

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

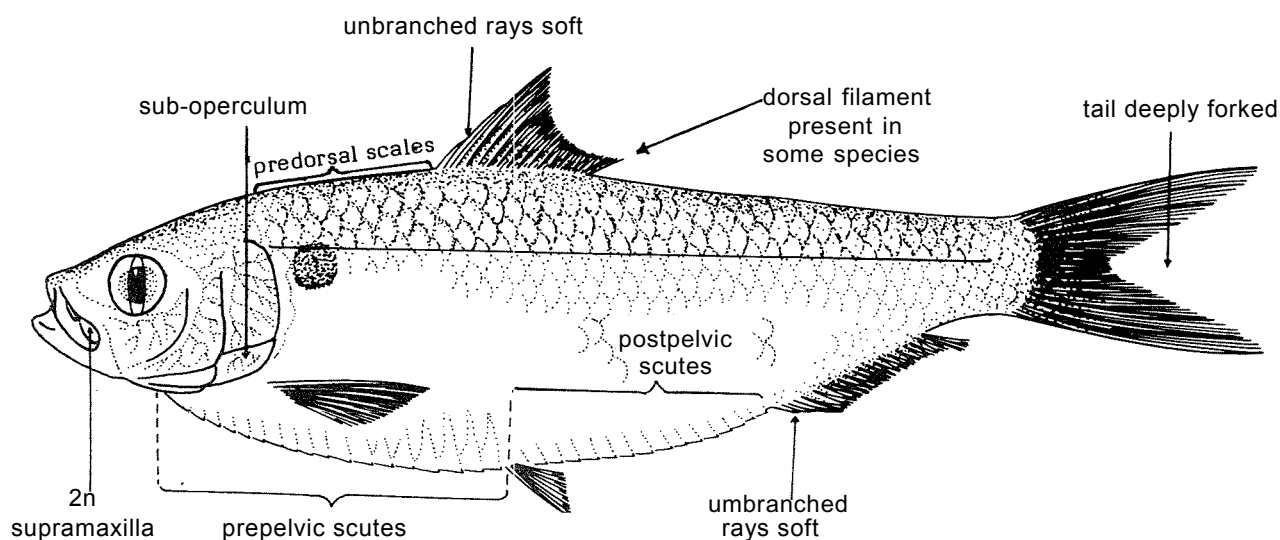
CLUPEIDAE

Herrings, shads, sardinellas, sprats, sardines

Small, mostly silvery fishes, usually between 7 and 20 cm length, generally with fusiform, sub-cylindrical bodies but sometimes quite strongly compressed; scutes present along belly (absent in *Etrumeus*, *Dussumieria*, *Spratelloides*, *Sauvagella* and *Spratellomorpha*, but weakly developed in *Dayella* and *Ehirana*). Lower jaw short, but deep. Fins lacking spiny rays; a single dorsal fin, usually short and near mid-point of body (dorsal fin absent in *Raconda*); pectoral fins set low on body; pelvic fin base about equidistant between pectoral fin base and anal fin origin pelvics absent in *Opisthopterus*); caudal fin deeply forked. Scales always cycloid (smooth to touch), but often shed rather easily; no lateral line.

Colour: back usually blue/green, sides silvery, sometimes with a distinct silver band. Darker markings include a black spot behind gill opening, sometimes continued as a series of spots along sides, a dark spot at dorsal fin origin (*Sardinella*), dark dots or spots along back and dark pigmentation on parts of fins (especially outer margin).

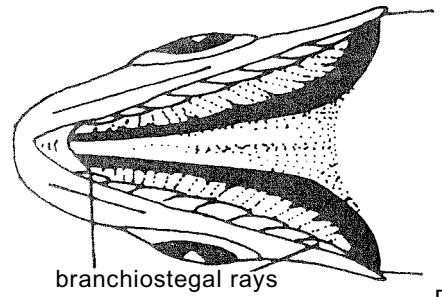
Most clupeids are marine, but some can tolerate low salinities and some shads (Alosinae) and gizzard shads (Dorosomatinae) live temporarily or permanently in freshwater. Although usually small fishes (15 to 25 cm), many are shoaling species of great importance to fisheries; some are used for food, others for bait. The reported yearly catch of clupeid species from the area exceeds 200 000 t.



KEY TO SUBFAMILIES

1a. Branchiostegal rays 11 to 18; no scutes, belly smooth Dussumieriinae

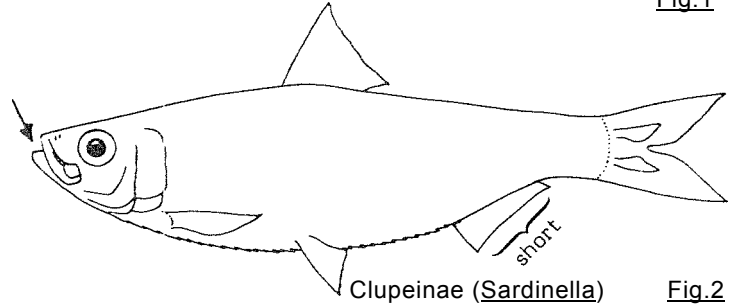
1b. Branchiostegal rays 4 to 8 (Fig.1) scutes present (except for Spratelloidinae and some Pellonulinae)



branchiostegal rays Fig.1

2a. Anal fin short (less than 30 rays); lower jaw not prominent (Fig. 2)

3a. Mouth terminal, lower jaw not flared outward at corners (Fig. 3a); last dorsal ray not filamentous



Clupeinae (*Sardinella*) Fig.2

4a. Upper jaw without a median notch (Fig. 4a)

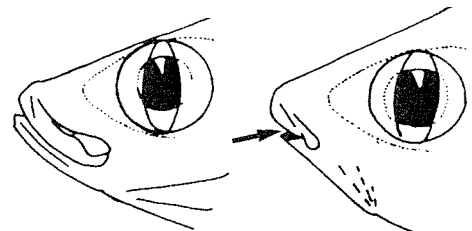
5a. Two supramaxillae (Fig. 5a)

6 a. Scutes absent Spratelloidinae

6 b. Scutes present Clupeinae

5b. A single (posterior) supra maxilla (Fig. 5b) Pellonulinae

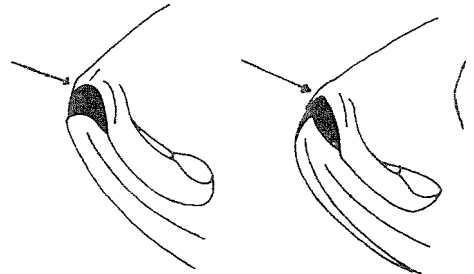
4b. Upper jaw with a distinct notch at centre (Fig. 4b) Alosinae



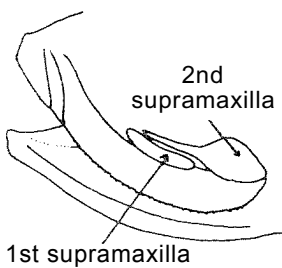
a) Clupeinae b) Dorosomatinae Fig.3

3b. Mouth inferior, lower jaw flared at corners (Fig. 3b); last dorsal ray often filamentous..... Dorosomatinae

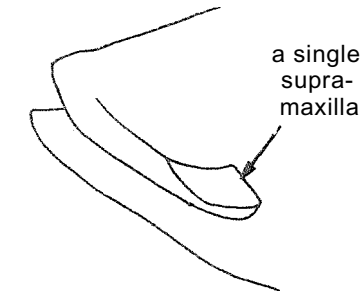
2b. Anal fin long (more than 30 rays); lower jaw very prominent (Fig. 6) Pristigasterinae



a) Clupeinae b) Alosinae Fig.4

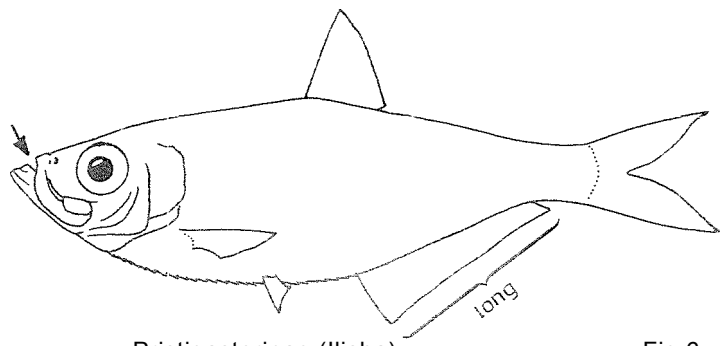


a) Clupeinae



b) Pellonulinae

Fig.5

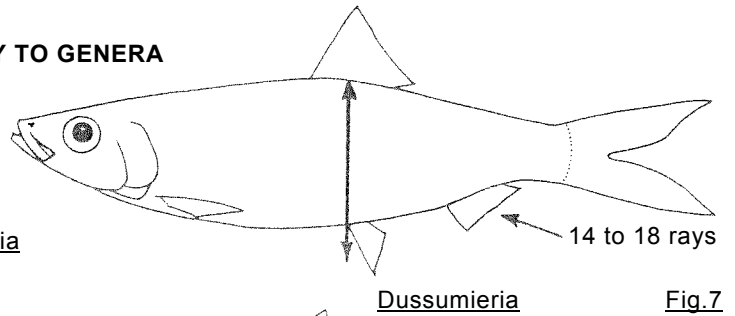


Pristigasterinae (*Ilisha*) Fig.6

KEY TO GENERA

Dussumieriinae

- 1a. Pelvic fins under dorsal fin base; 2 supramaxillae; anal rays 14 to 18 (Fig. 7) Dussumeria
- 1b. Pelvic fins behind dorsal fin base; 1 supramaxilla; anal rays 10 to 13 (Fig. 8) Etrumeus



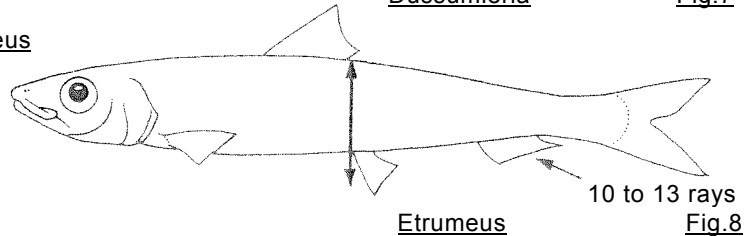
Dussumeria Fig.7

Spratelloidinae

Spratelloides only.

Clupeinae

- 1a. Opercle smooth
- 2a. Gill opening with two fleshy outgrowths (Fig. 9); pelvic finrays 8 or 9; back blue/green
- 3a. fronto-parietal striae (on top of head) few, 3 to 8 (Fig. 10a); lower portion of paddle-shaped 2nd supramaxilla longer than upper (Fig. 11a); no dark spot at origin of dorsal fin Herklotsichthys
- 3b. Fronto parietal striae (on top of head) usually many, 8 to 19 (Fig. 10b); lower portion of paddle-shaped 2nd supra-maxilla equal to upper (Fig. 11b)
- 4a. Gillrakers more than 40 in fishes over 5 cm standard length; predorsal scales paired and overlapping in midline (Fig. 12a) Sardinella
- 4b. Gillrakers 26 to 43; predorsal acalen forming a well-defined single median row (Fig. 12b)..... Amblygaster
- 2b. Gill opening smoothly rounded; pelvic fin rays 7; body creamy white ...Escualosa



Etrumeus Fig.8

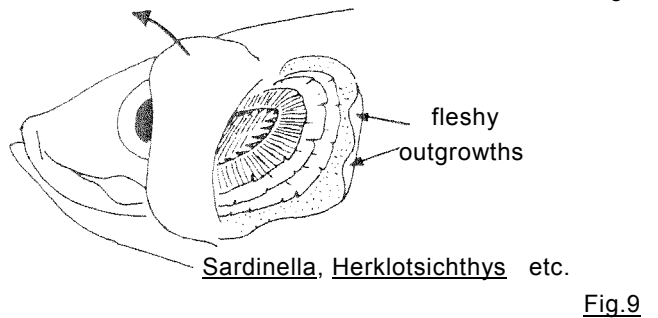
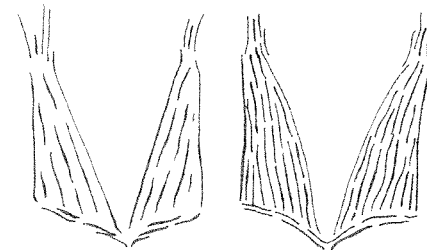
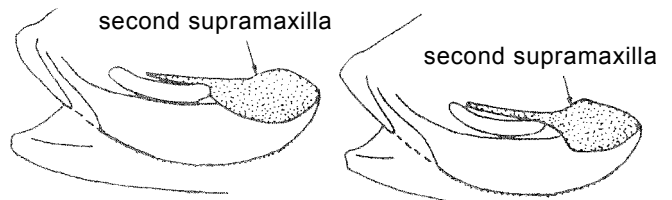


Fig.9

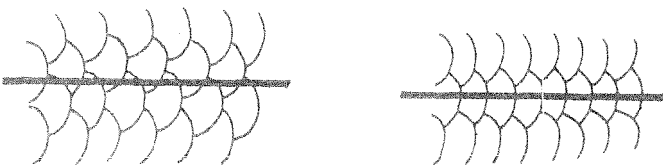


a) Herklotsichthys b) Sardinella Fig.10



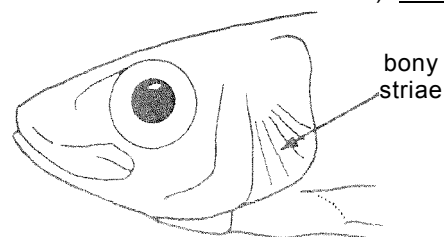
a) Herklotsichthys b) Sardinella Fig.11

- 1b. Opercle with radiating bony striae (Fig. 13) Sardinops



a) Sardinella b) Amblygaster

predorsal scales fig.12



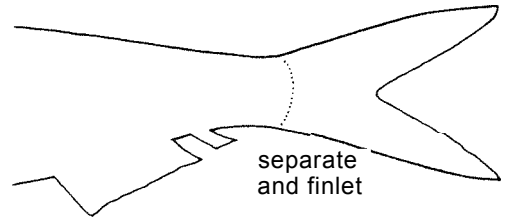
Sardinops Fig.13

Pellonulinae

1a. No prepelvic scutes

2a. Anal fin normal, last two rays not separate Sauvagella

2b. Last two anal rays detached, forming a separate finlet (Fig. 14) .. Spratellomorpha



Sprateliomorpha

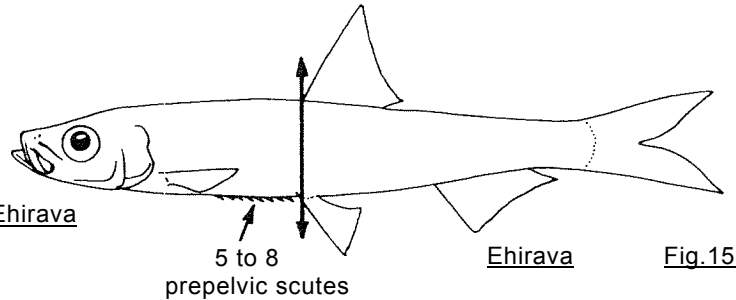
Fig.14

1b. One to 9 unkeeled prepelvic scutes

3a. Indian coasts and Sri Lanka

4a. Pelvic fin base just before dorsal fin origin; prepelvic scutes 5 to 8 (Fig. 15) Ehirava

4b. Pelvic fin base just behind dorsal fin origin; prepelvic scutes 1 to 4 (Fig. 16) Dayella



Ehirava

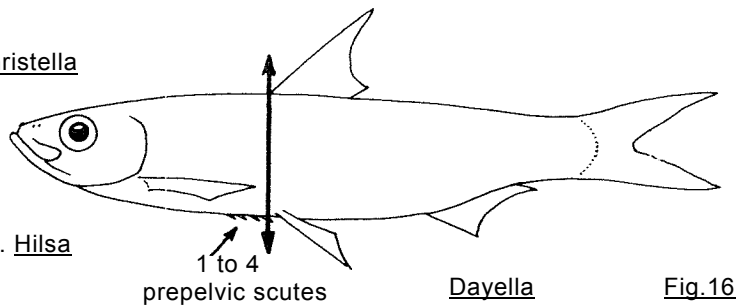
Fig.15

3b. Southeast coasts of Africa, also Madagascar Gilchristella

Alosinae

1a. Fronto-parietal striae (on top of head) many, 8 to 14 (Fig. 17a); gillrakers on inner arches distinctly curved outward; scales perforated Hilsa

1b. Fronto-parietal striae weakly developed, usually hidden by skin (Fig. 17b); gillrakers on inner arches straight; scales unperforated Tenualosa



Dayella

Fig.16

Dorosomatinae

1a. Last dorsal fin ray filamentous (Fig.18); predorsal scales paired Nematalosa

1b. Last dorsal fin ray normal; predorsal scales forming a single median rowAnodontostorna

Pristigasterinae

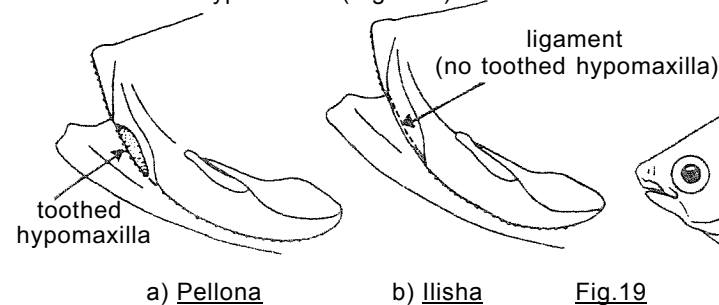
1a. Toothed hypomaxilla present (Fig. 19a) Pellona

1b. No toothed hypomaxilla (Fig. 19b)



a) Hilsa b) Tenualosa
frontoparietal striae on top of head

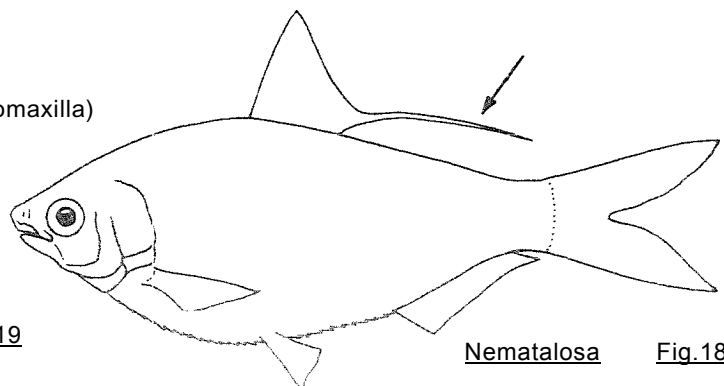
Fig. 17



a) Pellona

b) Ilisha

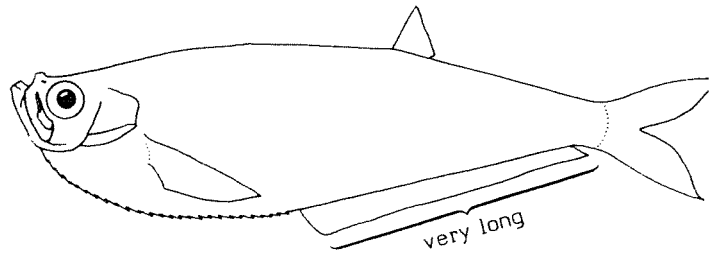
Fig.19



Nematalosa

Fig.18

- 2a. Pelvic fins present; anal fin rays 34 to 53 Ilisha
 2b. No pelvic fins; anal fin rays 51 to 65..... Opishopterus



no pelvic rays

Opishopterus Fig.20

LIST OF SPECIES OCCURRING IN THE AREA*

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

Dussumieriinae

- Dussumieria acuta Valenciennes, 1847 CLOP Duss 1
Dussumieria elopsoides Bleeker, 1849
Etrumeus teres (De Kay, 1840) CLUP Etru 1
Etrumeus whiteheadi Wongratana, 1983

Spratelloidinae

- Spratelloides delicatulus (Bennett, 1831) CLUP Spratel 1
Spratelloides gracilis (Schlegel, 1846) CLUP Spratel 2

Clupeinae

- Amblygaster clupeoides Bleeker, 1849 CLUP AmbI 1
Amblygaster leiogaster (Valenciennes, 1847) CLUP AmbI 2
Amblygaster sirm (Walbaum, 1792) CLUP AmbI 3
Escualosa thoracata (Valenciennes, 1847) CLUP Esc 1
Herklotsichthys lossei Wongratana, 1983
Herklotsichthys punctatus (Rüppell, 1837) CLUP Herk 1
Herklotsichthys quadrimaculatus (Rüppell, 1837) CLUP Herk 2
Herklotsichthys spilura Guichenot, 1863
Sardinella albella (Valenciennes, 1847) CLUP SardI 6
Sardinella brachysoma Bleeker, 1852
Sardinella dayi Regan, 1917
Sardinella fimbriata (Valenciennes, 1847)
Sardinella gibbossa Bleeker, 1849 CLUP SardI 8
Sardinella jussieui (Valenciennes, 1847)
Sardinella longiceps Valenciennes, 1847 CLUP SardI 3
Sardinella melanura (Cuvier, 1829) CLUP SardI 4
Sardinella neglecta Wongratana, 1983
Sardinella sindensis (Day, 1878) CLUP SardI 13
Sardinops ocellata (Pappé, 1853) CLUP Sardop 2

* 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

Pellonulinae

Dayella malabarica (Day, 1873)

Ehirava fluviatilis Deraniyagala, 1929

CLUP Ehir 1

Gilchristella aestuarius (Gilchrist, 1914)

Sauvagella madagascariensis (Sauvage, 1883)

Spratellomorpha bianalis (Bertin, 1940)

Alosinae

Hilsa kelee (Cuvier, 1829)

CLUP Hils 1

Tenualosa ilisha (Ham. Buch., 1822)

CLUP Tenu 1

Tenualosa toli Valenciennes, 1847

CLUP Tenu 2

Dorosomatinae

Anodontostoma chacunda (Ham. Buch., 1822)

CLUP Anod 1

Nematalosa arabica Regan, 1917

Nematalosa nasus Bloch, 1795)

CLUP Nem 1

Pristigasterinae

Ilisha filigera (Valenciennes, 1847)

Ilisha kampeni (Weber & de Beaufort, 1913)

Ilisha megaloptera (Swainson, 1839)

CLUP Ilish 4

Ilisha melastoma (Schneider, 1801)

CLUP Ilish 3

Ilisha obfuscata Wongratana, 1983

Ilisha striatula Wongratana, 1983

Opisthopterus tardoore (Cuvier, 1829)

CLUP Opis 1

Pellona ditchela Valenciennes, 1847

CLUP Pellon 2

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

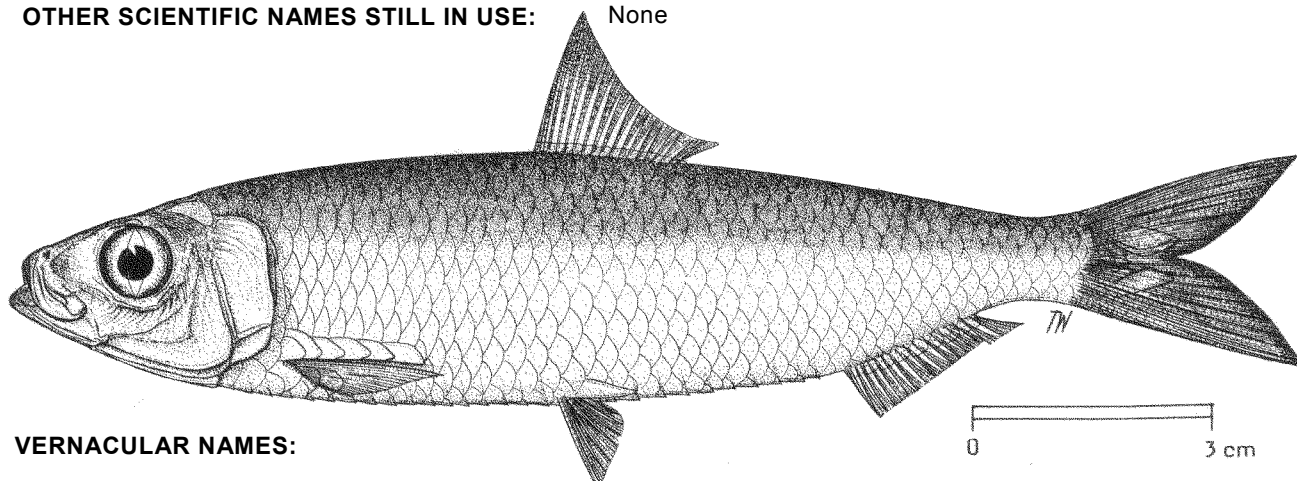
Main species figures drawn by T. Wongratana

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CLUPEIDAE

FISHING AREA 51
(W. Indian Ocean)Amblygaster clupeioides (Bleeker, 1849)

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO En - Bleeker's smoothbelly sardinella
 Fr - Sardinelle coulat
 Sp - Sardinela vientre liso

NATIONAL:

DISTINCTIVE CHARACTERS

Body fairly elongate, subcylindrical in cross-section; belly rounded, but with a low keel of scutes. Head moderate, about 4 times in standard length; gill openings with 2 fleshy outgrowths; gillrakers 26 to 31 on lower limb of first gill arch. Dorsal fin origin at mid-point of body or a little nearer to caudal fin base; 8 pelvic fin rays; anal fin origin well behind dorsal fin base. Predorsal scales forming a single (median) series.

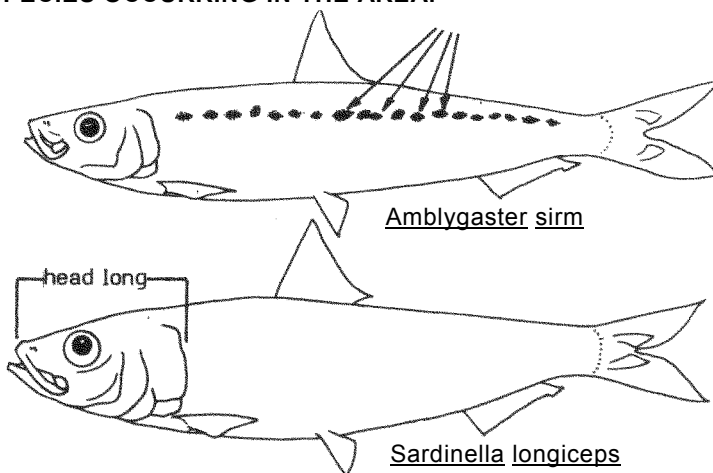
Colour: back blue/green, flanks silvery and without spots.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Amblygaster leiogaster: gillrakers 31 to 33 on lower limb of first arch (only 26 to 31 in A. clupeioides).

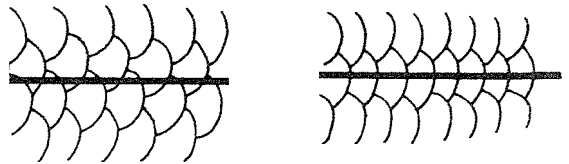
Amblygaster sirm: green/gold spots along flanks turning black in preserved material); gillrakers 33 to 43 on lower limb of first arch.

Sardinella longiceps and Sardinella neglecta: 9 pelvic fin rays and gillrakers long and very numerous (more than 100); head long, 2.8 to 3.5 times in standard length (about 4 times in A. clupeioides).



Other species of Sardinella: belly sharply keeled; 32 to 33 gillrakers on lower limb of first gill arch; a double series of (overlapping) predorsal scales.

Dussumieria species: no scutes along belly and a characteristic pointed mouth.



a) Sardinella

b) ***Amblygaster***

predorsal scales

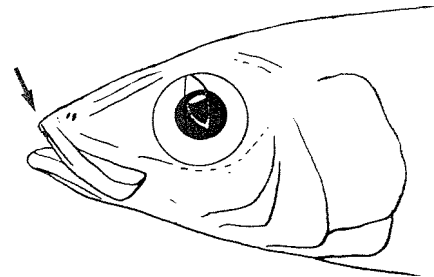
SIZE:

Maximum: 17 cm; common to 15 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Southern coasts of India; elsewhere, from Indonesia eastward to Fiji.

Pelagic in coastal waters.



Dussumieria

PRESENT FISHING GROUNDS:

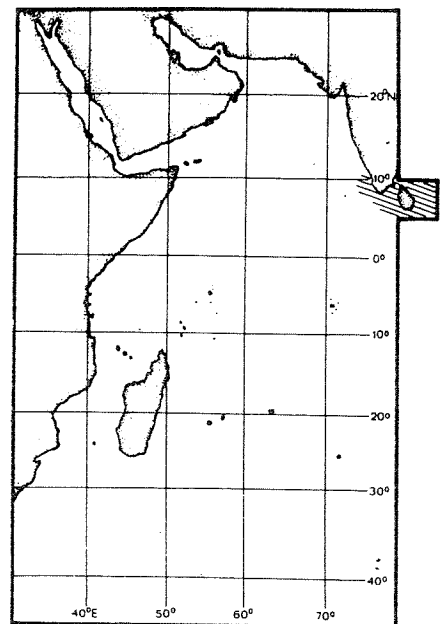
Caught throughout its range, but no special fishery.

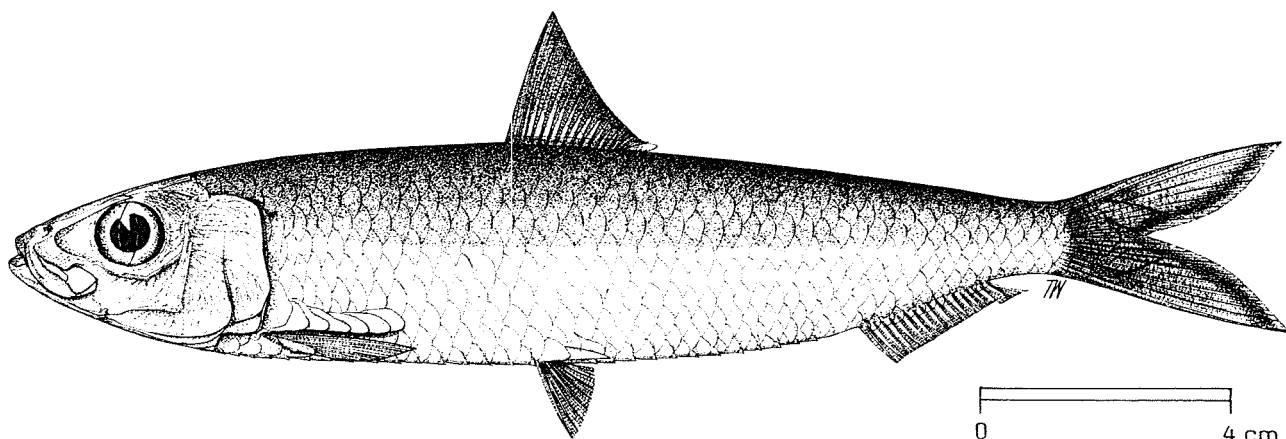
CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with seines, gillnets and perhaps shallow trawls.

Marketed fresh.



FAO SPECIES IDENTIFICATION SHEETS
FAMILY: CLUPEIDAE
**FISHING AREA 51
(W. Indian Ocean)**
Amblygaster leiogaster (Valenciennes, 1847)
OTHER SCIENTIFIC NAMES STILL IN USE: Sardinella leiogaster (Valenciennes, 1847)

VERNACULAR NAMES:

FAO: En - Smoothbelly sardinella
Fr - Sardinella daniva
Sp - Sardinela daniva

NATIONAL:

DISTINCTIVE CHARACTERS:

Body fairly elongate, subcylindrical in cross-section; belly rounded, but with a low keel of scutes. Head moderate, about 4 times in standard length; gill openings with 2 fleshy outgrowths; gillrakers 31 to 33 on lower limb of first arch. Dorsal fin origin at mid-point of body or a little nearer to snout; 8 pelvic fin rays; anal fin origin well behind dorsal fin base. Pre-dorsal scales forming a single (median) series.

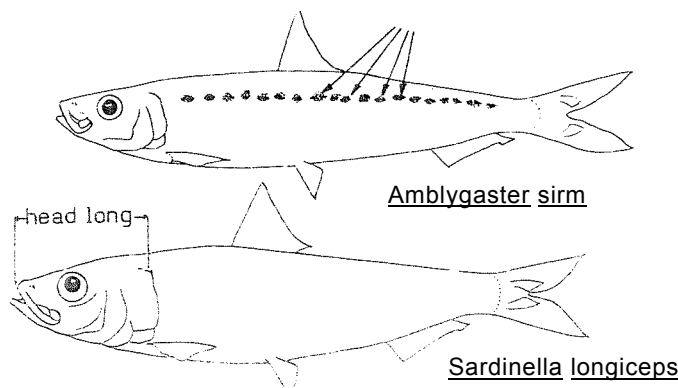
Colour: back blue/green, flanks silvery and without spots; dorsal fin black (or dusky when fully extended).

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Amblygaster clupeioides: gillrakers only 26 to 31 on lower limb of first arch (31 to 33 in A. leiogaster).

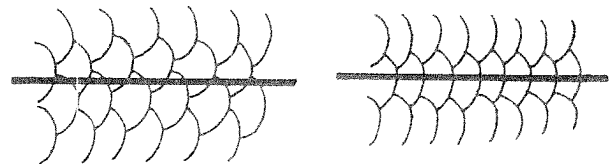
Amblygaster sirm: green/gold spots along flanks turning black in preserved material); gillrakers 33 to 43 on lower limb of first arch.

Sardinella longiceps, Sardinella neglecta: 9 pelvic fin rays and gillrakers long and very numerous (more than 100); also, head long, 2.8 to 3.5 times in standard length.



Other Species of Sardinella: belly sharply keeled, gillrakers more than 33; a double series of (overlapping) pre-dorsal scales.

Dussumieria species: no scutes along belly and a characteristic pointed mouth.



a) Sardinella

b) **Amblyaster**

predorsal scales

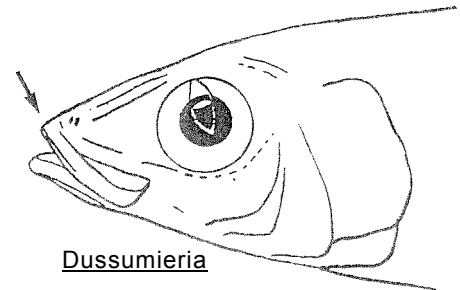
SIZE:

Maximum: 21 cm; common to 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

East, Africa and southern, India confirmed records, but probably throughout the area; elsewhere, eastern Indian Ocean.

Pelagic in coastal waters.



Dussumieria

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, gillnets and perhaps with shallow trawls.

Marketed fresh or frozen.

