

***Sepia prabahari* Neethiselvan and Venkataramani, 2002**

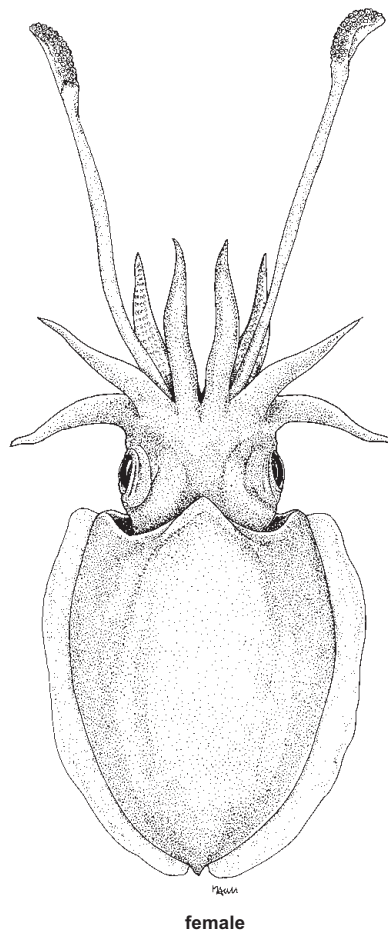
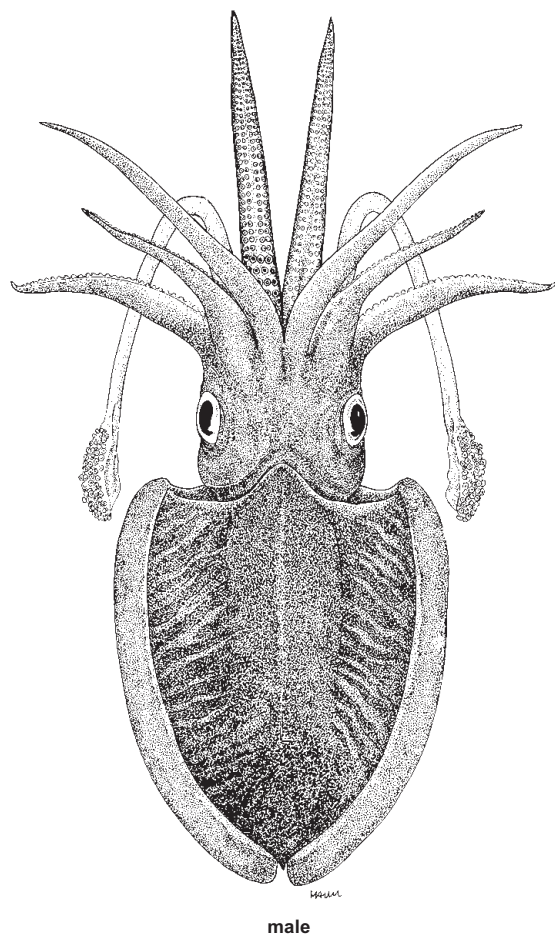
Fig. 174

Sepia prabahari Neethiselvan and Venkataramani, 2002, *Indian Journal of Marine Sciences*, 31(1): 45 [type locality: southeast coast of India, Tuticorin, 08°47'N 78°9'E].

Frequent Synonyms: None.

Misidentifications: None.

FAO Names: **En** – Small striped cuttlefish; **Fr** – Petite seiche rayée; **Sp** – *Sepia listada* pequeña.



Diagnostic Features: Male arms elongate, robust; **arms I and IV elongate, whip-like** (more pronounced in mature males); in females arms approximately subequal in length; arm formula in both sexes IV, I, III, II; arm suckers tetraserial. Hectocotylus present on left arm IV: 8 transverse rows of normal size suckers proximally, followed by 7 rows of modified suckers, then rest normal to arm tip. Suckers in **2 dorsal series greatly reduced, suckers in 2 ventral series normal in size** on modified portion of arm; 2 dorsal and 2 ventral series displaced laterally, with fleshy ridge between. Club short, with **6 suckers in transverse rows; suckers all of similar minute size**. Swimming keel terminates at posterior end of carpus. Dorsal protective membrane broader than ventral protective membrane. Dorsal and ventral protective membranes extend slightly beyond carpus, **not joined at base of club**. Cuttlebone elliptical; broader in females than males; rugose dorsally, with indistinct median and lateral ribs. Spine curved dorsally, without keels. Sulcus deep, broad, extends length of striated zone. Anterior striae are inverted V-shape. Inner cone limbs are **narrow anteriorly, broaden posteriorly, then are raised into a thick, round ledge**; outer cone

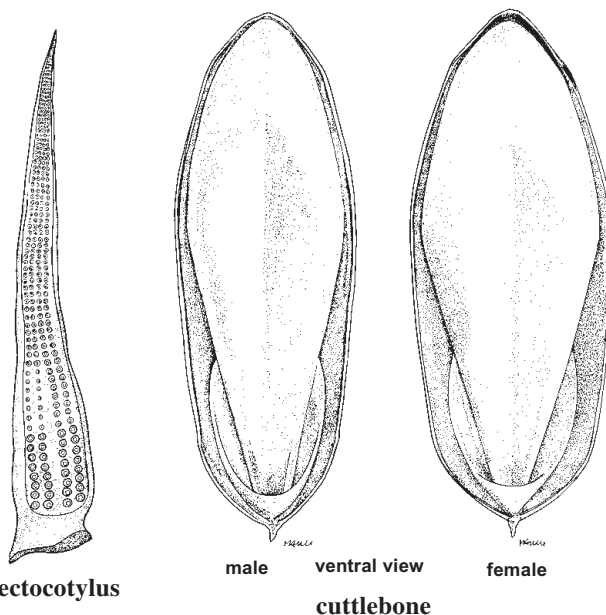


Fig. 174 *Sepia prabahari*

narrow anteriorly, broadens posteriorly, fused to inner cone. **Colour:** Dorsal mantle, head and arms dark brown with transverse zebra-stripe pattern (more prominent in males than females, and more obvious in fresh animals). Fins with pale, narrow, longitudinal line along base. Golden yellow nidamental glands visible in mantle cavity of female over 60 mm mantle length. Cuttlebone inner cone white.

Size: Up to 130 mm mantle length.

Geographical Distribution: Indian Ocean: Indian Coast, Gulf of Mannar. Depth ranges up to 100 m (Fig. 175).

Habitat and Biology: No detailed information is available yet for this newly described species.

Interest to Fisheries: *Sepia prabahari* is fished year round along the Thoothukkudi southeast coast (India).

Remarks: *Sepia prabahari* appears to breed continuously throughout the year.

Local Names: INDIA: Chinna vari kanavai.

Literature: Neethiselvan and Venkataramani, 2002.

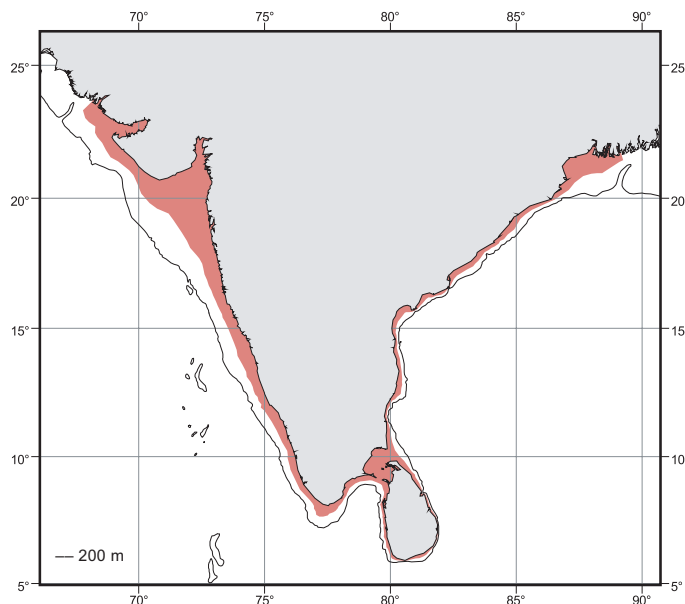


Fig. 175 *Sepia prabahari*
■ Known distribution

***Sepia prashadi* Winckworth, 1936**

Fig. 176

Sepia prashadi Winckworth, 1936, *Proceedings of the Malacological Society of London*, 22(1): 16 [type locality: India, Chennai (Madras), Bay of Bengal].

Frequent Synonyms: None.

Misidentifications: None.

FAO Names: En – Hooded cuttlefish; Fr – Seiche capuchon; Sp – *Sepia caperuza*.

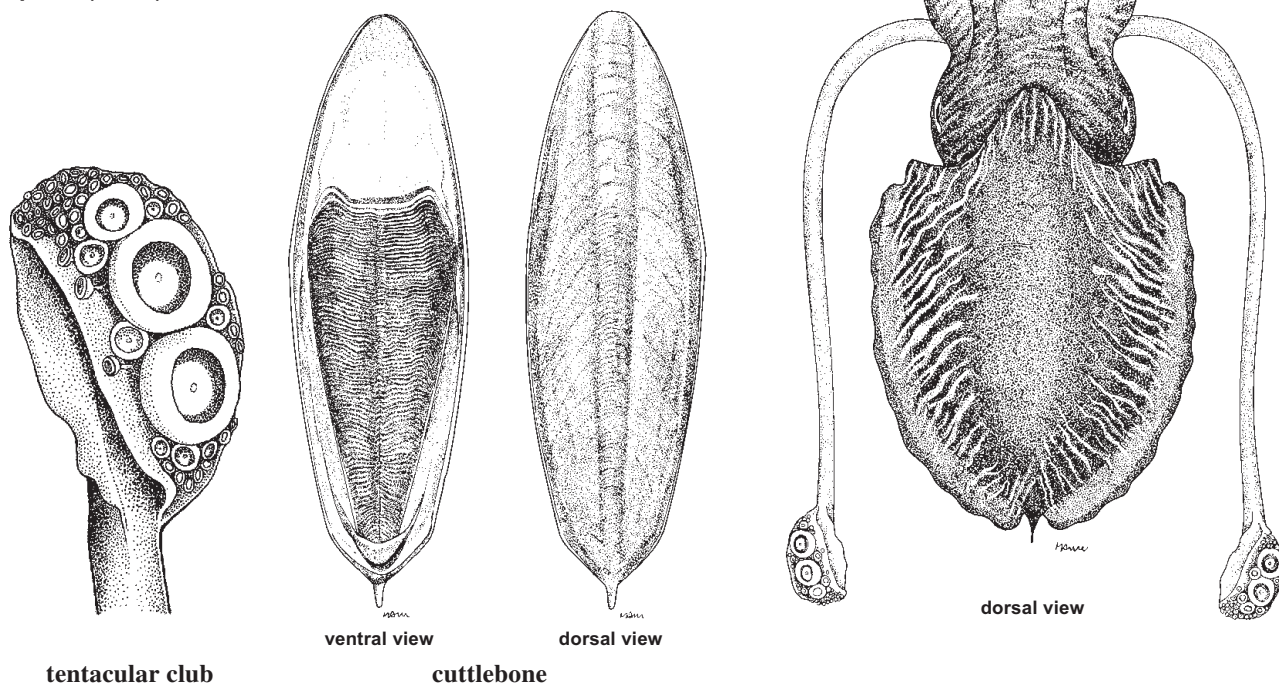


Fig. 176 *Sepia prashadi*

Diagnostic Features: Male and female arms subequal in length; protective membranes narrow. Arm suckers tetraserial. Male median arm suckers with **greater diameter than marginal ones** over most of arm length. Hectocotylus present on left ventral arm: **4 rows of normal size suckers proximally, 12 to 14 rows of reduced suckers medially**, then normal size suckers to arm tip; oral surface of modified region wide, swollen, fleshy, with transversely grooved ridges. Suckers of hectocotylus in 2 ventral series are displaced laterally, with gap between on proximal part of modified region, becoming closer together distally. Club short, oval; sucker-bearing surface flattened, with **3 to 5 suckers in transverse rows**; suckers differ markedly in size: **median 4 suckers extremely large**, surrounded by moderately large suckers. Swimming keel of club extends proximally slightly beyond carpus; dorsal and ventral protective membranes **not joined at base of club**. Cuttlebone outline oblong; bone triangular, obtuse anteriorly; bluntly rounded posteriorly; granulose; **dorsal median rib distinct**, broadens slightly anteriorly; ribs **bordered laterally by distinct grooves**; lateral ribs distinct. Chitin borders lateral and anterior margins of cuttlebone. Spine long, pointed, straight, directed dorsally, with dorsal and ventral keel. Striated zone convex; striated zone separated from outer cone by narrow, smooth marginal zones; sulcus shallow, narrow, **flanked by rounded ribs**, extends entire length of cuttlebone. Anterior striae **shallow m-shape**. Inner cone limbs are narrow anteriorly, broaden posteriorly; **raised into rounded, thickened ledge**; outer cone chitinous laterally, calcareous in expanded posterior part. Dorsal mantle has transverse zebra stripe pattern in breeding males.

Size: Up to 140 mm mantle length.

Geographical Distribution: Indian Ocean: from off northeastern India (Calcutta) to the Gulf of Oman, Red Sea, Gulf of Suez, southern Mozambique, Madagascar, Mauritius, Andaman–Nicobar Seas (Fig. 177).

Habitat and Biology: A demersal, shallow water, small-sized species ranging in depth from the coastline to 200 m. Off Waltair (northeastern coast of India), the species occurs throughout the year, even though sporadically. For this area, preliminary studies reported mature individuals at 72 and 67 mm mantle length for females and males, respectively. In the waters off Madras (southeast India), *S. prashadi* is found from January to April, along with upwelled deeper water fishes. In the Gulf of Suez a life span of 18 months was estimated.

Interest to Fisheries: Taken by trawls in the Red Sea and along the Indian east coast off Waltair and Madras (northeast India), *S. prashadi* is most abundant from the beginning of the year to June and in some years, from October to December. Off Madras, it is taken in small quantities in local upwelling areas as bycatch to finfishes normally occurring in deeper waters. Separate catch statistics are not reported for this species. Exploratory surveys in the Andaman–Nicobar Seas indicate a wide distribution of cephalopod resources both in the coastal and oceanic waters. It was suggested that suitable techniques, such as light fishing with lift nets, would result in better exploitation of demersal species, among which *S. prashadi* is well represented. Based on stock assessment studies in the Gulf of Suez, *S. prashadi* was underexploited in the mid-1990s.

Literature: Adam and Rees (1966), Silas *et al.* (1982), Silas *et al.* (1986), Okutani *et al.* (1987), Sreenivasan and Sarvesan (1990), Emam (1994), Filippova *et al.* (1995), Khaliluddin (1995), Nateewathana (1999).

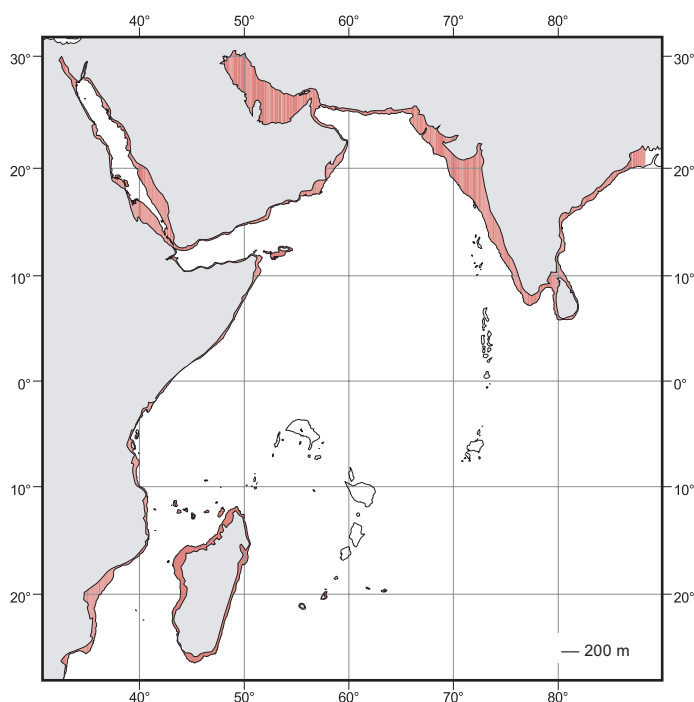


Fig. 177 *Sepia prashadi*
■ Known distribution

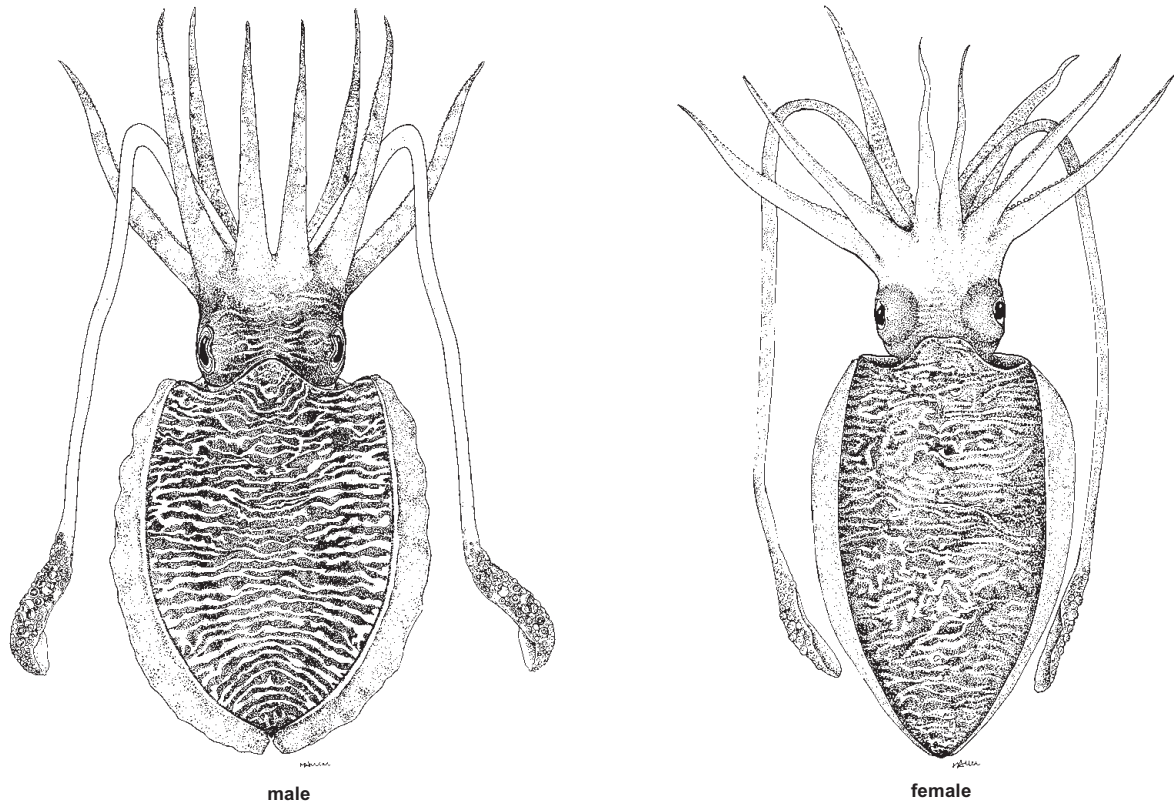
Sepia ramani* Neethiselvan, 2001*Fig. 178**

Sepia ramani Neethiselvan, 2001, *Indian Journal of Marine Sciences*, 30: 82 [type locality: southeast coast of India, Tuticorin, 08°47'N 78°09'E].

Frequent Synonyms: None.

Misidentifications: None.

FAO Names: **En** – Large striped cuttlefish; **Fr** – Grande seiche rayée; **Sp** – *Sepia listada grande*.



Diagnostic Features: Male and female arms approximately subequal in length; arm formula in both sexes IV, III, II, I; arm suckers tetraserial. Hectocotylus present on left arm IV: 14 to 16 transverse rows of normal size suckers proximally, followed by 7 to 10 rows of modified suckers, then rest normal to arm tip. Suckers in **2 dorsal series minute, suckers in 2 ventral series normal in size** on modified portion of arm; 2 dorsal and 2 ventral series displaced laterally, with fleshy ridge between. Club long; **15 to 24 suckers enlarged, all enlarged suckers similar in size**. Swimming keel narrow, terminates at posterior end of carpus. Dorsal and ventral protective membranes extend slightly beyond carpus, **not joined at base of club**. Buccal membrane with minute suckers. Cuttlebone slender, elliptical; rugose dorsally, with indistinct median and lateral ribs. Spine short, stout, without keels. Sulcus deep, broad, extends length of striated zone. Anterior striae are inverted V-shape. Inner cone relatively short, limbs are **narrow anteriorly, broaden posteriorly, with distinctive, thick, bulbous swelling**; outer cone narrow anteriorly, broadens posteriorly. **Colour:** Dorsal mantle, head and arms dark brown with transverse zebra stripe pattern (more prominent in males than females, and more obvious in fresh animals). Fins with pale, narrow, longitudinal line along base.

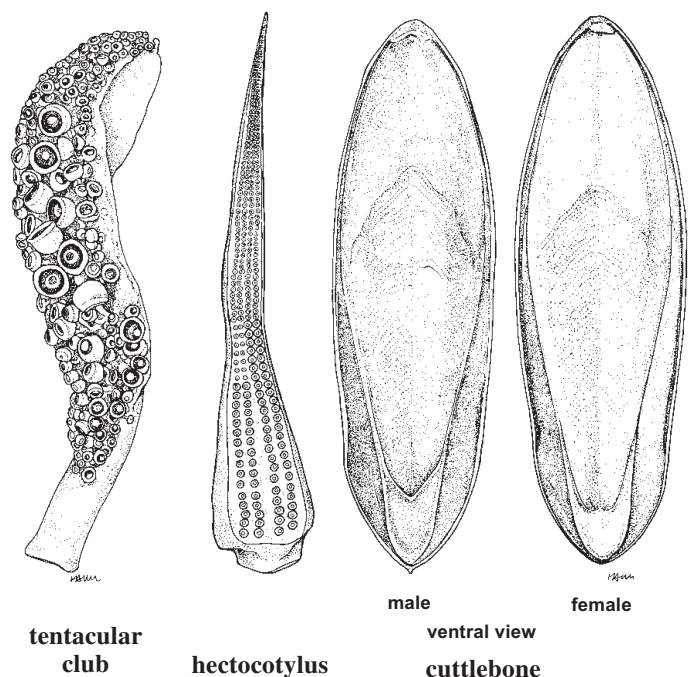


Fig. 178 *Sepia ramani*

Size: Up to 375 mm mantle length.

Geographical Distribution: Indian Ocean: southern Indian Coast, Gulf of Mannar. Depth ranges up to 100 m (Fig. 179).

Habitat and Biology: No detailed information is available yet for this recently described species.

Interest to Fisheries: *Sepia ramani* is a component of the commercial fishery throughout the year along the Thoothukkudi coast (southeast India).

Remarks: *Sepia ramani* is morphologically very similar to *Sepia pharaonis* Ehrenberg, 1831. *Sepia pharaonis* has 5 or 6 enlarged club suckers, of which 3 or 4 suckers are greatly enlarged, in contrast to *S. ramani* with 15 to 24 enlarged suckers that are all of similar size. In addition, there are 10 to 12 transverse rows of normal suckers on the base of the hectocotylus in *S. pharaonis*, and 14 to 16 transverse rows of normal suckers in *S. ramani*. The spawning season of *S. ramani* seems to extend from September to December.

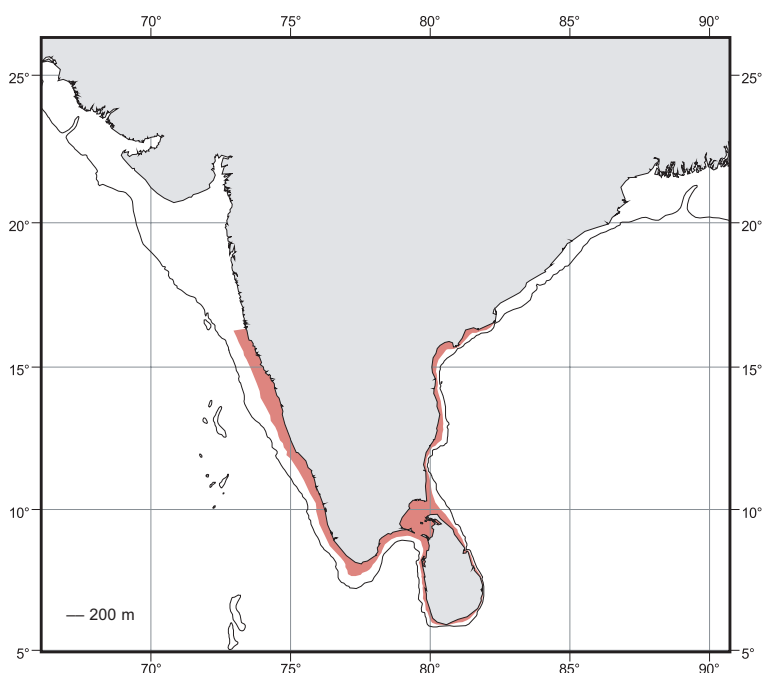


Fig. 179 *Sepia ramani*
■ Known distribution

Local Names: INDIA: Periya vari kanavai.

Literature: Neethiselvan, 2001.

***Sepia recurvirostra* Steenstrup, 1875**

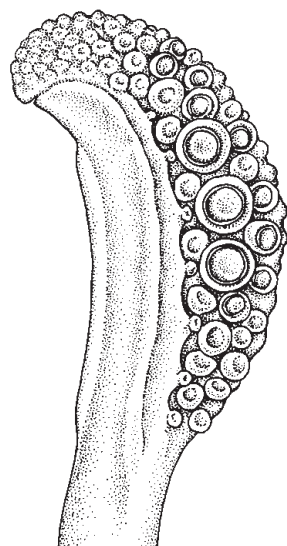
Fig. 180

Sepia recurvirostra Steenstrup, 1875, *Danske Videnskabernes Selskabs Skrifter*, 5 Række, Naturvidenskabelig og Mathematisk, 10(7): 479 [type locality: South China Sea].

Frequent Synonyms: *Sepia singaporensis* Pfeffer, 1884.

Misidentifications: None.

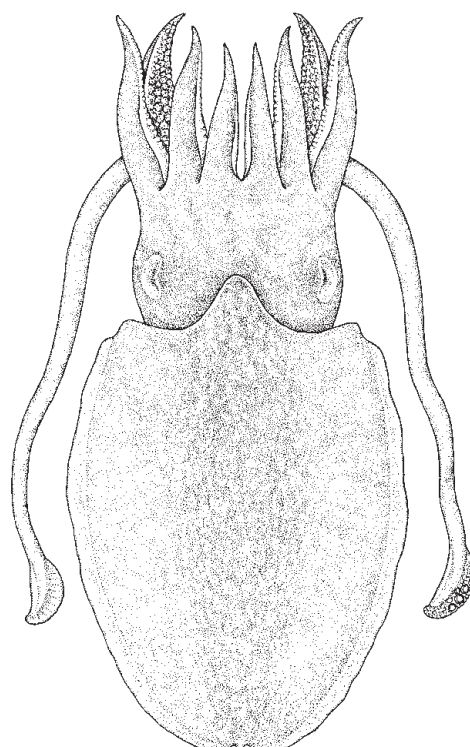
FAO Names: En – Curvespine cuttlefish; Fr – Seiche hameçon; Sp – Sepia ganchuda.



tentacular club



ventral view
cuttlebone



dorsal view

Fig. 180 *Sepia recurvirostra*

Diagnostic Features: Mantle broad, oval. Non-hectocotylized arm sucker arrangement same in both sexes: suckers arms I to III **tetraserial proximally, biserial at distal tips**; arms IV **suckers tetraserial**. Hectocotylus present on left ventral arm: sucker size normal proximally, reduced medially, then normal size suckers to arm tip. Suckers of hectocotylus in **2 dorsal series smaller than those in 2 ventral series**; reduced suckers much smaller than normal arm suckers; suckers evenly spaced on modified portion of arm. Club sucker-bearing surface flattened, with **5 or 6 suckers in transverse rows**; suckers differ markedly in size: **5 or 6 median suckers enlarged**. Swimming keel of club extends proximally slightly beyond carpus; dorsal and ventral protective membranes not joined at base of club; dorsal membrane forms deep cleft at junction with stalk. Buccal membrane without suckers. Cuttlebone outline oblong; **bone very angular, V-shape anteriorly**; bluntly rounded posteriorly; dorsal median and lateral ribs present. Chitin present as wide patch posteriorly and a narrow chitinous rim borders lateral margins of cuttlebone. Spine curves ventrally. Last loculus concave; sulcus shallow, narrow, extends along striated zone only. Anterior striae are **inverted U-shape**. Inner cone limbs are uniform width, narrow, U-shape posteriorly, **thickened posteriorly into a rough chitinous callus**; outer cone calcified, narrow anteriorly, broadens posteriorly. Dorsal mantle pale with opalescent blue transverse stripes. Fins with **pale reflective opalescent blue line along base**.

Size: Up to 170 mm mantle length and 0.4 kg weight.

Geographical Distribution: Western Pacific: Yellow Sea, China, Hong Kong, East China Sea, Taiwan Province of China, South China Sea, Philippines, Celebes Sea, Java Sea, Gulf of Thailand, Singapore. Indian Ocean: Andaman Sea and Myanmar, Bay of Bengal (Fig. 181).

Habitat and Biology: Depth range from 10 to 140 m. *Sepia recurvirostra* is a demersal species that inhabits the continental shelf. In the Gulf of Thailand, spawning occurs all year, with peak times from November to February and July to September. The ratio of males to females caught in the Gulf is 1:3.

Interest to Fisheries: The species has some commercial importance in Hong Kong, where it is caught in multispecies trawls. It is a commercial species in the Gulf of Thailand, South and East China Seas, and Japan. In Thailand, most cuttlefishes are caught using otter trawl, with smaller catches reported from pair trawl, squid light-lures, traps and push nets, with bottom otter and pair trawls used offshore, and push nets and lift nets used in inshore and coastal waters. A few cuttlefishes are caught using purse seine and hook and line. In the Gulf of Thailand, most captured animals are between 40 and 130 mm mantle length.

Local Names: CHINA: Jam mak yue; JAPAN: Ajia-kouika.

Literature: Adam and Rees (1966), Chantawong and Suksawat (1997).

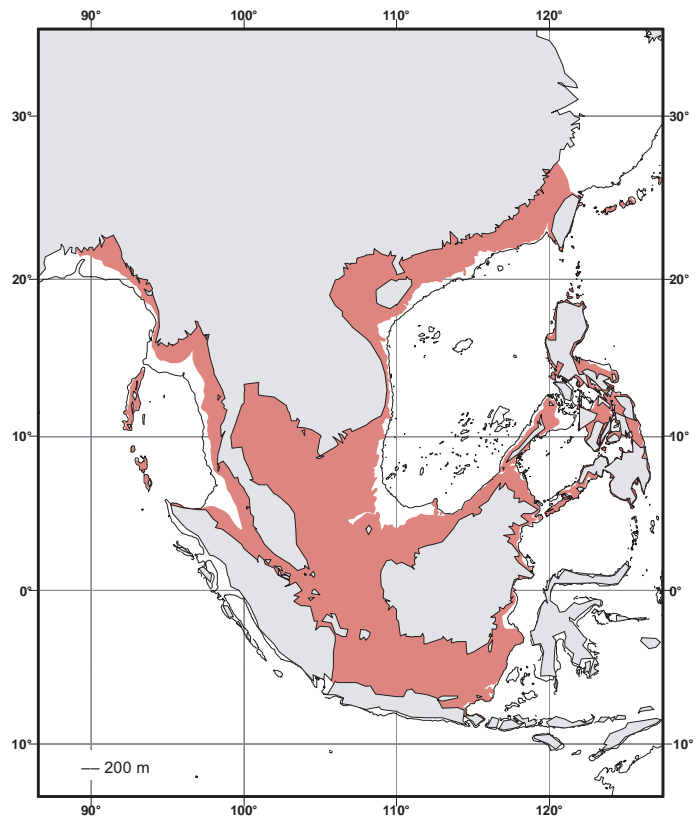


Fig. 181 *Sepia recurvirostra*
■ Known distribution