

***Sepia latimanus* Quoy and Gaimard, 1832**

Fig. 148; Plate IV, 23–27

Sepia latimanus Quoy and Gaimard, 1832, *Voyage de découvertes de l'Astrolabe pendant les années 1826–1827–1828–1829*, *Zoologie*, 2(1): 68 [type locality: New Guinea, Port Dorey, 00°51'S 134°01'E].

Frequent Synonyms: *Ponderisepia eclogaria* Iredale, 1926; *Sepia harmeri* Robson, 1928; *Sepia rappiana* Férussac, 1834 in Férussac and d'Orbigny (1834–1848); *Sepia mozambica* Rochebrune, 1884; *Sepia hercules* Pilsbry, 1894.

Misidentifications: None.

FAO Names: **En** – Broadclub cuttlefish; **Fr** – Seiche grandes mains; **Sp** – Sepia mazuda.

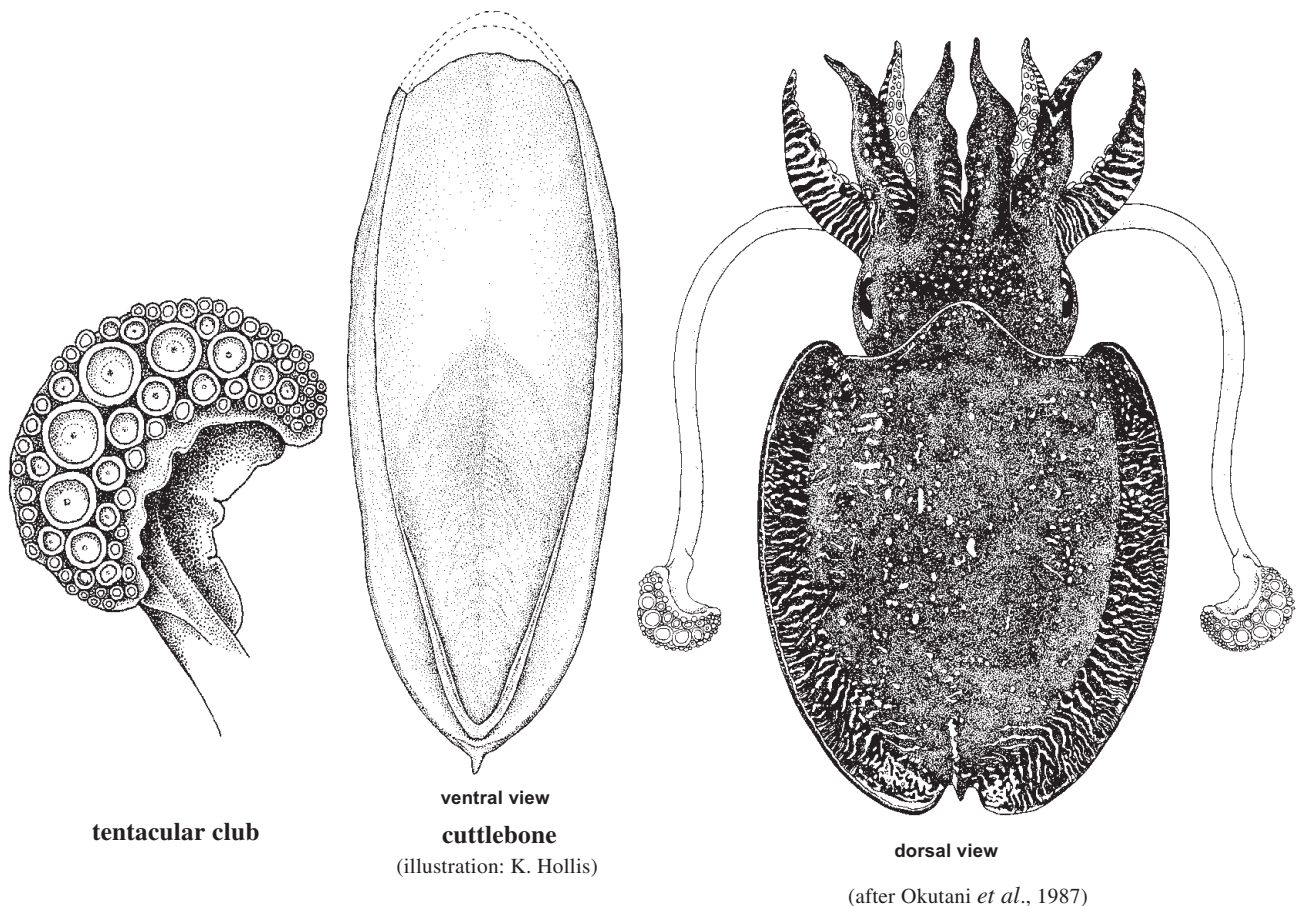


Fig. 148 *Sepia latimanus*

Diagnostic Features: Mantle oval. Arm suckers tetraserial. **Hectocotylus absent.** Club crescent-shaped, **sucker-bearing surface flattened**, with **5 or 6 suckers in transverse rows**; suckers differ markedly in size: **some greatly enlarged**. Swimming keel of club extends well proximal to carpus; dorsal and ventral protective membranes **joined at base of club**; **separated from stalk by membrane**; dorsal membrane forms shallow cleft at junction with stalk. Buccal membrane without suckers. Cuttlebone bluntly rounded anteriorly and posteriorly; dorsal surface convex posteriorly, flat anteriorly; granulate (texture loosely arranged along growth lines); dorsal median rib and lateral ribs indistinct, or absent. Spine short, pointed, stout, keels absent. Striated zone concave; last loculus convex; sulcus **shallow, narrow**, extends entire length of cuttlebone. Anterior striae are **inverted V-shape**. Inner cone limbs are uniform width, narrow, U-shape posteriorly; thickened into a rounded, shiny ridge; outer cone calcified, narrow anteriorly, broadens posteriorly, deep cup-like. Dorsal mantle covered with numerous large papillae and with series of elongate papillae along each side, adjacent to base of each fin. Head papillose. **Colour:** Light brown, yellowish or dark brown (dark in males during courtship and breeding), with whitish mottle, blotches or spots. Arms have **longitudinal white bands on their margins** that appear as broad white blotches when the arms are extended, and arms I to III have broad, longitudinal brownish bands medially, extending onto head. Dorsal mantle has transverse saddle mark, small white and brown spots, narrow brown transverse bands, and bold, white, transverse stripes and spots dorsally (spots and blotches are present in most colour patterns; saddle-mark shown only occasionally; transverse stripes shown by males during the breeding season). In live animals, the eyes are typically yellow around the ventral margins. Fins pale with **white, transverse stripes** extending onto mantle and narrow, white, band along outer margin.

Size: Up to 500 mm mantle length and weight to 10 kg.

Geographical Distribution: Indo-Pacific: from southern Mozambique, throughout the periphery of the Indian Ocean, Malacca Strait, Melanesian Islands, South China Sea, Philippine Sea and East China Sea, Taiwan Province of China and Japan to southern Kyushu. Indonesia to northwestern and northeastern Australia (from Western Australia, Shark Bay, 25°25'S 113°35'E, across northern Australian waters to southern Great Barrier Reef, about 23°S, Queensland), the Coral Sea, Palau, Guam, New Caledonia, Fiji and Cocos (Keeling) Islands. Records from Madagascar and southeastern Australia doubtful (Fig. 149).

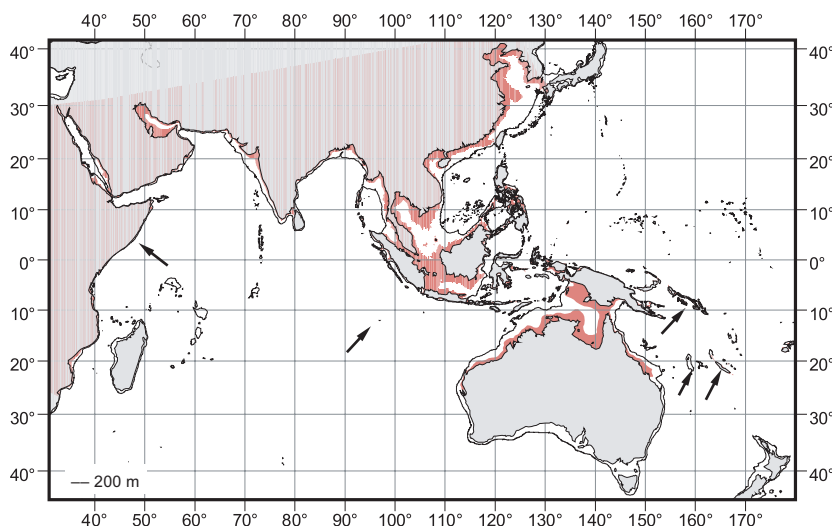


Fig. 149 *Sepia latimanus*

■ Known distribution

Habitat and Biology: Depth to 30 m, weight to 10 kg. This shallow water species inhabits tropical coral reefs.

Mating occurs on the west coast of Guam and off Okinawa in shallow water (30 m) from January to May, and the eggs hatch in 38 to 40 days. In the Alas Strait, Indonesia, males grow up to 170 mm (500 g), females 240 mm (1.3 kg) mantle length. *Sepia latimanus* is day active. During hunting it appears to mesmerize prey by displaying rhythmic colour bands along the body. It feeds on fishes and crustaceans. During the breeding season, males establish a territory, defending a coral head (typically *Porites*) among which females lay eggs following mating. Courtship is highly ritualized and stereotyped, and it incorporates striking visual displays. Males often guard females to ward off other males. Mating takes place head-to-head and spermatophores are placed in the females' buccal membrane ventral to the mouth. The eggs harden after laying and are very difficult to extract from the coral. They hatch after 4 to 6 weeks, and the young immediately hide among the coral and coral rubble. Juveniles often mimic mangrove leaves, their coloration and posture complete with the stem, ribs and scattered black spots.

Interest to Fisheries: *Sepia latimanus* is an important fisheries species throughout its range, taken by trawl, setnet, jig, handline and spear. It supports local fisheries in western Japan and the Philippines where it is caught with jigs, handlines, setnets and spears and it is common as bycatch in southeast Asian trawl fisheries. *Sepia latimanus* is fished in small quantities in the Ryukyus, China, near Taiwan Province of China and in the waters of Indo-China. In the Philippines, the large cuttlefishes, *S. pharaonis* Ehrenberg, 1831 and *S. latimanus*, are split open dorsally, the cuttlebone and viscera removed, and the animals are dried in the sun without salt.

Local Names: INDONESIA: Sotong-besar; JAPAN: Kobushime, Kubushime.

Remarks: *Sepia latimanus* probably comprises a species complex. This requires investigation, particularly considering its fisheries significance. Khromov (1996) suggests that Duc's (1978) record of *S. hercules* Pilsbry, 1894 (a junior synonym of *S. latimanus*) from Viet Nam actually is *S. pharaonis*.

Literature: Adam and Rees (1966), Okutani *et al.* (1987), Hanlon and Messenger (1996).

Sepia longipes* Sasaki, 1913*Fig. 150**

Sepia longipes Sasaki, 1913, *Doubutsugaku Zasshi* [Zoological Magazine, Tokyo] 25(292): 78 [type locality: Japan: Choshi, Ibaraki Prefecture (Chiba Peninsula)].

Frequent Synonyms: None.

Misidentifications: None.

FAO Names: **En** – Longarm cuttlefish; **Fr** – Seiche pieuvre; **Sp** – *Sepia brazolargo*.

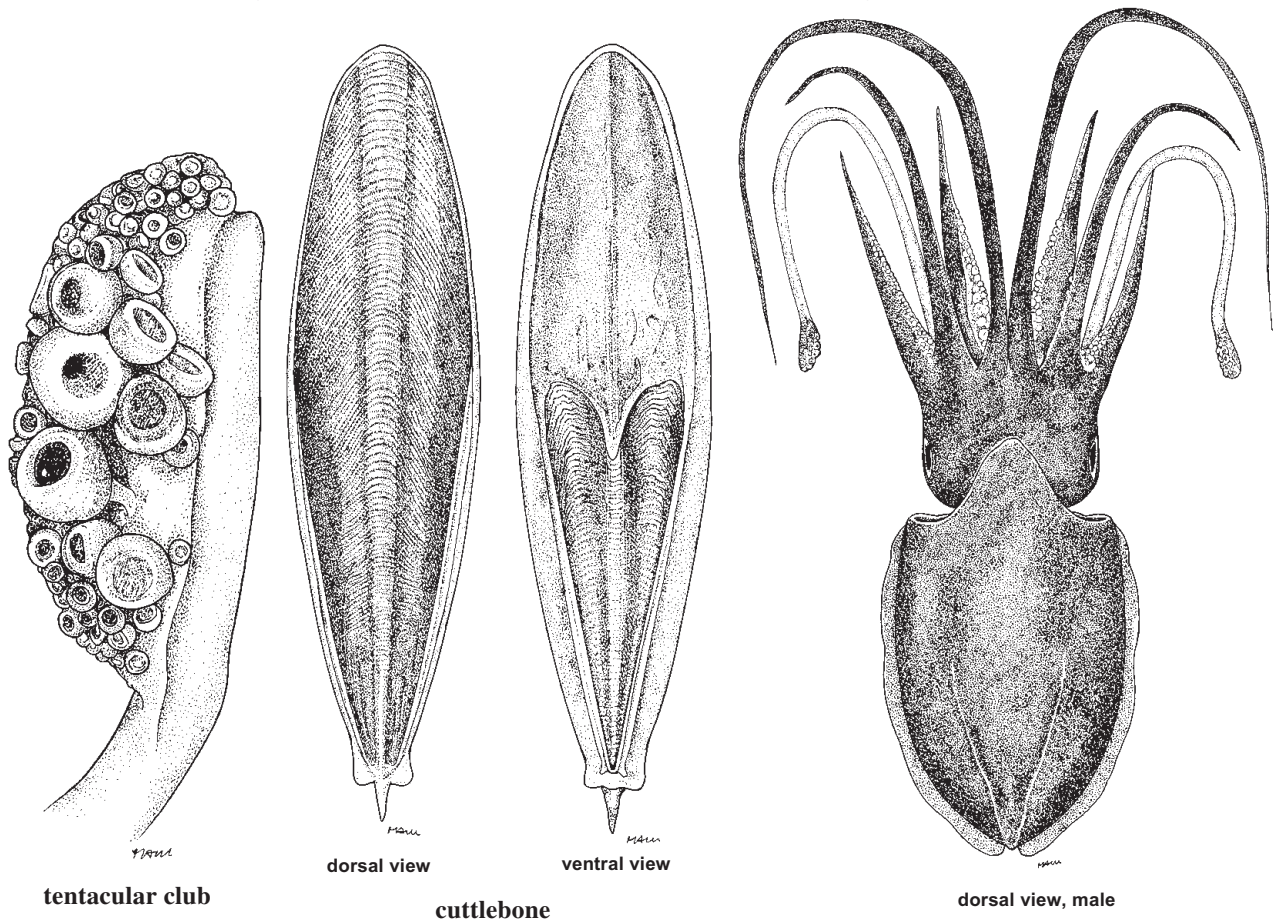


Fig. 150 *Sepia longipes*

Diagnostic Features: Dorsal anterior mantle margin triangular, acute; ventral mantle margin weakly convex. Fins wide, with very narrow gap between them. Male arms **I greatly elongate**, attenuate, whip-like, **about twice as long as other arms**, and arms II slightly elongate (relative lengths greater in large specimens); arms I with **biserial suckers on attenuated section**. Distal part of arms I thickened, bordered with long, broad trabeculae; protective membranes demarcated from proximal part by strong constriction; pedicels enlarged on distal portion of arm. Female arm lengths subequal (mostly shorter than mantle length). In males, suckers **on arms I tetraserial proximally, biserial distally, arms II to IV tetraserial**. Female arm suckers tetraserial. Sucker rings mainly smooth. Hectocotylus present; **both ventral arms modified**. Left ventral arm: sucker size normal proximally, **distal 40% of arm length with reduced suckers**; distal 40% furrowed longitudinally. Right ventral arm: **suckers reduced distally** after fourteenth row (not as much as on the left); oral surface of modified region (both ventral arms) wide, swollen, fleshy, with transversely grooved ridges. Club with **3 or 4 suckers in transverse rows**; suckers differ markedly in size: **4 or 5 greatly enlarged suckers** in longitudinal series towards posterior end of club. Cuttlebone outline **lanceolate**; bone bluntly rounded anteriorly; acuminate posteriorly; dorsal surface pinkish, granulose; dorsal median rib distinct, continuing to longitudinal groove on last loculus, rib broadens anteriorly. Spine moderate length, pointed, spindle-shape, pale pinkish. Striated zone convex, with a **high median ridge**; sulcus shallow, narrow, extends entire length of cuttlebone; **sulcus flanked by rounded ribs bordered laterally by shallow grooves**. Anterior striae **shallow m-shape**. Inner cone limbs are uniform width, narrow V-shape posteriorly; slightly raised into rounded, shiny posterior ridge; outer cone chitinous laterally, calcareous in expanded posterior part; outer cone limbs are **expanded posteriorly into 2 short 'wings'**, directed ventrally, to form a recurved cup-like structure. **Colour:** Pale brownish or purplish brown. Arms I to III have a **longitudinal orange-red pigmented stripe along their aboral surfaces**. Dorsal mantle has chromatophores concentrated medially above cuttlebone and scattered reddish spots.

Size: Up to 250 mm mantle length; 1 kg total weight.

Geographical Distribution: Northwestern Pacific: Japan, Chiba Peninsula to southern Kyushu and East China Sea (Fig. 151).

Habitat and Biology: Depth range from 100 to 300 m.

Interest to Fisheries: Occasionally trawled in southwestern Japan.

Local Names: JAPAN: Tenaga-kouika.

Remarks: This species is similar to *S. lorigera* Wülker, 1910, but differs in having a broader body, the first arm pair attenuate, whip-like and the cuttlebone with a high median ridge and a moderate spine.

Literature: Okutani *et al.* (1987).

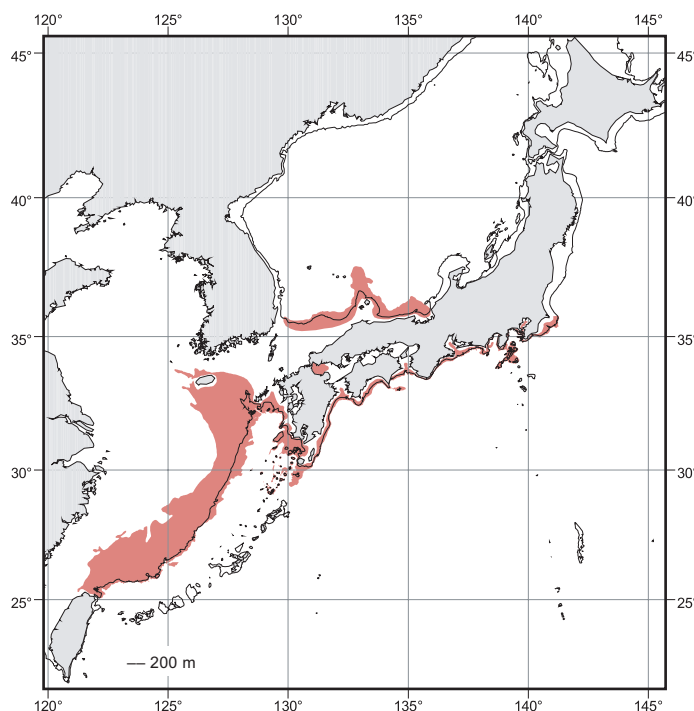


Fig. 151 *Sepia longipes*
 Known distribution

***Sepia lorigera* Wülker, 1910**

Fig. 152

Sepia lorigera Wülker, 1910, *Abhandlungen der mathematische-physikalische Klasse der Königlich Bayerischen Akademie der Wissenschaften*, 3(Suppl. 1): 12 [type locality: Japan: Misaki].

Frequent Synonyms: None.

Misidentifications: None.

FAO Names: **En** – Spider cuttlefish; **Fr** – Seiche araignée; **Sp** – *Sepia loriga*.

Diagnostic Features: Mantle oval (width about 40% of mantle length); dorsal anterior margin triangular, acute. Fins narrow, equal in width throughout. Male **arms I greatly elongate** (more than 1 1/2 times longer than mantle length, 3 times as long as other arms); arms I **narrow proximally, flared distally, protective membranes broad**; middle portion of arm I slender with enlarged protective membrane supported by trabeculae. Female arm lengths subequal. Non-hectocotylized arm sucker arrangement same in both sexes: suckers on **arms I to III tetraserial proximally, biserial at distal tips**; **arms IV suckers tetraserial** (in males, distal suckers arms I and II rudimentary, minute, on swollen pedicels). Hectocotylus present on left ventral arm: sucker size normal proximally, suckers **reduced in size on distal 1/3 and sucker pedicels swollen**. Club with 4 suckers in transverse rows; suckers **differ markedly in size**: 3 or 4 extremely large suckers surrounded by several moderately large suckers. Swimming keel of club extends proximally slightly beyond carpus. Cuttlebone **outline lanceolate**; acuminate, acute, anteriorly and posteriorly; dorsal surface pinkish; dorsal median rib indistinct, sides approximately parallel, bordered by grooves. Spine long, pointed. Anterior striae **shallow m-shape**. Inner cone limbs are uniform width, narrow, U-shape posteriorly; slightly raised into wide, V-shape, slightly thickened ridge; outer cone limbs are expanded posteriorly into 2 short 'wings', directed ventrally, to form small recurved cup-like structure. **Colour:** Reddish brown. Head with scattered red spots and chromatophores concentrated medially and over eye orbits. Arms have reddish spots. Ventral mantle pale, with **narrow longitudinal bands of brownish pigment with curved teardrop-shape ends on each side, adjacent to fins**.

Size: Up to 250 mm mantle length; 1 kg total weight.

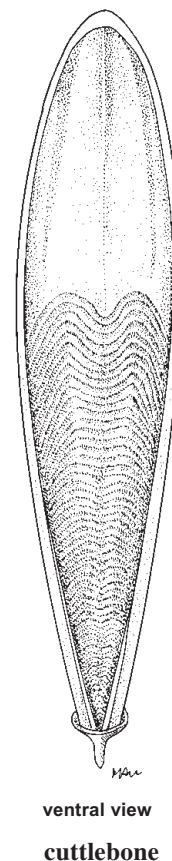


Fig. 152 *Sepia lorigera*

Geographical Distribution: Northwestern Pacific: southern and southwestern Japan from Sagami Bay to the East China Sea via the Pacific coast of Shikoku. South China Sea, Viet Nam (Fig. 153).

Habitat and Biology: Depth range from 100 to 300 m.

Interest to Fisheries: Object of minor fishery, occasionally caught by trawlers off southwestern Japan.

Local Names: JAPAN: Usubeni-kouika.

Remarks: The relative lengths of the attenuated arms increase with the size of the animal. This species is similar to the Australian species *S. tanybracheia* Reid, 2000, but in *S. tanybracheia* the dorsal arms are not as proportionally elongate and the enlarged club suckers are not as large as those of *S. lorigera*. The distinctive ventral pigment bands are not present in the Australian species.

Literature: Okutani *et al.* (1987).

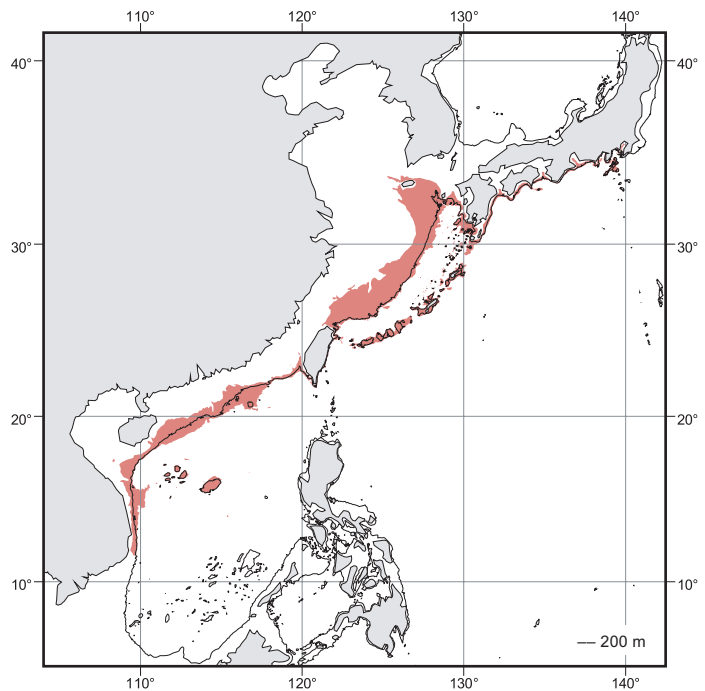


Fig. 153 *Sepia lorigera*
 Known distribution

***Sepia lycidas* Gray, 1849**

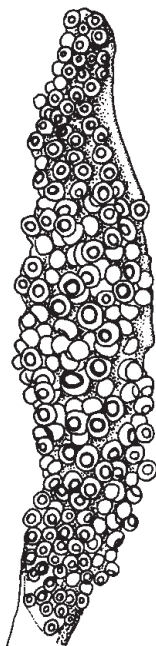
Fig. 154

Sepia lycidas Gray, 1849. *Catalogue of the Mollusca in the British Museum. Part I. Cephalopoda Antepedia*, 103 [type locality: Guangzhou (China)].

Frequent Synonyms: *Sepia subaculeata* Sasaki, 1914.

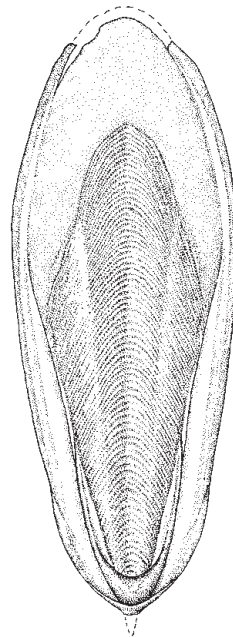
Misidentifications: None.

FAO Names: **En** – Kisslip cuttlefish; **Fr** – Seiche baisers; **Sp** – *Sepia labiada*.

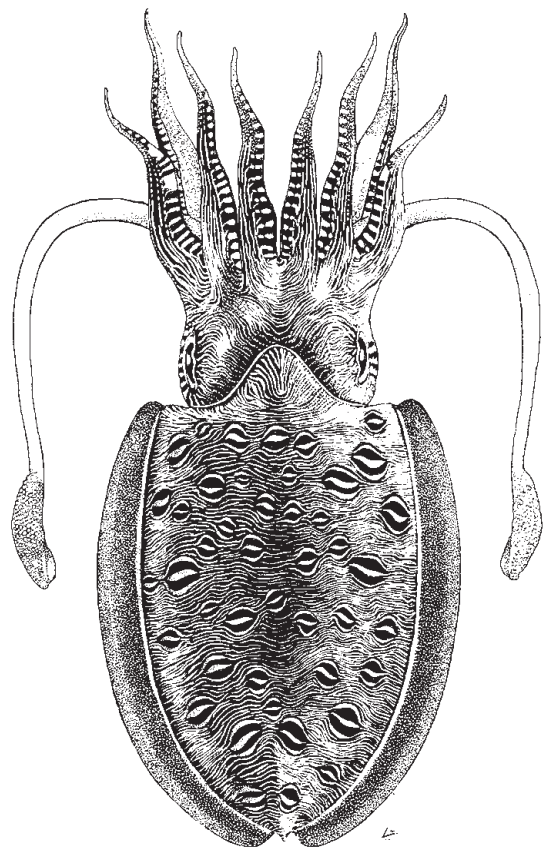


tentacular club

(after Okutani *et al.*, 1987)



ventral view
cuttlebone



dorsal view

Fig. 154 *Sepia lycidas*

Diagnostic Features: Mantle elliptical; dorsal anterior margin triangular, acute; ventral mantle margin emarginate. Fins end posteriorly in lobes, with only a small slit between them. Arm suckers tetraserial. Hectocotylus present on left ventral arm: 6 rows of normal size suckers proximally, 4 rows of reduced suckers distally. Club with **8 suckers in transverse rows** (more than 200 in number), all club suckers of similar, small size. Swimming keel of club shorter than carpus, extends from proximal 1/3 to distal tip of club. Dorsal and ventral protective **membranes not joined at base of club**, extend as membranous ridges along entire stalk. Buccal membrane with a **few, minute suckers** (single sucker on most lobes). Cuttlebone outline oblong; bone bluntly rounded anteriorly and posteriorly; dorsal surface evenly convex; dorsal median rib absent. Chitin present as wide patch posteriorly and a narrow chitinous rim borders lateral margins of cuttlebone. Spine short, pointed. Sulcus **deep, wide**. Anterior striae are **inverted V-shape**. Inner cone limbs are **thickened posteriorly, broaden into a rounded ridge**; outer cone calcified; narrow anteriorly, broadens posteriorly. **Colour:** Reddish brown or purple. Dorsal mantle has **scattered ocellate patches** and narrow, irregular, light-coloured, transverse stripes (pattern more prominent in males than females). Wide stripe adjacent to fins.

Size: Up to 380 mm mantle length. Maximum weight 5 kg.

Geographical Distribution: Indo-Pacific: southwestern Japan, south of Boso Peninsula from southern Honshu and Chingtao, Korea, to East China Sea, Taiwan Province of China and South China Sea, Philippine Sea, Viet Nam and Borneo. In the Gulf of Thailand it occurs south of 10°N, but never appears in the inner and eastern coasts. Commonly distributed in the Andaman Sea. Western limit of range unknown (Fig. 155).

Habitat and Biology: *Sepia lycidas* is a neritic demersal species with a depth range of 15 to 100 m. In the Gulf of Thailand and the Andaman Sea, most animals are caught between 20 and 40 m. The sex ratio of male to female animals caught in the Gulf of Thailand is 1:2. *Sepia lycidas* spends the winter at around 60 to 100 m, then moves into shallow waters to spawn in spring and early summer. In the South China Sea, it is abundant between 60 and 100 m depth in the prespawning period (November–February), then it migrates inshore to spawn in depths of 15 to 30 m from March to May. Immediately after laying, the eggs are shaped like hen eggs, and are amber coloured, like those of *S. esculenta* Hoyle, 1885. The egg case is pear-shaped and one of its pointed ends is bifurcated, to attach the egg to small twigs and other solid substrates. The newly hatched young individuals already show the adult benthic tendencies and bury themselves into the sand, but no schooling behaviour has been observed.

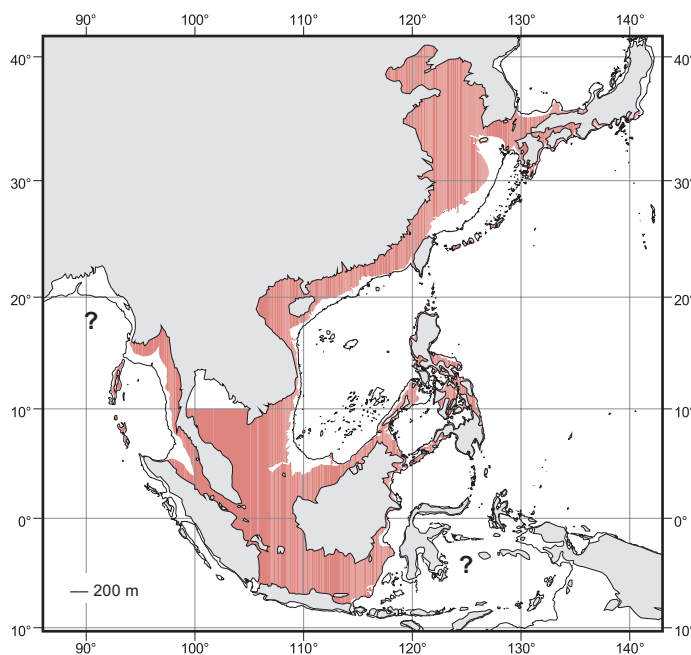


Fig. 155 *Sepia lycidas*
 Known distribution

Interest to Fisheries: *Sepia lycidas* is an important commercial species in Japan, China, South Korea, Viet Nam and Thailand. Most cuttlefishes are caught off Thailand using otter trawl, with smaller catches made using pair trawl and to a lesser extent, squid light-lures, traps and push nets; bottom otter and pair trawls are used offshore, while push nets and lift nets are used in inshore and coastal waters. This species is the secondmost important commercial cuttlefish in Hong Kong and Japan, caught as bycatch in trawls and with setnets and jigs, or by using live cuttlefishes as lures during the spawning season, and by hook, baited with live prawns or crabs, in other seasons. The mantle flesh is thick and tasty and is, therefore, highly esteemed. The species has been reared successfully in aquaculture experiments under the name *Sepia subaculeata*. Research indicates that waste materials obtained during the processing of this species have potential in supplementing the skin of land vertebrates as a source of collagen.

Local Names: CHINA: Fa gai na, Mak gung, Yi muk woo chak; JAPAN: Kaminari-ika, Mongouika.

Literature: Adam and Rees (1966), Choe (1966), Voss and Williamson (1971), Okutani *et al.* (1987), Natsukari and Tashiro (1991), Nagai *et al.* (2001).