

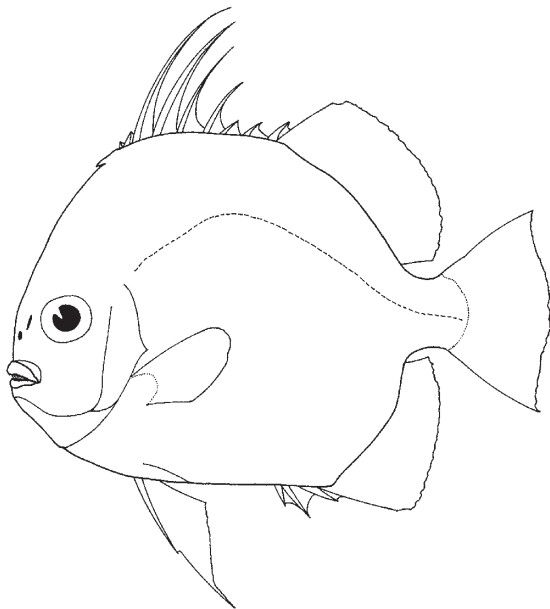
Suborder ACANTHUROIDEI

EHIPPIDAE

Spadefishes (batfishes)

by P.C. Heemstra

D diagnostic characters: Body deep (oblong or orbicular) and strongly compressed (size to about 25 cm). Head short, its length less than 1/2 body depth (except in *Proteracanthus*); interorbital and front of head naked or head covered with scales. Eye above horizontal axis through mouth. Mouth small, the maxilla not reaching past vertical at front edge of eye; upper jaw not protrusible; jaws with bands of slender setiform or compressed teeth; no teeth on palatines, vomer with or without teeth. Preopercle smooth or serrate; opercle without spines. **Dorsal fin single or deeply notched before soft-rayed part, with V to IX spines and 19 to 38 soft rays; anal fin with III spines and 15 to 27 soft rays;** pectoral fins rounded and usually shorter than head; pelvic fins with I spine and 5 soft rays; caudal fin truncate or wedge-shaped. Scales comparatively large and smooth (*Ehippus*), or small and ctenoid. Lateral line complete. Branchiostegal membranes broadly joined to isthmus, the gill opening not extending much below level of pectoral-fin base. Branchial skeleton distinctive in the reduced or absent basihyal (tongue) bone, the interarcual cartilage absent, and in having a comb-like series of short fleshy gill rakers loosely attached to upper limb of first gill arch. Vertebrae 10+14. **Colour:** adults silvery, silvery blue-green, pinkish grey, yellowish silvery, or dusky; often with vertical bars or spots.



Habitat, biology, and fisheries: Found in a variety of shallow-water habitats, estuaries, harbours, and coral reefs.

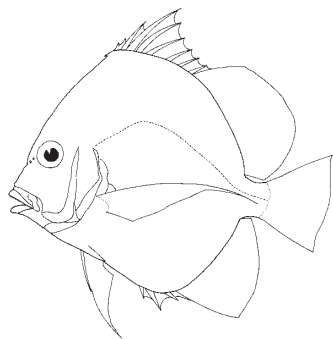
Remarks: A motley assemblage of disparate fishes. Seven genera are assigned to this family, 9 species occur in the area.

Similar families occurring in the area

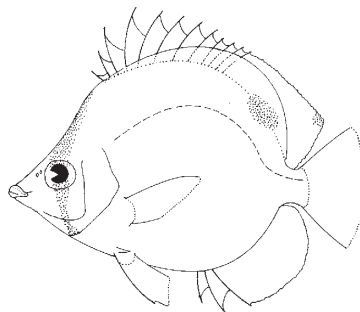
Drepanidae: upper jaw very protrusible, forming a downward-pointing tube when protruded; pectoral fins elongated, reaching rear end of anal-fin base.

Chaetodontidae: dorsal fin continuous, with VI to XVII spines and 14 to 34 soft rays; anal fin with III to V spines and 15 to 24 soft rays; branchiostegal membranes separate, narrowly joined to isthmus.

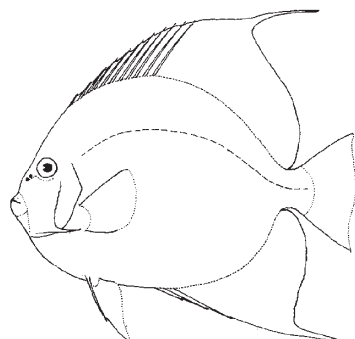
Pomacanthidae: preopercle serrate, with a large, posteriorly directed spine at the angle; dorsal fin with XI to XVI spines and 14 to 23 soft rays; branchiostegal membranes separate, free from isthmus or narrowly joined to it.



Drepanidae

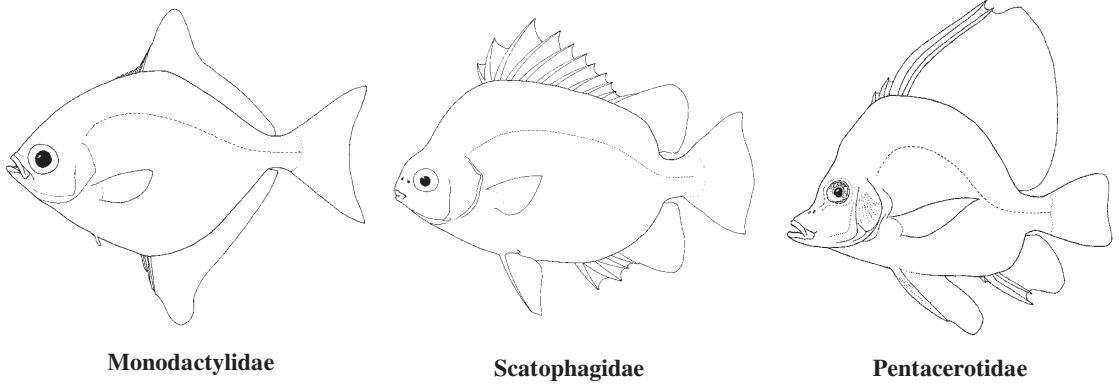


Chaetodontidae



Pomacanthidae

Monodactylidae: pelvic fins rudimentary or absent; horizontal axis through middle of upper jaw bisects eye.
 Scatophagidae: dorsal fin notched or divided to base before soft-rayed part, with XI or XII strong, heteracanthous spines and 15 to 18 soft rays; anal fin with IV large spines and 13 to 17 soft rays.
 Pentacerotidae: head mostly naked, the bones exposed and rugose, a small patch of embedded scales below eye; anal fin with II to VI spines and 6 to 17 soft rays.













Key to the species of Ehippidae occurring in the area

- 1a. Posterior dorsal-fin spines longest; dorsal-fin rays 28 to 38 → 4
- 1b. First or third to fifth dorsal-fin spines distinctly longer than other spines; dorsal-fin rays 14 to 16, or 19 to 20 → 2
- 2a. Dorsal fin with X spines and 14 to 16 soft rays, the fourth spine greatly elongated, thickened and irregularly swollen; body depth 2.2 to 2.3 times in standard length; head length about 70% body depth *Proteracanthus sarissophorus*
- 2b. Dorsal-fin with VIII or IX spines and 19 or 20 soft rays, the first or the third to fifth spines elongated, flexible filaments; body depth 1.2 to 1.8 times in standard length; head length less than 50% body depth → 3
- 3a. First dorsal-fin spine, fourth pectoral-fin ray, and first pelvic-fin ray greatly elongated filaments, reaching to or beyond vertical line at rear end of dorsal-and anal-fin bases; head naked; mouth inferior, the snout and upper jaw projecting in front of lower jaw *Rhinoprenes pentanemus*
- 3b. Third to fifth dorsal-fin spines elongated, but not reaching base of middle dorsal-fin ray; head mostly covered with scales; mouth terminal, the jaws equal and projecting slightly in front of snout *Ehippus orbis*
- 4a. Dorsal fin with IX spines, the anterior ones exposed; large irregular scales across top of head extend forward to rear nostrils *Zabidius novemaculeatus*
- 4b. Dorsal fin with IV to VII spines, mostly covered with skin and scales; small scales extend forward only to above the eyes → 5
- 5a. Dorsal fin with VI or VII spines and 28 to 31 soft rays; anal-fin rays 19 to 23; lateral cusps of outer teeth rudimentary; juveniles with prominent white stripes on a black background; interorbital of adults with prominent hump; lateral-line scales 64 to 75 *Platax batavianus*
- 5b. Dorsal fin with V or VI spines and 30 to 39 soft rays; anal-fin rays 22 to 30; lateral cusps of outer teeth distinct; juveniles not black, with white stripes → 6

- 6a.** Adults with front head profile concave, the snout somewhat produced; body scales smooth; 4 pores on each side of lower jaw; dorsal fin with V or VI spines and 34 to 38 soft rays; juveniles (less than 12 cm standard length) mostly blackish brown, with prominent orange border along margin of fins and body *Platax pinnatus*
- 6b.** Front of head convex, the snout not produced; body scales rough; 5 pores on each side of lower jaw; dorsal fin with V or VI spines and 29 to 39 soft rays; juveniles not orange margined → 7
- 7a.** Dorsal-fin with V spines and 34 to 39 soft rays; anal-fin rays 25 to 30; middle tooth cusp about twice length of lateral cusps; interorbital width 35 to 42% head length; juveniles (less than 10 cm standard length) tan or reddish brown, with irregular black spots and blotches and small white ocelli on body, dark band behind head faint and the dark eye band comprising a series of dark vermiculations *Platax orbicularis*
- 7b.** Dorsal-fin with V spines and 28 to 34 soft rays; anal-fin rays 21 to 28; middle tooth cusp not much longer than lateral cusps; interorbital width 39 to 52% head length → 8
- 8a.** Large adults with prominent hump on nape, the front head profile almost vertical; lateral-line scales 56 to 66; broad dark (or dusky) bar from dorsal-fin origin across rear edge of operculum and pectoral-fin base to belly, where it usually encloses a black blotch, with another smaller black vertical streak often present at origin of anal fin *Platax teira*
- 8b.** Adults with dorsal head profile gently curved, no prominent bulge at nape; lateral-line scales 44 to 52; no black blotch on side of belly or black streak at origin of anal fin; juveniles with front margin of black area at rear part of body closely preceded by a faint narrow dark bar; adults yellowish silver, usually with small scattered black spots *Platax boersii*

List of species occurring in the area

The symbol  is given when species accounts are included.

-  *Ehippus orbis* (Bloch, 1787)
-  *Platax batavianus* Cuvier, 1831
-  *Platax boersii* Bleeker, 1852
-  *Platax orbicularis* (Forsskål, 1775)
-  *Platax pinnatus* (Linnaeus, 1758)
-  *Platax teira* (Forsskål, 1775)
-  *Proteracanthus sarissophorus* (Cantor, 1850)
-  *Rhinoprenes pentanemus* Munro, 1964
-  *Zabidius novemaculeatus* (McCulloch, 1916)

Reference

Kishimoto, H., M. Hayashi, H. Kohno, and O. Moriyama. 1988. Revision of Japanese batfishes, genus *Platax*. *Sci. Rept. Yokos. City Mus.*, 36:19-36.

Ephippus orbis (Bloch, 1787)

Frequent synonyms / misidentifications: None / None.

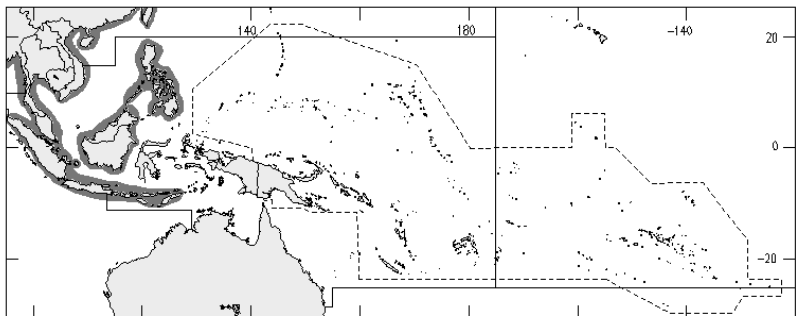
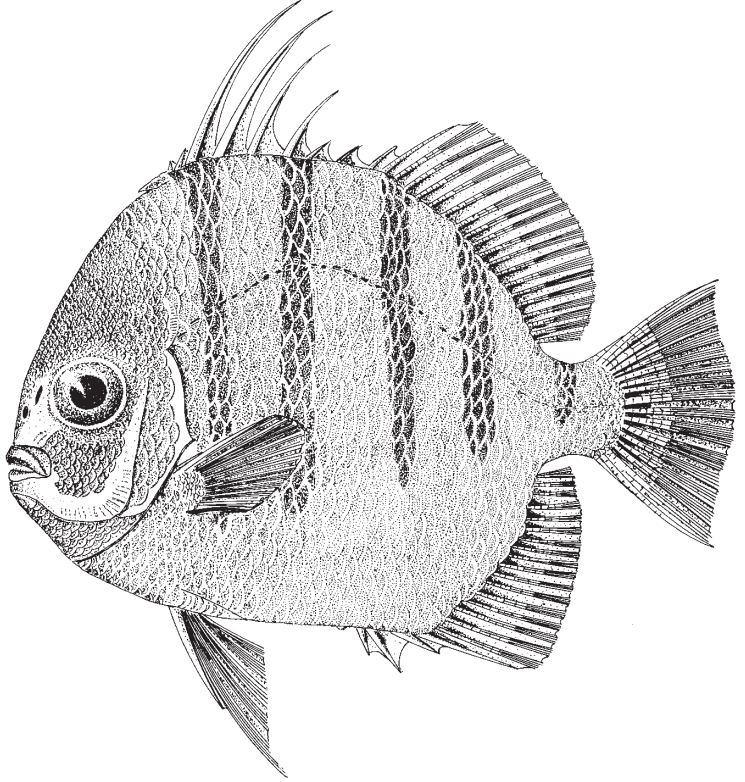
FAO names: En - Spadefish; Fr - Disque; Sp - Paguala.

Diagnostic characters: Body orbicular and strongly compressed, its depth more than twice length of head. Eye above horizontal axis through mouth. Mouth small, the maxilla not reaching past vertical at front edge of eye; jaws with bands of slender, incisiform teeth with a single lanceolate cusp; no teeth on palatines or vomer. Preopercle distinctly serrate, with a broad naked margin; opercle without spines. **Dorsal fin single, deeply notched before soft-rayed part, with IX spines and 19 or 20 soft rays, the third to fifth spines greatly elongated and interspinous membranes deeply incised; anal fin with III spines and 15 to 17 soft rays;** pectoral fins shorter than head, with 18 or 19 rays; pelvic fins with I spine and 5 soft rays; caudal fin truncate. Scales comparatively large and smooth. Lateral line complete, with 39 to 43 scales. **Colour: head and body silvery blue-green; 4 or 5 faint dark blue bars often visible on body;** fins dusky.

Size: Maximum total length 19 cm.

Habitat, biology, and fisheries: Usually caught in trawls and lift nets. No information available on biology. Of minor importance to fisheries.

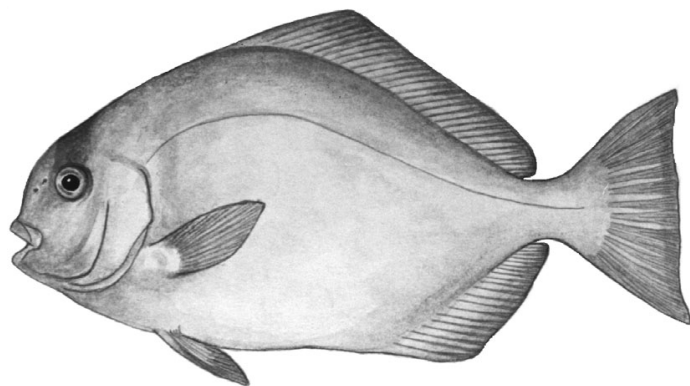
Distribution: Tropical waters of the Indo-West Pacific region from India and Sri Lanka to Indonesia, Philippines, and China (including Taiwan Province).



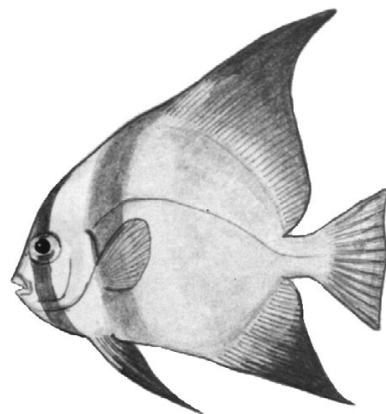
Platax batavianus Cuvier, 1831

Frequent synonyms / misidentifications: None / *Platax teira* (non Forsskål, 1775).

FAO names: En - Zebra batfish.



49 cm total length



20 cm total length

Diagnostic characters: Body orbicular and strongly compressed, its depth more than twice length of head and 1.1 to 1.9 times in standard length. Head length 3.1 to 3.4 times in standard length. Snout profile of large adults (above 40 cm) concave, with prominent bony swelling between eyes. **Jaws with bands of slender, flattened, tricuspid teeth, the middle cusp 3 to 4 times longer than lateral cusps;** vomer with a band of strong teeth, no teeth on palatines. Five pores on each side of lower jaw. Preopercle smooth; opercle without spines. **Dorsal fin single, with VI or VII spines and 28 to 31 soft rays, the spines hidden in front margin of fin, the last spine longest;** anal fin with III spines and 19 to 23 soft rays; juveniles with pelvic fins and anterior soft rays of dorsal and anal fins greatly elongated, the pelvic fins extending well past vertical at rear end of anal-fin base; pectoral fins shorter than head, with 18 to 20 rays; caudal fin truncate. Scales small and rough. Lateral line complete, with 64 to 75 scales. **Colour: adults (above 40 cm) silvery, with dark bar through eye and another (faint) bar just behind head; fins dusky. Small juveniles black, with vertical white lines on body and fins. Subadults brown, with black bar from nape, over eye to chest and another black bar from dorsal-fin origin, over pectoral fins to pelvic fins, pectoral and pelvic fins dark brown or black.**



□ 7 cm standard length

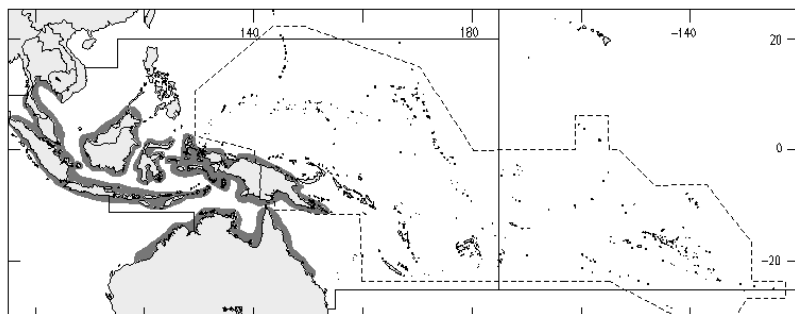


□ 5 cm standard length

Size: Maximum total length 65 cm.

Habitat, biology, and fisheries: The small zebra-striped juveniles often associated with crinoids; adults occur on or near reefs in depths of 10 to 60 m. Feeds on benthic invertebrates and zooplankton. Caught with hook-and-line, trawls, spear, or hand nets. Edible qualities variously reported as "excellent" or "inferior". The striking juveniles are valuable in the aquarium fish trade.

Distribution: Tropical waters of the western Pacific region from Viet Nam to Indonesia, northern Australia, and Papua New Guinea.

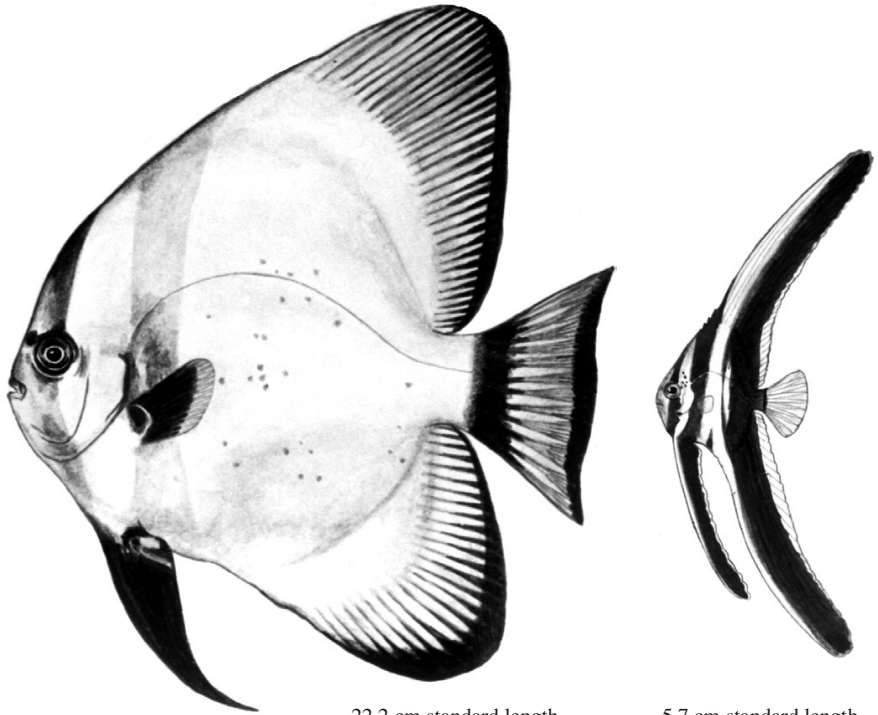


Platax boersii Bleeker, 1852

Frequent synonyms / misidentifications: None / *Platax teira* (non Forsskål, 1775).

FAO names: En - Spotted batfish.

Diagnostic characters: Body orbicular and strongly compressed, its depth more than twice length of head and 0.9 to 1.3 times in standard length. Head length 3.1 to 3.4 times in standard length. Dorsoanterior profile of adults evenly curved (no bony swelling between eyes); interorbital width 42 to 51% head length. **Jaws with bands of slender, flattened, tricuspid teeth, the middle cusp barely longer than lateral cusps; no teeth on palatines or vomer.** Five pores on each side of lower jaw. Preopercle smooth; opercle without spines. **Dorsal fin single, with V spines and 31 to 34 soft rays, the spines**



22.2 cm standard length

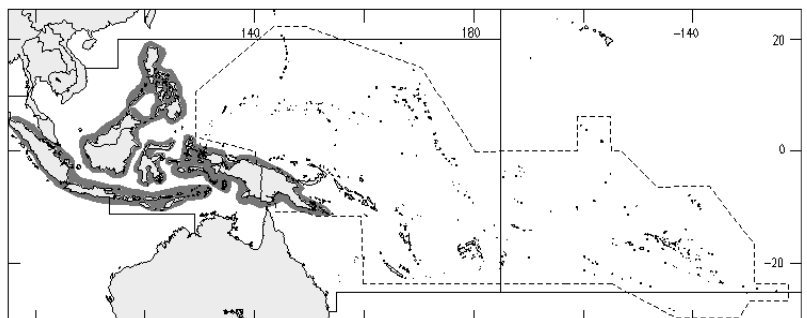
5.7 cm standard length

hidden in front margin of fin, the last spine longest; anal fin with III spines and 24 to 28 soft rays; juveniles with pelvic fins and anterior soft rays of dorsal and anal fins greatly elongated, the pelvic fins reaching well past vertical at rear end of anal-fin base; pectoral fins shorter than head, with 16 or 17 rays; caudal fin of adults truncate. Scales small and rough. Lateral line complete, with 44 to 52 scales. **Colour:** adults (above 18 cm) yellowish silvery, usually with small, scattered black spots on body, dark bar through eye, and another bar just behind head; median fins yellowish green; anal-fin margin and rear margin of caudal fin black; pelvic fins black. **Small juveniles yellowish brown or silvery, with 2 black bars as in adults; rear third of body blackish, the black colour continued onto dorsal and anal fins, and the front of the black zone on body often closely preceded by a narrow faint dark bar; caudal fin transparent except for black base.**

Size: Maximum total length 30 cm.

Habitat, biology, and fisheries: Juveniles and adults occur on or near reefs in depths of 10 to 60 m; they may be solitary or in small schools. No information available on biology. Caught with hook-and-line, trawls, or hand nets. Probably does well in aquaria, and the striking juveniles are valuable in the aquarium fish trade.

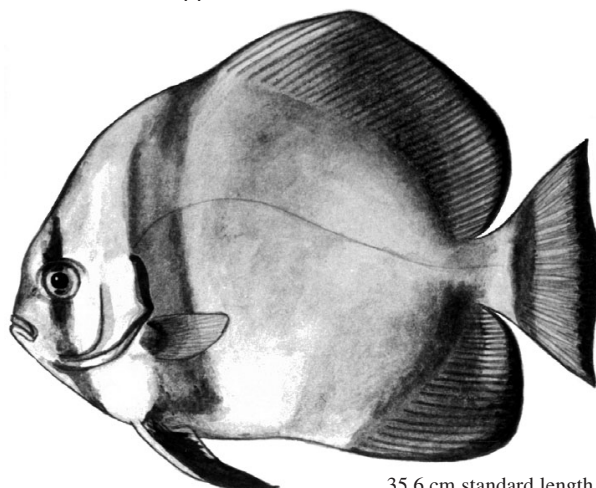
Distribution: Uncertain because of confusion with other species. Probably tropical waters of the western Pacific region from the Philippines to Indonesia and New Guinea.



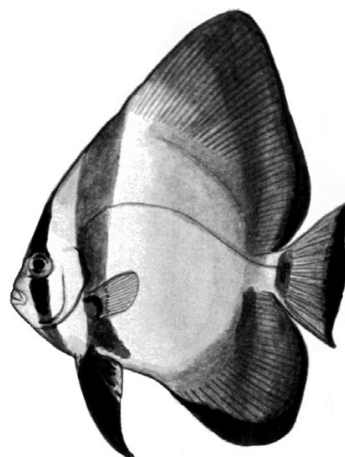
Platax orbicularis (Forsskål, 1775)

Frequent synonyms / misidentifications: None / *Platax teira* (non Forsskål, 1775).

FAO names: En - Copper batfish.

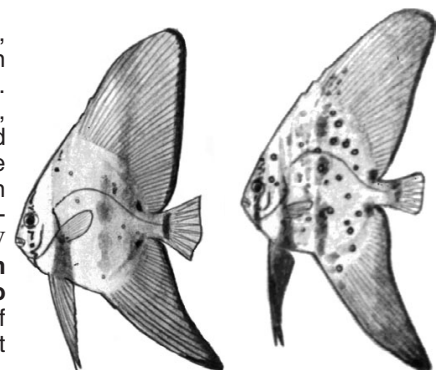


35.6 cm standard length



17.3 cm standard length

Diagnostic characters: Body orbicular and strongly compressed, its depth more than twice length of head and 0.9 to 1.4 times in standard length. Head length 3.4 to 3.8 times in standard length. Snout profile of large adults (above 40 cm total length) concave, with bony swelling between eyes; interorbital width 38 to 48% head length. Jaws with bands of slender, flattened, tricuspid teeth, the middle cusp about twice length of lateral cusps; no teeth on palatines or vomer. Five pores on each side of lower jaw. Preopercle smooth; opercle without spines. **Dorsal fin single, with V spines and 34 to 39 soft rays, the spines hidden in front margin of fin, the last spine longest; anal fin with III spines and 25 to 29 soft rays;** juveniles with pelvic fins and anterior soft rays of dorsal and anal fins elongated, but pelvic fins not reaching past vertical at rear end of anal-fin base; pectoral fins shorter than head, with 16 or 17 rays; caudal fin truncate. Scales small and rough. Lateral line complete, with 44 to 52 scales. **Colour: adults (above 20 cm) yellowish silvery or dusky, dark bar through eye and another bar just behind head; occasionally with a few small, scattered black spots on body; median fins yellowish, with black margins posteriorly; pelvic fins black. Small juveniles reddish brown, with irregular black spots and blotches and small, white (black-edged) ocelli on body; dark vermiculated bar through eye; small black spot at base of last 3 dorsal- and anal-fin rays; caudal fin transparent except for base, which is reddish brown.**



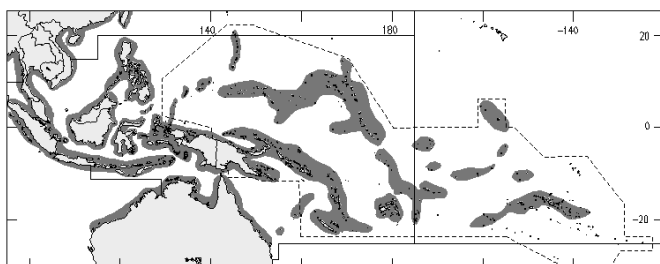
9.9 cm standard length

7.2 cm standard length

Size: Maximum total length 50 cm.

Habitat, biology, and fisheries: Juveniles occur inshore and are common in mangrove swamps, where they often float on their side at the surface and mimic floating leaves. Adults are found on or near reefs in depths of 10 to 60 m; they may be solitary, in pairs, or in small schools. Reported to be omnivorous, feeding on algae, small fishes, zooplankton, and benthic invertebrates. Eggs pelagic. Caught with hook-and-line, palisade traps, spear, trawls, and hand nets. The attractive juveniles are valuable in the aquarium fish trade.

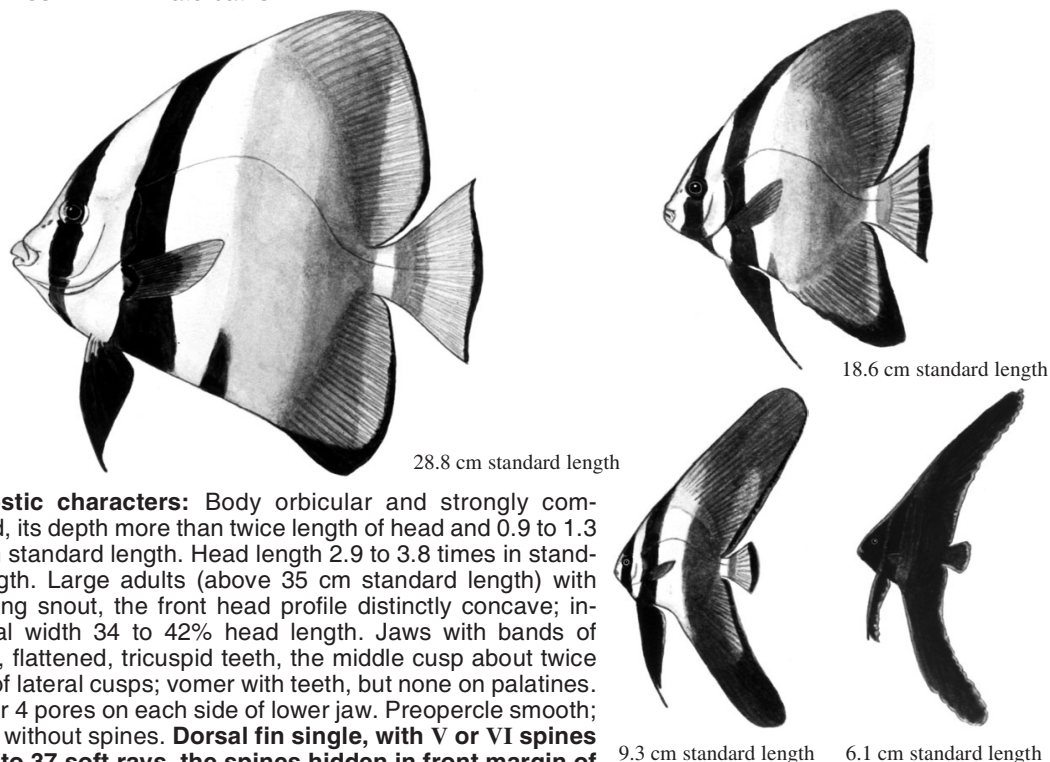
Distribution: Tropical and subtropical waters of the Indo-West Pacific region from the Red Sea to South Africa, Japan, the Philippines, Indonesia, New Guinea, Australia, and into the Central Pacific as far as the Tuamotus.



Platax pinnatus (Linnaeus, 1758)

Frequent synonyms / misidentifications: None / Small adults might be mistaken for *Platax orbicularis* (Forsskål, 1775).

FAO names: En - Pinnate batfish.



Diagnostic characters: Body orbicular and strongly compressed, its depth more than twice length of head and 0.9 to 1.3 times in standard length. Head length 2.9 to 3.8 times in standard length. Large adults (above 35 cm standard length) with protruding snout, the front head profile distinctly concave; interorbital width 34 to 42% head length. Jaws with bands of slender, flattened, tricuspid teeth, the middle cusp about twice length of lateral cusps; vomer with teeth, but none on palatines. Three or 4 pores on each side of lower jaw. Preopercle smooth; opercle without spines. **Dorsal fin single, with V or VI spines and 34 to 37 soft rays, the spines hidden in front margin of fin, the last spine longest; anal fin with III spines and 24 to 28 soft rays;** juveniles with pelvic fins and anterior soft rays of dorsal and anal fins elongated, but pelvic fins not reaching past vertical at rear end of anal-fin base; pectoral fins shorter than head, with 17 to 20 rays; caudal fin truncate. Scales small and smooth. Lateral line complete, with 44 to 52 scales. **Colour:** adults (above 14 cm) yellowish silvery or dusky, with a black (or dusky) bar through eye and another dark bar just behind head; median fins dusky yellow, with black margins posteriorly; pelvic fins black. **Small juveniles** (below 6 cm total length) **black, with bright orange margin around median and pelvic fins, continued as a median stripe along front of head from dorsal fin to lips, the rear third of caudal fin clear, preceded by the orange stripe continued along upper and lower edges of fin. Larger juveniles** (6 to 12 cm) **mostly blackish brown, with orange margin around fins, the middle third of body silvery with faint vertical black streaks.**

Size: Maximum total length 35 cm.

Habitat, biology, and fisheries: Juveniles and adults occur inshore on protected reefs and in mangrove areas and also on deep reefs in 60 m; they may be solitary, in pairs, or in small schools. The distinctive orange-margined juvenile can lie on its side and undulate the long dorsal and anal fins to mimic a brightly coloured toxic flatworm. The pinnate batfish is reported to be omnivorous, feeding on algae, small fishes, and invertebrates. Caught with hook-and-line, palisade traps, spear, trawls, and hand nets. Flesh edible, but not highly esteemed. The attractive juveniles are valuable in the aquarium fish trade.

Distribution: Tropical and subtropical waters of the western Pacific region from the Ryukyu Islands of southern Japan, to the Philippines, Indonesia, New Guinea, and northern Australia.

