

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

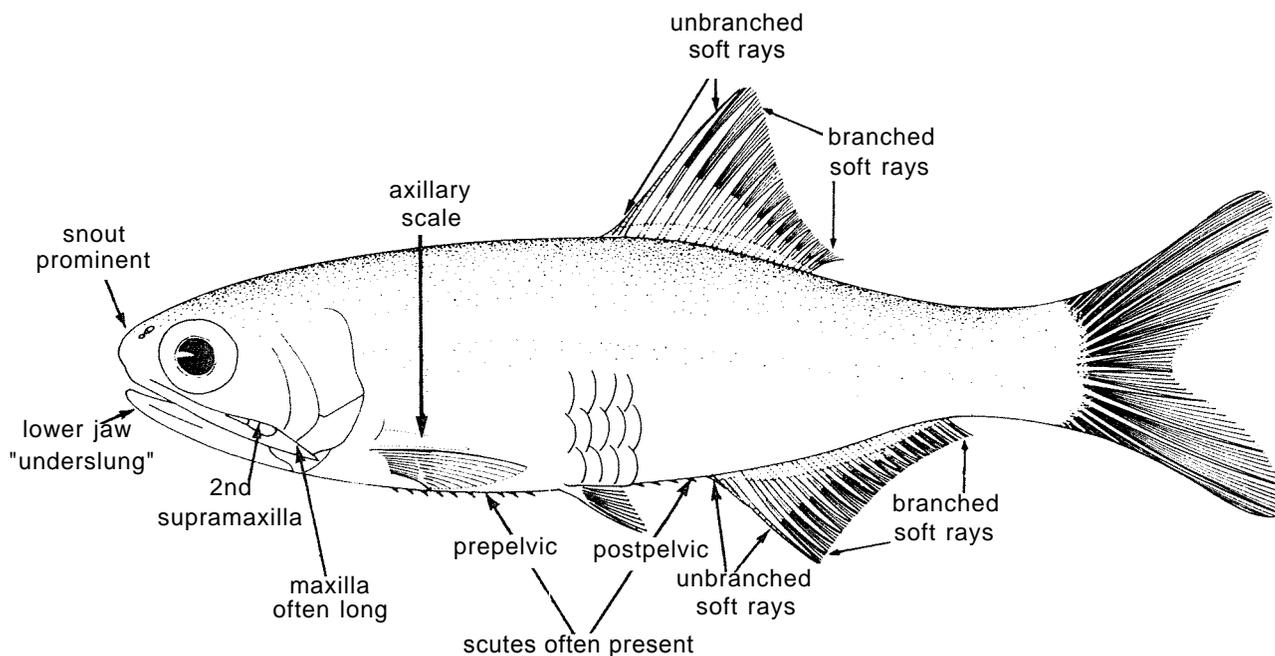
ENGRAULIDAE

Anchovies

Small, mostly silvery fishes, usually between 7 to 15 cm length, generally with fusiform, subcylindrical bodies but sometimes quite strongly compressed (body tapering to a point in the grenadier anchovies *Coilia*); scutes usually present along belly (except in *Engraulis*). Snout usually pig-like and projecting, lower jaw characteristically "underslung"; hind tip of upper jaw (maxilla) extending far backward, sometimes projecting beyond gill cover; jaw teeth small; pseudobranch present gill-like structure on inner face of opercle). No spiny rays in fins; pectoral fins set low on body; pelvic fins usually about half-way between pectoral fin bases and anal fin origin; anal fin short or long; caudal fin normally forked, but small and rounded in the grenadier anchovies (*Coilia*). Scales cycloid (smooth to touch); no lateral line.

Colour: back blue/green or translucent grey, sides silver or with a silver band; darker markings include a dark venulose area behind gill cover and duskiness on fins (especially outer margins).

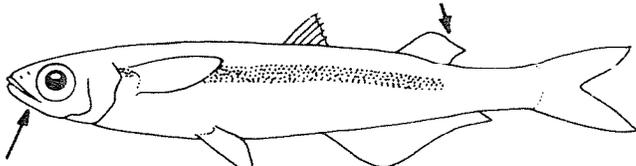
Most anchovies are marine, but some can tolerate low salinities or even freshwater. Although usually small, many are shoaling species of great importance to fisheries; some are used for food, others for bait. The reported catch for anchovies from the area in 1980 Loiaied about 39 1066 tons.



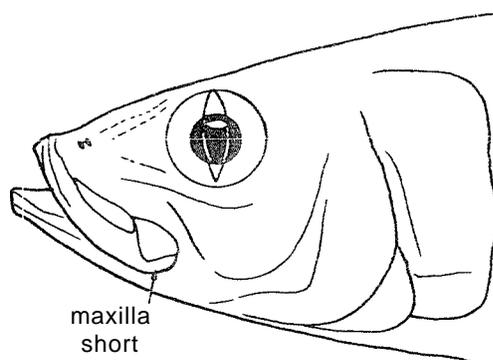
SIMILAR FAMILIES OCCURRING IN THE AREA:

Clupeidae: maxilla short, lower jaw deep and in most cases mouth terminal.

Atherinidae: mouth terminal, upper jaw short; two dorsal fins and no scutes along belly.



Atherinidae

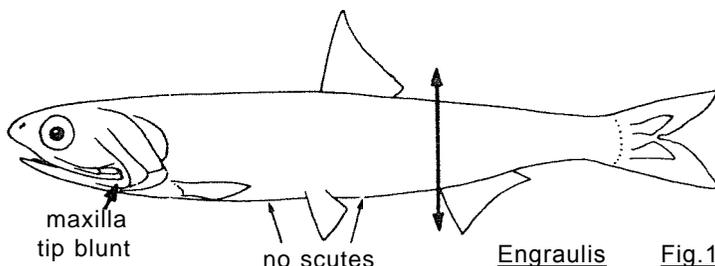


maxilla short

Clupeidae (Sardinella)

KEY TO GENERA OCCURRING IN THE AREA:

1a. Body normal, not tapering to a point, caudal fin forked (Figs. 1,2,3); anal fin not joined to caudal fin



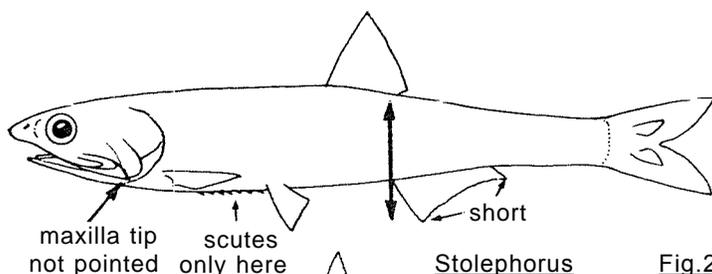
maxilla tip blunt

no scutes

Engraulis Fig.1

2a. No scutes before or behind pelvic fin base (except a single pelvic scute); maxilla tip blunt; anal fin origin well behind last dorsal fin ray (Fig. 1) Engraulis

2b. Scutes present along belly, needle-like or forming a keel; maxilla tip pointed in all species except Stolephorus punctifer; anal fin origins wider last dorsal fin rays or not far behind dorsal fin base, except in S. punctifer



maxilla tip not pointed

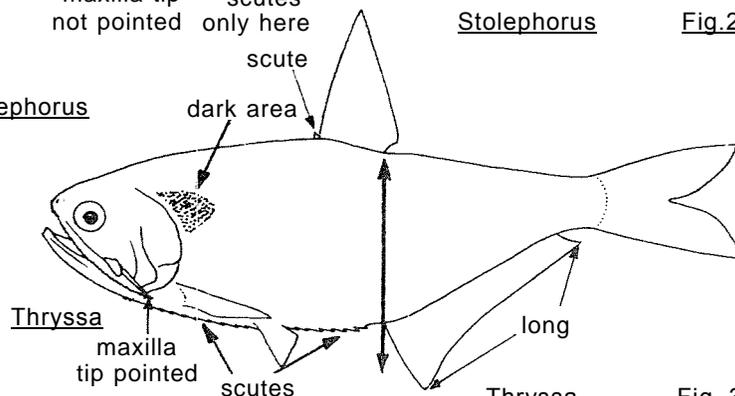
scutes only here

short

Stolephorus Fig.2

3a. Scutes needle-like, present only before pelvic fin base; anal fin short, less than 25 fin rays; small, slender fishes (usually 4 to 8 cm) with a silvery band on flanks (Fig. 2) Stolephorus

3b. Scutes present before and behind pelvic fin base, forming a keel; anal fin longer, with more than 25 fin rays; larger, more compressed fishes (usually 10 to 14 cm), with a dark humeral area behind gill opening (Fig. 3)..... Thryssa



Thryssa

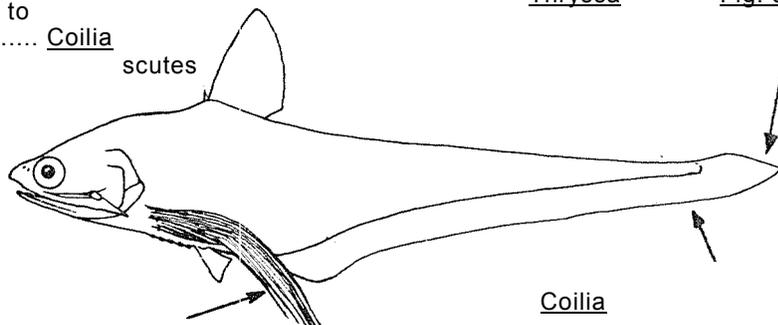
maxilla tip pointed

scutes

long

Thryssa Fig. 3

1b. Body tapering to a point, caudal fin small, not forked; 6 or 7 upper pectoral rays filamentous; anal fin very long and joined to caudal fin (Fig. 4) Coilia



scutes

Coilia

LIST OF SPECIES OCCURRING IN THE AREA:

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

<u>Coilia duslimieri</u> Valenciennes, 1848	ENGR Coil 2
<u>Coilia grayii</u> Richardson, 1845	
<u>Coilia neglecta</u> Whitehead, 1968	ENGR Coil 3
<u>Engraulis japonicus</u> Schlegel, 1846	ENGR Engr 4
<u>Stolephorus commersonii</u> Lacepède, 1803	ENGR Stol 6
<u>Stolephorus devisi</u> Whitley, 1940	ENGR Stol 7
<u>Stolephorus heterolobus</u> (Rüppell, 18-57)	ENGR Stol 1
<u>Stolephorus holodon</u> Boulenger, 1900	
<u>Stolephorus indicus</u> (van Hasselt, 1823)	ENGR Stol 5
<u>Stolephorus insularis</u> Hardenberg, 1933	
<u>Stolephorus punctifer</u> (Fowler, 1938)	ENGR Stol 2
<u>Stolephorus waitei</u> Jordan & Seale,	ENGR Stol 8
<u>Thryssa baelama</u> (Forsskål, 1775)	ENGR Thrys 6
<u>Thryssa dayi</u> Wongratana, 1983	
<u>Thryssa dussumieri</u> (Valenciennes, 1848)	ENGR Thrys 7
<u>Thryssa hamiltonii</u> (Gray, 1855)	ENGR Thrys 4
<u>Thryssa malabarica</u> (Bloch, 1795)	ENGR Thrys 5
<u>Thryssa mystax</u> (Schneider, 1801)	ENGR Thrys 1
<u>Thryssa polybranchialis</u> Wongratana, 1983	
<u>Thryssa urava</u> (Hamilton-Buchanan, 1822)	
<u>Thryssa setirostris</u> (Broussonet, 1782)	ENGR Thrys 3
<u>Thryssa vitirostris</u> (Gilchrist & Thompson, 19U8)	ENGR Thrys 2
<u>Thryssa whiteheadi</u> Wongratana, 1983	

Prepared by P.J.P. Whitehead, Department of Zoology, British Museum (Natural History), London SW75BD and T. Wongratana, Department of Biology, Faculty of Science, Chulalongkorn University, Bangkok, Thailand

Main species illustrations prepared by T. Wongratana

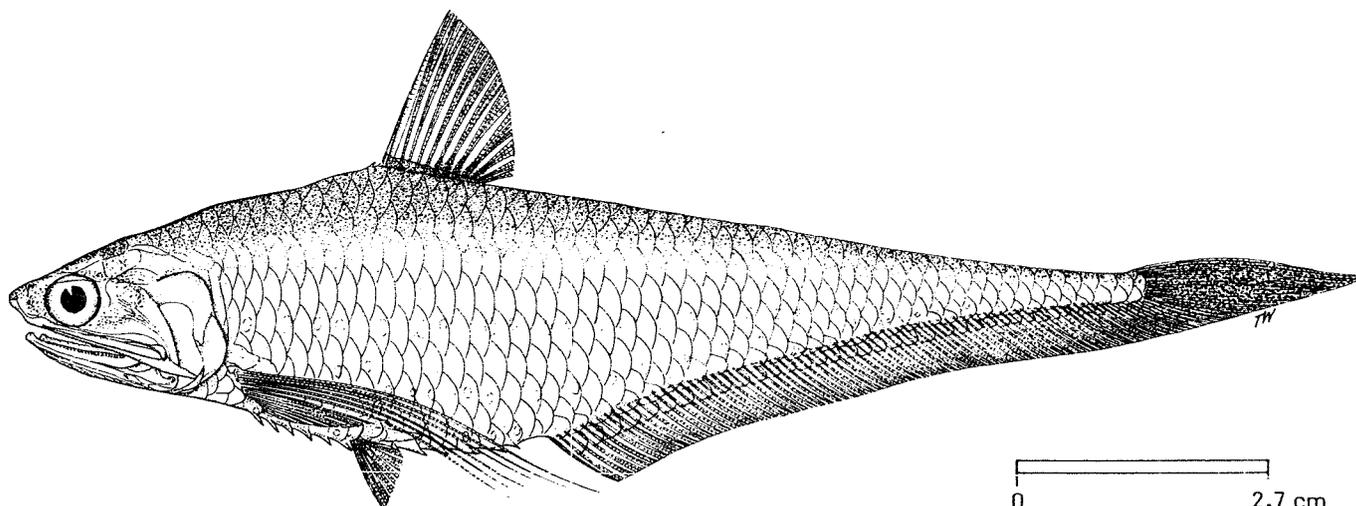
* A complete taxonomic revision of all Indo-Pacific clupeoid fishes (excluding Chirocentridae and genera confined to temperate waters) has been made by T. Wongratana (Ph.D. thesis, University of London, January 1980). This is the most up-to-date study and supercedes the synopsis by Whitehead, P.J.P., 1973. J.mar.biol.Ass.India, 14(1):160-256. The diagnoses of 24 new clupeoid species can be found in Wongratana, T., 1983. Japan J.Ichthyol., 29(4):385-407

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: ENGRAULIDAE

FISHING AREA 51
(W. Indian Ocean)*Coilia dussumieri* Valenciennes, 1848

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO : En - Gold-spotted grenadier anchovy
 Fr - Alice taches d'or
 Sp - Anchoa granadera dorada

NATIONAL

DISTINCTIVE CHARACTERS :

Body elongate, tapering evenly to the very slender tail (unless mutilated and new caudal fin regrown); belly a little rounded, with 5 or 6 sharp scutes before pelvic fin base and 7 to 9 post-pelvic scutes. Maxilla tip pointed, reaching to or just beyond gill opening. Dorsal fin with a small spine in front; upper 6 pectoral fin rays filamentous; anal fin very long and joined to caudal fin.

Colour: back light brown, flanks silvery, with three rows of orange/gold spots (silver in preserved material).

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Coilia neglecta and C. grayii: no series of spots on flanks; also, 7 pectoral fin filaments and 22 to 29 scutes behind pelvic fin base in C. rayii (6 filamentous pectoral fin rays and 7 to 9 post-pelvic scutes in C. dussumieri).

All other species of anchovy: body of normal shape, not tapering to slender tail, caudal fin forked.

SIZE:

Maximum: 20 cm; common to 15 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Coasts of India and Sri Lanka; elsewhere, Bay of Bengal and eastward to Southeast Asia.

Inhabits coastal waters and estuaries.

PRESENT FISHING GROUNDS:

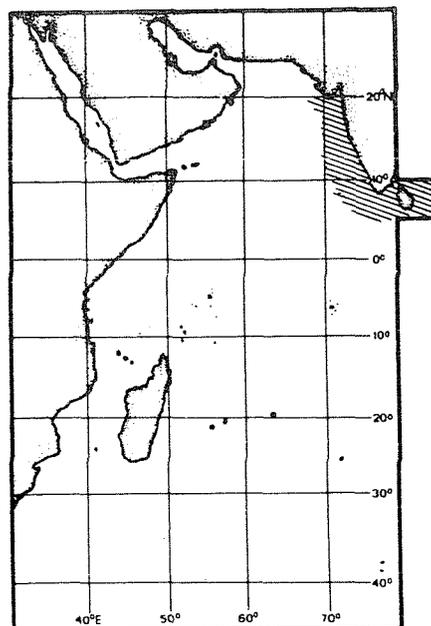
Caught throughout its range; common in bag net catches around Bombay.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with seines, bag nets and trawls in shallow waters.

Marketed fresh and dried salted.

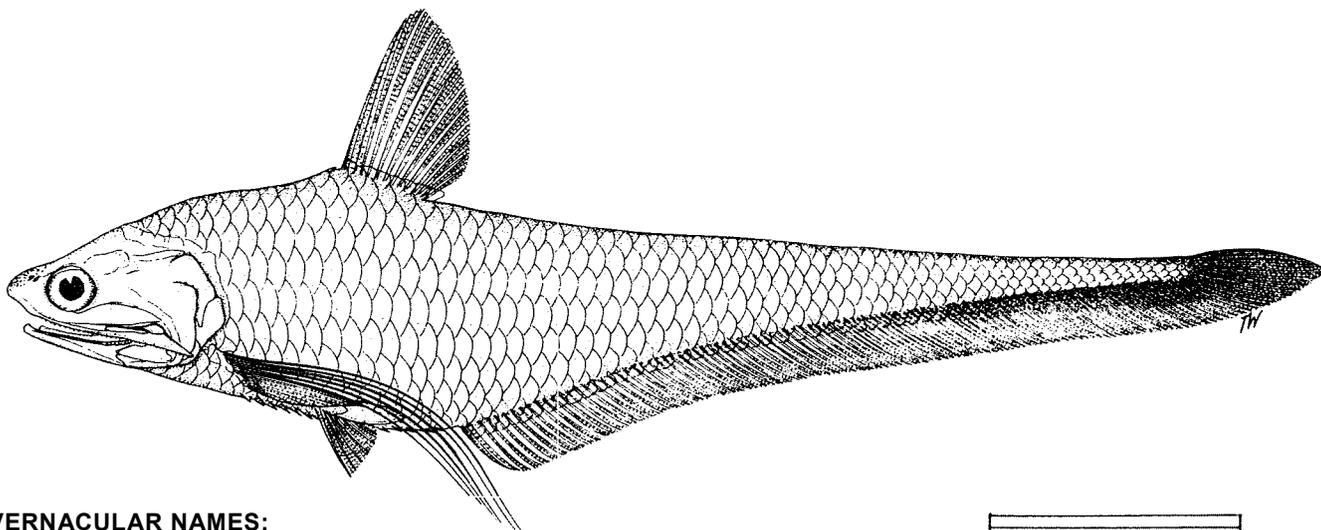


FAO SPECIES IDENTIFICATION SHEETS

FAMILY: ENGRAULIDAE

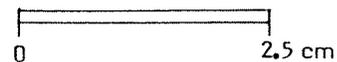
FISHING AREA 51
(W. Indian Ocean)*Coilia neglecta* Whitehead, 1968

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO : En - Neglected grenadier anchovy
Fr - Alice franche
Sp - Anchoa granadera plebeya



NATIONAL:

DISTINCTIVE CHARACTERS:

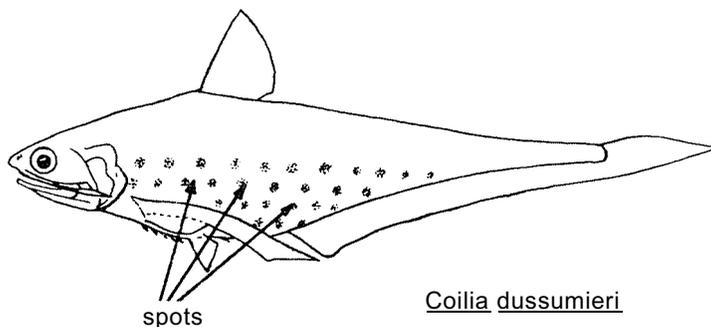
Body elongate, tapering evenly to the very slender tail (unless mutilated and new caudal fin regrown); belly a little rounded, with 5 or 6 sharp scutes before pelvic fin base and 7 to 9 post-pelvic scutes. Maxilla tip pointed, reaching to or just beyond gill opening. Dorsal fin with a small spine in front; upper 6 pectoral fin rays filamentous; anal fin very long and joined to caudal fin.

Colour: back light brown, flanks silvery, without orange/gold spots.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Coilia dussumieri: 3 series of orange/gold spots on flanks silver in preserved material).

Coilia grayii: 7 pectoral filaments and 22 to 29 scutes behind pelvic fin base (6 pectoral filaments and 7 to 9 post-pelvic scutes in C. neglecta).



All other species of anchovy: body of normal shape, not tapering to slender tail, caudal fin forked.

SIZE:

Maximum: 20 cm; common to 15 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Coasts of India and Sri Lanka; elsewhere, Bay of Bengal and eastward to Southeast Asia.

Inhabits coastal waters and estuaries.

PRESENT FISHING GRINDS:

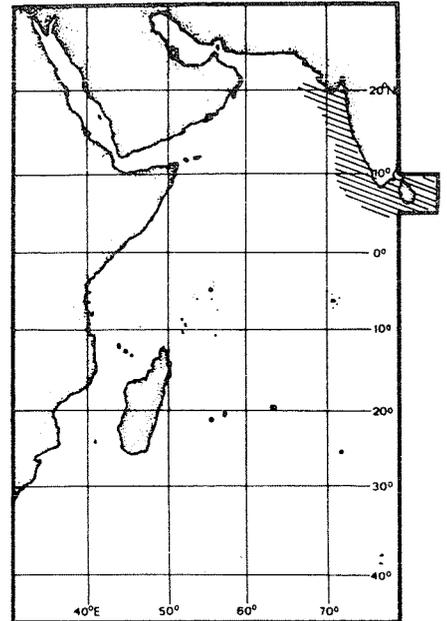
Caught throughout its range, but no special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

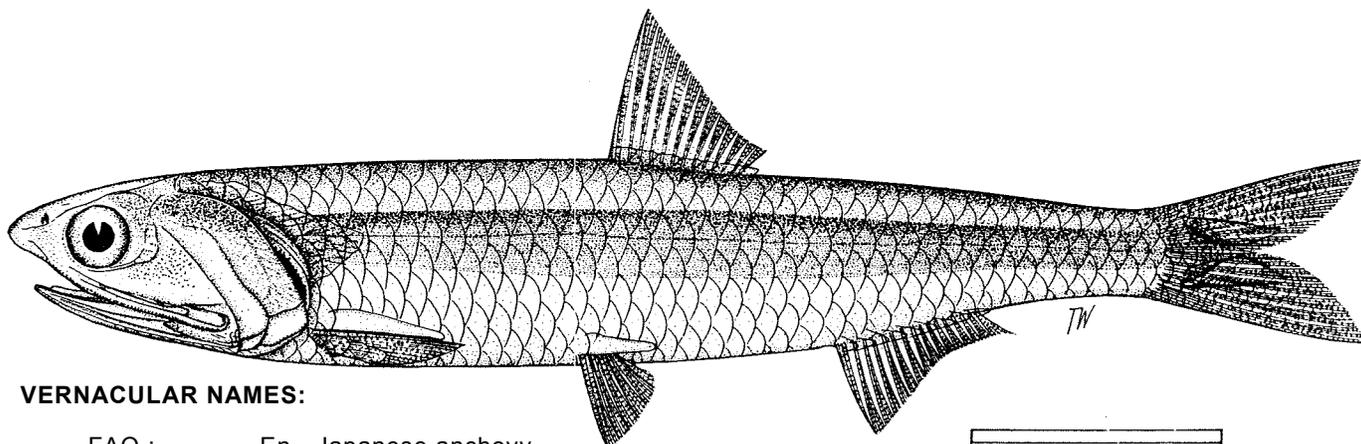
Caught with seines and trawls in shallow waters.

Marketed fresh and dried salted.



FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ENGRAULIDAE

FISHING AREA 51
(W. Indian Ocean)Engraulis japonicus Schlegel, 1846OTHER SCIENTIFIC NAMES STILL IN USE: Engraulis capensis Gilchrist, 1913

VERNACULAR NAMES:

FAO : En - Japanese anchovy
 Fr - Anchois japonais
 Sp - Anchoita japonesa

NATIONAL:

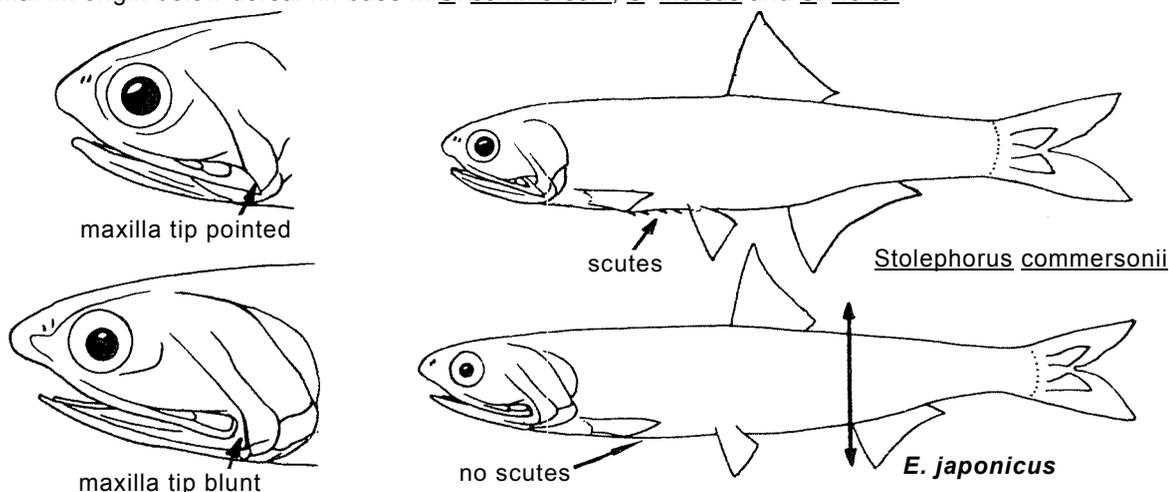
DISTINCTIVE CHARACTERS:

Body slender, subcylindrical in cross-section; belly rounded, without needle-like scutes. Upper jaw relatively short, maxilla tip blunt and reaching only to front margin of pre-opercle. Pelvic fin origins only slightly in front of dorsal fin origin; anal fin origin well behind dorsal fin base.

Colour: back blue/green, flanks with a thin dark line and a silver stripe below.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Stolephorus species: belly with at least 1, but usually 3 to 7, sharp, needle-like scutes before pelvic fin base; also, maxilla tip reaching beyond front margin of pre-opercle and usually pointed in all, except S. punctifer. Also, anal fin origin below dorsal fin base in S. commersonii, S. indicus and S. waitei.



Other species of anchovy: body deeper, compressed, belly with scutes before and behind pelvic fins.

SIZE:

Maximum: 12 cm; common to 10 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

South African coasts, Mauritius, Seychelles and East African coasts from the Equator to entrance to Gulf of Aden (during upwelling period in S.W. monsoon, June to August); elsewhere, eastward to Australia, New Zealand and northward to Japan.

Pelagic in coastal waters, but down to about 400 m (at least in other areas).

Feeds on planktonic organisms. Chiefly copepods and other small crustaceans.

PRESENT FISHING GROUNDS:

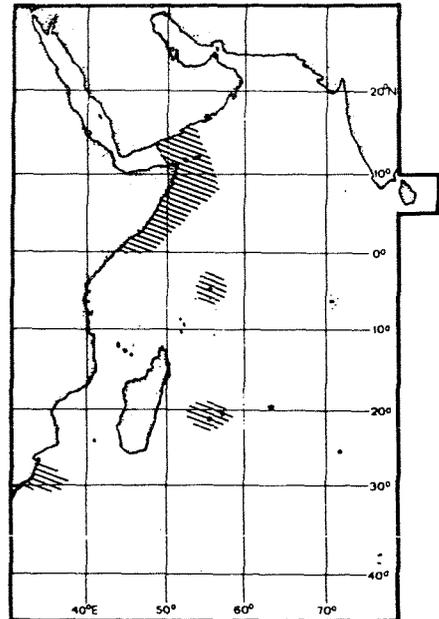
Caught throughout its range, but no special fishery in this area; of importance in South African waters immediately adjacent to Fishing Area 51 (i.e. Fishing Area 47).

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

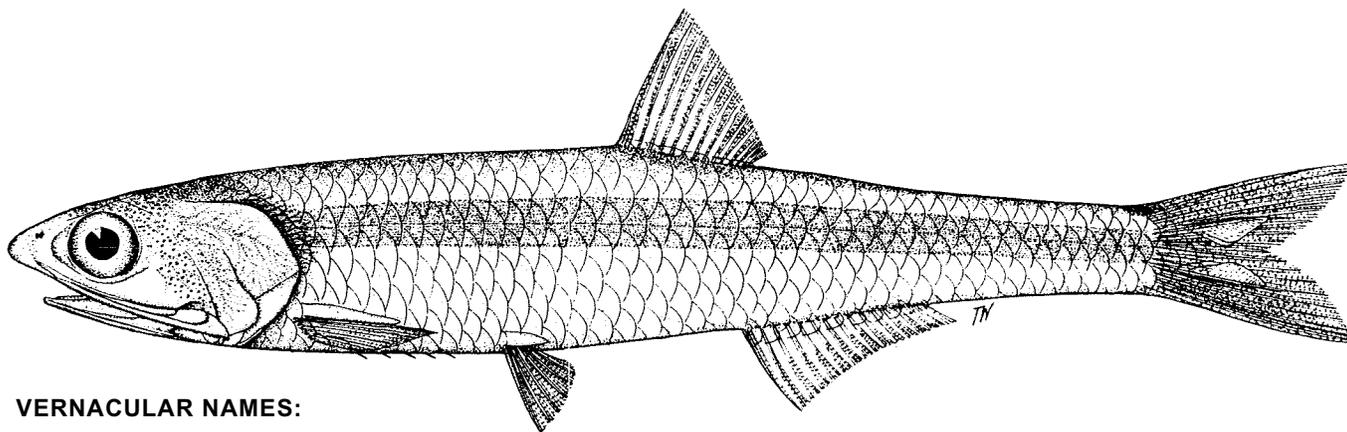
Caught with seines and trawls.

Marketed fresh and dried salted.



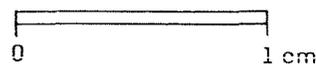
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: ENGRAULIDAE

FISHING AREA 51
(W. Indian Ocean)Stolephorus heterolobus (Rüppell, 1837)OTHER SCIENTIFIC NAMES STILL IN USE: Anchoviella heterolobus: Fowler, 1941

VERNACULAR NAMES:

FAO : En - Shorthead anchovy
Fr - Anchois doua nier
Sp - Boquerón aduanero



NATIONAL:

DISTINCTIVE CHARACTERS:

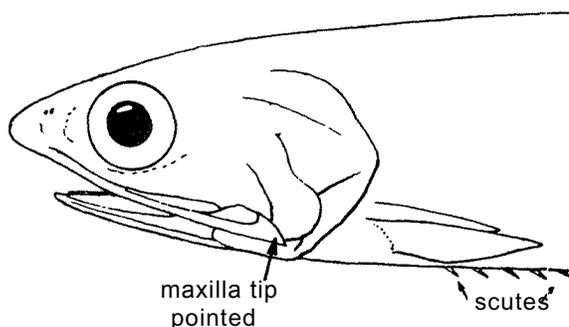
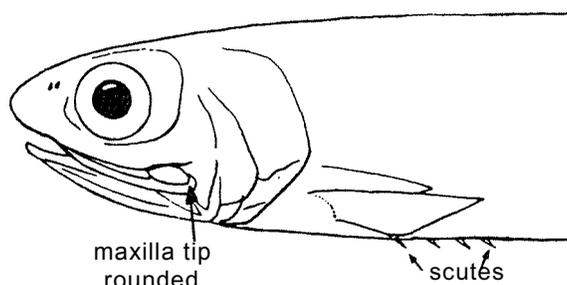
Body slender, subcylindrical in cross-section; belly rounded, with 5 to 6 small, needle-like scutes between pectoral and pelvic fin bases. Maxilla tip pointed, reaching onto pre-opercle; isthmus (between gill openings on underside of head) not reaching to hind border of gill membrane leaving exposed a small (white or silver) diamond-shaped bony urohyal plate easily visible without lens. Dorsal and anal fins with 2 unbranched fin rays; anal fin origin below last dorsal fin rays or just behind.

Colour: light transparent fleshy brown, with a silver stripe down flanks.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Stolephorus devisi: 3 unbranched dorsal and anal fin rays (only 2 in S. heterolobus).

Stolephorus punctifer: maxilla shorter, its tip bluntly rounded.

***S. heterolobus***

Other Stolephorus species: body more compressed; isthmus tapering evenly forward to hind border of gill membrane.

Engraulis japonicus: no needle-like scutes before pelvic fin base; maxilla tip bluntly rounded.

Thryssa species: body much deeper, compressed; a dark pigmented area behind gill opening; belly with a keel of scutes.

SIZE:

Maximum: 8 cm; common to 7 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Probably throughout the area, but firm records needed for the "Gulf", South Africa and Mauritius; elsewhere, eastward to Papua New Guinea and northern coasts of Australia.

Pelagic in coastal waters; one of the commonest species of Stolephorus.

PRESENT FISHING GROUNDS:

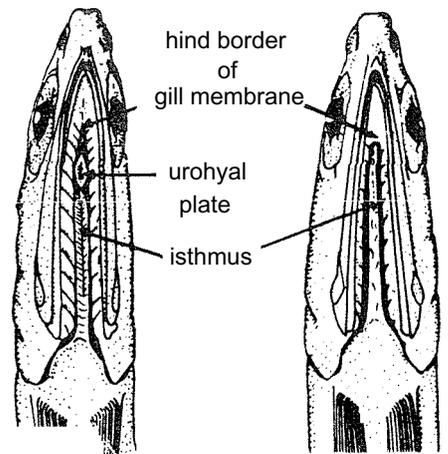
Caught throughout its range, but no special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

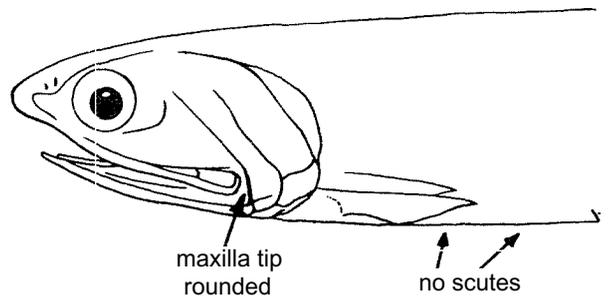
Separate statistics are not reported for this species.

Caught with seines and stake nets.

Marketed fresh or dried salted.



S. heteroioibus *S. indicus*, etc.
head viewed from below



Engraulis japonicus

