

THE AMPHIPODA OF SOUTHERN AFRICA

PART 3

THE GAMMARIDEA AND CAPRELLIDEA OF NATAL

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(With 8 figures)

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INTRODUCTION

The aim of this third paper in the series on the benthic Amphipoda of southern Africa is to bring together existing information concerning the marine gammaridean and caprellid amphipod fauna of Natal. The main body of data has been drawn from the collections of the University of Cape Town Ecological Survey and of the National Institute for Water Research of the South African Council for Scientific and Industrial Research. To these have been added the records of previous workers in the area, notably T. R. R. Stebbing (1918), K. H. Barnard (1916, 1925, 1940) and J. L. Barnard (1961).

A considerable number of estuaries are situated along the Natal coast and these have been the subject of much of the collecting effort in the area. As a result the estuarine fauna is well known while the marine environment has been less thoroughly sampled. Collecting in deeper waters has been particularly neglected, indeed the area between 200 and 1 000 m remains virtually untouched and there can be little doubt that many new species await discovery there.

The Natal seaboard is of a subtropical type, being warmed by the southerly flowing Agulhas current. The continental shelf is narrow, except in the stretch between Richard's Bay and Durban, and hence the current flows close inshore and has a profound effect upon the littoral fauna. The mean sea temperature is in fact maintained at a level some 10°C higher than found at the same latitude on the west coast, the normal range being between about 25°C in summer and 19°C in winter.

The collecting areas of the University of Cape Town and National Institute for Water Research (NIWR) are described briefly below and shown on Figure 1.

THE COLLECTING STATIONS

The various collections incorporated into this survey are best considered as falling into two groups—those from estuaries and brack-water lakes, and those from the open sea. Each of these categories is further divided according to the source of the samples.

Samples from the open sea

(a) Collections of the National Institute for Water Research (NIWR)

This series of some 50 benthic samples was collected by the R.V. *Meiring Naudé* on behalf of the National Institute for Water Research of the South African Council for Scientific and Industrial Research. Amphipods were recovered from 36 of these samples and kindly loaned to the author for identification. Examination of the samples revealed 47 recognizable species including four new to science and two others (*Ampelisca miops* and *Metaprotella macrodactylos*) previously known only from the holotype. Most of the samples were dominated by burrowing species, the most common being *Mandibulophoxus stimpsoni*, which was present in 22 of the samples. Other prominent species were *Byblis gaimardi*, *Microdeutopus thubellinus* n. sp., *Ampelisca diadema* and *Unciolella spinosa* n. sp.

Station data for samples containing amphipods are provided below. The samples were collected on three separate cruises and this is reflected in the catalogue numbers which are coded: NIWR/cruise/station number, the cruises being referred to as 1 and 2 and 'Umlass' (UM). Thus, station NIWR/1/3 is the third sample from cruise 1.

N.I.W.R. station data

<i>Catalogue no.</i>	<i>Date</i>	<i>Location</i>	<i>Depth (m)</i>
NIWR/1/3	15/5/72	28°36'S/32°26'E	55
NIWR/1/5	15/5/72	28°48'S/32°11'E	32
NIWR/1/6	15/5/72	28°48'S/32°11'E	50
NIWR/1/9	15/5/72	28°56'S/32°01'E	22

<i>Catalogue no.</i>	<i>Date</i>	<i>Location</i>	<i>Depth</i> (m)
NIWR/1/13	15/5/72	29°34'S/31°17'E	48
NIWR/1/14	15/5/72	29°34'S/31°17'E	53
NIWR/1/15	15/5/72	29°34'S/31°17'E	60
NIWR/1/24	15/5/72	30°21'S/30°52'E	52
NIWR/1/26	15/5/72	30°36'S/30°37'E	52
NIWR/1/27	15/5/72	30°37'S/30°40'E	58
NIWR/2/17	19/7/72	30°03'S/30°58'E	52
NIWR/2/18	19/7/72	30°04'S/30°01'E	155
NIWR/2/19	19/7/72	30°13'S/30°49'E	19
NIWR/2/20	19/7/72	30°14'S/30°52'E	44
NIWR/2/21	19/7/72	30°15'S/30°55'E	148
NIWR/2/22	19/7/72	30°19'S/30°45'E	23
NIWR/2/23	19/7/72	30°20'S/30°48'E	60
NIWR/2/24	19/7/72	30°21'S/30°52'E	102
NIWR/2/25	19/7/72	30°35'S/30°35'E	38
NIWR/2/27	19/7/72	30°37'S/30°40'E	71
NIWR/2/28	19/7/72	30°45'S/30°29'E	32
NIWR/2/29	19/7/72	30°46'S/30°31'E	49
NIWR/2/30	19/7/72	30°47'S/30°33'E	56
NIWR/2/31	19/7/72	30°53'S/30°23'E	32
NIWR/2/32	19/7/72	30°53'S/30°26'E	50
NIWR/2/33	19/7/72	30°54'S/30°29'E	86
NIWR/2/35	19/7/72	31°04'S/30°17'E	42
NIWR/2/36	19/7/72	31°05'S/30°19'E	72
NIWR/UM/P5	15/9/70	29°59'S/31°03'E	60
NIWR/UM/O3	15/9/70	29°59'S/31°03'E	51
NIWR/UM/R3	15/9/70	29°59'S/31°03'E	55
NIWR/UM/P1	15/9/70	29°59'S/31°03'E	25
NIWR/UM/M4	15/9/70	29°59'S/31°03'E	55
NIWR/UM/M1	3/11/72	29°59'S/31°03'E	30
NIWR/UM/M2	3/11/72	29°59'S/31°03'E	40
NIWR/UM/M3	3/11/72	29°59'S/31°03'E	50

(b) *Natal dredge (NAD)*

Benthic samples from Natal in the collections of the University of Cape Town are denoted by this code. To date there are 93 samples in the series, ranging from 18 to 200 m in depth. Only 24 of the samples include amphipods, a total of 39 species being recorded. Although this is a considerable number of species it is notable that 32 of them were recorded only in one sample and that the total number of individuals is small. This, coupled with the fact that species most common in the NIWR series (above) are generally poorly represented or absent in the NAD samples, indicates that a large number of benthic species are still to be found in the area.

Tube-building forms such as *Ampelisca brevicornis*, *A. spinimana*, *A. anisuroipa* and *Photis kapapa* dominated sandy and muddy samples in the series, while *Eusiroides monoculodes* was common in rocky areas. The two best represented species in the series, *Gammaropsis atlantica* and *Melita appendiculata* occurred in both hard and soft substrate areas.

Station data for those samples in which amphipods were represented are given below.

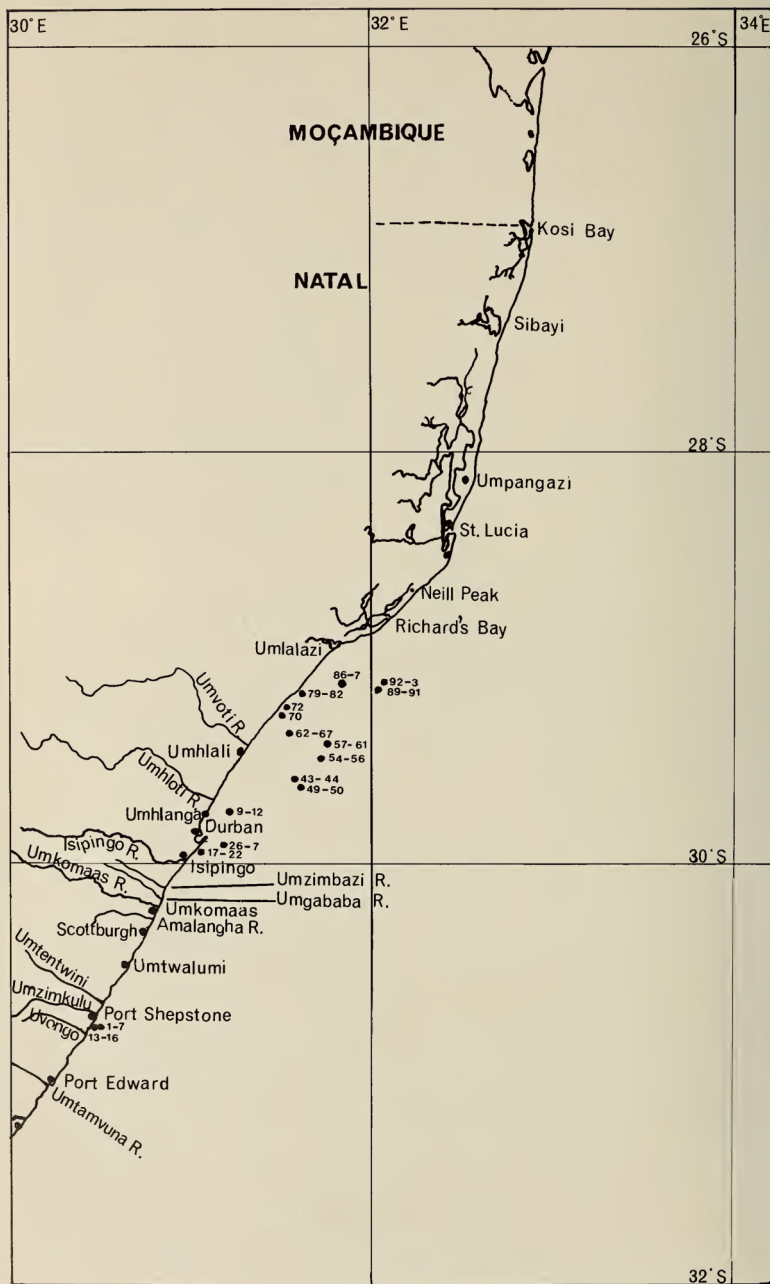


Fig. 1. Collecting stations along the Natal coast. Numbers represent NAD stations.

NAD station data

Catalogue no.	Date	Location	Depth (m)	Substrate	Gear
NAD 4	17/5/58	30°47'S/30°29'E	44	Stones	—
NAD 7	17/5/58	30°47'S/30°29'E	44	Stones	—
NAD 11	23/4/58	29°46'S/31°17'E	110	Stones	—
NAD 12	23/4/58	29°46'S/31°17'E	110	—	—
NAD 15	13/8/58	30°47'S/30°27'E	36	—	—
NAD 16	13/8/58	30°47'S/30°27'E	36	—	—
NAD 19	12/8/58	29°58'S/31°02'E	49	—	—
NAD 27	13/7/59	29°53'S/31°06'E	71	Mud	Dredge
NAD 39	9/9/64	29°35'S/31°38'E	150	Sandy mud	Grab
NAD 43	9/9/64	29°34'S/31°39'E	115	Sandy mud	Grab
NAD 49	9/9/64	29°35'S/31°42'E	138	Coral, gravel	Grab
NAD 56	9/9/64	29°29'S/31°45'E	86	Mud	Grab
NAD 57	9/9/64	29°26'S/31°46'E	77	Mud	Dredge
NAD 61	9/9/64	29°26'S/31°46'E	77	Mud	Grab
NAD 64	9/9/64	29°21'S/31°36'E	57	Shelly sand	Dredge
NAD 66	9/9/64	29°21'S/31°36'E	57	Shelly sand	Grab
NAD 70	9/9/64	29°18'S/31°33'E	47	Mud	Grab
NAD 72	10/9/64	29°16'S/31°32'E	35	Mud	Grab
NAD 81	29/7/64	29°11'S/31°37'E	18	Rock	Dredge
NAD 86	29/7/64	29°10'S/31°51'E	43	Sand	Trawl
NAD 90	30/7/64	29°11'S/32°02'E	70	Rock shell	Dredge
NAD 92	30/7/64	29°10'S/32°05'E	170	Rock, sand	Grab

(c) Shore stations

Early shore collections made by the University of Cape Town are denoted by single letter codes. Five stations in this series fall into our area: Umpangazi (G), Umhlati (U), Durban (D), Umtwalumi (M) and Port Edward (W). The records are purely of a presence-absence type, no data on abundance having been kept. Of the 13 species recorded, *Hyale grandicornis* and *Elasmopus pecteniscrus* appear to be the best distributed.

More recently shore samples have been lumped together under a single code (NA). Only five NA samples include amphipods, 17 species being found in all. The fact that the last of these samples added eight species to the list gives some indication of the inadequacy of the sampling coverage to date. The position at present indicates that the most common rocky intertidal species are *Maera inaequipes*, *Caprella penantis*, *Podocerus africanus*, *Jassa falcata* and *Hyale grandicornis*.

NA station data

Catalogue no.	Date	Location
NA 189	13/7/56	Port St. Johns, general collection
NA 191	13/7/56	Port St. Johns, general collection
NA 205	13/7/56	Port St. Johns, general collection
NA 243	25/7/72	Umhlanga, general collection from weeds
NA 244	27/7/72	Scottburgh, general collection from weeds

(d) Anton Bruun dredge (ABD)

A small collection of dredge samples collected by the S.S. *Anton Bruun* during 1964 is allocated to this code. Very few of the stations fall into the area

under consideration here, and from these only one amphipod, *Monoliropus falcimanus* Mayer, is recorded.

ABD station data

<i>Catalogue no.</i>	<i>Date</i>	<i>Location</i>	<i>Depth</i>
ABD 14	8/9/64	29°45'S/31°40'E	440 m

Samples from estuarine areas

(a) *Kosi Bay (KOS)*

A preliminary survey of Kosi Bay has been conducted by Broekhuysen & Taylor (1959), while details of the benthos of Nhlangwe and Sifungwe Lakes have been investigated by Bolt (1969b). The system is composed of a series of lakes running from south-west to north-east and opening to the sea just south of the Mozambique border. Two rivers flow into the uppermost and largest lake, Lake Nhlangwe, and this is joined to the smaller Sifungwe and Mponawini Lakes by a narrow winding channel. These in turn communicate with a tidal basin into which two further rivers discharge and which is connected to the sea by a short straight channel about 20 m wide.

At the time of Broekhuysen & Taylor's (1959) original survey the water in the system was exceptionally clear. Salinity in the tidal basin varied between 10 and 16‰ compared with 6–8‰ in Mponawini and Sifungwe and 3‰ in Nhlangwe, while water temperatures fell between 20 and 24°C. Full details of physical and biological features of the lakes at the time of sampling may be found in Broekhuysen & Taylor (1959).

In 1966 the Kosi system was flooded during a cyclone which raised the water level some 2 m before the sandbar at the mouth opened. This inundation caused a considerable accumulation and subsequent decay of organic matter in Lake Nhlangwe and several years passed before the water cleared fully. Details of the recovery of the lakes after these floods may be found in Bolt (1969b).

Four species of amphipod were recorded in the system by Broekhuysen & Taylor (1959) and to these Bolt (1966) has added two further benthic species. Of the six species *Urothoe serrulidactylus* is found only in the sandy shallows of Lake Sifungwe. *Afrochiltonia capensis* and *Melita zeylanica* are distributed throughout the upper reaches of the system, while *Orchestia ancheidos* is common along the driftline. The benthos of the lakes is dominated by *Grandidierella bonnierii* and *Corophium triaenonyx*. These two species have increased greatly in both density and range as conditions have improved following the floods of 1966, reaching a density of over 1 000 m/sq. in places by 1969.

Kosi Bay station data

<i>Catalogue no.</i>	<i>Date</i>	<i>Location</i>
KOS 6	18/4/48	Nhlangwe Lake, shore
KOS 15	12/7/49	Shore of tidal basin
KOS 53	15/7/49	Northern tip of Nhlangwe Lake

<i>Catalogue no.</i>	<i>Date</i>	<i>Location</i>
KOS 52	16/7/49	Between tidal basin and Mpunowini Lake
KOS 69	17/7/49	Between tidal basin and Mpunowini Lake
KOS 74	17/7/49	Shore of Mpunowini Lake
KOS 78	18/7/49	Shore of Mpunowini Lake
KOS 81	18/7/49	Shore of Sifungo Lake
KOS 82	18/7/49	Shore of Sifungo Lake
KOS 83	19/7/49	Shore of Sifungo Lake

(b) *St. Lucia* (STL)

The main body of the St. Lucia system is a saline lake shaped like the letter H and about 18 km wide by 40 km long, the western limb being known as False Bay, the crosspiece as Hell's Gates and the eastern limb as Lake St. Lucia proper. The eastern limb of the lake is further subdivided into the North Lake from which elongate shallow South Lake is almost completely separated by an island known as Fanie's Island. On the western shore of the South Lake lies the settlement of Charter's Creek and from its southern tip winds a long narrow channel some 15 km long and seldom more than 2 m deep. Some 2 km from the mouth of this channel lies the village of St. Lucia, reached by a bridge across the channel. At the time of sampling the large Umfolosi River flowed into the system just before its junction with the sea but the river mouth has since been diverted south.

Several rivers flow into the main lake, notably the Hluhluwe, flowing into False Bay and the Mkuze, which enters North Lake. Variations in rainfall and evaporation cause wild fluctuations of depth, salinity and substrate in the system. However, the bottom is chiefly muddy and the depth of the lake averages 1 m or less. Salinity is generally higher than that of the sea but falls violently when the system is flushed by heavy rains. Considerable water turbidity is normal while temperatures generally fall between 20° and 30°C.

Two surveys of the lake system have been undertaken by the University of Cape Town resulting in the publications of Day, Millard & Broekhuysen (1953) and Millard & Broekhuysen (1965). Detailed descriptions of the physical and biological conditions at the times of sampling (1948-51 and 1964-5 respectively) are provided therein. It should be emphasized, however, that conditions in the lakes have changed considerably since the collections reported upon were taken. As well as the diversion of the Umfolosi River, the channel has been dredged to facilitate water movement and faunal migration, and the mouth has been stabilised by breakwaters. Despite these efforts to improve conditions, salinity in the system in recent years has risen at times to well in excess of 100‰. This has undoubtedly affected the fauna but the nature of such effects will only be determined by further sampling.

At the time of sampling eight species of amphipod were found. *Afrochiltonia capensis* and *Orchestia rectipalma* were common in areas of low salinity where rivers enter the system, while *Grandidierella bonnierii* and *Melita zeylanica* appeared tolerant of conditions of salinity from 0-50‰ and more. *Orchestia ancheidos* was found along the driftline throughout the system. Also recorded were

Corophium triaenonyx, found locally throughout the lakes, *Ampelisca anisuropha* from South Lake and *Eriopisa chilensis* from mangroves near the mouth.

St. Lucia station data

<i>Catalogue no.</i>	<i>Date</i>	<i>Location</i>
STL 11	4/7/48	Stony shore, Charters Creek
STL 18	4/7/48	Amongst <i>Zostera</i> , Charters Creek
STL 52	9/7/48	Mouth of estuary, shore collection
STL 67	12/7/48	Drift line near Charters Creek
STL 73	12/7/48	Decaying <i>Zostera</i> near Charters Creek
STL 77	15/7/48	Black mud, shore near Charters Creek
STL 89	19/7/48	River mouth, False Bay
STL 101	3/7/48	Near Charters Creek, plankton haul
STL 102	19/7/48	Hluhluwe River
STL 135	6/7/49	Amongst <i>Zostera</i> , Charters Creek
STL 148	8/7/49	Sandy shore, Charters Creek
STL 171	11/7/49	Sandy beach, mouth of estuary
STL 178	19/7/49	Sandy stones, False Bay
STL 188	20/7/49	Plankton haul, False Bay
STL 193	7/2/49	Mangrove swamps near mouth
STL 204	21/1/51	Stomach of fish, Charters Creek
STL 223	20/1/51	Stomach of fish, Charters Creek
STL 232	3/7/64	Seine netting, opposite Charters Creek
STL 243	1/7/64	River mouth, channel
STL 251	24/6/64	South Lake
STL 252	24/6/64	South Lake
STL 270	5/7/64	Rocky shore, South Lake
STL 274	26/6/64	Mangrove swamps above bridge
STL 296	10/1/65	Seine netting above bridge
STL 299	11/1/65	Shore collection, channel
STL 304	12/1/65	Shore collection, channel
STL 309	14/1/65	Seine, North Lake
STL 312	15/1/65	Seine, northern False Bay
STL 317	16/1/65	Shore collections, southern False Bay
STL 318	16/1/65	Shore collection, western False Bay
STL 337	23/1/65	Shore collection, North Lake
STL 339	24/1/65	Charters Creek, seine
STL 342	25/1/65	Shore stations, South Lake
STL 343	25/1/65	Charters Creek
STL 344	25/1/65	Charters Creek

(c) *Richard's Bay* (RHB)

Full details of the physical and biotic features of the area are to be found in Millard & Harrison (1954), but a brief summary is given here for the sake of convenience. Richard's Bay is a subtropical estuary situated 28°48'S/32°05'E. The estuary receives several sizeable rivers and is about 40 sq. km in area, consisting of a large triangular shallow lake opening to the sea through a narrow mouth. The body of the lake averages about 1 m depth but has a deeper perimeter. The bottom is mostly soft mud with a good growth of *Zostera* and the banks are generally marshy with occasional areas of mangrove. The channel flows from the north-east corner of the lake, its bottom changing from mud to sand as it approaches the sea. An hotel is situated on the north bank of the channel, while in its centre there is a small island known as Pelican Island.

In parts the channel may be 5 m deep.

Salinity in the main lake usually lies between 18–24‰, varying according to season. Near the river mouths the salinity decreases to zero, while it increases to that of sea water along the length of the channel.

A series of sampling expeditions to the lake between 1948 and 1951 by teams from the University of Cape Town revealed seven species of amphipod. *Grandidierella bonnieri* was abundant amongst the rich fauna of the *Zostera* beds, *Gitanopsis pusilla* and *Melita zeylanica* being found in lesser numbers in the same habitat. Around the shore of the system *Orchestia ancheidos* was common while *Eriopisa chilensis* was recorded in the mangroves and marshes. *Afrochiltonia capensis* and *Orchestia rectipalma* were to be found in areas of low salinity where rivers flowed into the lake.

Richard's Bay station data

<i>Catalogue no.</i>	<i>Date</i>	<i>Location</i>
RHB 5	21/7/48	Muddy bank opposite hotel
RHB 38	—/2/49	Sandy beach near mouth
RHB 39	26/1/49	Muddy shore, Pelican Island.
RHB 40	24/1/49	Amongst <i>Zostera</i> off Pelican Island
RHB 84	16/7/49	Trawl in <i>Zostera</i> bed
RHB 86	16/7/49	Netting in <i>Zostera</i> bed
RHB 93	17/7/49	Sandy beach below hotel
RHB 109	30/1/49	Muddy sand near mouth
RHB 113	25/1/51	Netting in <i>Zostera</i> , Pelican Island
RHB 114	25/1/51	Netting in shallows of channel
RHB 124	25/1/51	Netting in reeds at river mouth
RHB 127	26/1/51	Netting in mangroves near mouth
RHB 129	26/1/51	Hand-netting at river mouth
RHB 132	26/1/51	Sievings from <i>Zostera</i> near mouth

(d) *Durban Bay* (DBN)

A description of Durban Bay and its ecology may be found in Day & Morgans (1956). This landlocked bay has been extensively developed to form one of the largest harbours in the Southern Hemisphere. The narrow entrance is guarded by a pier to the north and a breakwater to the south. From the entrance the bay extends for about 6 km inland having a maximum width of about 4 km. The north, and much of the south bank, have been developed as a harbour, but at the time of sampling there were areas of mangrove to the south-west and large central sandbanks which were relatively undisturbed.

Two small polluted rivers flow into the bay but they do not significantly lower the salinity or affect tidal flow in the bay as a whole. Surface temperatures in the system vary between 20–25°C while currents and wave action are slight except in the entrance.

Durban Bay was visited on four occasions between 1950 and 1952 by zoologists from the University of Cape Town. The teams collected for about two weeks on each occasion, netting and dredging in deeper waters and digging or hand collecting intertidally.

Fifteen species of amphipod are represented in the collections. These

predominantly consist of hard-substrate types such as *Caprella equilibra*, *Stenothoe valida*, *Podocerus brasiliensis*, *Elasmopus pecteniscrus* and *Erichthonius brasiliensis*, which, to a large extent, inhabit artificial structures in the bay. Only five of the species were recorded from soft substrates and none of these were common. Although the muddy bottoms of the channels were sampled, no amphipods were recorded.

It is evident from these results that the fauna of the bay has been radically altered by human factors. Dredging and pollution of the channels have destroyed the benthic fauna of these areas while the intertidal sand flats have also been adversely affected by oil spillage, bait collecting and the like. The construction of wharfs has compressed much of the shoreline into vertical faces which lack the variety of niches found naturally, although favouring the proliferation of certain species.

Collection stations in the bay are denoted by the symbol DBN, those stations from which amphipods were recovered are listed below.

Durban Bay station data

<i>Catalogue no.</i>	<i>Date</i>	<i>Location</i>
DBN 2	7/7/50	Scraped from floating jetty
DBN 44	17/7/50	Amongst shelly sand, edge of channel
DBN 50	18/7/50	From sponge on muddy sand, centre banks
DBN 52	18/7/50	Netting in main channel
DBN 62	20/7/50	Collection from stones at culvert entrances
DBN 77	16/7/50	From <i>Zostera</i> , western shore
DBN 79	22/7/50	Sandy rocks, southern shore
DBN 131	15/1/51	Scrapings from ships hulls
DBN 143	9/1/51	Among algae, North Pier
DBN 158	30/9/51	Sand and drain pipes, southern shore
DBN 165	30/9/51	Intertidal rocks, southern shore
DBN 176	1/10/51	Hard objects at low tide, centre banks
DBN 192	2/10/51	Solid objects on causeway
DBN 199	3/10/51	From rocks, North Pier
DBN 201	3/10/51	From rocks, North Pier
DBN 241	23/4/52	From loose rocks, harbour entrance
DBN 251	24/4/52	Scrapings from buoy, mid channel
DBN 264	25/4/52	Surface of centre banks at low tide
DBN 271	26/4/52	Balanoid zone of pier
DBN 322	28/4/52	Concrete wall, south bank
DBN 371	30/4/52	Concrete wall, harbour entrance
DBN 373	30/4/52	Stones, harbour entrance
DBN 379	1/5/52	Scrapings from hull of launch
DBN 396	24/4/52	Scrapings from ship's hull
DBN 404	23/4/52	From buoy in channel.

(e) *Estuaries in the Umkomaas area (UMK)*

The samples in this series were collected from small estuaries between Durban and Umkomaas. The fast flowing muddy Umkomaas river proved devoid of amphipods while several species were found in the adjoining relatively clear estuaries of the Umgababa, Umzimbazi, Amalanga and Isipingo Rivers.

These rivers had estuaries typical of the area in that they are closed most of the year, breaking through to the sea during summer. Typical amphipods found under these conditions are *Afrochiltonia capensis* and *Orchestia rectipalma*,

found in conditions of low salinity, and *Melita zeylanica*, *Corophium triaenonyx*, *Grandidierella bonnieri* and *Grandidierella lignorum*, found nearer the mouths. *Orchestia ancheidos* is to be found along the banks of these estuaries.

UMK station data

<i>Catalogue no.</i>	<i>Date</i>	<i>Location</i>
UMK 18	29/1/50	Muddy sand near mouth, Umzimbazi River
UMK 19	29/1/50	Stones near mouth, Umzimbazi River
UMK 23	30/1/50	Amongst <i>Zostera</i> near mouth, Umzimbazi River
UMK 24	30/1/50	Shore collection, Umgababa River
UMK 25	30/1/50	Netting 1 km from mouth, Umgababa River
UMK 26	30/1/50	Collection from stones, Umgababa River
UMK 27	30/1/50	<i>Zostera</i> bed, Umgababa River
UMK 29	19/7/47	Grass around mouth, Amalanga River
UMK 33	19/7/50	Sandy bottom of Isipingo River
UMK 35	7/7/46	Umzimbazi River lagoon

(f) *Estuaries near Port Shepstone (SHP)*

Collections from the Umzimkulu, Umtentwini and Uvongo River estuaries are incorporated in this series. The clear sandy Uvongo lagoon did not reveal any amphipods but in the rich muddy Umzimkulu estuary *Grandidierella lignorum* was common. *Orchestia ancheidos* was found commonly around the banks of the Umtentwini.

SHP station data

<i>Catalogue no.</i>	<i>Date</i>	<i>Location</i>
SHP 2	22/1/50	Muddy rocks, mouth of Umzimkulu River
SHP 5	22/1/50	Grass on bank of Umtentwini River

(g) *Estuaries near Port Edward (EDW)*

During a brief visit to the Umtamvuna River estuary, 3 km from Port Edward, two species of amphipod were recorded. These were *Orchestia rectipalma* and *Afrochiltonia capensis*, which were both found along the driftline near the mouth of the estuary.

SYSTEMATICS

The systematic text is presented in alphabetical order of families, genera within each family, and then of species within each genus. Taxonomy follows J. L. Barnard (1969, 1970a) for the Gammaridea, and McCain (1970) for the Caprellidea. World species lists of these groups may be found in J. L. Barnard (1958), and McCain & Steinberg (1970) respectively.

Samples in the collections of the University of Cape Town are labelled according to a catalogue—sample—species code. Thus all samples from a particular area are denoted by a letter code, usually a triplet suggesting the name of the area covered (e.g. RHB for Richard's Bay). The first sample in this series is RHB 1 and the species within that sample are labelled RHB 1A, RHB 1B etc. This system has the advantage of enabling species to be labelled before their identity is known. Where the number of individuals of a species

has been recorded this is given after the catalogue number in brackets. Occasionally only an index of abundance (A—abundant, C—common, P—present) was recorded, in which case this is provided instead.

All previous records of amphipods from Natal in the literature are also noted. The location of benthic samples was frequently given by these authors in a somewhat vague fashion (e.g. 'off Cape Natal'). In these cases I have given the location in terms of the latitude/longitude square in which the sample was taken, followed by the depth. Thus 28/32/100 m indicates a record from the latitude/longitude square 28°S/32°E at a depth of 100 m. The source of the record follows the code in brackets. In a few cases in K. H. Barnard's papers the material reported on was derived from University of Cape Town collections. In these cases duplication has been avoided by giving only the University code.

Analysis is restricted to species occurring in less than 1 000 m of water, species occurring below this depth being regarded as abyssal, rather than as members of the South African fauna. Terrestrial and truly fresh-water species are omitted while estuarine species and those dwelling on the strand are included. No attempt has been made to provide a full list of synonyms but the reader is referred to at least one description of each species, preference being given to those incorporating good figures or pertaining specifically to the southern African region. Where brief diagnoses are given these are intended to differentiate the species from others in that genus. Generic diagnoses may be found in J. L. Barnard (1969*b*) for gammaridean genera or via McCain & Steinberg (1970) for caprellid genera. Where no diagnoses are provided here they may be found in Parts 1 and 2 of this series.

Limbs of the pereon have been referred to throughout as gnathopods 1 and 2, followed by pereopods 1–5. This follows K. H. Barnard and J. L. Barnard, but it should be noted that many authors, including McCain, Ledoyer and Schellenberg number pereopods according to the pereon segments on which they occur (i.e. gnathopods 1 and 2 followed by pereopods 3–7).

Type-specimens of all new species have been placed in the South African Museum, Cape Town.

Suborder GAMMARIDEA

Family Ampeliscidae

Ampelisca anisuropa (Stebbing, 1908)

Byblis anisuropus Stebbing, 1908: 72, pl. 10. K. H. Barnard, 1955: 82, fig. 40b.

Records: NIWR/1/15B(1), NIWR/2/33C(2); NAD 39B(8), NAD 66T(2).

Diagnosis: Antenna 1 as long as peduncle of antenna 2; antenna 2 as long as body; anterior margin of head oblique, sinuous; two pairs of eyes, with corneal lenses; article 3 of pereopod 5 shorter than 4, article 4 slightly lobed posteriorly, 5 not notched anteriorly, distally lobed to embrace the narrow article 6,

7 minute; third pleonal epimeron postero-distally rounded; pleon segment 4 bearing a triangular dorsal carina.

Distribution: Endemic, Natal to west coast of South Africa.

Remarks: This species is one of three intermediate between *Ampelisca* and *Byblis*. Normally *Ampelisca* can be distinguished from *Byblis* by virtue of the longer telson, which is more than 50 per cent cleft, by the lack of setae on the anterior margin of article 2 of pereopod 5 near its junction with article 3, and by the lamellar article 6 and lanceolate article 7 of pereopod 5.

Ampelisca byblisoides (K. H. Barnard), *Ampelisca subantarctica* (Schellenberg) and *Byblis anisuropus* Stebbing display a cleft telson, sparse setation of article 2 of pereopod 5 and a narrow article 6 and minute article 7 of pereopod 5. Since two of the species have been assigned previously to *Ampelisca* [*A. subantarctica* was moved from *Byblis* by J. L. Barnard (1966)] the move proposed here of *B. anisuropus* to the genus *Ampelisca* will enable these two genera to be clearly distinguishable by the degree of division of the telson and by the density of setae on pereopod 5.

Ampelisca brachyceras Walker, 1904

Ampelisca brachyceras Walker, 1904: 252, pl. 2, fig. 13.

Records: NIWR/2/30G(2), NIWR/2/33H(1).

Distribution: Ceylon, southern Africa.

Ampelisca brevicornis (Costa, 1853)

Ampelisca brevicornis: Reid, 1951: 204-210, figs 9-15.

Records: NIWR/1/14C(1), NIWR/UM/M4A(1), NIWR/UM/P1A(1), NIWR/2/33B(3), NIWR/2/36E(8); NAD 27B(3), NAD 43D(1), NAD 61B(1), NAD 86P(1).

Distribution: Mediterranean, Atlantic, Indo-Pacific.

Ampelisca chiltoni Stebbing, 1888

Ampelisca chiltoni Stebbing, 1888: 1042, pl. 103. J. L. Barnard, 1961: 61, fig. 31.

Records: NIWR/1/27F(1); NAD 11T(1).

Diagnosis: Antenna 1 as long as peduncle of 2; antenna 2 as long as body; anterior margin of head almost transverse; two pairs of eyes, with corneal lenses; article 3 of pereopod 5 slightly shorter than 4, article 4 slightly lobed posteriorly, 5 notched anteriorly, not embracing 6, which is almost as wide as 5, 7 as long as 6; third pleonal epimeron with a small postero-distal tooth; pleon segment 4 not carinate.

Distribution: Indo-Pacific.

Ampelisca diadema (Costa, 1853)

Ampelisca diadema: K. H. Barnard, 1916: 133. Chevreux & Fage, 1925: 82, fig. 74.

Records: NIWR/1/6A(1), NIWR/1/14B(1), NIWR/1/15C(4), NIWR/UM/D3D, NIWR/UM/R3F(6), NIWR/UM/M2D(1), NIWR/UM/M3E(2), NIWR/2/27F(1), NIWR/2/33G(1), NIWR/2/13A(1), NIWR/2/14K(1), NIWR/2/17D(2), NIWR/2/21C(1), NIWR/2/23D(14); NAD 4X(3); 30/30/24 m (K. H. Barnard 1916).

Distribution: Cosmopolitan.

Ampelisca fusca Stebbing, 1888

Ampelisca fusca Stebbing, 1888: 1052, pl. 105.

Records: NIWR/2/36G(4).

Distribution: Endemic, Moçambique to South West Africa.

Ampelisca miops K. H. Barnard, 1916

Ampelisca miops K. H. Barnard, 1916: 134, pl. 26, fig. 6.

Records: NIWR/1/27E(1), NIWR/2/30J(1); 29/31/80 m (K. H. Barnard 1916).

Diagnosis: Antenna 1 slightly exceeding peduncle of 2; antenna 2 as long as body; anterior margin of head oblique; one pair of eyes with corneal lenses; article 3 of pereopod 5 twice as long as 4, article 4 not lobed posteriorly, 5 not notched anteriorly, slightly produced over 6 anteriorly, 6 wider and much longer than 5, 7 almost as long as 6; third pleonal epimeron postero-distally acute, bi-sinuate above; pleon segment 4 with an acute dorsal carina.

Distribution: Endemic to Natal, the above records being the only ones to date.

Ampelisca natalensis K. H. Barnard, 1916

Ampelisca natalensis K. H. Barnard, 1916: 137, pl. 26, fig. 7.

Records: 29/31/200 m, 30/30/48 m (K. H. Barnard 1916).

Diagnosis: Antenna 1 considerably longer than peduncle of 2; antenna 2 shorter than body; anterior margin of head oblique; two pairs of eyes with corneal lenses; article 3 of pereopod 5 equal to 4 plus 5, 4 not lobed posteriorly, 5 not notched, not embracing 6 which is equal to 3; 7 almost as long as 6; third pleonal epimeron postero-distally slightly produced; pleon segment 4 with a slight dorsal keel.

Distribution: Endemic to Natal.

Ampelisca palmata K. H. Barnard, 1916

Ampelisca palmata K. H. Barnard, 1916: 136, pl. 28, figs 30-31.

Records: NIWR/2/24A(1), NIWR/2/36F(4); 29/31/200 m (K. H. Barnard 1916).

Distribution: Southern and west Africa.

Ampelisca spinimana Chevreux, 1887

Ampelisca spinimana: Chevreux & Fage, 1925: 81, fig. 73.

Records: NAD 27A(22), NAD 49S(1), NAD 56C(7), NAD 61C(2), NAD 66U(2); NA 189W(1).

Distribution: Eastern Atlantic, extending to Natal.

Byblis gaimardi (Kröyer, 1846)

Byblis gaimardi: Mills, 1971: 367-370, figs 6A, 7.

Records: NIWR/A/3A(1), NIWR/1/14A(2), NIWR/1/15A(2), NIWR/1/26B(2), NIWR/1/27C(3), NIWR/UM/M2C(1), NIWR/UM/M3B(3), NIWR 2/27A(5), NIWR/2/30H(1), NIWR/2/36D(9), NIWR/2/23B(5); 29/31/200 m (K. H. Barnard 1916).

Diagnosis: Front margin of head concave, corneal lenses present; article 4 of pereopod 5 more than twice as long as article 3; articles 4 and 5 parallel sided, 5 not embracing 6 distally, 6 almost as long as 5; uropod 3 barely exceeding 1 and 2; telson 20 per cent cleft.

Distribution: North Atlantic, ? Pacific, Arctic, South Africa.

Triodos insignis K. H. Barnard, 1916

Triodos insignis K. H. Barnard, 1916: 140, pl. 26, figs 8-10.

Records: 29/31/200 m (K. H. Barnard 1916).

Diagnosis: As this genus is monotypic the characters of the genus diagnose the species. One pair of eyes, antero-ventral corner of head produced; flagellum of antenna 2 of about 28 articles; article 2 of pereopod 5 greatly expanded distally, posterior edge oblique, articles 3 and 4 equal, together equal to 5, 6 narrow, 7 spiniform; pleon with segments 4 and 5 keeled, keels bearing tufts of setae; telson ovate, cleft nearly to base.

Distribution: The above record is the only one to date.

Family **Amphilochidae***Amphilochus neapolitanus* Della Valle, 1893

Amphilochus neapolitanus: J. L. Barnard, 1962b: 126, fig. 3.

Records: DBN 50D.

Diagnosis: Eyes round or slightly oval, fairly small; antenna 1 extending beyond peduncle of antenna 2; coxa 1 quadrate; article 5 of gnathopod 1 extending 75 per cent of way along hind margin of 6; gnathopod 2 larger than 1, article 5 produced along entire hind margin of 6, palm transverse; telson much shorter than peduncle of uropod 3.

Distribution: Cosmopolitan in tropical and temperate seas.

Cyproidea ornata (Haswell, 1880)

Cyproidea ornata: J. L. Barnard, 1972: 21, figs 4-5.

Records: NIWR/2/24G(1), NIWR/2/30Q(1), NIWR/2/36M(1); Port Shepstone (K. H. Barnard 1925).

Distribution: Indo-Pacific, extending to South West Africa.

Gitanopsis pusilla K. H. Barnard, 1916

Gitanopsis pusilla K. H. Barnard, 1916: 144.

Records: NIWR/1/5B(1), NIWR/1/9A(1), NIWR/1/27M(3), NIWR/2/24J(1), NIWR/2/27K(1), NIWR/2/30N(1), NIWR/2/35B(1), NIWR/2/36L(5), NIWR/UM/M1C(1); RHB 40B(2).

Distribution: Southern Africa, southern ocean islands.

Family **Ampithoidae***Ampithoe africana* K. H. Barnard, 1925

Ampithoe africana K. H. Barnard, 1925: 361.

Records: DBN 143D(1), DBN 241V(1), DBN 271D(1), DBN 322F(1); NA 244J(5).

Diagnosis: Antenna 2 strongly setose; article 2 of gnathopods 1 and 2 lobed, article 6 of gnathopod 1 ovate, palm oblique, sinuate; article 6 of gnathopod 2 ovate-oblong, palm oblique, straight or slightly concave, defining angle obtuse with a short stout spine, dactyl serrulate; article 2 of pereopods 1 and 2 not strongly expanded, twice as long as broad.

Distribution: Endemic, Knysna to Durban.

Cymadusa filosa Savigny, 1818

Cymadusa australis: K. H. Barnard, 1940: 480.

Cymadusa filosa: J. L. Barnard, 1955: 29, fig. 15.

Records: G 13D, G 15D.

Distribution: Circumtropical.

Exampithoe natalensis K. H. Barnard, 1925

Exampithoe natalensis K. H. Barnard, 1925: 363, pl. 34, figs 16, 17.

Records: Port Shepstone (K. H. Barnard 1925).

Diagnosis: This genus is monotypic so the characters of the genus identify the species. Antenna 1 without accessory flagellum; mandible with slender palp, molar greatly reduced; gnathopod 1 stouter but shorter than 2; article 6 of pereopods 3-5 apically expanded; outer ramus of uropod 3 with two hooks.

Distribution: The above record is the only one to date.

Family **Aoridae***Aora typica* Kröyer, 1845

Aora typica: Ledoyer, 1967: 131, fig. 15.

Records: Durban (K. H. Barnard 1916).

Distribution: Cosmopolitan.

Lemboides acanthiger K. H. Barnard, 1916

Lemboides acanthiger K. H. Barnard, 1916: 239, pl. 28, figs 7-8.

Records: NAD 27C(1), NAD 56E(2); 29/31/110 m (K. H. Barnard 1916).

Diagnosis: Ventral surface of pereon segments 3 and 4 with large forwardly-directed curved spines, smaller spines on segments 5-7; palm of gnathopod 1 oblique, defined by a large acute tooth, dactyl nearly twice as long as palm, smooth; palm of gnathopod 2 smoothly concave.

Distribution: Endemic; Natal to False Bay.

Lembos hypacanthus K. H. Barnard, 1916

Lembos hypacanthus K. H. Barnard, 1916: 237, pl. 28, figs 5-6.

Records: NAD 43E(1).

Distribution: Endemic, Natal to South West Africa.

Microdeutopus thumbellinus n. sp.

Fig. 2

Description of male (3.5 mm): Head as long as first two pereon segments, ocular lobes short, acute, eyes large, oval, their centres dark but the peripheries colourless; (both antennae missing); primary cutting edge of mandible with four teeth, lacinia mobilis with five teeth, spine row of five spines, molar quadrate, triturative, palp short and stout, 3-articulate; maxilla 1 with 2-articulate palp exceeding outer plate, palp tipped by nine spines and three setae, outer plate with 10 terminal spines, inner plate tipped by a single seta; inner and outer plates of maxilla 2 subequal; maxilliped of normal structure, bearing 4-articulate palp.

Coxa 1 produced antero-distally into an acute point (Fig. 2A), ventral margin concave, remaining coxae rounded-quadrate, diminishing in size posteriorly; article 2 of gnathopod 1 expanding distally from a narrow base, article 5 greatly enlarged, its posterior margin distally produced into a single triangular tooth, an unusual large blunt process arises from the centre of the inner surface of the article (Fig. 2B), article 6 shorter and considerably narrower than 5, dactyl subequal to 6; gnathopod 2 subchelate, much smaller than 1, articles 5 and 6 subequal, dactyl slightly exceeding oblique undefined palp; (pereopods 1-5 missing); pereon segments lacking any ventral processes.

Pleonal epimera 1-3 postero-distally rounded; uropods extending equally; peduncle of uropod 1 (Fig. 2C) bearing four dorsal spines and a large terminal spine, inner ramus slightly the longer, rami strongly spinose dorsally and terminally; uropod 2 (Fig. 2D) similar to 1 but without a terminal peduncular spine; uropod 3 (Fig. 2E) with a single dorsal spine on the peduncle, rami subequal, spinose; telson quadrate, fleshy, a short thick spine and two setae at each distal apex.

Holotype: SAM A13222, male, 3.5 mm.

Type-locality: NIWR/UM/PIE, 15 September 1970; 29°59'S/31°03'E, depth 60 m.

Female: Similar to the male except for the structure of gnathopod 1 (Fig. 2H), which is like gnathopod 2, and the presence of brood pouches.

Relationships: Adults of this species are easily distinguished by virtue of the unusual projection arising from the inner surface of article 5 of gnathopod 1 male. In male specimens under 3 mm this process is less obvious (Fig. 2G), but specimens can still be identified by the lack of accessory teeth on article 5 of gnathopod 1, and by the relative size of article 5 and 6, which features are unusual for the genus. *Microdeutopus damnoniensis* (Bate) is probably the most closely related species but has rounded ocular lobes and smaller eyes, as well as lacking the process on article 5 of gnathopod 1.

Material: NIWR/UM/PIE(2), NIWR/UM/MIIE(2), NIWR/2/21A(1), NIWR/2/24D(9), NIWR/2/30R(1), NIWR/2/36R(5).

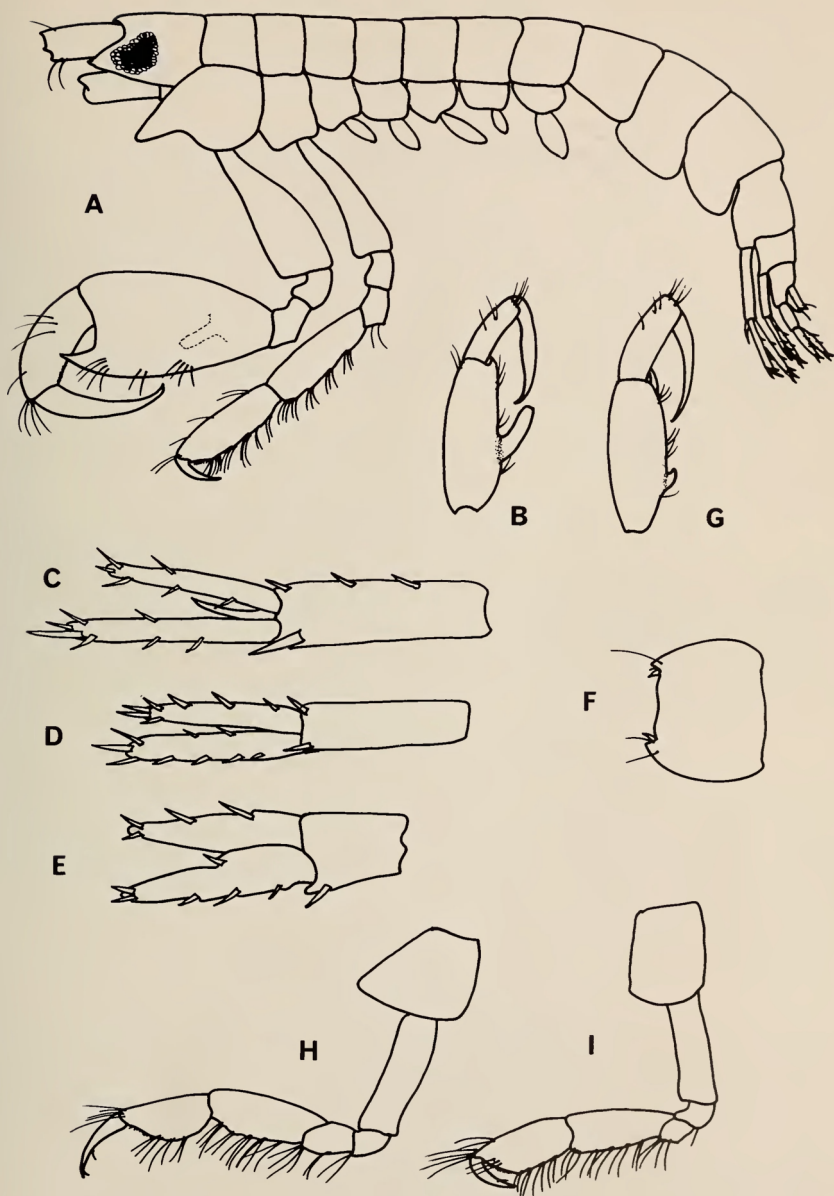


Fig. 2. *Microdeutopus thumbellinus* n. sp.

Male, 3.5 mm: A—lateral aspect; B—dorsal view of articles 5–7 of gnathopod 1; C, D, E—uropods 1, 2, 3; F—telson. Male, 3 mm: G—dorsal view of articles 5–7 of gnathopod 1. Female, 3 mm: H—gnathopod 1; I—gnathopod 2.

Family **Colomastigidae***Colomastix pusilla* Grube, 1864

Colomastix pusilla: J. L. Barnard, 1955: 39-42, fig. 20.

Records: NAD 7B(2).

Distribution: Cosmopolitan in tropical and temperate seas.

Family **Corophidae***Cerapus tubularis* Say, 1817

Cerapus tubularis: J. L. Barnard, 1962b: 61, figs 27-28.

Records: NIWR/2/27E(2), NIWR/2/28A(1), NIWR/2/30L(6); NAD 19C(3); NA 244K(1); 28/32/165 m (K. H. Barnard 1916 as *C. abditus*); 29/31/430 m (J. L. Barnard 1961).

Distribution: Cosmopolitan in warm and temperate seas.

Corophium acherusicum Costa, 1857

Corophium acherusicum: J. L. Barnard, 1971: 59, figs 17, 26.

Records: DBN 50C(P), DBN 131H(P), DBN 176V(2), DBN 251F(1), DBN 271C, DBN 396C(4); Durban Bay (K. H. Barnard 1916).

Distribution: Cosmopolitan in tropical and temperate seas.

Corophium triaenonyx Stebbing, 1904

Corophium triaenonyx Stebbing, 1904: 25, pl. 6A.

Records: STL 252G, STL 296V(3), STL 309G(70), STL 312H(2); UMK 18T(C), UMK 19V(C), UMK 23P(C), UMK 25E(P), UMK 26D(C), UMK 27P(C); Lake Sibayi (Bolt 1969).

Distribution: Mediterranean, Atlantic and Indian Oceans.

Erichthonius brasiliensis (Dana, 1853)

Erichthonius brasiliensis: J. L. Barnard, 1971: 61, fig. 17E.

Records: DBN 50B(P), DBN 131N(1), DBN 241U(C), DBN 251E(C), DBN 264H(P), DBN 396B(P); NA 243D(1).

Distribution: Cosmopolitan in tropical and temperate seas.

Grandidierella bonnieri Stebbing, 1908

Grandidierella bonnieri: Ledoyer, 1967: 137, fig. 28A.

Records: DBN 44M, DBN 50A(P), DBN 52R, DBN 77B(4), DBN 165P(1); STL 89J(P), STL 101B, STL 188A, STL 204F, STL 223A(2), STL 312S(1);

RHB 5G(A), RHB 39A(1), RHB 40A(C), RHB 84D(A), RHB 86L, RHB 109A(1), RHB 113J(C), RHB 114C(1); UMK 11E(P), UMK 23R(C), UMK 27M(C); Umlalazi estuary (Hill 1966).

Distribution: Caribbean, Atlantic and Indian Oceans.

Grandidierella lignorum K. H. Barnard, 1935

Grandidierella lignorum K. H. Barnard, 1935: 300, fig. 14.

Records: UMK 18S(A), UMK 23S(P), UMK 25D(P), UMK 26F(P), UMK 27C(P), UMK 33D(2); SHP 2A(C); Lake Sibayi (Bolt 1969).

Diagnosis: Pereon segments of male without ventral processes; coxae 1 and 2 sharply pointed antero-distally; article 5 of gnathopod 1 ovoid, a pointed process on lower distal corner, another on distal margin and a third on hind margin.

Distribution: Endemic to brack waters on east coast of South Africa.

Siphonoecetes dellavallei Stebbing, 1893

Siphonoecetes dellavallei: Chevreux & Fage, 1925: 361, fig. 369.

Records: NIWR/1/26D(3), NIWR/1/27N(1), NIWR/2/21D(1), NIWR/2/23F(3).

Distribution: Mediterranean, southern Africa.

Siphonoecetes orientalis Walker, 1904

Siphonoecetes orientalis Walker, 1904: 294, pl. 7, fig. 49. K. H. Barnard, 1916: 270.

Records: NAD 86Q(9); 29/31/200 m (K. H. Barnard 1916).

Distribution: Tropical Indo-Pacific.

Unciolella spinosa n. sp.

Fig. 3

Description of male (7 mm): Head as long as first two pereon segments, eyes fairly large, round, colourless, head produced into a small lobe immediately below eye; antenna 1 as long as pereon plus pleon, articles 1 and 3 subequal, each 80 per cent as long as article 2, flagellum shorter than peduncle, 9-articulate, accessory flagellum of two long articles and one small article; (antenna 2 missing); mandible (Fig. 3B) with triturative molar and 3-articulate palp, spine row of eight strong spines, articles 2 and 3 of palp slightly longer than article 1, article 3 with an oblique row of medial plumose setae and a row of about 25 setae terminally; inner plate of maxilla 1 tipped by a single seta, outer plate bearing eight serrate spines, palp bi-articulate, terminally bearing three setae and five spine teeth; inner plate of maxilliped (Fig. 3D) with a row of

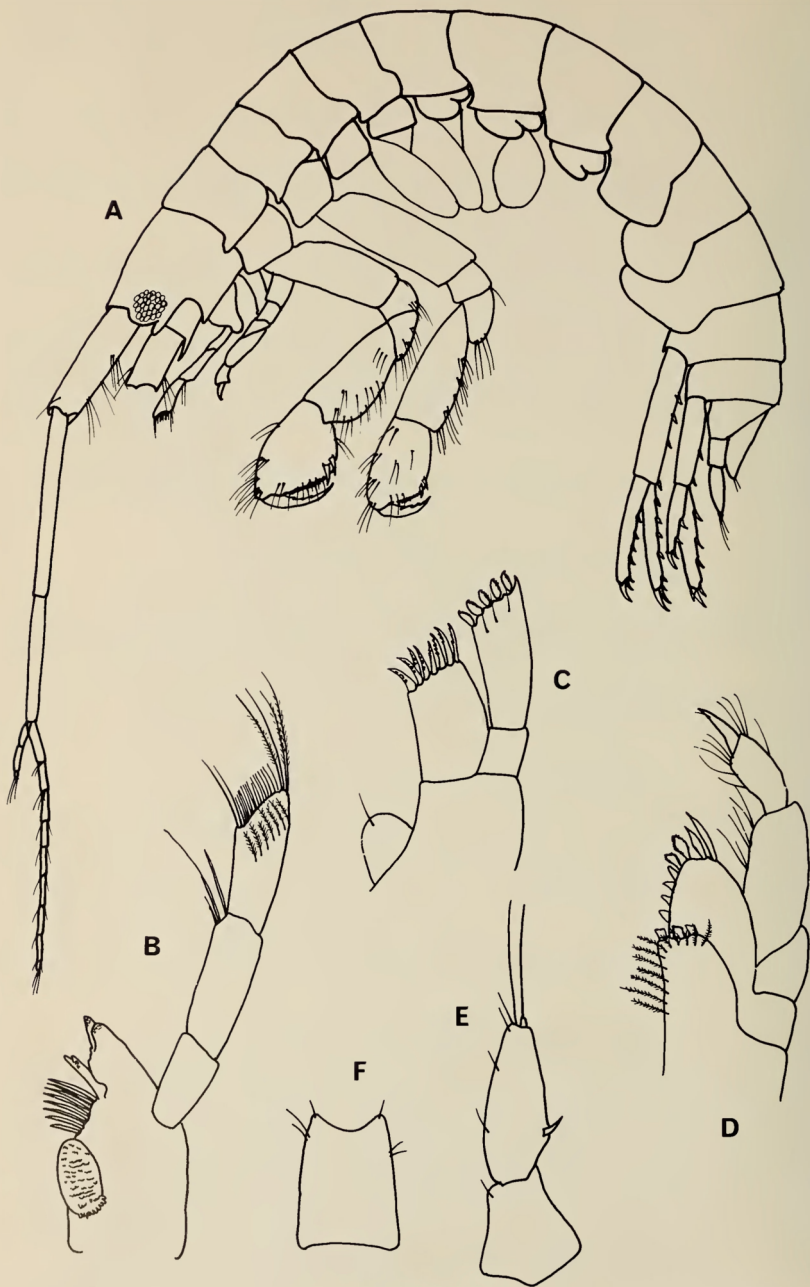


Fig. 3. *Unciolella spinosa* n. sp.
Male, 7 mm: A—lateral aspect; B—mandible; C—maxilla 1; D—maxilliped; E—uropod 3;
F—telson.

lateral plumose setae and three terminal spine teeth, outer plate marginally bearing eight successively longer spine teeth, palp 4-articulate.

Surface of body porcelainous with scattered pits and furrows but these less marked than in *U. foveolata* K. H. Barnard, 1955; coxae 1-4 quadrate, remaining coxae rounded; gnathopod 1 slightly larger than 2, article 2 expanding markedly from its base, article 5 slightly longer than 6, palm oblique, minutely pectinate, defined by two very large spines, dactyl cut into 3 teeth, equal to palm; gnathopod 2 resembling 1 but slightly smaller and more elongate, palm pectinate, defined by 2 spines, dactyl serrate; (pereiopods all missing); pereon segments 3-5 each with a single mid-ventral forwardly directed spine, spines becoming smaller posteriorly.

Pleonal epimera 1-3 smoothly rounded; uropod 1 large (Fig. 3A), peduncle with four dorsal spines, rami equal, each with four dorsal and 3-4 terminal spines; uropod 2 extending as far as 1, exceeding uropod 3 by nearly the whole length of the rami, outer ramus 70 per cent as long as inner, bearing two dorsal and two terminal spines; uropod 3 uniramous, much shorter than 1 and 2, peduncle medially expanded (Fig. 3E), bearing single seta, ramus 1.5 times peduncle, bearing a single lateral spine, 2-3 terminal setae and a minute second article which is hardly more than an expanded base to the single large seta it bears; telson large, fleshy, distally emarginate with a single seta at each apex and 2 marginal setae on each side.

Holotype: SAM A13217, male 7 mm.

Type-locality: NIWR/1/27P, 15 May 1972, 30°47'S/30°33'E, depth 58 m.

Female: Similar to the male except for the possession of broad plates and the absence of mid-ventral spines on the pereon segments; ovigerous at 5 mm.

Relationships: There are only two other species in this genus, *U. foveolata* K. H. Barnard, 1955 and *U. lunula* Chevreux, 1910. The present species can be distinguished from these by the enlarged uropods 1 and 2, which in the other two species barely exceed uropod 3; by the presence of mid-ventral spines on segments 3-5 and by the 3-articulate accessory flagellum (this is uni-articulate in *U. lunula* and 4-5 articulate in *U. foveolata*).

Remarks: It is characteristic of this species, and of *U. foveolata* to which it is obviously closely related, to autotomize its appendages when preserved. Animals almost invariably lack antennae and pereiopods, although the gnathopods are seldom lost. Over 100 individuals of the present species are represented in the collections of the University of Cape Town, and of these only one, the holotype, possesses a first antenna enabling it to be described.

The placement of this genus in Corophiidae as opposed to Isacidae or Aoridae, to which it could equally well belong, underlines the impossibility of distinguishing these three families and the necessity for their fusion.

Material: NIWR/1/13B(1), NIWR/1/27P(2), NIWR/UM/PIC(1), NIWR/UM/P5A(2), NIWR/2/21B(2), NIWR/2/24C(18), NIWR/2/27D(2), NIWR/2/30F(1), NIWR/2/36P(9).

Family **Dexaminidae***Atylus granulosus* (Walker, 1904)

Atylus granulosus: Ledoyer, 1967: 127, fig. 8.

Records: NIWR/2/36K(1); 30/30/200 m, 29/32/50 m (K. H. Barnard 1916).

Diagnosis: K. H. Barnard's (1916) specimens agree with Walker's (1904) brief description except that pleon segment 1 as well as 2 and 3 show carinae produced into small acute teeth posteriorly; the urosomal carinae are much larger than figured by Ledoyer (1967); urosome segment 1 has a small setiferous notch followed by a deep depression and a hoodlike arched process, segment 2 plus 3 smoothly arched distally; article 2 of pereopod 3 postero-distally produced into a strong curved process extending beyond the tip of article 3.

Distribution: Indian Ocean.

Polycheria atolli Walker, 1905

Polycheria atolli: Ledoyer, 1967: 131, fig. 13A.

Records: NIWR/1/14L(1); D 96A; NAD 16P(2).

Distribution: Southern oceans, extending into tropical Indian Ocean.

Family **Eusiridae***Eusiroides monoculodes* (Haswell, 1880)

Eusiroides monoculodes: J. L. Barnard, 1964: 221, fig. 1.

Records: NAD 4W(2), NAD 81J(2), NAD 191G(2); 30/30/24 m, 29/31/100 m (K. H. Barnard 1916).

Distribution: Cosmopolitan.

Paramoera capensis (Dana, 1853)

Paramoera capensis: K. H. Barnard, 1916: 183-186.

Paramoera schizurus Stebbing, 1918: 66, pl. 10.

Records: D 261; M 19F; Durban (Stebbing 1918); Port Shepstone (K. H. Barnard 1940).

Distribution: Atlantic, Indo-Pacific.

Rhachotropis grimaldi Chevreux, 1887

Rhachotropis grimaldii: K. H. Barnard, 1916: 179.

Records: 29/3/800 m (K. H. Barnard 1916).

Diagnosis: Pereon not carinate but segment 7 in male with a small median tooth; pleon segments 1-3 dorsally tricarinate, all the carinae ending in acute

scarcely-upturned teeth, pleon segment 4 with a single median carina; article 2 of pereopod 5 with serrate hind margin, postero-distal angle rounded; pleonal epimera 2 and 3 posteriorly serrate.

Distribution: Atlantic, extending to Natal.

Family Gammaridae

Ceradocus natalensis n. sp.

Fig. 4

Description of male (10 mm): Head slightly shorter than two pereon segments, a pronounced slit below the eye, which is large and dark; antenna 1 reaching end of pereon, articles 1 and 2 subequal, 3 short, flagellum of 20–25 articles, accessory flagellum of about nine articles; antenna 2 slightly shorter than antenna 1, article 2 produced ventrally to tip of article 3; article 1 of mandibular palp with inner margin distally produced, article 3 slightly less than half length of article 2 (Fig. 4D), inner plate of maxilla 1 densely setose, outer plate armed with forked and serrate spines, palp with about 11 apical setae; inner plate of maxilla 2 densely setose medially and terminally; outer plate of maxilliped armed with serrate spines.

Coxa 1 acutely produced anteriorly, lower margin with a few fine setae; article 2 of gnathopod 1 expanded just below its origin, articles 5 and 6 subequal and densely setose posteriorly; palm oblique, setose, not defined; dactyl equal to palm (Fig. 4A); gnathopod 2 differing on the two sides, that of the left side very large, article 2 anteriorly keeled, article 5 cup-shaped, 6 very large; palm transverse with a strong defining tooth, a few irregular crenulations and then a square topped tooth and a step near the finger hinge; dactyl as long as palm, abruptly constricted near its origin to fit the step in palm; gnathopod 2 of right side much smaller, article 6 less than twice length of 5, palm oblique, convex; dactyl equal to palm, not constricted; pereopod 1 slightly longer than 2 (pereopods 3–5 missing).

Pleon segments 1–3 with posterior margins dorsally serrate; segments 1 and 2 with 6 teeth on each side, the central pair the smallest and the second pair the largest; third pleon segment also with 6 pairs of teeth dorsally, the most lateral pair the largest; first pleonal epimeron with a tooth at postero-inferior corner and a much smaller one above and below it, an oblique ridge runs across the epimeron to the corner tooth; second pleonal epimeron similar but with two teeth on posterior margin; third pleonal epimeron without oblique ridge, three teeth on lower margin, a larger one at postero-inferior corner, and five along the posterior margin; pleon segment 4 with a flat-lying mid-dorsal tooth flanked by a pair of much larger upstanding teeth; pleon segment 5 smooth mid-dorsally, with three pairs of small lateral teeth; uropod 1 extending slightly beyond uropod 2, rami equal, subequal to peduncle; outer ramus of uropod 2 slightly shorter than inner; uropod 3 (Fig. 4F) extending well beyond 1 and 2,

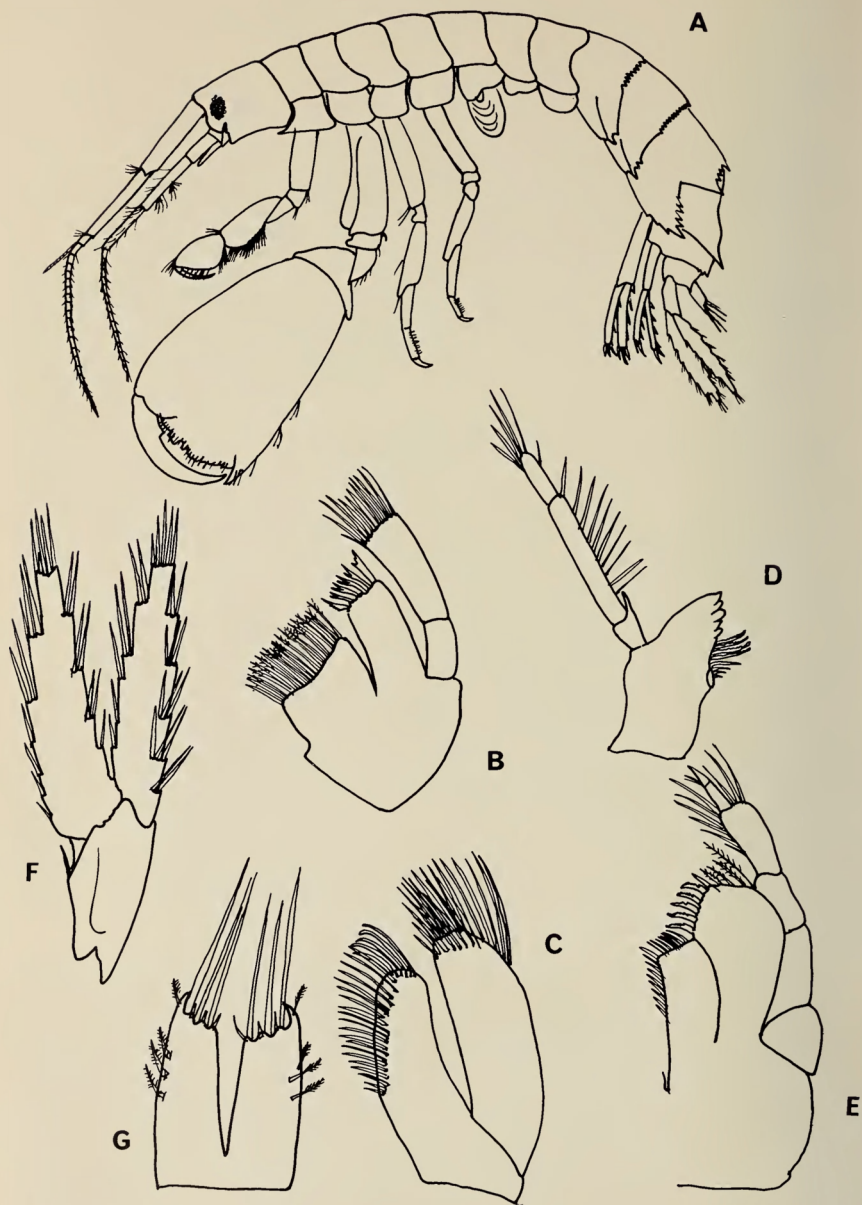


Fig. 4. *Ceradocus natalensis* n. sp.
Male, 10 mm: A—lateral aspect; B—maxilla 1; C—maxilla 2; D—mandible; E—maxilliped;
F—uropod 3; G—telson.

rami broad, subequal, heavily spinose; telson cleft almost to base, each lobe with four plumose setae on lateral margin and three long terminal spines, three small spines lying at bases of long spines. (Fig. 4G).

Holotype: SAM A13164, male 10 mm.

Type-locality: NAD 4N, 30°47'S/30°29'E, 17 May 1958, depth 44 m, substrate stones.

Relationships: The genus *Ceradocus* was revised by Sheard (1939). The present species falls into his subgenus *Denticeradocus* by virtue of its multi-dentate pleon segments. It can be distinguished from other species in the group by details of pleonal armature and structure of the telson, as well as by the shape of gnathopod 2. Closely related species include *Ceradocus chevreuxi* Sheard, which has five large spines on each lobe of the telson, and *C. hawaiiensis* J. L. Barnard which has two spines at each telsonic apex and a more strongly toothed second gnathopod.

Material: NAD 4N, two males.

Cerodocus rubromaculatus (Stimpson, 1885)

Cerodocus rubromaculatus: J. L. Barnard, 1972: 220, fig. 129.

Records: NIWR/1/27B(1), NIWR/UM/R3A(1); NAD 4T(4).

Distribution: Indo-Pacific, extending to South West Africa.

Elasmopus affinis Della Valle, 1893

Elasmopus affinis: Sars, 1895: 521, pl. 183.

Records: NAD 7A(1).

Distribution: Mediterranean, Atlantic, southern Indian Ocean.

Elasmopus japonicus Stephensen, 1932

Elasmopus japonicus Stephensen, 1932: 490, figs 1-2. Sivaprakasam, 1968: 278, figs 3-5.

Records: D 273; Durban (K. H. Barnard 1925 as *E. spinimanus*); Isipingo (K. H. Barnard 1940).

Distribution: Japan, India, southern Africa.

Elasmopus pectenictus Bate, 1862

Elasmopus pectenictus: J. L. Barnard, 1970b: 125, figs 73-74.

Records: DBN 2V, DBN 62G(C), DBN 79A, DBN 131G(C), DBN 158X(1), DBN 176U(3), DBN 192L(1), DBN 199V(C), DBN 201H(3), DBN 241T(C), DBN 251D(C), DBN 264L, DBN 396A(C), DBN 371E(1), DBN 379B(FC); G 15H; U 28F; M 19D; Durban (K. H. Barnard 1916).

Diagnosis: Eyes without black pigment; outer ramus of uropod 3 lacking article 2, inner ramus $\frac{2}{3}$ outer; telson of medium length, apices truncate, with 4-6 apical spines; gnathopod 2 male with hirsute, S-shaped, undefined palm, a small process distally and a ridge on inner proximal surface; dactyl simple, curved, longer than palm; article 2 of pereopod 4 male postero-distally excavate and serrate.

Distribution: Cosmopolitan in tropical and temperate seas.

Eriopisa chilensis (Chilton, 1921)

Niphargus chilensis Chilton, 1921: 531, fig. 4.

Records: RHB 127J(1); STL 193A(1).

Diagnosis: Eyes small, irregular; head without lateral cephalic notch; article 4 of gnathopod 1 produced posteriorly into a rounded lobe; palm of gnathopod 2 oblique, sinuous, sub-equal to hind margin; articles 1 and 2 of outer ramus of uropod 3 subequal; pleonal epimera 1 and 2 not setose, third pleonal epimeron postero-distally quadrate, slightly produced; telson cleft to base, a single stout seta at apex of each lobe.

Distribution: India, east coast of South Africa.

Maera hamigera (Haswell, 1880)

Maera hamigera: K. H. Barnard, 1916: 196 pl. 27, figs 11-12. J. L. Barnard, 1965: 507, fig 16.

Records: NIWR/1/26G(1), NIWR/2/27J(1); 29/31/170 m (K. H. Barnard 1916).

Distribution: Indo-Pacific.

Maera inaequipēs Costa, 1851

Maera inaequipēs: J. L. Barnard, 1959: 25, pl. 5.

Records: NIWR/1/27L(2), NIWR/2/36J(1); NA 189X(12), NA 191F(3), NA 205K(1); M 19G.

Distribution: Cosmopolitan in tropical and temperate seas.

Mallacoota subcarinata (Haswell, 1880)

Maera subcarinata: K. H. Barnard, 1940: 460, fig. 26.

Mallacoota subcarinata: J. L. Barnard, 1972: 247, figs 144-145.

Records: D 117; NAD 16R(2); 'Natal' (K. H. Barnard 1940).

Distribution: Mediterranean, Indo-Pacific.

Remarks: J. L. Barnard (1972) has redefined the genus *Maera* such that species with paired dorsal carinae on pleon segment 4 are transferred to a new genus, *Mallacoota*. *M. subcarinata* is the only species from South Africa affected by this change.

Megaluropus namaquaeensis Schellenberg, 1953

Megaluropus namaquaeensis Schellenberg, 1953: 117, fig. 5.

Records: NIWR/UM/MID(1).

Distribution: Endemic, Natal to South West Africa.

Melita appendiculata Say, 1818

Melita appendiculata: J. L. Barnard, 1970b: 161, figs 103-104.

Records: NAD 4L(180), NAD 56B(11), NAD 66S(1), NAD 81G(6); DBN 131L(1), DBN 396D(3); Durban, 29/31/54 m, 'Morewood Cove' 50 m (K. H. Barnard 1916 as *M. fresnelii*).

Distribution: Cosmopolitan.

Melita zeylanica Stebbing, 1904

Melita zeylanica: J. L. Barnard, 1972: 235, figs 139-141.

Records: DBN 373Y(2); STL 89H(C), STL 179E(P), STL 243U, STL 251L, STL 274G, STL 296U(10), STL 299Y(A), STL 302N(6), STL 305E(A), STL 312J(5), STL 318C(1), STL 337B(6), STL 339U(1), STL 343F(11), STL 343K(2), STL 344D(A); KOS 53G(P), KOS 62C(1), KOS 69F(19), KOS 74D(11), KOS 78F(18), KOS 82D(C), KOS 83N(3); RHB 5H(1), RHB 40C(2), RHB 84E, RHB 114C(1); UMK 18Q(C), UMK 19U(C), UMK 23Q(P), UMK 26E(C), UMK 27K(P), UMK 29B(P), UMK 35J; Umlalazi estuary (Hill 1966).

Distribution: Indo-Pacific region, in brack water.

Family **Haustoriidae***Platyschnopus herdmani* Walker, 1904

Platyschnopus capensis K. H. Barnard, 1925: 338, pl. 34, figs 13, 14.

Platyschnopus herdmani: Rabindranath, 1971: 521, figs 1, 2.

Records: NIWR/1/14J(1).

Diagnosis: Head longer than first four pereon segments, rostrum oblong, anteriorly rounded, encircled basally by weak spines, eyes present, subcutaneous, without ocelli; third pleonal epimeron postero-distally produced and upturned, pleon segment 3 with large medio-dorsal tooth and three lateral teeth on each side.

Distribution: India, South Africa.

Urothoe coxalis n. sp.

Fig. 5

Description of male (2.5 mm): Head equal to first three pereon segments, eyes small, round; antenna 1 with 4-articulate flagellum, accessory flagellum 2-articulate; antenna 2 about half length of body, flagellum of 15 rather broad articles; palp of maxilla 1 bi-articulate, tipped by three plumose setae, outer plate terminally bearing about eight strong spines, inner plate with a single terminal seta; mandible with large smooth molar and 3-articulate palp; articles 2 and 3 of palp subequal, twice length of 1; maxilliped with 4-articulate palp, article 2 densely setose medially, outer plate of maxilliped with four spine teeth on inner margin, inner plate terminally with three spines and four setae.

Coxa 1, narrow, evenly tapering to an acute point; coxa 2 slightly produced posteriorly and bearing three setae postero-distally; coxa 3 similar to 2; coxa 4 (Fig. 5G) hugely produced postero-distally into an acute upturned tooth, apex of the tooth extending beyond the posterior margin of coxa 5, coxa 5 bilobate, 6 and 7 rounded; gnathopod 1 (Fig. 5F) simple, article 5 expanded posteriorly, longer and twice as wide as 6; gnathopod 2 (Fig. 5E) slightly chelate, article 6 widening medially; pereopods 1 and 2 with dactyl nodulose, article 6 strongly spinose postero-distally; pereopod 3 (Fig. 5H, I) with article 2 quadrate, 4 with four antero-distal spines, 5 $1\frac{1}{2}$ times as wide as long, two groups of spines anteriorly, the proximal group of six spines and the distal group of five, also two groups of five and six spines on posterior margin, article 6 with three anterior fascicles of three, five and three spines and two posterior groups of four and three spines, dactyl broad, bearing two very strong spines in notches on its anterior border, below which it is minutely serrulate; pereopods 4 and 5 not greatly expanded, posterior margin of article 2 bearing a few scattered plumose setae, dactyl bearing nodules on anterior margin.

First pleonal epimeron rounded postero-distally, second slightly produced, bearing long plumose setae on exterior surface, third pleonal epimeron strongly produced into an acute point above which it is bisinuate; uropods 1 and 2 with rami equal, unarmed; peduncle of uropod 3 (Fig. 5L) quadrate, rami broadly foliaceous, bearing long plumose setae marginally, outer ramus with a small article 2; telson (Fig. 5M) slightly exceeding peduncle of uropod 3, cleft to base, each lobe terminating in a single spine and a plumose seta.

Holotype: SAM A13211, male, 2.5 m.

Type-locality: NIWR/1/5D, 15 May 1972, 28°48'S/32°11'E, depth 16 m.

Female: Eyes of comparable size to those of the male, antenna 2 (Fig. 5B) with 3-articulate flagellum, otherwise like male. The specimen figured measured 3 mm and was carrying four large ova.

Relationships: The greatly produced fourth coxa and the unusual dactyl of pereopod 3 serve to diagnose this species. Only two other species, *Urothoe*

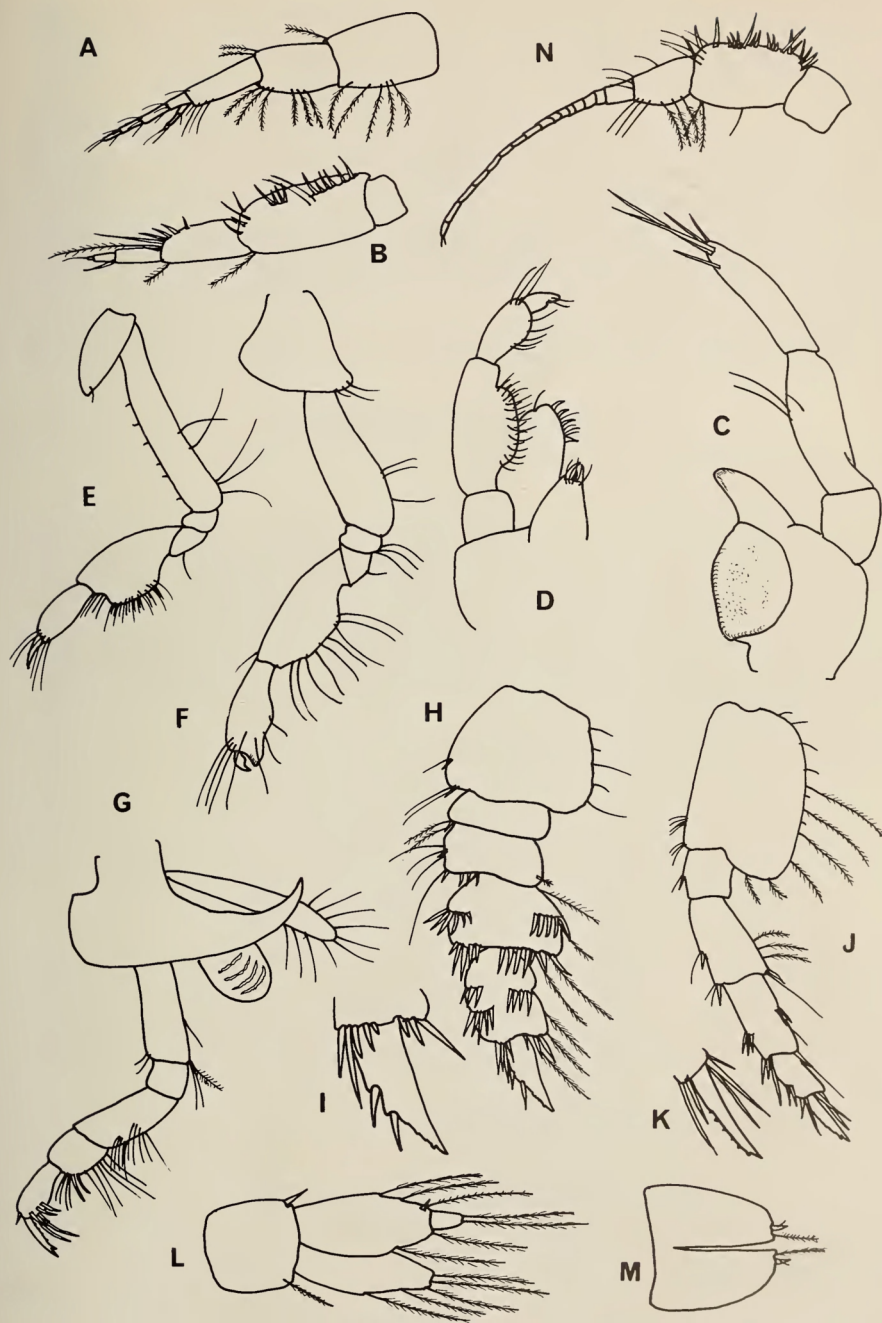


Fig. 5. *Urothoe coxalis*. n. sp.

Female, 3 mm; A—antenna 1; B—antenna 2; C—mandible; D—maxilliped; E—gnathopod 1; F—gnathopod 2; G—pereiopod 2; H—pereiopod 3; I—dactyl of pereiopod 3; J—pereiopod 5; K—dactyl of pereiopod 5; L—uropod 3; M—telson. Male, 2,5 mm: N—antenna 2.

grimaldii Chevreux, and *U. spinidigitus* Walker, have spinose dactyls on pereopod 3, but both bear more spines and lack the produced coxa 4 of *U. coxalis* n. sp.

Material: Single male and female from the type locality.

Urothoe elegans Bate, 1857

Urothoe elegans: Chevreux & Fage, 1925: 101, fig. 95.

Records: NIWR/1/14E(4), NIWR/1/27G(3), NIWR/UM/R3D(1), NIWR/UM/M3D(25), NIWR/2/23E(1), NIWR/2/27G(2), NIWR/2/30C(1), NIWR/2/32C(1), NIWR/2/33E(1).

Distribution: Atlantic and Indian Oceans.

Urothoe pinnata K. H. Barnard, 1955

Urothoe pinnata K. H. Barnard, 1955: 86, fig. 42.

Records: NIWR/2/20B(1).

Diagnosis: Antenna 1 of female with 6–8 articulate flagellum, accessory flagellum 5–6 articulate; article 6 of gnathopod 1 slightly expanded but simple; gnathopod 2 subchelate, palm rounded, dactyl equal to palm; pereopod 3 with article 2 oval, about $1\frac{1}{4}$ times as long as broad, article 5 twice as broad as long, 6 quadrate, dactyl narrow, minutely serrulate; article 2 of pereopod 5 about $1\frac{1}{2}$ times as long as broad.

Distribution: Endemic, Natal to False Bay.

Urothoe pulchella (Costa, 1853)

Urothoe pulchella: Chevreux & Fage, 1925: 99, fig. 92. K. H. Barnard, 1955: 83, fig. 41A.

Records: NIWR/1/5C(1), NIWR/1/13C(3), NIWR/2/17C(5).

Diagnosis: Antenna 1 of female with 5-articulate flagellum and 3-articulate accessory flagellum; gnathopod 1 very weakly subchelate, article 6 expanding distally; gnathopod 2 distinctly subchelate, palm transverse; article 5 of pereopod 3 about $1\frac{1}{3}$ times as wide as long, dactyl slender, not cultriform, minutely pectinate.

Distribution: Mediterranean, Atlantic, South Africa.

Urothoe serrulidactylus K. H. Barnard, 1955

Urothoe serrulidactylus K. H. Barnard, 1955: 85, fig. 41C. Ledoyer, 1969: 185, fig. 3.

Records: KOS 82G(8).

Diagnosis: Antenna 1 of female with 6–8 articulate flagellum and 3–6 articulate accessory flagellum; gnathopod 1 simple, article 6 elongate; gnathopod 2 with article 6 slightly expanded distally, palm transverse, defined by a single

spine; article 5 of pereopod 3 twice as wide as long, dactyl cultriform, broad, anterior margin distally serrate; article 2 of pereopod 5 subcircular.

Distribution: Natal, Madagascar.

Remarks: Rabindranath (1971) synonymized *Urothoe serrulidactylus* with *U. ruber* Giles but this is incorrect, as can be seen by comparing Rabindranath's figures with those of either K. H. Barnard (1955) or Ledoyer (1969). The dactyl of pereopod 3 in *serrulidactylus* is distinctly wide and cultriform and quite naked of setae, while that of *U. ruber* is very narrow, evenly tapering and bears a number of small setae. The palm of gnathopod 2 is also markedly chelate in *U. ruber* but more transverse in *serrulidactylus* and there are a number of differences in the minute structure of the mouth parts and antennae.

Urothoe tumorosa n. sp.

Fig. 6

Description of male (3.5 mm): Head as long as three pereon segments; eyes large, dark, separated dorsally by about $\frac{1}{3}$ of their diameter; antenna 1 (Fig 6A) with 6-articulate flagellum and 3-articulate accessory flagellum, peduncular articles subequal; antenna 2 (Fig 6K) as long as body, article 4 of peduncle heavily spinose, article 5 and flagellum bearing aesthathascs, flagellum 36-articulate; mandible with very large circular molar, incisor simple, heavily chitinized, palp 3-articulate, articles 2 and 3 subequal, each twice article 1; palp of maxilla 1 bi-articulate, tipped with three long plumose setae, outer plate terminally bearing about ten strong serrate spines; maxilla 2 normal; maxilliped bearing 4-articulate palp, article 3 expanding distally from a very narrow base, outer lobe distally bearing five spine teeth interspersed with fine setae, inner plate terminating in two spines and five short setae.

Coxa 1 triangular, remaining coxae subquadrate, not produced (cf. *U. coxalis* n. sp.), but each bearing a few setae postero-distally; gnathopods similar, subchelate; article 5 of gnathopod 1 bearing nine strong spines on distal margin, palm undefined, minutely pectinate; article 5 of gnathopod 2 lacking spines, palm defined by two short spines, minutely pectinate; articles 5 and 6 of pereopods 1 and 2 posteriorly strongly spinose, dactyl bearing 3-4 pronounced knobs; pereopod 3 strongly spinose (Fig 6F), a group of very long plumose setae arising from inner margin of article 4, articles 5 and 6 about as wide as long, bearing rows of strong blunt spines and occasional plumose setae, dactyl wide, evenly tapering, bearing about seven pronounced knobs on anterior margin; pereopod 4 with posterior margin of article 4 bearing plumose setae, dactyl with anterior knobs; pereopod 5 like 4 but lacking plumose setae and considerably shorter.

Pleonal epimera 1-3 postero-distally rounded, the second bearing a prominent group of long plumose setae which extend to the posterior end of the body; peduncle of uropod 1 setose and bearing a lateral and two distal

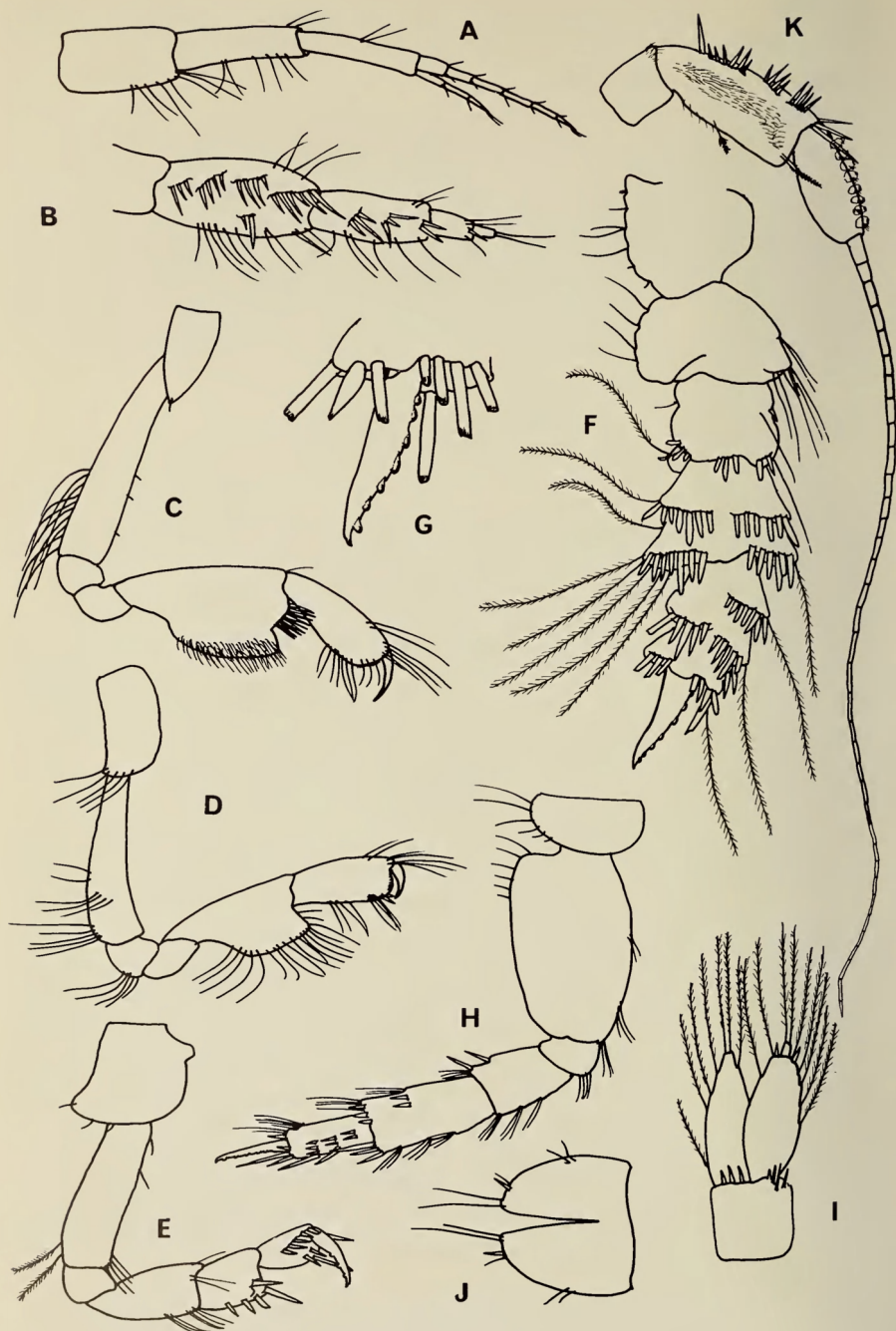


Fig. 6. *Urothoe tumorosa* n. sp.

Female, 3,5 mm: A—antenna 1; B—antenna 2; C—gnathopod 1; D—gnathopod 2; E—pereopod 2; F—pereopod 3; G—dactyl of pereopod 3; H—pereopod 5; I—uropod 3; J—telson.

Male 3,5 mm: K—antenna 2.

spines, outer ramus equal to peduncle and bearing a single mediodorsal spine, inner ramus naked, 80 per cent length of outer; uropod 2 half length of 1, peduncle with two strong distal spines, rami equal, unarmed; peduncle of uropod 3 quadrate, distally spinose, rami subequal, the outer with a minute second article, both rami marginally bearing plumose setae; telson (Fig. 6J) as long as broad, 80 per cent cleft, each lobe with a terminal spine and three setae and with two small lateral setae.

Holotype: SAM A13214, male, 3.5 mm.

Type-locality: NIWR/2/20A, 19 July 1972, 30°14'S/30°52'E, depth 44 m.

Female: Similar to the male except for the second antennae, which are much shorter than those of the male (Fig 6B), and the smaller third uropods (Fig 6I) which have fewer, shorter plumose setae than those of the male.

Relationships: The marked protuberances on the dactyls, particularly that of pereopod 3, are sufficient to identify this species. Stebbing (1906) quotes two other species, *U. marina* (Bate), and *U. irrostrata* Dana as possessing nodulose dactyls, but fuller descriptions of these species in Chevreux & Fage (1925) and Della Valle (1893) respectively show the dactyls to be minutely serrulate in both cases.

Material: NIWR/UM/M2B(1), NIWR/2/20A(2), NIWR/2/33D(1).

Family **Isaeidae**

Cheiriphotis megacheles (Giles, 1885)

Cheiriphotis durbanensis K. H. Barnard, 1916: 247.

Cheiriphotis megacheles: J. L. Barnard, 1962a: 17, fig. 4.

Records: Durban Bay (K. H. Barnard 1916 as *C. durbanensis*); Durban (Stebbing 1918).

Distribution: Indo-Pacific.

Chevalia aviculae Walker, 1904

Chevalia aviculae: J. L. Barnard, 1971: 88, fig. 42.

Records: NAD 16N(7); NIWR/UM/D3B(1), NIWR/UM/P1B(1), NIWR/2/36H(4).

Distribution: Circumtropical and warm temperate.

Gammaropsis afra (Stebbing, 1888)

Gammaropsis afra: J. L. Barnard, 1970b: 170, fig. 108.

Records: 29/31/430 m (J. L. Barnard 1961).

Distribution: Almost circumtropical.

Gammaropsis atlantica (Stebbing, 1888) **new synonymy**

Eurystheus imminens K. H. Barnard, 1916: 250; 1937: 165, fig. 11.

Gammaropsis atlantica: J. L. Barnard, 1970b: 174, figs 111–113.

Records: NIWR/1/26F(1), NIWR/UM/D3A(1), NIWR/UM/R3B(1), NIWR/2/24E(3), NIWR/2/30M(5), NIWR/2/36B(13); ABD 8Q(2); NAD 4S(2) NAD 11R(11), NAD 19G(10), NAD 56A(41), NAD 61A(1), NAD 64F(6), NAD 66R(3), NAD 70V(2), NAD 81H(1), NAD 90T(22), NAD 92N(7), NAD 92 (P); 'Morewood cove' 50 m (K. H. Barnard 1916 as *E. imminens*).

Distribution: Almost circumtropical.

Remarks: K. H. Barnard (1916) erected *G. imminens* on the basis of two characters—the relative sizes of the palmar teeth of gnathopod 2 male, and the shape of the eyes ('elongate oval'). I have examined his type material and find the eyes to be of a shape consistent with those of *G. atlantica* from the same area (vertically elongate but not markedly constricted dorsally). Although the relative size of the palmar teeth is unusual their general shape is consistent with *G. atlantica*, and this cannot be regarded as taxonomically significant in the light of the variability of *G. atlantica* which has been demonstrated in recent years (e.g. J. L. Barnard 1970b). Moreover, the fact that the specimens were found amongst samples of *G. atlantica* suggests that they merely represent aberrations of the normal form.

Gammaropsis chelifera (Chevreux, 1901)

Eurystheus semichelatus K. H. Barnard, 1957: 8, fig. 5.

Gammaropsis chelifera: Ledoyer, 1972: 239, pl. 54A.

Gammaropsis semichelatus: Griffiths, 1972: 290.

Records: NA 191J(8).

Distribution: Indian Ocean.

Gammaropsis holmesi (Stebbing, 1908) **new synonymy**

Eurystheus holmesi Stebbing, 1908: 85, pl. 14A. K. H. Barnard, 1955: 95, figs 48 A–D.

Eurystheus semidentatus K. H. Barnard, 1916: 250, pl. 28, figs 13, 14.

Records: NAD 7D(2), NAD 19Q(14); Durban (Stebbing 1918).

Diagnosis: Gnathopod 2 powerful, hind margin much shorter than oblique, dentate palm, palm defined by a small tooth; hind margins of article 2 of pereopods 3–5 strongly serrate posteriorly; pleon segment 4 dorsally tridentate, median tooth the smallest, segment 5 with a pair of dorso-lateral teeth.

Distribution: Endemic, Natal to Saldanha Bay.

Remarks: As originally described by K. H. Barnard (1916), *G. semidentatus* could be distinguished from *G. holmesi* by the less marked and more regular serrations along the posterior margin of article 2 of pereopods 3–5, and by differences in the teeth of the palm of gnathopod 2. However it has since been

found that Stebbing's original material was unusually well developed as regards these features, the usual form of *G. holmesi* being described and figured by K. H. Barnard (1955). As can be seen by comparing these figures with those depicting *semidentatus*, the two species have become indistinguishable, *holmesi* merely representing a more highly developed phenotype of *semidentatus*. Since *holmesi* has preference, *semidentatus* thus falls into synonymy with it.

Photis longimanus Walker, 1904

Photis longimanus: K. H. Barnard, 1916: 244. Sivaprakasam, 1970: 567, fig. 8.

Records: Durban Bay (K. H. Barnard 1916).

Distribution: Indian Ocean, extending to South West Africa.

Photis kapapa J. L. Barnard, 1970

Photis kapapa J. L. Barnard, 1970b: 192, figs 124, 125.

Records: NIWR/UM/R3C(5), NIWR/2/27H(3), NIWR/2/33F(3); NAD 19E(23), NAD 56D(2), NAD 64G(1).

Distribution: Hawaii, east coast of southern Africa.

Photis uncinata K. H. Barnard, 1932

Photis longicaudata: K. H. Barnard, 1916: 243, pl. 28, fig. 26.

Photis uncinata K. H. Barnard, 1932: 223, fig. 138.

Records: NIWR/1/6B(1), NIWR/1/14D(2), NIWR/UM/D3C(1), NIWR/2/22B(1); 29/31/50 m, 'Morewood Cove' 50 m (K. H. Barnard 1916).

Diagnosis: Articles 5 and 6 of gnathopod 1 subequal, palm very oblique, faintly denticulate; article 2 of gnathopods 1 and 2 antero-distally terminating in a small curved acute process tipped by two setae; article 6 of gnathopod 2 oblong, defining angle rectangular, slightly produced, palm nodulose, dactyl serrate; outer ramus of uropod 3 very small.

Distribution: Endemic to South Africa.

Family **Ischyroceridae**

Ischyrocerus anguipes Kröyer, 1838

Ischyrocerus anguipes: Schellenberg, 1953: 120, fig. 7A-C.

Records: NIWR/3/30S(1), NIWR/2/35C(1).

Distribution: Atlantic, Indo-Pacific.

Jassa falcata (Montagu, 1808)

Jassa falcata: Sexton & Reid, 1951: 30-47, pls 4-30. J. L. Barnard, 1969a: 155, figs 38, 39.

Records: DBN 131P(1); D 276(2); NA 244F(23).

Distribution: Cosmopolitan.

Family **Leucothoidae***Leucothoe ctenochir* K. H. Barnard, 1925

Leucothoe ctenochir K. H. Barnard, 1925: 342, pl. 34, fig. 8.

Records: NAD 4P(7); Port Shepstone (K. H. Barnard 1925).

Diagnosis: Readily identified by the form of the palm of gnathopod 2 which is cut into five or six regular comb-like teeth, the tooth nearest the finger-hinge obscurely bifid; third pleonal epimeron postero-distally subquadrate, lacking a posterior sinus; antenna 1 extending to pereon segment 3.

Distribution: Endemic to east coast of South Africa.

Leucothoe dolichoceras K. H. Barnard, 1916

Leucothoe dolichoceras K. H. Barnard, 1916: 157, pl. 26, fig. 14; 1925: 343.

Records: NIWR/2/36Q(1); NAD 4Q(1).

Diagnosis: Antenna 1 extending to pleon segment 3 (unusually long); article 6 of gnathopod 1 long and narrow, palm with two large blunt-tipped tubercles near finger-hinge, a third proximal to them and a series of small denticles near defining angle; dactyl equal to palm, a deep semicircular incision bounded by a denticle near its base (this form of gnathopod 2 only fully developed in specimens over 8 mm); third pleonal epimeron acutely produced with a deep sinus above postero-distal corner.

Distribution: Endemic to South Africa.

Leucothoe richiardi Lessona, 1865

Leucothoe richiardi: Sivaprakasam, 1967: 385, fig. 2.

Records: NAD 4R(6).

Diagnosis: Antenna 1 extending to pereon segment 3; article 6 of gnathopod 2 elongate oval, palm convex, denticulate distally; third pleonal epimeron postero-distally acute, a sinus above corner (obscure in females).

Distribution: Mediterranean, India, South Africa.

Leucothoe spinicarpa (Abildgaard, 1789)

Leucothoe spinicarpa: K. H. Barnard, 1916: 148. Sivaprakasam 1967: 384, fig. 1.

Records: NIWR/3/24F(4); NAD 90U(22); NA 243B(1); 30/30/50 m (K. H. Barnard 1916).

Distribution: Cosmopolitan.

Family **Liljeborgiidae***Liljeborgia epistomata* K. H. Barnard, 1932

Liljeborgia epistomata K. H. Barnard, 1932: 144, fig. 83; 1955: 89, fig. 44.

Records: NAD 15M(2).

Diagnosis: The male differs considerably from the female and is relatively rare. Male coxa 1 ovoid, enormously enlarged; article 6 of gnathopod 2 $1\frac{1}{2}$ times as long as broad, palm oblique, sinuous, a prominent bilobed tooth near finger-hinge, dactyl with 7-8 large serrations, closing into a shallow pit on inner surface of hand which is armed by three spines. Female coxa 1 normal, gnathopod 2 palm not toothed. Both sexes lack eyes and dorsal teeth on pleon segment 1; pleon segments 2, 4 and 5 have single medio-dorsal teeth, those of segments 4 and 5 forming the termination of medio-dorsal keels.

Distribution: Endemic, Saldanha Bay to Natal.

Family **Lysianassidae***Amaryllis macrophthalma* Haswell, 1880

Amaryllis macrophthalma: J. L. Barnard, 1972: 262, figs 156-158.

Records: NIWR/1/26C(1), NIWR/1/27D(1), NIWR/UM/M3C(2), NIWR/2/17B(2), NIWR/2/32B(8), NIWR/2/36C(13); NA 205J(1); 30/30/50 m, 29/31/100 m (K. H. Barnard 1916).

Distribution: Southern Hemisphere.

Hippomedon longimanus (Stebbing, 1888)

Hippomedon longimanus Stebbing, 1888: 643, pl. 12. K. H. Barnard, 1916: 125.

Records: 29/31/80 m (K. H. Barnard 1916).

Diagnosis: Eyes absent; article 1 of antenna 1 longer than articles 2 plus 3, article 1 of flagellum elongate; gnathopods 1 and 2 long and slender, article 5 longer than 6; pleon segment 4 dorsally depressed anteriorly and posteriorly carinate; third pleonal epimeron with a short point postero-inferiorly; telson 60 per cent cleft, apices somewhat divergent, each ending in a spine.

Distribution: Atlantic, extending to Natal.

Hippomedon onconotus (Stebbing, 1908)

Tryphosa onconotus Stebbing, 1908: 65, pl. 35.

Records: NIWR/UM/M1B(1).

Diagnosis: Eyes absent; article 1 of antenna 1 as long as 2 plus 3; article 5 of gnathopods 1 and 2 longer than article 6; pleon segment 4 with a deep dorsal depression followed by an upturned acute triangular process; third pleonal

epimeron smoothly rounded; telson 80 per cent cleft, each lobe with an apical and a lateral spine and two proximal setae.

Distribution: Endemic to South Africa.

Lysianassa ceratina (Walker, 1889)

Lysianassa cubensis: K. H. Barnard, 1916: 120.

Lysianassa ceratina: Chevreux & Fage, 1925: 42, fig. 23.

Records: NIWR/1/27J(2), NIWR/2/27C(4), NIWR/2/30A(6); NA 244H(3), G 15N; M 19E.

Distribution: Mediterranean, Atlantic, Indian Ocean.

Lysianassa variagata (Stimpson, 1855)

Lysianassa variagata: Stebbing, 1888: 682. pl. 23.

Records: NAD 4M(2), NAD 81K(3).

Distribution: Africa south of the equator.

Microlysias xenoceras Stebbing, 1918

Microlysias xenoceras Stebbing, 1918: 64, pl. 9.

Records: Durban (Stebbing 1918).

Distribution: Endemic, Durban to Plettenberg Bay.

Trischizostoma remipes Stebbing, 1908

Trischizostoma remipes Stebbing, 1908: 61, pl. 34. K. H. Barnard, 1925: 321.

Records: NAD 11S(1).

Diagnosis: Article 6 of gnathopod 1 very large, showing some torsion, palm elongate, evenly convex, minutely serrulate, dactyl curved, inner margin smooth; eyes very large, nearly meeting on top of head; rostrum small; accessory flagellum of antenna 1 of a single laminar joint followed by a short linear one; article 6 of pereopod 5 slightly longer and wider than 5, forming a narrow blade-like lamina; telson 40 per cent cleft.

Distribution: Endemic, Natal to False Bay.

Trischizostoma serratum K. H. Barnard, 1925

Trischizostoma serratum K. H. Barnard, 1925: 320, pl. 34, fig. 1.

Records: 'Various localities on Natal coast' (K. H. Barnard 1925).

Diagnosis: Close to *T. remipes* but differing in the form of gnathopod 1 which has a straight or concave palm with defining angle produced into a blunt point with 1 or 2 stout blunt spines, palm entire, armed with seven stout marginal

and five submarginal spines, inner margin of dactyl with a series of conical denticles at regular intervals.

Distribution: Endemic, Natal to False Bay

Tryphosella normalis K. H. Barnard, 1955

Tryphosella normalis K. H. Barnard, 1955: 80, fig. 39.

Records: NIWR/1/26E(2), NIWR/1/27H(6), NIWR/UM/P1D(1), NIWR/2/30D(2).

Distribution: Endemic, Natal to South West Africa.

Uristes natalensis K. H. Barnard, 1916

Uristes natalensis K. H. Barnard, 1916: 126.

Records: Port Shepstone (K. H. Barnard 1916).

Diagnosis: Coxa 1 widening distally, oblong, not greatly reduced; pleon segment 4 somewhat depressed basally but neither carinate nor produced; telson oblong, apices divergent.

Distribution: Endemic to east coast of South Africa.

Family **Ochlesidae**

Ochlesis lenticulosus K. H. Barnard, 1940

Ochlesis lenticulosus K. H. Barnard, 1940: 447, fig. 23.

Records: NIWR/2/30T(1).

Diagnosis: Pereon and pleon dorsally carinate, the carinae of pereon segment 7 and pleon segments 1 and 2 produced posteriorly into a blunt dorsal projection, pleon segment 3 with an upstanding triangular projection about the middle of its length; third pleonal epimeron postero-distally produced into a sharply upturned tooth; lower distal margins of articles 1 and 2 of antenna 1 produced into spinose projections.

Distribution: Endemic, Natal to False Bay.

Family **Phliantidae**

Palinnotus natalensis K. H. Barnard, 1940

Palinnotus natalensis K. H. Barnard, 1940: 445, fig. 22.

Records: D 279; Isipingo (K. H. Barnard 1940); Port Shepstone (K. H. Barnard 1955).

Diagnosis: Body dorsally depressed, coxae splayed; article 2 of pereopod 5 strongly expanded, as wide as long in adults; article 4 distally strongly lobed; uropod 3 lacking rami.

Distribution: Natal, India.

Family **Phoxocephalidae***Mandibulophoxus stimpsoni* (Stebbing, 1908)*Pontharpinia stimpsoni* Stebbing, 1908: 75, pl. 11.*Mandibulophoxus stimpsoni*: J. L. Barnard, 1957: 436-438, figs 3, 4.

Records: NIWR/1/5A(2), NIWR/1/14F(1), NIWR/1/24A(1), NIWR/1/26A(8), NIWR/1/27A(5), NIWR/UM/R3E(1), NIWR/UM/P5B(1), NIWR/UM/M1A(2), NIWR/UM/M2A(3), NIWR/UM/M3A(3), NIWR/2/17A(3), NIWR/2/19A(1), NIWR/2/21F(1), NIWR/2/22A(1), NIWR/2/23A(2), NIWR/2/27B(5), NIWR/2/29A(1), NIWR/2/30B(5), NIWR/2/32A(1), NIWR/2/33A(4), NIWR/2/35A(2), NIWR/2/36A(1); NAD 27C(1).

Diagnosis: Eyes present; rostrum extending beyond tip of peduncle of antenna 1, apex drawn out into a curved downturned point; third pleonal epimeron with an oblique setal row on its exterior surface; rami of uropods 1 and 2 dorsally and apically spinose; telson cleft to base.

Distribution: West and southern Africa.

Family **Podoceridae***Laetmatophilus durbanensis* K. H. Barnard, 1916*Laetmatophilus durbanensis* K. H. Barnard, 1916: 275.

Records: Durban Bay (K. H. Barnard 1916).

Diagnosis: Pereon transversely ridged; gnathopod 1 with article 6 not at all widened, narrower than article 5, palm smooth, not defined from hind margin; article 2 of gnathopod 2 male with two anterior keels, both apically acute, article 6 broadly ovate, palm straight, with a low denticulate process extending from the finger-hinge about $\frac{1}{3}$ way along the palm and a pointed tooth proximal to it, dactyl nearly straight, matching palm.

Distribution: The above record is the only one to date.

Laetmatophilus purus Stebbing, 1888*Laetmatophilus purus* Stebbing, 1888: 1198, pl. 132.

Records: NIWR/2/30E(18).

Distribution: Endemic, South West Africa to Moçambique.

Laetmatophilus tridens K. H. Barnard, 1916*Laetmatophilus tridens* K. H. Barnard, 1916: 275, pl. 28, fig. 22.

Records: NAD 15L(1).

Distribution: Endemic, Moçambique to Saldanha Bay.

Podocerus africanus K. H. Barnard, 1916

Podocerus africanus K. H. Barnard, 1916: 278, pl. 28, figs 24-25; 1937: 176, fig. 19.

Records: NA 244D(30); Port Shepstone (K. H. Barnard 1925).

Distribution: Arabia, Natal to South West Africa.

Podocerus brasiliensis (Dana, 1853)

Podocerus brasiliensis: J. L. Barnard, 1970: 237, figs 156-157.

Records: DBN 2W(15), DBN 62J(C), DBN 131J(A), DBN 131K(1), DBN 251C(C), DBN 271F(2), DBN 379D(P); Durban Bay (K. H. Barnard 1916 as *P. synapochir*).

Diagnosis: Body lacking dorsal processes; coxa 1 weakly produced forwards, apically rounded; male gnathopod 2 with article 2 not anteriorly keeled, obscurely lobed distally, palm occupying whole posterior margin of article 6, undefined and smooth except for a slight distal bulge, dactyl half length of palm; peduncles and inner rami of uropods 1 and 2 moderately and irregularly spinose.

Distribution: Cosmopolitan in tropical and temperate seas.

Podocerus inconspicuus (Stebbing, 1888)

Podocerus palinuri K. H. Barnard, 1916: 277, pl. 28, fig. 23.

Podocerus inconspicuus: Nagata, 1965: 322, fig. 43.

Records: NIWR/2/19A(1); NA 191H(1); Durban (Stebbing 1918).

Distribution: Indo-Pacific, extending along west coast of South Africa.

Podocerus multispinis K. H. Barnard, 1925

Podocerus multispinis K. H. Barnard, 1925: 367, pl. 34, fig. 18.

Records: NAD 4V(2).

Diagnosis: Body not dorsally keeled but bearing two transverse rows of 3 spini-form tubercles on segment 1 and a single row on each of segment 2-7; coxa 1 produced forwards to level of the eye, apically acute; male gnathopod 2 with article 2 strongly keeled on inner and outer anterior margins, both keels ending in rounded setiferous lobes; palm 60% length of article 6, defined by a strong conical tooth, an obscure bifid tooth halfway along the palm and another square topped tooth near the finger-hinge, dactyl almost as long as palm; inner margins of peduncles and inner ramis of uropods 1 and 2 with comb-like rows of closely set spines.

Distribution: Endemic, Natal to Saldanha Bay.

Family **Stenothoidae***Proboloides rotunda* (Stebbing, 1917)

Metopa rotundus Stebbing, 1917: 39, pl. 7A.

Proboloides rotunda: K. H. Barnard, 1940: 444.

Records: NIWR/2/30P(1), NIWR/2/36N(11); NAD 19M(1).

Diagnosis: Body round; flagellum of antenna 1 and 2 shorter than peduncle, accessory flagellum absent; article 6 of gnathopod 1 parallel-sided, twice as long as broad, palm smooth, oblique; gnathopod 2 much larger than 1, palm oblique, convex, serrate near finger-hinge then abruptly stepped to form a cavity within which the dactyl closes; article 4 of pereopods 4 and 5 produced posteriorly into an acute lobe extending to the end of article 5; peduncle of uropod 3 longer than ramus, article 1 of ramus longer than spiniform second article.

Distribution: Endemic to South Africa.

Stenothoe gallensis Walker, 1904

Stenothoe gallensis: K. H. Barnard, 1925: 344. J. L. Barnard, 1955: 3, fig. 1; 1971: 120, figs 62-63.

Records: NAD 17Q(1); Durban (K. H. Barnard 1916); Port Shepstone (K. H. Barnard 1925).

Distribution: Cosmopolitan.

Remarks: K. H. Barnard's (1925) identification was queried by J. L. Barnard (1955) on the basis of the shape of uropod 3. I have examined the single male K. H. Barnard (1925) referred to, but find the third uropods to be missing. However, other material from South Africa conforms with his description, the third uropod differing from the usual form (figured in J. L. Barnard 1971) in that article 2 of the ramus is proximally almost circular and has an almost straight distal process arising from the superior half of its distal margin, the process is ridged in the usual pattern for the species. The process is *not* demarcated in any way from the proximal part of the article. Although the shape of the third uropod is unusual, I feel that in the light of increasing variability which has been found in this species, and its relative *S. valida* Dana, in recent years, it would be unwise to erect a new species for this form.

Stenothoe valida Dana, 1853

Stenothoe valida: Sivaprakasam, 1967: 373, fig. 2 a-b. J. L. Barnard, 1970b: 250, fig. 165.

Records: DBN 2U(C), DBN 62H(C), DBN 131M(P), DBN 251G(1), DBN 379C(P), DBN 396E(P); Durban (K. H. Barnard 1925).

Distribution: Cosmopolitan in tropical and temperate seas.

Family **Synopiidae***Tiron australis* Stebbing, 1908

Tiron australis Stebbing, 1908: 79, pl. 38.

Records: NIWR/2/20C(1), NIWR/2/36S(2).

Diagnosis: Accessory eye of four ommatidea; mandible with 3-articulate palp; inner plate of maxilla 2 with a medial submarginal row of setae; dactyls of pereopods stubby but apically sharp; article 2 of pereopods 4 and 5 not strongly setose, that of 5 crenulate posteriorly; pleonites 1-3 dorsally crenulate; each lobe of telson with a median row of large spines.

Distribution: Endemic to east and south coasts of South Africa.

Superfamily TALITROIDEA

Family **Hyalellidae***Afrochiltonia capensis* (K. H. Barnard, 1916)

Chiltonia capensis K. H. Barnard, 1916: 224, pl. 27, figs 38-40.

Afrochiltonia capensis: K. H. Barnard, 1955: 93.

Records: STL 89G(A), STL 102C(C); KOS 62B(3), KOS 74G(5), KOS 78H(6), KOS 81E(1), KOS 82F(1); RHB 129Q(2); UMK 19W(C), UMK 23W(2), UMK 25C(P), UMK 26H(C), UMK 27N(C), UMK 29A(A); EDW 3B(C).

Diagnosis: Since the genus is monotypic the generic characters diagnose the species. Habitat estuarine and brack water; maxilla 1 lacking palp; gnathopods of both sexes subchelate; male gnathopod 2 not larger than gnathopod 1; female gnathopod 2 like gnathopod 1; male pleopod 1 normal; uropod 3 lacking rami; telson entire.

Distribution: Endemic, Zululand to Saldanha Bay.

Parhyalella natalensis (Stebbing, 1917)

Exhyalella natalensis: Stebbing, 1918: 67, pl. 11.

Parhyalella natalensis: K. H. Barnard, 1925: 359.

Records: Durban (Stebbing 1918; K. H. Barnard 1925).

Diagnosis: Flagellum of antenna 1 and 2 at least as long as peduncle; article 5 of gnathopod 1 male larger than 6; article 5 of gnathopod 2 male with a narrow posterior lobe intervening between articles 4 and 6, palm oblique, elongate, spine fringed, having a very short hind margin; uropod 3 very small, peduncle much larger than ramus; telson entire.

Distribution: Not recorded outside Durban.

Family **Hyalidae***Hyale grandicornis* (Kröyer, 1845)

Hyale grandicornis: Stephensen, 1949: 33, figs 14, 15.

Records: G 15F; V 28L; D 118; M 19H; NA 243C(1), NA 244G(18); Port Shepstone, Isipingo, Port Edward (K. H. Barnard 1955).

Distribution: Cosmopolitan in tropical and temperate seas.

Family **Talitridae***Orchestia ancheidos* (K. H. Barnard, 1916)

Talorchestia ancheidos K. H. Barnard, 1916: 221, pl. 27, figs 35, 36.

Orchestia ancheidos: Ruffo, 1958: 43, figs 3, 4.

Records: STL 11D(4), STL 18D, STL 52G, STL 67B, STL 73A, STL 77A, STL 135B(2), STL 148B(8), STL 171A(2), STL 232D, STL 270B, STL 299R(2), STL 317D(2), STL 342G(A), STL 343J(5), STL 344; KOS 6A(A), KOS 15A(2), KOS 78G(3); RHB 38A(15), RHB 93A(3), RHB 132D(20); UMK 24N; SHP 5B(C); Umlalazi estuary (Hill 1966).

Distribution: Madagascar, Moçambique, South Africa.

Orchestia rectipalma (K. H. Barnard, 1940)

Parorchestia rectipalma K. H. Barnard, 1940: 473, fig. 32.

Records: STL 89F(A), STL 102D(1); RHB 124N(1), RHB 129C(3); EDW 3A(C); UMK 19F, UMK 29C(P), UMK 33C(8).

Distribution: Endemic; Natal to South West Africa.

Suborder CAPRELLIDEA

Family **Aeginellidae***Metaprotella macrodactylos* Stebbing, 1910

Metaprotella macrodactylos Stebbing, 1910: 469, pl. 48A.

Records: NIWR/2/30K(1).

Diagnosis: Last two thoracic segments distinct but not movable upon each other; head bearing an acute forward-directed process, rest of the body lacking dorsal processes; pereopods 1 and 2 minute, less than $\frac{1}{4}$ length of branchiae; second gnathopods large, hand very long and bearing a pronounced acute tooth on the palm near the articulation of the dactyl, dactyl extending whole length of hand.

Distribution: Endemic, this is only the second record of this species, the first being from the Port Elizabeth area.

Monoliropus falcimanus Mayer, 1904

Monoliropus falcimanus: Sivaprakasam, 1967: 382, fig. 4G-H.

Records: ABD 14K(1).

Distribution: Indian Ocean.

Pseudaeginella tristanensis (Stebbing, 1888)

Pseudaeginella tristanensis: Stephensen, 1949: 52, fig. 23.

Records: NIWR/2/30U(1); NA 244B(1).

Diagnosis: Branchiae on pereon segments 2 and 3; pereopods 1 and 2 absent, pereopod 3 6-articulate; abdomen lacking appendages; pereon segment 1 with a large upright antero-dorsal tooth and a smaller posterior one, segments 2-4 each with three dorsal tubercles, the largest in the centre of the segments, the others sometimes obscure; gnathopod 2 with a small acute tooth half way along the palm and two smaller rounded teeth distally.

Distribution: Tristan da Cunha, South Africa.

Family **Caprellidae***Caprella cicur* Mayer, 1903

Caprella cicur Mayer, 1903: 75, 97, pl. 4, figs 5-7, pl. 8, figs 3-5.

Records: G 15K; U 28H; J 11C.

Diagnosis: Head with short rostral point; basis of gnathopod 2 shorter than pereon segment 2, outer margin anteriorly keeled, the keel ending in an acute point; a spine ventrally between the insertions of gnathopod 2, hand of male gnathopod 2 elongate, palm defined by an acute forward directed process, a triangular tooth near finger-hinge.

Distribution: Endemic, Natal to west coast of South Africa.

Caprella danilevski Czerniavski, 1868

Caprella danilevskii: Chevreux & Fage, 1925: 454, fig. 432. McCain, 1968: 22-25, figs 10-11.

Records: J 11C.

Distribution: Widespread in tropical seas.

Caprella equilibra Say, 1818

Caprella equilibra: McCain, 1968: 25-30, figs 12-13.

Records: DBN 2X(A), DBN 131C(P), DBN 241 W(1), DBN 251A(A), DBN 379A(C), DBN 396F(C); NAD 15J(6); Durban (K. H. Barnard 1916).

Distribution: Cosmopolitan, 0-300 m.

Caprella laevipes Mayer, 1903

Caprella laevipes Mayer, 1903: 108, pl. 5, fig. 2, pl. 8, figs 14-16.

Records: 'Port Natal' (= Durban, Mayer 1903).

Diagnosis: Head with large anteriorly directed rostral spine; basis of gnathopod 2 longer than pereon segment 2; no spine between insertions of second gnathopods, hand elongate and expanding distally in adult males, palm with two strong teeth and a distal rectangular projection; pereopods 5-7 lacking grasping spines (distinguishing the species from *C. scaura*).

Distribution: Endemic, Natal to west coast of South Africa.

Caprella natalensis Mayer, 1903.

Caprella acutifrons var. *natalensis*: Mayer, 1903: 81, pl. 3, figs 22, 23.

Caprella penantis (non Leach, 1814): Stebbing, 1910: 465.

Caprella penantis var. *natalensis*: K. H. Barnard, 1916: 281.

Caprella angusta: Laubitz, 1970: 40, fig. 11.

Caprella natalensis: Laubitz, 1972: 47, pl. 9, figs F,G, pl. 10, figs F-K.

Records: Durban (Mayer 1903; K. H. Barnard 1916).

Diagnosis: Head with anteriorly directed rostrum; basis of gnathopod 2 shorter than pereon segment 2; no spine between insertions of second gnathopods, hand twice as long as broad, palm sparsely setose with proximal poison tooth and distal rectangular projection.

Distribution: Pacific North America, Tristan de Cunha, South Africa.

Remarks: This form was originally described by Mayer as one of twenty varieties of *C. acutifrons* which he recognized. These varieties were analysed by McCain (1968) who assigned eight of them including var. *natalensis*, to *C. penantis*. Laubitz (1970) subsequently elevated one of these eight, *C. angusta*, to specific level but then (1972) synonymized this with a newly elevated *C. natalensis*. This species can be distinguished from *C. penantis* by its long pereonite 5 (as long as 6+7) and the sparse setification of the palm of gnathopod 2, as well as the absence of pleura, which are usually well developed in adult *C. penantis*.

Caprella penantis Leach, 1814

Caprella penantis: McCain, 1968: 33-40, figs 15-16.

Records: D 272; NA 244A (26).

Distribution: Cosmopolitan in tropical and temperate seas.

Caprella scaura Templeton, 1836

Caprella scaura: McCain, 1968: 40-44, figs 17-18.

Records: DBN 131E(1).

Distribution: Cosmopolitan.

Paracaprella pusilla Mayer, 1890

Paracaprella pusilla: McCain, 1968: 82-86, figs. 32 a-b, 41, 42, 53.

Records: DBN 131D(1).

Diagnosis: Mandibular palp absent; antero-ventral margin of male pereon segment 2 acutely produced forwards; basis of gnathopod 2 short, a distinct hump on posterior margin near origin, palm with proximal grasping spine followed by a tooth, a pronounced excavation midway along palm; pereopods 1 and 2 2-articulate; pereopod 3 6-articulate.

Distribution: Cosmopolitan in tropical and temperate seas.

Family **Cyamidae***Cymus balaenopterae* K. H. Barnard, 1931

Cymus balaenopterae: K. H. Barnard, 1932: 309, fig. 171.

Records: Ectoparasitic on a fin whale, Durban (K. H. Barnard 1932).

Diagnosis: Maxilliped with palp; body narrow in dorsal view, parallel sided in male, ovate in female; pereon segment 1 completely fused with head, pereon segment 2 not laterally hooked; branchiae on segments 3 and 4 single, about as long as segments 2 and 3, male branchiae with single short pointed accessory gills; male with a pair of ventral tubercles on each of pereon segments 6 and 7; female with a pair of oblong ventral processes on segment 5, and a pair of tubercles on each of segments 6 and 7.

Distribution: Widespread on fin whales and blue whales.

Cymus boopis Lutken, 1873

Paracyamus boopis: K. H. Barnard, 1932: 312.

Cymus boopis: Margolis, 1955: 124, figs 7-12.

Records: Ectoparasitic on humpback and sperm whales, Durban (K. H. Barnard 1932).

Diagnosis: Maxillipedal palps absent, body ovate (but more slender than *C. erraticus*) pereon segment 2 not postero-laterally hooked; branchiae single with the bifurcate accessory gills in male shorter than pereon segments 2-5; male with one pair of ventral spines on each pereon segments 5-7, female with 2 pairs on segment 5 and one pair each on 6 and 7.

Distribution: Widespread on humpback whales.

Cymus erraticus Roussel de Vauzème, 1834

Paracyamus erraticus: K. H. Barnard, 1932: 310, fig. 172.

Cymus erraticus: Margolis, 1955: 132, figs 1-6.

Records: Humpback whale, Durban (Stebbing 1910).

Diagnosis: Maxilliped with or without palps; body broadly ovate, pereon segment 2 postero-laterally produced into a forwardly directed hooked process; branchiae single, as long as pereon segments 2-7 and with small bifid accessory lobe in adult male; male with 2 pairs of ventral spines on segments 5 and 6 and a single pair on 7, female with a single pair of spines on segments 5 and 7 and two pairs on 6.

Distribution: Widespread on right whales.

Family **Phtisicidae**

Phtisica marina Slabber, 1769

Phtisica marina: K. H. Barnard, 1916: 283. McCain, 1968: 91-97, fig. 46.

Records: 30/30/80 m (K. H. Barnard 1916).

Distribution: Principally Atlantic but extending to Moçambique, Mediterranean and Black Sea.

Caprellina longicollis (Nicolet, 1849)

Caprella longicollis: McCain, 1969: 289, fig. 2.

Records: DBN 404A(C).

Distribution: Southern oceans, Mediterranean.

Subfamily **Phtisicinae**

Chaka n. gen.

Diagnosis: Flagellum of antenna 2 tri-articulate, swimming setae present; mandible with 3-articulate palp, setal formula of terminal article 1-X-1, molar absent; outer lobe of maxilliped equal to inner lobe; gills on pereonites 2-4; pereopods 1 and 2 fully developed, pereopod 3 tri-articulate; abdomen of male and female with two pairs of bi-articulate appendages.

Type-species: *Chaka leoni* n. sp.

Relationships: The configuration of the pereopods in this genus is unique. Other genera in the subfamily *Phtisicinae* have five or six-articulate third pereopods, while genera in the subfamily *Dodecadinae* have pereopods 1 and 2 more or less reduced.

Chaka leoni n. sp.

Figs 7, 8

Description of male (11 mm): Head produced into a short flat-lying process (Fig. 7A), antenna 1 about as long as first five pereon segments, flagellum less than half peduncle, 11-articulate; antenna 2 shorter than peduncle of antenna

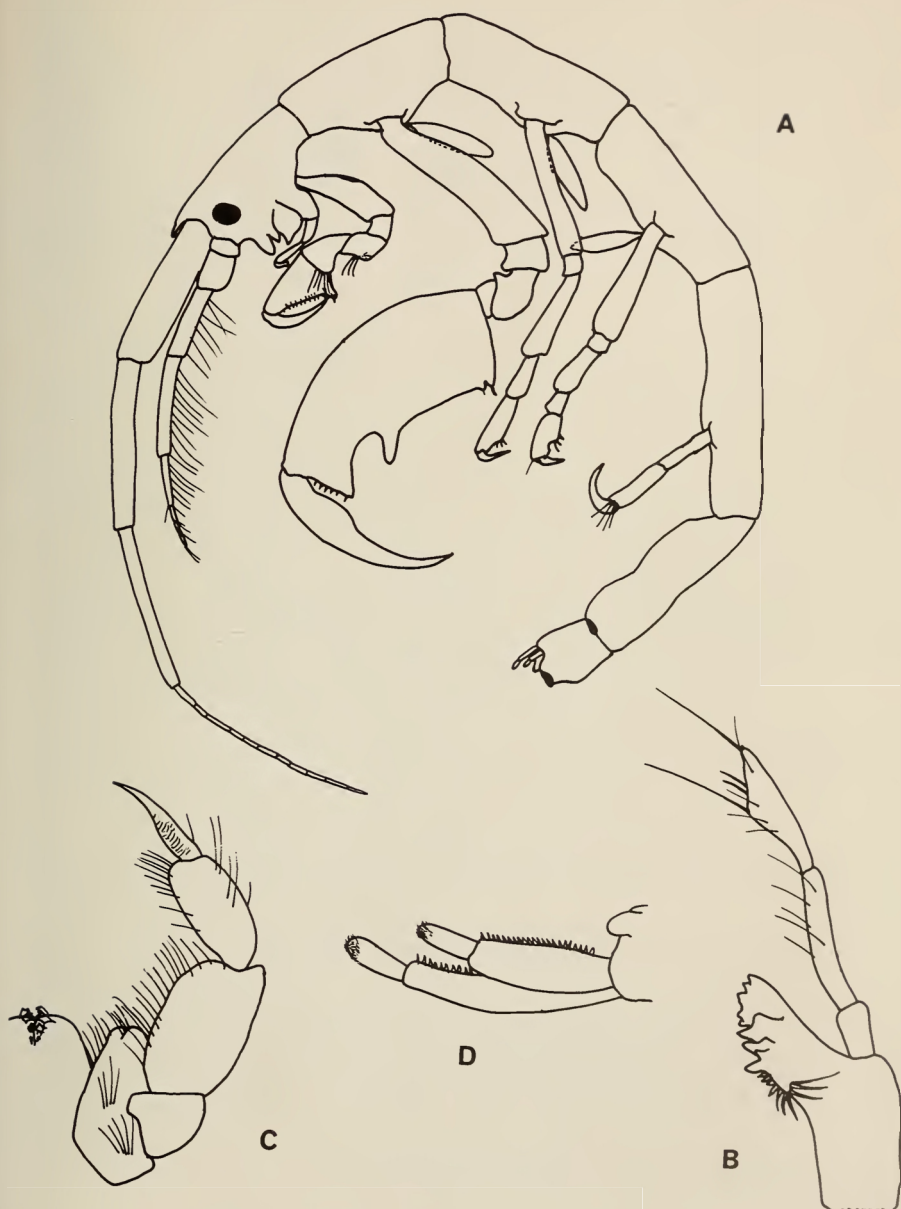


Fig. 7. *Chaka leoni* n. gen., n. sp.

Male, 11 mm: A—lateral aspect; B—mandible; C—maxilliped; D—lateral view of abdominal appendages.

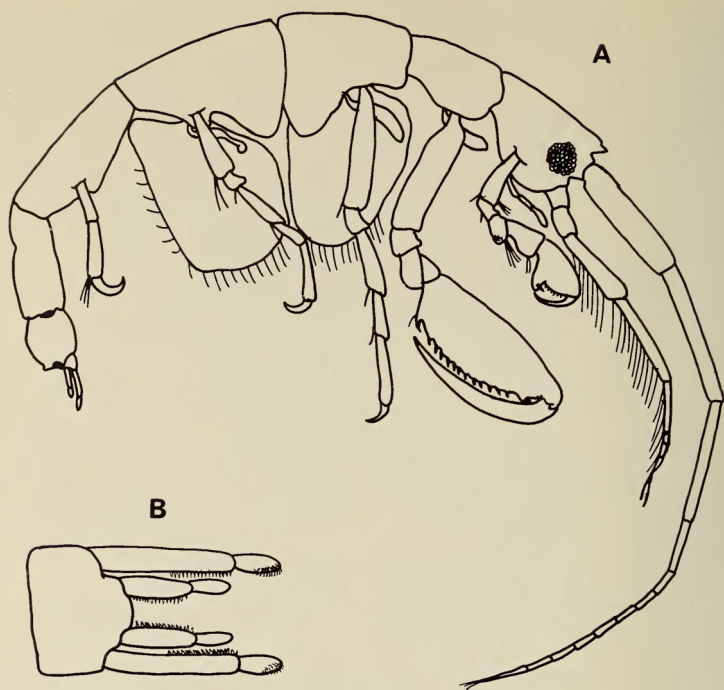


Fig. 8. *Chaka leoni* n. gen., n. sp.
Female, 8 mm: A—lateral aspect; B—dorsal view of abdomen.

1, flagellum 3-articulate, swimming setae present; mandible with 3-articulate palp, setal formula of terminal article 1-2-1, incisor of mandible (Fig. 7B) five toothed, lacinia mobilis smooth, two accessory plates present, below which lies a row of ten strong setae, molar absent; inner and outer lobes of maxilliped equal, inner lobes nearly fused, armed distally with serrate spines.

Propodos of gnathopod 1 subtriangular, palm evenly concave, defining angle produced into a rounded lobe; gnathopod 2 very large, propodos with proximal poison tooth followed by a pair of small protuberances, palm distally with a strong pointed tooth separated from a triangular tooth near the hinge by a semicircular excavation; dactyl strong, equal to palm; branchiae elongate-elliptical, three pairs found on pereon segments 2-4; pereopods 1 and 2 6-segmented, palm of propodos proximally with three spines; pereopod 3 3-segmented, propodos lacking palm and without spines; (pereopods 4 and 5 missing).

Abdomen with two pairs of bi-articulate appendages (Fig. 7D); article 1 of each dorsally with closely packed short spines set in a row, article 2 of each appendage distally finely setose.

Female: Rostral projection shorter and of different shape to that of the male;

antenna 2 as long as peduncle of antenna 1; propodos of gnathopod 2 smaller than that of male, palm evenly convex with a row of 12 short strong spines evenly spaced along its length and a small poison tooth at defining angle; pereopods as in male but 1 and 2 lacking spines; pereon segments 3 and 4 ventro-laterally produced into projecting keels, ventrally with large brood pouches; abdomen as in male.

Holotype: SAM A13165, male, 11 mm.

Type-locality: NAD 15K, 13 August 1958, 30°47'S/30°27'E, depth 36 m.

Material: Three males and three females from the type-locality.

SUMMARY

Data from the considerable collections amassed by the University of Cape Town Ecological Survey and the National Institute for Water Research have been incorporated with the records of previous authors in listing the known gammaridean and caprellid amphipod fauna of Natal. A total of 115 species is recognized from the area. Of these six species and one genus are described as new to science, namely *Microdeutopus thumbellinus* n. sp., *Unciolella spinosa* n. sp., *Ceradocus natalensis* n. sp., *Urothoe coxalis* n. sp., *Urothoe tumorosa*, n. sp., and *Chaka leoni* n. gen., n. sp., (Phtisicidae). In addition two existing species, *Gammaropsis imminens* K. H. Barnard and *Gammaropsis semidentatus* K. H. Barnard are synonymized with *Gammaropsis atlantica* Stebbing and *Gammaropsis holmesi* Stebbing respectively.

References to and distributions for each species are given, as well as brief diagnoses of those species not previously described in Parts 1 and 2 of this series.

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