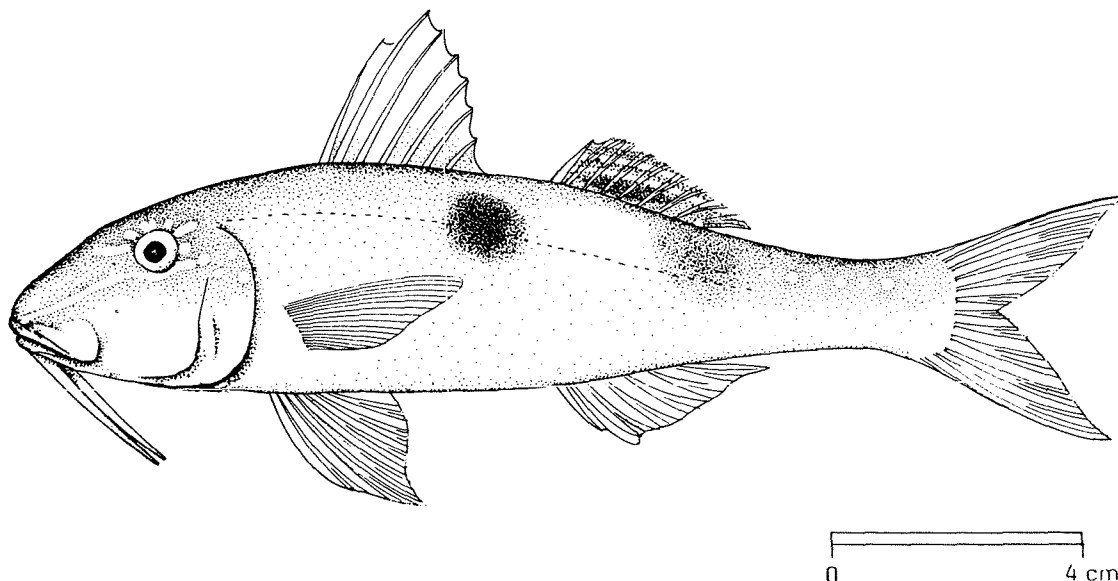


FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MULLIDAE

FISHING AREA 51
(W. Indian Ocean)Parupeneus pleurostigma (Bennett, 1831)OTHER SCIENTIFIC NAMES STILL IN USE: Parupeneus brandesii (Bleeker, 1851)

VERNACULAR NAMES:

FAO : En - Sidespot goatfish
 Fr - Rouget-barbet pastille
 Sp - Salmonete pastilla

NATIONAL:

DISTINCTIVE CHARACTERS:

Body moderately elongate, the depth 3.5 to 3.9 times in standard length. Chin with 2 slender barbels which usually reach posterior to rear margin of preopercle, their length 1.4 to 1.7 times in head; snout not long, its length 1.8 to 2.1 times in head; mouth small, the maxilla reaching about 3/4 distance to front edge of eye; a single row of well-spaced, stout, conical teeth in jaws; no teeth on roof of mouth; gillrakers on first arch 29 to 32. First dorsal fin with 8 spines, the first small, the third longest, contained 1.3 to 1.4 times in head; last dorsal and anal rays slightly prolonged, about 1.2 times longer than preceding rays; pectoral fin rays 15 to 17 (usually 16). Lateral line scales 27 or 28; 2 or 3 vertical scale rows in space between dorsal fins; 8 or 9 vertical scale rows along upper part of caudal peduncle.

Colour: pale yellowish brown to light red, shading to white or pale pink ventrally, with a very large roundish dark brown to black spot centred on lateral line below rear base of first dorsal fin; a broad dusky to reddish bar often present on upper half of body below rear base of second dorsal fin, the area between this and the large black spot paler than rest of body; a row of pale blue spots, one per scale, above lateral line on posterior 2/3 of caudal peduncle; a pale blue line from above mouth to lower edge of eye, and some pale blue spots and short lines around eye and on upper opercle; basal third of second dorsal fin blackish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Parupeneus bifasciatus: 2 or 3 dark bars dorsally on body; gillrakers 34 to 40 (29 to 32 in P. pleurostigma).

P. rubescens: no blackish spot on side of body (instead a saddle-like dark spot posteriorly on caudal peduncle, preceded by a pale area).

SIZE:

Maximum: 30 cm; common to 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Within the area, known from the east African coast from the outer Gulf of Aden to about 26° S, and around most Western Indian Ocean islands. Not recorded from the Red Sea, the "Gulf", Pakistan, India or Sri Lanka. Outside the area, ranging eastward to the Hawaiian Islands and French Polynesia.

Primarily an insular species; usually found individually in clear water in the vicinity of coral reefs.

Feeds mainly on sand-dwelling animals such as crabs and other crustaceans, polychaete worms, peanut worms, small clams and small heart-urchins.

PRESENT FISHING GROUNDS:

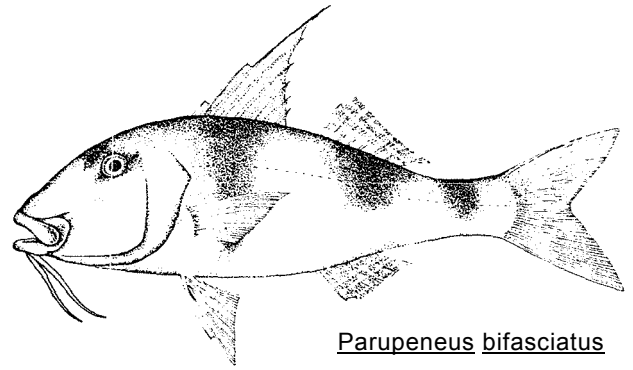
Primarily inshore waters of islands. Not very important commercially due to its relatively small size.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

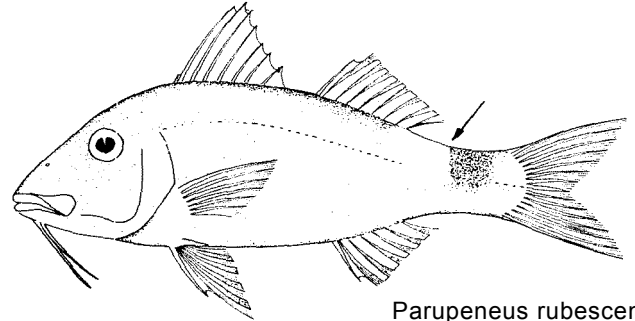
Separate statistics are not reported for this species.

Caught incidentally with other reef fishes, mainly in traps or gillnets.

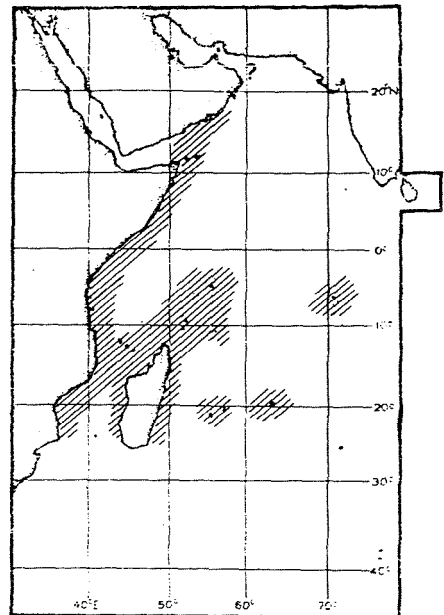
Marketed fresh.



Parupeneus bifasciatus



Parupeneus rubescens

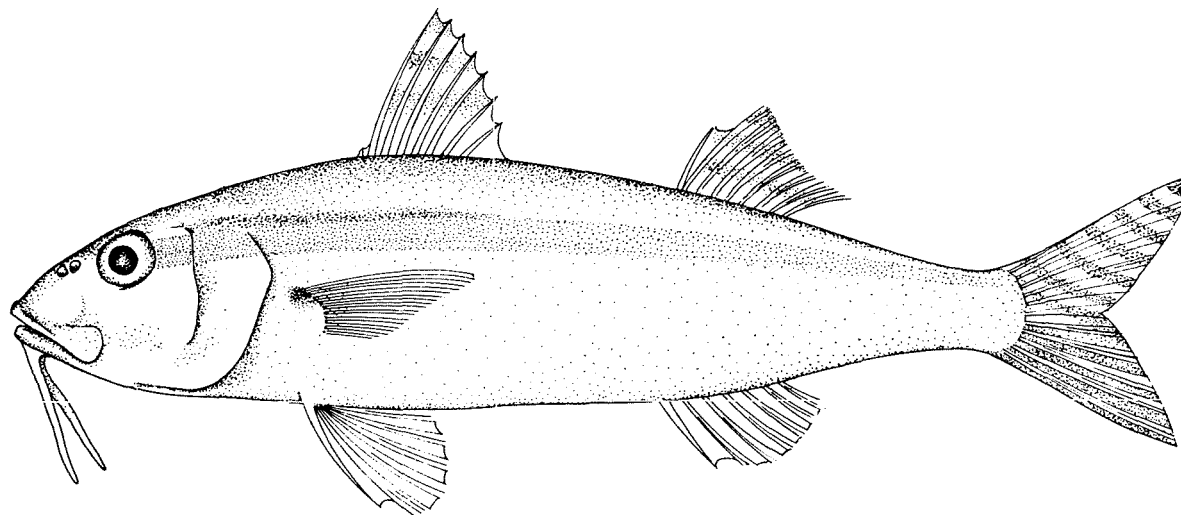


FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MULLIDAE

FISHING AREA 51
(W. Indian Ocean)Upeneus moluccensis (Bleeker, 1855)

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO : En - Goldbarid goatfish
 Fr - Rouget-souris bande or
 Sp - Salmonete de banda dorada

NATIONAL:

DISTINCTIVE CHARACTERS:

Body elongate, the depth 3.55 to 3.9 times in standard length. Chin with 2 slender barbels which do not reach rear margin of preopercle, their length 1.5; to 2.1 times in head; maxilla reaching to or slightly posterior to front edge of eye; villiform teeth in jaws, on vomer and palatines (roof of mouth); gillrakers on first arch 27 to 31. First dorsal fin with 8 spines, the first spine minute; pectoral rays 15 to 18 (usually 16); pelvic fins about 2/3 length of pectoral fins. Lateral line scales 33 to 36; 5½ vertical rows of scales in space between dorsal fins; 12 or 13 vertical rows of scales along upper part of caudal peduncle.

Colour: a golden yellow stripe about as broad as pupil passing from eye along upper side of body to upper caudal base; head and body above stripe silvery pink to greenish, silvery white below; barbels whitish to pink; first dorsal fin with 3 or 4 orangish stripes (including tip); second dorsal fin with 2 or 3 orangish stripes (including tip); upper lobe of caudal fin with 6 or 7 transverse orangish bands; lower lobe of caudal fin longitudinally streaked with orangish and whitish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Other Upeneus species: yellow stripes, when present on body, narrow and more than one (a single broad stripe on U. molluccensis; dark bands, when present on caudal fin, on both lobes (only on upper lobe of U. moluccensis, though bands present only along lower edge of lower lobe on U. bensasi and U. asymmetricus).

Mulloides and Parupeneus species: no teeth on vomer or palatines; no dark bands on upper lobe of caudal fin.

SIZE:

Maximum: 20 cm; common to 14 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout most of the northern part of area, southward to 12° S, but not recorded from the "Gulf". Outside the area, it extends eastward to the western Pacific where it ranges from southern Japan to Australia; has entered the eastern Mediterranean via the Suez Canal.

A species mainly of mud bottoms on continental shores; usually found at depths of 10 to 40 m.

PRESENT FISHING GROUNDS:

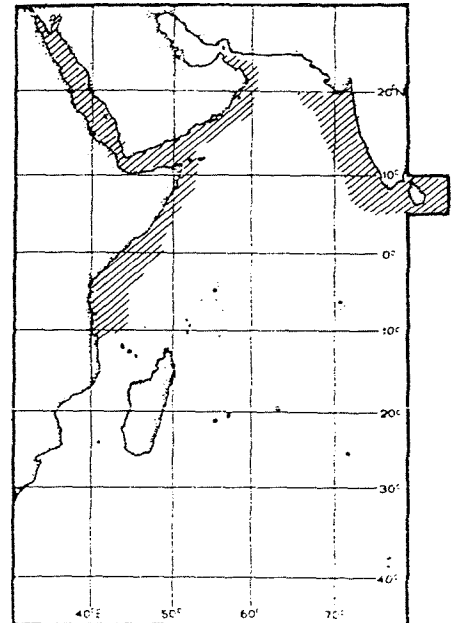
Inshore waters, throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with shore seines and bottom trawls, sometimes with trapnets and gillnets.

Marketed mainly fresh.

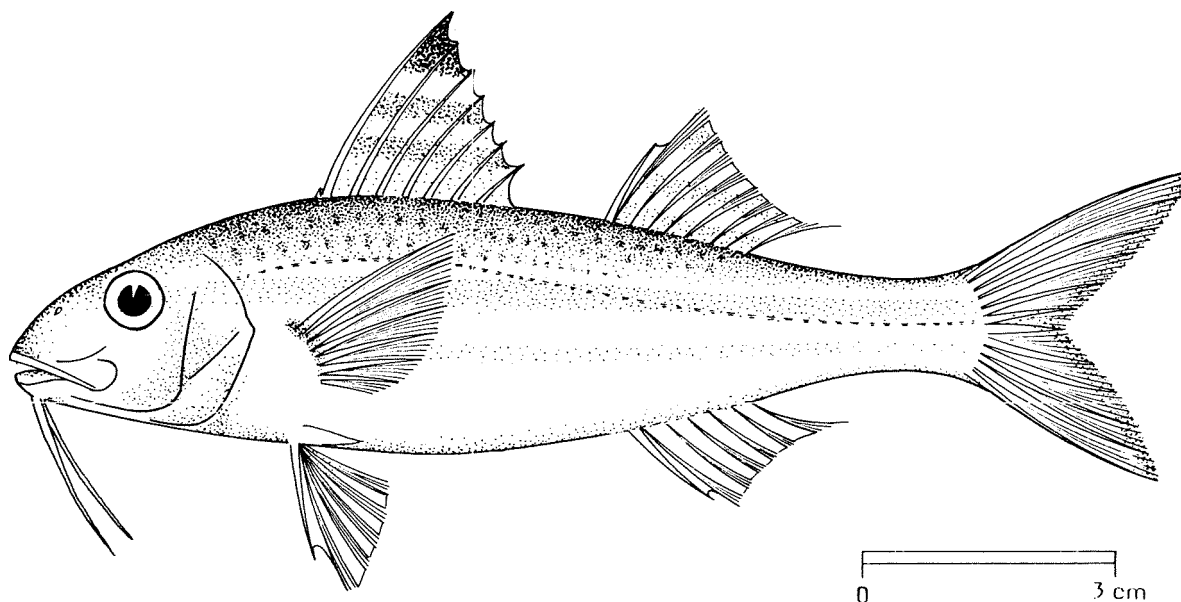


FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MULLIDAE

FISHING AREA 51
(W. Indian Ocean)Upeneus sulphureus Cuvier, 1829

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO : En - Sulphur goatfish
 Fr - Rouget-souris aurore
 Sp - Salmonete aurora

NATIONAL:

DISTINCTIVE CHARACTERS:

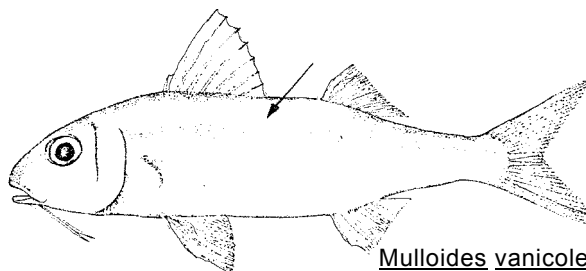
Body moderately elongate, the depth 3.2 to 3.6 times in standard length. Chin with 2 slender barbels which usually reach to or extend beyond rear margin of preopercle their length 1.2 to 2.0 times in head; maxilla reaching clearly posterior to front edge of eye (on some specimens to below centre of eye), villiform teeth in jaws, on vomer and palatines (roof of mouth); gillrakers on first arch 26 to 32. First dorsal fin with 8 spines, the first spine minute; pectoral fin rays 15 to 17 (usually 16); pelvic fins about 3/4 length of pectoral fins. Lateral line scales 34 to 37; 5½ vertical scale rows in space between dorsal fins; 12 or 13 vertical rows of scales along upper part of caudal peduncle.

Colour: back greenish, mottled with bronze, silvery white on side with 2 narrow yellow stripes, the uppermost at level of eye most prominent, the lowermost ending in axil of pectoral fin; ventral part of body pale yellow; barbels whitish to pale yellowish; dorsal fins with 3 yellowish brown stripes, the outermost of first dorsal fin notably darker; caudal fin without dark bands.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Other Upeneus species: dark crossbands on at least upper lobe of caudal fin (none on either lobe of U. sulphureus).

Mulloides species: no teeth on vomer or palatines; a single yellow stripe on M. vanicolensis and M. flavolineatus (2 on U. sulphureus).



Mulloides vanicolensis

SIZE:

Maximum: 23 cm; common to 15 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout most of the area, ranging on the east African coast south to 26°S. A Red Sea record is questionable. Outside the area, it extends eastward to the western Pacific where it ranges from southern Japan to Queensland; reported from Fiji and Vanuatu (New Hebrides).

Inhabits coastal waters, often entering estuaries, at depths of 20 to 60 m; usually found in schools.

PRESENT FISHING GROUNDS:

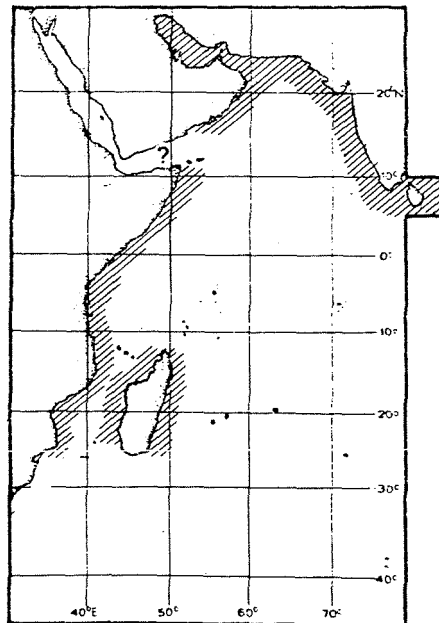
Coastal waters throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught mainly with shore seines, bottom trawls and trapnets.

Marketed mainly fresh.

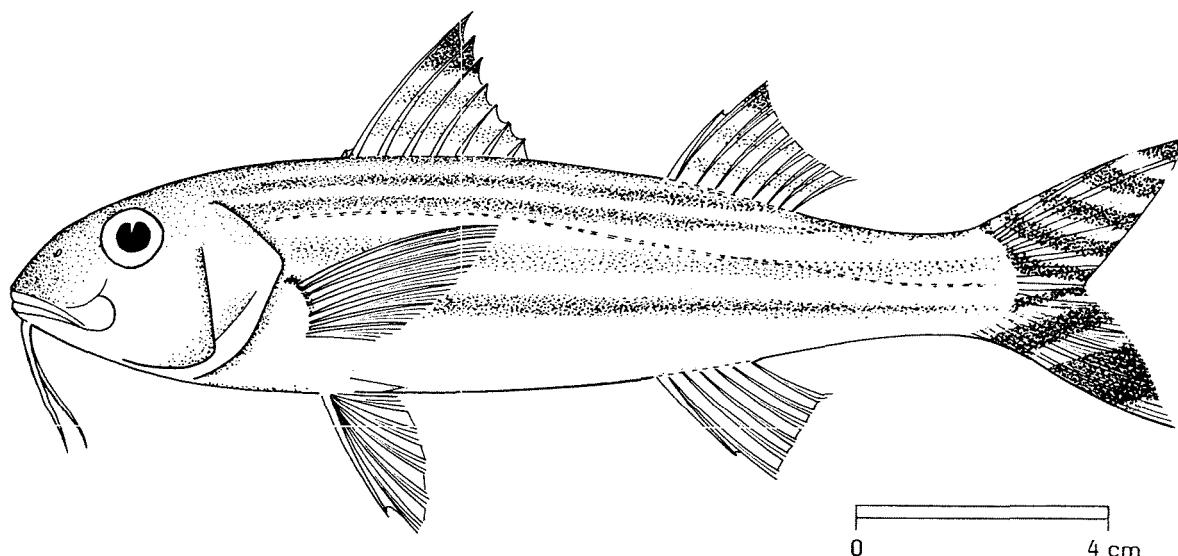


FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MULLIDAE

FISHING AREA 51
(W. Indian Ocean)Upeneus vittatus (Forsskål, 1775)

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO : En - Striped goatfish
 Fr - Rouget-souris orangé
 Sp - Salmonete naranjero

NATIONAL:

DISTINCTIVE CHARACTERS:

Body moderately elongate, the depth 3.3 to 3.7 times in standard length. Chin with 2 slender barbels which usually do not reach rear margin of preopercle, their length 1.5 to 2.2 times in head; maxilla usually reaching to below anterior margin of pupil; villiform teeth in jaws, on vomer and palatines (roof of mouth); gillrakers on first arch 26 to 31. First dorsal fin with 8 spines, the first spine minute; pectoral fin rays 15 to 17 (usually 16); pelvic fins about 2/3 length of pectorals. Lateral line: scales 33 to 36; 5½ vertical rows of scales in space between dorsal fins; 11 or 12 vertical rows of scales along upper part of caudal peduncle.

Colour: greenish on back, shading to silvery white on sides and pale yellow ventrally, with 4 orange-yellow stripes; barbels whitish; first dorsal fin with 3 broad dark stripes, the outermost near fin tip black; second dorsal fin with 3 broad diagonal dark bands; caudal fin crossed by 2 broad dark bands the upper lobe with 4 or 5 and the lower with 3 or 4, the most distal band (excluding tip if dark) broadest and darkest.

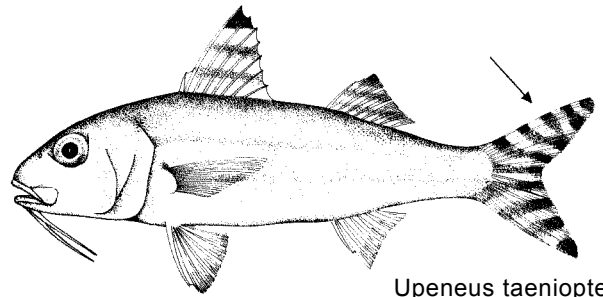
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Upeneus taeniopterus: pectoral rays 13 or 14 (15 to 17 in U. vittatus); lower lobe of caudal fin with 5 blackish crossbands (3 or 4 in U. vittatus).

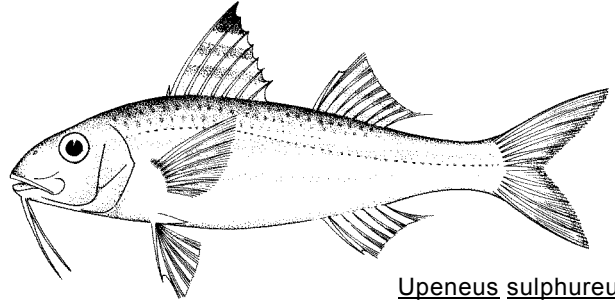
U. sulphureus: caudal fin lobes without dark crossbands.

U. moluccensis and U. sundaicus: a single yellow stripe on body.

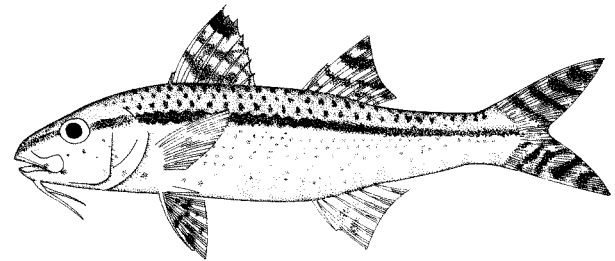
U. tragula: lateral line scales 28 to 32 (33 to 36 in U. vittatus); a single brown to blackish stripe on upper side of body; rest of body flecked with small dark spots.



Upeneus taeniopterus



Upeneus sulphureus



Upeneus tragula

SIZE:

Maximum: 28 cm; common to 18 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout the area. This is the most wide-ranging species of the genus, occurring throughout the Indo-Pacific region eastward to French Polynesia.

Usually found in turbid water over mud bottoms from depths of a few metres to about 100 m. Tends to occur in schools.

PRESENT FISHING GROUNDS:

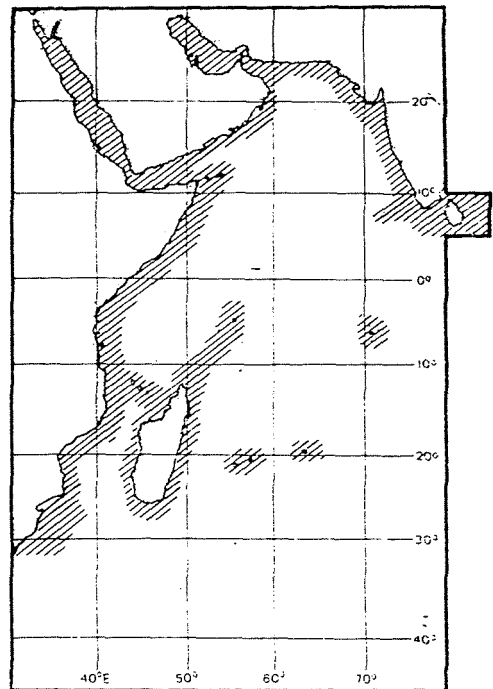
Coastal waters, throughout its range; taken in moderate quantities along the southwest and southeast coasts of India.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with bottom trawls, shore seines and boat seines.

Marketed mainly fresh; salt-cured. Excellent as food.

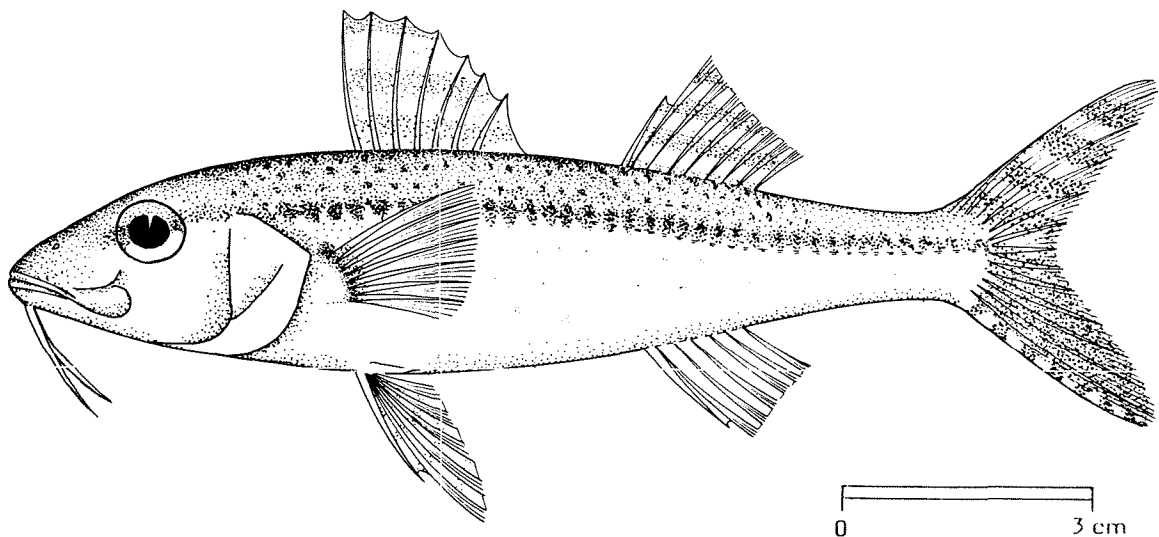


FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MULLIDAE

FISHING AREA 51
(W. Indian Ocean)Upeneus bensasi (Temminck & Schlegel, 1842)

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO: En - Bensasi goatfish
Fr - Rouget-souris bensasi
Sp - Salmonete bensasi

NATIONAL:

DISTINCTIVE CHARACTERS:

Body elongate, the depth 4.0 to 4.3 times in standard length. Chin with 2 slender barbels which reach posterior to rear margin of preopercle, their length 1.2 to 1.55 times in head; maxilla just reaching or extending slightly posterior to anterior edge of eye; villiform teeth in jaws, on vomer and palatines (roof of mouth); gillrakers on first arch 23 to 27. First dorsal fin with 7 spines, the first spine longest; pectoral fin rays 13 or 14 (usually 14); pelvic fins slightly shorter than pectoral fins. Lateral line scales (to caudal base) 28 to 30; 4½ vertical rows of scales in space between dorsal fins; 10 or 11 vertical rows of scales along upper part of caudal peduncle.

Colour (of Indian Ocean individuals): greenish grey on back with longitudinal rows of brownish red spots (the most prominent row at level of upper end of gill opening), shading to silvery white on sides and ventrally with rows of faint pale orange-red to yellow spots; head greenish grey, spotted with brownish orange dorsally, mottled silvery white and light red below; barbels yellow; dorsal fins with 2 to 4 (usually 3) brownish red stripes; upper lobe of caudal fin with 4 or 5 transverse brownish red bands median fin bands usually not persisting in preservative); lower lobe of caudal fin brownish red except for broad lower whitish margin crossed by about 7 brownish red bars.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Upeneus asymmetricus: barbels short, 1.45 to 1.8 times in head; a dark saddle-like mark dorsally on caudal peduncle just posterior to second dorsal fin.

All other Indo-Pacific mullid fishes: dorsal spines 8, the first very small (U. bensasi and U. asymmetricus with 7 dorsal spines, the first longest).

SIZE:

Maximum: 20 cm; common to 13 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout most of the area, southward to 30°S; apparently absent from the Red Sea, the "Gulf" and oceanic islands. Outside the area, extending eastward to southern Japan.

Inhabits coastal waters, down to about 40 m; usually found in schools.

Feeds on bottom-dwelling animals.

PRESENT FISHING GROUNDS:

Inshore waters, throughout its range, especially in the northern Indian Ocean.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with seines and bottom trawls; also with trapnets.

Marketed mainly fresh.

