

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

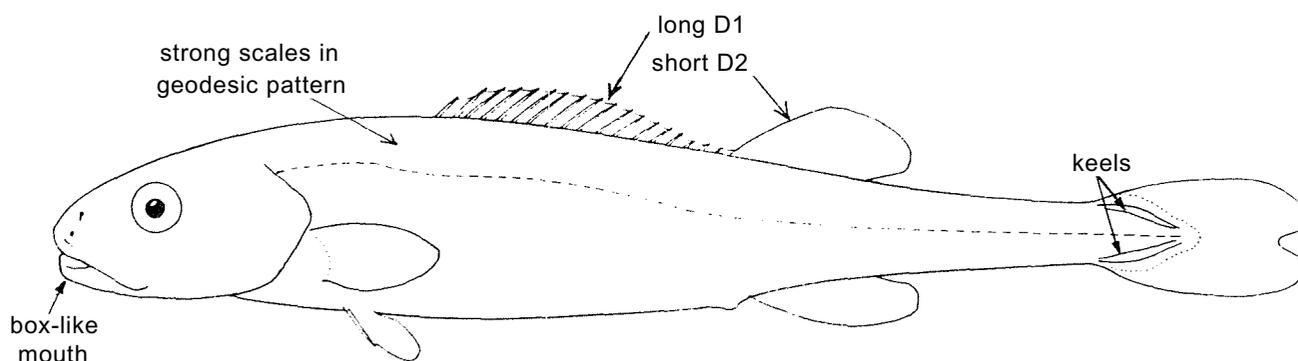
TETRAGONURIDAE

Squaretails

Body very elongate, cylindrical; caudal peduncle, very long and thick, square in cross-section, with modified scales forming 2 lateral keels on each side near base of caudal fin. Head long and somewhat broad, snout long and blunt; eyes large, without adipose tissue and with a series of grooves on posterior rim; mouth fairly large, maxilla extending to below eye; premaxilla not protractile; only the ventral border of maxilla visible below large lacrimal bone, lower jaw appears to shut within upper; teeth small, pointed and recurved in upper jaw; large, flattened and knife-like in lower jaw; opercles fleshy. Two dorsal fins, the first originating over tip of pectoral fin, with 10 to 20 short spines which fold into a groove, the second with a much shorter base, with 10 to 17 rays; a single anal fin, similar to the second dorsal; pectoral fins small and rounded; pelvics very small, inserted behind pectoral fin bases and anterior to origin of first dorsal; caudal fin with 2 rounded lobes, not strongly forked. Lateral line without pored scales, slightly arched anteriorly, then descending to run along mid-line of sides and ending on caudal peduncle. Scales moderate in size, with heavy keels, very adherent and following a geodesic pattern around the body; top of head and snout naked, with small pores.

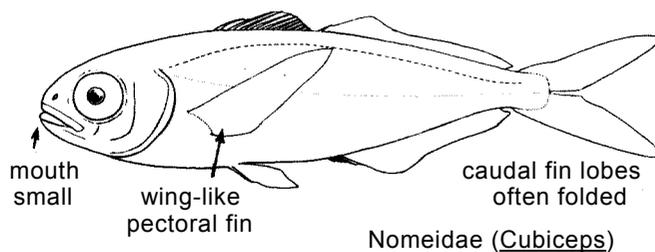
Colour: adults uniformly brown, ranging from tan to almost black, the young often greyish.

Squaretails are rather small-sized oceanic epi- or mesopelagic fishes (up to about 30 cm in length), almost never seen inshore. They feed on soft-bodied pelagic invertebrates, and the young commonly occur in association with salps, even living within them. There are reports that the flesh may be poisonous, and they can in no case be considered to have fishery potential. Squaretails do figure in the diets of large oceanic fishes.



SIMILAR FAMILIES OCCURRING IN THE AREA :

Nomeidae: body compressed, generally with elongate pectoral fins; mouth small; scales thin, small, and easily shed; no keels on caudal peduncle; caudal fin lobes often folded.



GENERA OCCURRING IN THE AREA:

A single genus, Tetragonurus.

LIST OF SPECIES OCCURRING IN THE AREA:

Tetragonurus atlanticus Lowe, 1839

Tetragonurus pacificus Abe, 1953

Prepared by R.L. Haedrich, Memorial University of Newfoundland, St. John's, Newfoundland, Canada

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
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TETRAODONTIDAE

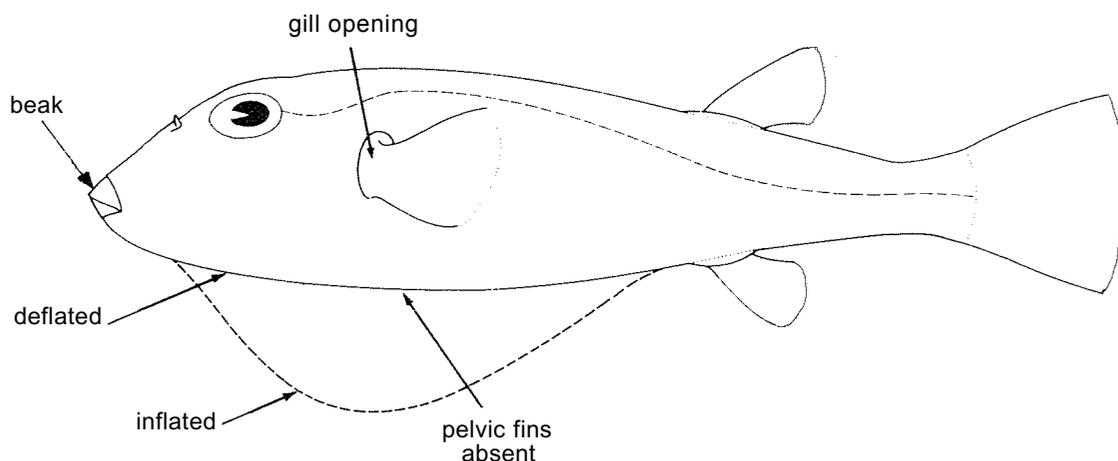
(including Canthigasteridae)

Pufferfishes, blowfishes, tobies

Small to moderate-sized fishes (up to 75 cm in length) with a heavy, blunt body capable of rapid inflation by intake of water (or air). Head large and blunt, jaws modified to form a beak of 4 heavy, powerful teeth, 2 above and 2 below; gill openings simple slits anterior to pectoral fins; eyes located high on head. Pelvic fins absent; dorsal and anal fins located far posteriorly, containing no spines, but 7 to 15 soft rays; caudal fin truncate, rounded, or emarginate to somewhat lunate. Lateral lines, when present often indistinct, forming an interconnecting pattern on the sides of head and body, but quite distinct in some genera, e.g., Fugu and Torquigener. Typical scales absent, but numerous small spiny prickles often present on back and/or belly, sometimes on sides.

Colour: most species are mottled and variegated on back and sides, sometimes with spots of various sizes and colours, while others are of plain coloration.

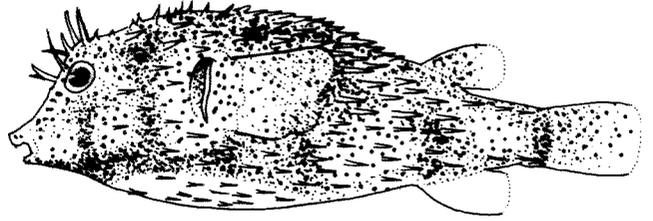
Pufferfishes are inhabitants of tropical and temperate seas, most frequent in shallow inshore waters, sometimes entering brackish and fresh waters, but a few species are pelagic. Usually found alone, although some species school together, especially for mating purposes. They have the ability to inflate themselves with either air or water as a deterrent to predators. In addition, the viscera and skin of most species are poisonous, some more than others. However, the effect of this poison on other marine animals is not fully understood, whereas its toxicity to terrestrial animals is well known. Careful preparation is required to render pufferfish flesh safe to eat (removal of skin and viscera) and the resultant product is considered a delicacy in some countries (e.g., Fugu in Japan). Nevertheless, many deaths still occur each year from the consumption of these fishes.



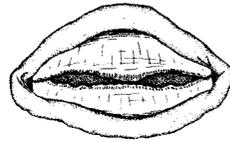
SIMILAR FAMILIES OCCURRING IN THE AREA:

Diodontidae: strong elongate spines cover head and body; a single tooth in each of the upper and lower jaws (2 teeth in each jaw in Tetraodontidae).

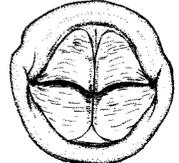
Monacanthidae: spinous dorsal fin present, usually consisting of one strong spine with a second much smaller spine at its rear base.



Diodontidae

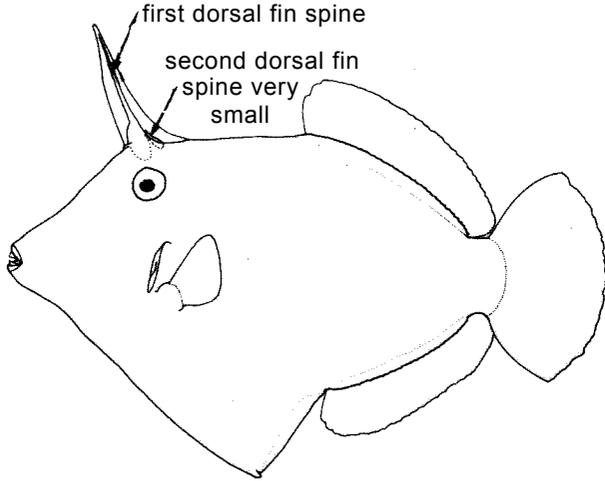


Diodontidae

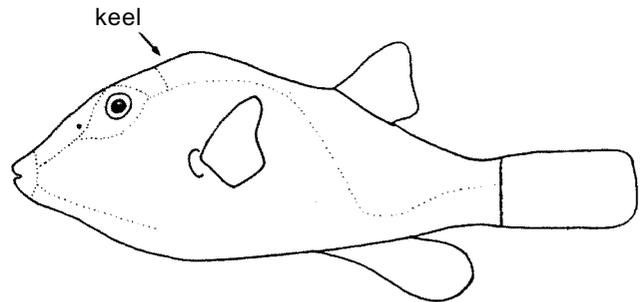


Tetraodontidae

tooth plates



Monacanthidae

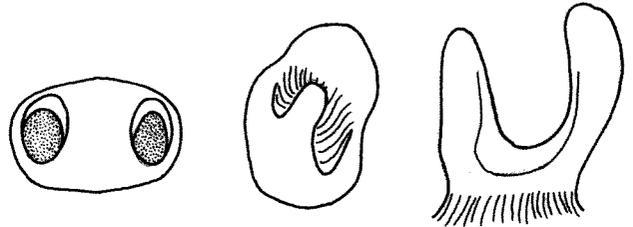


Canthigaster Fig.1

KEY TO GENERA OCCURRING IN THE AREA:

1a. Nostrils minute, rarely visible without aid of magnification; dorsal surface posterior to eyes distinctly keeled (Fig.1) Canthigaster

1b. Nostrils easily visible without magnification; dorsal surface posterior to eyes more or less smooth, without a distinct keel

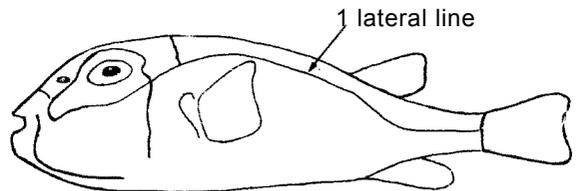


a) Lagocephalus b) Chelonodon c) Arothron
nostril Fig.2

2a. Nostril an upright sac with 2 openings (Fig.2a)

3a. A single lateral line on side of body (Fig.3) Sphoeroides

3b. Two lateral lines on side of body (Figs 4 and 5)



Sphoeroides Fig.3

4a. Caudal fin lunate to emarginate (Fig.4) Lagocephalus

4b. Caudal fin rounded or truncate (Fig.5)

5a. bony interorbital region broad

6a. No raised skinfold along lower side of body, or if present, mouth antero-dorsally positioned Amolrhynchotes

6b. A raised skinfold along lower side of body; mouth anteriorly positioned Fugu

5b. bony interorbital region narrow ..Torquigener

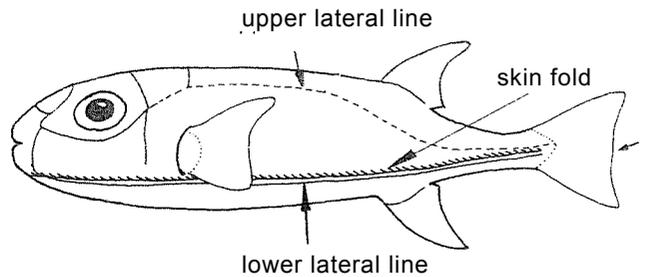
2b. Nostril either an upraised cup with 2 fleshy lobes (Fig.2b) or a solid bifid tentacle (Fig.2c)

7a. A single lateral line on side of body (Fig.7) Arothron

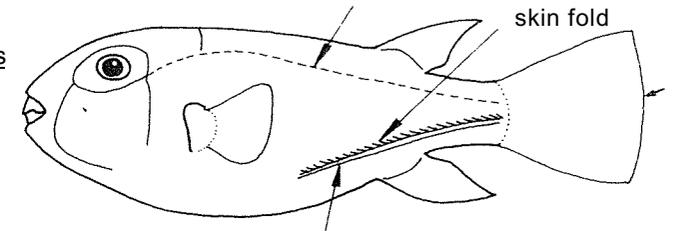
7b. Two lateral lines, the upper joining the lower in the region above or behind the anal fin (Fig.8)

8a. back and belly with spines Chelonodon

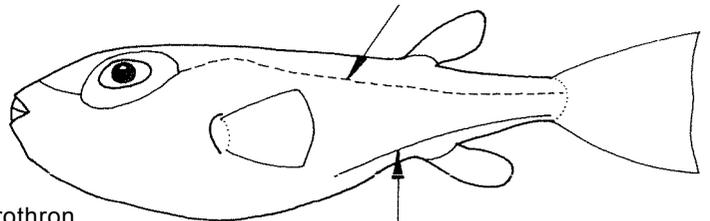
8b. belly only with spines Chelonodontops



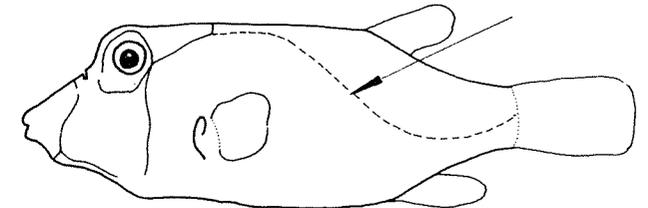
Lagocephalus Fig.4



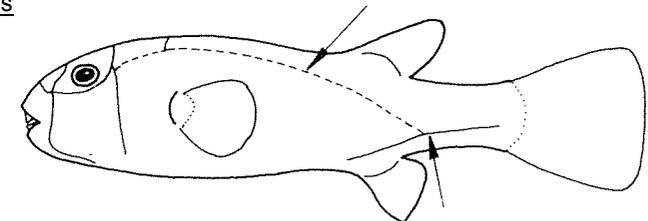
Torquigener Fig.5



Amblyrhynchotes Fig.6



Arothron Fig.7



Chelonodon Fig.8

LIST OF SPECIES OCCURRING IN THE AREA:

- Amblyrhynchotes honckenii (Bloch, 1796)
Amblyrhynchotes spinosissimus (Regan, 1908)
- Arothron hispidus (Lacepède, 1802)
Arothron immaculatus (Bloch & Schneider, 1801)
Arothron inconditus Smith, 1958
Arothron leopardus (Day, 1878)
Arothron mapp (Lesson, 1830)
Arothron meleagris (Lacepède, 1798)
Arothron nigropunctatus (Bloch & Schneider, 1801)
Arothron stellatus Bloch & Schneider, 1801
- Canthigaster amboinensis (Bleeker, 1865)
Canthigaster bennetti (Bleeker, 1854)
Canthigaster coronata (Vaillant & Sauvage, 1875)
Canthigaster janthinuroptera (Bleeker, 1855)
Canthigaster margaritata (Rüppell, 1828)
Canthigaster natalensis (Günther, 1870)
Canthigaster pygmaea Allen & Randall, 1977
Canthigaster rivulata (Schlegel, 1850)
Canthigaster smithae Allen & Randall, 1977
Canthigaster solandri (Richardson, 1844)
Canthigaster tyleri Allen & Randall, 1977
Canthigaster valentini (Bleeker, 1853)
- Chelonodon fluviatilis (Buchanan, 1822)
Chelonodon laticeps Smith, 1947
Chelonodon patoca (Buchanan, 1822)
- Chelonodontops pulchellus Smith, 1958
- Fugu oblongus (Bloch, 1786)
- Lagocephalus inermis (Temminck & Schlegel, 1844)
Lagocephalus lagocephalus Linnaeus, 1758
Lagocephalus lunaris (Bloch & Schneider, 1801)
Lagocephalus sceleratus (Gmelin, 1789)
Lagocephalus spadiceus (Richardson, 1844)
- Sphoeroides pachygaster (Müller & Troschel, 1848)
Sphoeroides pleurospilus (Regan, 1919)
- Torquigener hypselogeneion (Bleeker, 1852)

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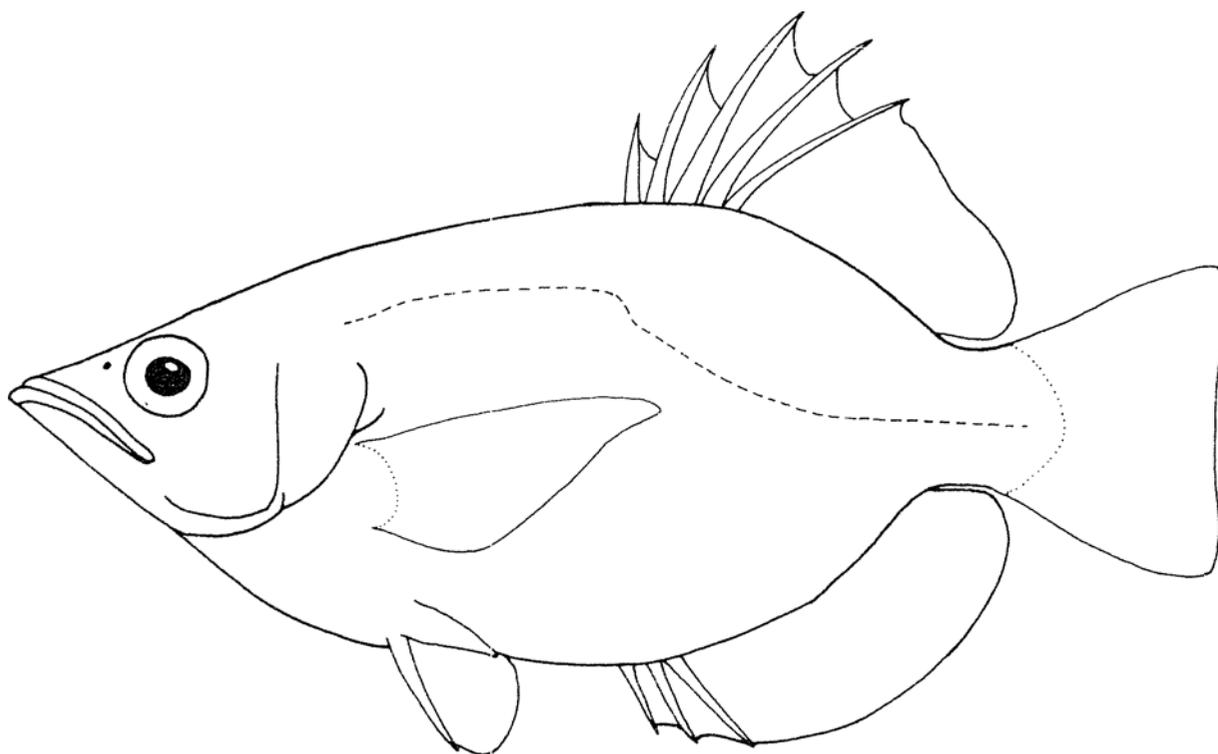
TOXOTIDAE

Archerfishes, riflefishes

Body laterally compressed. Eye large; mouth moderate in size. A single dorsal fin with 4 or 5 spines and 12 to 14 rays; anal fin with 3 spines and 15 to 17 rays. Head and body covered with small to moderate scales.

Colour: usually whitish or silvery with several dark spots or bars on sides.

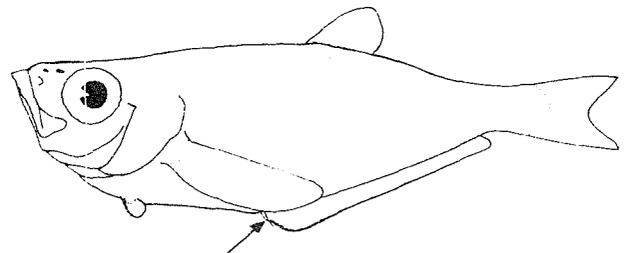
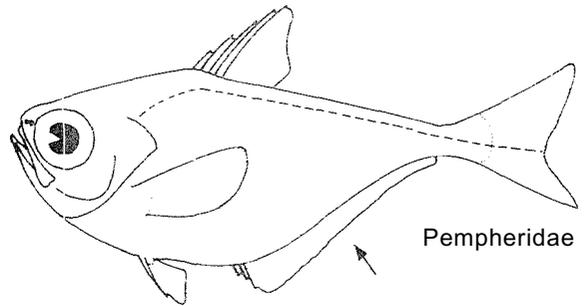
Relatively small fishes living individually or in small groups in brackish (sometimes only slightly) water or in freshwater streams. They are frequently seen near the surface and are renowned for their ability to knock down insects from overhanging vegetation with a jet of water squirted from the mouth.



SIMILAR FAMILIES OCCURRING IN THE AREA:

Pempheridae: dorsal fin relatively short, placed above pectoral fin; anal fin long, usually with more than 30 rays (17 or less in Toxotidae).

Bathyclupeidae: dorsal fin spines absents anal fin long with a single spine and more than 20 rays; body elongate (depth 3 or 4 times in standard length); fragile fishes with deciduous scales living in deep water.



KEY TO GENERA OCCURRING IN THE AREA:

Toxotes only.

LIST OF SPECIES OCCURRING IN THE AREA:

Code numbers are given for those species for which Identification Sheets are included

Toxotes chatareus (Hamilton-Buchanan, 1822)

TOX Tox 1

Toxotes jaculator (Pallas, 1766)

TOX Tox 2

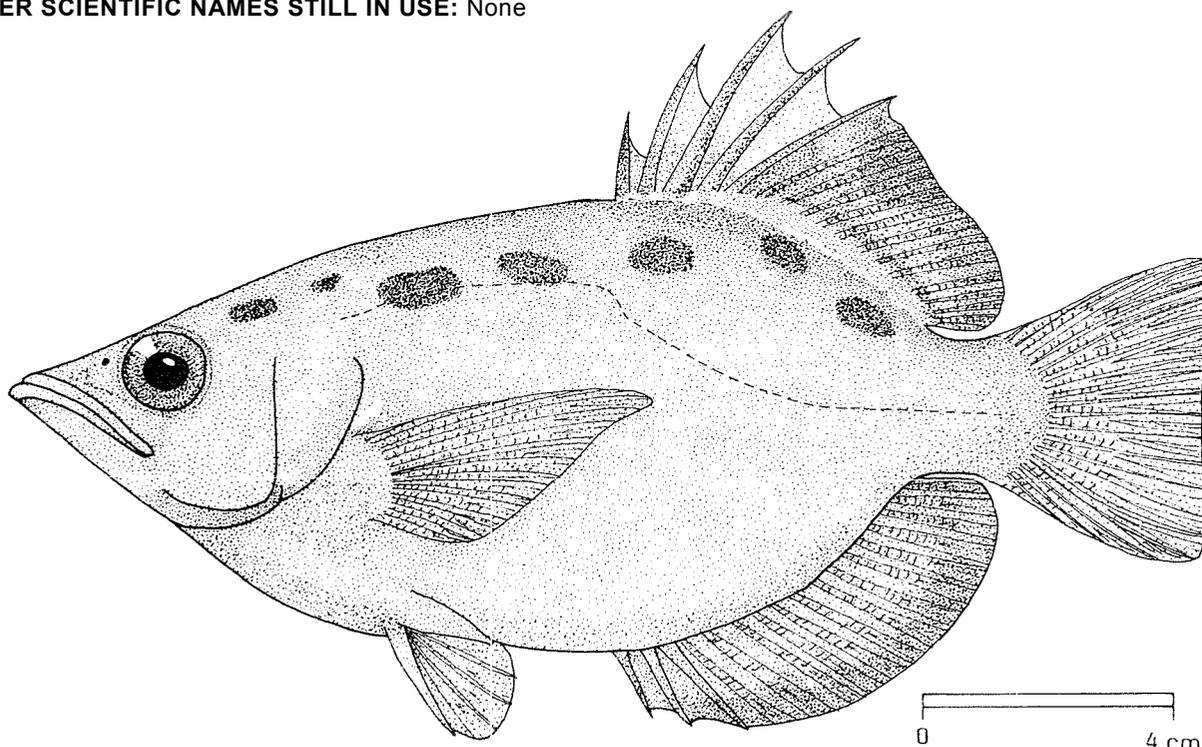
Prepared by G.R. Allen, Western Australian Museum, Perth, Australia

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: TOXOTIDAE

FISHING AREA 51
(W. Indian Ocean)Toxotes chatareus (Harnilton-Buchanan, 1822)

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO : En - Spotted archerfish
 Fr - Poisson archer tacheté
 Sp - Arquero manchado

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oblong, compressed; head flattened on dorsal surface; dorsal fin spines 5; lateral line scales 30 to 36.

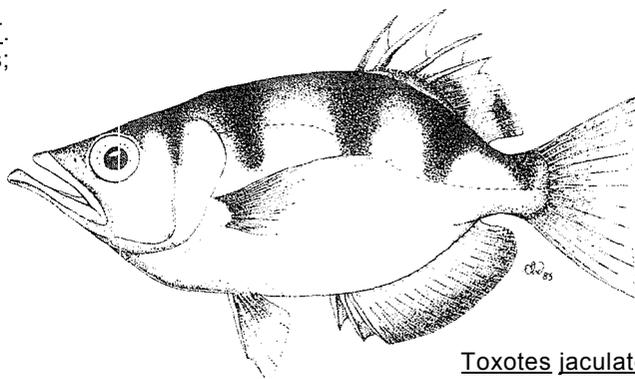
Colour: body generally pale (grey to silvery); a series of 5 to 7 black blotches on upper sides; dorsal and anal fins dusky to blackish; pectorals, pelvics and caudal fin slightly dusky.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Toxotes jaculator: 4 dorsal fin spines (5 in I. chatareus) a series of 4 or 5 black bars on upper sides; lateral line scales 26 to 30 (30 to 36 in I. chatareus).

SIZE:

Maximum: 30 cm; common to 20 cm.



Toxotes jaculator

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Known in the area only from Sri Lanka and India; also ranges eastward to New Guinea and northern Australia.

Primarily an inhabitant of brackish mangrove estuaries, but also penetrates freshwater rivers and small streams.

Feeds at the surface during the day on floating debris which includes insects and vegetable matter.

PRESENT FISHING GROUNDS:

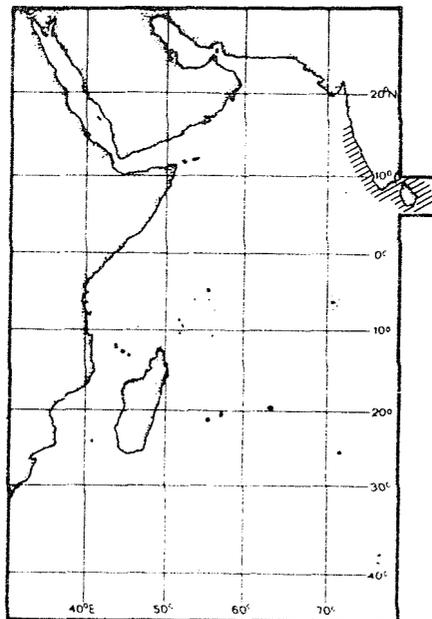
Mangrove estuaries, throughout the year.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species, but it is common in certain markets.

Caught mainly with seine nets, but also readily taken by hook and line.

Marketed mostly fresh.

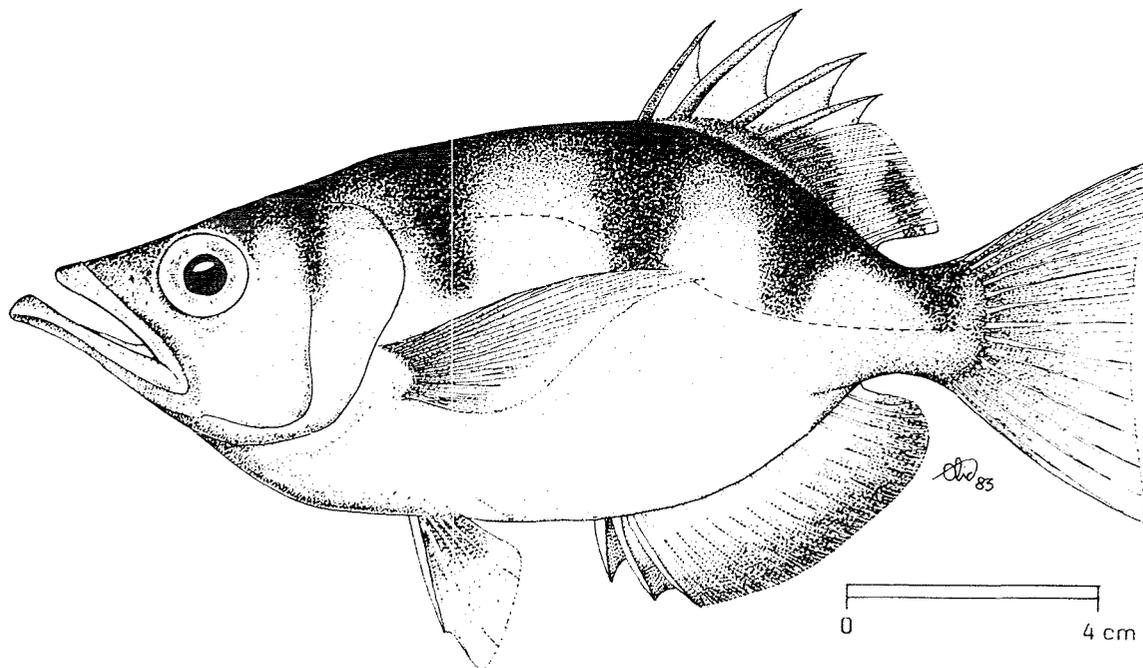


FAO SPECIES IDENTIFICATION SHEETS

FAMILY: TOXOTIDAE

FISHING AREA 51
(W. Indian Ocean)*Toxotes jaculator* (Pallas, 1766)

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO : En - Banded archerfish
 Fr - Poisson archer sellé
 Sr - Arquera ensillado

NATIONAL:

DISTINCTIVE CHARACTERS:

Body oblong, compressed; head flattened on dorsal surface; dorsal fin spines 4; lateral line scales 26 to 30.

Colour: body generally pale; a series of 4 or 5 black blotches on upper sides; dorsal and anal fins dusky to blackish; pectorals, pelvics and caudal fin usually pale.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Toxotes chatareus: 5 dorsal fin spines (4 in T. jaculator); a series of 5 to 7 black blotches on upper sides; lateral line scales 30 to 36 (26 to 30 in T. jaculator).

SIZE:

Maximum: 30 cm; common to 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Known in the area only from India; also ranges eastward to Australia, the New Hebrides and Solomon Islands, and northward to the Philippines.

Primarily an inhabitant of brackish mangrove estuaries, but also penetrates freshwater rivers and small streams.

Feeds at the surface during the day on floating debris which includes insects and vegetable matter.

PRESENT FISHING GROUNDS:

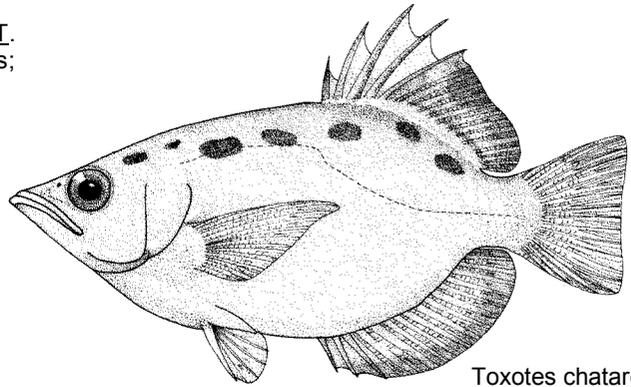
Mangrove estuaries, throughout the year.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species, but it is common in certain markets.

Caught mainly with seine nets, but also readily taken by hook and line.

Marketed mostly fresh.



Toxotes chatareus

