ABSTRACT: Three genera and ten species of sepiid cuttlefishes are reported from the Gulf of Thailand and the Andaman Sea. They are: Sepiella inermis (Férussac & d’Orbigny, 1835); Metasepia tullbergi (Appellöf, 1886); Sepia pharaonis Ehrenberg, 1831; Sepia aculeata d’Orbigny, 1848; Sepia lycidas Gray, 1849; Sepia brevimana Steenstrup, 1875; Sepia recurvirostra Steenstrup, 1875; Sepia kobiensis Hoyle, 1885; Sepia arabica Massy, 1916; and Sepia prashadi Winckworth, 1936. Metasepia tullbergi, Sepia lycidas and Sepia kobiensis are restricted to the Gulf of Thailand, South China Sea while Sepia arabica and Sepia prashadi are represented only in the Andaman Sea. Diagnoses and a provisional key to the identification of these cuttlefishes are included. A discussion on recorded sepiids in Thai waters by various authors is also provided.

INTRODUCTION

The sepiids have been described in various papers dealing with Thai cephalopods. The first recorded sepiid in Thai waters was Sepia sp. (Suvatti 1938). Later, the same author added Sepia esculenta to the list of molluscs of Thailand (Suvatti 1950, 1966). Sithigornkul (1974) was the first to provide a detailed treatment of the cephalopod fauna of Thailand. He recorded 6 species while Chotiyaputta (1993) recorded 7 species of sepiids in Thai waters. An intensive investigation along the Andaman Sea coast of Thailand was carried out by Nateewathana (1996), and 7 species were reported in this area. Among these species, Sepia arabica and S. prashadi are the first records for Thai waters. Later, Nateewathana (1998) reported Metasepia tullbergi for the first time in the Gulf of Thailand.

The aim of this paper is to collate the knowledge of Sepiidae in Thai waters. It is intended to reduce the confusion facing students of this group in Thailand and to provide a better baseline for fishery scientists interested in the exploitation of this group of animals.

MATERIALS AND METHODS

Study area. Thailand is situated in the Southeast Asian peninsula extending from 5° to 21° N and 95° to 106° E with a seabed area of 420,280 km² (Gulf of Thailand 304,000 km² and the Andaman Sea 116,280 km²). The coastline extends 2,615 km (Gulf of Thailand 1,875 km and the Andaman Sea 740 km). The Gulf of Thailand is relatively shallow, with a mean depth of approximately 58 m; the deepest point is 95 m. The Andaman Sea depth is greater than 1,000 m, but fishing activities take place on the shelf at depths of less than 90 m depth. The fishing area in the Andaman Sea coast of Thailand is about 44,000 km².

Collection and identification. In the present study, most of the species collected from the Andaman Sea have been described in Nateewathana (1996, 1998) and deposited in the Phuket Marine Biological Center Reference Collection. Additional material was collected from the Gulf of Thailand. Sepiidae were obtained from fishing boats, research vessels, fish markets and fish landings along the coast. All material was fixed
in 10% neutralized formalin and subsequently transferred to 75% ethyl alcohol. The procedure for preservation and curation follows Roper & Sweeney (1983). Illustrations of the species are modified from Roper et al. (1984) and presented here only for assisting rapid identification. Full figures can be found in the original references. The specimens are deposited in the Reference Collection of Phuket Marine Biological Center, P.O. Box 60, Phuket 83000, Thailand.

A Provisional Key to the Sepiidae of Thailand

1. Glandular pore at posterior end of mantle between fins..........................Sepiella inermis
   - No glandular pore at posterior end of mantle.........................................................2
2. Two prominent ear-shaped fleshy projections present on head behind eyes...Sepia arabica
   - No such projection on head..........................................................................................3
3. Cuttlebone without posterior spine.................................................................Metasepia tullbergi
   - Cuttlebone with posterior spine................................................................................4
4. Club suckers of greatly different size.................................................................5
   - Club suckers small, subequal in size..............................................................................7
5. Shell elongate-oval, width 25–28% of shell length. 3–4 of the median suckers of the club greatly and conspicuously enlarged....................................................Sepia prashadi
   - Shell oval, wide, width 30–40% of shell length..............................................................6
6. Club protective membranes parallel in carpal part and terminating on stalk of tentacle without joining, 5–6 of the median suckers of the club greatly enlarged.....Sepia pharaonis
   - Club protective membranes fused in carpal part of club and separating sucker-carrying surface from stalk, 5–6 of the median suckers of the club slightly enlarged.................................................................Sepia recurvirostra
7. Club suckers in 10–14 oblique rows.................................................................Sepia aculeata
   - Club suckers in 8 oblique rows.................................................................................Sepia brevimana

SYSTEMATIC ACCOUNTS

Family SEPIIDAE Keferstein, 1866
(sensu Reid et al. 2005)
Fig. 1–2

Diagnostic Features: Small to medium-sized cephalopods. Mantle robust, slightly flattened dorsoventrally, may be broad or slender; oval or nearly circular in outline; anterior dorsal mantle margin projected forward, not fused with head. Fins narrow, located dorsolaterally on mantle, approximately equal to mantle length; posterior fin lobes free, not connected to each other. Head robust, slightly narrower than mantle; eyes prominent, covered by a transparent membrane and a conspicuous secondary fold on the eyelid. Mouth surrounded by 10 appendages (8 arms and 2 tentacles). Arms with 2–4 suckers in transverse rows. Males of some species with hectocotylized ventral arm(s) IV for holding and transferring spermatophores; when present, the hectocotylized area usually consists of a region of reduced suckers; hectocotylized region also may be swollen and crenulated by transverse folds. Tentacular clubs with 4 or more suckers in transverse rows; tentacles retract into pockets on the ventrolateral sides of the head between arms III and IV. Arm and club suckers with chitinous rings. Mantle-locking apparatus angular or curved in shape. Internal calcareous cuttlebone located dorsally in the mantle underneath the skin; cuttlebone length usually equal to mantle length (Metasepia being an exception); cuttlebone shape ranges from lanceolate to oval or diamond-shaped; dorsal side a calcareous plate (dorsal shield); ventral side finely laminate, porous, and comprised of thin, transverse septa supported by longitudinal and transverse calcareous pillars. One pairs of gills; no branchial canal between afferent and efferent branchial blood.
vessels. ‘Liver’ (digestive gland) divided or bilobed. Buccal membrane present, with or without suckers; each radula tooth unicuspid (with a single projection). Olfactory organ a ciliated pit.

Three genera are recognized in the Family Sepiidae. Main different characters of Sepiella and Sepia are shown in Fig. 3.

**Genus Sepiella Gray, 1849**
Posterior gland present; tentacular club with numerous subequal suckers; cuttlebone without posterior spine, outer cone expanded posteriorly.

**Genus Metasepia Hoyle, 1885**
Posterior gland absent; tentacular club with few unequal suckers; cuttlebone without posterior spine, broad, acuminate anteriorly, nearly completely chitinized (i.e. uncalcified) anteriorly, calcareous posteriorly.

**Genus Sepia Linnaeus, 1758**
Posterior gland absent; tentacular club with subequal or unequal suckers; cuttlebone with or without posterior spine, slender to broadly oval, length approximately equal to dorsal mantle length (s. str.).

Figure 1. Ventral view of basic cuttlefish features.
**Sepiella inermis** Orbigny, 1848, in Férussac & Orbigny, 1934–1848

Fig. 4

**Full description:** *Sepiella inermis* – Nateewathana 1996: 147–150, fig. 1a–s, table 2.

**Additional material examined:** PMBC 15224, 12 specimens, fish landing, Pattani province, 25 Jan 1995; PMBC 15225, 12 specimens, Pakbang Village, Sakom, Songkla province, 24 Jan 1995; PMBC 15226, 4 specimens, Muang Fish Market, Trat province, 9 March 1995.


**Diagnostic features:** Mantle elongate, oval. Fins with row of more than 7 red spots along bases. Arms stout, arms I indistinctly keeled, other arms with outer keel. Arm suckers quadriserial. Left arm IV of male hectocotylized. Medial tentacular club with minute, subequal suckers in 16–24 longitudinal rows. Cuttlebone broadly oval, ventral surface strongly convex in lateral view, dorsal surface with low median rib. Cuttlebone width 35%–45% of length. Inner cone forming thick, narrow, rounded posterior ridge. Outer cone forming semicircular, wing-like posterior portion.

**Distribution in Thailand:** Gulf of Thailand and the Andaman Sea.

**Geographical distribution:** From Persian Gulf and southern Red Sea to mouth of Zambezi River, east to eastern Indonesia and Gulf of Tonkin.

**Figure 2.** Characteristics of Cuttlebone (lateral view: sagittal section).
Figure 3. Ventral side of *Sepia* (a) and *Sepiella* (b).

Figure 4. Dorsal view (a) tentacular club (b) and ventral view of mantle (c) of *Sepiella inermis*. 
Metasepia tullbergi (Appellöf, 1886)
Fig. 5


Material examined: no additional material.

Other Records in Thailand: Reid et al. (2005).

Diagnostic Features: Mantle as broad as long; dorsal surface of mantle, head and arms rugose; ventral surface of mantle with 10 to 13 pores on each side anteriorly. Fins broad and fused posteriorly. Tentacular clubs short, crescent-shaped with a broad swimming keel extending proximally on stalk for half the club length; dorsal protective membrane broad, separated at base of club from ventral protective membrane; 4 or 5 minute suckers in transverse rows across the club, 3 or 4 suckers enlarged. Arm suckers biserial; left arm IV hectocotylized, the basal two thirds with 10 to 12 pairs of minute, widely spaced suckers, the rows separated by a transversely ridged area, distal third with 5 or 6 pairs of enlarged suckers followed by minute suckers at the tip. Shell broad, acuminated anteriorly, nearly completely chitinized anteriorly, calcareous posteriorly.

Distribution in Thailand: Gulf of Thailand.

Geographical Distribution: Western Pacific: Sea of Japan, Yellow Sea to Hong Kong and Taiwan (Province of China).

Figure 5. Dorsal view (a) and tentacular club (b) of Metasepia tullbergi.
The Sepiidae (Cephalopoda) of Thailand

*Sepia aculeata* d’Orbigny, 1848, in Férussac & Orbigny, 1934–1848

**Fig. 6**

**Full description:** *Sepia aculeata* – Nateewathana 1996: 153–156, fig. 3a–s, table 4.

**Additional material examined:** PMBC 14908, 2 specimens, Muang, fish landing, Pattani province, 16 Nov 1989; PMBC 15158, 1 specimen, Sai Ree Beach, Chumphorn province, 21 Feb 1995; PMBC 15161, 4 specimens, Muang Fish Market, Trat province, 09 March 1995; PMBC 15162, 2 specimens, Klong Son Market, Yai channel, Trat province, 09 March 1995; PMBC 15163, 9 specimens, Angsila, fish landing, Chonburi province, 17 March 1995; PMBC 15183, 4 specimens, Pakbang Village, Sakom, Songkla province, 24 Jan 1995.


**Diagnostic Features:** Mantle about half as broad as long. Tentacular club long, slender with 10 to 12 minute, subequal suckers in each row across the club in males, 13 or 14 suckers across in females; club protective membranes not united, extending proximally along oral face of stalk as low ridges. Left arm IV hectocotylized: about 12 normal suckers (3 series) proximally, followed by about 5 or 6 series of very small suckers in ventral longitudinal rows; corresponding suckers of dorsal longitudinal rows extremely minute (or absent) in a deep, smooth groove; suckers normal distally. Colour: dorsal mantle with a fine, dark-pigmented, transverse, reticulate colour pattern; a pale, reflective line along bases of fins.

**Distribution in Thailand:** Gulf of Thailand and the Andaman Sea.

**Geographical Distribution:** Indo-Pacific: southern India to South China Sea, East China Sea north to central Japan.

*Sepia arabica* Massy, 1916

**Fig. 7**

**Full description:** *Sepia arabica* – Nateewathana 1996: 165–169, fig. 7a–s; table 8.

**Material examined:** no additional material.

**Diagnostic Features:** Body elongate, narrow, bluntly pointed posteriorly, the mantle extending dorsally to level with the eyes. Two prominent ear-shaped fleshy projections present on head behind eyes. Tentacles very slender; clubs crescent-shaped with 5 or 6 suckers in transverse rows across the club, subequal in size; their dorsal protective membrane as broad as sucker-bearing surface, their swimming keel well developed, slightly longer than club. Cuttlebone long, narrow; tapered, very narrow posteriorly; spine lacking.

**Distribution in Thailand:** Restricted to the Andaman Sea.

**Geographical Distribution:** Northwestern Indian Ocean and southwest India.

*Sepia brevimana* Steenstrup, 1875

**Fig. 8**

**Full description:** *Sepia brevimana* – Nateewathana 1996: 159–162, fig. 5a–s; table 6.

**Additional material examined:** PMBC 15191, 23 specimens, fish landing, Samutprakan province, 11 March 1995; PMBC 15193, 1 specimen, fish landing, Pattani province, 25 Jan 1995.


**Diagnostic Features:** Mantle broad, its dorsal margin acuminate, strongly projecting anteriorly; posteriorly very pointed due to the long spine. Tentacular club short, with a well developed swimming keel extending proximally beyond base;
dorsal protective membrane as broad as sucker-bearing surface; suckers very small, subequal; 6 to 8 suckers in oblique transverse rows.

**Distribution in Thailand:** Gulf of Thailand and the Andaman Sea.

**Geographical Distribution:** Indo-Malayan region, along the northern coast of the Indian Ocean, from Singapore westwards probably to the west coast of India.

*Figure 6.* Dorsal view (a), tentacular club (b) and distribution map (c) of *Sepia aculeata.*
Figure 7. Dorsal view (a, after Nateewathana, 1996), cuttlebone (b) and tentacular club (c) of *Sepia arabica*.

Figure 8. Dorsal view (a) and cuttlebone (b) of *Sepia brevimana*.
*Sepia kobiensis* Hoyle, 1885

Fig. 9

**Full description:** *Sepia kobiensis* – Chotiyaputta *et al.* 1992: 40–41, fig. 13a–b.

**Material examined:** no additional material.


**Diagnostic Features:** Mantle width less than half the length. Tentacular club short, narrow; suckers small, 8 suckers in transverse rows; 5 suckers of third longitudinal row much larger than all others; swimming keel broad, extending proximally beyond base of club; dorsal protective membrane broad, half the width of sucker-bearing surface. Arms short, attenuate, subequal; arm suckers globular quadrisserial, those in median rows larger than marginal ones; left arm IV hectocotylized along distal half, with suckers greatly reduced in size and the oral surface hollowed out and transversely ridged.

**Geographical Distribution:** Western Pacific: South China Sea, East China Sea, Yellow Sea to southern and central Japan.

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*Sepia lycidas* Gray, 1849

Fig. 10

**Full description:** *Sepia lycidas* – Sithigornkul, 1974: 44–51, figs. 11–12; – Chotiyaputta *et al.* 1992: 30–31, fig. 8a–c.

**Additional material examined:** PMBC 15194, 1 specimen, Pakbang Village, Sakom, Songkla province, 24 Jan 1995; PMBC 15195, 5 specimens, fish landing, Pattani province, 25 Jan 1995.


**Diagnostic Features:** Tentacular club with well developed swimming keel extending nearly to base of club; outer keel along tentacular stalk extends along club but does not connect with swimming keel; protective membranes extending, without meeting, along entire length of stalk as membraneous ridges; 8 subequal suckers in...
transverse rows. Colour: dorsal part of mantle with vivid oval eye-like or lip-shaped markings; a white line along bases of fins.

**Distribution**: Gulf of Thailand and the Andaman Sea.

**Geographical Distribution**: Western Pacific: South China Sea, Philippine Sea and southwestern Japan.

*Sepia pharaonis* Ehrenberg, 1831

**Full description**: *Sepia pharaonis* – Nateewathana 1996: 150–153: fig. 2a–t; table 3.

**Additional material examined**: PMBC 15196, 1 specimen, fish landing, Samutprakan province, 11 March 1995.


**Diagnostic Features**: Mantle broad. Fins wide, nearly as long as mantle. Tentacular clubs moderately long; protective membranes not meeting at base; 8 suckers in transverse rows with 5 or 6 median ones (3rd and 4th in the series) quite enlarged. Left arm IV hectocotylized: basal 12 quadrirserial rows normal, next 10 rows with ventral suckers (2 rows) normal but those in dorsal 2 rows minute and separated from ventral rows by a fleshy, transversely grooved ridge. Colour: a vivid transverse tiger-stripe pattern (especially in males) on dorsal mantle and head; a narrow, light, interrupted line along bases of fins.

**Distribution in Thailand**: Gulf of Thailand and the Andaman Sea.

**Geographical Distribution**: Indo-Pacific: Red Sea, Arabian Sea to South China Sea, East China Sea and northern and northwestern Australia.

*Figure 10*. Dorsal view (a) and tentacular club (b) of *Sepia lycidas*. 
**Sepia prashadi** Winckworth, 1936

**Full description:** *Sepia prashadi* – Nateewathana 1996: 162–165, fig. 6a–s; table 7.

**Material examined:** no additional material.

**Diagnostic Features:** Fins several millimeters shorter than mantle, narrow, separate. Tentacular clubs short, broad; swimming keel broad, strong, slightly longer than the club; sucker bearing surface nearly separated from the stalk by a very deep cleft under the dorsal protective membrane; both protective membranes well developed, converging but not meeting at proximal base of club and not extending down the stalk; 8 suckers arranged in very oblique series across the club, but the arrangement is greatly distorted by the 2 or 3 enormously enlarged suckers of the 3rd longitudinal row. Left arm IV hectocotylized for most of its length after the 2nd quadriserial row; it is broad, flat, with transverse folds; suckers minute in the 2 very closely packed ventral rows, slightly larger in the dorsal rows which are separated proximally and converge distally.

**Distribution in Thailand:** the Andaman Sea.

**Geographical Distribution:** Western Indian Ocean: from southern Mozambique to the Gulf of Aden, Red Sea, Arabian Sea, Gulf of Oman, Gulf between Iran and the Arabian Peninsula, Indian west and east coasts and Sri Lanka.

**Sepia recurvirostra** Steenstrup, 1875

**Full description:** *Sepia recurvirostra* – Nateewathana 1996: 156–159, fig. 4a–s; table 5.

**Additional material examined:** PMBC 15214, 2 specimens, Klong Son Market, Yai channel, Trat province, 09 March 1995; PMBC 15219, 5 specimens, fish landing, Samutprakan province, 11 March 1995; PMBC 15220, 9 specimens, fish landing, Pattani province, 25 Jan 1995.


**Figure 11.** Dorsal view and tentacular club of *Sepia pharaonis.*
**Diagnostic Features:** Mantle broad. Tentacles large with relatively small clubs, their swimming keel extending proximally a short distance beyond the base of the club; dorsal protective membrane extending down the stalk for some distance; protective membranes fused at the proximal base; 5 or 6 suckers in transverse rows with 5 or 6 median suckers greatly enlarged; a deep cleft nearly separates the sucker bearing surface on the fenestrated dorsal protective membrane from the stalk. Left arm IV in male hectocotylized in its proximal third by suckers greatly reduced in size, especially those of the dorsal rows.

**Distribution in Thailand:** Gulf of Thailand and the Andaman Sea.

**Geographical Distribution:** Western Pacific: Andaman Sea, South China Sea, the Philippines and southern East China Sea.

**Figure 12.** Dorsal view (a) and tentacular club (b) of *Sepia prashadi*.

**Figure 13.** Dorsal view (a), tentacular club (b) and cuttlebones (c) of *Sepia recurvirostra*. 
DISCUSSIONS

Although, at the present time, the status and understanding of the systematics and classification of the recent Cephalopoda are under considerable discussion, the families of living cephalopods are, for the most part, well resolved and relatively well accepted (Jereb et al. 2005). The Family Sepiidae has been considered in different suprafamilial classifications of living coleoid cephalopods. It is placed, respectively, in the Order Sepioidea (Roper et al. 1984; Clarke, 1988; Young et al. 1998); in the Suborder Sepiina (Engeser and Bandel, 1988); in the Order Sepiida (Sweeney and Roper, 1998; Boletzky, 1999); and in the Order Uniductia (Haas, 2002). The higher classification above the family level is controversial and a broad consensus still needs to be achieved. Consequently, rather than accept and promote any particular scheme of classification, before consensus and stability are achieved, the present report will consider the group as Cuttlefish.

The traditional group of “sepioid” Cuttlefishes included 5 families i.e. the Sepiidae, the Sepiolidae, the Sepiadariidae, the Idiosepiidae and the Spirulidae.

Keferstein (1866) is recognized as an authority of the family Sepiidae. The type genus is Sepia Linnaeus (1758). The three genera recognized in the family are Sepia Linnaeus (1758) Sepiella Gray, 1849, and Metasepia Hoyle, 1885. Khromov et al. (1998) provide an overview of diagnostic features and distribution data for the clarification of sepid systematic and biogeography. For the genus Sepia, they considered the following subdivision into species complexes (rather than subgenera) viz.

1) Sepia species complex: in the present study it consists of one species, i.e. Sepia (Sepia) pharaonis Ehrenberg, 1831.

2) Acanthosepion species complex: in the present study it consists of five species, i.e. Sepia (Acanthosepion) aculeata Férussac & d’Orbigny, 1835; Sepia (Acanthosepion) brevimana Steenstrup,1875; Sepia (Acanthosepion) lyridas Gray, 1849; Sepia (Acanthosepion) prashadi Winckworth, 1936; Sepia (Acanthosepion) recurvirostra Steenstrup, 1875.

3) Rhombosepion species complex.

4) Anomalosepia species complex.

5) Doratosepion species complex: in the present study it consists of two species, i.e. Sepia (Doratosepion) arabica Massy, 1916; Sepia (Doratosepion) kochi Hoyle, 1885.

6) Hemisepia species complex.

The species complexes are considered in a typological fashion similar to the phenetic approach.

Cuttlefishes of the family Sepiidae possess about 120 species in the World Ocean. There are 59 species distributed in the Indian and the Pacific Ocean. Only 8 species are distributed throughout this region, 24 species from the Indian Ocean to the Red Sea, 9 species from New Guinea to Malaysia, and 18 species from Japan to China (Sugiyama, 1989).

There are only 10 species occurring in Thai waters, both in the Gulf of Thailand and the Andaman Sea, as shown in the present study. Of these, 5 species are distributed in the two ocean basins, viz. Sepiella inermis; Sepia pharaonis; Sepia aculeata; Sepia brevimana and Sepia recurvirostra. Three species, Metasepia tullbergi, Sepia lyridas and Sepia kochi are restricted to the Gulf of Thailand, South China Sea while two species, Sepia arabica and Sepia prashadi are represented only in the Andaman Sea. However, during collecting the specimens described in the present study, no specimens of Sepia lyridas were collected on the Andaman coast, as was formerly noted in the study of Chantawong and Suksawat (1997). The species has been reported in the Andaman Sea by other authors, i.e. Chotiyaputta (1993), Reid et al. (2005). These authors stated that S. lyridas is commonly distributed in the Andaman Sea, but in the Gulf of Thailand it occurs south of latitude 10° N and never appears in the inner and eastern coast of the Gulf. These results support similar findings described in resource surveys conducted in the Upper Gulf of Thailand (Jindalikit and Sereeruk, 2005).

According to Nabhitabhata (2008), there are three more recorded species of the sepiids in Thai waters. They are:

– Broadclub cuttlefish, Sepia latimanus Quoy & Gaimard, 1832 was recorded both in the
Gulf of Thailand and the Andaman Sea by Roper et al. (1984), Okutani (1995), Reid (1998), and Reid et al. (2005).

– Golden cuttlefish, Sepia esculenta Hoyle, 1885 was recorded both in the Gulf of Thailand and the Andaman Sea by Suvatti (1966), Filippova et al. (1997), and Khromov et al. (1998). Recently, Reid et al. (2005) has pointed out that the geographical distribution of the species is known in the Indo-Pacific region. It is distributed from the East China Sea (Sea of Japan), south to China and Hong Kong, Taiwan (Province of China), South China Sea (north of central Philippines), Vietnam and possibly Singapore and western Indonesia. The southernmost extent of this range is yet to be determined.

– Starry cuttlefish, Sepia stellifera Homenko & Khromov, 1984 was recorded in the Gulf of Thailand by Filippova et al. (1997), Khromov et al. (1998), Reid (1998) and Reid et al. (2005).

Cuttlefishes are an economically important marine species throughout their respective ranges. A large number of the species are exploited, from the Indian Ocean to the Pacific. The combined catch of exploited cuttlefishes made up about 12 to 16% of total cephalopod catches in the last 10 years, roughly fluctuating between 300,000 and over 500,000 metric tons. The most important genus exploited is Sepia (Reid et al. 2005). In Thailand, the following 5 species of the cuttlefishes are commercially exploited: Sepiella inermis; Sepia pharaonis; Sepia aculeata; Sepia brevimana and Sepia recurvirostra. The remainder constitute a minor portion of the fishing products of Thailand.

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REFERENCES


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