

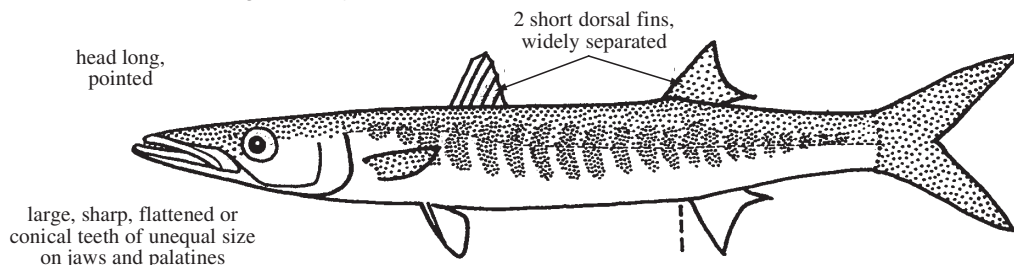
Suborder SCOMBROIDEI

SPHYRAENIDAE

Barracudas

by H. Senou

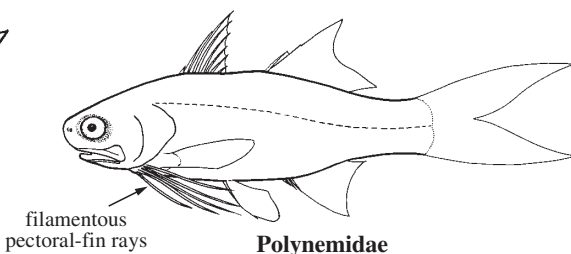
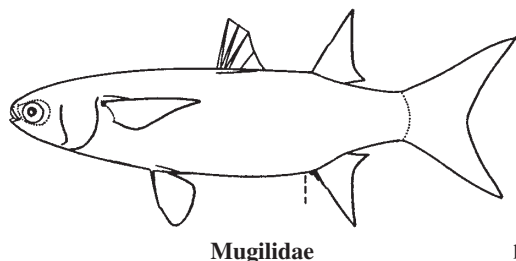
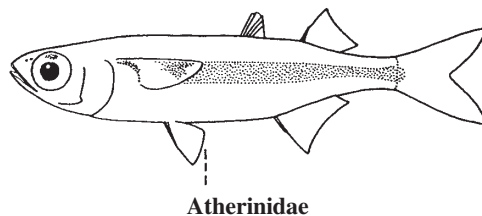
Diagnostic characters: Body elongate, subcylindrical or slightly compressed (size to 170 cm); covered with small, cycloid scales. **Head long, pointed**, scaly on sides and posteriorly on top. Mouth nearly horizontal, large. Jaws elongate, the lower one considerably projecting; **large, sharp, flattened or conical teeth of unequal size on jaws and palatines**; usually 1 or 2 strong, sharp canines near tip of lower jaw. **Gill rakers, if present, as short spinules, 1 or 2 at angle of gill arch; in some species, as platelets with or without distinct spines. Two short dorsal fins, widely separated**; the first with IV strong spines inserted about opposite to or behind pelvic fins; the second with I spine and 9 soft rays. Anal fin with II spines and 7 to 9 soft rays. Caudal fin forked; some large species with a pair of lobes at posterior margin. Pectoral fins short, placed on or below axis of body; pelvic fins placed abdominal, with I spine and 5 soft rays. Branchiostegal rays 7, the membranes free from isthmus and each other. Lateral line well developed, straight. Vertebrate 12+12=24. **Colour:** grey to blue, or pale brown above, with silvery reflections, lighter to white below; body with darker bars, saddles, or chevron markings in large species; some species with longitudinal yellow, brown, or dark stripes, or dark blotches.



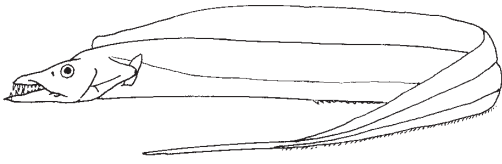
Habitat, biology, and fisheries: Carnivorous pike-like, pelagic to demersal fishes occurring in all tropical and temperate seas. Most of them inhabit shallow coastal waters such as bays, estuaries, or the vicinity of coral reefs, but also in the surface of open oceans or down to depths of 100 m or more. Juveniles of *Sphyraena barracuda* are usually found in mangrove swamps or estuaries of rivers. Barracudas frequently occur in small to large schools, but adults of *S. barracuda* are solitary. Some species are primarily diurnal, while others are nocturnal and occur in inactive schools during the day. Although barracudas are edible, large individuals of the large species, especially *S. barracuda*, should be avoided because of the risk of ciguatera poisoning. They are caught by handlines, gill nets, set nets, or trawls. Also a good target of anglers, and many are caught by trolling artificial lures. Attacks on humans have been documented but these are frequently the result of incorrect identification or a result of provocation (e.g. after spearing); it is frequently reported that barracudas are attracted by metal objects flashing in the sun or speared fish, particularly in murky water. Barracudas are marketed fresh, frozen, dried, salted, or smoked. From 1990 to 1995, the FAO Yearbook of Fisheries Statistics reports a range of yearly catch of around 29 400 to 47 100 t of *Sphyraena* spp. from the Western Central Pacific.

Similar families occurring in the area

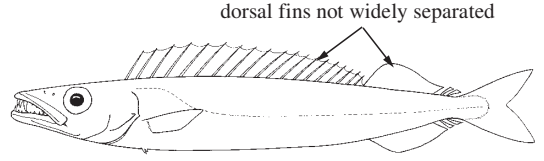
Atherinidae, Mugilidae, and Polynemidae: also with 2 widely spaced dorsal fins, but have a short snout and small mouth and lack canine teeth; also, lower pectoral-fin rays filamentous in Polynemidae.



Trichiuridae and Gempylidae: also with elongate snout, large mouth, and canine teeth, but never have 2 short and widely spaced dorsal fins; also, body ribbon-like in Trichiuridae.

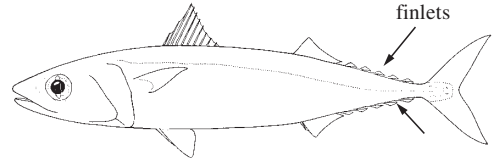


Trichiuridae



Gempylidae

Scombridae: also with moderately large mouth and 2 dorsal fins, but easily distinguished by presence of distinct finlets behind second dorsal fin and anal fin.



Scombridae

Key to the species of Sphyraenidae occurring in the area

- 1a. Body with many vertical dark bars, saddles, or chevron markings when fresh; maxilla reaching anterior edge of eye; first gill arch without gill rakers, but bearing rough platelets (Fig. 1a) → 2
- 1b. Body with longitudinal yellow or dark stripes when fresh, or without any distinct markings such as bars or stripes; maxilla not reaching anterior edge of eye (except sometimes in *S. forsteri*); first gill arch with platelets bearing several distinct spines in *S. forsteri*, or with 1 or 2 prominent gill rakers in the other species (Fig. 1b, c, d) → 5

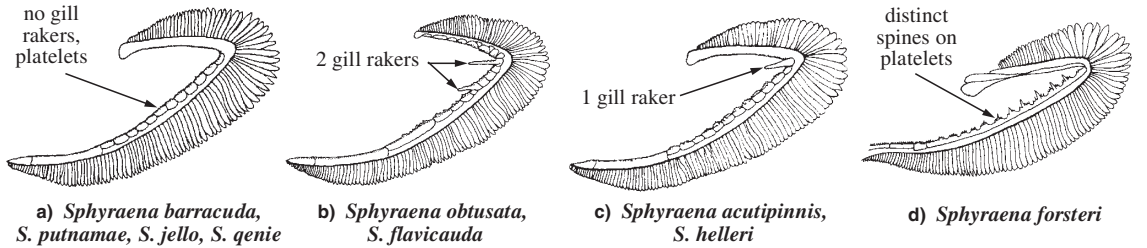


Fig. 1 first gill arch

- 2a. Many oblique dark bars on upper half of body, these not across lateral line; caudal fin black with white tips, bearing a pair of large lobes at posterior margin except in young less than 50 cm total length; lateral-line scales less than 90 (Fig. 2) *Sphyraena barracuda*
- 2b. Many dark bars, saddles, or chevron markings on body, these across lateral line; caudal fin blackish or yellowish without white tips, not bearing a pair of lobes at posterior margin (or with a pair of small lobes only); lateral-line scales more than 120 (Fig. 3) → 3

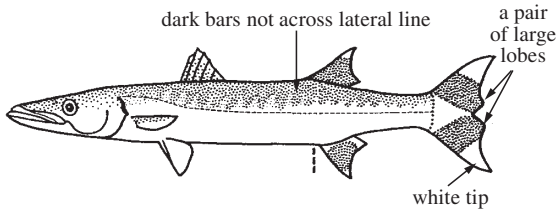


Fig. 2 *Sphyraena barracuda*

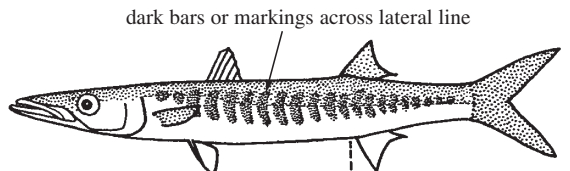


Fig. 3 *Sphyraena putnamae*

- 3a. Many typical dark chevron markings on body; last ray of second dorsal fin elongate in comparison with penultimate ray (Fig. 4) *Sphyraena putnamae*
- 3b. Many dark bars on body, each bar oblique in upper half, but nearly vertical in lower half; last ray of second dorsal fin not elongate in comparison with penultimate ray (Fig. 5) → 4

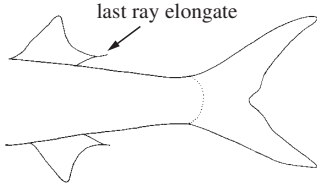


Fig. 4 *Sphyraena putnamae*

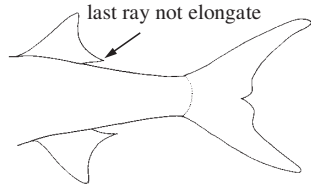


Fig. 5 *Sphyraena genie*

- 4a. Caudal fin largely yellowish, without a pair of small lobes at posterior margin; lateral-line scales 130 to 140 (Fig. 6) *Sphyraena jello*
- 4b. Caudal fin largely blackish, with a pair of small lobes at posterior margin (in adults); lateral-line scales 120 to 130 (Fig. 7) *Sphyraena genie*

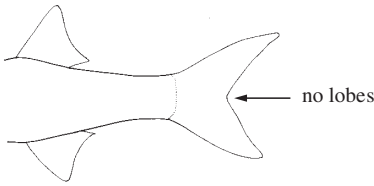


Fig. 6 *Sphyraena jello*

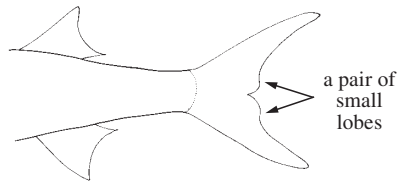
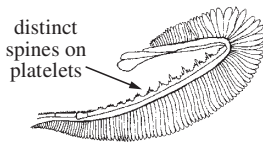
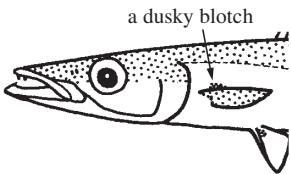
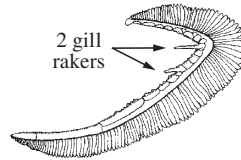


Fig. 7 *Sphyraena genie*

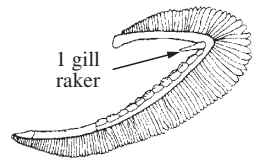
- 5a. A dusky blotch present behind axil of pectoral fins (Fig. 8); first gill arch with many platelets, each bearing small spines (Fig. 9a) *Sphyraena forsteri*
- 5b. A dusky blotch absent behind axil of pectoral fins; first gill arch with 1 or 2 prominent gill rakers (Fig. 9b, c) → 6



a) *Sphyraena forsteri*



b) *Sphyraena obtusata*, *S. flavicauda*



c) *Sphyraena acutipinnis*, *S. helleri*

Fig. 9

Fig. 8 *Sphyraena forsteri*

- 6a. Origin of pelvic fins situated well before first dorsal-fin origin (Fig. 10a); first gill arch with 2 prominent gill rakers (Fig. 11a); lateral-line scales less than 100 → 7
- 6b. Origin of pelvic fins just below or slightly before first dorsal-fin origin (Fig. 10b,c); first gill arch with 1 prominent gill raker (Fig. 11b); lateral-line scales more than 120 → 8

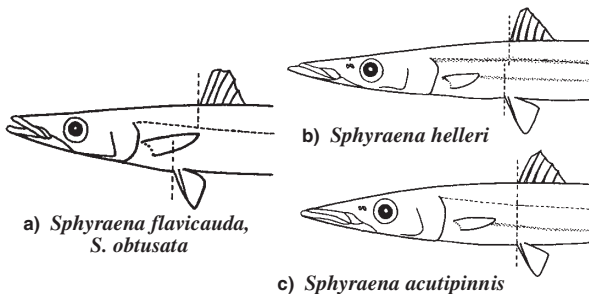
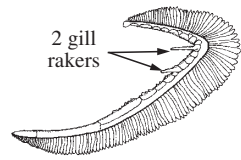
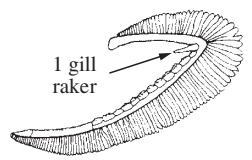


Fig. 10 anterior portion of body



a) *Sphyraena flavicauda*, *S. obtusata*



b) *Sphyraena helleri*, *S. acutipinnis*

Fig. 11 first gill arch

- 7a. Body with 2 brown or brownish yellow longitudinal stripes when fresh, but sometimes absent in non fresh specimens; tips of pectoral fins not reaching to origin of first dorsal fin (Fig. 12) *Sphyraena flavicauda*
- 7b. Body without distinct stripes; tips of pectoral fins reaching past origin of first dorsal fin (Fig. 13) *Sphyraena obtusata*

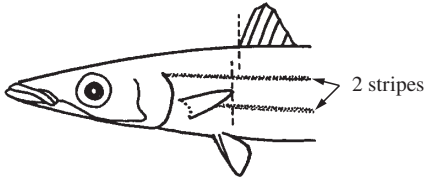


Fig. 12 *Sphyraena flavicauda*

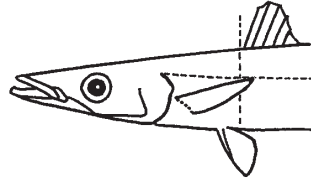


Fig. 13 *Sphyraena obtusata*

- 8a. Two bright yellow stripes on sides of body; a dark marking absent on body near pelvic-fin base; maxilla not reaching to anterior nostril; origin of pelvic fins slightly before first dorsal-fin origin; lateral-line scales 140 to 150 (Fig. 14) *Sphyraena helleri*
- 8b. A narrow dark stripe on lower flank of body; a dark blotch present on body near pelvic-fin base; maxilla reaching to anterior nostril; origin of pelvic fins just below first dorsal-fin origin; lateral-line scales 129 to 138 (Fig. 15) *Sphyraena acutipinnis*^{1/}

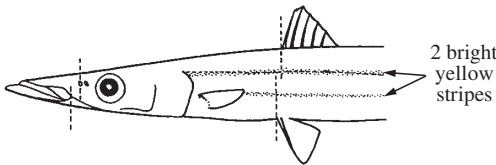


Fig. 14 *Sphyraena helleri*

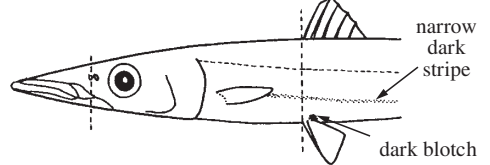


Fig. 15 *Sphyraena acutipinnis*

List of species occurring in the area

The symbol given when species accounts are included.

- Sphyraena acutipinnis* Day, 1876^{1/}
- Sphyraena barracuda* (Walbaum, 1792)
- Sphyraena flavicauda* Rüppell, 1838
- Sphyraena forsteri* Cuvier, 1829
- Sphyraena helleri* Jenkins, 1901
- Sphyraena jello* Cuvier, 1829
- Sphyraena obtusata* Cuvier, 1829
- Sphyraena putnamae* Jordan and Seale, 1905
- Sphyraena qenie* Klunzinger, 1870

References

de Sylva, D.P. and F. Williams. 1986. Sphyraenidae. In *Smith's sea fishes*, edited by M.M. Smith and P.C. Heemstra. Johannesburg, Macmillan South Africa, pp. 721-726.

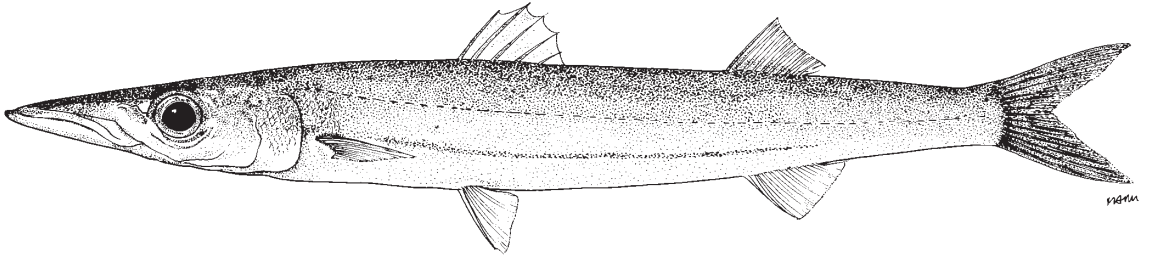
Yoshino, T. 1988. Sphyraenidae. In *The fishes of the Japanese Archipelago*, edited by H. Masuda, K. Amaoka, C. Araga, T. Uyeno, and T. Yoshino. Tokyo, Tokai University Press, 2nd ed., 121 p.

^{1/} Likely to occur from the Philippines to northeastern Australia, but a confirmed record from the area is pending. Exact range uncertain because of confusion with *S. helleri*.

***Sphyraena acutipinnis* Day, 1876**

Frequent synonyms / misidentifications: *Sphyraena africana* Gilchrist and Thompson, 1909 / *Sphyraena helleri* Jenkins, 1901.

FAO names: En - Sharptin barracuda.

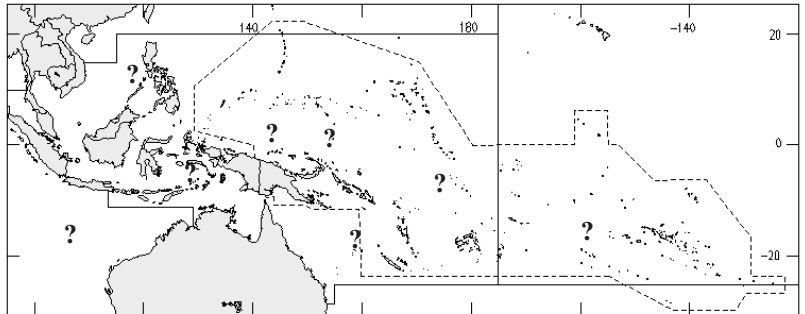


Diagnostic characters: A medium-sized species. Maxilla reaching to below anterior nostril. **First gill arch with 1 prominent gill raker.** Tip of pectoral fins not reaching to first dorsal fin. Caudal fin typically forked in all stages, without a pair of lobes at posterior margin. **Origin of pelvic fins just below first dorsal-fin origin.** Lateral-line scales 129 to 138. **Colour: body with a narrow dark stripe on the lower flank; a dark marking present on body near pelvic-fin base;** caudal fin darkish.

Size: Maximum total length about 60 cm.

Habitat, biology, and fisheries: Inhabiting bays and the vicinity of coral reefs. Nocturnally active fish. Caught by handlines.

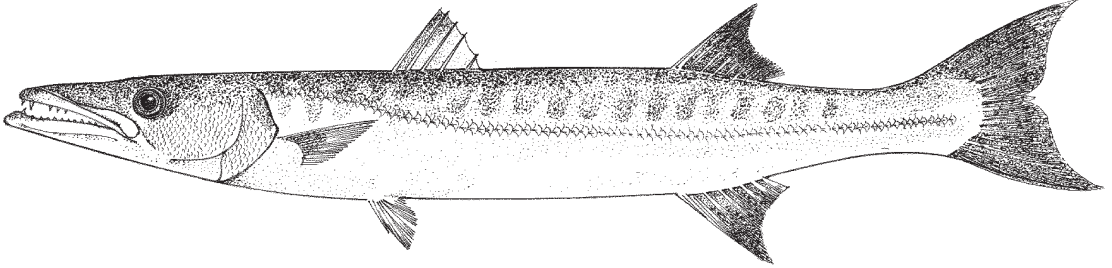
Distribution: Tropical and subtropical Indo-West Pacific from South Africa to southern Japan. Although there is so far no record of this species from the Western Central Pacific, it very likely occurs from the Philippines to northeastern Australia. The exact range is uncertain because of confusion of this species with *Sphyraena helleri*.



Sphyraena barracuda (Walbaum, 1792)

Frequent synonyms / misidentifications: None / None.

FAO names: En - Great barracuda; Fr - Barracuda; Sp - Picuda barracuda.

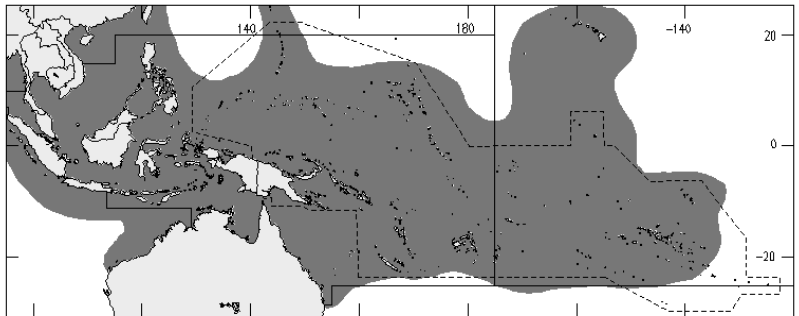


Diagnostic characters: A large species. Maxilla reaching to or a little beyond anterior margin of eye. **No gill rakers on first gill arch;** upper and lower gill arch with rough platelets which lack distinct spines. Last ray of second dorsal fin not elongate in comparison with penultimate ray. **Caudal fin with a pair of large lobes at posterior margin,** except in young less than 50 cm total length which have a forked caudal fin. Origin of pelvic fins before first dorsal-fin origin. Lateral-line scales 75 to 87. **Colour: many oblique dark bars on upper half of body, these not across lateral line; caudal fin black with white tips;** some black blotches sometimes present on underside of posterior body. Juveniles with a series of large dark blotches irregularly arranged on sides of body.

Size: Maximum total length about 170 cm, commonly to 100 cm.

Habitat, biology, and fisheries: Juveniles found inshore, usually in estuaries or mangrove swamps, adults in open sea and close to reef. Diurnal, and solitary or in small schools. Attacks on humans nearly always a result of provocation as by spearing or in murky water when a limb might be mistaken for a fish. Large adults often ciguatoxic. Caught by handline, set nets, and other fishing gear.

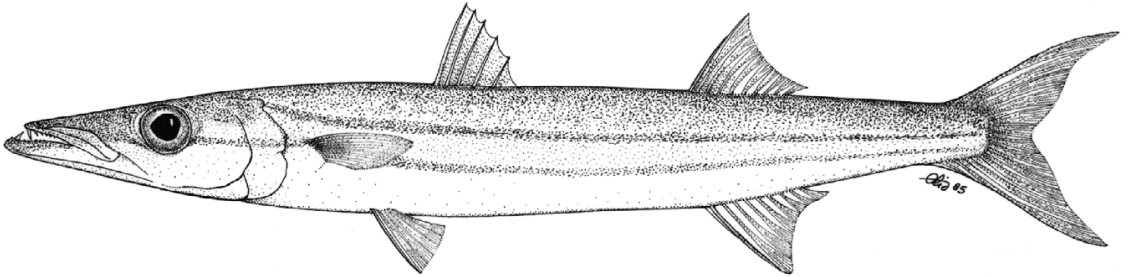
Distribution: Widespread in all tropical seas of the world except the eastern Pacific Ocean; north to southern Japan.



***Sphyraena flavicauda* Rüppell, 1838**

Frequent synonyms / misidentifications: *Sphyraena chrysotaenia* Klunzinger, 1884 / *Sphyraena obtusata* Cuvier, 1829.

FAO names: En - Yellowtail barracuda.

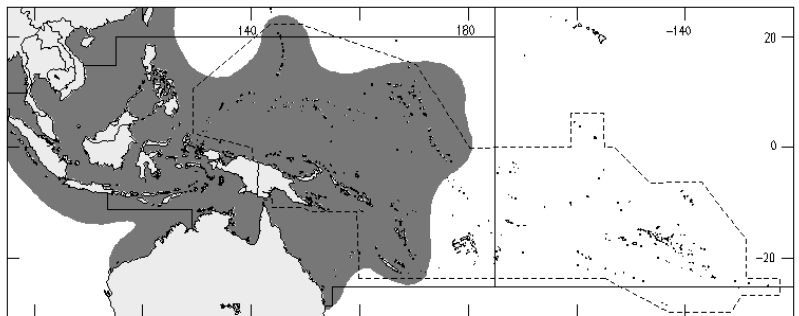


Diagnostic characters: A medium-sized species. Maxilla reaching to below anterior nostril. **First gill arch with 2 prominent gill rakers.** Caudal fin typically forked in all stages, without a pair of lobes at posterior margin. Origin of pelvic fins well before first dorsal-fin origin. **Tip of pectoral fins not reaching to first dorsal fin.** Lateral-line scales 84 to 91. **Colour:** body with 2 brown or brownish yellow longitudinal stripes when fresh, sometimes absent in non fresh specimens; caudal fin yellowish.

Size: Maximum total length about 60 cm, commonly to 40 cm.

Habitat, biology, and fisheries: Inhabiting coral reefs or bays. Usually seen during the day in large schools. Caught by set nets and gill nets.

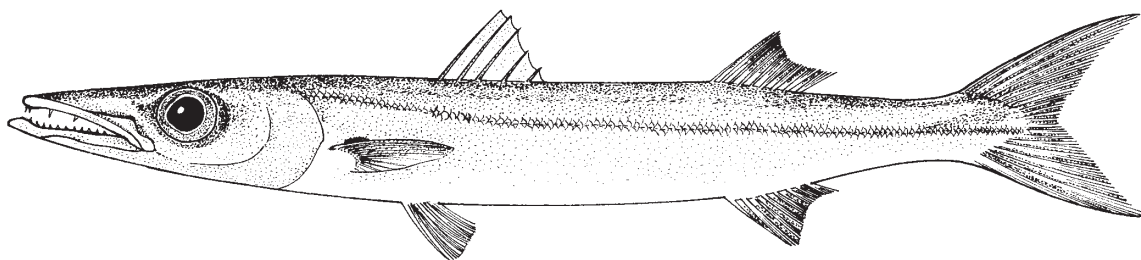
Distribution: Tropical and subtropical Indo-West Pacific from South Africa to Micronesia; north to southern Japan. The exact range is uncertain because of confusion with *Sphyraena obtusata*.



Sphyraena forsteri Cuvier, 1829

Frequent synonyms / misidentifications: None / None.

FAO names: En - Bigeye barracuda; Fr - Bécune de Forster; Sp - Picuda de Forster.

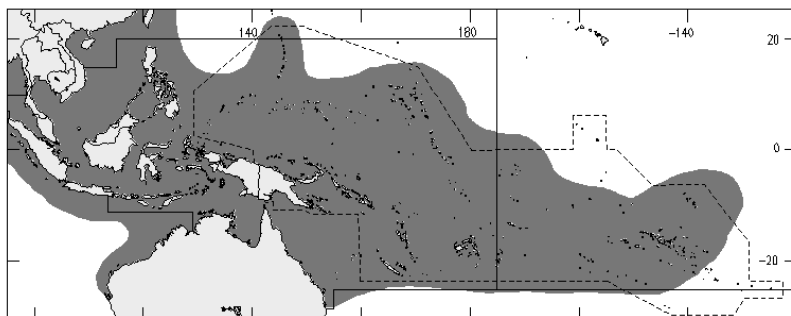


Diagnostic characters: A medium-sized species. Maxilla either not reaching anterior margin of eye, or to just below anterior margin. **First gill arch with many platelets, each bearing distinct small spines.** Caudal fin typically forked in all stages, without a pair of lobes at posterior margin. Origin of pelvic fins before first dorsal-fin origin. Lateral-line scales 112 to 133. **Colour:** body without bars and stripes; **a dusky blotch present behind axil of pectoral fins;** caudal fin darkish.

Size: Maximum total length about 65 cm, commonly to 50 cm.

Habitat, biology, and fisheries: Inhabiting coral reefs. Nocturnally active fish, but occurring in large schools above lagoon patch reefs and along outer reef slopes by day. Common in Micronesia and Great Barrier Reef. Caught by handlines.

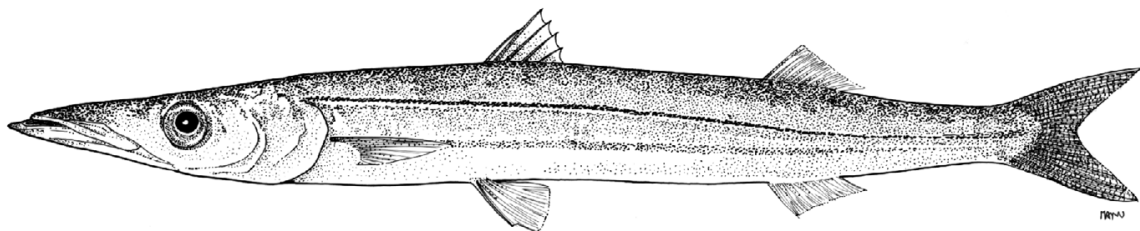
Distribution: Widespread in the tropical and subtropical Indo-Pacific, from East Africa to the Marquesas Islands; north to southern Japan.



***Sphyraena helleri* Jenkins, 1901**

Frequent synonyms / misidentifications: None / *Sphyraena acutipinnis* Day, 1876; *S. novaehollandiae* Günther, 1860.

FAO names: En - Heller's barracuda.



Diagnostic characters: A medium-sized species. **Maxilla not reaching to below anterior nostril. First gill arch with 1 prominent gill raker. Origin of pelvic fins slightly before first dorsal-fin origin.** Tip of pectoral fins not reaching to first dorsal fin. Caudal fin typically forked in all stages, without a pair of lobes at posterior margin. Lateral-line scales 140 to 150. **Colour: body with 2 bright yellow stripes on sides; caudal fin darkish.**

Size: Maximum total length about 60 cm, commonly to 40 cm.

Habitat, biology, and fisheries: Inhabiting coral reefs or bays. Usually seen during the day in large schools. Common in oceanic islands of the Pacific. Caught by set nets and gill nets.

Distribution: Widespread in the tropical and subtropical western to central Pacific, including Hawaii; north to southern Japan and east to French Polynesia. Also reported from East Africa and Mascarene Islands in the Indian Ocean. The exact range is uncertain because of confusion with *Sphyraena acutipinnis* and *S. novaehollandiae*.

