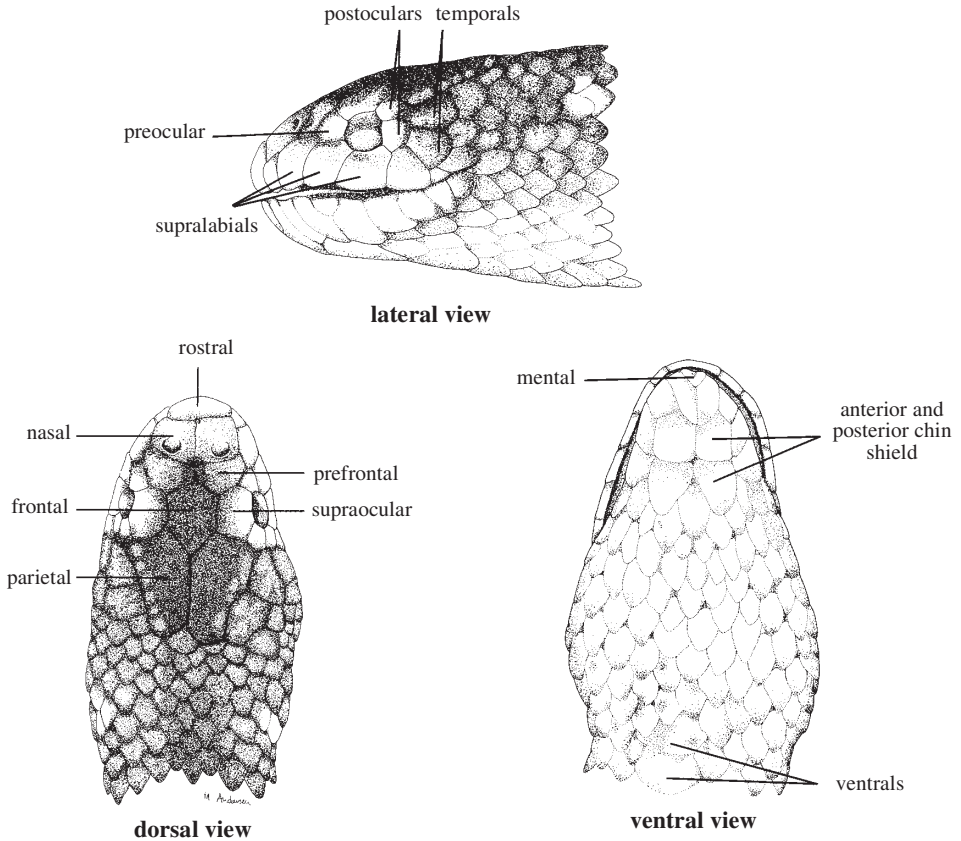


# SEA SNAKES

by A.R. Rasmussen

## TECHNICAL TERMS



## GENERAL REMARKS

Sea snakes occur in the tropical and subtropical waters of the Indian and Pacific oceans from the east coast of Africa to the Gulf of Panama. Most species are found in the Indo-Malayan Archipelago, China seas, Indonesia, and the Australian region. They inhabit shallow waters along coasts and around islands, river mouths, and ascend into rivers up to more than 100 miles from the sea. They have also been found in lakes in Thailand, Cambodia, the Philippines, and Rennell Island (Smith, 1926; Dunson, 1975; Alcalá, 1986; Ineich, 1996; pers. observ.). There is considerable variation in the number of species and species composition reported from the Western Central Pacific and precise information on geographical distribution for many species is still lacking. Most species feed on fish, a few prefer fish eggs, and a single species takes crustaceans and molluscs (Voris, 1972; Voris and Voris, 1983; McCosker in Dunson, 1975; Rasmussen, 1989, 1993). The genus *Laticauda* is oviparous (egg-laying) while all other sea snakes are viviparous (livebearing).

The most typical feature of a sea snake is the **vertically flattened paddle-like tail**, which is absent in all other aquatic or terrestrial snakes. However, the taxonomic status of "sea snakes" is still under review and there is no general agreement at the moment. Traditionally, sea snakes have been regarded as belonging to a single family, Hydrophiidae, with *Laticauda* as the most primitive genus. However, some experts consider that the Laticaudinae and Hydrophiinae evolved from different terrestrial representatives of the family Elapidae. Even more confusingly, some results indicate that the Hydrophiinae can be separated into 2 quite different groups, indicating that sea snakes may have evolved 3 times from terrestrial elapids (Rasmussen, 1997). On a higher taxonomic level, all sea snakes are most closely related to terrestrial

elapids, which include some of the most poisonous snakes of the world (e.g. brown snakes, taipan, death adder, cobra, Krait, mambas). Sea snakes (or aquatic elapids) and terrestrial elapids are both named "proteroglyphous snakes" because of the position of the poison-fangs in front of the upper jaw (maxillary bone).

Sea snake bite is the cause of fatalities in the Western Central Pacific. Typical victims are fishermen handling gape nets, sorting fish on a trawler, or dragging a net while wading in muddy coastal waters or river mouths. Some sea snakes are gentle, inoffensive creatures which bite only when provoked, but other species are much more aggressive (e.g. *Aipysurus laevis*, *Astrotia stokesii*, *Enhydrina schistosa*, *Hydrophis ornatus*) (Guinea, 1994; Heatwole and Cogger, 1994; Toriba, 1994; Warrell, 1994; pers. observ.). Even though sea snakes rarely inject much of their venom, so that frequently no or only trivial severity of poisoning is recognizable, all sea snakes should be handled with great caution. If a snake bite has occurred, the following first-aid procedures are recommended: if the bite is on an arm or leg, a broad crepe bandage (or material of similar type) should be wrapped immediately around the area of the bite. The bandage must be very tight and extended over the entire arm or leg. Then a splint should be used to immobilize the arm or leg and hospital treatment must be sought as quick as possible. If the bite is on the body, firmly press the area of the bite and look for hospital treatment immediately.

Sea snakes are exploited for their skin, organs, and meat. Although some species are taken in great numbers (e.g. *Laticauda* spp., *Lapemis* spp., and some *Hydrophis* spp.), they are not protected by CITES (Washington convention). Since 1934, meat and skin of sea snakes have been used commercially in the Philippines (Dunson, 1975) and local protection of sea snakes became necessary to avoid overexploitation. Sea snakes are also exploited in Australia, Japan, Taiwan Province of China, Thailand, and Viet Nam (Dunson, 1975; Warrell, 1994; Tim Ward, pers. comm., 1993; pers. observ.). The local government in Queensland, Australia has introduced a special licence to collect sea snakes. However, most sea-snake fisheries in the Indian and Pacific oceans have not been reported in the literature and are not controlled by local governments. With the exception of the Philippines, the impact of exploitation on populations of sea snakes is almost unknown and some populations may already be in danger of extinction. Monitoring and control of the commercial catch is the only way to maintain a sustainable yield, giving local governments a chance to intervene before a catastrophic collapse of local populations occurs. However, management of sea-snake fisheries and protection of the endangered species is not possible without a basic knowledge of the group and the ability to identify to the species level. It is the purpose of the present contribution to provide a tool for correct identification of sea snakes in the Western Central Pacific. Nonetheless, the following identification keys must be regarded as tentative, due to the lack of distribution data from many regions and because there is no general agreement on the validity of certain species.

The system of genera and species recognized here follows Golay et al. (1993), modified by Rasmussen (1994, 1997), Rasmussen and Smith (1997), David and Ineich (1999), and Rasmussen and Ineich (2000). Of the 54 taxa recognized in the Western Central Pacific only 21 are included in the species accounts; the author has personally examined specimens of all these species. Data used in the keys and species accounts, other than those based on personal observation, are taken from studies given below in the list of references.

## KEYS TO THE SEA SNAKES OCCURRING IN THE AREA

(drawings by M. Andersen)

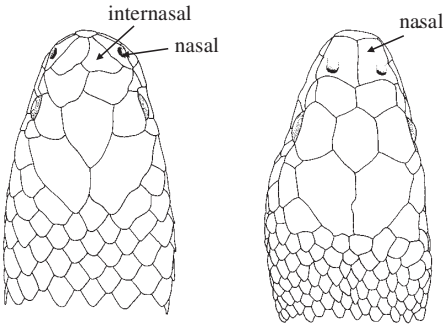
Identification of sea snakes to the species level is very difficult. The genus *Hydrophis* especially shows wide interspecific variation which makes it difficult to exclusively use external characters for identification. For the separation of genera, only characters that are visible without using a microscope are included in the keys. The shields on the head and the number of scale rows around the body are particularly important, as well as the shape of head, the size and number of ventral scales, and the position of the maxillary bone.

When **counting scale rows around the neck and body** it is important to remember that the count around the neck is a minimum count, while the count around the body is a maximum count. To be sure of the minimum count around the neck it is necessary to count the scale rows 3 or 4 times, starting 1 ½ head lengths behind the head and then 2, 2 ½, and 3 head lengths behind the head. When counting scale rows around the body the maximum count is normally found just behind the midbody. However, to be sure of the precise maximum count it is helpful to count 3 or 4 times between midbody and anus. All scale rows are counted in a straight line around the body, starting at a ventral and counting each scale along this line. The ventral is not included in the scale-row count.

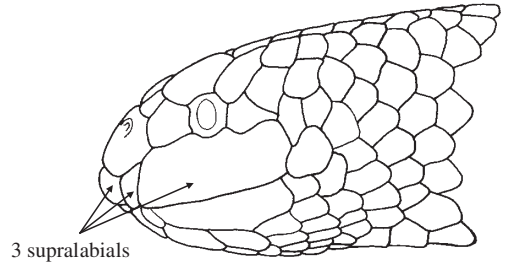
In the key to species of *Hydrophis* it was necessary to include the **count of maxillary teeth** behind the poison-fangs. Use a needle to push the gum around the teeth to above the maxillary bone and keep the gum in this position by fixing the needle at the roof of mouth (sometimes it is necessary to use 2 needles). A microscope is required to count the maxillary teeth.

**Key to the genera of sea snakes occurring in the area**

- 1a. At least 73 scale rows around body . . . . . *Kolpophis*  
(a single species, *K. annandalei*)
- 1b. Less than 73 scale rows around body . . . . . → 2
- 2a. Rostral shield broken up into 4 or 5 pieces, head shields with thickened edges . . . . . *Thalassophis*  
(a single species, *T. anomalus*)
- 2b. Rostral shield single . . . . . → 3
- 3a. Nasals separated by internasals (Fig. 1a) . . . . . *Laticauda*
- 3b. Nasals not separated by internasals (Fig. 1b) . . . . . → 4
- 4a. Three supralabials, the second very elongate (Fig. 2) . . . . . *Emydocephalus*  
(a single species, *E. annulatus*)
- 4b. More than 4 supralabials . . . . . → 5

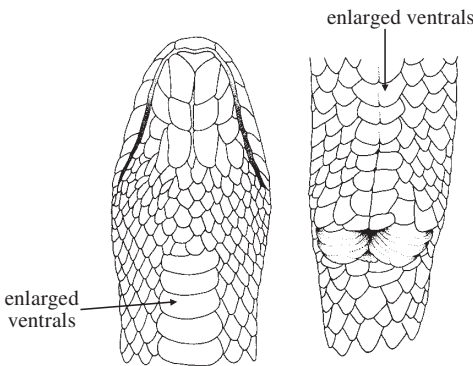


a) *Laticauda laticaudata*    b) *Hydrophis ornatus*  
**Fig. 1 dorsal view of head**

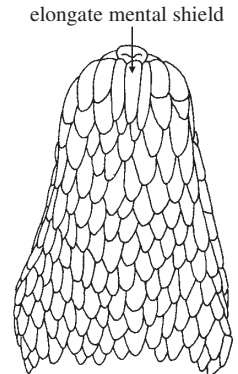


lateral view of head  
**Fig. 2 *Emydocephalus annulatus***

- 5a. Ventrals much broader anteriorly than posteriorly (Fig. 3) . . . . . *Thalassophina*  
(a single species, *T. viperina*)
- 5b. Ventrals, if distinct, not much broader anteriorly than posteriorly. . . . . → 6
- 6a. Elongate mental shield several times longer than broad (Fig. 4) . . . . . *Enhydrina*  
(2 species occurring in the area; no key to species included here)
- 6b. Mental shield not much longer than broad . . . . . → 7



ventral view of head and anal region  
**Fig. 3 *Thalassophina viperina***



ventral view of head  
**Fig. 4 *Enhydrina schistosa***

7a. Head elongate; snout bill-like and flattened; gap of mouth very wide (Fig. 5); normal colour pattern with yellow on ventral side and black on dorsal side . . . . . *Pelamis*  
(a single species, *P. platurus*)

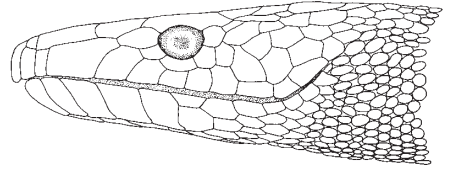
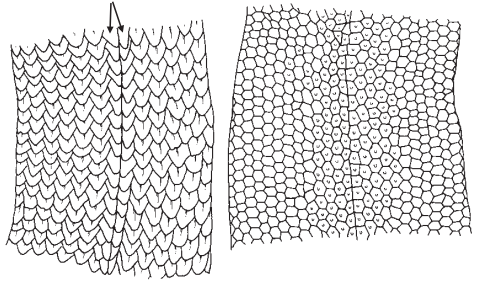


Fig. 5 *Pelamis platurus*

7b. Colour pattern never with yellow on ventral side and black dorsal . . . . . → 8

8a. Ventrals (except on throat) divided into pairs of overlapping scales (Fig. 6a). . . . . *Astrotia*  
(a single species, *A. stokesii*)

ventrals in pairs of overlapping scales



a) *Astrotia skokesii*      b) *Hydrophis gracilis*

Fig. 6 ventral view of midbody (detail)

8b. Ventrals usually entire (except *H. gracilis* Fig. 6b) or difficult to distinguish . . . . . → 9

9a. Spines on rear edge of some head shields . . . . . *Acalyptophis*  
(a single species, *A. peronii*)

9b. No spines on head shields . . . . . → 10

10a. No preocular scale, prefrontal bordering eye . . . . . *Hydrelaps*  
(a single species, *H. darwiniensis*)

10b. Preocular scales present . . . . . → 11

11a. Ventrals very small and difficult to distinguish; scales in lowermost scale rows on flanks enlarged compared to dorsal scales (Fig. 7) . . . . . *Lapemis*  
(a single species, *L. curtus*)

11b. Ventrals distinct throughout and lowermost scale rows on flanks not enlarged compared to dorsal scales . . . . . → 12

12a. Large ventrals, each at least 3 times as broad as adjacent body scales . . . . . → 13

12b. Small ventrals, each not more than 2 times as broad as adjacent body scales . . . . . → 15

13a. At least 28 scale rows around body . . *Parahydrophis*  
(a single species, *P. mertonii*)

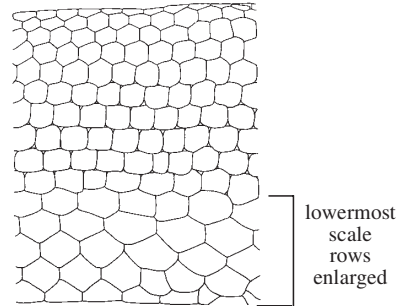
13b. Less than 28 scale rows around body . . . . . → 14

14a. Maxillary bone not extending forwards as far as palatine (Fig. 8a) . . . *Ephalophis*  
(a single species, *E. greyi*)

14b. Maxillary bone and palatine straight, or maxillary bone reaching beyond palatine (Fig. 8b) . . . . . *Aipysurus*

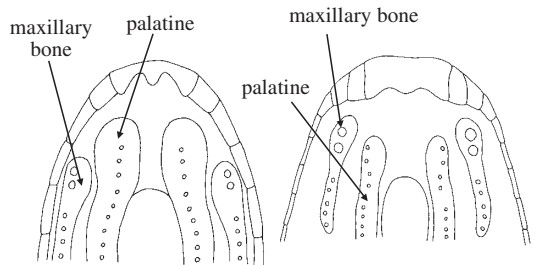
15a. Less than 24 scale rows around body . . . *Kerilia*  
(a single species, *K. jerdoni*)

15b. At least 24 scale rows around body . . *Hydrophis*



lateral view of midbody

Fig. 7 *Lapemis curtus*



a) *Ephalophis*      b) *Aipysurus*

Fig. 8 roof of mouth



- 6a. At least 37 scale rows around neck . . . . . → 7
- 6b. Less than 37 scale rows around neck . . . . . → 8
  
- 7a. Dorsal part of body with rounded bands anteriorly, the interspaces more than 2 scales wide; less than 42 bands on body and tail . . . . . *Hydrophis lamberti*
- 7b. Dorsal part of body with parallel bands anteriorly and normally the interspaces 2 or less scales wide, and/or 42 bands or more on body and tail . . . . . → 8
  
- 8a. Less than 275 ventrals; more than 29 scale rows around neck . . . . . → 9
- 8b. Ventrals 275 or more, and/or 29 or less scale rows around neck . . . . . → 10
  
- 9a. Less than 38 bands on body and tail; less than 10 maxillary teeth behind the poison-fangs. . . . . *Hydrophis major*
- 9b. Bands on body 38 or more, and/or 10 or more maxillary teeth behind the poison fangs . . . . . → 10
  
- 10a. Less than 280 ventrals; more than 36 scale rows around body . . . . . → 11
- 10b. Ventrals 280 or more, and/or 36 or less scale rows around body . . . . . → 12
  
- 11a. Less than 30 scale rows around neck; sides of body with 2 or 3 series of spots or dark-edged markings; head very small; body compressed posteriorly . . . . . *Hydrophis macdowellii*
- 11b. Scale rows around neck 30 or more, and/or body without 2 or 3 series of spots or dark-edged markings . . . . . → 12
  
- 12a. More than 49 scale rows around body; less than 8 maxillary teeth behind the poison fangs. . . . . → 13
- 12b. Scale rows around body 49 or less, and/or 8 or more maxillary teeth behind the poison fangs. . . . . → 14
  
- 13a. Number of ventrals between 280 and 330; 1 or 2 rows of regular black pentagonal markings on side of body. . . . . *Hydrophis czelbukovi*
- 13b. Number of ventrals less than 280 or more than 330; no rows of regular black pentagonal markings on side of body . . . . . → 14
  
- 14a. At least 9 maxillary teeth behind the poison-fangs . . . . . → 15
- 14b. Less than 9 maxillary teeth behind the poison-fangs . . . . . → 19
  
- 15a. More than 27 scale rows around neck; more than 1 postocular . . . . . → 16
- 15b. Scale rows around neck 27 or less, and/or only 1 postocular . . . . . → 19
  
- 16a. Body grey above, white below . . . . . *Hydrophis inornatus*
- 16b. Body with bands . . . . . → 17
  
- 17a. Body either with bands behind head parallel in upper parts and tail with 6 to 11 grey bands and narrow whitish interspaces, or body with ocellus on sides . . . . . *Hydrophis ornatus ornatus, H. o. ocellatus*
- 17b. Bands not parallel behind head, and/or tail with less than 6 bands . . . . . → 18
  
- 18a. Body with blackish grey bands strongly dilated dorsally; tail with 3 to 5 weak bands, tip black, no ocellus on flank . . . . . *Hydrophis lapemoides*
- 18b. Bands not strongly dilated dorsally, and/or bands on tail not weak . . . . . → 19

- 19a.** More than 400 ventrals . . . . . → **20**
- 19b.** Less than 400 ventrals . . . . . → **21**
- 20a.** More than 47 scale rows around body; head very small and black, neck long and narrow  
. . . . . *Hydrophis fasciatus*  
(west of Singapore)
- 20b.** Scale rows around body 47 or less, and/or head with lighter markings . . . . . → **21**
- 21a.** More than 340 ventrals; more than 36 scale rows around body . . . . . → **22**
- 21b.** Ventrals 340 or less, and/or 36 or less scale rows around body . . . . . → **23**
- 22a.** Transverse series of small spots between bands dorsally; rounded or oval spots on sides  
and ventrally . . . . . *Hydrophis elegans*
- 22b.** No small spots between bands on body . . . . . → **23**
- 23a.** Less than 325 ventrals; less than 42 bands on body and tail; bands on posterior end as  
broad as or broader than interspaces dorsally . . . . . *Hydrophis coggeri*
- 23b.** Ventrals 325 or more, and/or 42 or more bands on body . . . . . → **24**
- 24a.** Head small, not more than 8 mm wide; neck long and narrow, posterior part of body more  
than 2 times the neck . . . . . → **25**
- 24b.** Head big, at least 8 mm wide, or head and body of same width . . . . . → **32**
- 25a.** Less than 25 scale rows around neck; ventrals 320 to 360; at least 70 bands on body  
and tail . . . . . *Hydrophis vorisi*
- 25b.** Scale rows around neck 25 or more, and/or less than 320 ventrals or more than 360  
ventrals and/or less than 70 bands on body and tail . . . . . → **26**
- 26a.** More than 6 maxillary teeth behind the poison fangs; more than 28 scale rows around  
neck . . . . . *Hydrophis torquatus*
- 26b.** Maxillary teeth behind the poison fangs 6 or less, and/or 28 or less scale rows around  
neck . . . . . → **27**
- 27a.** Less than 360 ventrals; more than 5 maxillary teeth behind the poison fangs . . . . . → **28**
- 27b.** Ventrals 360 or more, and/or 5 or less maxillary teeth behind poison fangs. . . . . → **30**
- 28a.** Less than 42 scale rows around body; primary colour yellow with black or dark bands . . . . . → **29**
- 28b.** Scale rows around body 42 or more, and/or primary colour not yellow . . . . . → **30**
- 29a.** Normally a single supralabial in contact with eye . . . . . *Hydrophis belcheri*  
(Gulf of Thailand, Viet Nam, Indonesia, and New Guinea)
- 29b.** Normally more than 1 supralabial in contact with eye . . . . . *Hydrophis melanocephalus*  
(Philippines)
- 30a.** Scale rows around neck and body 25 to 30 and 39 to 49, respectively; ventrals 320 to  
455, head black and normally without white-yellow markings dorsally . . . . . *Hydrophis atriceps*
- 30b.** Scale rows around neck and body 23 to 27 and 31 to 39, respectively; ventrals 360 to  
413; head blackish to olivaceous, sometimes with an indistinct horseshoe-shaped mark  
dorsally . . . . . *Hydrophis klossi*
- 30c.** Scale rows around neck and body 25 to 31 and 37 to 45, respectively; ventrals 328 to  
414; head blackish and normally with a curved yellow mark extending across snout and  
backwards along side of head . . . . . *Hydrophis brookii*



- 31a.** Less than 37 scale rows around body; less than 28 scale rows around neck . . . . . → 32
- 31b.** Scale rows around body 37 or more, and/or 28 or more scale rows around neck. . . . . → 33
- 32a.** At least 52 bands on body and tail; bands dorsally broader than interspaces . . . *Hydrophis belcheri*
- 32b.** Less than 52 bands on body, and/or bands dorsally as broad as, or narrower than interspaces . . . . . → 34
- 33a.** At least 7 maxillary teeth behind the poison-fangs; head with a yellow horseshoe-shaped mark above; more than 50 bands on body and tail . . . . . *Hydrophis torquatus*
- 33b.** Less than 7 maxillary teeth behind the poison fangs, and/or 50 or less bands on body and tail . . . . . → 34
- 34a.** Interspaces between bands 2 to 4 times broader than bands posteriorly, primary colour yellow, bands black . . . . . *Hydrophis spiralis*
- 34b.** Interspaces between bands narrower than bands posteriorly, primary colour yellow-white, bands black bluish . . . . . *Hydrophis cyanocinctus*, *Hydrophis pacificus*
- 34c.** Black bands on body broader than white bands, primary colour black-white . *Hydrophis melanosoma*

#### Key to the species of *Laticauda* occurring in the area

- 1a.** Upper lip yellow . . . . . *Laticauda colubrina*
- 1b.** Upper lip dark brown or black . . . . . → 2
- 2a.** Rostral not divided . . . . . → 3
- 2b.** Rostral divided horizontally . . . . . → 4
- 3a.** More than 215 ventral scales . . . . . *Laticauda laticaudata*
- 3b.** Less than 215 ventral scales . . . . . *Laticauda crockeri*
- 4a.** Less than 198 ventral scales; less than 32 bands on body . . . . . *Laticauda schistorhynchus*  
(New Guinea, Melanesia, and Polynesia)
- 4b.** More than 195 ventral scales; more than 29 bands on body . . . . . *Laticauda semifasciata*  
(Philippines, China, Taiwan Province of China, and Japan)

### LIST OF SPECIES OCCURRING IN THE AREA

The symbol  $\mathcal{W}$  is given when species accounts are included.

#### Family ELAPIDAE

##### Subfamily HYDROPHIINAE

- $\mathcal{W}$  *Acalyptophis peronii* (Duméril, 1853)
- Aipysurus apraefrontalis* Smith, 1926
- Aipysurus duboisii* Bavay, 1869
- $\mathcal{W}$  *Aipysurus eydouxii* (Gray, 1849)
- Aipysurus foliosquama* Smith, 1926
- $\mathcal{W}$  *Aipysurus fuscus* (Tschudi, 1837)
- $\mathcal{W}$  *Aipysurus laevis* Lacepède, 1804
- Aipysurus tenuis* Lønnberg and Andersson, 1913

- ʘ *Astrotia stokesii* (Gray, 1846)  
 ʘ *Emydocephalus annulatus* Krefft, 1869  
 ʘ *Enhydrina schistosa* (Daudin, 1803)  
   *Enhydrina zweifeli* Kharin, 1985  
   *Ephalophis greyi* Smith, 1931  
   *Hydrelaps darwiniensis* Boulenger, 1896  
 ʘ *Hydrophis atriceps* Günther, 1864  
   *Hydrophis belcheri* (Gray, 1849)  
   *Hydrophis brookii* Günther, 1872  
   *Hydrophis caeruleus* (Shaw, 1802)  
 ʘ *Hydrophis coggeri* (Kharin, 1984)  
 ʘ *Hydrophis cyanocinctus* Daudin, 1803  
   *Hydrophis czeblukovi* (Kharin, 1984)  
 ʘ *Hydrophis elegans* (Gray, 1842)  
   *Hydrophis fasciatus* (Schneider, 1799)  
   *Hydrophis gracilis* (Shaw, 1802)  
   *Hydrophis inornatus* (Gray, 1849)  
 ʘ *Hydrophis kingii* (Boulenger, 1896)  
   *Hydrophis klossi* Boulenger, 1912  
   *Hydrophis laboutei* Rasmussen and Ineich, 2000 (not included in the key)  
   *Hydrophis lapemoides* (Gray, 1849)  
 ʘ *Hydrophis lamberti* Smith, 1917  
   *Hydrophis macdowellii* Kharin, 1983  
 ʘ *Hydrophis major* (Shaw, 1802)  
   *Hydrophis melanocephalus* Gray, 1849  
   *Hydrophis melanosoma* Günther, 1864  
 ʘ *Hydrophis ornatus ornatus* (Gray, 1942)  
   *Hydrophis ornatus ocellatus* (Gray, 1849)  
   *Hydrophis pacificus* Boulenger, 1896  
   *Hydrophis parviceps* Smith, 1935  
   *Hydrophis semperi* Garman, 1881  
 ʘ *Hydrophis spiralis* (Shaw, 1802)  
   *Hydrophis torquatus* Günther, 1864  
   *Hydrophis vorisi* Kharin, 1984  
 ʘ *Kerilia jerdoni* Gray, 1849  
   *Kolpophis annandalei* (Laidlaw, 1901)  
 ʘ *Lapemis curtus* (Shaw, 1802)  
   *Parahydrophis mertoni* (Roux, 1910)  
 ʘ *Pelamis platurus* (Linnaeus, 1766)  
 ʘ *Thalassophina viperina* (Schmidt, 1852)  
   *Thalassophis anomalus* Schmidt, 1852

#### Subfamily LATICAUDINAE

- Laticauda colubrina* (Schneider, 1799)  
   *Laticauda crockeri* Slevin, 1934  
 ʘ *Laticauda laticaudata* (Linnaeus, 1758)  
   *Laticauda schistorhynchus* (Günther, 1874)  
   *Laticauda semifasciata* (Reinwardt in Schlegel, 1837)

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Class REPTILIA

Order SQUAMATA

Suborder SERPENTES

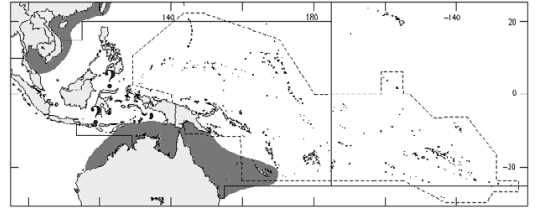
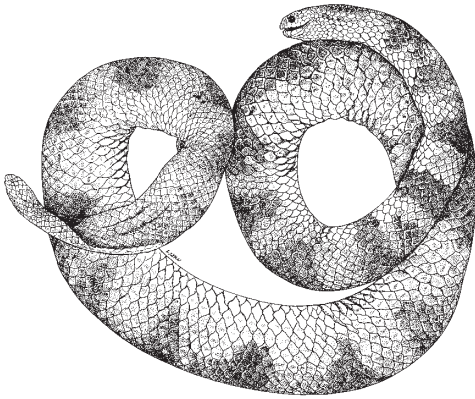
ELAPIDAE

HYDROPHIINAE

*Acalyptophis peronii* (Duméril, 1853)

**En** - Peron's sea snake; **Fr** - Acalypte de Péron.

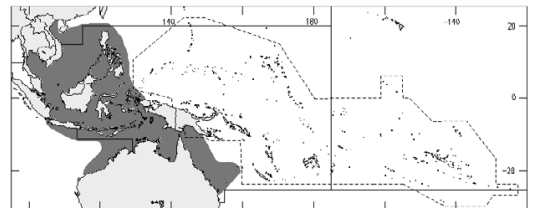
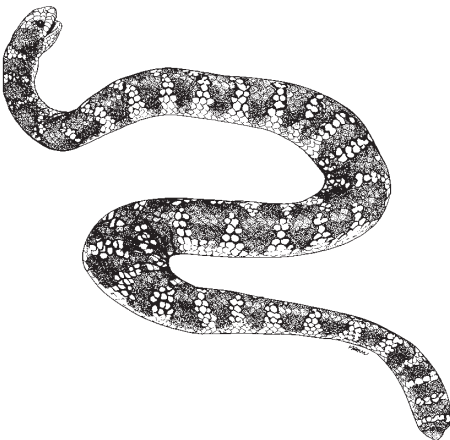
Maximum total length about 125 cm. Scale rows around neck 19 to 24 (rarely up to 27); scale rows around body 23 to 31 (rarely 21 or 32); ventrals 142 to 222. Maxillary teeth behind the poison-fangs 5 to 8. Often seen on the surface of reefs at medium depths. Feeds on Eleotridae and Gobiidae. Found in the Gulf of Thailand, Viet Nam, China, the Australian region, and New Caledonia; future investigations will probably reveal its presence in Indonesia.



*Aipysurus eydouxii* (Gray, 1849)

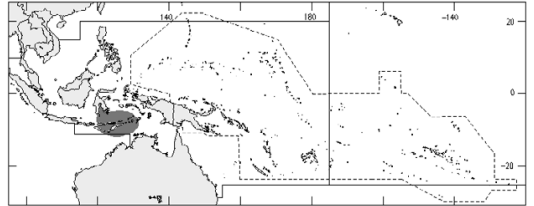
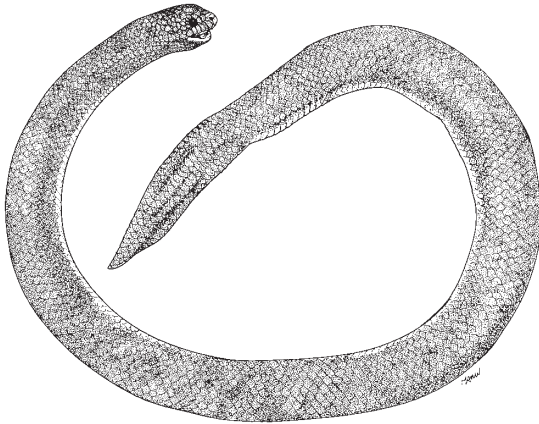
**En** - Eydoux' sea snake; **Fr** - Aipysure d'Eydoux.

Maximum total length about 115 cm. Scale rows around neck 17 (rarely 16); scale rows around body 17; ventrals 124 to 155, slightly notched on posterior border. Maxillary teeth behind the poison-fangs 8 to 12, very small. Head shields regular. Feeds exclusively on benthic fish eggs. Caught by trawls from the surface to about 23 m; does not inhabit clear reef waters. East coast of Malayan Peninsular, Gulf of Thailand, Viet Nam, Philippines, Indonesia, and the Australian region. The only species of the genus *Aipysurus* which is caught outside the Australian region.

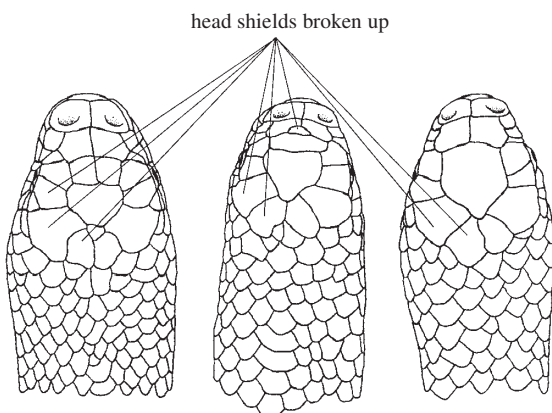


***Aipysurus fuscus*** (Tschudi, 1837)**En** - Dusky sea snake; **Fr** - Aipysure brun.

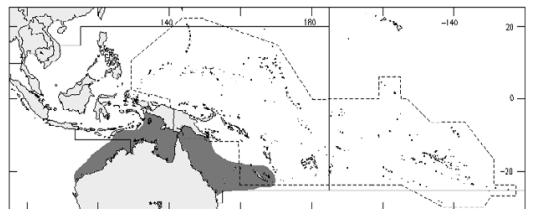
Maximum total length about 90 cm. Scale rows around neck 19 (rarely 20 or 21); scale rows around body 19; ventrals 155 to 180, slightly notched on posterior border. Maxillary teeth behind the poison-fangs 6 to 8. Head shields broken up but more or less retain their normal outline. First 2 or 3 superlabials divided horizontally. Found in areas of moderate to heavy coral growth and along gullies and channels with sandy bottoms. Feeds mostly on Labridae. Northwestern coast of Western Australia; the type specimens are reportedly from Celebes.

***Aipysurus laevis*** Lacepède, 1804**En** - Olive sea snake; **Fr** - Aipysure lisse.

Maximum total length about 165 cm. Scale rows around neck 21 to 23; scale rows around body 21 to 23 (rarely 25); ventrals 138 to 155, slightly notched on posterior border. Maxillary teeth behind the poison-fangs 6 to 8. Same head pattern as in *Aipysurus fuscus*. Found in shallow water and in deep water; one of the most common sea snakes on coral reefs throughout its range. An opportunistic, generally benthic feeding carnivore. Widespread from Western Australia to the Loyalty Islands (New Caledonia) in the east and to New Guinea in the north.



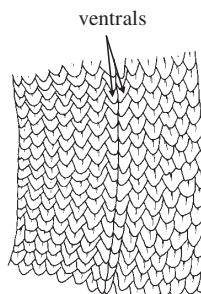
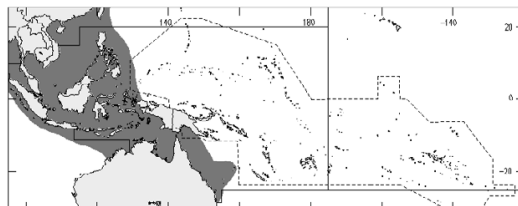
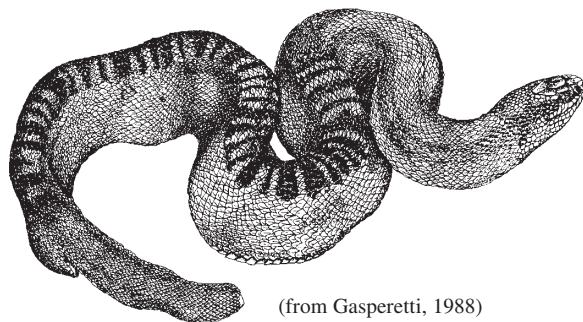
examples showing variation in head shield pattern  
(dorsal view)



*Astrotia stokesii* (Gray, 1846)

**En** - Stokes' sea snake; **Fr** - Astrotie de Stokes.

Maximum total length about 180 cm. Scale rows around neck 37 to 47; scale rows around body 46 to 63; ventrals 226 to 286, divided into pairs of overlapping scales. Maxillary teeth behind the poison-fangs 6 or 7. In adult specimens, the ventrals form a marked ridge in the posterior part of the body. A benthic feeding piscivore, mostly feeds on Batrachoididae. Found from Pakistan, India, Sri Lanka, Malaysia, Gulf of Thailand, Viet Nam, China, Taiwan Province of China, Philippines, Indonesia, and the Australian region.



*Emydocephalus annulatus* Krefft, 1869

**En** - Turtleheaded sea snake; **Fr** - Emydocéphale annelé.

Maximum total length about 105 cm. Scale rows around neck 15; scale rows around body 17 (rarely 15); ventrals 125 to 146. Maxillary teeth behind the poison-fangs rudimentary. Males with a short spine on rostral. Feeds exclusively on fish eggs, mostly of Gobiidae and Blenniidae. Very abundant on reefs in northern Australia from the Timor Sea in west to the Loyalty Islands (New Caledonia) in the east.

