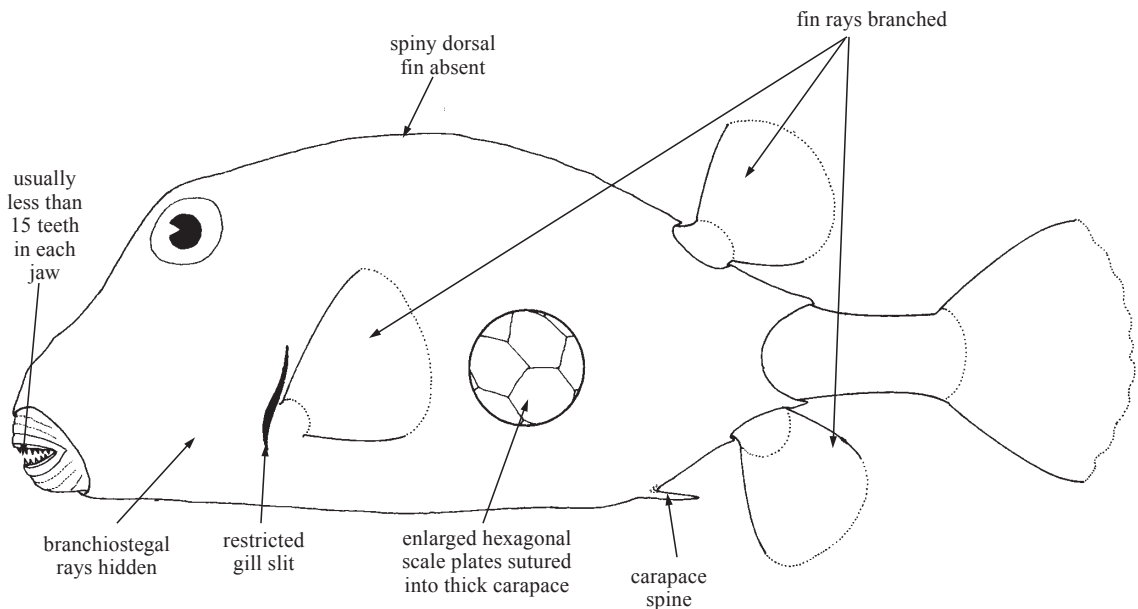


OSTRACIIDAE

Boxfishes (trunkfishes, cowfishes)

by K. Matsuura, National Science Museum, Tokyo, Japan

Diagnostic characters: Small fishes, never more than about 45 cm, with wide **body nearly completely enclosed in a carapace or cuirass formed of enlarged, thickened scale plates, usually hexagonal in shape and firmly sutured to one another** (less so on cheek to allow for breathing movements). **The carapace has openings for the mouth, eyes, gill slits, and fins, and for the flexible caudal peduncle; it is either triangular (flat on bottom and sharp-crested above) or rectangular (only some Indo-Pacific species) in shape, although sometimes relatively pentangular.** Mouth small, terminal, with fleshy lips; **teeth moderate, conical, usually less than 15 in each jaw.** **Gill openings relatively short, vertical to oblique slits in front of pectoral-fin bases, branchiostegal rays hidden beneath the skin.** Spiny dorsal fin absent; most dorsal-, anal- and pectoral-fin rays branched; pelvic fins absent. All Atlantic species of boxfishes with 10 soft rays in dorsal and anal fins. **Scale-plates often with surface granulations and sometimes prolonged into prominent carapace spines around eye or along the ventrolateral or dorsal surfaces of the body;** scales above pectoral-fin base like the scales of rest of body. Lateral line inconspicuous. **Colour:** variable, with general ground colours ranging from grey to bluish and greenish or, to yellowish and brown, usually with darker or lighter lines, bars, spots, reticulations, or symmetrical patterns such as hexagons.



Habitat, biology, and fisheries: Slow-swimming benthic-dwelling fishes occurring around rocky and coral reefs and on open sand bottoms and seagrass beds down to about 90 m depth. They feed on a variety of benthic invertebrates, with their small mouths in fleshy lips typically armed with moderate-sized conical teeth. Caught in traps and considered excellent eating, being highly prized in the Caribbean, although some species have been reported to have toxic skin (ostracitoxin) on occasion, and at least 1 species can secrete a substance that is highly toxic to other fishes and to itself in enclosed areas such as holding tanks.

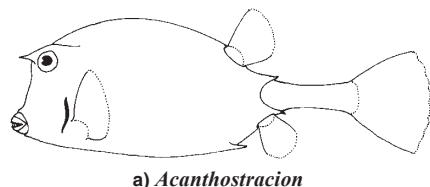
Similar families occurring in the area

No other family of fishes has a wide body nearly completely encased in a carapace or cuirass formed of enlarged, thickened, usually hexagonal plates sutured to one another.

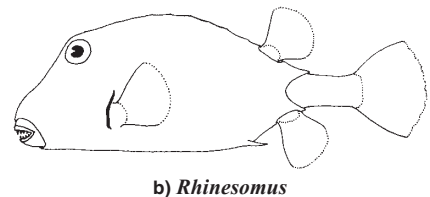
Key to the species of Ostraciidae occurring in the area

1a. Prominent carapace spines projecting anteriorly from front of eyes and posteriorly from ventrolateral edges of carapace; carapace complete around bases of soft dorsal and anal fins (Fig. 1a) (*Acanthostracion*) → 2

1b. No carapace spines in front of eyes (Fig. 1b); carapace spines present or absent posteriorly from ventrolateral edges of carapace; carapace complete around base of anal fin but either complete or partially open behind base of dorsal fin → 3



2a. Pectoral-fin rays (not including dorsal rudiment) usually 11, rarely 12; body with dark spots or blotches and irregular wavy lines, with more or less horizontal and parallel lines on cheek (Fig. 2a) *Acanthostracion quadricornis*



2b. Pectoral-fin rays (not including dorsal rudiment) usually 12, rarely 11; body covered with dark hexagons and near hexagons, the lines separating them light-coloured; reticulated dark lines on cheeks (Fig. 2b) *Acanthostracion polygonius*

Fig. 1

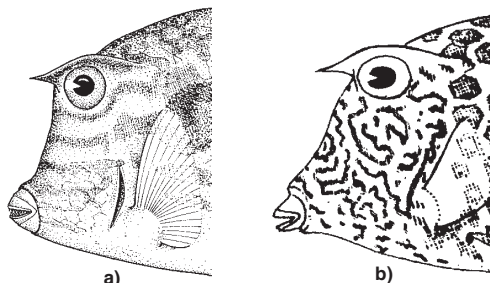


Fig. 2

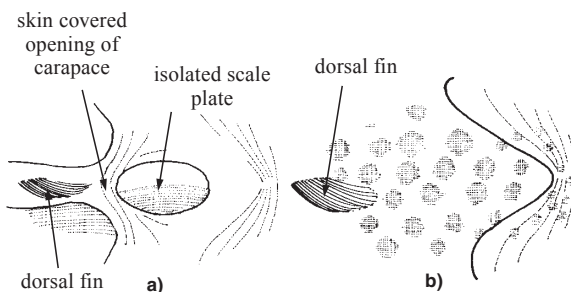


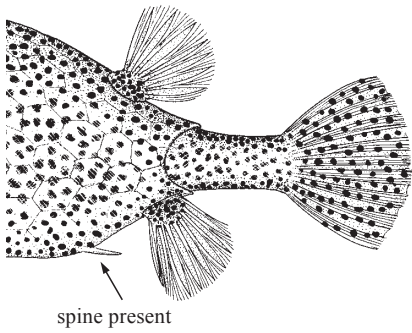
Fig. 3

upper surface of carapace behind dorsal fin

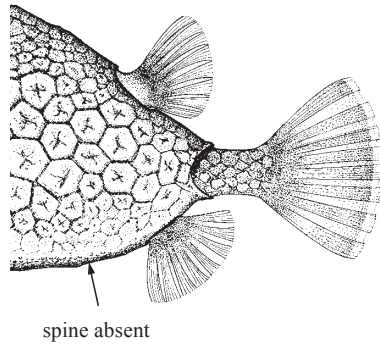
3a. Carapace incomplete and partially open behind base of dorsal fin, with a skin-covered space in the midline enclosed between the posterodorsal edges of carapace and followed immediately by a large, usually oval, isolated scale plate (Fig. 3a) *Lactophrys trigonus*

3b. Carapace complete around base of dorsal fin, forming a solid continuous bridge over caudal peduncle behind dorsal fin (Fig. 3b) (*Rhinesomus*) → 4

- 4a. A spine on posterolateral edge of carapace; body with many dark brown or blackish spots (Fig. 4a) *Rhinesomus bicaudalis*
- 4b. No spines on carapace (Fig. 4b); body with many pale spots ranging from white to straw and golden yellow. *Rhinesomus triqueter*




a) *Rhinesomus bicaudalis*








b) *Rhinesomus triqueter*

Fig. 4 posterior part of body

List of species occurring in the area

The symbol  is given when species accounts are included.

-  *Acanthostracion polygonius* Poey, 1876.
-  *Acanthostracion quadricornis* (Linnaeus, 1758).
-  *Lactophrys trigonus* (Linnaeus, 1758).
-  *Rhinesomus bicaudalis* (Linnaeus, 1758).
-  *Rhinesomus triqueter* (Linnaeus, 1758).

References

Böhlke, J. C. and C. C. G. Chaplin. 1993. *Fishes of the Bahamas and Adjacent Tropical Waters*, Second edition. Austin, Texas, University of Texas Press, 771 p.

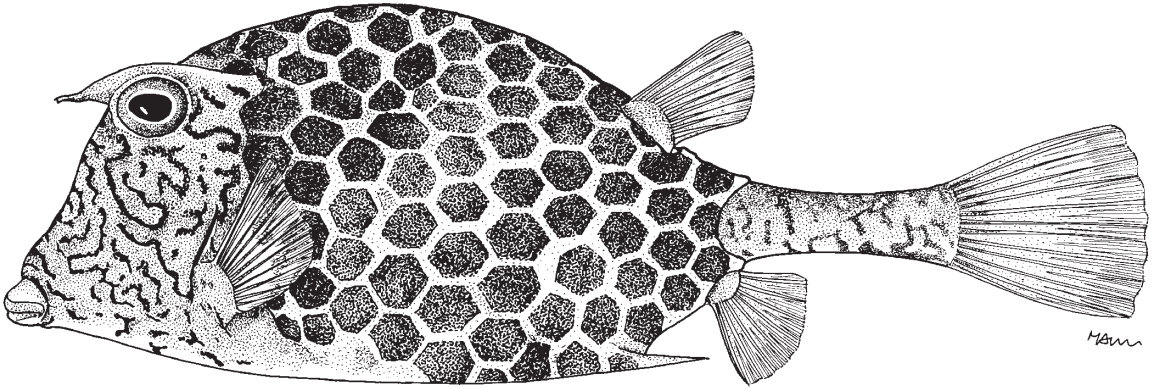
Tyler, J. C. 1965. The trunkfish genus *Acanthostracion* (Ostraciotidae, Plectognathi) in the western Atlantic: two species rather than one. *Proc. Acad. Nat. Sci. Philad.*, 117(1):1-18.

***Acanthostracion polygonius* Poey, 1876**

NCY

Frequent synonyms / misidentifications: *Lactophrys polygonius* Poey, 1876 / None.

FAO names: En - Honeycomb cowfish; Fr - Coffre polygone.

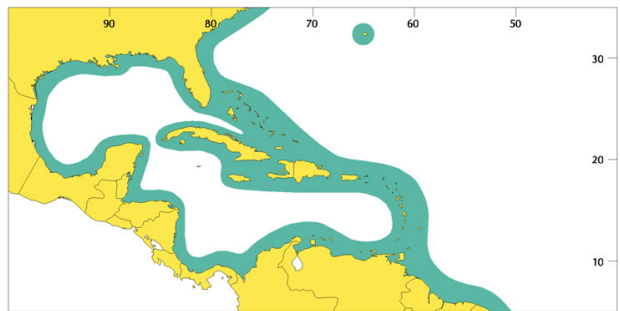


Diagnostic characters: Region of back behind head without a concavity, upraised into a carapace crest. Caudal fin rounded or slightly produced dorsally and ventrally. **Pectoral-fin rays usually 12, rarely 11. One pair of scales in front of eyes and 1 pair on posterolateral edges of carapace greatly expanded into spine-like processes; the most posteromedial scales above and below the caudal peduncle usually prolonged posteriorly as short spines; carapace complete behind dorsal fin. Colour:** generally olivaceous with dark hexagons and near hexagons, separated by light lines; reticulated dark lines on cheek.

Size: Maximum to about 40 cm; commonly to 25 cm.

Habitat, biology, and fisheries: Found in coral reefs down to about 70 m depth. Feeds on tunicates, alcyonarians, sponges, and shrimps. Caught incidentally with traps. Separate statistics are not reported for this species.

Distribution: New Jersey and Bermuda to Brazil, including the central American coast.

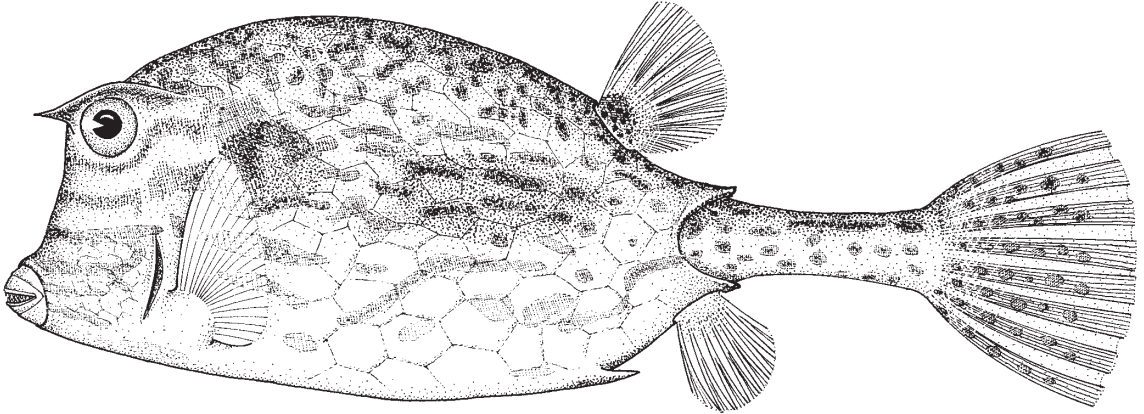


Acanthostracion quadricornis (Linnaeus, 1758)

NCQ

Frequent synonyms / misidentifications: *Lactophrys quadricornis* (Linnaeus, 1758), *Lactophrys tricornis* (Linnaeus, 1758) / None.

FAO names: En - Scrawled cowfish; Fr - Coffre taureau; Sp - Torito azul.

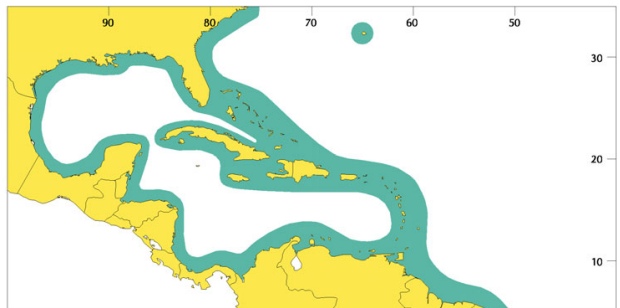


Diagnostic characters: Region of back behind head without a concavity, upraised into a carapace crest. Caudal fin rounded or slightly produced dorsally and ventrally. **Pectoral-fin rays usually 11, rarely 10 or 12. One pair of scales in front of eyes and 1 pair on posterolateral edges of carapace greatly expanded into spine-like processes; the most posteromedial scales above and below the caudal peduncle usually prolonged posteriorly as short spines; carapace complete behind dorsal fin.** **Colour:** generally greyish brown to yellowish green, with numerous short to long irregular bars and spots of blackish blue to bright blue, with the more or less parallel 3 or 4 stripes of blue on the cheek especially prominent, but some individuals relatively plain, lacking prominent markings.

Size: Maximum to about 45 cm; commonly to 30 cm.

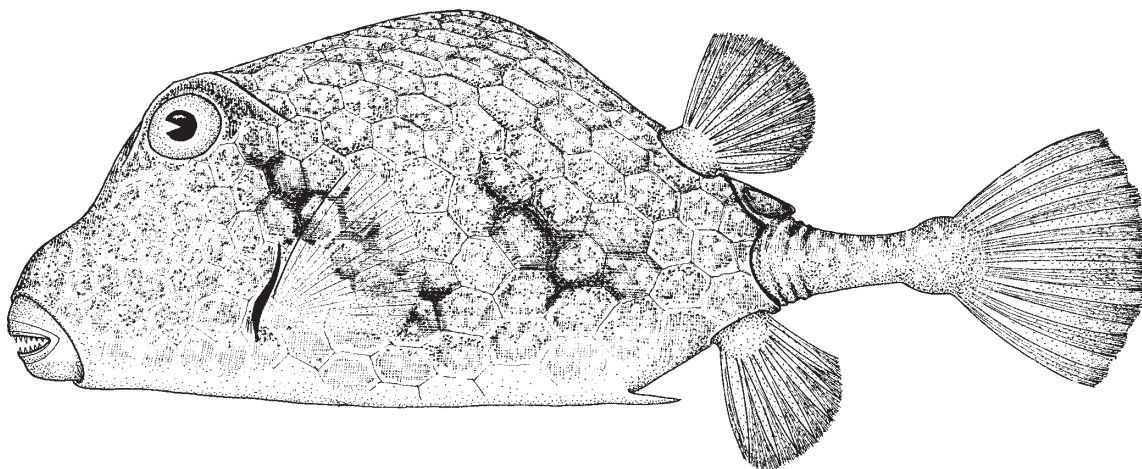
Habitat, biology, and fisheries: Found in shallow water down to about 80 m depth, mainly in seagrass beds. Feeds on sessile invertebrates such as tunicates, gorgonians, and anemones, as well as on slow-moving crustaceans, often partially buried in sand, and on sponges. Caught mainly with traps, occasionally with seines, throughout its range; locally abundant. Marketed fresh. An excellent foodfish, but has been implicated in boxfish poisoning when not properly prepared. Separate statistics are not reported for this species.

Distribution: Both sides of the tropical and temperate Atlantic; in the western Atlantic from Massachusetts to Brazil, including Bermuda, the Gulf of Mexico and the Caribbean. Found in the eastern Atlantic only as a rare stray in South Africa.



Lactophrys trigonus (Linnaeus, 1758)

LFT

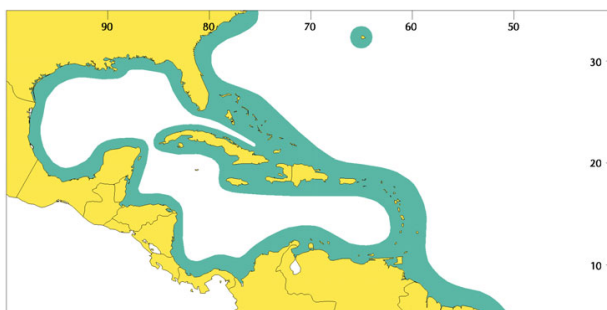
Frequent synonyms / misidentifications: None / None.**FAO names:** **En** - Buffalo trunkfish (AFS: Trunkfish); **Fr** - Coffre à cornes; **Sp** - Chapín bufalo tresfilos.

Diagnostic characters: Region of back behind the head without a concavity, upraised into a carapace crest. Caudal fin rounded or very slightly produced dorsally and ventrally. **Pectoral-fin rays usually 12, rarely 11 or 13. A pair of scales on the posterolateral edge of carapace (but none in front of eyes) expanded into spine-like processes; the most posteromedial scales above and below caudal peduncle never prolonged posteriorly as short spines; carapace incomplete behind the dorsal fin.** **Colour:** generally green to tan, with small white spots and 2 dark, blackish, diffuse chain-like markings, 1 behind and above the pectoral-fin base, the other about midbody carapace. In extremely large specimens the dark chain-like markings and pale spots disappear and are replaced by an extensive pattern of blackish irregular reticulations on a greenish to bluish background, with yellowish overtones anteriorly.

Size: Maximum to 45 cm; commonly to 20 cm.

Habitat, biology, and fisheries: Primarily a resident of seagrass beds in shallow water down to about 50 m depth. Feeds on a wide variety of small bottom invertebrates such as molluscs, crustaceans, worms, and sessile tunicates, as well as some seagrasses. Caught mainly with traps, occasionally with seines, throughout its range. Marketed fresh. Highly esteemed as food in the Caribbean, being cooked in the shell after removal of guts, but has been implicated in boxfish poisoning when not properly prepared. Separate statistics are not reported for this species.

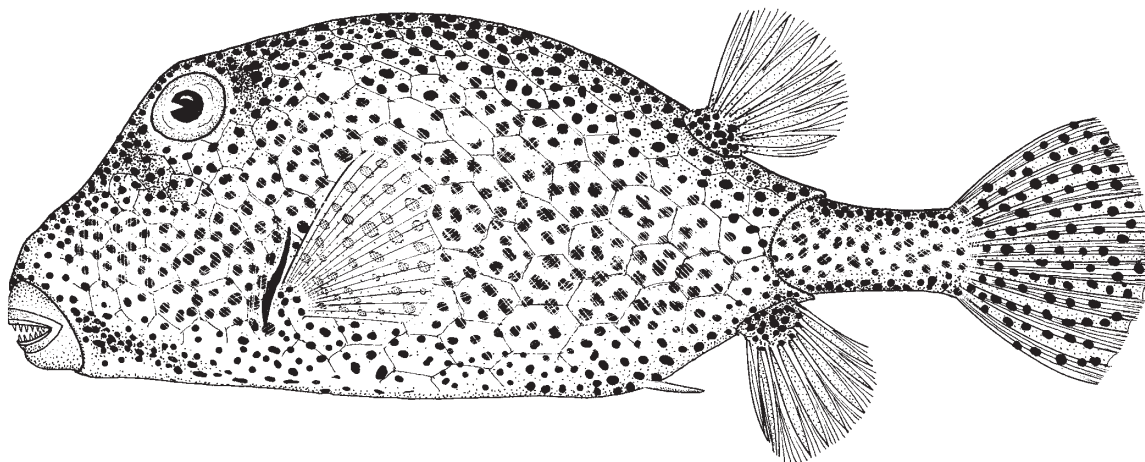
Distribution: Western Atlantic from Massachusetts to Brazil, including Bermuda, the Gulf of Mexico and the Caribbean.



Rhinesomus bicaudalis (Linnaeus, 1758)

Frequent synonyms / misidentifications: *Lactophrys bicaudalis* (Linnaeus, 1758) / None.

FAO names: **En** - Spotted trunkfish; **Fr** - Coffre zinga; **Sp** - Chapín pintado.

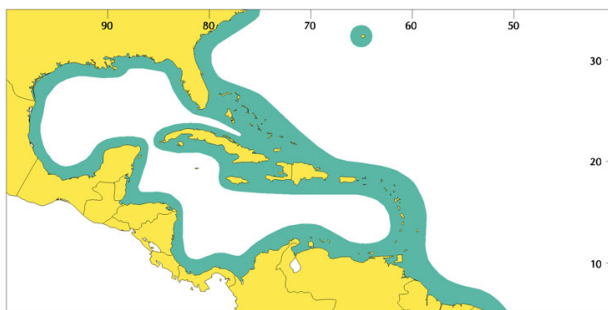


Diagnostic characters: Region of back behind head without a concavity, upraised into a carapace crest. Caudal fin rounded. **Pectoral-fin rays 12. A pair of scales on the posterolateral edges of carapace (but none in front of eyes) greatly expanded into spine-like processes; the most posteromedial scales above and below caudal peduncle never prolonged posteriorly as short spines; carapace complete behind dorsal fin. Colour:** generally pale grey to whitish with numerous dark brown or blackish spots; lips whitish; large specimens with about 3 prominent white spots on body behind eye.

Size: Maximum to 45 cm; commonly to 20 cm.

Habitat, biology, and fisheries: Found down to about 50 m depth. Feeds on a wide variety of small bottom invertebrates such as molluscs, crustaceans, starfishes, sea urchins, sea cucumbers, and sessile tunicates, as well as on some seagrasses. Caught mainly with traps throughout its range. Probably marketed fresh locally. Separate statistics are not reported for this species.

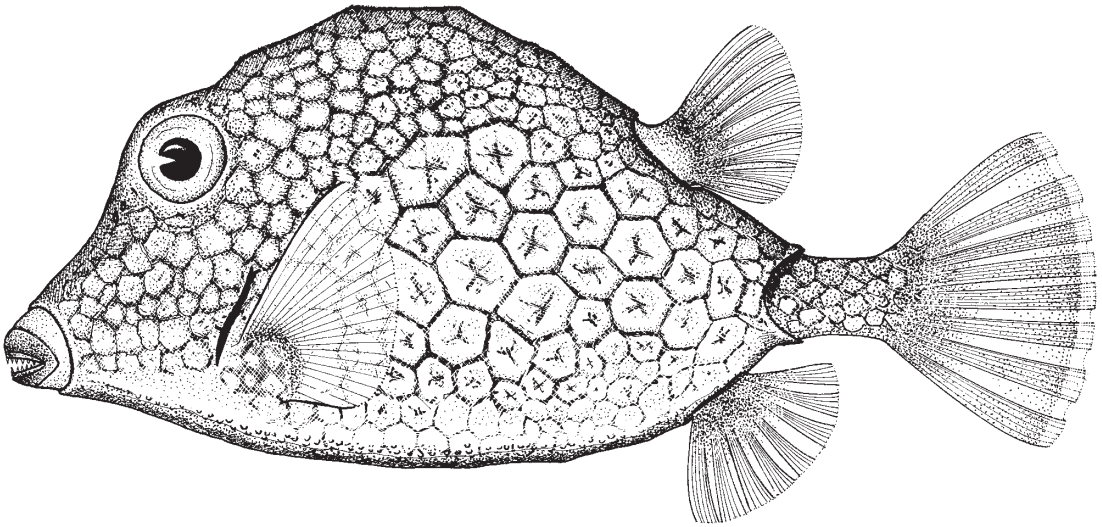
Distribution: Western Atlantic from Florida to Brazil, including Bermuda, the Gulf of Mexico and the Caribbean, and at Ascension Island.



Rhinesomus triqueter (Linnaeus, 1758)

Frequent synonyms / misidentifications: *Lactophrys triqueter* (Linnaeus, 1758) / None.

FAO names: **En** - Smooth trunkfish; **Fr** - Coffre baquette; **Sp** - Chapín común.



Diagnostic characters: Region of back behind head without a concavity, upraised into a carapace crest. Caudal fin rounded. **Pectoral-fin rays 12. No spine-like processes either posteriorly from posterolateral edges of carapace or anteriorly in front of eyes; the most posteromedial scales above and below caudal peduncle never prolonged posteriorly as short spines; carapace complete behind dorsal fin. Color:** generally blackish brown with numerous pale spots ranging from white to straw and golden yellow; lips and finbases blackish.

Size: Maximum to 30 cm; commonly to 15 cm.

Habitat, biology, and fisheries: Usually found in reef areas down to about 50 m depth. Feeds on a wide variety of small bottom invertebrates such as molluscs, crustaceans, worms, and sessile tunicates and sponges. Caught mainly with traps, occasionally with seines, throughout its range. Marketed fresh locally. Separate statistics are not reported for this species.

Distribution: Western Atlantic from Massachusetts to Brazil, including Bermuda, the Gulf of Mexico, and the Caribbean.

