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OCCURRENCE OF KING CRAB, *TACHYPLEUS GIGAS* (MULLER), OFF THE NORTHEAST COAST OF INDIA

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ABSTRACT

The occurrence of *Tachypleus gigas* (Muller) at 35-81 m depths off Orissa coast, between Paradwip and Palmyras Point (Lat. 20° 31' - 20° 47' N and Long. 87° 63' - 87° 41' E) is reported, based on the collections of FORV *Sagar Sampada*. The earlier reports show that this species is marine, distributed from the intertidal zone to 40 m depth. The species is described based on five specimens, two females and three males ranging in size from 270 to 390 mm along with a brief description of the ecology of the collection ground.

INTRODUCTION

Tachypleus gigas (Muller) has been reported earlier from the inshore regions of West Bengal and Orissa by Rao and Rao (1974). They have also studied three specimens from the collections of the Zoological Survey of India, two of them collected by Dr. J. Anderson from Mergui, Burma coast and the third by an unknown collector from the Orissa coast. During a programme of experimental fishing in the EEZ by FORV *Sagar Sampada* as part of her Cruise 36, the authors could collect five specimens of *T. gigas* from the depth range of 35 -81 m off Orissa coast while operating Chalut Trawl (400 mesh). The earlier recorded distribution of this species has been only upto 40 m depth and the present observation indicates an extended occurrence beyond this. However, the species is found mainly on sandy and muddy bottoms in the intertidal to 40 m area (Annandale, 1909; Sewell, 1912) and also commonly along the deltaic region of Ganges and Mahanadi (Panikkar, 1951).

Class : Arachnida
Subclass : Merostomata
Order : Xiphosura
Family : Xiphosuridae
Subfamily : Tachypleinae

Tachypleus gigas (Muller)

1785. *Limulus gigas* Muller, *Entomostraca*, p 126 (in part). 1802, *Limulus moluccanus* Latreille, *Hist. Nat. Crust. Ins.*, 4: 92.

1902, *Tachypleus gigas* Pocock, *Ann. Mag. nat. Hist.*, 9: 262. 1974, *Tachypleus gigas* (Muller), *Proc. Indian natn. Sci. Acad.*, 38: 206-211.

MATERIAL

Lat. 20° 30' N Long. 87° 36' E : One specimen, 390 mm in total length, collected at Station 1204 from 70 m depth on 6-10-87 between 1440 and 1540 hrs (Figs. 1 & 2).

Lat. 20° 24' N Long. 87° 37' E : Two specimens, 300 and 305 mm in total length, collected at Station 1205 from 81 m depth on 6-10-87 between 1730 and 1830 hrs. The left side of opisthosoma in the 300 mm specimen and anterior right margin of the prosoma in the 305 mm specimen were found deformed.

Lat. 20° 38' N Long. 87° 22' E : One specimen, 270 mm in total length, collected at Station 1206 from 35 m depth on 7-10-87 between 0645 and 0730 hrs.

Lat. 20° 47' N Long. 87° 41' E : One specimen, 300 mm in total length, collected at Station 1207 from 42 m depth between 1015 and 1100 hrs.

Diagnosis : Triangular caudal spine crested dorsally and concave ventrally. The other species (*Carcinoscorpius rotundicauda*) known to occur in Indian waters is reported to have round caudal spine (Rao and Rao, 1974).

Size : The minimum and maximum sizes recorded were 270 mm and 390 mm respectively. The details of other body measurements are given in Table-1.

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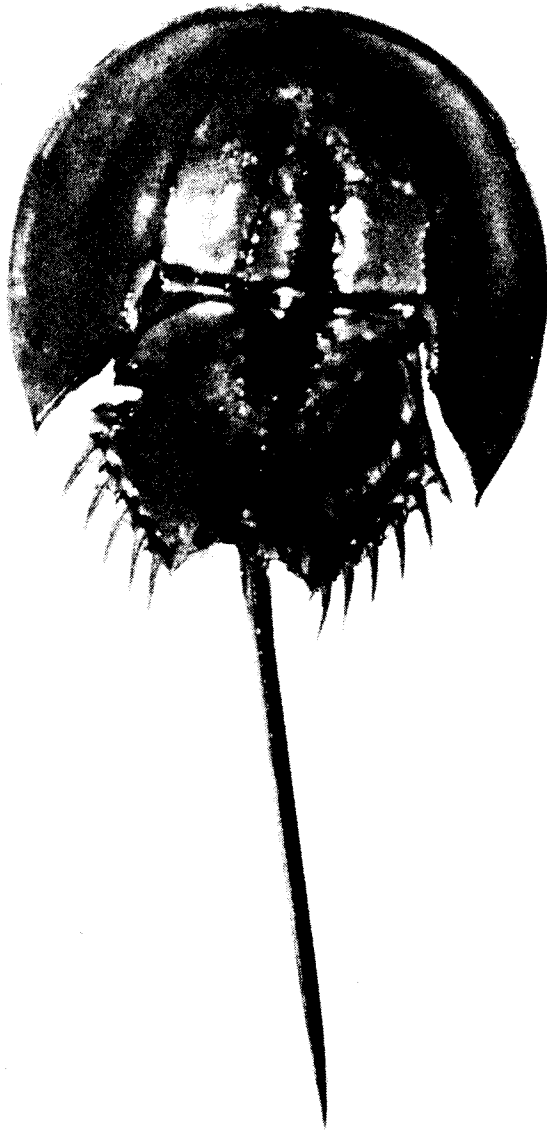


Fig. 1. *Tachypleus gigas* (Muller) - dorsal view.

Sex : Of the five specimens, two were female and three male. In males and young females lateral spines of opisthosoma were long, but the posterior ones were short in the adult female. The claspers of the male were hemichelate.

Colour : Prosoma and opisthosoma glossy ash grey, caudal spine dark-brown, lateral spines cream-yellow and eyes black.

Ecology : The stations from where the specimens were collected had muddy bottom. The salinity of the water in the first two stations was found to be higher than that of the other two stations; 21.67‰ in Station 1204 and 21.31‰ in station No. 1205. In Station 1206 and 1207 the salinity noted was 17.32‰ and 12.8‰ respectively. Dissolved oxygen values were found low in station



Fig. 2. *Tachypleus gigas* (Muller) - ventral view.

1204 and 1205 (4.89 and 2.53 ml/l respectively) and higher in Station 1206 (5.46 ml/l) and 1207 (5.37 ml/l). Thus, the animal seems to tolerate wide ranges of salinity and oxygen. The water temperature recorded at the stations ranged narrowly : 30.5° C at 1205 and 1207 and 29.6° C and 29.4° C respectively at stations 1204 and 1206. The fish fauna landed along with the king crab were : *Rastrelliger kanagurta*, *Ariomma indica*, *Decapterus russelli*, *Upeneus vittatus*, *Lutianus malabaricus*, *Nemipterus metopius*, *Priacanthus hamrur*, *Johnius dussumieri*, *Saurida undosquamus*, *Ilisha megaloptera*, *Trichiurus lepturus*, skates, rays, *Leiognathus bindus*, and *L. lineolatus*. The prawns, *Penaeus canaliculatus* and *P. semisulcatus* and the weaving mussel *Modiolus* sp. were found in stray numbers.

TABLE 1. Morphometric measurements (mm) of *Tachypleus gigas*

	Specimen No.				
	1	2	3	4	5
Total length	390	300	305	270	300
Length of prosoma	115	85	82	82	88
Length of opisthosoma	75	60	60	67	60
Length of caudal spine	190	152	170	135	166
Inter-orbital distance	95	70	71	74	75
Maximum width of prosoma	175	147	145	140	143
Maximum width of opisthosoma	115	95	90	90	90
Sex	Female	Female	Male	Male	Male

Distribution : The area of the present collections is shown in Fig. 3. Out of 22 stations covered during the cruise between Visakhapatnam and Plamyras Point, the king crab could be collected only from four, between off Paradwip and Palmyras Point. The earlier reports suggest its distribution from Bay of Bengal to Malay Archipelago besides the deltaic region of Ganges and Mahanadi.

REMARKS

The maximum size of king crab reported so far is 300 mm (Rao and Rao, 1974), and the 390 mm specimen in the present collection seems to be the largest recorded so far. The king crabs are described as "mobile museums of natural history" as they carry varied epifauna on the dorsal and ventral surfaces of the body. But in the present collection no epifauna was present. The species known to occur upto 40 m depth from previous records, is now shown to enjoy wider distribution.

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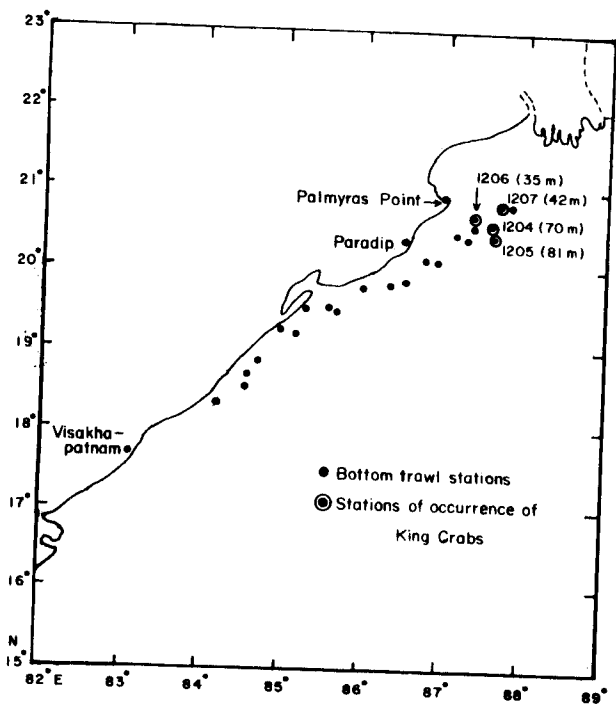


Fig. 3. Map showing the stations where bottom trawl was operated and locations of occurrence of king crab.