

NEW RECORDS OF DECAPOD CEPHALOPODS
FROM THE ARABIAN SEA

VARGHESE P. OOMMEN

Integrated Fisheries Project, Cochin-682 016

ABSTRACT

Three species of decapod cephalopods collected by the fishing vessels of the Integrated Fisheries Project, Cochin during their exploratory fishing operations along the west coast of India are described here. All of them are new records to the Arabian Sea.

INTRODUCTION

THE FISHING VESSELS of the Integrated Fisheries Project during their exploratory fishing operations hauled on board a number of interesting specimens of cephalopods. Some of them are new to science and some are new records to the Arabian Sea. The present account deals with the cephalopods collected by these vessels and described for the first time from the Arabian Sea.

I wish to thank the Director, Integrated Fisheries Project, Cochin for the suggestions and encouragement. I also wish to thank the Captains and crew of the vessels of the Integrated Fisheries Project for their help and co-operation on board the vessels.

TERMINOLOGY

The terminology, measurements and indices are followed that of Voss (1953). The expansion of the indices used in the text are as follows:-

| | | | |
|-----|----------------------------|------|---------------------------|
| ML | Dorsal mantle length in mm | HcLI | Hectocotylus length index |
| MWI | Mantle width index | TLI | Tentacle length index |
| HWI | Head width index | CLI | Club length index |
| FLI | Fin length index | SIs | Arm sucker index |
| FWI | Fin width index | SIt | Tentacle sucker index |

I, II, III, IV—Arms length index

DESCRIPTION

SUBCLASS : COLEOIDEA:

ORDER : SEPIOIDEA

Family: *Sepiolidae* Subfamily: *Sepiolinae*

Iniotheuthis maculosa Goodrich, 1896

Iniotheuthis maculosa Goodrich, 1896, p.2; Massy, 1916, p.216; Adam, 1954, p.128; Voss, 1963, p.59.

Material: 2 male specimens, ML 12.5 and 13.5, off Cochin, Latitude 09° 58' N and Longitude 76°10' E, 24 metres. 12.3.1974.

Description: Mantle sac like, slightly flattened and with a round posterior margin. Head and mantle connected dorsally with a narrow band of tissue. Head as wide as mantle. Large eyes with small pupils. Eye lids present. Ventral surface of head flattened and moderately excavated to accommodate the funnel.

Funnel somewhat conical with wide base and slender anterior section, which is independent of head for most of its length. Funnel organ U-shaped. Mantle-funnel locking apparatus resembles with that of Voss's (1963) description.

Fins attached about half way up the mantle, small, nearly rounded with narrow bases.

In one of the specimens the arms are in the order of 4213, and in the other they are mutilated. Left dorsal arm hectocotylised in both specimens. Arms with round aboral surface. IVth pair narrow with well defined aboral keel, which extended almost to its whole length. Suckers stalked, biserially arranged and without any protective membrane. Suckers of ventral half of Ist, IInd and IIIrd pair of arms enlarged. Both rows of suckers of IVth pair somewhat enlarged.

Tentacles long and slender with expanded clubs. Clubs with 8 to 10 rows of suckers.

Colour: formalin preserved form is slightly yellowish with brownish chromatophores; scattered almost all over the body except from ventral surface of fins.

Measurements and indices (of the 2 specimens):

| | I | II | | I | II |
|-----|-------|-------|-----|-------|-------|
| ML | 12.5 | 13.5 | III | 104.0 | 118.0 |
| MWI | 72.0 | 81.0 | IV | 128.0 | 96.3 |
| HWI | 80.0 | 74.0 | TLI | 296.0 | 237.0 |
| FLI | 56.0 | 52.0 | CLI | 56.0 | 37.0 |
| FWI | 144.0 | 148.1 | SIs | 4.8 | 5.2 |
| I | 122.0 | — | Stt | 1.6 | 2.2 |
| II | 120.0 | — | | | |

Type: Indian Museum, Calcutta.

Type locality: Andaman Islands.

Remarks: The present material shows close similarity to the descriptions given by Goodrich (1896) and Voss (1963), especially in the case of hectocotylised arm, tentacles, fins, form of locking apparatus and colour.

Distribution: Andaman Islands, Persian Gulf, Indonesia, Philippines, Arabian Sea.

ORDER: TEUTHOIDEA SUBORDER: MYOPSIDA

Family: *Loliginidae****Sepioteuthis lessoniana* Lesson, 1830**

Sepioteuthis lessoniana Ferussac, 1826, p. 155; Lesson, 1830, p. 244; Sasaki, 1929, p. 127; Adam, 1939, p. 21; Voss, 1954, p. 365; 1963, p. 77.

Material: One male specimen, ML 232, off Cochin, Latitude 09°57' N and Longitude 76°09' E, 25 metres. 28.3.1974.

Description: Mantle long and tubular with a blunt conical posterior end. Anteriorly the mantle produced into a small lobe mid-dorsally over the head and ventrally two lobes on either side of the funnel. Head broader than mantle. Eyes prominent. A small olfactory crest below and ventral to eyes.

Funnel long, set deeply into ventral surface of head. Mantle-funnel locking apparatus straight and strong. Funnel valve well developed and prominent.

Fins large, extending along the lateral margin of mantle and united posteriorly with a ridge and gives an oval shaped outline. Fins start from anterior region of mantle 15 mm below.

Arms in order of 3421. Left ventral arm of the male hectocotylised, for its distal third. Arms somewhat flattened and keeled.

Tentacles stout and laterally compressed. Clubs slightly expanded, with well developed protective memberane. Suckers arranged in four rows.

Colour: White with pink chromatophores. Chromatophores present on the mantle, dorsal sides of fins, arms and tentacles, but completely absent from ventral sides of fins. Some transverse lines are present on the dorsal side of mantle.

Measurements and indices:

| | | | |
|-----|-------|------|-------|
| ML | 232.0 | III | 47.4 |
| MWI | 30.2 | IV | 43.9 |
| HWI | 22.4 | HcLI | 39.2 |
| FLI | 93.5 | TLI | 125.0 |
| FWI | 75.0 | CLI | 23.7 |
| I | 31.0 | Stc | 1.7 |
| II | 40.5 | Sic | 2.2 |

Type: Not traced.

Type Locality: Not traced.

Remarks: The present specimen agrees well with the descriptions of Voss (1963) and Adam (1939).

Distribution: Japan, Australia, New Zealand, Hawaii, Eastern Indian Ocean, Arabian Sea.

Loliolus investigatoris Goodrich, 1896

Loliolus investigatoris Goodrich, 1896, p. 8; Massy, 1916, p. 222; Adam, 1939, p. 66.

Material: One female specimen, ML 55, off Cochin, Latitude 09°58' N and Longitude 76° 10' E, 23 metres. 12.3.1974.

Description: Mantle conical in shape with round posterior end. Its anterior end produced into a small projection mid-dorsally and ventrally two projections on either side of the funnel. Head as wide as mantle and dorsoventrally compressed. Eyes large with small pupils. Olfactory crest present posteriorly below to eyes.

Funnel conical in shape. A valve present. Funnel fitted in a depression formed on the mid-ventral side of the head.

Fins with round anterior and lateral edges. They fused together posteriorly beyond the mantle and gives a 'heartshaped' appearance.

Arms with a formula of 4321. First three pairs bear a median keel on the outer surface, and it is well developed on the IIIrd pair. IVth pair squarish in section and its outer edges produced into lateral keels. Suckers stalked and biserially arranged on the arms. Horny rims of the suckers with 3 to 5 large blunt teeth.

Tentacles elongate with small clubs. Suckers arranged in four rows on the club. Lateral sides of the club bears protective membranes. Horny rims of suckers with 26 to 36 sharp teeth.

Colour: Slightly yellow with brownish chromatophores. Chromatophores scattered on both sides of mantle, head, arms, tentacles and dorsal sides of fins, and absent on the ventral side of the fins.

Measurements and indices:

| | | | |
|-----|------|-----|-------|
| ML | 55.0 | III | 56.4 |
| MWI | 38.2 | IV | 65.5 |
| HWI | 40.0 | TLI | 145.5 |
| FLI | 67.3 | CLI | 30.9 |
| FWI | 96.4 | SIs | 2.7 |
| I | 23.6 | SIt | 1.8 |
| II | 47.3 | | |

Type: Indian Museum, Calcutta. **Type Locality:** Bay of Bengal.

Remarks: The present specimen agrees with the description of Goodrich (1896). A comparative study on the male characters could not be made since the present material consists only of a female specimen.

Distribution: Bay of Bengal, Western Pacific Ocean, Arabian Sea.

REFERENCES

- ADAM, W. 1939. The Cephalopods in the Indian Museum, Calcutta., *Rec. Indian Mus.*, **41**: 61-110.
- 1954. Cephalopoda. Partie III & IV. Cephalopodes a l'exclusion des genres *Sepia*, *Sepiella* et *Sepioteuthis*. *Siboga Exped. Monographie*, **33c**: 123-193.
- FERUSSAC, A. DE 1826. In: d'Orbigny, Tableau methodique de la classe des cephalopodes. *Ann. Sci. Hist. Nat., Paris*, **7**: 96-169.
- GOODRICH, E. S. 1896. Report on a collection of Cephalopods from the Calcutta Museum., *Trans. Linn. Soc. London*, **7**: 1-24.
- LESSON, R. P. 1830. *Mollusques*. In Voyage autour de monde execute sur la corvette de S. M. 'La Coquille' pendant les annes 1822-1825, **2** (1): 239-246.
- MASSY, A. L. 1916. The Cephalopoda of the Indian Museum. *Rec. Indian Mus.*, **12**: 185-247.
- SASAKI, M. 1929. A monograph of the dibranchiate cephalopods of the Japanese and adjacent waters. *J. Coll. Agric. Hokkaido imp. Univ.*, **20**: 1-357.
- VOSS, G. L. 1954. Decapodous cephalopod mollusks from the Marshall Islands. *Pacific Sci.*, **8** (3): 363-366.
- Cephalopods of the Philippine Islands. *Bull. U. S. Nat. Mus.* **234**: 1-180.