

PELAGIC COPEPODS FROM THE INSHORE WATERS OFF SAURASHTRA COAST

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ABSTRACT

Pelagic copepods from the coastal waters of Saurashtra are studied. Seventy eight species of copepods belonging to the suborder Calanoida, Harpacticoida and Cyclopoida are identified. The Calanoida is represented by 15 families, 23 genera and 54 species; the Harpacticoida by 6 families, 7 genera and 7 species and Cyclopoida by 4 families, 5 genera and 17 species. *Pontella karachiensis* Fazal-ur-Rehman is reported here for the first time from the Indian Coast.

INTRODUCTION

PELAGIC COPEPODS from the inshore waters have been fairly well investigated from the east and southwest coasts of India (Prasad, 1964), whereas these from the northwest coast are inadequately known. A preliminary account of the plankton off Kandla Port (Lat. 23° 01' N, 70° 13' E) in the Gulf of Kutch was given by Ramamurthy and Dhawan (1963). Recently Bhaskaran and Gopalakrishnan (1971) made a preliminary study on the marine plankton of the Gulf of Kutch, off Port Okha (Lat. 22° 28' N, 69° 05' E).

The author has made an attempt to give a systematic list of the pelagic copepods inhabiting the coastal waters of Saurashtra. The classification adopted is that of Sars (1903, 1911, 1918). The present study was carried out as a part of Plankton Project, between 1972 and 1974 by the author at the Marine Biological Research Station, Port Okha.

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AREA OF STUDY

The study area extends between the Latitudes 20°50' 28"N and 22°30' 18"N and Longitudes 68°50'E and 70°20' 10"E, covering a stretch of 360 km of the coast. Stations in the neritic waters of the Saurashtra Coast from where samples have been collected are given in Table 1.

TABLE 1. *Location of stations*

Sampling station	Location	Approximate distance from shore (in nautical miles)	Approximate depth (m)
Off Rozi	22-70 4A	4.3	6-14
Off Port Okha	22-69 3A	1.6	6
Off Dwarka	22-68 2E, 2F	6	38-46
Off Porbandar	21-69 3C, 4C	10	34-46
Off Veraval	20-70 5A, 6A	15	36-48

MATERIALS AND METHODS

The collections were made by an half metre organdy cloth net having 36 Strands/cm, towed horizontally for 20 minutes duration in the surface waters from a survey cum exploratory vessel or a 'machhawa' with out-board motor. In all, seventy six samples were collected. All plankton samples were preserved in 5% formaldehyde and examined for species composition. Sketches were drawn with the aid of a camera lucida.

LIST OF SPECIES

SUBORDER: CALANOIDA

TRIBE: AMPHASCANDRIA

Family: CALANIDAE

Genus: *Canthocalanus* A. Scott
Canthocalanus pauper (Giesbrecht)

Genus: *Undinula* A. Scott
Undinula vulgaris (Dana)
(a) variety *typica* Sewell
(b) variety *giesvrechtii* Sewell

Undinula darwini (Lubbock)
(a) variety *stimmatica* Sewell
(b) variety *intermedia* Sewell

Family: EUCALANIDAE

Genus: *Eucalanus* Dana
Eucalanus elongatus (Dana)
E. monachus Giesbrecht
E. crassus Giesbrecht
E. subcrassus Giesbrecht
E. attenuatus (Dana)
E. pseudattenuatus Sewell

Genus: *Rhincalanus* Dana
Rhincalanus cornutus Dana
R. nasutus Giesbrecht

Family: PARACALANIDAE

Genus: *Paracalanus* Boeck
Paracalanus parvus Giesbrecht
P. aculeatus Giesbrecht
P. denudatus Sewell

Genus: *Acrocalanus* Giesbrecht
Acrocalanus gracilis Giesbrecht
A. gibber Giesbrecht
A. longicornis Giesbrecht

Family: PSEUDOCALANIDAE

Genus: *Calocalanus* Giesbrecht
Calocalanus pavo (Dana)

Family: EUCHAETIDAE

Genus: *Euchaeta* Philippi
Euchaeta concinna Dana
E. marina (Prestandrea)
E. tenuis Esterly
E. wolfendeni A. Scott

TRIBE: HETERARTHRODRIA

Family: CENTROPAGIDAE

Genus: *Centropages* Kroyer
Centropages furcatus (Dana)
C. dorsispinatus Thompson and Scott
C. alcocki Sewell

Family: PSEUDODIAPTOMIDAE

Genus: *Pseudodiaptomus* Herrick
Pseudodiaptomus aurivilli Cleve

Genus: *Schmackeria* Poppe and Richard
Schmackeria serricaudatus (T. Scott)

Family: TEMORIDAE

Genus: *Temora* Baird
Temora turbinata (Dana)
T. discaudata Giesbrecht

Family: METRIDIIDAE

Genus: *Pleuromamma* Giesbrecht
Pleuromamma indica Wolfenden

Family: LUCICUTIIDAE

Genus: *Lucicutia* Giesbrecht
Lucicutia flavicornis (Claus)

Family: ARIETELLIDAE

Genus: *Metacalanus* Cleve
Metacalanus aurivilli Cleve

Family: CANDACIIDAE

Genus: *Candacia* Dana
Candacia bradyi A. Scott
C. pachydactyla (Dana)

Family: *PONTELLIDAE*

Genus: *Labidocera* Lubbock
Labidocera acuta Dana
L. pectinata Thompson and Scott
L. minuta Giesbrecht
L. pavo Giesbrecht

Genus: *Pontella* Dana
Pontella securifer Brady
P. karachiensis Fazal-ur-Rehman
P. spinipes Giesbrecht

Genus: *Pontellopsis* Brady
Pontellopsis herdmanni Thompson and Scott
P. macronyx A. Scott
P. scottii Sewell

Genus: *Pontellina* Dana
Pontellina plumata Dana
 Genus: *Calanopia* Dana
Calanopia thompsoni A. Scott
C. aurivilli (Cleve)
C. minor A. Scott

Family: *ACARTIIDAE*

Genus: *Acartia* Dana

Acartia (Odontacartia) spinicaudata Giesbrecht
A. (Odontacartia) centrura Giesbrecht
A. (Odontacartia) erythraea Giesbrecht
A. (Euacartia) southwelli Sewell

Family: *TORTANIDAE*

Genus: *Tortanus* Giesbrecht
Tortanus gracilis (Brady)
T. forcipatus (Giesbrecht)

SUB ORDER: *HARPACTICOIDA*SECTION: *ACHIROTA*Family: *ECTINOSOMIDAE*

Genus: *Microsetella* Brady and Robertson
Microsetella norvegica (Boeck)

Family: *LONGIPEDIIDAE*

Genus: *Longipedia* Claus
Longipedia weberi A. Scott

SECTION: *CHIROGNATHA*Family: *TACHIDIIDAE*

Genus: *Euterpina* Norman
Euterpina acutifrons (Dana)

Family: *MACROSETELLIDAE*

Genus: *Macrosetella* A. Scott
Macrosetella gracilis (Dana)

Genus: *Miracia* Dana
Miracia efferata Dana

Family: *CLYTEMNESTRIDAE*

Genus: *Clytemnestra* Dana
Clytemnestra scutellata Dana

Family: *METIDAE*

Genus: *Metis* Philippi
Metis jousseaumei (Richard)

SUR ORDER: *CYCLOPOIDA*SECTION: *GNATHOSTOMA*Family: *OITHONIDAE*

Genus: *Oithona* Baird
Oithona brevicornis Giesbrecht
O. rigida Giesbrecht
O. similis Claus
O. plumifera Baird
O. spinirostris Claus

SECTION: *POECILOSTOMA*Family: *ONCAEIDAE*

Genus: *Oncaea* Philippi
Oncaea venusta Philippi
O. conifera Giesbrecht

Family: *SAPPHIRINIDAE*

Genus: *Sapphirina* Thompson
Sapphirina auronitens Claus
S. ovatolanceolata Dana

Genus: *Copilia* Dana
Copilia quadrata Dana
C. mirabilis Dana

Family: *CORYCAEIDAE*

Genus: *Corycaeus* Dana
Corycaeus (Corycaeus) crassiusculus Dana
C. (Corycaeus) speciosus Dana
C. (Ditrichocorycaeus) africanus F. Dahl
C. (Ditrichocorycaeus) asiaticus F. Dahl
C. (Onychocorycaeus) catus F. Dahl
C. (Corycella) gibbulus Giesbrecht

Pontella karachiensis Fazal-ur-Rehman (Fig. 1)

Material : 1 female, 1 male, station 2, Off Port Okha, 6 m, 2 females, 1 male, station 3, Off Dwarka, 38m.

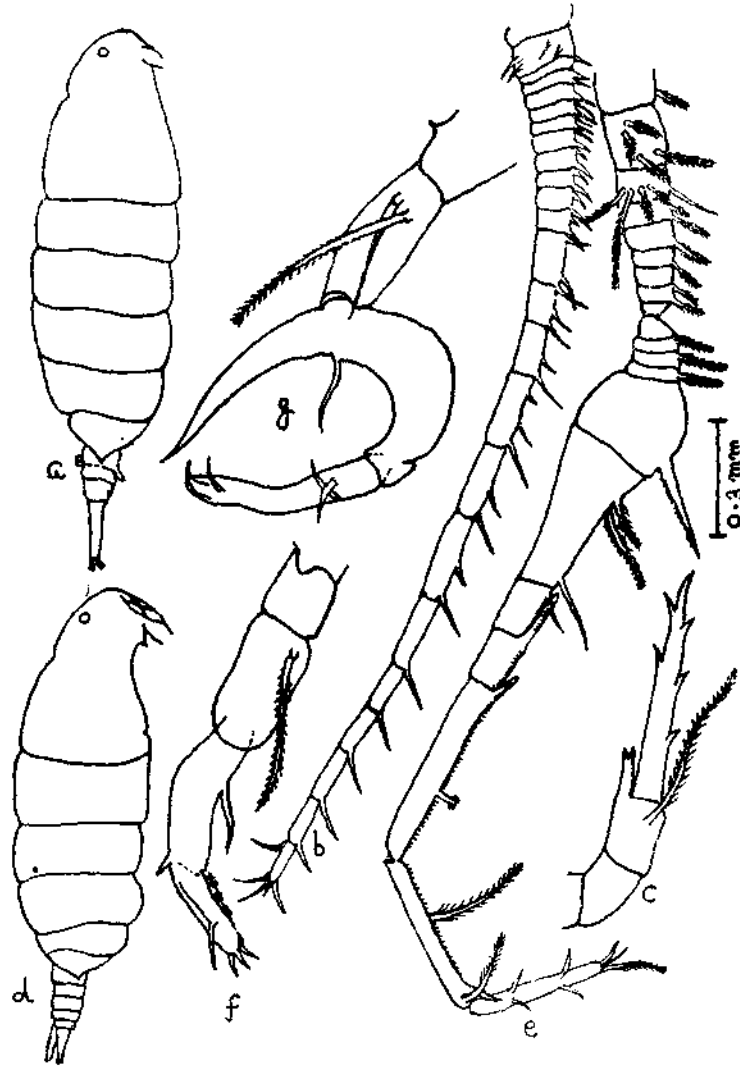


Fig. 1. *Pontella karachiensis* Fazal-ur-Rehman: a. lateral view (Female); b. right 1st antenna (Female); c. fifth leg (Female); d. lateral view (Male); e. right 1st antenna (Male); f. left fifth leg (Male); and g. right fifth leg (Male).

Description : *Female* : Total length 5.03 mm; length ratio of cephalothorax and abdomen is 62:39, so that abdomen is contained 1.564 times in the length of anterior region of body. Cephalon and 1st thoracic segment separate, as also 4th and 5th thoracic segments. Posterior thoracic segment is slightly flexed posteriorly,

nearly rounded and provided with a minute spine on each side. Abdomen asymmetrical and consists of two segments. Proportional lengths of segments are as follows:

Abdominal segment :	1-4	5	Furca	
	27	22	51	= 100

First antenna reaches back to about posterior margin of 2nd thoracic segment. It consists of 24 free segments having the following proportional lengths:

Segment	1	2	3	4	5	6	7	8	9	10	11	12
	36	53	18	23	18	18	24	21	24	28	21	21
Segment	13	14	15	16	17	18	19	20	21	22	23	24
	45	42	45	73	66	91	66	49	56	56	59	42 = 1000

Second antenna and mandible are as described and figured by Fazal-ur-Rehman (1973). Maxillules, maxillae and maxillipedes resemble those of other members of the genus. The swimming legs in the present specimens agree exactly with the figures given by Fazal-ur-Rehman (1973).

Male : Total length 4.08 mm. Body cylindrical. Proportional length of cephalothorax and abdomen 55:34, so that abdomen is contained 1.617 times in length of anterior region of body. Cephalic region, thoracic somites and other structures are similar in shape to that of female.

Abdomen symmetrical and consists of 5 segments. Proportional lengths of segments are as follows:

Abdominal segments :	1	2	3	4	5	Furca	
	18	15	19	12	10	26	= 100

First antenna on left side unmodified and consists usual 24 free joints. The flexion of geniculate right antenna situated between 18th and 19th segment. 17th segment bears an elongated ridge, with annulations proximally and fine denticles distally, extending to segment 16. 18th segment is armed with a similar but smaller ridge, carrying a single row of large spiniform denticles. Segmentation of 20th segment indistinct.

Details of fifth leg agrees exactly with original description of the species.

Distribution : Manora Channel, Karachi (Fazal-ur-Rehman, 1973).

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