

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

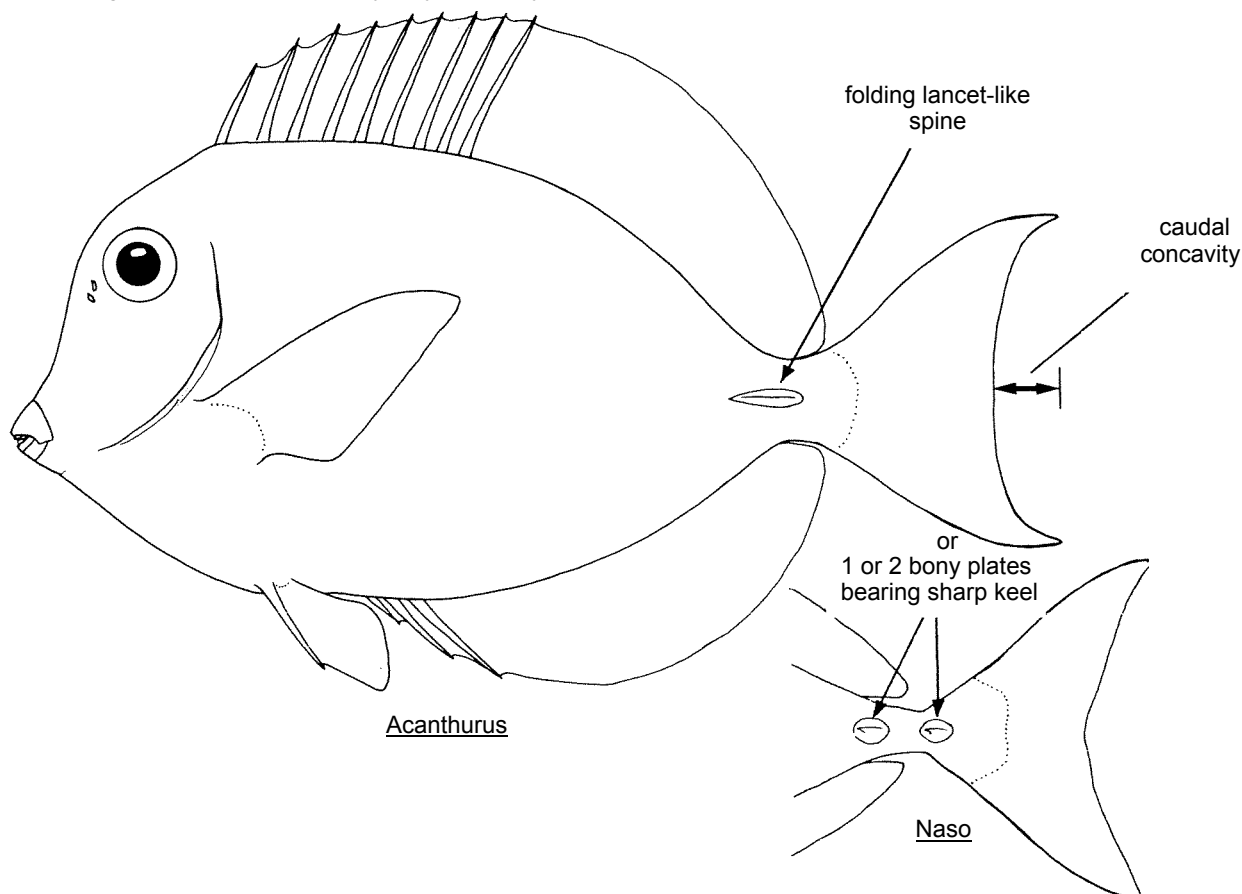
ACANTHURIDAE

Surgeonfishes, tangs, unicornfishes

High-bodied, compressed fishes with a single folding lancet-like spine (Acanthurinae) or one or two bony plates usually bearing sharp keels (Nasinae on side of caudal peduncle). Mouth small, the premaxilla not protractile; teeth in a single row, variable in shape with genus, but never caniniform or molariform. A continuous, unnotched dorsal fin with 4 to 9 spines preceding the soft rays; anal fin with 2 or 3 spines preceding the soft rays; pelvic fins with 1 spine and 3 soft rays (Naso and Paracanthurus) or 1 spine and 5 rays (Acanthurus, Ctenochaetus and Zebrasoma); caudal fin truncate to lunate. Scales small.

Colour: often brown or grey, but some species very colourful.

Surgeonfishes and unicornfishes are most often found on or near coral reefs or rocky areas. All of the genus Zebrasoma, all but two of the species of Acanthurus and many of the Naso are herbivorous; they graze diurnally on benthic algae, sometimes on seagrasses. The species of the genus Ctenochaetus feed primarily on detritus. The Ctenochaetus and one group of Acanthurus have a thick-walled, gizzard-like stomach. These fishes ingest more sediment with their food than species with thin-walled stomachs. Probably this serves to assist in the trituration of algal particles. Two of the Acanthurus, the single species of Paracanthurus and several of the Naso are zooplankton-feeders. The surgeonfishes and unicornfishes are not of great commercial value, though in insular and coastal regions with coral reefs they may be locally important.

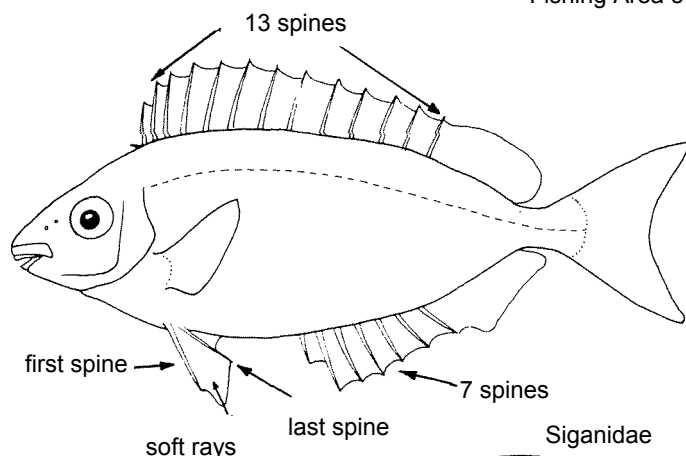


SIMILAR FAMILIES OCCURRING IN THE AREA

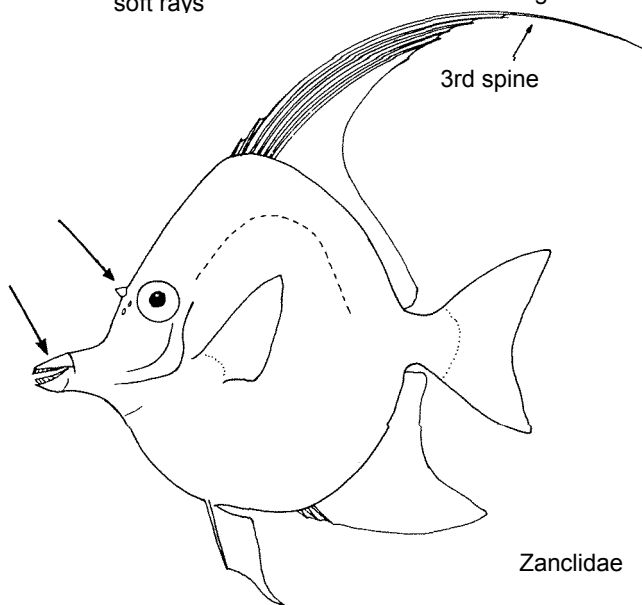
Although no family of fishes is apt to be confused with the Acanthuridae because of their distinctive caudal spines, there is superficial resemblance to the Siganidae and the monotypic Zanclidae.

Siganidae: pelvic fins with 2 spines and 3 soft rays between them; dorsal fin with 13 spines (4 to 9 in Acanthuridae); anal fin with 7 spines (2 or 3 in Acanthuridae).

Zanclidae: snout protruding; premaxilla protractile; dorsal fin with a long filament from third spine; adults with a pair of supraocular bony projections.



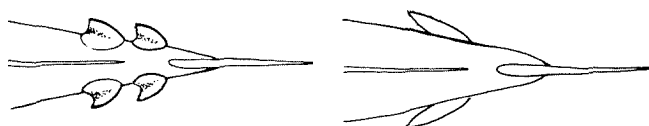
Siganidae



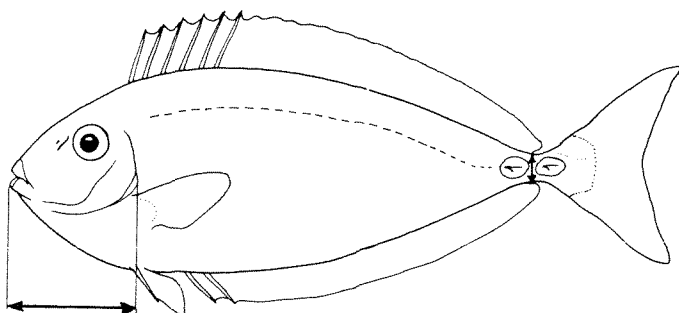
Zanclidae

KEY TO THE GENERA OCCURRING IN THE AREA

- 1 a. One or two immovable bony plates, often keeled, on side of caudal peduncle (Fig. 1a); least depth of caudal peduncle 4 to 6 times in head length (Fig. 2) Naso
- 1b. A single folding spine on side of caudal peduncle (Fig. 1b); least depth of caudal peduncle 2.1 to 3.5 times in head length (Figs.

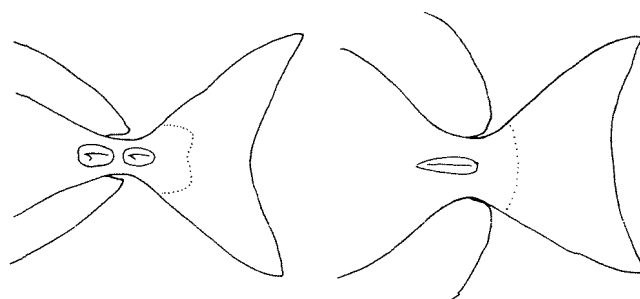


dorsal view



Naso

Fig.2



a) Naso

b) Acanthurus

Fig.1

2 a. Pelvic fins with 1 spine and 3 soft rays; scales on head modified into tuberculated plates (Fig. 3) Paracanthurus

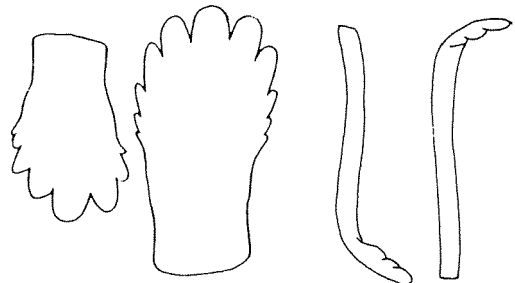
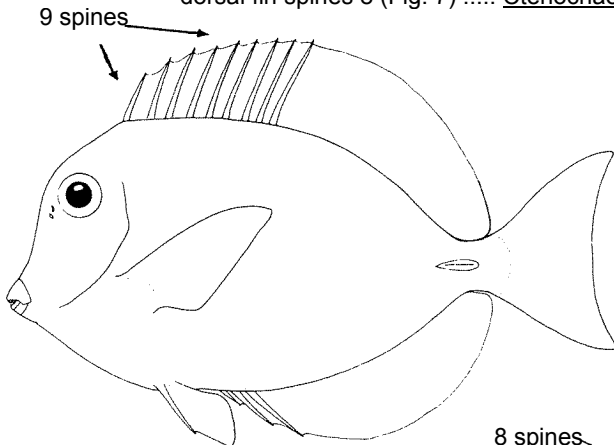
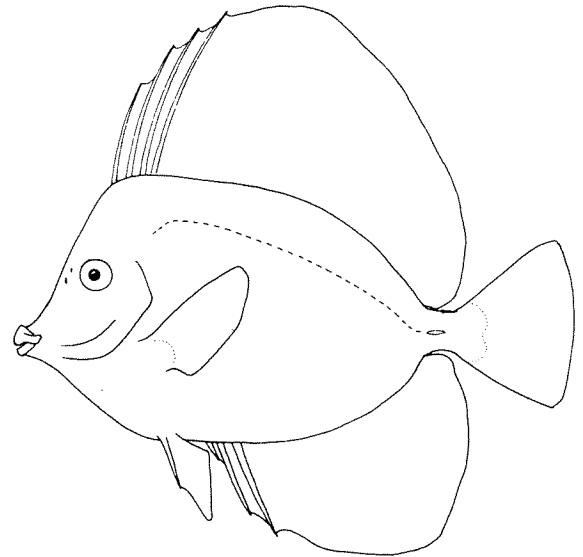
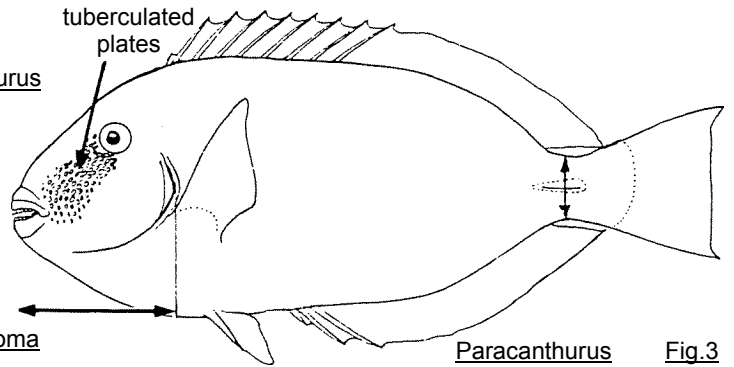
2 b. Pelvic fins with 1 spine and 5 rays; scales on head not modified into tuberculated plates

3 a. Dorsal fin spines 4 or 5; length of longest dorsal ray 2.2 to 3.8 times in standard length; caudal spine in a shallow depression (Fig. 4) Zebrasoma

3 b. Dorsal fin spines 8 or 9; length of longest dorsal ray 3.6 to 6.0 in standard length; caudal spine in a well-defined deep groove

4 a. Teeth fixed, not elongate with expanded incurved tips, denticulate on both margins (Fig. 5a) and not over 26 in upper jaw; dorsal fin spines 9 (except A. pyroferus with 8) (Fig.6) Acanthurus

4 b. Teeth movable, elongate with expanded incurved tips which bear only lateral denticulations (Fig. 5b), 30 to 60 in upper jaw; dorsal fin spines 8 (Fig. 7) Ctenochaetus

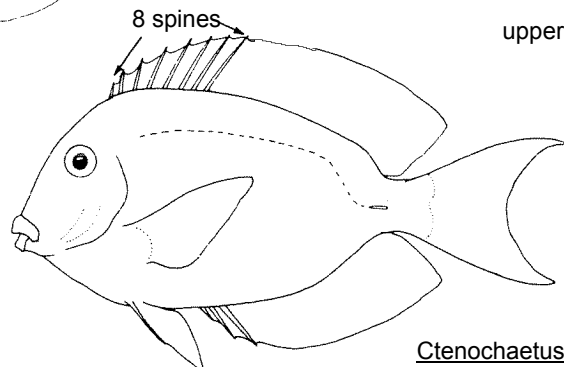


a) Acanthurus

b) Ctenochaetus

upper and lower tooth examples

Fig.5



Ctenochaetus

Fig.7

LIST OF SPECIES OCCURRING IN THE AREA

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

Subfamily Acanthurinae

<u>Acanthurus</u> <u>bariense</u> Lesson	
<u>Acanthurus</u> <u>bleekeri</u> Günther, 18b1	ACANT Acant 4
<u>Acanthurus</u> <u>dussumieri</u> Valenciennes, 1835	ACANT Acant 5
<u>Acanthurus</u> <u>guttatus</u> Bloch & Schneider	
<u>Acanthurus</u> <u>leucocheilus</u> Herre	
<u>Acanthurus</u> <u>leucosternon</u> Bennett, 1832	ACANT Acant 6
<u>Acanthurus</u> <u>lineatus</u> (Linnaeus, 1758)	ACANT Acant 7
<u>Acanthurus</u> <u>mata</u> (Cuvier)	
<u>Acanthurus</u> <u>melanosternon</u> Smith	
* <u>Acanthurus</u> <u>nigricans</u> (Linnaeus)	
** <u>Acanthurus</u> <u>nigricauda</u> Duncker & Mohr	
<u>Acanthurus</u> <u>nigrofuscus</u> (Forsskål)	
<u>Acanthurus</u> <u>polyzona</u> (Bleeker)	
*** <u>Acanthurus</u> sp.	
<u>Acanthurus</u> <u>sohal</u> (Forsskål)	
<u>Acanthurus</u> <u>tennentii</u> (Günther, 1861)	ACANT Acant 8
<u>Acanthurus</u> <u>thompsoni</u> (Fowler)	
<u>Acanthurus</u> <u>triostegus</u> (Linnaeus, 1758)	ACANT Acant 9
<u>Acanthurus</u> <u>xanthopterus</u> Valenciennes, 1835	ACANT Acant 10
<u>Ctenochaetus</u> <u>binotatus</u> Randall	
<u>Ctenochaetus</u> <u>striatus</u> (Quo) & Gaimard, 1824)	ACANT Cteno 1
<u>Ctenochaetus</u> <u>strigosus</u> (Bennet)	
<u>Paracanthurus</u> <u>hepatus</u> (Linnaeus)	
<u>Zebrasoma</u> <u>veliferum</u> (Bloch, 1797)	
<u>Zebrasoma</u> <u>gemmatum</u> (Cuvier & Valenciennes)	
<u>Zebrasoma</u> <u>scopas</u> Cuvier)	
<u>Zebrasoma</u> <u>xanthurum</u> (Blyth)	

Subfamily Nasinae

**** <u>Naso</u> <u>annulatus</u> (Quoy & Gaimard)	
<u>Naso</u> <u>brachycentron</u> (Cuvier & Valenciennes)	
<u>Naso</u> <u>brevirostris</u> (Cuvier & Valenciennes)	
<u>Naso</u> <u>fageni</u> Morrow	
<u>Naso</u> <u>hexacanthus</u> (Bleeker, 1855)	ACANT Naso 1
<u>Naso</u> <u>lituratus</u> Bloch & Schneider, 16G1)	ACANT Naso 2
<u>Naso</u> <u>minor</u> (Smith)	
<u>Naso</u> <u>thorpei</u> Smith	
<u>Naso</u> <u>thynnoides</u> (Cuvier & Valenciennes)	
<u>Naso</u> <u>tuberosus</u> Lacepède	
<u>Naso</u> <u>unicornis</u> (Forsskål, 1775)	ACANT Naso 3
<u>Naso</u> <u>vomer</u> (Klunzinger)	
<u>Naso</u> <u>vlamingii</u> (Cuvier & Valenciennes)	

Prepared by J.E. Randall, B. Bishop Museum, Honolulu, Hawaii 96819, U.S.A.

* A Red Sea endemic; A. gahhm (Forsskål) is a junior synonym

** Misidentified as A. gahhm by Randall (1956). Widespread in the Indo-Pacific but absent from the Red Sea

*** A close relative of A. pyroferus, currently under description by the author

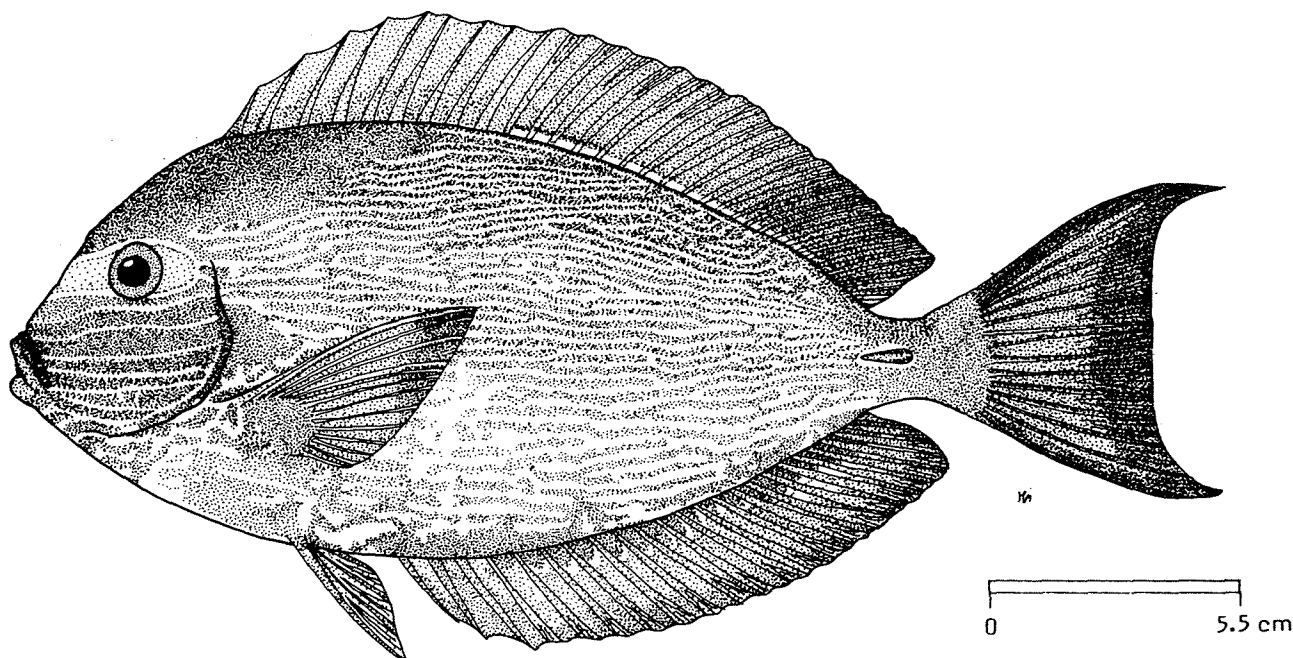
**** Naso herrei Smith appears to be the large adult of N. annulatus

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: ACANTHURIDAE

FISHING AREA 51
(W. Indian Ocean)*Acanthurus bleekeri* Günther, 1861

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO : En - Bleeker's surgeonfish Fr -
Chirurgien de Bleeker Sp -
Cirujano de Bleeker

NATIONAL :

DISTINCTIVE CHARACTERS:

A moderately high-bodied, compressed fish, the depth 2.1 to 2.5 times in standard length (smaller individuals deeper-bodied). Snout relatively short, 6.6 to 6.9 times in standard length; eye 3.2 to 4.5 times in head length (at standard lengths of 12 to 28 cm); mouth small; teeth spatulate, close-set, with denticulate edges, and small for the genus; gillrakers on first arch 13 to 15. A continuous, unnotched dorsal fin with 9 spines and 24 to 26 soft rays; anal fin with 3 spines and 23 or 24 soft rays; caudal fin emarginate to lunate, the caudal concavity 6.5 to 9 times in standard length (concavity greater in larger individuals). Caudal peduncle narrow, the least depth 10 to 12 times in standard length, with a lancet-like spine on sides which folds into a deep horizontal groove. Stomach large, U-shaped, thin-walled with large, thorn-like papillae on inner surface.

Colour: brown with longitudinal blue lines on head and body; a yellow area behind eye and two yellow bands extending anteriorly from eye. In life this fish is capable of changing its ground colour from dark brown to pale blue.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA

This species differs from all other Acanthurus in its narrower caudal peduncle (least depth 10 to 12 in standard length, compared to 7.7 to 9.5 times for other species); also in its small mouth (the width from rictus to rictus 4.7 to 5 times in head length and the small teeth.

SIZE

Maximum: 40 cm; common to 30 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Occurs throughout most of the Indo-Pacific (from the Red Sea southward to Durban, Natal, and eastward to French Polynesia. In the Western Pacific, from southern Japan to the southern Great Barrier Reef.

Usually found at depths of 15 m or more, generally in the vicinity of coral reefs or rocky bottom. May occur in aggregations.

Feeds on zooplankton.

PRESENT FISHING GROUNDS :

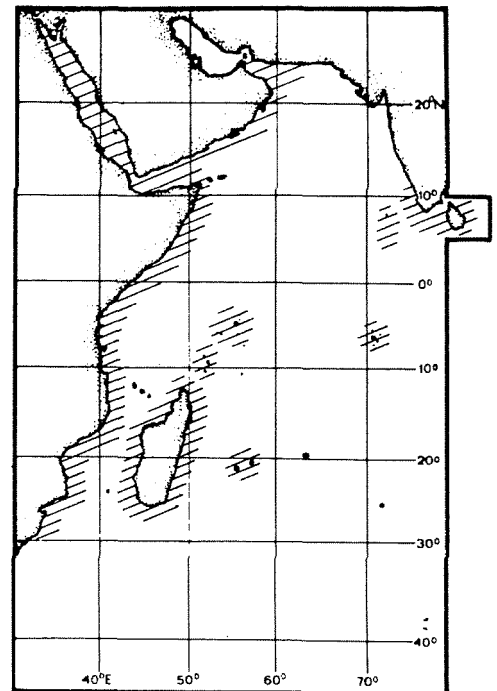
No definite fishing grounds; caught incidentally throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Taken mainly in nets and traps.

Marketed fresh.

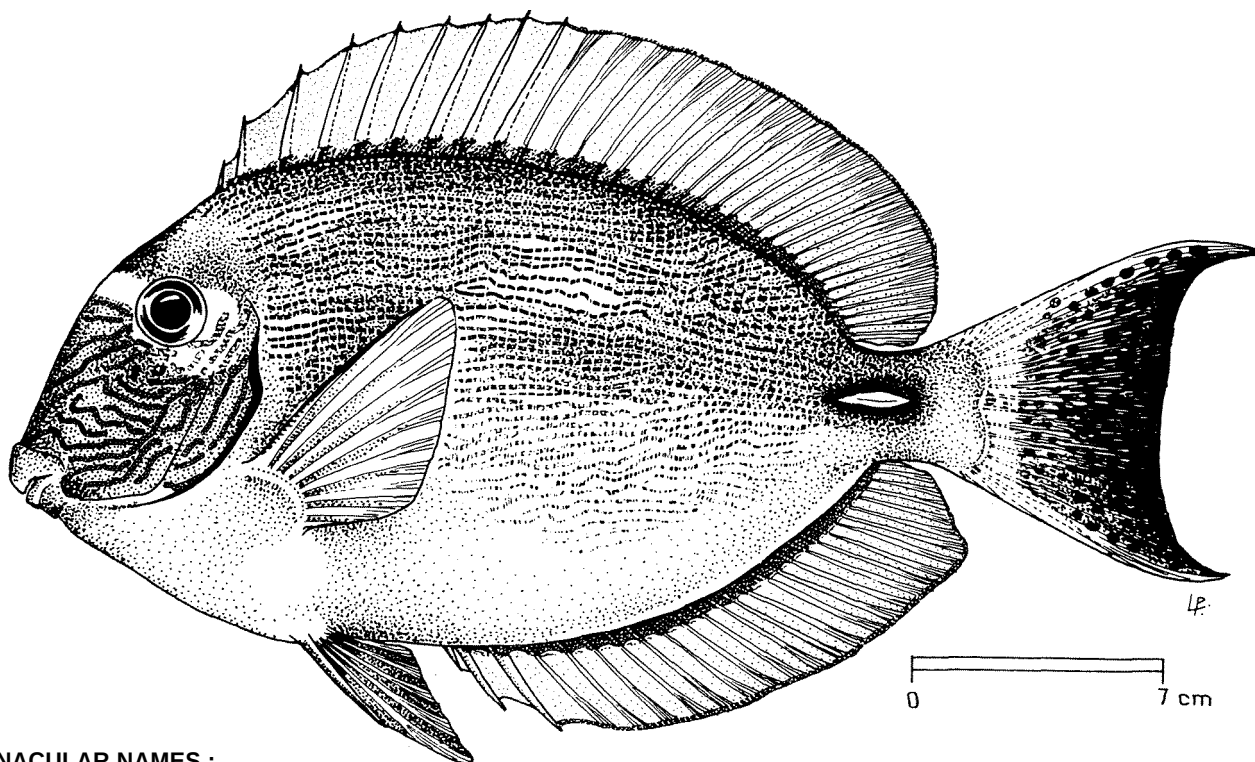


FAO SPECIES IDENTIFICATION SHEETS

FAMILY: ACANTHURIDAE

FISHING AREA 51
(W. Indian Ocean)*Acanthurus dussumieri* Valenciennes, 1835

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES :

FAO : En - Eyestripe surgeonfish
Fr - Chirurgien couronné
Sp - Navajón coronado

NATIONAL

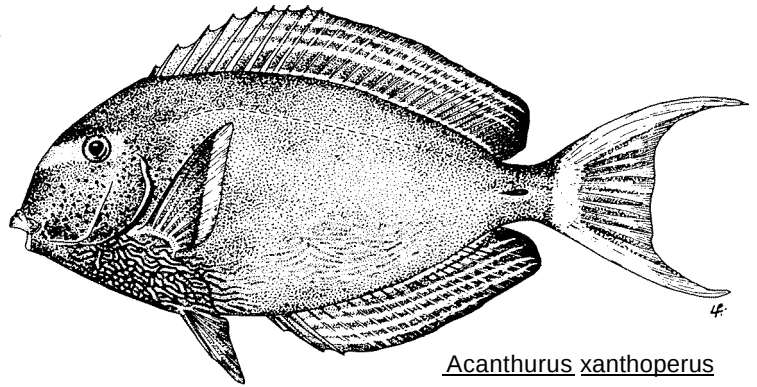
DISTINCTIVE CHARACTERS :

A high-bodied, compressed fish, the depth 1.9 to 2.1 times in standard length. Snout 4.2 to 4.6 times in standard length; eye 3.4 to 4.7 times in head length (at standard lengths of 11 to 30 cm); mouth small; teeth spatulate, close-set, with denticulate edges; gillrakers 22 to 26 on first arch. A continuous unnotched dorsal fin with 9 spines and 25 to 27 soft rays; anal fin with 3 spines and 24 to 26 soft rays; caudal fin emarginate to lunate, the caudal concavity varying from 14 times in standard length (at standard lengths of 11 cm) to 5 times at 30 cm. A lancet-like spine on sides of caudal peduncle which folds into a deep horizontal groove; length of caudal spine 3 to 5 times in head length relatively longer in larger individuals). A thick-walled gizzard-like stomach.

Colour: light brown with numerous longitudinal, slightly wavy purplish to bluish grey lines on body; similar, but more irregular lines on head; a yellow band about as wide as pupil extending anteriorly from eye and less distinctly posterior from eye; sheath of caudal spine pale cream; socket of caudal spine surrounded by a black area about 3 times as high as width of spine; dorsal and anal fins yellow, sometimes with traces of narrow bluish longitudinal bands distally; a bluish band basally on dorsal and anal fins; caudal fin deep blue with numerous small blackish spots; pectoral fins light yellowish brown.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Acanthurus xanthopterus : caudal fin not marked with small dark spots; outer third of pectoral fins yellow; an indistinct yellowish region anterior to eye (no definite interocular yellow band); dorsal and anal fins yellowish with 4 longitudinal blue bands; caudal spine not large, 4.4 to 5.7 in head length, the sheath brown.



SIZE :

Maximum: 54 cm; common to 35 cm.

Acanthurus xanthopterus

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Indo-Pacific from East Africa to the western Pacific and Hawaiian Islands. In the Western Indian Ocean southward to Natal, but absent from the Red Sea and the "Gulf".

Closely tied to coral reefs or rocky substratum. Usually seen as solitary individuals; generally found at depths greater than about 15 m.

Feeds on benthic algae.

PRESENT FISHING GROUNDS :

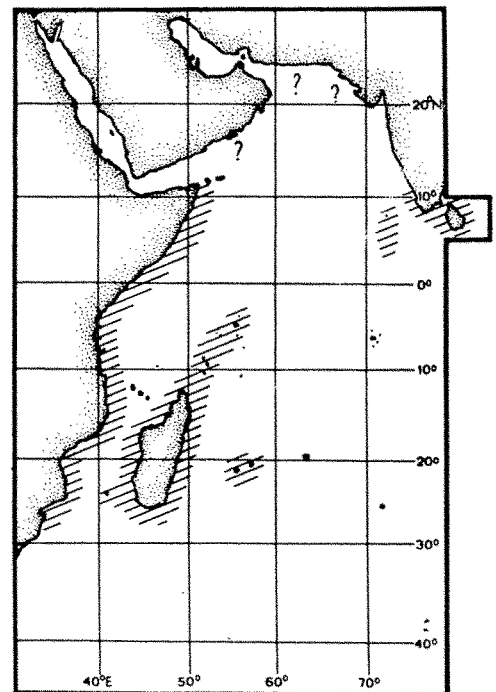
No definite fishing grounds; caught incidentally in many localities.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Taken mainly in traps.

Marketed fresh.

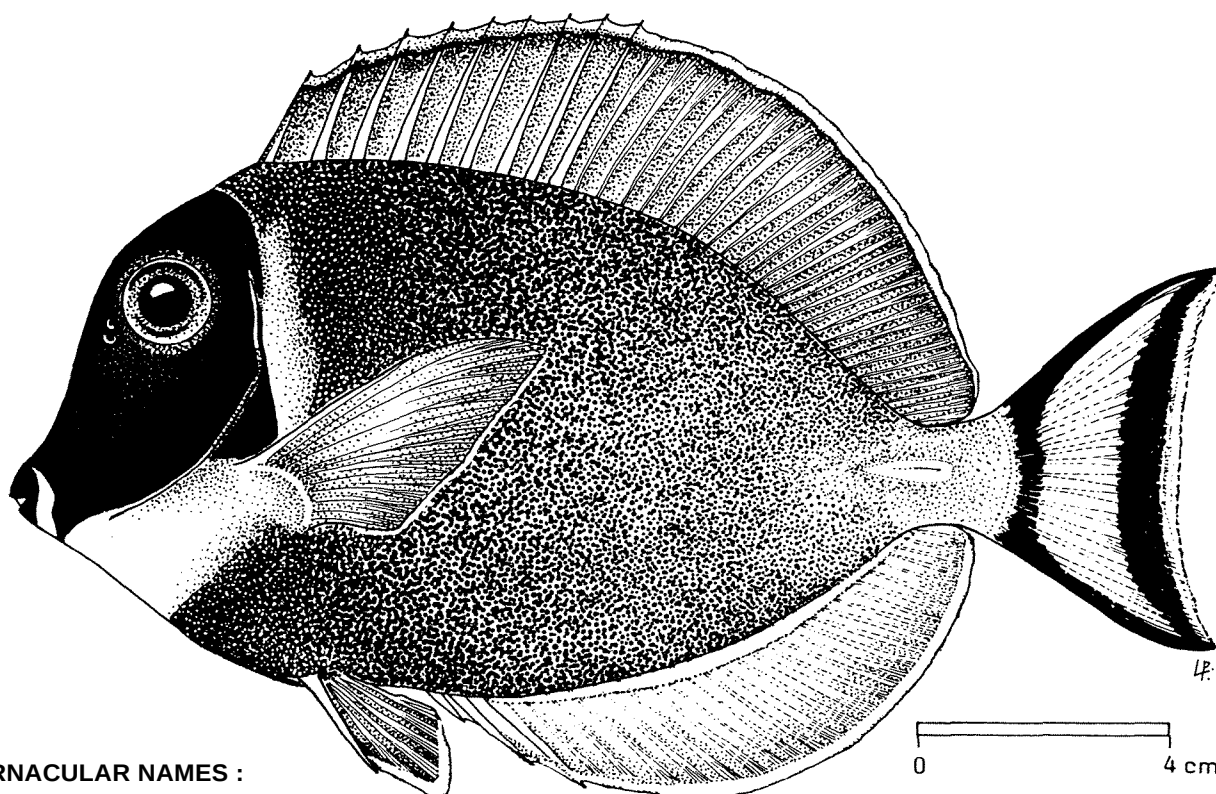


FAO SPECIES IDENTIFICATION SHEETS

FAMILY: ACANTHURIDAE

FISHING AREA 51
(W. Indian Ocean)*Acanthurus leucosternon* Bennett, 1832

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES :

FAO : En - Powder blue surgeonfish
 Fr - Chirurgien poudré
 Sp - Navajón empolvado

NATIONAL:

DISTINCTIVE CHARACTERS:

A high-bodied, compressed fish, the depth 1.7 to 1.9 times in standard length. Snout 4 to 4.35 times in standard length; mouth small; teeth spetulate, close-set, with denticulate edges; gillrakers on first arch 16 to 18. A continuous unnotched dorsal fin with 9 spines and 28 to 30 soft rays; anal fin with 3 spines and 26 to 28 soft rays; caudal fin emarginate, the caudal concavity 10 to 16 times in standard length. A lancet-like spine on side of caudal peduncle which folds into a deep horizontal groove; length of caudal spine 2.1 to 3.3 times in head length. Stomach thin-walled.

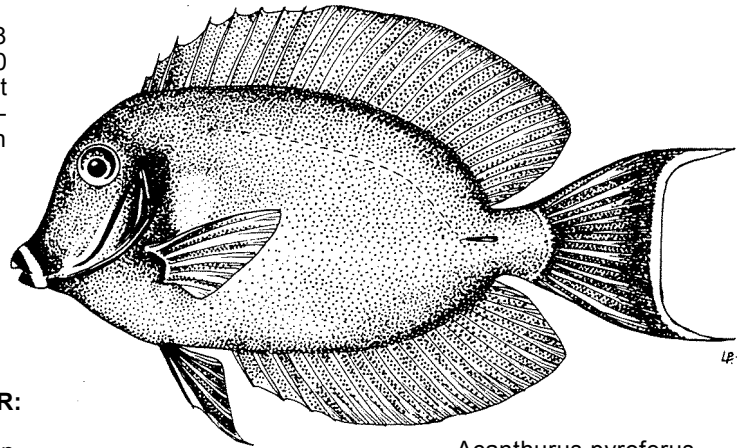
Colour: body blue with a broad white band crossing anterior thorax from pectoral fin base; caudal peduncle and spine yellow; head black; a vertical white line extending from chin to above corner of mouth; dorsal fin yellow with a white margin and a black submarginal line; anal fin grey with a white margin and a narrow white band at base; caudal fin black with a large crescentic central white region and a white posterior margin; pectoral fins clear with yellowish rays; pelvic fins grey with a white margin.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA

Acanthurus pyroferus: dorsal fin with 8 spines and 27 or 28 soft rays (9 spines and 28 to 30 soft rays in *A. leucosternon*); snout somewhat produced; dark brown with a white margin posteriorly on caudal fin (broader and yellow in colour on fish from the Pacific).

SIZE:

Maximum: 23 cm; common to 19 cm.



Acanthurus pyroferus

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

East Africa to Sumatra; in the Western Indian Ocean southward to the northern coast of Natal; absent from the Red Sea and the "Gulf".

A coral reef species generally found in less than 15 m depth. May occur singly or in large feeding aggregations.

Feeds on benthic algae.

PRESENT FISHING GROUNDS:

No definite fishing grounds; caught incidentally in many coral reef localities.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Taken in traps and nets. Of limited commercial importance due to its relatively small size.

Marketed fresh.

