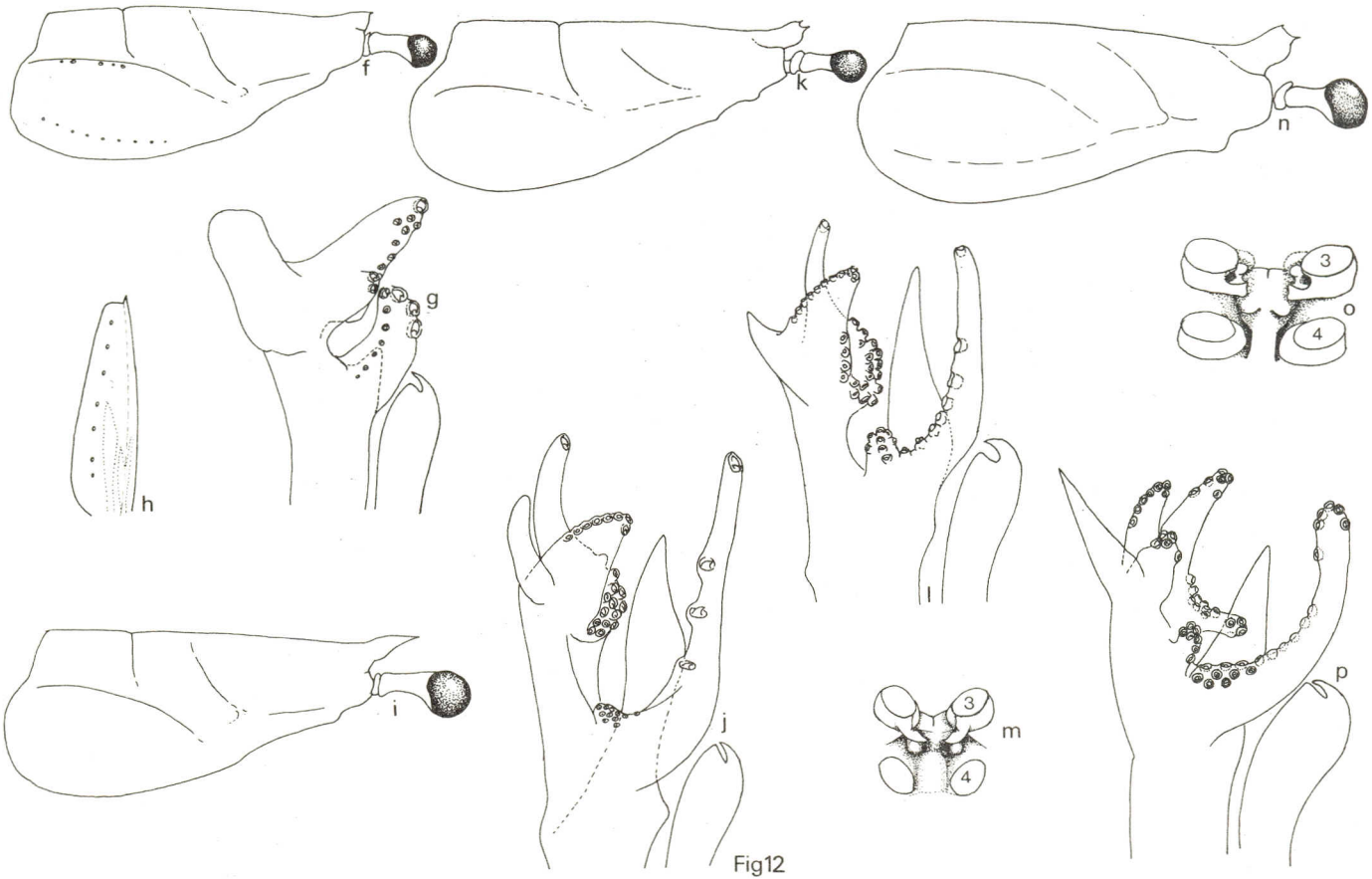
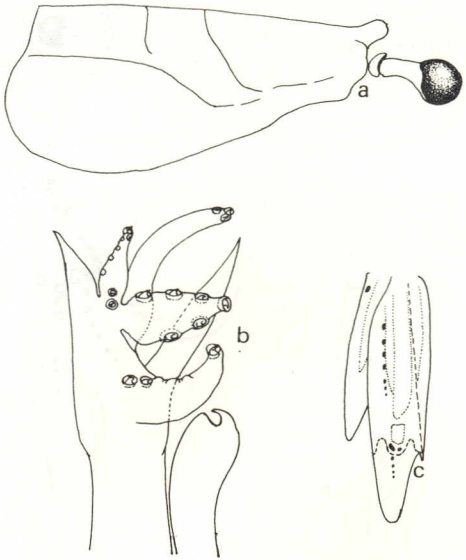


Fig12

7. Rostrum broadly rounded
Outer uropod ramus with two groups of photophores .. *grandis* (13A, B, C)
— Rostrum not broadly rounded, with hint of dorsal denticle
Outer uropod ramus with single continuous row of small photophores
splendens (13D, E, F)

Subfamily LUCIFERINAE Genus LUCIFER

1. Eyestalk less than half the distance between bases of eyes and labrum .. 2
— Eyestalk more than half the distance between bases of eyes and labrum 3
2. Petasma terminally expanded, processus ventralis brush-like *penicillifer* (13H, I)
— Petasma terminally acute, with needle-like processus ventralis *chacei* (13J, K)
3. Telson in male with ventral process some distance from apex
Petasma with processus ventralis having transverse area between horns
typus (13L, M, N)
— Telson in male with ventral process ending at apex
Petasma with processus ventralis lacking transverse are between two horns
orientalis (13O, P, Q)



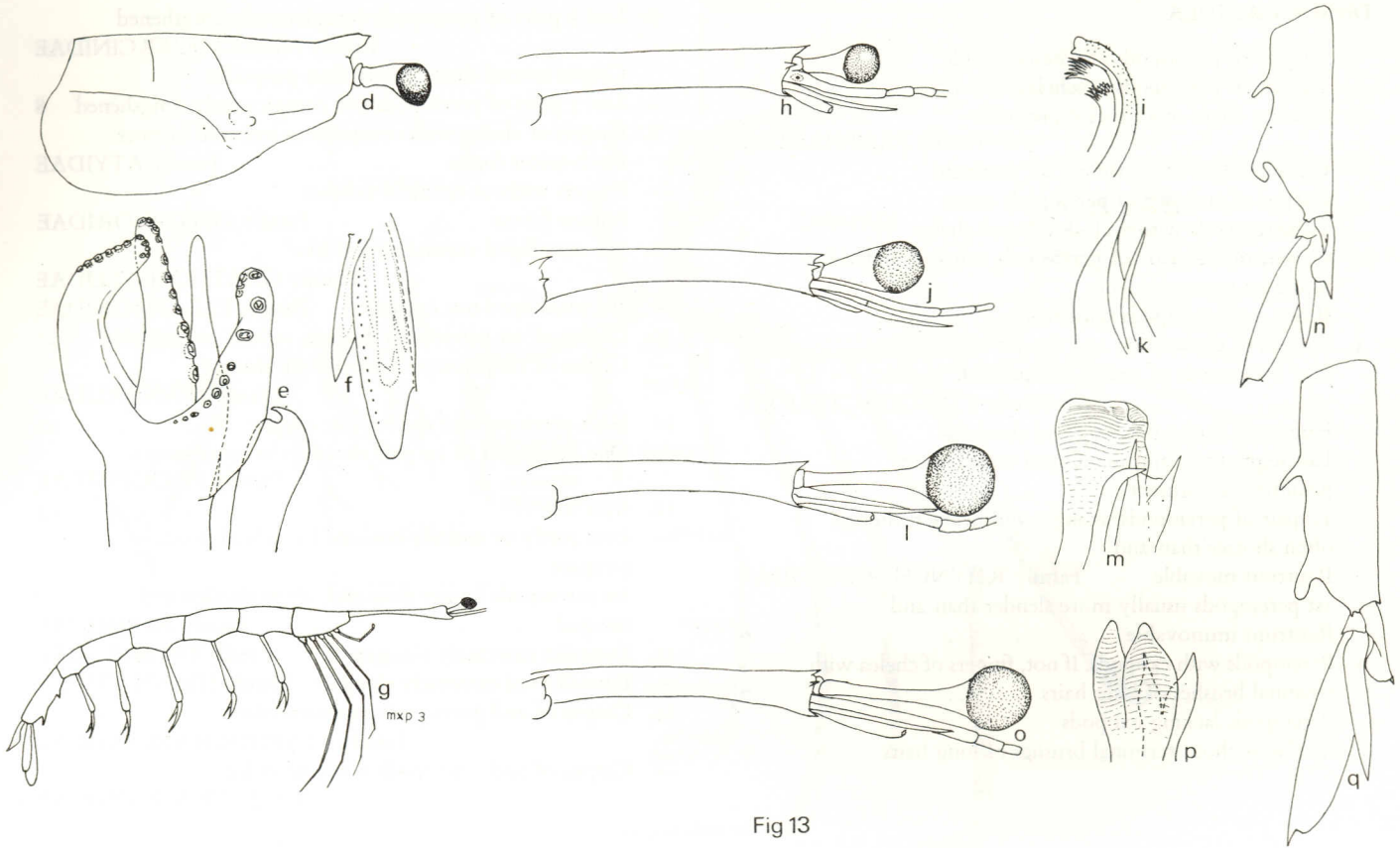
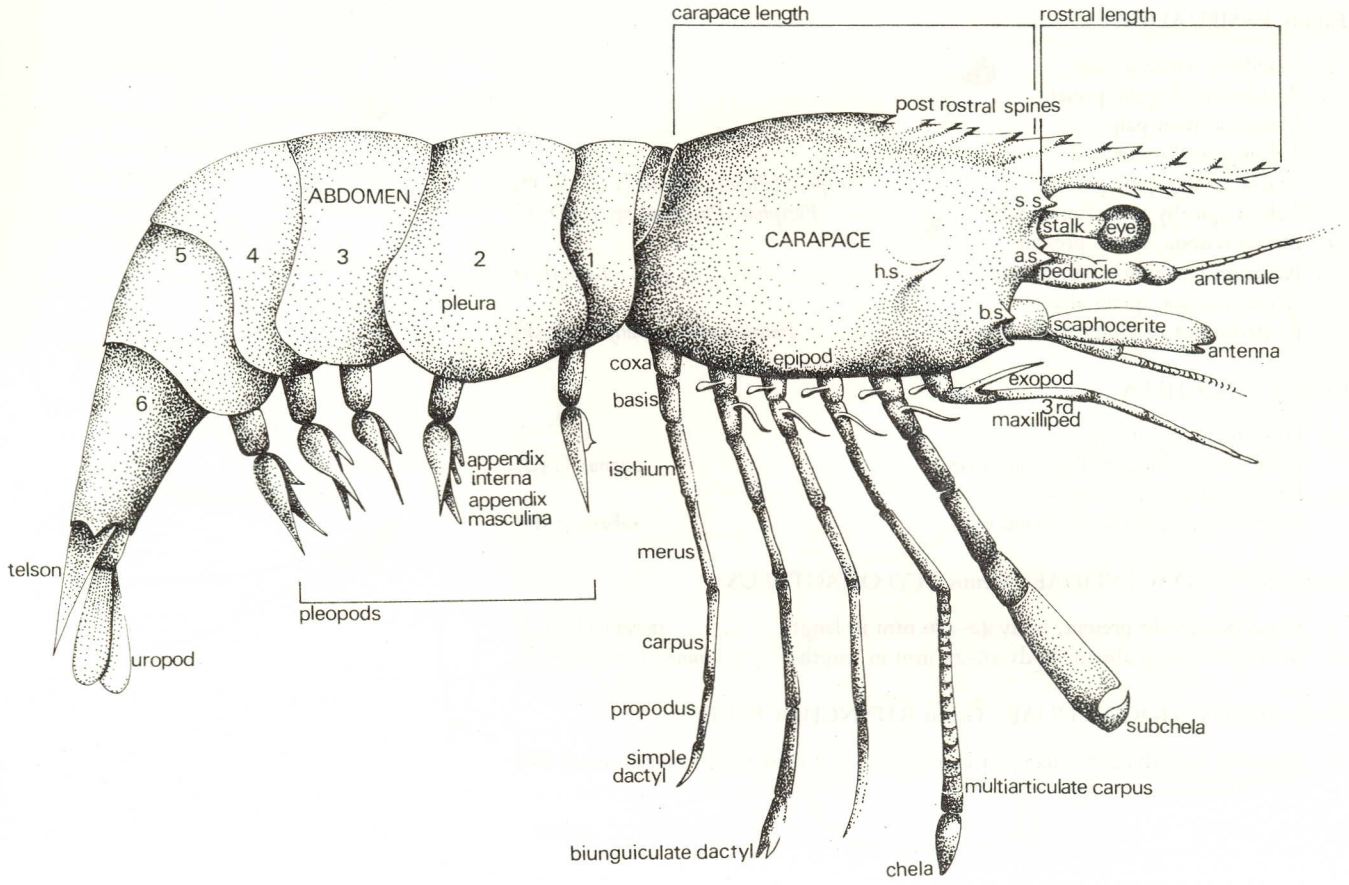


Fig 13

Division CARIDEA

1. 1st pair of pereiopods chelate or simple 2
— 1st pair of pereiopods subchelate 14
2. Cutting edges of all chelae pectinate
Family PASIPHAEIDAE
— Cutting edges of chelae not all pectinate 3
3. Carpus of 2nd pair of pereiopods entire
1st pereiopods with well-developed chelae 4
— Carpus of 2nd pair of pereiopods usually subdivided into 2 or more segments
If not, 1st pereiopods not chelate 10
4. Fingers of chelae long and slender
Last 2 segments of 2nd maxilliped side by side
Family STYLODACTYLIDAE
— Fingers of chelae not long and slender
Last segment of 2nd maxilliped terminal on penultimate segment 5
5. 1st pair of pereiopods stronger and heavier, though often shorter than 2nd
Rostrum movable Family RHYNCHOCINETIDAE
— 1st pereiopods usually more slender than 2nd
Rostrum immovable 6
6. Pereiopods with exopods. If not, fingers of chelea with terminal brushes of long hairs 7
— Pereiopods lacking exopods
Chelae without terminal brushes of long hairs .. 9
7. Last 3 pairs of pereiopods conspicuously lengthened
Family NEMATOCARCINIDAE
Carpus several times longer than propodus
— Last 3 pairs of pereiopods not conspicuously lengthened 8
8. Fingers of chelae with conspicuous terminal brushes
Fresh-water forms .. .. .. Family ATYIDAE
— Fingers without terminal brushes
Marine forms .. .. Family OPLOPHORIDAE
9. 3rd maxilliped expanded, leaf-like
Family GNATHOPHYLLIDAE
— 3rd maxilliped not expanded Family PALAEMONIDAE
10. Chelae of 1st pereiopods distinct, at least on one side 11
— Chelae of 1st pereiopods minute or absent
Family PANDALIDAE
11. Both pereiopods of the 1st pair chelate 12
— One pereiopod of 1st pair chelate, the other simple
Family PROCESSIDAE
12. Eyes free 13
— Eyes partly or entirely covered by orbital hoods of carapace
1st pereiopods longer than 2nd, often swollen and unequal .. .. Family ALPHEIDAE
13. Eyestalks extremely elongate .. Family OGYRIDIDAE
— Eyestalks not extremely elongate Family HIPPOLYTIDAE
14. Carpus of 2nd pereiopods multiarticulate
Family GLYPHOCRANGONIDAE
— Carpus of 2nd pereiopods not subdivided
Family CRANGONIDAE



HYPOTHETICAL CARID PRAWN

Fig 14

Family PASIPHAEIDAE

1. Mandible without palp
   Post-antennal spine present 2
— Mandible with palp 3
2. Telson apically notched
   Post-antennal spine present .. .. *Pasiphae* (*Phye*) *pacificus* (15A, B, C)
— Telson apically truncate/rounded .. .. *Pasiphae* (*Pasiphae*) sp. (15D, E)
3. Dorsal telsonic spines present
   Rostrum reaching beyond eyes .. .. *Leptochela*
— Dorsal telsonic spines absent
   Rostrum not reaching beyond eyes .. .. *Parapasiphae sulcatifrons* (15F)

Genus LEPTOCHELA

1. Post-antennal spine present
   Rostrum reaching well beyond eyes .. .. .. *pugnax* (15G)
— Post-antennal spine absent
   Rostrum reaching just beyond eyes .. .. *robusta* (15H)

Family STYLODACTYLIDAE Genus STYLODACTYLUS

1. Mandibular palp present, body 42–150 mm in length .. *stebbingi* (15I, J)
— Mandibular palp absent, body 19–25 mm in length .. *bimaxillaris* (15K, L)

Family RHYNCHOCINETIDAE Genus RHYNCHOCINETES

1. Rostrum movable, articulated at base .. *Rhynchocinetes durbanensis* (15M)

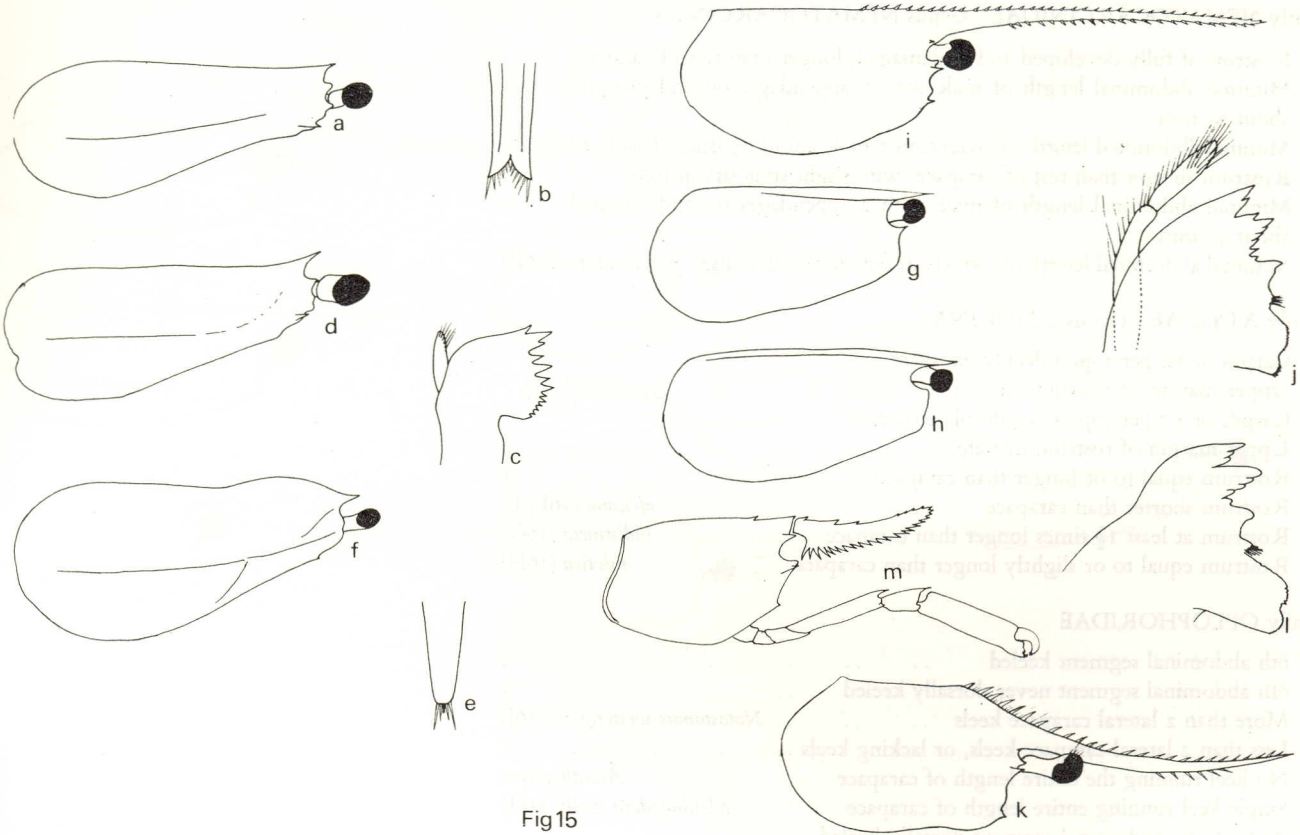


Fig 15

Family NEMATOCARCINIDAE Genus NEMATOCARCINUS

1. Rostrum if fully developed and undamaged, longer than rest of carapace
   Minimal abdominal length of male with 2 appendages on 2nd pleopod about 63 mm
   Minimal abdominal length of ovigerous female about 65 mm *longirostris* (16A)
— Rostrum shorter than rest of carapace, with slight sinuosity at base
   Minimal abdominal length of male with 2 appendages on 2nd pleopod about 42 mm
   Minimal abdominal length of ovigerous female about 58 mm *parvidentatus* (16B)

Family ATYIDAE Genus CARIDINA

1. Carpus of 1st pereiopod deeply excavate
   Upper margin of rostrum smooth .. .. *typus* (16C, D)
— Carpus of 1st pereiopod not deeply excavate
   Upper margin of rostrum dentate 2
2. Rostrum equal to or longer than carapace 3
— Rostrum shorter than carapace .. .. *africana* (16E, F)
3. Rostrum at least 1½ times longer than carapace .. .. *indistincta* (16G)
— Rostrum equal to or slightly longer than carapace .. *nilotica* (16H)

Family OPLOPHORIDAE

1. 6th abdominal segment keeled 2
— 6th abdominal segment never dorsally keeled 3
2. More than 2 lateral carapace keels .. .. .. *Notostomus westergreni* (16J)
— Less than 2 lateral carapace keels, or lacking keels 3
3. No keel running the entire length of carapace .. .. *Acanthephyra*
— Single keel running entire length of carapace .. *Meningodora mollis* (16I)
4. At least one abdominal segment dorsally keeled
   Eyes well developed and pigmented 5

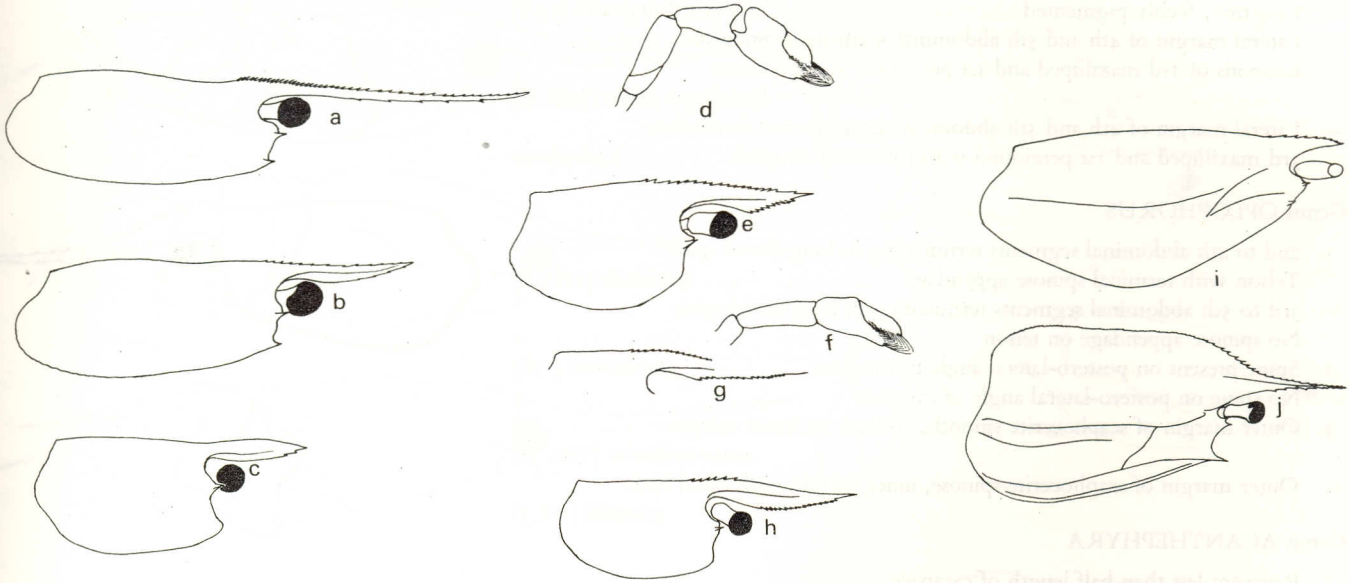
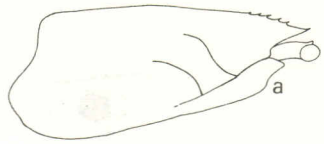


Fig16

— No dorsally keeled abdominal segments
Eyes tiny, feebly pigmented .. .. *Hymenodora gracilis* (17A)

5. Lateral margin of 4th and 5th abdominal segments denticulate
Exopods of 3rd maxilliped and 1st pereiopod not foliaceous
Systellaspis debilis (17B, C)

— Lateral margin of 4th and 5th abdominal segments not denticulate
3rd maxilliped and 1st pereiopod with foliaceous exopods .. *Oplophorus*



Genus OPLOPHORUS

1. 2nd to 4th abdominal segments terminating in long dorsal spine
Telson with terminal spinose appendage .. .. .. *spinicauda* (17D, E)

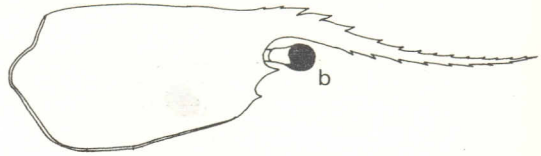
— 3rd to 5th abdominal segments terminating in long dorsal spine
No spinose appendage on telson 2

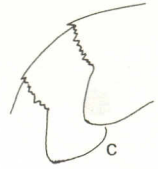
2. Spine present on postero-lateral angle of carapace .. .. *gracilirostris* (17F)

— No spine on postero-lateral angle of carapace 3

3. Outer margin of scaphocerite smooth, no barb on inner margin
novaezeelandiae (17G, H)

— Outer margin of scaphocerite spinose, inner margin with distal barb
grimaldii (17I, J)





Genus ACANTHEPHYRA

1. Rostrum less than half length of carapace 2

— Rostrum more than half length of carapace 4

2. Rostrum dorsally elevated .. .. *stylorostrata* (17K)

— Rostrum not dorsally elevated 3

3. 3rd abdominal segment with leaf-like dorsal tooth .. *brevirostris* (17M)

— 3rd abdominal segment without leaf-like dorsal tooth .. *gracilipes* (17L)

4. 3–6 lateral telsonic spines 5

— More than 6 lateral telsonic spines 7

5. Carapace with 2 lateral keels .. .. *corallina* (17N)

— No carapace keels 6

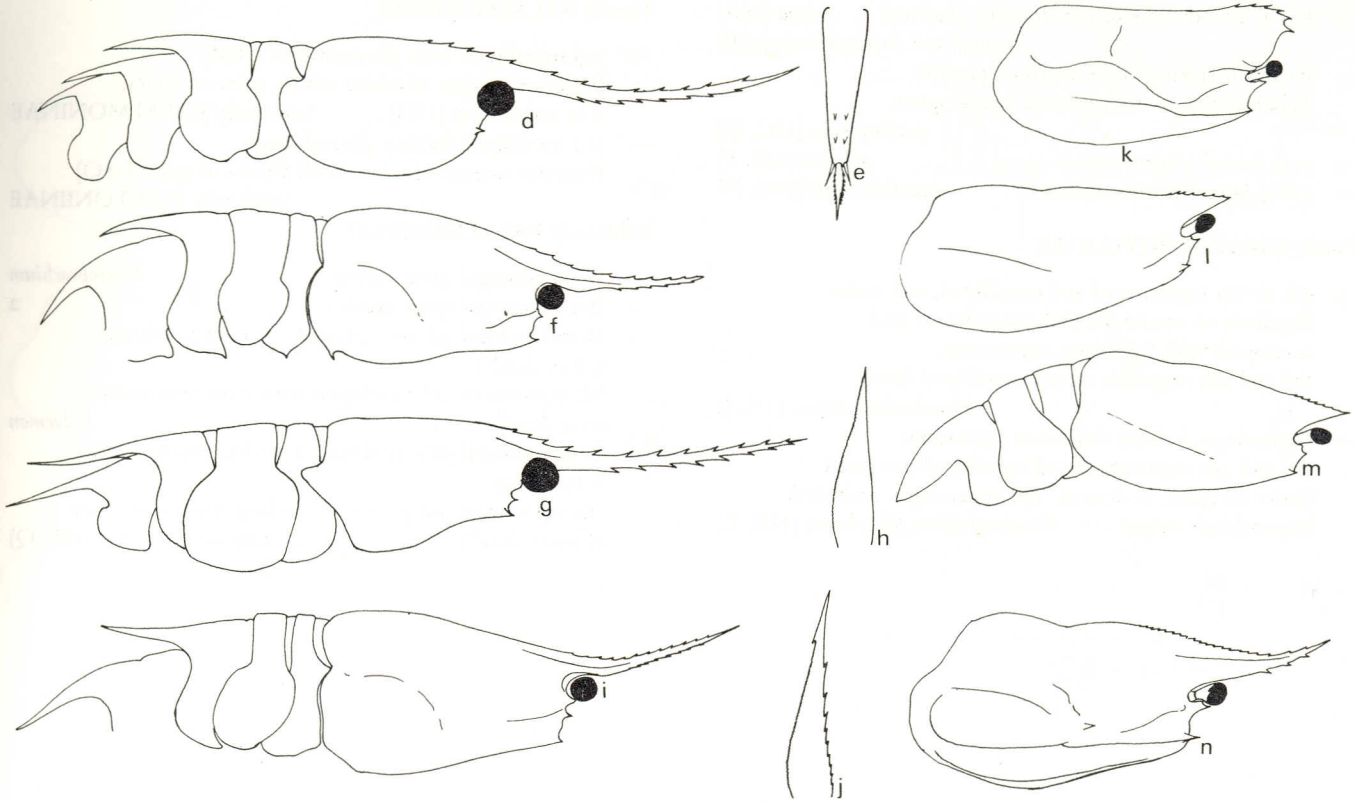


Fig 17

6. Distal portion of rostrum dorsally unarmed .. *eximia* (18A)
eximia var. *brachytelsonis* (18B)

— Rostrum lacking large unarmed portion
Telson always with 4 pairs of lateral spines
quadrispinosa (18C, D)

7. 7–11 lateral telsonic spines .. .. *pelagica* (18E, F)

— 13–19 lateral telsonic spines .. *acanthitelsonis* (18G, H)

Family GNATHOPHYLLIDAE

1. 4th to 6th segments of 3rd maxilliped, and outer flagellum of antennule, and propodus of 2nd pereiopod with foliaceous expansions
3rd and 4th segments of 3rd maxilliped fused
Hymenodora elegans (18I, J)

— Appendages lacking foliaceous expansions
3rd and 4th segments of 3rd maxilliped not fused
Entire carapace, abdomen, and appendages with dark brown/black stripes *Gnathophyllum fasciolatum* (18K, L)

Family PALAEMONIDAE

1. 3rd maxilliped with pleurobranch (18M)
Posterior margin of telson with 2 pairs of spines, 2 or more setae (18N) Subfamily PALAEMONINAE

— 3rd maxilliped lacking pleurobranch
Posterior margin of telson with 3 pairs of spines (18O)
Subfamily PONTONIINAE

Subfamily PALAEMONINAE

1. Branchiostegal spine absent .. .. *Macrobrachium*

— Branchiostegal spine present 2

2. Branchiostegal groove present, 2 median telsonic spines slender
6th segment of 5th pereiopod with transverse rows of setae distally .. .. *Palaemon*

— Branchiostegal groove absent, 2 median telsonic spines very strong
6th segment of 5th pereiopod lacking transverse rows of setae distally .. .. .. *Leander tenuicornis* (18P, Q)

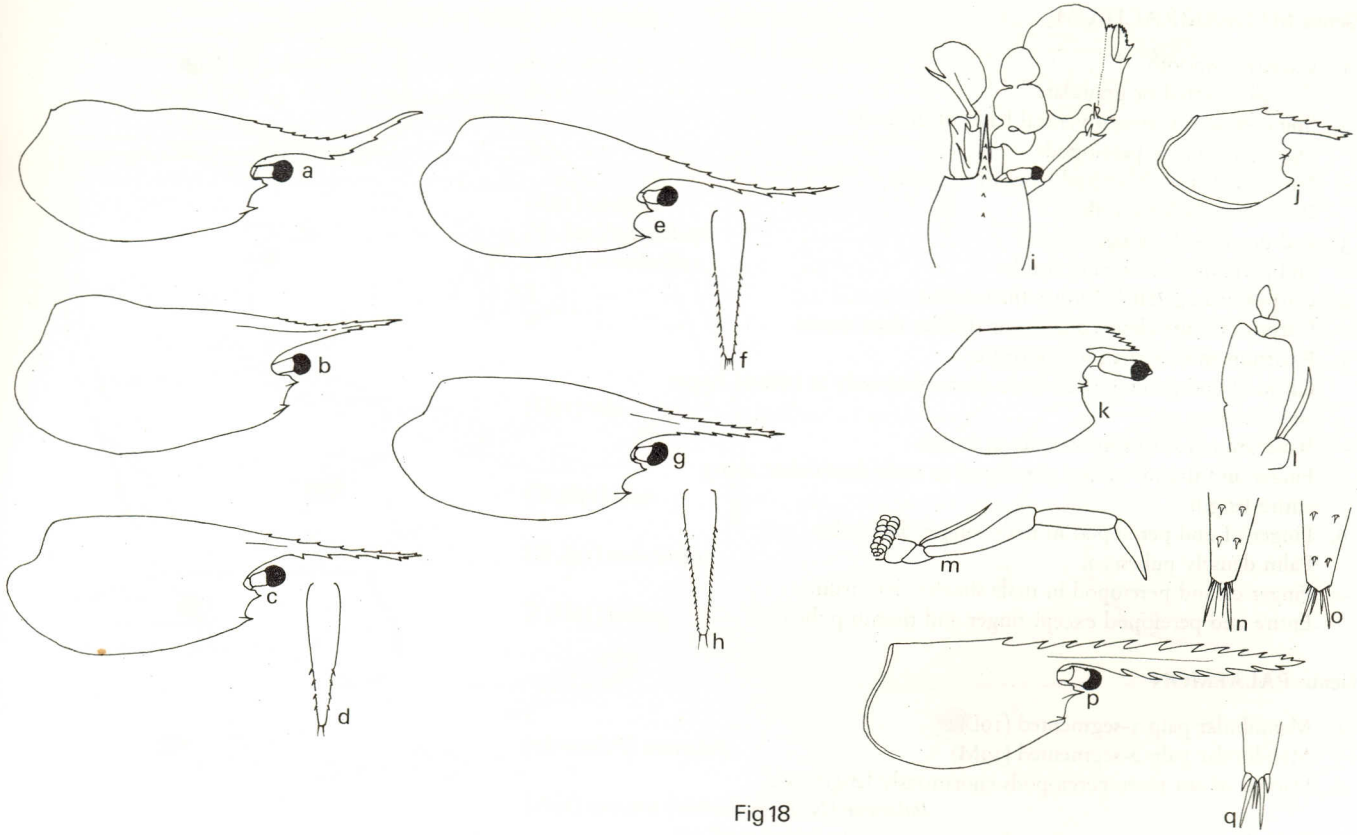


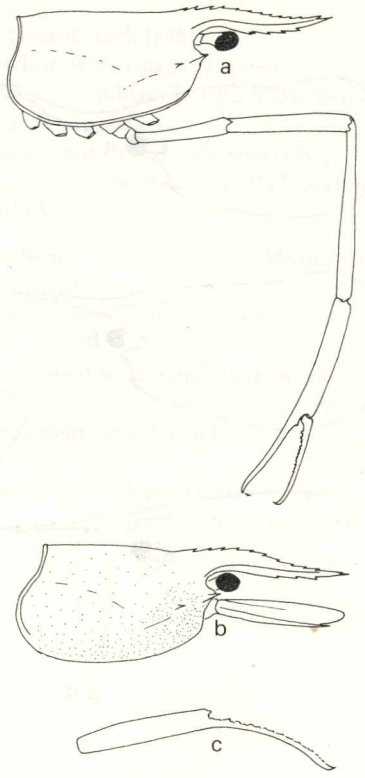
Fig 18

Genus MACROBRACHIUM

1. Carapace smooth 2
— Carapace pitted or granulate 4
2. Spine present between ventral bases of uropods
Scales present on pereiopods 3
— No spine between ventral bases of uropods
Pereiopods lacking scales .. .. *equidens* (19A)
3. 2nd pereiopods elongate, stout .. .. .. *lepidactylus* (19E, F)
— 2nd pereiopods elongate, slender .. .. *vollenhoveni* (19G)
4. Carpus of large chela longer than merus 5
— Carpus of large chela equal to or smaller than merus 6
5. Rostrum shorter than scaphocerite
Chela of 2nd pereiopod in male denticulate only at base of finger and thumb .. .. *idae* (19D)
— Rostrum equal to scaphocerite in length
Finger and thumb of 2nd pereiopod in male denticulate along entire length .. .. *rudis* (19B, C)
6. Finger of 2nd pereiopod in male longer than palm
Palm densely pubescent .. .. *scabriculum* (19J, K)
— Finger of 2nd pereiopod in male shorter than palm
Entire 2nd pereiopod except finger and thumb pubescent *petersi* (19H, I)

Genus PALAEMON

1. Mandibular palp 3-segmented (19L) 2
— Mandibular palp 2-segmented (19M) .. .. *Palaemon* (*Palaeander*)
2. Dactyli of last three pereiopods enormously lengthened
Palaemon (*Nematopalaemon*) *tenuipes* (19N)
— Dactyli of last three pereiopods not enormously lengthened
Palaemon (*Palaemon*)



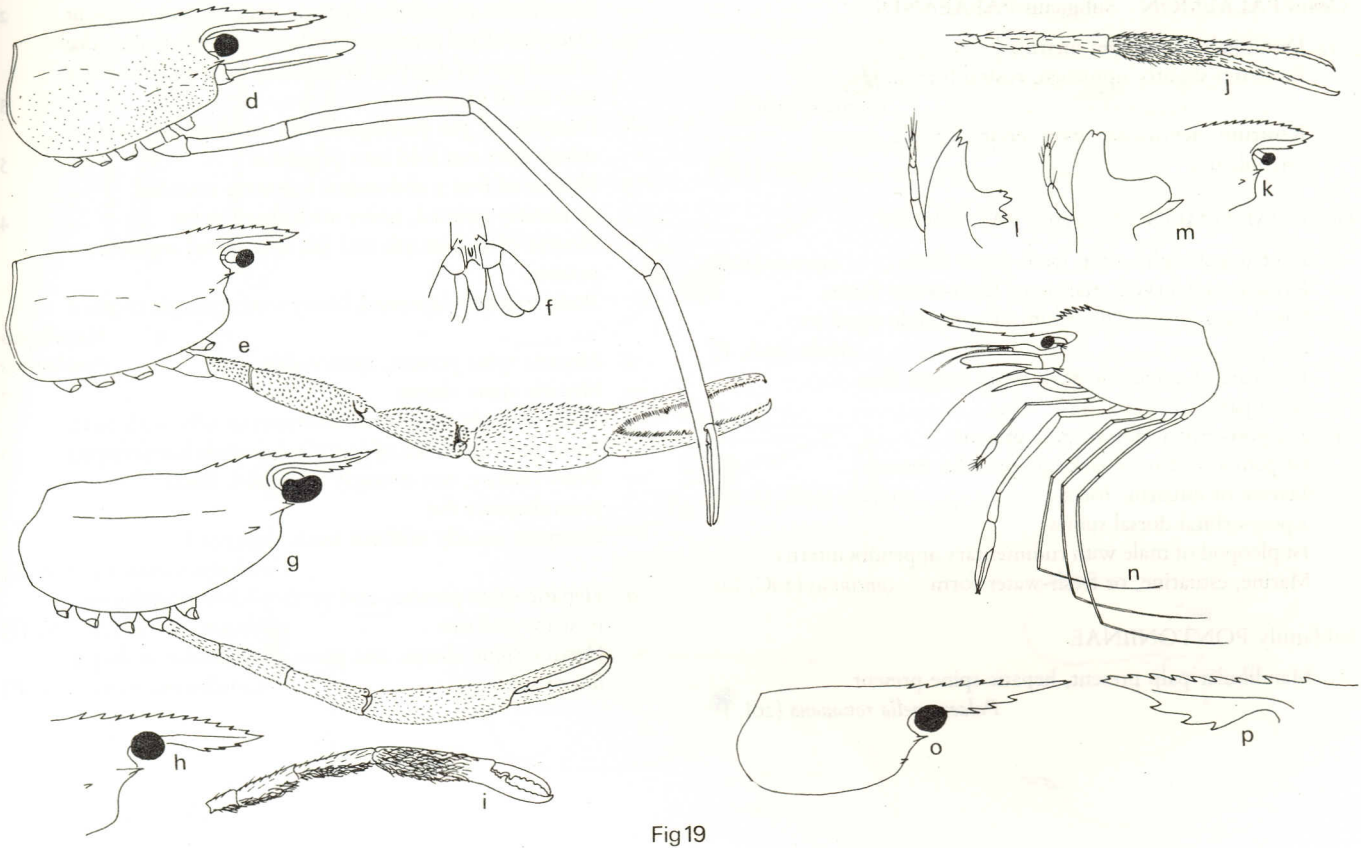


Fig 19

Genus PALAEMON Subgenus PALAEANDER

1. Distal half of rostrum unarmed
   Rostrum slightly upturned, rostral formula 6/3
   maculatus (19O)
— Rostrum denticulate over entire length, rostral formula 9/3 .. .. *elegans* (19P)

Genus PALAEMON Subgenus PALAEMON

1. Rostrum straight, 10/4, fresh-water form *capensis* (20E)
— Rostrum upcurved, marine or fresh-water forms .. 2
2. Fused part of outer flagellum of antennule equal to free part .. .. *debilis* (20A, F)
— Free part of antennule 3½–4 times longer than fused part 3
3. 2–3 post-orbital dorsal spine present
   1st pelopod of male lacking appendix interna
   Marine or estuarine form .. *pacificus* (20B, G, H)
— 2 post-orbital dorsal spines
   1st pleopod of male with rudimentary appendix interna
   Marine, estuarine, or fresh-water form *concinnus* (20C, D)

Subfamily PONTONIINAE

1. Mandibular palp present, hepatic spine present
   Palaemonella rotumana (20I, J)
— Mandibular palp absent, hepatic spine present or absent 2
2. Dactylus of 3rd pereiopod without basal protruberance
   If basal part of dactylus broadened, latter portion folds into slit of propodus 3
— Dactylus of 3rd pereiopod with basal protruberance, which does not fold into propodus 5
3. Pleurae of first 5 abdominal segments rounded or bluntly pointed, never with sharp point 4
— Pleurae of at least 4th and 5th abdominal segments pointed
   Body strongly depressed, lower rostral margin toothed
   Harpiliopsis
4. Hepatic spine present, immovable .. *Periclimenes*
— Hepatic spine absent 7
5. Body strongly depressed. Rostrum usually with teeth
   Basal protruberance of last 3 pereiopods hoof-shaped 6
— Body clumsy, not strongly depressed. Basal protruberance flat
   Rostrum usually without teeth, depressed
   Conchodytes tridacnae (20K, L)
6. Hepatic spine present. 2nd pereiopods very different in shape and size .. .. *Jocaste lucina* (20M, N, O)
— Hepatic spine absent. 2nd pereiopods similar in shape, not in size .. .. .. *Coralliocaris graminea* (20P)

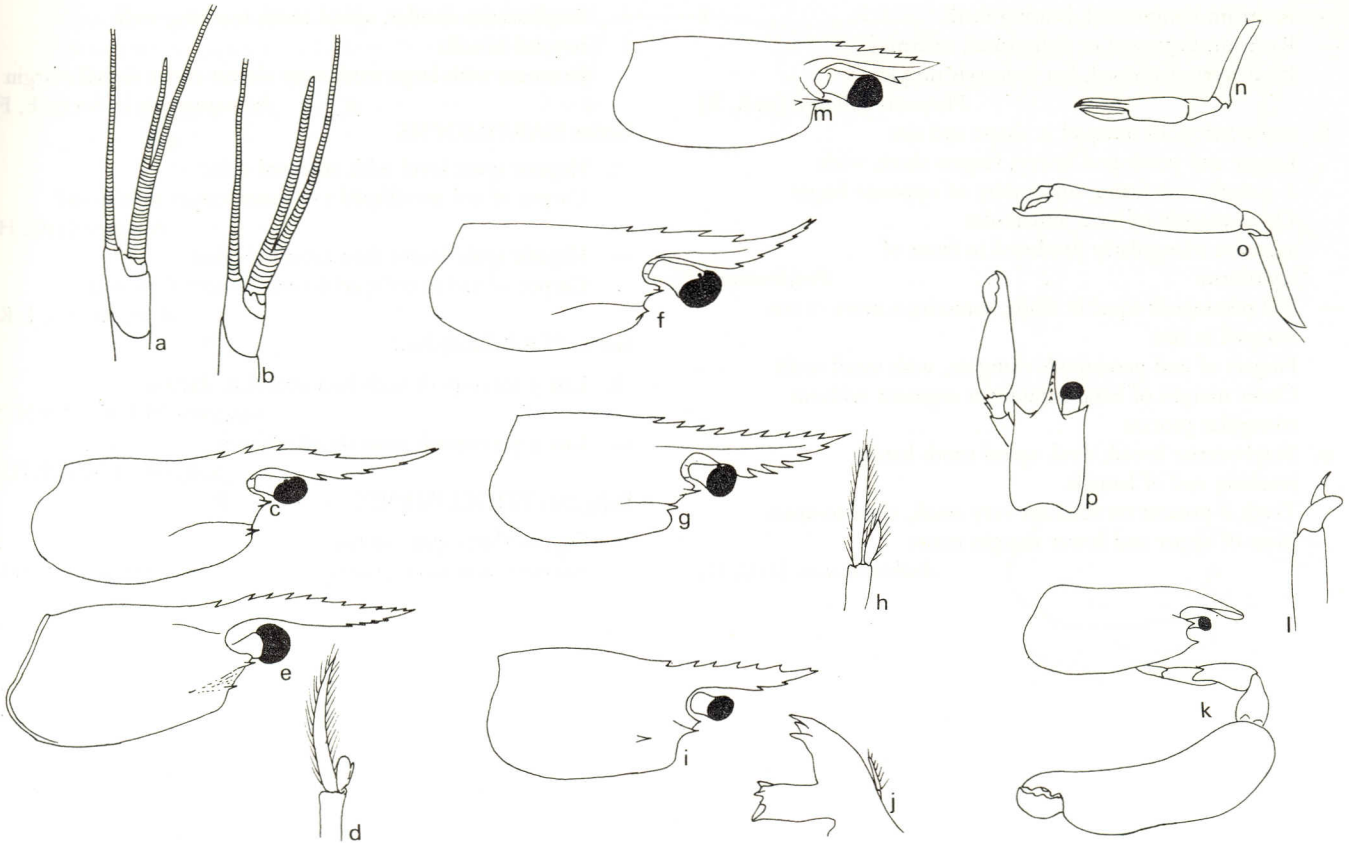


Fig 20

7. Rostrum compressed, bearing teeth 8
— Rostrum depressed or cylindrical, unarmed
Body very depressed, last 3 dactyls simple
Platycaris latirostris (21A, B)

8. 2nd pereiopods unequal in shape and size
Larger 2nd pereiopod heavy, fingers short, with 1–3 teeth, one fitting into cavity of opposite finger
Outer margin of basal antennular segment triangularly produced in front of stylocerite .. .. *Periclimenaeus*
— 2nd pereiopods equal in shape, sometimes more or less unequal in size
Fingers of 2nd pereiopods elongate, with small teeth
Outer margin of basal antennular segment without triangular process 9

9. Scaphocerite broad, oval, apical tooth hardly reaching end of lamella
Teeth if present on rostrum very small, close to apex, most of upper and lower margin entire
Anchistus custos (21C, D)
— Scaphocerite slender, apical tooth reaching well beyond lamella
Rostrum with large teeth over almost entire dorsal margin
Ischnopontonia lophos (21E, F)

Genus HARPILIOPSIS

1. Hepatic spine level with antennal spine
Carpus of 3rd maxilliped 3–4 times longer than broad
beaupresi (21G, H)
— Hepatic spine lower than antennal spine
Carpus of 3rd maxilliped 6 times longer than wide
depressus (21I, J, K)

Genus PERICLIMENES

1. Last 3 pereiopods with biunguiculate dactyli
Subgenus PERICLIMENES
— Last 3 pereiopods with simple dactyli
Subgenus HARPILIUS

Subgenus PERICLIMENES

1. Supra-orbital spine absent 2
— Supra-orbital spine present .. .. *commensalis* (21L)

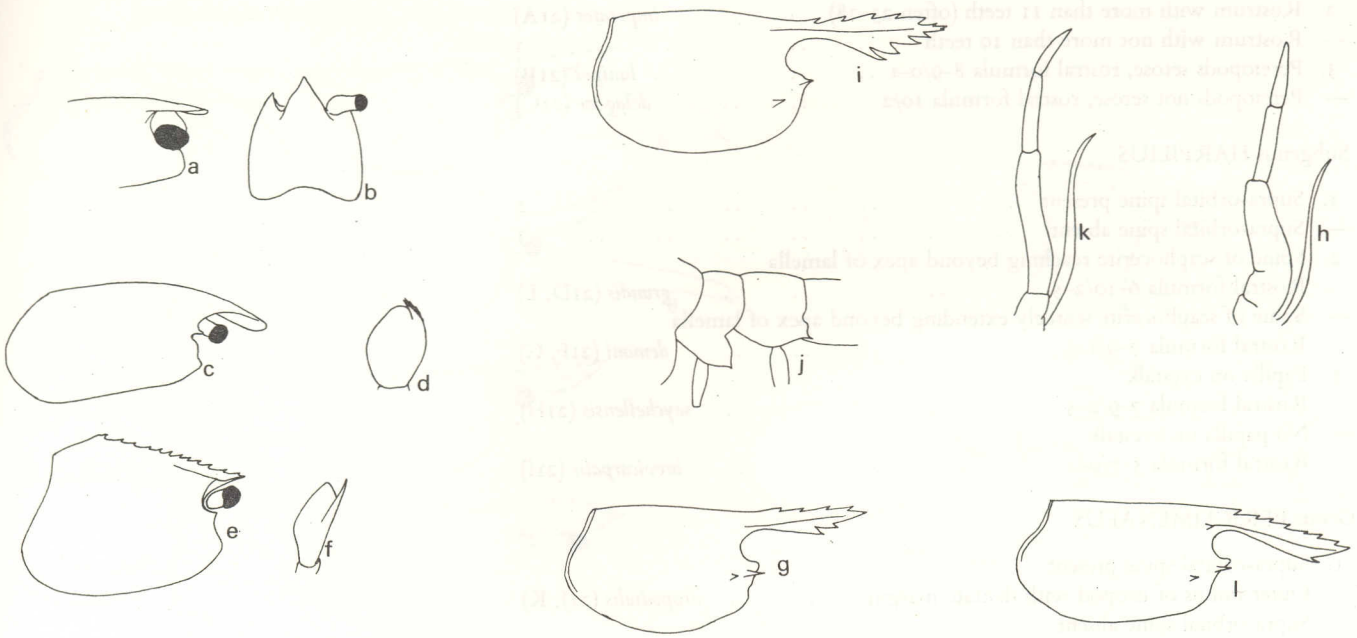


Fig 21

2. Rostrum with more than 11 teeth (often 23–28) .. .. *imperator* (21A)
— Rostrum with not more than 10 teeth 3
3. Pereiopods setose, rostral formula 8–9/0–1 .. .. *lanipes* (21B)
— Pereiopods not setose, rostral formula 10/2 .. .. *delagoae* (21C)

Subgenus HARPILIUS

1. Supra-orbital spine present 2
— Supra-orbital spine absent 3
2. Spine of scaphocerite reaching beyond apex of lamella
Rostral formula 6–10/2–5 .. .. *grandis* (21D, E)
— Spine of scaphocerite scarcely extending beyond apex of lamella
Rostral formula 7–9/1–3 .. .. *demani* (21F, G)
3. Papilla on eyestalk
Rostral formula 7–9/2–5 .. .. *seychellensis* (21H)
— No papilla on eyestalk
Rostral formula 5–7/0–2 .. .. *brevicarpalis* (21I)

Genus PERICLIMENAEUS

1. Supra-orbital spine present
Outer ramus of uropod with dentate margin .. .. *uropodialis* (21J, K)
— Supra-orbital spine absent
Outer ramus of uropod with smooth margin 2
2. Rostral formula 2–3/0 .. .. *tridentatus* (21L, M, N)
— Rostral formula 10/3 .. .. *natalensis* (21O)

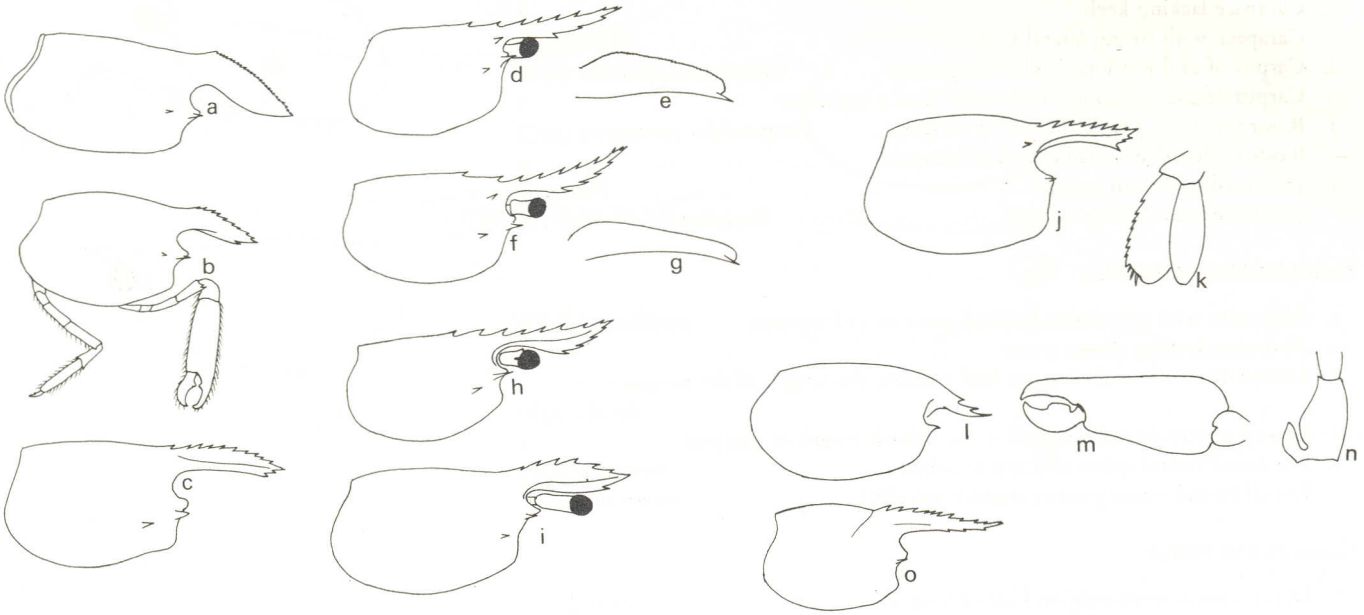
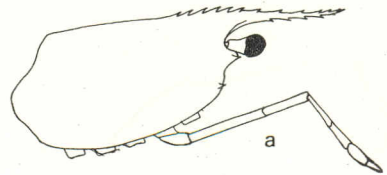
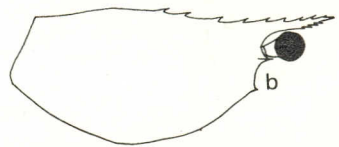


Fig 22

Family PANDALIDAE

1. Carapace lacking keels 2
— Carapace with strong lateral keels .. .. *Heterocarpus*
2. Carpus of 2nd pereiopod with 2 segments .. *Chlorotocus crassicornis* (23A)
— Carpus of 2nd pereiopod with more than 2 segments 3
3. Rostrum about 3 times length of carapace .. *Parapandalus zurstrasseni* (23C)
— Rostrum less than twice length of carapace 4
4. 3rd maxilliped with exopod .. .. *Plesionika*
— 3rd maxilliped lacking exopod .. .. *Pandalina brevirostris* (23B)





Genus HETEROCARPUS

1. Abdomen with prominent hooked spine on 3rd segment *woodmasoni* (23D)
— Abdomen lacking dorsal spines 2
2. Lowest ventro-lateral carapace keel running the length of the carapace *dorsalis* (23E)
— Lowest ventro-lateral keel half to two-thirds length of carapace .. 3
3. No dorsal rostral spines anterior to orbits .. .. .. *laevigatus* (23F)
— Dorsal rostral spines present anterior to orbits .. .. *tricarinatus* (23G)

Genus PLESIONIKA

1. Dorsal rostral teeth only on base of rostrum .. .. .. *martia* (23H)
— Dorsal rostral teeth along length of rostrum 2
2. Rostrum equal to or longer than carapace
Rostral formula 15/15–18 .. .. *longirostris* (23I)
— Rostrum two-thirds carapace length
Rostral formula 11/4–5 .. .. *acanthonotus* (23J)

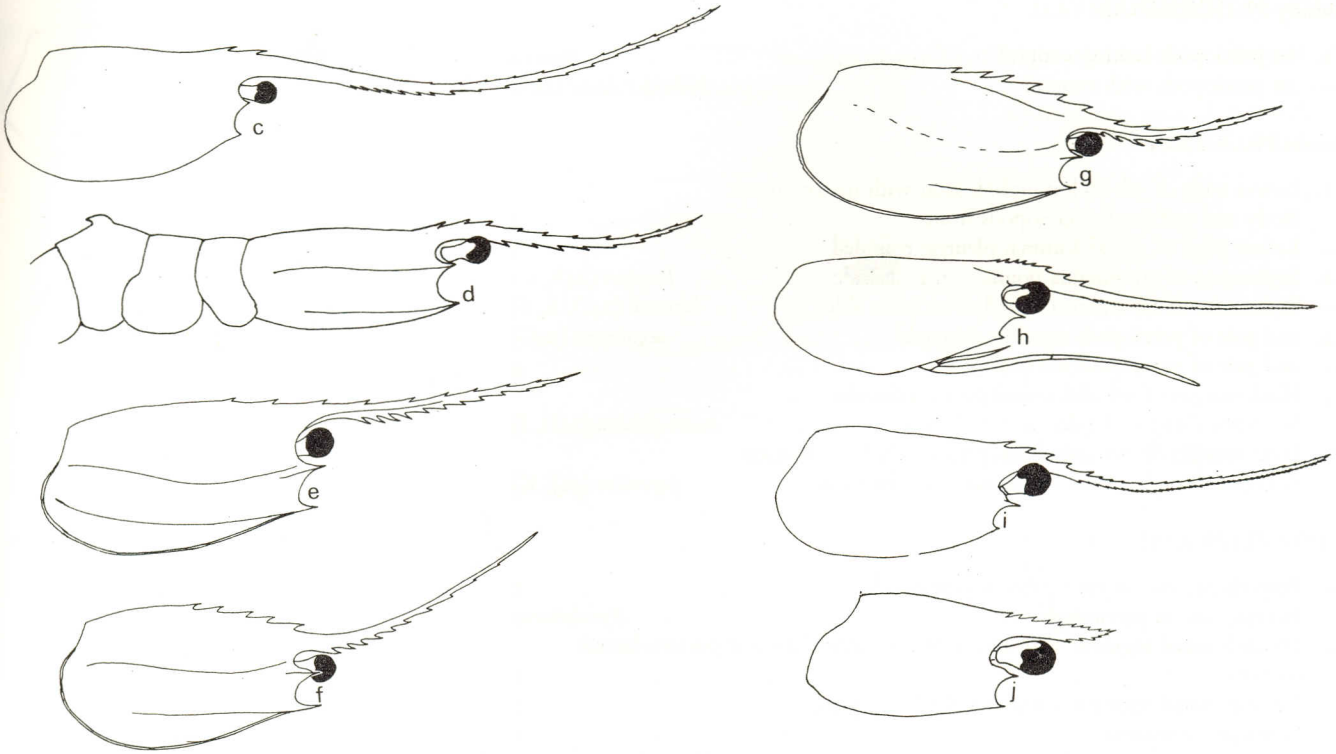


Fig 23

Family PROCESSIDAE

1. 1st pereiopods lacking exopod .. .. *Processa*
— 1st pereiopods with exopod .. .. *Nikoides danae* (24A)

Genus PROCESSA

1. Lower edge of 5th abdominal pleuron with minute tooth
   Body and 3rd to 5th pereiopods stout 2
— Lower edge of 5th abdominal pleuron rounded 3
2. Stylocerite of 1st antenna pointed on inner side .. .. *longipes* (24B, C)
— Stylocerite of 1st antenna rounded on inner side .. .. *barnardi* (24D, E, F)
3. 2nd pair of pereiopods equal or subequal .. .. .. *aequimana* (24G)
— 2nd pair of pereiopods unequal 4
4. Hind margin of 5th abdominal pleuron circular
   Rostrum narrow, slender in dorsal view .. .. *austroafricana* (24H, I)
— Hind margin of 5th abdominal pleuron slightly elongate
   Rostrum broad at base, triangular in dorsal view .. .. *japonicus* (24J, K)

Family ALPHEIDAE

1. Epipods present on 1st 2 pairs of pereiopods 2
— No epipods on pereiopods .. .. *Synalphaeus*
2. 6th abdominal segment with movable plate articulating at postero-lateral corner 3
— 6th abdominal segment without articulating plate 5
3. Rostrum prominent 4
— Rostrum indistinct or absent .. .. *Betaeus jucundus* (24L)
4. Epipods on 1st 3 pairs of pereiopods
   Carpus of 2nd pereiopod 5-segmented .. .. *Athanas*
— Epipods on 1st 2 pairs of pereiopods .. .. *Arete indica* (24M)

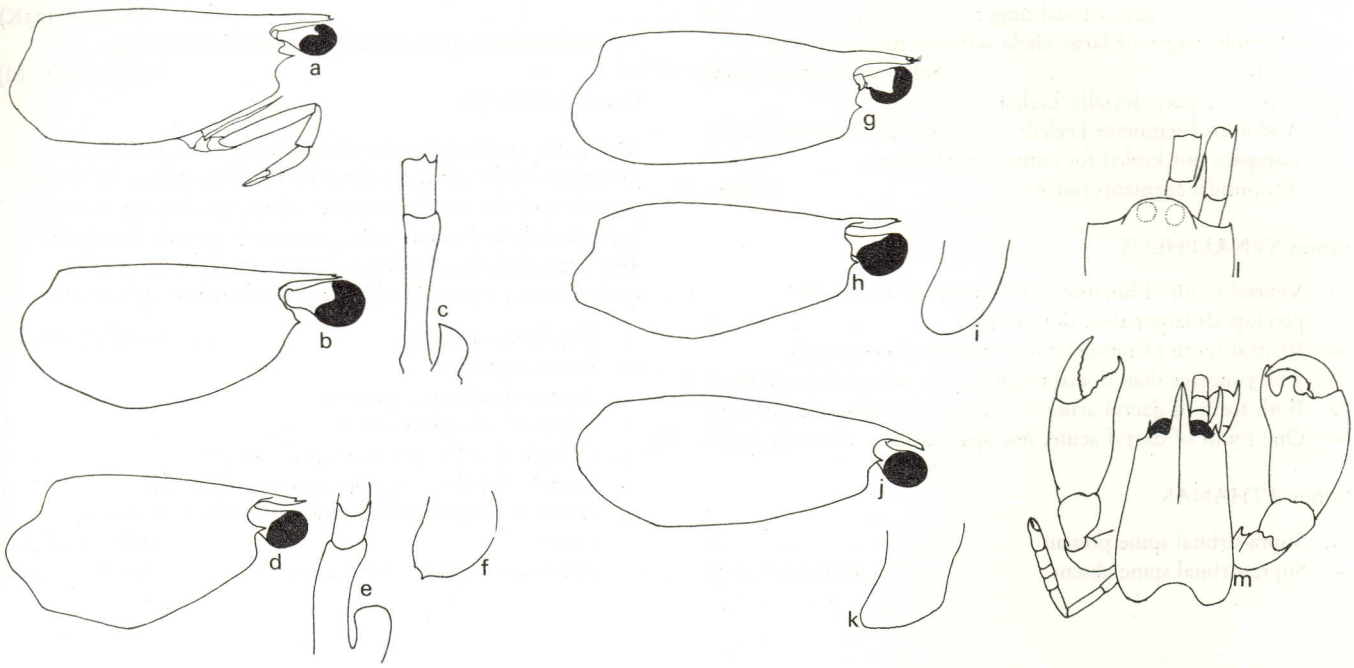


Fig 24

5. Movable finger of large chela with molar-shaped tooth fitting into socket of fixed finger 6
— Movable finger of large chela without molar-shaped tooth .. .. *Salmoneus rostratus* (25A)
6. Entire carapace dorsally keeled
Abdominal segments keeled .. *Racilius compressus* (25C)
— Carapace not keeled for entire dorsal length
Abdominal segments not keeled .. .. *Alpheus*

Genus SYNALPHEUS

1. Ventral tooth of biunguiculate dactyli of 3rd to 5th pereiopods larger than dorsal tooth 2
— Ventral tooth of biunguiculate dactyli of pereiopods 3 to 5 shorter than dorsal tooth *anisocheir* (25B, H, I)
2. Both teeth of dactyl acute .. .. *jedanensis* (25D, E)
— One tooth of dactyl acute, one spathulate *charon* (25F, G)

Genus ATHANAS

1. Supra-orbital spine present 2
— Supra-orbital spine absent .. .. *minikoensis* (25J)
2. Extra-orbital spine smaller than infra-orbital spine *djibotensis* (25K)
— Infra-orbital spine smaller than extra-orbital spine *nitescens* (25L, M)

Genus ALPHEUS

Merely for convenience, no attention has been paid to the groupings of the genus as given by De Man (1911). With the exception of the last three species, characters dealing with the large chela have been avoided, as these frequently break off. The large chela has, however, been figured for most of the species, so as to provide additional confirmation of a species.

1. No distinct rostrum .. .. .. *frontalis* (25N, O)
— Rostrum present 2
2. Supra-orbital spines present 3
— Supra-orbital spines absent 8
3. Dactyli of 3rd to 5th pereiopods simple 4
— Dactyli of 3rd to 5th pereiopods biunguiculate .. 5
4. Anterior carapace villose, and with minute scattered spines .. .. *villosus* (25P, Q)
— Anterior carapace lacking hairs .. *deuteropus* (25R)

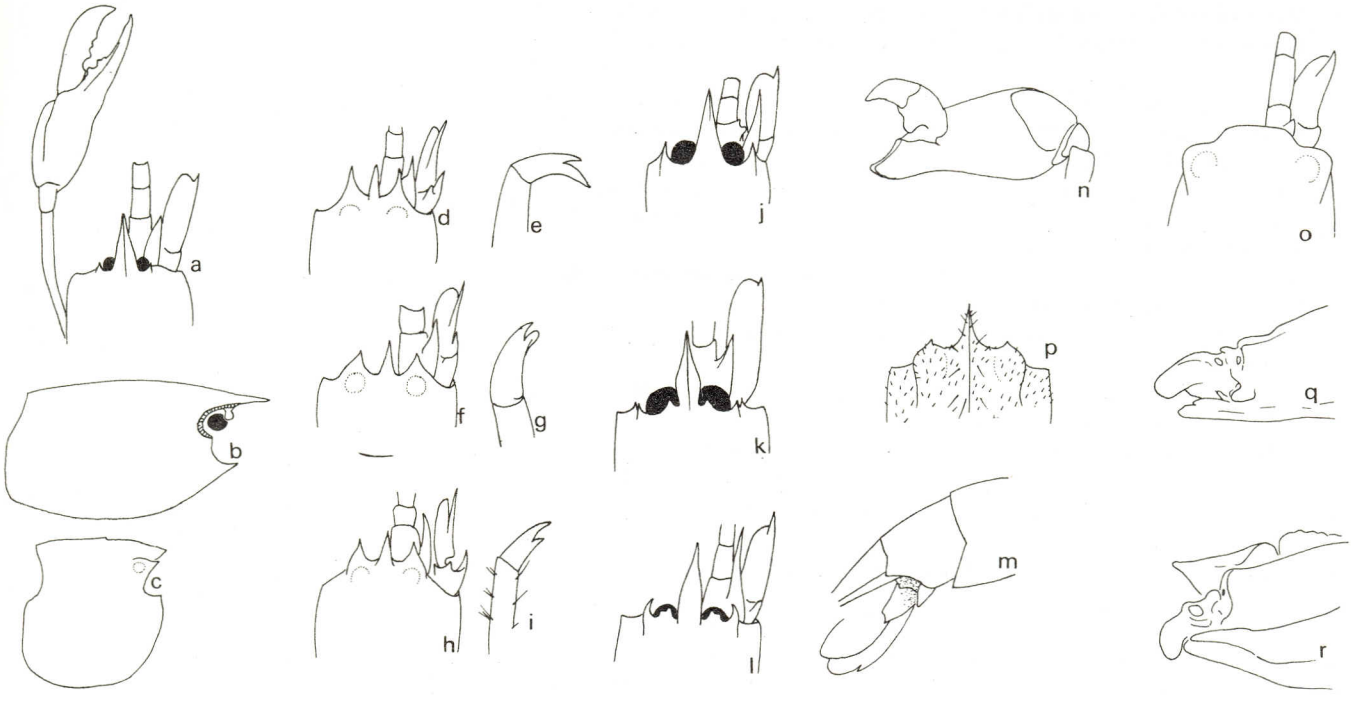
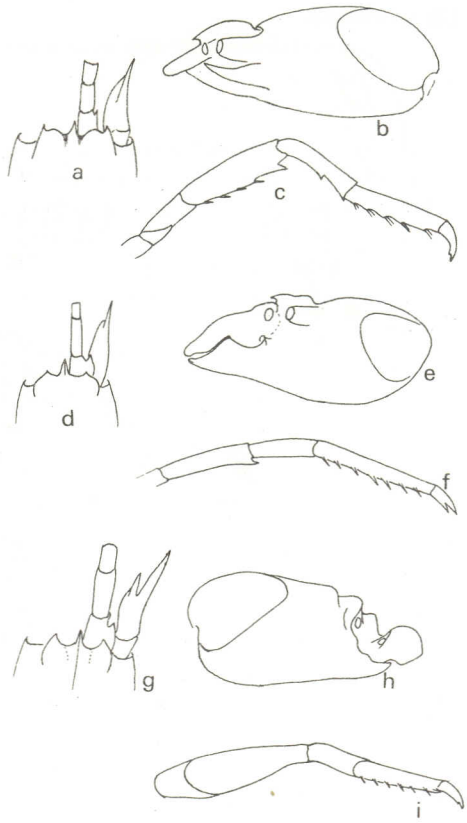


Fig 25

5. Merus of 3rd pereiopod with ventral apical tooth 6
— Merus of 3rd pereiopod lacking ventral apical tooth 7
6. Merus of 3rd pereiopod with 3–6 ventral spines .. *collumianus* (26A, B, C)
— Merus of 3rd pereiopod lacking spines other than ventral apical spine *waltervadi* (26D, E, F)
7. Dactyl of 3rd pereiopod slender .. .. *bullatus* (26G, H, I)
— Dactyl of 3rd pereiopod stumpy, with blunt spines at base *lottini* (26J, K, L)
8. Dactyls of 3rd to 5th pereiopods simple 9
— Dactyli of 3rd to 5th pereiopods biunguiculate .. *macrochirus* (26M, N)
9. Telson constricted in distal half .. .. *notabilis* (26O, P)
— Telson not markedly constricted 10
10. Base of rostrum flanked by flat tooth on either side *dissodontonotus* (26Q, R)
— No flanking teeth at base of rostrum 11
11. Merus of 3rd pereiopod armed with ventral apical tooth 12
— Merus of 3rd pereiopods unarmed 16
12. 2nd segment of carpus of 2nd pereiopod at least twice as long as 1st .. 13
— 2nd segment not longer than first 14
13. 2nd segment of carpus of 2nd pereiopod 4 times longer than 1st *obesomanus* (26S, T, U)
— 2nd segment of carpus of 2nd pereiopod twice length of 1st *longecarinatus* (26V, W, X)
14. Anterior orbital margin (i.e. of orbital hoods) regularly rounded *hippothoe* (26Y, Z)
— Anterior orbital margin not regularly rounded, but with a prominence 15
15. Broad arcuate setiferous prominence between the obtuse tips of orbital hoods and rostrum .. .. *insignis* (26AA)
— No broad arcuate setiferous prominence between orbital hoods and rostrum .. .. *parvirostris* (26BB, CC)



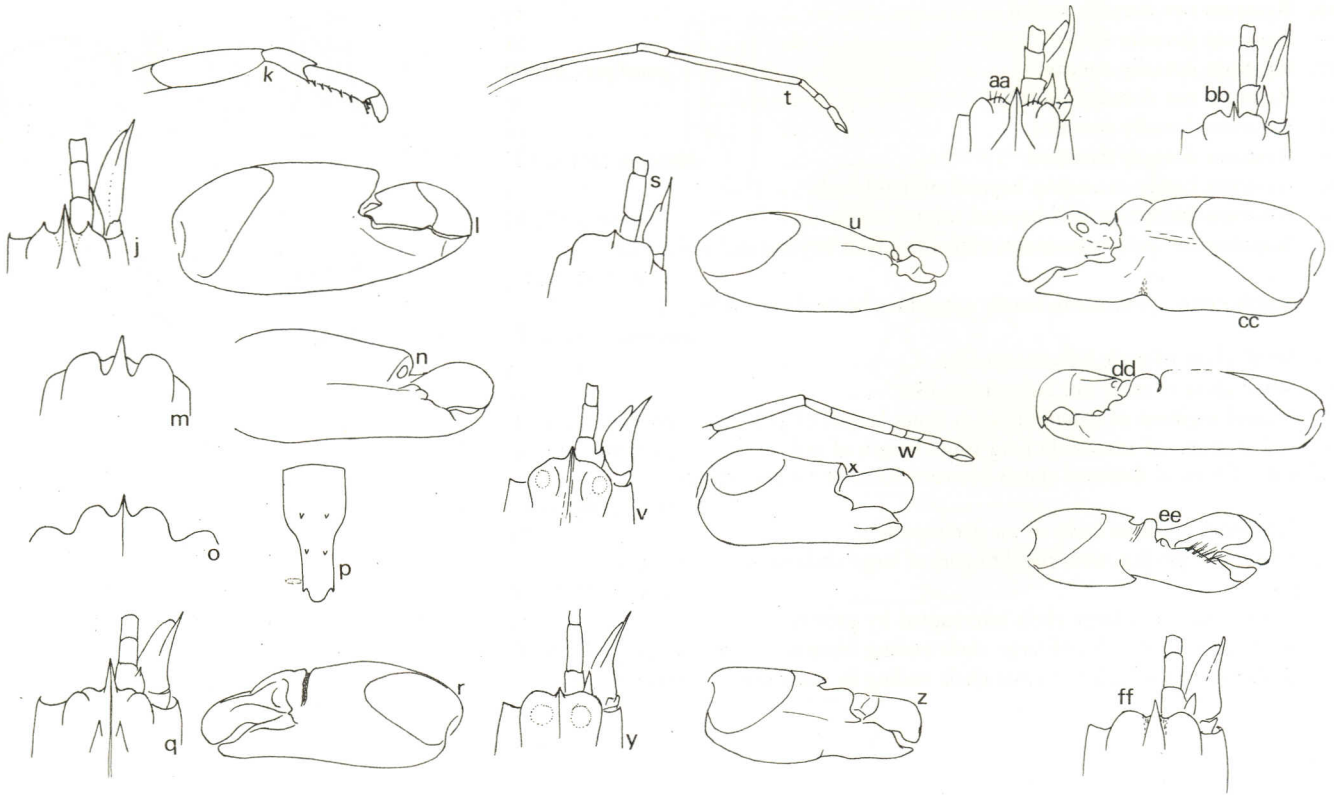
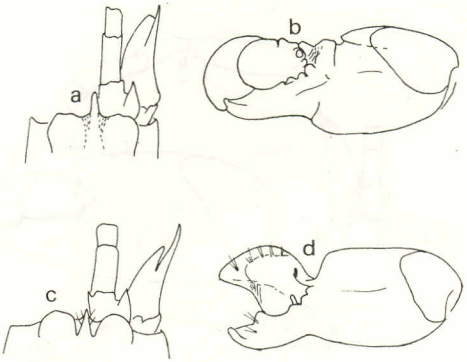


Fig 26

16. Rostrum not dorsally keeled 17
— Rostrum dorsally keeled 21
17. Rostrum dorsally concave .. .. *gracilipes* (26DD)
— Rostrum not dorsally concave 18
18. Rostrum dorsally rounded 19
— Rostrum dorsally flattened .. .. *bisincisus* (26EE, FF)
19. Rostrum barely extending beyond orbital hoods 20
— Rostrum extending well beyond orbital hoods .. .. *strenuus* (27A, B)
20. Scaphocerite spine prominent, extending well beyond end of lamella
luciae (27C, D)
— Scaphocerite spine small, barely extending beyond end of lamella
malabaricus (27E, F)
21. Small chela of male balaeniceps-like 23
— Small chela of male not balaeniceps-like 22
22. Second segment of antennule $2\frac{1}{2}$–3 times length of 3rd .. *rapacida* (27G, H, I)
— 2nd segment of antennule 1–$1\frac{1}{2}$ times length of 3rd .. *laeviuscula* (27J, K)
23. Pair of ventral flattened spines between bases of 1st pereiopods
nonalter (27L, M, N, O)
— No spines between bases of 1st pereiopods 24
24. Lower margin (i.e. with fixed finger) of large chela uninterrupted by groove .. .. *rapax* (27P, Q)
— Lower margin of large chela interrupted by groove 25
25. Both margins of palm of large chela ending bluntly *crassimanus* (27R, S, T)
— Both margins of palm of large chela ending in acute spine *edwardsii* (27U, V)



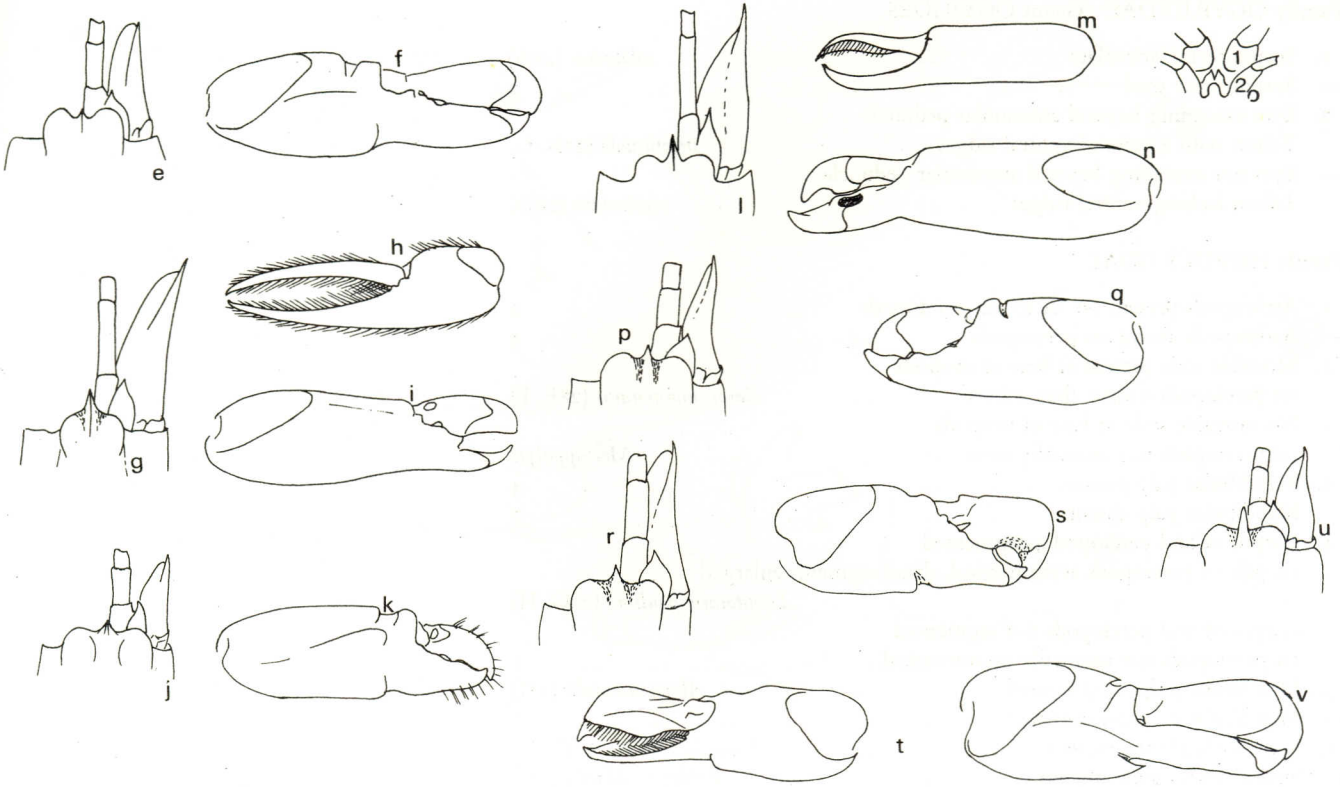


Fig 27

Family OGYRIDIDAE Genus OGYRIDES

1. Scaphocerite lanceolate .. .. *saldanhae* (28A)
— Scaphocerite oval 2
2. Eyes extending beyond antennular peduncle
Telson with 4 pairs of ventral ridges .. .. *striaticauda* (28B, C)
— Eyes not extending beyond antennular peduncle
Telson lacking ventral ridges .. .. *occidentalis* (28D)

Family HIPPOLYTIDAE

1. Arthropods present on 1st to 4th pereiopods 2
— Arthropods absent on pereiopods 3
2. Movable scale present at base of uropods
1st pereiopods stouter than others .. .. *Saron marmoratus* (28E, F)
— No movable scale at base of uropods
1st pereiopods not unusually stout .. .. *Merhippolyte*
3. Mandibular palp present 4
— Mandibular palp absent 7
4. Carpus of 2nd pereiopod 4-segmented
1st pair of pereiopods asymmetrical, distal segments enlarged
Leontocaris paulsoni (28G, H)
— Carpus of 2nd pereiopods 6–8 segmented
1st pereiopods not unusually asymmetrical 5
5. Mandibular palp 3-segmented .. .. .. *Alope orientalis* (28I)
— Mandibular palp 2-segmented 6
6. Supra-orbital spine absent .. .. *Eualus*
— Supra-orbital spine present .. .. *Lebbeus saldanha* (28J)
7. Dactyli of pereiopods 3–5 ending in cluster of 4 spines
Gelastocaris peroni (28K, L)
— Dactyli of pereiopods 3–5 simple or biunguiculate 8

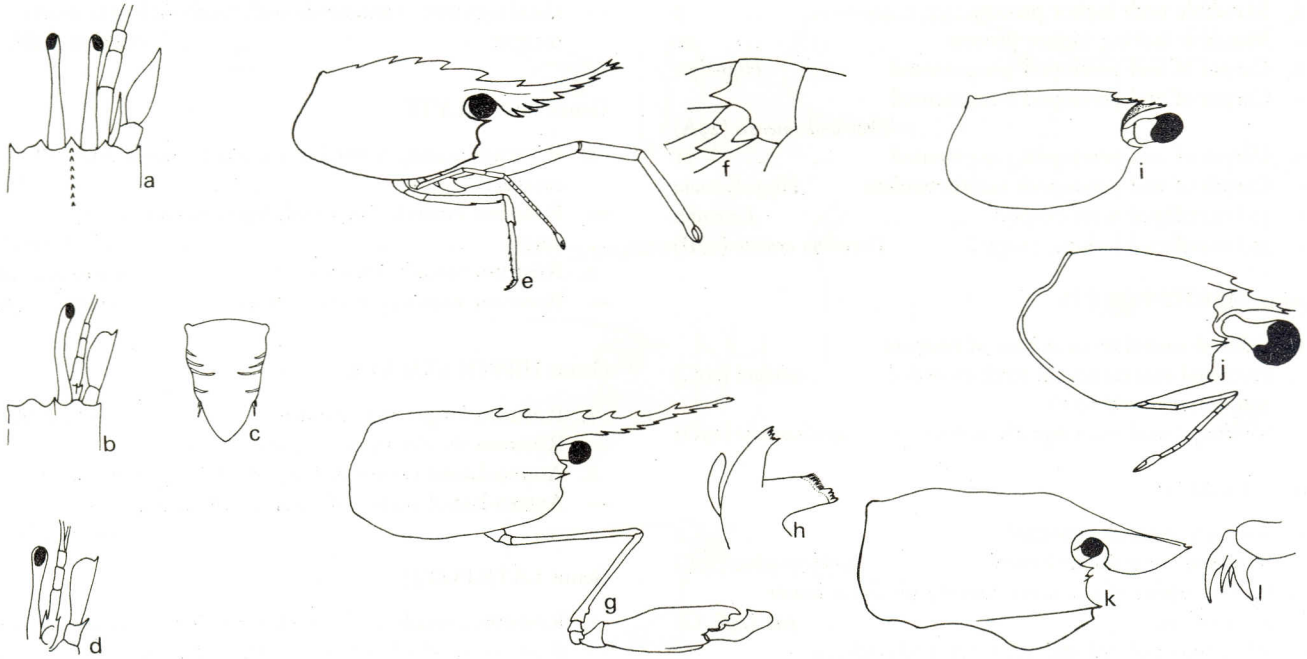


Fig 28

8. Mandible with incisor process 9
— Mandible lacking incisor process 10
9. Carpus of 2nd pereiopod 3-segmented .. *Hippolyte*
— Carpus of 2nd pereiopod 6-segmented
Thor amboinensis (29A)
10. Carpus of 2nd pereiopod 3-segmented 11
— Carpus of 2nd pereiopods multiarticulate *Hippolysmata*
11. 3rd maxilliped with exopod .. .. .. *Latreutes*
— 3rd maxilliped lacking exopod *Tozeuma armata* (29B)

Genus MERHIPPOLYTE

1. 3 dorsal rostral teeth at base of rostrum
Proximal ventral rostral teeth crowded .. *calmani* (29C)
— 4–6 dorsal rostral teeth
Ventral rostral teeth equally spaced .. *agulhasensis* (29D)

Genus EUALUS

1. Rostrum ventrally toothed 2
— Rostrum ventrally unarmed .. .. *makrognathus* (29E)
2. Basal segment of antennule lacking tooth on lower inner margin .. .. *pax* (29F, G)
— 4th segment of 3rd and 4th pereiopods lacking comb-like teeth
— Basal segment of antennule with tooth on lower inner margin .. .. *ctenifera* (29H, I, J)

Genus HIPPOLYTE

1. Rostrum bearing ventral teeth, usually more than half carapace length 2
— Rostrum ventrally unarmed, less than half carapace length .. .. *palliola* (29K, L)
2. Rostrum apically tridentate .. .. *kraussiana* (29M)
— Rostrum with single apical point .. *ventricosa* (29N)

Genus HIPPOLYSMATA

1. Rostrum longer than carapace .. *tugelae* (29O, P)
— Rostrum shorter than carapace 2
2. Antero-lateral corner of carapace bearing spine *vittata* (29Q)
— Antero-lateral corner of carapace lacking spine
kukenthali (29R)

Genus LATREUTES

1. Rostrum dorsally and ventrally toothed *mucronatus* (29S)
— Rostrum toothed only near apex, relatively less deep than previous species .. .. .. *pygmaeus* (29T)

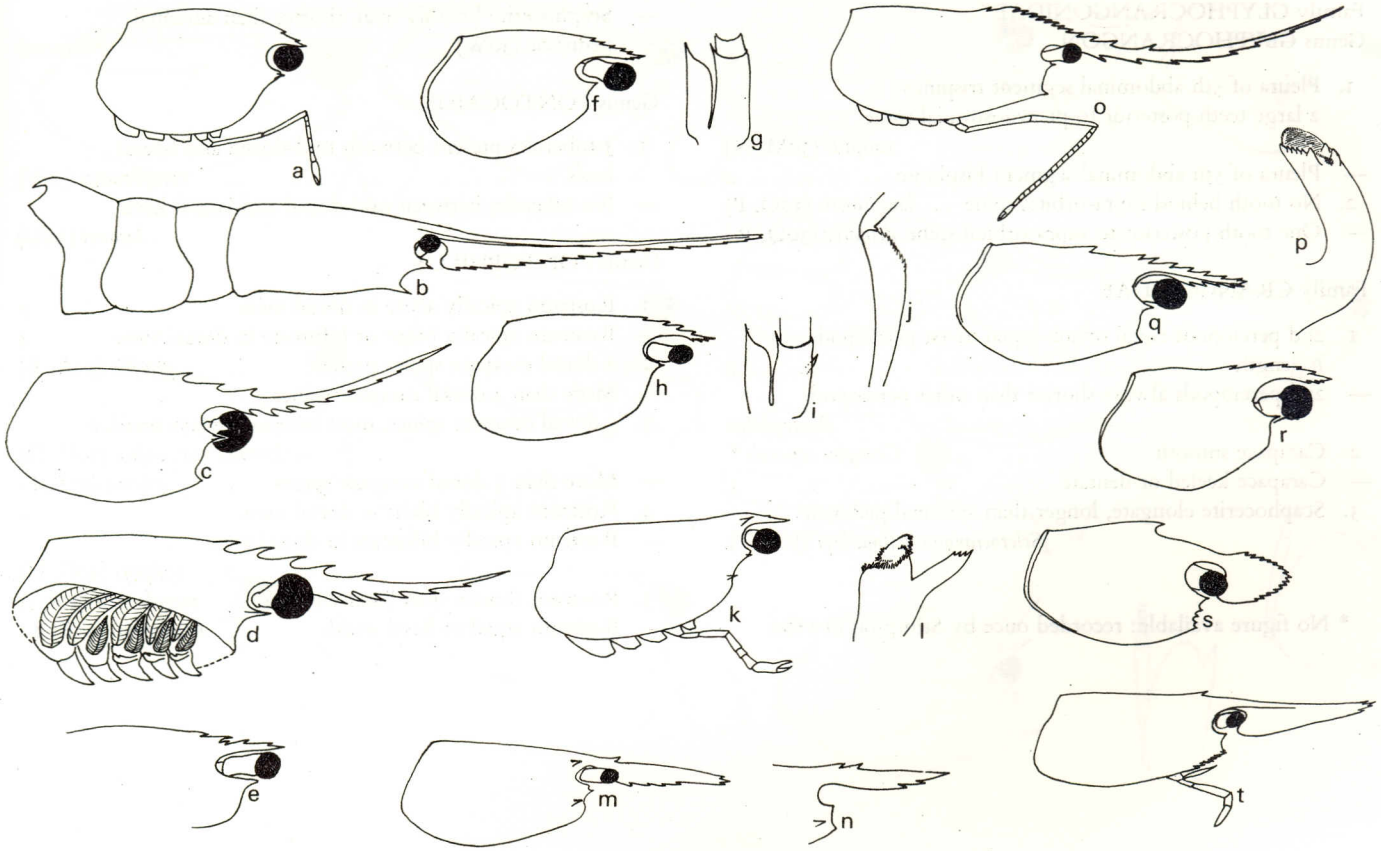


Fig 29

Family GLYPHOCRANGONIDAE
Genus GLYPHOCRANGON

1. Pleura of 5th abdominal segment trispinose
   2 large teeth posterior to pterygostomial spine
   sculptus (30M, N)
— Pleura of 5th abdominal segment bispinose 2
2. No tooth behind supra-orbital spine .. *longirostris* (30O, P)
— One tooth posterior to supra-orbital spine *dentatus* (30Q, R)

Family CRANGONIDAE

1. 2nd pereiopods equal or sub-equal to 1st pereiopods in length 2
— 2nd pereiopods always shorter than other pereiopods
   Pontophilus
2. Carapace smooth .. .. .. *Crangon capensis* *
— Carapace keeled or dentate 3
3. Scaphocerite elongate, longer than antennal peduncle
   Sclerocrangon bellmarleyi (30S, T)

* No figure available: recorded once by Stimpson in 1860.

— Scaphocerite broadly oval, shorter than antennal peduncle (30W) .. .. *Pontocaris*

Genus PONTOCARIS

1. 3 tubercles present between mid-dorsal and lateral keels .. .. *cataphractus* (30V)
— No tubercles between mid-dorsal and lateral keels
   lacazei (30U)

Genus PONTOPHILUS

1. Rostrum apically acute in dorsal view 2
— Rostrum apically blunt or bifurcate in dorsal view 4
2. 2 dorsal carapace spines present .. *gracilis* (30A, B)
— More than 2 dorsal carapace spines 3
3. 3 dorsal carapace spines, most anterior always smallest
   occidentalis var. *indica* (30C, D)
— More than 3 dorsal carapace spines .. *pilosus* (30E, F)
4. Rostrum apically blunt in dorsal view 5
— Rostrum apically bifurcate in dorsal view
   sculptus (30G, H)
5. Rostrum shorter than basal width .. *megalocheir* (30I, J)
— Rostrum equal to basal width .. *hendersoni* (30K, L)

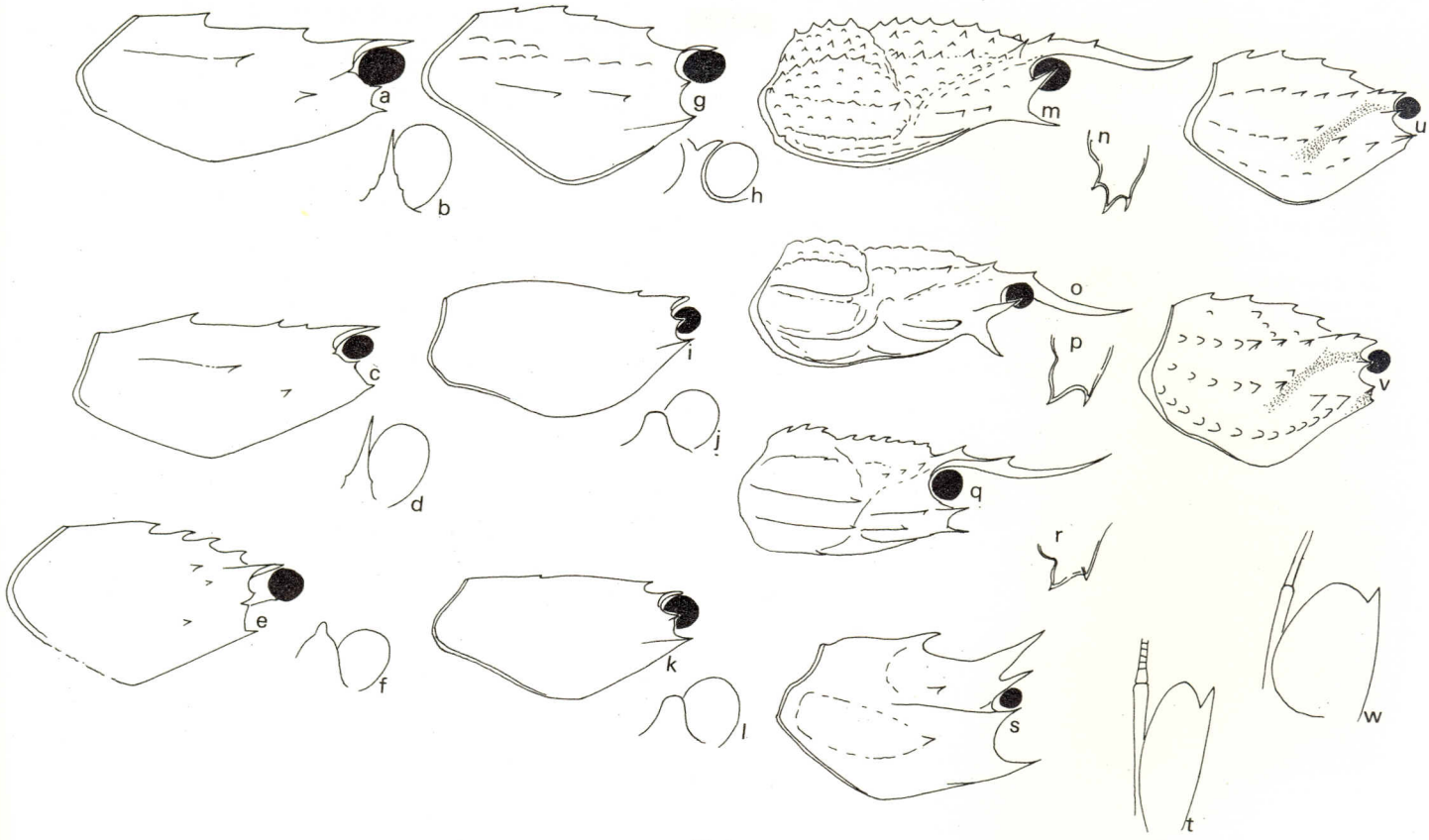


Fig 30