

## FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51  
(W. Indian Ocean)

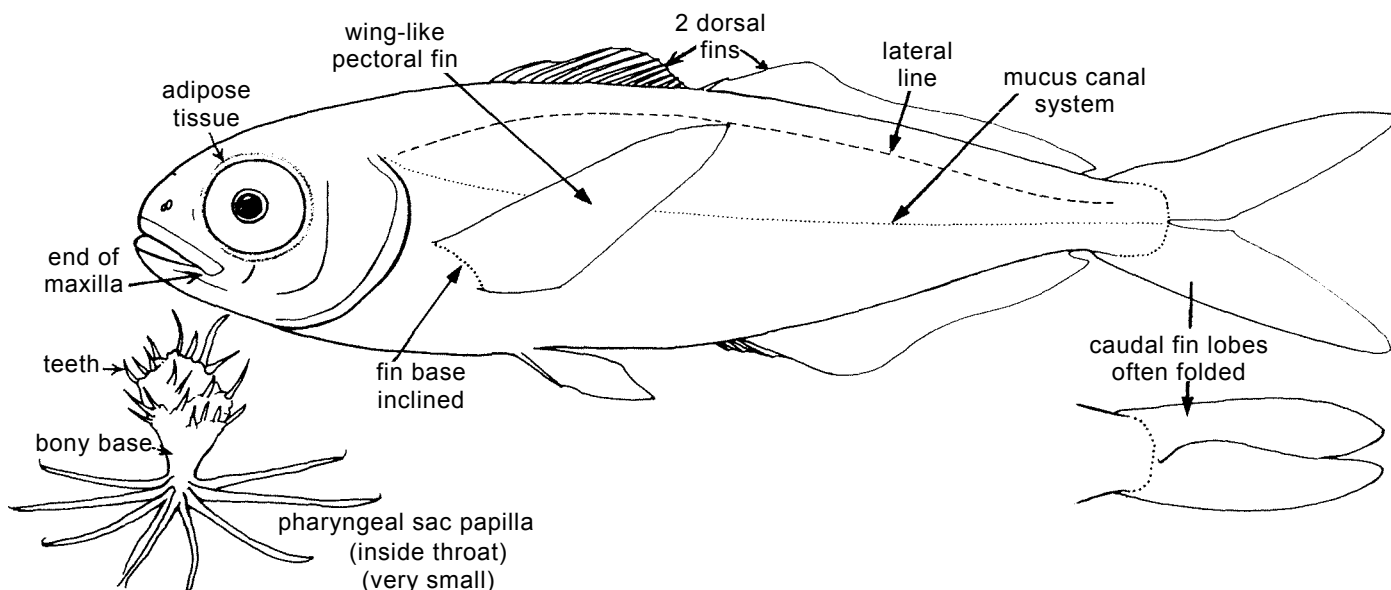
## NOMEIDAE

Man-of-war fishes, also driftfishes

Slender to deep, laterally compressed fishes (in *Psenes* the young may be quite deep-bodied becoming less so with growth); caudal peduncle deep, more than 5% of standard length. Adipose tissue around eyes developed in most species; opercular and preopercular margins entire or finely denticulate; opercle very thin, with 2 flat, weak spines; 6 branchiostegal rays; mouth small, the maxilla rarely extending to below eye, supramaxilla absent; jaw teeth small, uniserial conical or flattened and knife-like (in some *Psenes*); small teeth also present on vomer, palatines (roof of mouth), on the basibranchials and sometimes on tongue; pharyngeal sacs with toothed papillae in upper and lower sections, these papillae in about 5 broad longitudinal bands, their bases stellate, teeth seated on top of a central stalk. Two dorsal fins, the first with about 10 slender spines folding into a groove, the longest spine at least as long as the longest ray of the second dorsal fin; anal fin with 1 to 3 spines, not separated from the rays; second dorsal and anal fin bases approximately the same length and covered with scales; pectoral fins becoming long and wing-like with growth, their bases inclined about 45°; pelvic fins attached to abdomen by a thin membrane and folding into a narrow groove, the fins greatly produced and expanded in young *Nomeus* and some *Psenes*; caudal fin forked, the lobes often folded to overlap one another. Lateral line high, following dorsal profile and often not extending onto caudal peduncle. Skin thin; subdermal mucus canal system well developed and visible in most species, the main canal down the side of the body may be mistaken for a lateral line; scales small to very large, cycloid (smooth-edged) or with very weak cteni (*Psenes pellucidus*), thin, very easily shed. Vertebrae 30 to 33 or 41 to 42; caudal skeleton, with, 4 hypural and 3 epural bones. The body proportions of these fishes changes considerably with growth.

Colour: *Cubiceps* species are generally dark blue to brownish on back, light-coloured or silvery on sides with no mottling or stripes, but they may become uniformly dark with age. *Nomeus* is bright blue above, with a mottled blue pattern overlying the silvery sides and black pelvic fins; large specimens may be more uniformly coloured, resembling *Cubiceps*. Young *Psenes* may be striped or mottled, dark over light on sides and back, but older individuals are uniformly dark blue or black.

Small to medium-sized, epi- and mesopelagic fishes, (adults 10 to 100 cm in length), often associating with jellyfish (siphonophores, especially the "Portuguese man-of-war" and medusae); probably schooling, at least found in large aggregations. They feed on zooplankton and jellyfish of all kinds, occasionally taking small fish; the young are found in the very surface layers, while adults live in deeper waters (some may be deep benthic). There is no special fishery for Nomeidae in the Western Indian Ocean, but they often occur as bycatch. The flesh is soft but good. Driftfishes can be important in the diets of tunas and billfishes.



**SIMILAR FAMILIES OCCURRING IN THE AREA:**

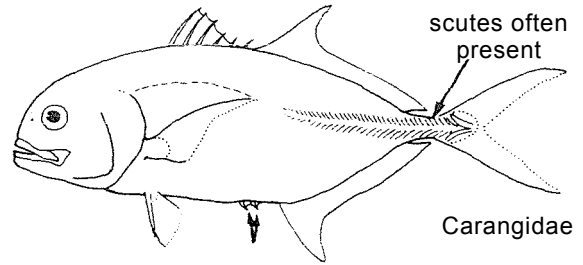
**Carangidae:** some species similar in shape and colour pattern, but can be distinguished by the two heavy spines ahead of the anal fin and, often, by the scutes along the side of the caudal peduncle.

**Ariommidae:** caudal peduncle very narrow, with two low fleshy keels on each side of caudal fin base, and no teeth on roof of mouth.

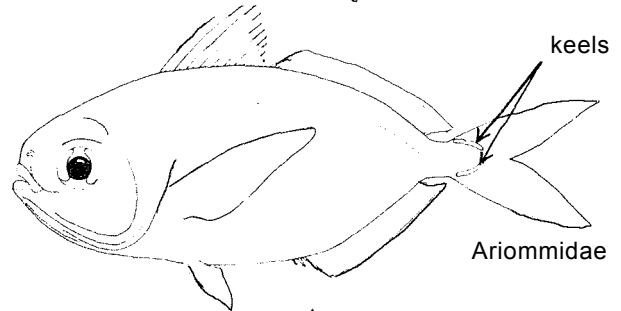
**Centrolophidae:** a single dorsal fin; mouth large, tip of maxilla usually extending well beyond anterior eye margin; 7 branchiostegal rays (6 in Nomeidae); no teeth on roof of mouth, tongue, or basibranchials.

**KEY TO GENERA OCCURRING IN THE AREA:**

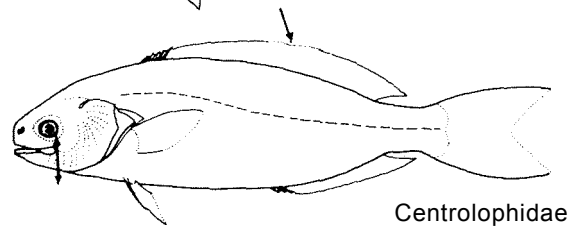
- 1a. Body elongate, maximum depth usually less than 35% of standard length, greatest in small specimens; origin of dorsal fin behind, or directly over (in small specimens), insertion of pectoral fins (Figs 2,3); scales on top of head extending forward of eyes (Fig. 1a)
- 2a. Anal fin with 1 to 3 spines and 14 to 25 segmented rays; insertion of pelvic fins under the end of, or posterior to pectoral fins base (Fig. 2); teeth on tongue, knob-like or pointed; 30 to 33 vertebrae ..... Cubiceps
- 2b. Anal fin with 1 or 2 spines and 24 to 29 segmented rays; insertion of pelvic fins before or under insertion of pectoral fin (Fig. 3), (possibly posterior in very large specimens); no teeth on tongue; 41 vertebrae ..... Nomeus
- 1b. Body elongate or deep (maximum depth usually greater than 40% of standard length, although it can be reduced to 17% of standard length in very large specimens); origin of dorsal fin before, or directly over (in large specimens), insertion of pectoral fins (Fig. 4); no scales on top of head in front of eyes (Fig. 1b) ..... Psenes



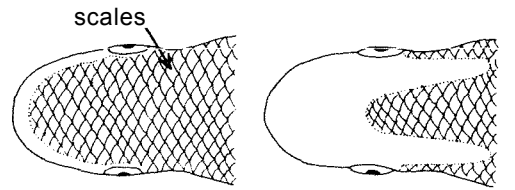
Carangidae



Ariommidae



Centrolophidae



scales

a)

b)

Fig.1

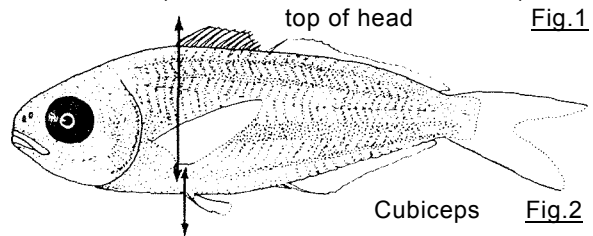
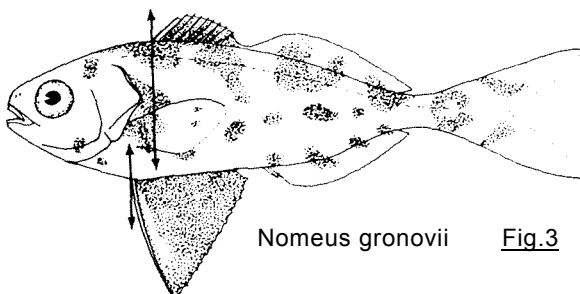
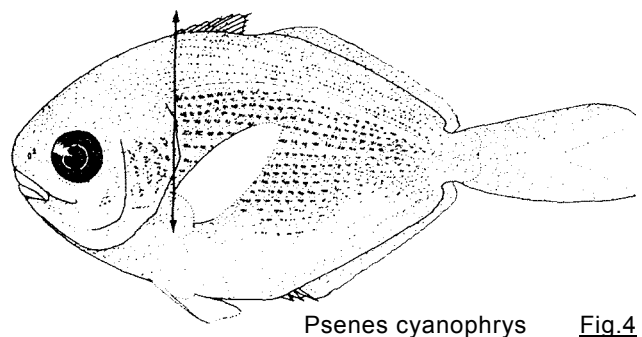


Fig.2



Nomeus gronovii Fig.3



Psenes cyanophrys Fig.4

**LIST OF SPECIES OCCURRING IN THE AREA:**

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

Cubiceps capensis (Smith, 1849)

Cubiceps pauciradiatus Günther, 1872

Nomeus gronovii (Gmelin, 1788)

Psenes arafurensis Günther, 1889

Psenes cyanophrys Cuvier & Valenciennes, 1833

Psenes pellucidus Lütken, 1880

Psenes squamiceps (Lloyd, 1909)

NOM Psen 1

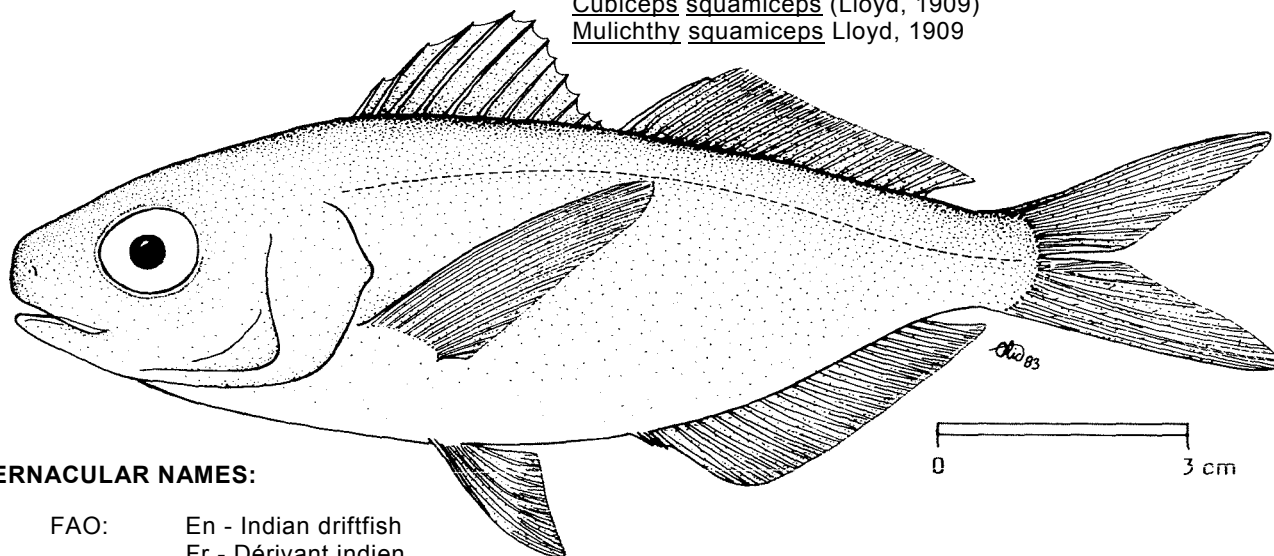
Prepared by R.L. Haedrich, Memorial University of Newfoundland, St. John's, Newfoundland, Canada, and R. Nzioka, Kenya Marine and Fisheries Research Institute, Mombasa, Kenya

## FAO SPECIES IDENTIFICATION SHEETS

FAMILY: NOMEIDAE

FISHING AREA 51  
(W. Indian Ocean)*Psenes squamiceps* (Lloyd, 1909)

## OTHER SCIENTIFIC NAMES STILL IN USE:

*Cubiceps natalensis* Gilchrist & von Bonde, 1923*Cubiceps squamiceps* (Lloyd, 1909)*Mulichthy squamiceps* Lloyd, 1909

## VERNACULAR NAMES:

FAO: En - Indian drifffish  
Fr - Dérivant indien  
Sp - Savorin indio

NATIONAL:

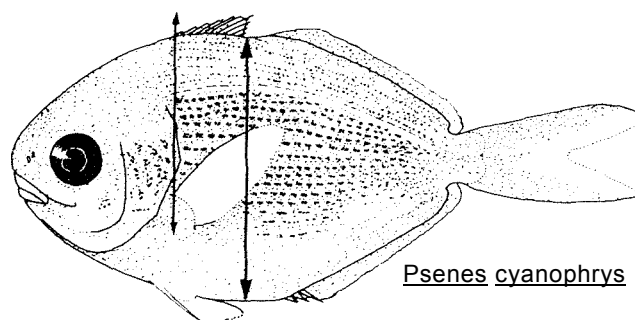
## DISTINCTIVE CHARACTERS:

Body moderately elongate (maximum depth less than 35% of standard length), compressed, chunky-looking; caudal peduncle somewhat deep and compressed, without keels or scutes; musculature soft. Snout blunt and broad; mouth fairly small, maxilla only reaching to under anterior part of eye; premaxilla not protractile; the expanded lacrimal bone covers upper jaw completely; jaw teeth small, in a single series, those in lower jaw somewhat flattened and knife-like; a single row of pointed teeth on a central ridge on tongue; eye large, its diameter about equal to length of snout and a little smaller than interorbital width; opercles thin, smooth-edged; gillrakers on first arch 25 to 28. First dorsal fin originating directly over insertion of pectoral fins, with 10 to 12 long, weak spines, the longest longer than any of the dorsal rays; second dorsal originating behind mid-body, with 19 to 21 soft rays; anal fin with 2 or 3 spines and 18 to 21 rays; pectoral fins long and wing-like, with 18 to 20 rays, their bases approaching the horizontal; pelvic fins long, originating directly under posterior end of the pectoral fin base, reaching to anus and folding into a conspicuous groove; caudal finforked, but the two lobes are most commonly folded over one another. Scales fairly small, cycloid (smooth), easily shed, also present on cheeks. Lateral line high, with 64 to 66 scales, following dorsal profile and extending onto caudal peduncle; head naked, scales on nape reaching to level of posterior margin of eye.

Colour: preserved specimens brown, a little darker on back than on sides; inside of opercle dark. A silvery cast in life.

## DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Other *Psenes* species: maximum body depth usually greater than 40% of standard length (less than 35% in *P. squamiceps*). Furthermore, teeth in lower jaw longer and more obviously flattened and knife-like in *P. arafurensis*; teeth in lower jaw conical and slightly recurved, similar to those in upper jaw, and anal fin rays 24 to 28 in *P. cyanophrys* (18 to 21 in *P. squamiceps*); anal fin rays 26 to 31 (18 to 21 in *P. squamiceps*); and teeth in lower jaw longer and more obviously flattened and knife-like in *P. pellucidus*.

*Psenes cyanophrys*

Cubiceps species: scales on top of head extending ahead of eyes. Furthermore: C. capensis is a rather large fish (to about 1 m in total length with a patch of knobby teeth on tongue; second dorsal fin rays 24 to 26; C. pauciradiatus is a small (to about 15 cm total length slender fish with a thin bony keel on breast; second dorsal fin rays 16 to 18.

Psenopsis cyanea (Centrolophidae): first dorsal fin spines shorter than any of the second dorsal rays; no teeth on tongue or palate; second dorsal fin rays 26 to 28.

Species of Ariommidae: palate and tongue toothless; caudal peduncle slender, with 2 low fleshy keels at base of caudal fin; dorsal and anal fin rays less than 17; caudal fin stiff.

Species of Carangidae: two small pre-anal spines separate from fin; often modified scales forming scutes on caudal peduncle; lateral line along middle of sides.

**SIZE:**

Maximum: about 18 cm; common to 14 cm.

**GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:**

Reported from South Africa and the west Indian coast, but probably occurring throughout the Western Indian Ocean except in the Red Sea and the "Gulf". Eastward extending to Japan.

Pelagic or near the bottom in deep water at the edge of the continental shelf.

**PRESENT FISHING GROUNDS:**

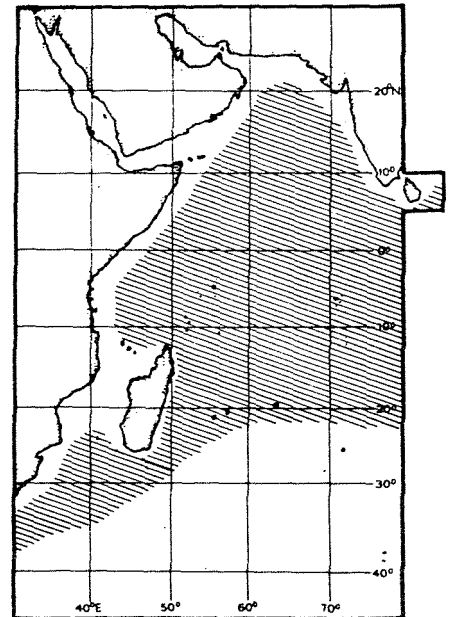
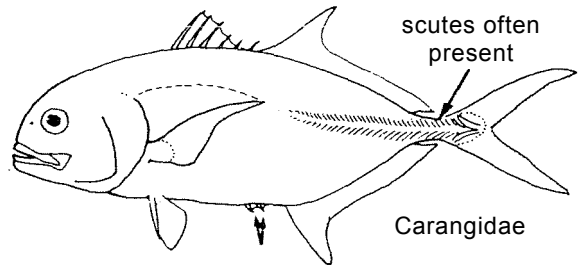
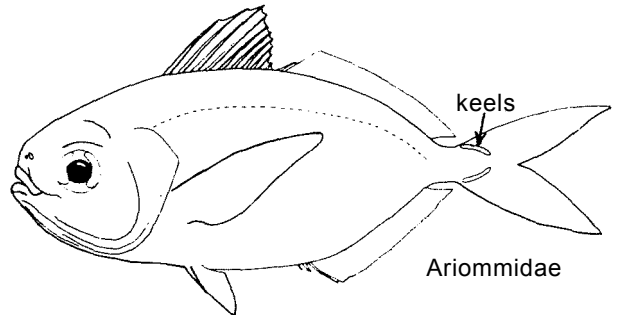
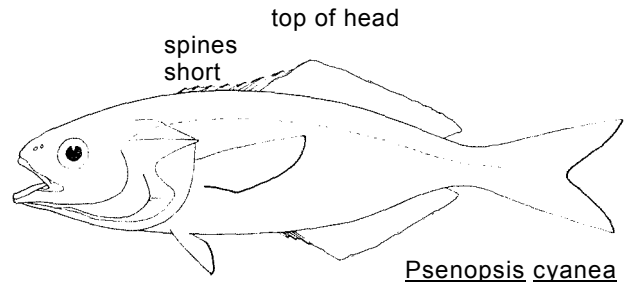
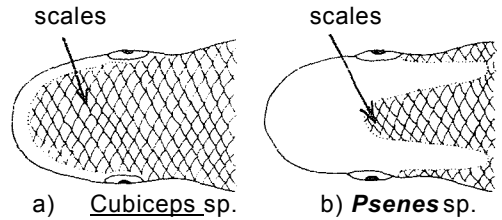
Southwest India only between 180 and 450 m depth, but no special fishery. This species seems to have considerable commercial potential, as yet unexploited.

**CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:**

Separate statistics are not reported for this species. However it is known to be taken the year round off Cochin and Quilon in the deep-sea lobster fishery, but usually discarded, except at the end of the season (March-April) when it is landed and marketed.

Caught with bottom trawls.

Marketed fresh; could also be used for fishmeal or paste.



NOTOCH

1983

**FAO SPECIES IDENTIFICATION SHEETS**

**FISHING AREA 51  
(W. Indian Ocean)**

NOTOCHEIRIDAE

(= Isonidae Rosen, 1964)

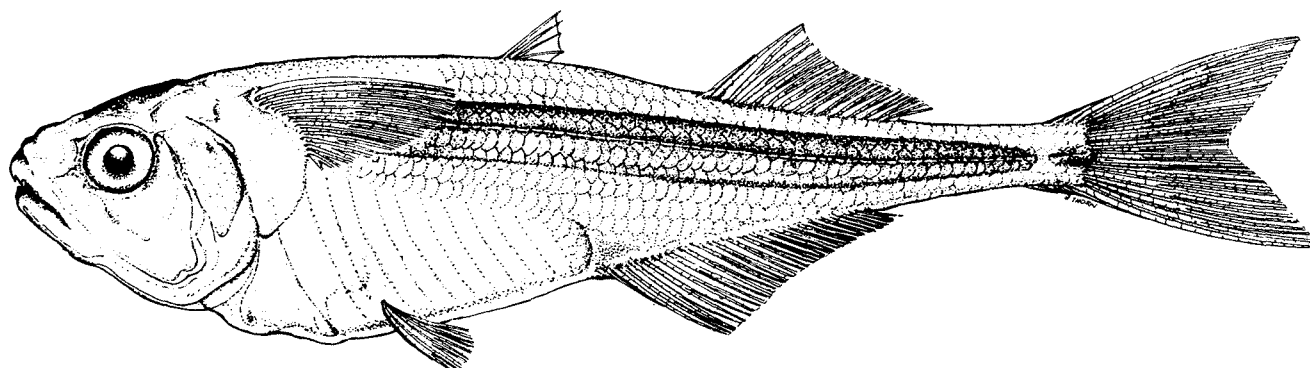
Flowers of the wave, surf sardines

A single species in the area - see species sheet for:

Iso natalensis Regan, 1919 NOTOCH Iso 1

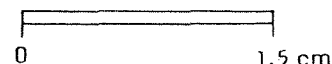
## FAO SPECIES IDENTIFICATION SHEETS

FAMILY: NOTOCHEIRIDAE

FISHING AREA 51  
(W. Indian Ocean)*Iso natalensis* Regan, 1919OTHER SCIENTIFIC NAMES STILL IN USE: *Iso flosindicus* Herre, 1944

## VERNACULAR NAMES:

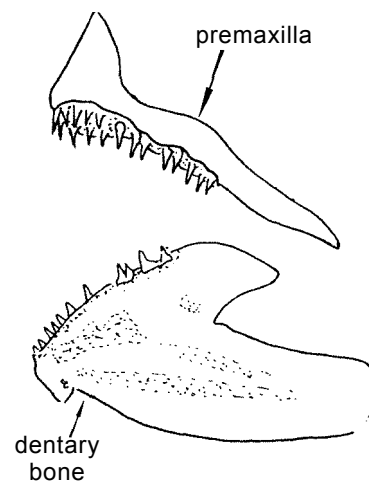
FAO : En - Surf sardine  
Fr - Surfette commune  
Sp - Rompeolas



NATIONAL:

## DISTINCTIVE CHARACTERS:

Body highly compressed, very deep at vertical through origin of pectoral fins, then tapering rapidly toward caudal peduncle. Head small and truncated posteriorly; very fine papillae, scarcely visible even under high magnification, present on upper surface of head, below the eyes and on lower jaw; teeth in jaws small, but well developed and curving backward into mouth, those on premaxilla extending outward onto free surface but diminishing in size; teeth also present on vomer and palatines (roof of mouth); mouth strongly oblique; premaxilla extending backward beyond vertical through anterior margin of orbit, its median process short (about as wide as long) and immobile, lateral process absent; dentary bone sloping upward and backward, its free surface more or less convex; gill rakers moderately long and well developed, longer than diameter of pupil, 10 to 12 on lower limb of first gill arch. Anus well behind tips of pelvic fins. First dorsal fin with 3 to 6 spines, second dorsal with 1 spine and 12 to 17 rays; anal fin with 1 spine and 21 to 28 rays; pectoral fins with 12 to 14 rays. Vertebral count 42 or 43. Body scales small, absent on predorsal and abdominal regions; midlateral scale count difficult, as scales very deciduous; reported as low as 60 and as high as 74 in literature.



Colour: translucent in life, almost invisible in water. Whole side of body silvery, with virtually no dark pigmentation. Preserved specimens yellow brown, with wide silvery stripe originating abruptly under pectoral and continuing to hypural, then tapering suddenly at caudal peduncle and widening out to form an irregular blotch. Belly, opercle and eye silvery, upper surface of head dark. Caudal fin dusky, other fins clear.

### DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Considered here to be indistinct from Iso flosindicus which has been described from the Indian subcontinent. This group, however, requires further study.

### SIZE:

Maximum: about 8.5 cm.

### GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Presently known from Cape of Good Hope to Mozambique in the north. Iso flosindicus (now regarded as I. natalensis) has been known from east and south India. Unpublished records indicate that fishes attributable to this species are common off the coast of Pakistan.

Most commonly found in boiling surf, quite close to shore. An entirely marine species with apparently very high oxygen requirements.

### PRESENT FISHING GROUNDS:

Incidental collections when seining in surf within its distribution.

### CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with seines.

Unlikely to be of any commercial importance but may be of great importance in food chain of larger surf fishes; also used as bait.

