



*Rec. zool. Surv. India* : 111(Part-1) : 47-61, 2011

## **CRABS AND PRAWNS (CRUSTACEA : DECAPODA) OF BAHUDA ESTUARY, GANJAM, ORISSA**

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### **INTRODUCTION**

River Bahuda is one of the major rivers in Orissa. It originates from Andanda which is between Ramgiri and Mahendragiri hills of Gajapati District of the state. After running for a short distance in Gajapati District it enters Ganjam District at Berhampur; then it runs within Ganjam District and takes a strong diversion at Nuapadapentha. Near Patrapur it crosses the border of Orissa and enters Andhra Pradesh. It crosses Icchhapuram, takes a strong diversion, then again enters the state of Orissa and opens to Bay of Bengal at Village Sunapur, of Ganjam. Bahuda basin is characterized by silt and clay dominated sediments in the upper and mid reaches as against sand dominated sediment in the lower reaches.

Information on malacostracan fauna of Indian estuaries is very scanty (Balasubramanyan (1962) on Vellar Estuary; Subrahmanyam (1969) on Godavari Estuary; Selvakumar and Ajmal Khan (1993) on Parangipettai coast). Only recently, this aspect is being studied by Bairagi (1995), Bhadra (1995), Ghosh (1995) and Reddy (1995) on Hugli Matla, Deb (1998) on Mahanadi Estuary, Dev Roy and Bhadra, (2001) on Godavari Estuary, Dev Roy and Nandi (2007, 2009) on East Coast, Rath and Dev Roy (2008), on Krishna Estuary and Rath and Dev Roy (2010a, b) Even then, information is lacking especially for many estuaries. As nothing is known on crustacean resources of Bahuda estuary, the present study has been taken up for a period of three years from 2004-2006 to inventorize the prawn and crab diversity. In the present communication, materials deposited by earlier survey parties from this estuary have been identified and included. A total of

212 examples of prawns (both penaeid and non-penaeid) and 850 examples of crabs were examined and studied. These belong to 11 species under 4 genera and 2 families of prawns and 22 species under 16 genera and 4 families of crabs respectively. Key to genera and species has been provided for quick recognition.

### **MATERIAL AND METHODS**

All materials for the present study were collected around Sunapur and Sorala mainly covering Ganjam district. As the mangrove ecosystem is very poorly developed in these areas only a few variety of mangrove inhabiting crabs were collected from this region. In the present paper, measurements of crabs were taken following the standard methods. In case of prawns, total length was measured from tip of the rostrum to the tip of the telson.

The abbreviations L and W are used here to indicate carapace length and carapace width respectively. Other abbreviations used in this text are as under :

AM-A. Mohapatra , CANR-Dr. C.A.N. Rao, CR-Crustacea, PMS-Dr. P.M. Sureshan, SR-S. Rath, SZS-Dr. S.Z. Siddiqi.

All collections pertaining to the present investigation has been deposited with the National Zoological Collections of Zoological Survey of India, Gopalpur, Orissa.

### **SYSTEMATIC LIST OF PRAWNS AND CRABS FROM BAHUDA ESTUARY, GANJAM DISTRICT, ORISSA**

Subphylum	CRUSTACEA
Class	MALACOSTRACA
Subclass	EUMALACOSTRACA

- Superorder EUCARIDA  
 Order DECAPODA  
 Suborder DENDROBRANCHIATA  
 Family PENAEIDAE
1. *Penaeus (Penaeus) monodon* Fabricius, 1798
  2. *Penaeus (Penaeus) semisulactus* De Haan, 1844
  3. *Penaeus (Fenneropenaeus) indicus* (H. Milne Edwards, 1837)
  4. *Penaeus (Marsupenaeus) japonicus* Bate, 1888
  5. *Penaeus (Melicertus) canaliculatus* (Olivier, 1811)
  6. *Metapenaeus monoceros* (Fabricius, 1798)
  7. *Metapenacus dobsoni* (Miers, 1878)
  8. *Parapenaeopsis aclivirostris* Alcock, 1905  
 Suborder PLEOCYEMATA  
 Infraorder CARIDEA  
 Family PALAEMONIDAE
  9. *Macrobrachium malcolmsonii* (H. Milne Edwards, 1844)
  10. *Macrobrachium equidens* (Dana, 1852)
  11. *Macrobrachium rude* (Heller, 1862)  
 Infraorder BRACHYURA  
 Section EUBRACHYURA  
 Family MATUTIDAE
  12. *Ashtoret lunaris* (Forskål, 1775)
  13. *Ashtoret miersi* (Henderson, 1887)
  14. *Matuta planipes* Fabricius, 1798  
 Section BRACHYRHYNCHA  
 Superfamily PORTUNOIDEA  
 Family PORTUNIDAE  
 Subfamily PORTUNINAE
  15. *Scylla serrata* (Forskål, 1775)
  16. *Portunus pelagicus* (Linnaeus, 1758)
  17. *Portunus sanguinolentus* (Herbst, 1790)  
 Subfamily THALAMITINAE
  18. *Charybdis (Charybdis) helleri* (A. Milne Edwards, 1867)
  19. *Charybdis (Charybdis) affinis* Dana, 1852
  20. *Thalamita crenata* (Latreille, 1829)  
 Family GRAPSIDAE
  21. *Metopograpsus messor* (Forskål, 1775)

- Family SESARMIDAE
22. *Parasesarma plicatum* (Latreille, 1803)
  23. *Perisesarma bidens* (De Haan, 1835)
  24. *Episesarma nederi* (H. Milne Edwards, 1853)
  25. *Muradium tetragonum* (Fabricius, 1798)
  26. *Metasesarma obesum* (Dana, 1851)  
 Family VARUNIDAE
  27. *Metaplax distincta* (H. Milne Edwards, 1852)
  28. *Varuna litterata* (Fabricius, 1798)  
 Superfamily OCYPODOIDEA  
 Family OCYPODIDAE  
 Subfamily OCYPODINAE
  29. *Ocypode macrocera* A. Milne Edwards, 1837
  30. *Ocypode ceratophthalma* (Pallas, 1772)  
 Subfamily UCINAE
  31. *Uca lactea* (De Haan, 1835)
  32. *Uca triangularis* A. Milne Edwards, 1873  
 Family MACROPHTHALMIDAE
  33. *Macrophthalmus (Mareotis) tomentosus* Souleyet, 1841

#### SYSTEMATIC ACCOUNT

Family PENAEIDAE

#### Key to the genera of family PENAEIDAE from Bahuda estuary

1. Dentition present on both side of rostrum .....  
 ..... *Penaeus*  
 Dentition present only on dorsal side of rostrum  
 ..... 2
  2. Pleurobranchiae on 3<sup>rd</sup> to 7<sup>th</sup> thoracic somites,  
 exopodites on the last pair of thoracic legs only  
 ..... *Metapenaeus*  
 Pleurobranchiae on 3<sup>rd</sup> to 6<sup>th</sup> thoracic somites,  
 thoracic legs with exopodites .... *Parapenaeopsis*  
 Genus *Penaeus* Fabricius, 1798
- Key to subgenera of the genus *Penaeus* from Bahuda estuary
1. Gastrofrontal carina present ..... 2  
 Gastrofrontal carina absent ..... 3

2. Thelycum bearing a sub-triangular plate on 7<sup>th</sup> thoracic sternite and 2 lateral sub-circular plates on 8<sup>th</sup> thoracic sternites ..... *Melicertus*  
Thelycum with a triangular plate on 7<sup>th</sup> thoracic and a pouch like square plate on 8<sup>th</sup> thoracic sternites ..... *Marsupenaeus*
3. Hepatic carina prominent ..... *Penaeus*  
Hepatic carina ill defined or absent .....  
..... *Fenneropenaeus*  
Sub-genus *Penaeus* Fabricius, 1798

**Key to the species of subgenus *Penaeus* from Bahuda estuary**

- Fifth pereopod without exopod, petasma with distomedian projections slightly overhanging distal margin of costae; anterior process of thelycum concave rounded distally, posterior process sub triangular ..... *P. (P.) monodon*
- Fifth pereopod with small exopod, petasma with distomedian projections reaching costae; anterior process of thelycum with raised edges delimiting a depressed area, posterior process convex .....  
..... *P. (P.) semisulcatus*

**1. *Penaeus (Penaeus) monodon* Fabricius, 1798**  
(Pl. 1, fig. 1)

1798. *Penaeus monodon* Fabricius, *Ent. Syst. Suppl.* : 408.  
1969. *Penaeus monodon* : George, *Bull. Cent. Mar. Fish Res. Inst.*, **14** : 22.  
1991. *Penaeus (Penaeus) monodon* : Paulpandian and Ramasamy, *Guide to the Prawns of Portonovo.* : 36, pl. 29, fig. 4.

*Material examined* : 10 ex., Sorala, 14.12.2006, Coll. : SR, Reg. No. CR-5685; 7 ex., Sorala, 15.12.2006, Coll. : SR, Reg. No. CR-5689; 4 ex., Antareipur, 22.01.2007, Coll. : SR, Reg. No. CR-5701.

*Measurements* : L-55.0-107.0.

*Distribution* : India : East and West coasts, Andaman and Nicobar Island and Lakshadweep.

*Elsewhere* : East Africa, Gulf of Aden, Red Sea, West coast of Madagascar, Mauritius, Pakistan, Sri Lanka, Philippines, China, Japan, New Guinea and Australia.

*Remarks* : This species is not abundant in commercial catches. This species was earlier reported

from Gautami-Godavari (Subramanyam, 1969) and Matla estuaries (Reddy, 1995).

**2. *Penaeus (Penaeus) semisulcatus* De Haan, 1844**  
(Pl. 1, fig. 2)

1844. *Penaeus semisulcatus* De Haan, *In* : Von Siebold, *Fauna Japon. (Crust.)* (6/7) : 46 fig. 1.  
1969. *Penaeus semisulcatus* : George, *Bull. Cent. Mar. Fish. Res. Inst.* **14** : 23.  
1991. *Penaeus (Penaeus) semisulcatus* : Paulpandian and Ramasamy, *Guide to the Prawns of Portonovo.* : 36 pl. 29, fig. 4.

*Material examined* : 2 ex., Sorala, 14.12.2006, Coll. : SR, Reg. No. CR-5686; 3 ex., Sorala, 22.01.2004, Coll. : SR, Reg. No. CR-5696; 1 ex., Sunapur, 13.12.2006, Coll. : SR, Reg. No. CR-5726.

*Measurements* : L-60.0-107.0.

*Distribution* : India : East and West coasts. Elsewhere: East Africa, Red Sea, Western Madagascar, Mauritius, Sri Lanka, Philippines, Japan, Korea, New Guinea, Northern Australia and Eastern Mediterranean.

*Remarks* : Closely resembles *P. (P.) monodon*. In size and weight, the female appear to attain larger size than male.

Subgenus *Fenneropenaeus* Pérez Faafante, 1969

**3. *Penaeus (Fenneropenaeus) indicus* (H. Milne Edwards, 1837)**  
(Pl. 1, fig. 3)

1837. *Penaeus indicus* H. Milne Edwards, *Hist. Nat. Crust., Paris*, **2** : 415.  
1906. *Penaeus indicus* : Alcock, *Cat. Indian Decapod Crust.*, **3**(1) : 12.  
1991. *Penaeus (Fenneropenaeus) indicus* : Paulpandian and Ramasamy, *Guide to the Prawns of Portonovo* : 35, pt. 28, fig. 2.

*Material examined* : 39 ex., Sorala, 14.12.2006, Coll. : SR, Reg. No. CR-5687; 6 ex., Sorala, 15.12.2006, Coll. : SR, Reg. No. CR-5690; 1 ex., Antareipur, 22.01.2006, Coll. : SR, Reg. No. CR-5703; 3 ex., Sunapur, 08.01.2006, Coll. : SR, Reg. No. CR-5727.

*Measurements* : L-50.0-112.0.

*Distribution* : India : East and West coasts, Andaman and Nicobar Island, Lakshadweep.

*Elsewhere* : Sri Lanka, China, East African coast, Madagascar, Red Sea, Philippines and Northern Australia.

*Remarks* : Found abundantly in Bahuda Estuary. This prawn is also reported from Gautami-Godavari (Subramanyam, 1969) and Matla estuaries (Reddy, 1995).

Subgenus *Marsupenaeus* Tirmizi, 1971

4. *Penaeus (Marsupenaeus) japonicus* Bate, 1888

1888. *Penaeus canaliculatus* var. *japonicus* Bate, *Rep. Sci. Res.*, "Challenger" **24** : 245.

1969. *Penaeus Japonicus* : George, *Bull. cent. mar. Fish. Res. Inst.*, **14** : 21.

1991. *Penaeus (Marsupenaeus) japonicus* : Paulpandian and Ramasamy, *Guide to the Prawns of Portonovo* : 36, pl. 29, fig 1.

*Material examined* : 4 ex., Sorala, 22.01.2004, Coll. : SR, Reg. No. CR-5697; 8 ex., Antareipur, 22.01.2004, Coll. : SR, Reg. No. CR-5702.

*Measurements* : L-77.0-102.0.

*Distribution* : India : East and West coast.

*Elsewhere* : South East Africa, Red Sea, Gulf of Madagascar, Mauritius, Korea, Japan, New Guinea and Australia.

*Remarks* : Occasionally found in Bahuda Estuary. This species is recorded from Matla estuary (Reddy, 1995).

Subgenus *Melicertus* Rafinesque, 1814

5. *Penaeus (Melicertus) canaliculatus* (Olivier, 1811)

1811. *Palaemon canaliculatus*, Olivier, *Encycl. Method. Hist. Nat. (Ins)*, **8** : 660.

1969. *Penaeus canaliculatus*: George, *Bull. Cent. Mar. Fish. Res. Inst.*, **14** : 21.

1991. *Penaeus (Melicertus) canaliculatus* : Paulpandian and Ramasamy, *Guide to the Prawns of Portonovo*,: 35, pl 29, fig. 4.

*Material examined* : 1 ex., Sorala, 22.01.2004, Coll. : SR, Reg. No. CR-5698; 1 ex., Keutasunapur, 22.01.2004, Coll. : SR, Reg. No. CR-5707; 1 ex., Sorala, 14.12.2006, Coll. : SR, Reg. No. CR-5790.

*Measurements* : L-70.0-172.0.

*Distribution* : India : East and West coast.

*Elsewhere* : South East Africa, Red Sea, Mauritius, Sri Lanka, Taiwan, New Guinea and Polynesia.

*Remarks* : This species appears to be quite rare in this estuary and is often confused with *P. (M.) japonicus*.

Genus *Metapenaeus* Wood Mason and Alcock, 1891

**Key to the species of Genus *Metapenaeus* from Bahuda estuary**

— Rostrum elevated and toothless along its distal half; distomedian petasml projection with filaments not readily visible; thelycum of impregnated females usually with white conjoined pads ..... *M. dobsoni*

— Rostrum straight and toothed along entire dorsal margin; distomedian petasml projection without apical filament; thelycum of impregnated females without white conjoined pads ..... *M. monoceros*

6. *Metapenaeus monoceros* (Fabricius, 1798)

(Pl. 1, fig. 4)

1798. *Penaeus monoceros* Fabricius, *Ent. Syst. Suppl.* : 409.

1906. *Metapenaeus monoceros* : Alcock, *Cat. India Decapod Crust.*, **3**(1) : 18.

1998. *Metapenaeus monoceros* : Deb, *Estuarine Ecosystem Series*, **3** : Mahanadi Estuary Crust : 137.

*Material examined* : 20 ex., Sorala, 14.12.2006, Coll. : SR, Reg. No. CR-5688; 3 ex., Sorala, 15.12.2006, Coll. : SR, Reg. No. CR-5691; 32 ex., Sorala, 22.01.2004, Coll. : SR, Reg. No. CR-5695; 23 ex., Antareipur, 22.01.2004, Coll. : SR, Reg. No. CR-5700; 12 ex., Sunapur, 22.01.2004, Coll. : SR, Reg. No. CR-5706.

*Measurements* : L-45.0-98.0.

*Distribution* : India : East and West coasts. Elsewhere: Sri Lanka, South Africa, Malay Peninsula, Red Sea, Madagascar, Mauritius and Mediterranean.

*Remarks* : Closely resembles *M. ensis*. This species occurs abundantly in Bahuda Estuary. Reported from Mahanadi (Deb, 1998) and Gautami-Godavari (Subramanyam, 1969) estuaries also.

7. *Metapenaeus dobsoni* (Miers, 1878)

(Pl. 2, fig. 1)

1878. *Penaeus dobsoni* Miers, *Proc. Zool. Soc. London* : 302.

1906. *Metapenaeus dobsoni* : Alcock, *Cat. Indian Decapod Crust.*, **3**(1) : 21.

1995. *Metapenaeus dobsoni* : Reddy, *Estuarine Ecosystem series, Part 2* : Hugli, Matla Estuary : 294.

*Material examined* : 1 ex., Sorala, 15.12.2006, Coll. : SR, Reg. No. CR-5692; 2 ex., Sorala, 22.01.2004, Coll. : SR, Reg. No. CR-5699; 2 ex., Antereipur, 22.01.2004,

Coll. : SR, Reg. No. CR-5704; 2 ex., Sunapur, 22.01.2004,  
Coll. : SR, Reg. No. CR-5705.

*Measurements* : L-35.0-64.0.

*Distribution* : India : South-West coast.

*Elsewhere* : Sri Lanka, Gulf of Thailand, Philippines and Indonesia.

*Remarks* : Abundant in Bahuda estuary. Recorded from Gautami-Godavari (Subramanyam, 1969) and Matla estuaries (Reddy, 1995) also.

Genus *Parapenaepsis* Alcock, 1901

8. *Parapenaepsis acclivirostris* Alcock, 1905

(Pl. 2, fig. 2)

1905. *Parapenaepsis acclivirostris* Alcock, *Ann. Mag. nat. Hist., ser. 7*, **16** : 522.

1992. *Parapenaepsis acclivirostris* : Goswami, *J. mar. biol. Ass. India*, **34**(1&2) : 121.

*Material examined* : 3 ex., Sunapur, 22.01.04, Coll. : SR, Reg. No. CR-5980.

*Measurements* : L-85-90.

*Distribution* : India : West Bengal.

*Elsewhere* : Indo-West Pacific from South and East Africa to India.

*Remarks* : This species occurs both in marine and estuarine habitats.

Family PALAEMONIDAE Rafinesque, 1815

Genus *Macrobrachium* Bate, 1868

**Key to species of the genus *Macrobrachium* from Bahuda estuary**

1. Rostrum with 3 post-orbital teeth on carapace, podomeres tuberculate ..... 2
- Rostrum with 2 post-orbital teeth on carapace, podomeres pubescent ..... *M. rude*
2. Carapace smooth ..... *M. malcolmsonii*
- Carapace scabrous in the anterior part .....  
..... *M. equidens*

9. *Macrobrachium malcolmsonii*

(H. Milne Edwards, 1844)

(Pl. 2, fig. 3)

1844. *Palaemon malcolmsonii* H. Milne Edwards, *Voy Inde Jacquemont*, **4**(2) : 8.

1950. *Macrobrachium malcolmsonii* : Holthuis, *Siboga Exped.*, **39** a(9) : 121.

1995. *Macrobrachium malcolmsonii* : Reddy, *Wetland Ecosystem Series 1 : Fauna of Chilika Lake* : 380.

*Material examined* : 2 ex., Sorala, 22.01.2004, Coll. : SR, Reg. No. CR-5794.

*Measurements* : L-100.0.

*Distribution* : India : Southern India.

*Elsewhere* : Pakistan, Sri Lanka and Bangladesh.

*Remarks* : This species inhabits both estuarine and fresh waters. As early in 1844, H. Milne Edwards reported it as the commonest species in South India. However, this species appears to be rare in this estuary.

10. *Macrobrachium equidens* (Dana, 1852)

(Pl. 2, fig. 4)

1852. *Palaemon equidens* Dana, *Proc. Acad. Nat. Sci. Philad.*, **6** : 26.

1950. *Macrobrachium equidens* : Holthuis, *Siboga Exped.*, **39** (a-9) : 162.

1995. *Macrobrachium equidens* : Reddy, *Estuarine Ecosystem series, Part 2 Hugli Matla Estuary* : 310.

*Material examined* : 14 ex., Sorala, 14.12.2006, Coll. : SR, Reg. No. CR-5789; 5 ex., Sorala, 22.01.2004, Coll. : SR, Reg. No. CR-5795.

*Measurements* : L-45.0-108.0.

*Distribution* : India : South-West coast, Kerala.

*Elsewhere* : Pakistan, Sri Lanka, China, East coast of Africa, Madagascar, Philippines and New Caledonia.

*Remarks* : This species is found in large numbers in this estuary. *M. equidens* has earlier been reported from Matla estuary by Reddy (1995).

11. *Macrobrachium rude* (Heller, 1862)

1862. *Palaemon rudis* Heller, *Verh. Zool. -bot. Ges. Wien*, **12** : 525.

1950. *Macrobrachium rude* : Holthuis, *Siboga Exped.*, pt. X, **39** : 150.

1998. *Macrobrachium rude* : Deb, *Estuarine Ecosystem Series, 3 : Mahanadi Estuary* : 133.

*Material examined* : 3 ex., Sorala, 22.01.2004, Coll. : SR, Reg. No. CR-5793.

*Measurements* : L- 68.0.

*Distribution* : India : East coast.

*Elsewhere* : Sri Lanka, Bangladesh, Natal East coast of Africa, Madagascar and South Somalia.

*Remarks* : This species is found both in riverine and estuarine in habitats. It also occurs in Matla estuary (Reddy, 1995).

## Family MATUTIDAE De Haan, 1833

**Key to the genera of the family Matutidae from Bahuda estuary**

- Mid-palmar ridge granular, dactylar ridge smooth, carpus of penultimate pereopod bicarinate .....  
..... *Ashtoret*
- Mid-palmar ridge smooth, dactylar ridge milled, carpus of last pair of leg unicarinate ..... *Matuta*

Genus *Ashtoret* Galil and Clark, 1994**Key to species of the genus Ashtoret from Bahuda estuary**

- A finely milled ridge on outer surface of dactylus in male, absent in female, plastron coarsely granular ..... *A. lunaris*
- No milled ridge on outer surface of dactylus in both sexes, plastron finely granular ..... *A. miersi*

12. *Ashtoret lunaris* (Forskål, 1775)1775. *Cancer lunaris* Forskål, *Desc. Anim.*, : 91.1896. *Matuta banski* : Alcock, *J. Asiat. Soc. Bengal*, **65** (2) : 158.1994. *Ashtoret lunaris* : Galil and Clark, *Zool. Verh. Leiden*, **294** : 5, figs a-b, pl. 1a-b.2005. *Ashtoret lunaris* : Dev Roy and Bhadra, *State Fauna Series, 5: Fauna of Andhra Pradesh (Part 5)* : 382, pl.1, fig. 2.

*Material examined* : 1 ex., Mouth, 07.01.2005, Coll. : PMS, Reg. No. CR-5759; 1 ex., Mouth, 12.05.2004, Coll. : AM, Reg. No. CR-5774; 1 ex., Keutasunapur, 22.07.2003, Coll. : SZS, Reg. No. CR-5779; 1 ex., Antareipur, 22.01.2004, Coll. : SR, Reg. No. CR-5780.

*Measurements* : L-39.0-44.0, W-42.0-46.0.*Distribution* : India : Orissa, Andhra Pradesh.*Elsewhere* : Aden, Red Sea, Singapore, Malaysia, Philippines, Indonesia, New Guinea and Australia.

*Remarks* : Earlier reported from Hugli, Mahanadi (Deb, 1998), Godavari (Dev Roy and Bhadra, 2001), Krishna (Rath and Dev Roy, 2009) and Vamsadhara Estuaries (Rath and Dev Roy, 2010), it is now recorded from Bahuda estuary.

13. *Ashtoret miersi* Henderson, 18871775. *Cancer lunaris* Forskål, *Desc. Anim.*, : 91.1896. *Matuta banski* : Alcock, *J. Asiat. Soc. Bengal*, **65** (2) : 158.1994. *Ashtoret lunaris* : Galil and Clark, *Zool. Verh. Leiden*, **294** : 5, figs a-b, pl. 1a-b.2005. *Ashtoret lunaris* : Dev Roy and Bhadra, *State Fauna Series 5 : Fauna of Andhra Pradesh (Part 5)* : **382** : pl.1, fig. 2.

*Material examined* : 2 ex., Keutasunapur, 10.08.2005, Coll. : SR, Reg. No. CR-5723.

*Measurements* : L-20.0, W-21.0.*Distribution* : India : Orissa, Andhra Pradesh.*Elsewhere* : Aden, Red Sea, Singapore, Malaysia, Philippines, Indonesia, New Guinea and Australia.

*Remarks* : This species has been reported earlier from Mahanadi estuary (Deb, 1998).

Genus *Matuta* Weber, 179514. *Matuta planipes* Fabricius, 1798

(Pl. 3, Fig. 1)

1798. *Matuta planipes* Fabricius, *Ent. Syst. Suppl.*, : 369.1994. *Matuta planipes* : Galil and Clark, *Zool. Verh. Leiden*, **294** : 5, figs a-b, pl. 1a-b.1998. *Matuta planipes* : Deb., *State Fauna Series, 3 : Fauna of West Bengal part 10* : 365.

*Material examined* : 2 ex., Keutasunapur, 10.08.2005, Coll. : SR, Reg. No. CR-5722.

*Measurements* : L-18.0-20.0, W-18.5-21.0.*Distribution* : India : West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Maharashtra.*Elsewhere* : Pakistan, Myanmar, Thailand, Java, China, Japan and Australia.

*Remarks* : This species was encountered near the confluence area of Bahuda estuary. Also reported from Hugli, Matla, Mahanadi and Krishna estuaries (Deb, 1998; Rath and Dev Roy, 2008).

Family PORTUNIDAE Rafinesque, 1815

Subfamily PORTUNINAE Rafinesque, 1815

**Key to genera of the subfamily Portuninae from Bahuda estuary**

- Carapace smooth, regions ill defined propodus of chelipeds smooth and inflated ..... *Scylla*
- Carapace not smooth, regions well defined, propodus of chelipeds prismatic and costate .....  
..... *Portunus*

Genus *Scylla* De Haan, 183315. *Scylla serrata* (Forskål, 1775)

1775. *Cancer serratus* Forskål. *Desc. Anim.* : 90.

2005. *Scylla serrata* : Dev Roy and Bhadra, *State Fauna Series, 5 : Fauna of Andhra Pradesh (Part 5)* : 420.

*Material examined* : 2 ex., Antareipur, 29.10.2003, Coll. : AM, Reg. No. CR-5708; 10 ex., Keutasunapur, 22.01.2004, Coll. : SR, Reg. No. CR-5710; 1 ex., Keutasunapur, 22.01.2004, Coll. : SR, Reg. No. CR-5712; 54 ex., Sorala, 14.12.2006, Coll. : SR, Reg. No. CR-5731; 1 ex., Sunapur, 14.12.2006, Coll. : SR, Reg. No. CR-5732; 13 ex., Antareipur, 22.01.2004, Coll. : SR, Reg. No. CR-5737; 3 ex., Sunapur, 12.12.2006, Coll. : SR, Reg. No. CR-5739; 1 ex., Sunapur, 12.12.2006, Coll. : SR, Reg. No. CR-5746; 15 ex., Sorala, 13.12.2006, Coll. : SR, Reg. No. CR-5751; 2 ex., Antareipur, 22.01.2004, Coll. : SR, Reg. No. CR-5752; 1 ex., Antareipur, 29.10.2003, Coll. : AM, Reg. No. CR-5753; 1 ex., Keutasunapur, 22.07.2003, Coll. : SZS, Reg. No. CR-5781; 1 ex., Sorala, 22.01.2004, Coll. : SR, Reg. No. CR-5782.

*Measurements* : L-11.0-56.0, W-14.0-84.0.

*Distribution* : India : West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Karnataka, Goa, Maharashtra, Gujarat and Andaman and Nicobar Islands.

*Elsewhere* : Africa, Red Sea, Pakistan, Mergui, Formosa, Japan, Australia and Tahiti.

*Remarks* : This crab inhabits muddy bottoms along the estuarine waters. It is the most important edible crab of the region and is exploited in large quantities.

Genus *Portunus* Weber, 1795Key to species of the genus *Portunus* from Bahuda Estuary

- Carapace marked with three large blood red spots, posterior border of merus of chelipeds devoid of any spine ..... *P. sanguinolentus*
- No such spots on carapace, but surface studded with miliary granules, posterior border of merus of chelipeds armed with a spine at its distal end ..... *P. pelagicus*

16. *Portunus pelagicus* (Linnaeus, 1758)

1758. *Cancer pelagicus* Linnaeus, *Syst. Nat.*, 10<sup>th</sup> ed., 1 : 626.

1899. *Neptunus pelagicus*: Alcock, *J. Asiat. Soc. Bengal*, 68 (2) : 34.

2000. *Portunus pelagicus* : Dev Roy and Das, *Rec. Zool. Surv. India, Occ. Paper No.* 185 : 41.

*Material examined* : 2 ex., Sunapur, 14.12.2006, Coll. : SR, Reg. No. CR-5734; 1 ex., Antareipur, 22.01.2004, Coll. : SR, Reg. No. CR-5738; 3 ex., Sunapur, 13.12.2006, Coll. : SR, Reg. No. CR-5748; 1 ex., Keutasunapur, 22.01.2004, Coll. : AM, Reg. No. CR-5754; 1 ex., Mouth, 07.01.2005, Coll. : PMS, Reg. No. CR-5755; 1 ex., Keutasunapur, 22.07.2003, Coll. : SZS, Reg. No. CR-5760; 2 ex., Mouth, 07.01.2005, Coll. : PMS, Reg. No. CR-5761; 1 ex., Mouth, 12.05.2004, Coll. : AM, Reg. No. CR-5772; 1 ex., Mouth, 01.09.2004, Coll. : AM, Reg. No. CR-5778; 2 ex., Sorala, 22.01.2004, Coll. : SR, Reg. No. CR-5783.

*Measurements* : L-14.0-45.0, W-23.0-81.0.

*Distribution* : India : West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Gujarat, Kerala, Karnataka, Maharashtra and Andamans.

*Elsewhere* : East and South coasts of Africa, Red Sea, Persian Gulf, Karachi, Mergui Archipelago, Singapore, Philippines, Hong Kong, China, Japan, Australia, New Zealand, Tahiti and as far as Hawaiian Islands.

*Remarks* : This species is fished regularly for its commercial value. It is recorded from Hughli, Matla, Mahanadi, Godavari, Krishna, Vamsadhara, Nagavali and Ennore estuaries (Dev Roy and Nandi, 2009).

17. *Portunus sanguinolentus* (Herbst, 1796)

1796. *Cancer sanguinolentus* Herbst, *Krabben und Krebse*, 1 (2) : 161. pl. 8 figs. 56-57.

1899. *Neptunus sanguinolentus* : Alock, *J. Asiat. Soc. Bengal*, 68 (2) : 32.

2000. *Portunus sanguinolentus* : Dev Roy and Das, *Rec. Zool. Surv. India, Occ. Paper No.*, 185 : 33, pl. 2, fig. 2.

*Material examined* : 3 ex., Sunapur, 14.12.2006, Coll. : SR, Reg. No. CR-5735; 1 ex., Sunapur, 12.12.2006, Coll. : SR, Reg. No. CR-5747; 5 ex., Mouth, 07.01.2005, Coll. : PMS, Reg. No. CR-5736.

*Measurements* : L-14.0-47.0, W-24.0-86.0.

*Distribution* : India : West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka and Nicobars.

*Elsewhere* : East coast of Africa, Red Sea, Persian Gulf, Pakistan, Sri Lanka, Hongkong, Philippines, Taiwan, Japan, Australia, New Zealand and Hawaii.

*Remarks* : Population of this crab appears to rather poor in this estuary.

This species has been reported from Hugli, Godavari, Krishna and Vamsadhara estuaries (Dev Roy and Nandi, 2009).

Subfamily THALAMITINAE Paul'son, 1875

Genus *Charybdis* De Haan, 1833

**Key to genera of the subfamily Thalamitinae from Bahuda estuary**

— Antero-lateral border of carapace cut into 6 teeth ..... *Charybdis*

— Antero-lateral border of carapace cut into 5 teeth, 4<sup>th</sup> tooth often small or rudimentary .. *Thalamita*

Key to species of the subgenus *Charybdis*

— A transverse granular ridge present on the cardiac region, no spine on posterior border of carpus of last pair of legs ..... *C. (C.) affinis*

— No transverse granular ridge on the cardiac region, posterior border of carpus of last pair of legs with an acute spine ..... *C. (C.) helleri*

**18. *Charybdis (Charybdis) helleri* (A. Milne Edwards, 1867)**

1867. *Goniosoma helleri* A. Milne Edwards, *Annls. soc. ent. Fr. sér.*, 4, 7 : 282.

1899. *Charybdis (Goniosoma) merguensis* : Alcock, *J. Asiat. Soc. Bengal*, 68 (2) : 55.

1995. *Charybdis merguensis* : Bhadra, *Estuarine Ecosystem Series. Part 2. Hugli Matla Estuary* : 249-262.

2005. *Charybdis (Charybdis) helleri* : Dev Roy and Bhadra, *State Fauna Series, 5 : Fauna of Andhra Pradesh (Part 5)* : 433, pl. 2, fig. 5.

*Material examined* : 1 ex., Sunapur, 14.12.2006, Coll. : SR, Reg. No. CR-5733; 1 ex., Keutasunapur, 07.01.2005, Coll. : PMS, Reg. No. CR-5757; 1 ex., Sunapur, 12.05.2004, Coll. : AM, Reg. No. CR-5775.

*Measurements* : L-15.0, W- 24.0.

*Distribution* : India : West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Kerala and Andaman Islands. Elsewhere: Red Sea, Persian Gulf, Mediteranean, Sri Lanka, Mergui Archipelago, Malaya Peninsula, Singapore, Thailand, Hong Kong, China, Indonesia, Australia, and Hawaii.

*Remarks* : This crab has been reported from Hugli and Subarnarekha estuaries (Dev Roy and Nandi, 2009).

**19. *Charybdis (Charybdis) affinis* Dana, 1852**

(Pl. 3, fig. 2)

1852. *Charybdis affinis* Dana, *Proc. Acad. nat. Sci. Philad.*, 6 : 85 and *U. S. Explor. Exped. Crust.*, 13(1) : 286, pl. 17, figs. 12a-c.

2005. *Charybdis (Charybdis) affinis* : Dev Roy and Bhadra, *State Fauna Series, 5 : Fauna of Andhra Pradesh (Part 5)* : 429, pl. 2, fig. 3.

*Material examined* : 7 ex., Antareipur, 29.10.2003, Coll. : AM, Reg. No. CR-5709; 8 ex., Keutasunapur, 22.01.2004, Coll. : SR, Reg. No. CR-5711.

*Measurements* : L-15.0, W-24.0.

*Distribution* : India : West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Kerala and Andaman Islands.

*Elsewhere* : Red Sea, Persian Gulf, Mediteranean, Sri Lanka, Mergui Archipelago, Malaya Peninsula, Singapore, Thailand, Hong Kong, China, Indonesia, Australia and Hawaii.

*Remarks* : This species is recorded from Hugli and Subarnarekha estuaries (Dev Roy and Nandi, 2009).

Genus *Thalamita* Latreille, 1829

**20. *Thalamita crenata* (Latreille, 1829)**

1829. *Portunus crenatus* Latreille, *Collection du Museum*, 33.

2005. *Thalamita crenata* : Dev Roy and Bhadra, *State Fauna Series, 5 : Fauna of Andhra Pradesh (Part 5)* : 440, pl. 2, fig. 6.

*Material examined* : 1 ex., Sorala, 14.12.2006, Coll. : SR, Reg. No. CR-5729; 2 ex., Sunapur, 01.09.2004, Coll. : AM, Reg. No. CR-5777.

*Measurements* : L-17.0-43.0, W-22.0-62.0.

*Distribution* : India : West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Pondicherry, Maharashtra and Andaman and Nicobar islands.

*Elsewhere* : East Coast of Africa, Red Sea, Pakistan, Sri Lanka, Mergui, Archipelago, Singapore, Philippines, Japan, Indonesia, Australia, New Zealand, Saoma, Hawaii and Society Islands.

*Remarks* : This species has been observed mostly in the confluence area. It is reported from Krishna, Vamsadhara and Nagavali estuaries (Dev Roy and Nandi, 2009).



## Family GRAPSIDAE MacLeay, 1838

Genus *Metopograpsus* H. Milne Edwards, 185321. *Metopograpsus messor* (Forskål, 1775)1775. *Cancer messor* Forskål, *Desc. Anim.*, : 88.1960. *Metopograpsus messor* : Banerjee, *Temminckia*, **10** : 174, figs. 4h, I and 5c.2005. *Metopograpsus messor* : Dev Roy and Bhadra, *State Fauna Series*, **5** : *Fauna of Andhra Pradesh (Part 5)* : 477, pl. 3, fig. 3.*Material examined* : 2 ex., Sunapur, 12.12.2006, Coll. : SR, Reg. No. CR-5744.*Measurements* : L-13.0-21.0, W-17.0-27.0.*Distribution* : India : Andhra Pradesh, Orissa, Tamil Nadu, West Bengal, Karnataka, Maharashtra, Gujarat and Andaman and Nicobar Islands.*Elsewhere* : Suez Canal, Aden, Red Sea, Madagascar, Pakistan, Bangladesh, Sri Lanka, Myanmar, Australia as far as Hawaii.*Remarks* : The materials examined and reported herein comprises of juveniles only. It is reported from Hugli, Mahanadi, Subarnarekha and Vamsadhara Estuaries (Dev Roy and Nandi, 2009).

Family SESARMIDAE Dana, 1852

**Key to the genera of the family Sesarmidae from Bahuda estuary**

1. Carapace broader than long, pterygostomian regions and side walls reticulated, lower border of orbit not abnormally prominent ..... 2
- Carapace much broader than long, pterygostomian regions and side walls not reticulated, lower border of orbit prominent ..... *Metaplex*
2. Antenna in the orbital hiatus ..... 3
- Antenna excluded from the orbital hiatus ..... *Metasesarma*
3. Palm of chelipeds with a longitudinal pectinated crest on its upper part ..... *Episesarma*
- Palm of chelipeds with 2-3 transverse pectinated crest on its upper part ..... 4
4. Lateral border entire ..... *Parasesarma*
- Lateral border with a tooth behind outer orbital angle ..... 5
5. Upper border of movable finger milled with transverse lamellae, small crab ..... *Perisesarma*

— Upper border of movable finger with longitudinal crenulate crest separated from one another, large crab ..... *Muradium*Genus *Episesarma* De Man, 189522. *Episesarma nederi* (H. Milne Edwards, 1853)1853. *Sesarma nederi* H. Milne Edwards, *Annls. Sci. nat. (Zool.)*, sér., 3, **20** : 185.1957. *Sesarma (Sesarma) taeniolata* : Chhappgar, *J. Bombay nat. Hist. Soc.*, **54**(3) : 521.2000. *Neoepisesarma (Neoepisesarama) taeniolata* : Dev Roy and Das, *Rec. zool. Surv. India. Occ. Paper No.*, **185** : 95.2005. *Episesarma taeniolata* : Dev Roy and Bhadra, *State Fauna Series*, **5** : *Fauna of Andhra Pradesh (Part 5)* : 485.2008. *Episesarma nederi* : Ng, Guinet & Davie, *Raffles Bull. zool.*, **17** : 220.*Material examined* : 1 ex., Sorala, 14.12.2006, Coll. : SR, Reg. No. CR-5730; 1 ex., Sunapur, 12.12.2006, Coll. : SR, Reg. No. CR-5743.*Measurements* : L-11.0-26.0, W-15.0-29.0.*Distribution* : India : Andhra Pradesh, West Bengal, Maharashtra, Andaman Islands.*Elsewhere* : Pakistan, Mergui, Archipelago, Malay, Peninsula, Singapore, Indonesia, China, Japan, Thailand.*Remarks* : This is a mangrove dwelling species, generally occurring in the landward fringe. It is reported to occur in Hugli, Matla, Godavari and Krishna estuaries (Dev Roy and Nandi, 2009).Genus *Parasesarma* De Man, 189523. *Parasesarma plicatum* (Latreille, 1803)1803. *Ocypoda plicata* Latreille, *Hist. Nat. Crust.*, : 47.1899. *Sesarma quadrata* : Alcock, *J. Asiat. Soc. Bengal*, **69**(2) : 413.1957. *Sesarma (Sesarma) quadrata* : Chhappgar, *J. Bombay nat. Hist. Soc.*, **54**(3) : 520, pl. 16, fig. a-c.2000. *Sesarma (Parasesarma) plicatum* : Dev Roy and Das, *Rec. zool. Surv. India. Occ. Paper No.*, **185** : 91.2005. *Parasesarma plicatum* : Dev Roy and Bhadra, *State Fauna Series 5: Fauna of Andhra Pradesh (Part 5)* : 483.*Material examined* : 4 ex., Keutasunapur, 10.08.2005, Coll. : AM, Reg. No. CR-5786; 1 ex., Keutasunapur, 22.07.2003, Coll. : SZS, Reg. No. CR-5791.*Measurements* : L-12.0-18.0, W-13.0-18.0.*Distribution* : India : Andhra Pradesh, Orissa, Pondicherry, Tamil Nadu, West Bengal, Gujarat,

Maharashtra, Karnataka, Kerala, Maharashtra and Andaman and Nicobar Islands.

*Elsewhere* : East Coast of Africa, Pakistan, Sri Lanka, Myamnar, China, Korea and Japan.

*Remarks* : This species inhabits both in brackish and fresh water areas of this estuary. It prefers muddy bottom of mangroves. It is reported from Hugli, Matla, Mahanadi, Subarnarekha, Godavari and Krishna estuaries (Dev Roy and Nandi, 2009).

Genus *Perisesarma* De Man, 1895

24. *Perisesarma bidens* (De Haan, 1835)

1835. *Grapsus (Pachysoma) bidens* De Haan, In : Siebold, *Fauna Japon. (Crust.)* : 60.

1995. *Sesarma bidens* : Ghosh, *Zool. Surv. India, Estuarine Ecosystem Series, Part-1-2, Hugli Matla Estuary* : 243.

2000. *Sesarma (Chiromantes) bidens* : Dev Roy & Das, *Rec. zool. Surv. India, Occ. Paper No., 185* : 90.

2005. *Chiromantes bidens* : Dev Roy and Nandi, *J. Environ. & Sociobiol.*, 2 (1&2) : 123.

2009. *Perisesarma bidens* : Dev Roy, *Rec. Zool. Surv. India. Occ. Paper No. 289* : 129.

*Material examined* : 1 ex., Sorala, 22.01.2004, Coll. : SR, Reg. No. CR-5617; 1 ex., Sunapur, 12.12.2006, Coll. : SR, Reg. No. CR-5742.

*Measurements* : L-13.0-14.5, W-17.0-20.0.

*Distribution* : India : Andhra Pradesh, Orissa, West Bengal and Andaman and Nicobar Islands.

*Elsewhere* : Sri Lanka, Japan, Thailand, Hong Kong.

*Remarks* : This crab was found to occur very rarely in muddy areas of mangrooves. It is reported from Hugli, Matla, Mahanadi and Krishna estuaries (Dev Roy and Nandi, 2009).

Genus *Muradium* Serène and Soh, 1970

25. *Muradium tetragonum* (Fabricius, 1798)

1798. *Cancer tetragonum* Fabricius, *Ent. Syst. Suppl.*, : 342.

1900. *Sesarma tetragonum* : Alcock, *J. Asiat. Soc. Bangal*, 69 (2) : 355.

2000. *Neoepisesarma (Muradium) tetragonum* : Dev Roy and Das, *Rec. Zool. Surv. India. Occ. Paper No., 185* : 97.

2005. *Episesarma tetragonum* : Dev Roy & Bhadra, *State Fauna Series, 5 : Fauna of Andhra Pradesh (Part-5)* : 485.

2008. *Muradium tetragonum* : Dev Roy, *Rec. zool. Surv. India, Occ. Paper No., 289* : 125.

*Material examined* : 1 ex., Keutasunapur, 22.07.2003, Coll. : SZS, Reg. No. CR-5792.

*Measurements* : L-11.0, W-13.0.

*Distribution* : India : West Bengal, Orissa, Andhra Pradesh, Tamil Nadu and Andaman. Islands.

*Elsewhere* : Sri Lanka.

*Remarks* : This crab occurs in landward fringe of mangrove forests and has been reported from Hugli, Mahanadi, Godavari and Krishna estuaries (Dev Roy and Nandi, 2009).

Genus *Metasesarma* H. Milne Edwards, 1853

26. *Metasesarma obesum* (Dana, 1851)

(Pl. 3, fig. 3)

1851. *Sesarma obesum* Dana, *Proc. Acad. nat. Sci. Philad.*, 5(1) : 250.

2005. *Metasesarma rousseauxii* : Dev Roy and Bhadra, *State Fauna Series 5 : Fauna of Andhra Pradesh (Part 5)* : 492.

2008. *Metasesarma obesum* : Dev Roy, *Rec. zool. Surv. India, Occ. Paper*, 289 : 124.

*Material examined* : 1 ex., Antareipur, 29.10.2003, Coll. : AM, Reg. No. CR-5724.

*Measurements* : L-14.0, W-17.0.

*Distribution* : India : West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Andaman Islands and Lakshwadeep.

*Elsewhere* : East Africa, Madagascar, Maldives, Sri Lanka, Mergui archipelago, Philipines, Austarlia and Samoa.

*Remarks* : This species appears to be rare in this estuary.

Family VARUNIDAE H. Milne Edwards, 1853

Genus *Metaplax* H. Milne Edwards, 1852

27. *Metaplax distincta* H. Milne Edwards, 1852

1852. *Metaplax distinctus* H. Milne Edwards, *Anns. Sci. nat. (Zool.)*, sér. 3, 18 : 162. pl. 4, fig. 27.

2005. *Metaplax distincta* : Dev Roy and Bhadra, *State Fauna Series, 5 : Fauna of Andhra Pradesh (Part 5)* : 488.

*Material examined* : 1 ex., Antareipur, 22.01.2004, Coll. : SR, Reg. No. CR-5718; 1 ex., Keutasunapur, 22.01.2004, Coll. : SR, Reg. No. CR-5721.

*Measurements* : L-16.0-17.0, W-24.0-25.0.

*Distribution* : India : West Bengal, Andhra Pradesh, Tamil Nadu, Karnataka, Maharashtra and Andamans.

*Elsewhere* : Mergui Archipelago, Thailand.

*Remarks* : This is a mangrove inhabiting species is truly estuarine in nature. It is reported to occur in Hugli, Mahanadi, Subarnarekha and Krishna estuaries (Dev Roy and Nandi, 2009).

Genus **Varuna** H. Milne Edwards, 1830

28. **Varuna litterata** (Fabricius, 1798)  
(Pl. 3, fig. 4)

1798. *Cancer litteratus* Fabricius, *Ent. Syst. Suppl.*, : 342.

2005. *Varuna litterata* : Dev Roy and Bhadra, *State Fauna Series, 5 : Fauna of Andhra Pradesh (Part 5)* : 480.

*Material examined* : 2 ex., Keutasunapur, 22.01.04, SR, CR-5717; 3 ex., Mouth, 01.09.04, AM, CR-5776; 1 ex., Antareipur, 22.01.04, SR, CR-5787.

*Measurements* : L-17.0-37.0, W-18.0-40.0.

*Distribution* : India : Andhra Pradesh, Orissa, Tamil Nadu, West Bengal, Kerala, Maharashtra.

*Elsewhere* : Myanmar, Bangladesh, Philippines, Hongkong, Japan, New Zealand, New Guinea, Singapore, Australia, East Africa.

*Remarks* : This species is very common occurring both in brackish and fresh parts of this estuary. It is recorded from Hugli, Matla, Mahanadi, Subarnarekha, Godavari, Krishna and Vamsadhara estuaries (Dev Roy and Nandi, 2009).

Family OCYPODIDAE Rafinesque, 1815

**Key to the genera of the family Ocypodidae from Bahuda estuary**

- Antennular flagella concealed under front, eyes large occupying major part of the eye stalk .....  
..... *Ocypode*
- Antennular flagella small but not concealed, eyes small, eye stalk long and slender ..... *Uca*

Genus **Ocypode** Weber, 1795

**Key to species of the genus Ocypode from Bahuda estuary**

- Carapace and its appendages whitish or yellowish, fingers of both chela pointed .....  
..... *O. ceratophthalma*
- Carapace and its appendages red, finger of smaller chela expanded ..... *O. macrocera*

29. **Ocypode ceratophthalma** (Pallas, 1772)

1772. *Cancer ceratophthalmus* Pallas, *Specilegia Zool.*, **9** : 83, pl. 5, fig 7.

2005. *Ocypode ceratophthalma* : Dev Roy and Bhadra, *State Fauna Series, 5 : Fauna of Andhra Pradesh (Part 5)* : 500.

*Material examined* : 1 ex., Antareipur, 29.01.2003, Coll. : AM, Reg. No. CR-5725 ; 2 ex., Sunapur, 13.12.2006, Coll. : SR, Reg. No. CR-5750 ; 1 ex., Mouth, 07.01.2005, Coll. : PMS, Reg. No. CR-5761; 5 ex., Keutasunapur, 18.09.2003, Coll. : SZS, Reg. No. CR-5764.

*Measurements* : L-11.0-19.0, W-15.0-24.0.

*Distribution* : India : West Bengal, Orissa, Andhra Pradesh, Tamil Nadu. Elsewhere: Sri Lanka.

*Remarks* : This is a common species of this estuary. It occurs in Hugli, Subarnarekha and Godavari estuaries (Dev Roy and Nandi, 2009).

30. **Ocypode macrocera** H.Milne Edwards, 1837  
(Pl. 4, fig. 1)

1837. *Ocypode macrocera* H. Milne Edwards, *Hist. Nat. Crust.*, **2** : 49.

2005. *Ocypode macrocera* : Dev Roy & Bhadra, *State Fauna Series 5 : Fauna of Andhra Pradesh (Part 5)* : 502.

*Material examined* : 1 ex., Keutasunapur, 22.01.2004, Coll. : SR, Reg. No. CR-5715; 1 ex., Sunapur, 14.12.2006, Coll. : SR, Reg. No. CR-5736; 2 ex., Sunapur, 12.12.2006, Coll. : SR, Reg. No. CR-5741, 1 ex.; Keutasunapur, 22.07.2003, Coll. : SZS, Reg. No. CR-5765; 6 ex., Keutasunapur, 22.07.2003, Coll. : SZS, Reg. No. CR-5766; 4 ex., Nuagaon, 18.09.2003, Coll. : SZS, Reg. No. CR-5767; 1 ex., Mouth, 12.05.2004, Coll. : AM, Reg. No. CR-5771; 4 ex., Keutasunapur, 10.08.2005, Coll. : SR, Reg. No. CR-5784.

*Measurements* : L-10.0-26.0, W-13.0-32.0.

*Distribution* : India : West Bengal, Orissa, Andhra Pradesh, Tamil Nadu. Elsewhere: Myanmar, Gulf of Thailand.

*Remarks* : This crab is very common in this estuary. This species has earlier been reported from Hugli, Mahanadi, Subarnarekha, Krishna, Vamsadhara and Nagavali estuaries (Dev Roy and Nandi, 2009).

Genus **Uca** Leach, 1814

**Key to species of the genus Uca from Bahuda estuary**

- Carapace subquadrilateral, major cheliped porcelain white with truncated tip .....  
..... *Uca lactea*

## PLATE-1

Prawns of Bahuda Estuary, Orissa

1. *Penaeus (Penaeus) monodon* Fabricius, 17982. *Penaeus (Penaeus) semisulcatus* De Haan, 18443. *Penaeus (Fenneropenaeus) indicus* (H. Milne Edwards, 1837)4. *Metapenaeus monoceros* (Fabricius, 1798)

## PLATE-2

Prawns of Bahuda Estuary, Orissa

1. *Metapenaeus dobsoni* (Miers, 1878)2. *Parapenaeopsis acclivirostris* Alcock, 19053. *Macrobrachium malcolmsonii* (H. Milne Edwards, 1844)4. *Macrobrachium equidens* (Dana, 1852)

**PLATE-3**

Crabs of Bahuda Estuary, Orissa



1. *Matuta planipes* Fabricius, 1798



2. *Charybdis (Charybdis) affinis* Dana, 1852



3. *Metasesarma rousseauxii* H. Milne Edwards, 1853



4. *Varuna litterata* (Fabricius, 1798)

**PLATE-4**

Crabs of Bahuda Estuary, Orissa



1. *Ocypode macrocera* H. Milne Edwards, 1837



2. *Uca triangularis* A. Milne Edwards



3. *Macrophthalmus (Mareotis) tomentosus* Souleyet, 1841

— Carapace hexagonal, major cheliped yellow, finger tips never truncated ..... *Uca tringularis*

31. *Uca lactea* (De Haan 1835)

1835. *Ocypode (Gelasiums) lacteus* De Haan, In : Siebold, *Faun Japon. (Crust.)* : 54.  
 1900. *Gelasiums lacteus* : Alcock, *J. Asiat. Soc. Bangal*, **69** (2) : 355.  
 1975. *Uca (celuca) lactea lactea* : Crane, *Fiddler Crabs of the world : Ocypodidae* : Genus *Uca* : 300.  
 2005. *Uca lactea* : Dev Roy and Bhadra, *State Fauna Series, 5 : Fauna of Andhra Pradesh (Part 5)* : 508.

*Material examined* : 1 ex., Keutasunapur, 22.01.2004, Coll. : SR, Reg. No. CR-5713; 3 ex., Sorala, 22.01.2004, Coll. : SR, Reg. No. CR-5714; 5 ex., Keutasunapur, 10.08.2005, Coll. : SR, Reg. No. CR-5719; 4 ex., Sunapur, 12.12.2006, Coll. : SR, Reg. No. CR-5740; 2 ex., Sunapur, 12.12.2006, Coll. : SR, Reg. No. CR-5745; 1 ex., Sunapur, 13.12.2006, Coll. : SR, Reg. No. CR-5749; 1 ex., Mouth, 07.01.2005, Coll. : AMS, Reg. No. CR-5758; 4 ex., Mouth, 07.01.2005, Coll. : PMS, Reg. No. CR-5762; 18 ex., Keutasunapur, 29.10.2003, Coll. : AM, Reg. No. CR-5768; 3 ex., Keutasunapur, 18.09.2003, Coll. : SZS, Reg. No. CR-5769; 4 ex., Keutasunapur, 22.07.2003, Coll. : SZS, Reg. No. CR-5770; 1 ex., Mouth, 12.05.2004, Coll. : AM, Reg. No. CR-5773; 1 ex., Keutasunapur, 10.08.2005, Coll. : SR, Reg. No. CR-5785.

*Measurements* : L-6.0-12.0, W-8.0-20.0.

*Distribution* : India : West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Maharashtra, Andaman & Nicobar Islands.

*Elsewhere* : Africa, Red Sea, Persian Gulf, Madagascar, Mauritius, Pakistan, Singapore, Malaya Peninsula, Thailand, Philippines, China, Japan, Indonesia, New Guinea and Australia.

*Remarks* : This is one of the commonest mangrove species of this estuary. It is reported to occur in Hugli, Matla, Mahanadi, Subarnarekha, Godavari, Krishna and Vamsadhara estuaries (Dev Roy and Nandi, 2009).

32. *Uca triangularis* A. Milne Edwards, 1837

(Pl. 4, fig. 2)

1852. *Gelasimus triangularis* A. Milne Edwards, *Nouv. Archs. Mus. nat. Paris (N.S.)*, **9** : 275.  
 1995. *Uca (Celuca) triangularis Bengali* : Bairagi, *Estuarine Ecosystem Series, Part 2, Hugli Matla Estuary* : 274.  
 2005. *Uca triangularis* : Dev Roy and Bhadra, *State Fauna Series, 5 : Fauna of Andhra Pradesh (Part 5)* : 508.

*Material examined* : 1 ex., Keutasunapur, 10.08.2005, Coll. : SR, Reg. No. CR 5720.

*Measurements* : L-12.0, W-19.0.

*Distribution* : India : West Bengal, Andhra Pradesh, Tamil Nadu.

*Elsewhere* : Myanmar, Malaysia and Australia.

*Remarks* : This is also a very common species of this estuary occurring in mangroves. It is known to occur in Hugli, Matla, Mahanadi, Subarnarekha and Krishna estuaries (Dev Roy and Nandi, 2009).

Family MACROPHTHALMIDAE Dana, 1851

Genus *Macrophthalmus* Latreille, 1829

Subgenus *Mareotis* Barnes, 1967.

33. *Macrophthalmus (Mareotis) tomentosus*

Souleyet, 1841

(Pl. 4, fig. 3)

1841. *Macrophthalmus tomentosus*, Souleyet, *Voy. "Bonite", Zool. (Crust.)*, **1** : 243, pl. 3, fig. 8.

2005. *Macrophthalmus tomentosus* : Dev Roy and Bhadra, *State Fauna Series, 5 : Fauna of Andhra Pradesh (Part 5)* : 519.

*Material examined* : 1 ex., Antareipur, 22.01.2004, Coll. : SR, Reg. No. CR-5788.

*Measurements* : L-24.0, W- 27.0.

*Distribution* : India : West Bengal, Orissa, Andhra Pradesh.

*Elsewhere* : Mergui Archipelago, Aru Islands, Philippines and New Caledonia.

*Remarks* : This species is very rare being represented by a single specimen.

### SUMMARY

11 species of prawns under 4 genera and 2 families and 22 species of brachyuran crabs under 16 genera and 4 families have been recorded from Bahuda estuary which includes few marine elements. Key to genera and species have been given along with distribution of each species.

### ACKNOWLEDGEMENTS

The authors are grateful to the Director Zoological Survey of India, to Dr. S.Z. Siddiqi the then Officer-in-Charge, Dr. D.V. Rao present Officer-in-Charge of Estuarine Biological Station and Dr. A.K. Singh,

Scientist 'E' and Officer-in-Charge, Fire Proof Spirit Building, Kolkatta for providing literatures, facilities and encouragements. The authors are also grateful to Sri B. Dalai and Sri P. Varma of this station for helping in collection of specimens and for taking digital photograph of specimens respectively.

#### REFERENCES

- Balasubramanian, K. 1962. Studies on the ecology of the Vellar estuary. 4. Distribution of crabs in the intertidal region. *Proc. Second All India Cong. Zool.*, : 307-311.
- Bairagi, N. 1995. Ocypodidae: Decapoda: Crustacea. *Estuarine Ecosystem Series, Part 2 : Hugli Matla Estuary* : 263-287. Zoological Survey of India, Calcutta.
- Bhadra, S. 1995. Crustacea : Decapoda : Portunidae. *Estuarine Ecosystem Series, Part 2 : Hugli Matla Estuary* : 249-262. Zoological Survey of India, Calcutta.
- Deb, M. 1995. Crustacea : Xanthidae. *Estuarine Ecosystem Series, Part 2 : Hugli Matla Estuary* : 217-228. Zoological Survey of India, Calcutta.
- Deb, M. 1998. Crustacea. *Estuarine Ecosystem Series, 3 : Mahanadi Estuary* : 129-159. Zoological Survey of India, Calcutta.
- Dev Roy, M.K. and Bhadra, S. 2001. Brachyuran Crabs (Crustacea : Decapoda : Brachyura). *Estuarine Ecosystem Series, 4 Fauna of Godavari Estuary* : 35 –54. Zoological Survey of India, Calcutta.
- Dev Roy, M.K. and Bhadra, S. 2005. *State Fauna Series, 5 : Fauna of Andhra Pradesh (Part 5)* : 357-535. Zoological Survey of India, Calcutta.
- Dev Roy, M.K. and Nandi, N.C. 2007. Brachyuran Diversity in Estuarine Environments of India. *Proc. Natl. Sem. on CR & SM, Bidhan Chandra Krishi Viswavidyalaya* : 213-225.
- Dev Roy, M.K. and Nandi, N.C. 2009. Notes on the distribution of brachyuran crabs in estuarine ecosystems of east coasts of India. *J. Nat. Hist.*, 5(2) : 7-11.
- Ghosh, S.K. 1995. Crustacea : Decapoda : Grapsidae. *Estuarine Ecosystem Series, Part 2 : Hugli Matla Estuary* : 229-248. Zoological Survey of India, Calcutta.
- Rath, S. and Dev Roy, M.K. 2008. Brachyuran crabs (Crustacea : Decapoda : Brachyura). *Estuarine Ecosystem Series, 5 : Fauna of Krishna Estuary* : 43-81. Zoological Survey of India, Calcutta.
- Rath, S. and Dev Roy, M.K. 2008. Prawns (Crustacea : Decapoda). *Estuarine Ecosystem Series, 5 : Fauna of Krishna Estuary* : 83-103. Zoological Survey of India, Calcutta.
- Rath, S. and Dev Roy, M.K. 2010a. Prawns (Crustacea : Decapoda) Fauna of Vamsadhara and Nagavali Estuary, *Estuarine Ecosystem Series, 6* : 15-22, Zoological Survey of India, Calcutta.
- Rath, S. and Dev Roy, M.K. 2010. Crabs (Crustacea : Decapoda : Brachyura). *Estuarine Ecosystem Series, 6* : 23-45. Zoological Survey of India, Calcutta. *Fauna of Vamsadhara and Nagavali Estuary* : 23-45.
- Reddy, K.N. 1995. Prawns and Shrimps (Crustacea : Decapoda). *Estuarine Ecosystem Series, Part 2. Hugli Matla Estuary* : 289-314. Zoological Survey of India, Calcutta.
- Selvakumar, S. and Ajmal Khan, S. 1993. Grapsid and Xanthid crabs of Parangipettai coast. *Rec. zool. Surv. India*, 93(3-4) : 329-354.
- Subrahmanyam, M. 1969. An ecological study of the prawn fauna in a tidal river of Godavari estuary. *J. zool. Soc. India*, 21(1) : 75-82.