PLOT

1983

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

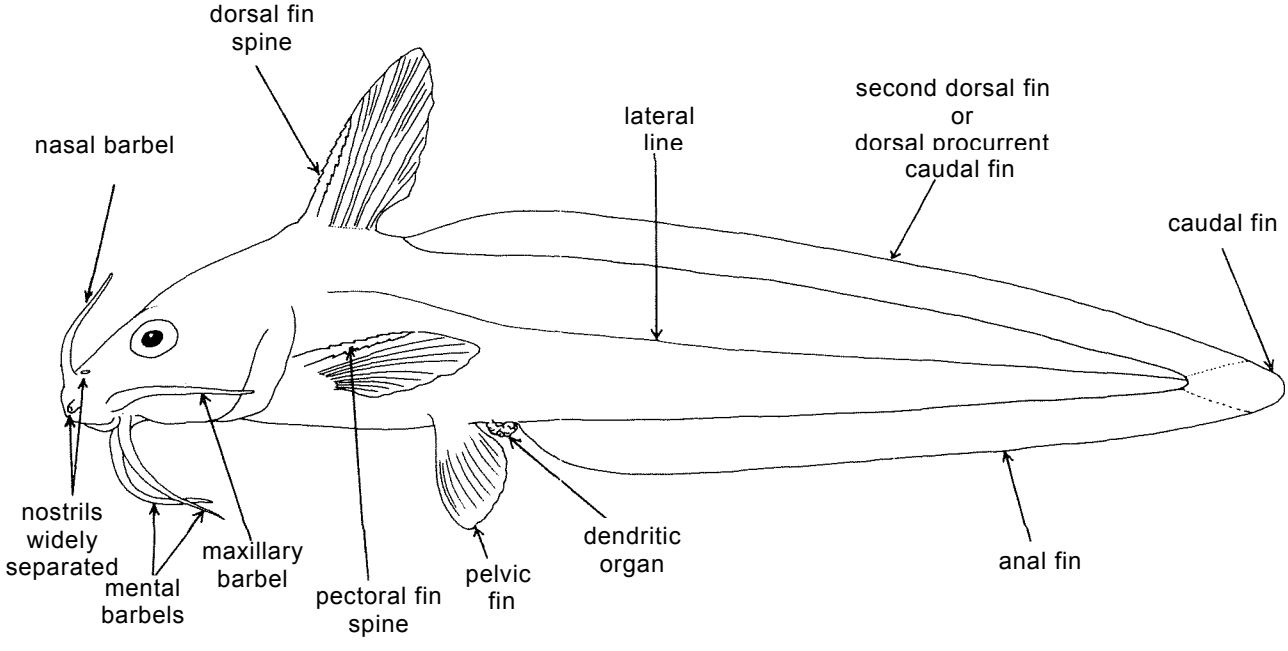
PLOTOSIDAE *

Stinging catfishes, coral reef catfishes, eel catfishes, barbel eels

Small to moderately large-sized catfishes. Body elongate, compressed, tapering to a point posteriorly. Head broad, dorsal profile arched or straight from tip of snout to dorsal fin origin; gill membranes free from each other and from the isthmus except anteriorly; 4 pairs of barbels - 1 pair nasal, 1 pair maxillary and 2 pairs mental; a pair of widely separated nostrils on each side, anterior nostril a small tube, posterior nostril slit-like; teeth on upper jaw conical; teeth on lower jaw and palate conical and/or molar-like, those on palate in a crescentic or triangular patch; 16 to 32 normal rakers present on anterior edge of first gill arch; 0 to 10 ridge-like rakers on posterior face of first gill arch, confined to upper limb. First dorsal fin short-based, with 1 serrated spine and 4 to 6 soft rays; second dorsal fin (or dorsal procurrent caudal fin), caudal fin, and anal fin confluent; second dorsal fin with 69 to 143 soft rays, its origin approximately opposite: pelvic fin insertion; caudal fin rounded to pointed, with 6 to 11 rays; anal fin base long, with 58 to 131 soft rays; adipose fin absent; pectoral fins with 1 serrated spine and 9 to 16 soft rays; pelvic fin with 10 to 16 soft rays. Scales and bony plates absent. Lateral line complete, ending near base of caudal fin rays. A dendritic organ consisting of many vascularized epithelial folds present directly posterior to anus. Vertebrae (including urostylar vertebra) posterior to Weberian complex 49 to 80.

Colour in preservative: back and sides uniformly tan, brown or black, or with 2 or 3 whitish to yellowish lateral stripes; belly usually paler or white. Fins often with dark borders.

Stinging catfishes occur in marine, brackish and freshwaters of tropical and warm-temperate regions. The marine representatives mostly are confined to continental margins and continental islands, Plotosus lineatus being the notable exception. Some members are found on coral reefs. Juveniles of marine stinging catfishes often form dense aggregations (pods). Major food items ere crustaceans, molluscs and fishes. This family includes several marine species of economic value. They are taken by bottom trawls, seines, and on hook and line.



*Diagnosis applies only to the genus Plotosus

SIMILAR FAMILIES OCCURRING IN THE AREA:

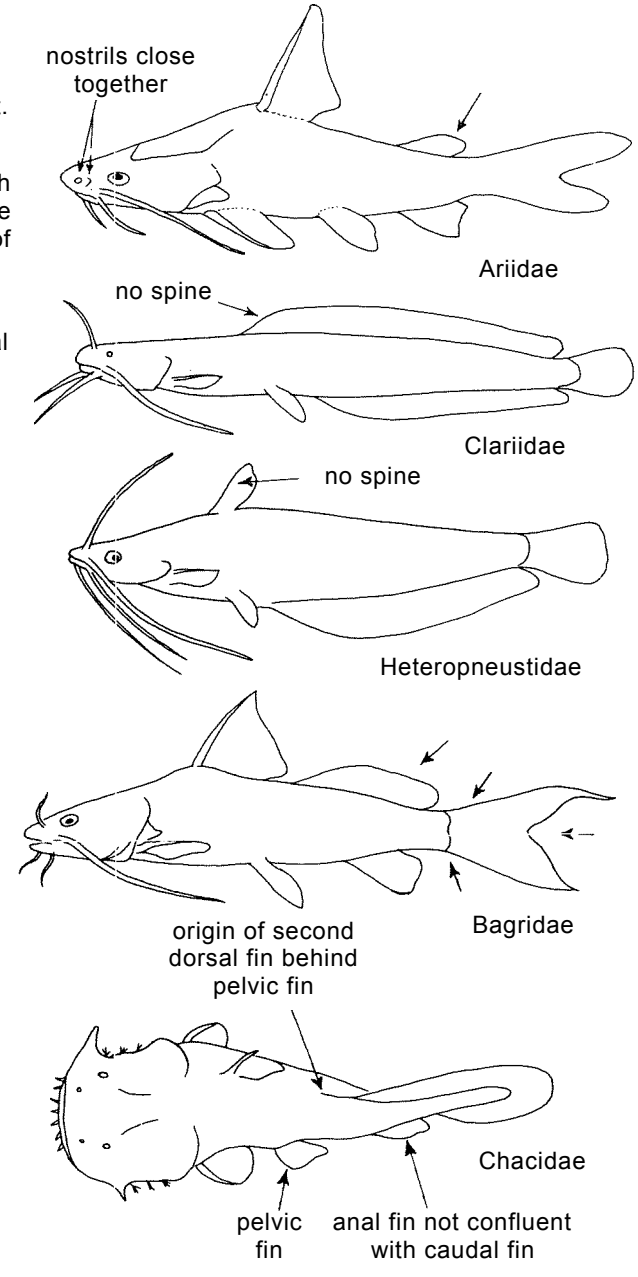
All other catfish families: dendritic organ absent. Furthermore:

Ariidae (the only family in Fishing Area 51 with truly marine representatives): caudal fin forked, adipose fin present, anal and caudal fins not confluent, 3 pairs of barbels (4 pairs in Plotosidae), nostrils close together.

Clariidae and Heteropneustidae: no spine in dorsal fin.

Bagridae: adipose fin present, caudal fin usually forked, anal and caudal fins not confluent.

Chacidae: anal and caudal fins not confluent, origin of second dorsal fin not opposite pelvic fin origin.



KEY TO GENERA OCCURRING IN THE AREA:

Plotosus only.

LIST OF SPECIES OCCURRING IN THE AREA:

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

Plotosus canius Hamilton-Buchanan, 1822	PLOT Plot 1
Plotosus limbatus Valenciennes, 1840	PLOT Plot 2
Plotosus lineatus (Thunberg, 1787)	PLOT Plot 3
Plotosus nkunga Gomon & Taylor, 1982	PLOT Plot 4

Prepared by J.R. Gomon, US National Museum of Natural History, Washington, D.C., USA

Draft material received by K.C. Jayaram, Zoological Survey of India, Calcutta, India

PLOT Plot 1

1983

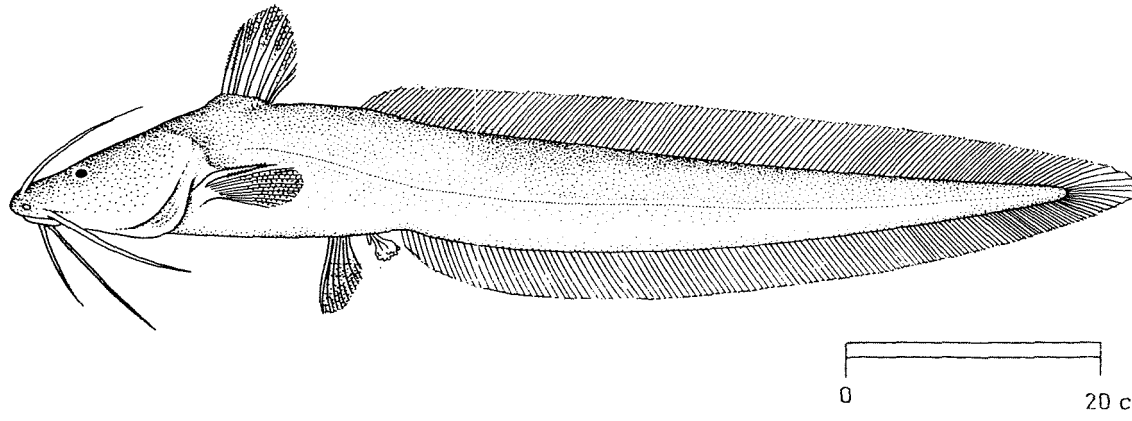
FAO SPECIES IDENTIFICATION SHEETS

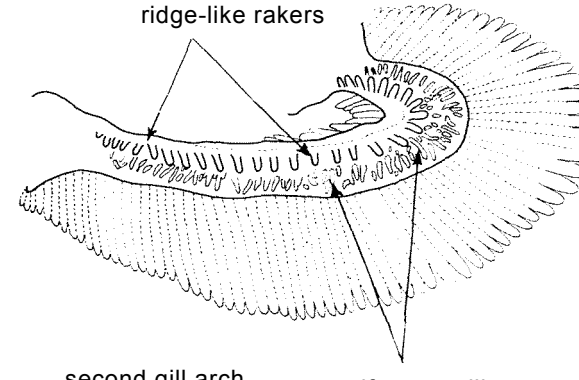
FAMILY: PLOTOSIDAE

FISHING AREA 51
(W. Indian Ocean)

Plotosus canius Hamilton-Buchanan, 1822

OTHER SCIENTIFIC NAMES STILL IN USE: None





VERNACULAR NAMES:

FAO :
En - Eel catfish
Fr - Balibot canin
Sp - Patuna canina

NATIONAL:

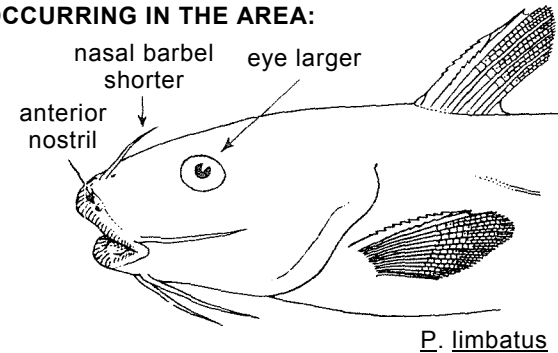
DISTINCTIVE CHARACTERS:

Head moderately large, profile straight from tip of snout to dorsal fin origin; 4 pairs of barbels (1 nasal, 1 maxillary, 2 mental), the nasal barbels extending well behind eyes almost to nape, maxillary barbels extending to bases of pectoral fins; anterior nostrils located on end of snout at edge of upper lip; eyes small, 7 to 12% of head length; teeth in upper jaw pointed, in 2 rectangular patches of 3 rows each; teeth in lower jaw in 2 patches of 4 or 5 rows each, the anterior row with pointed teeth, the posterior rows with molar-like teeth; teeth on palate pointed in young, molar-like in adults, in a triangular to crescentic patch. Twenty-two to 26 gillrakers on anterior edge of first arch; 0 to 6 tiny, ridge-like rakers on rear face of first arch, confined to upper limb; large, vermiform papillae always present between gillrakers and filaments on both faces of second and subsequent arches, sometimes present on first arch. First dorsal fin with 1 spine and 4 soft rays, the last ray single or double at base; pectoral fins with 11 to 14 soft rays; pelvic fins with 12 to 16 rays; dorsal procurrent caudal fin (second dorsal fin) with 124 to 143 rays; caudal fin with 6 to 11 rays; anal fin with 106 to 131 rays; total number of rays in confluent fins 247 to 281. Vertebrae posterior to Weberian complex 73 to 80. Dendritic organ present posterior to anus.

Colour in preservative: moderate to dark brown above, lighter below; fins rarely with dark borders.

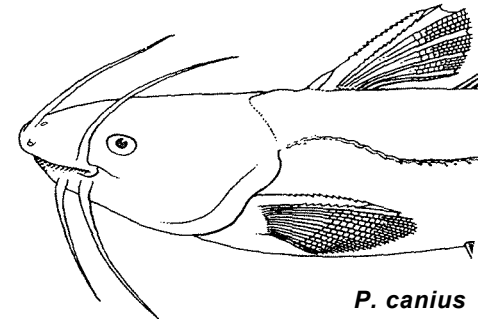
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Plotosus limbatus: dorsal profile of head arched (straight in P. canius); eye larger, 11 to 20% of head length (7 to 12% in P. canius); nasal barbel shorter, extending to middle or posterior border of eye in adults, slightly farther in juveniles; anterior nostrils above edge of upper lip; papillae rarely present on faces of gill arches and never vermiform; fewer total rays in confluent fins, 210 to 243 (247 to 281 in P. canius); fewer vertebrae posterior to the Weberian complex, 69 to 77 (73 to 80 in P. canius).



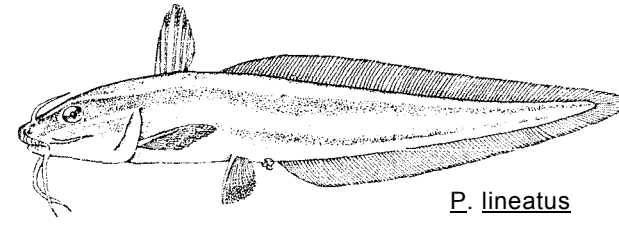
P. limbatus

P. lineatus: 2 or 3 pale stripes usually present on head and body (no stripes in P. canius); eye larger, 12 to 26% of head length; nasal barbel shorter, only extending to posterior border of eye; papillae absent on gill arch faces; fewer total rays in confluent fins, 139 to 200; fewer vertebrae posterior to Weberian complex, 49 to 58; a smaller species reaching approximately 30 cm standard length (reportedly to 150 cm standard length in P. canius).


P. canius

P. nkunga: fewer gillrakers on anterior edge of first arch, 16 to 21 (22 to 26 in P. canius); body with or without 2 pale, faint stripes (stripes never present in P. canius); eye larger, 11 to 18% of head length; nasal barbel shorter; vermiform papillae absent on gill arch faces; fewer total rays in confluent fins, 202 to 237; fewer vertebrae posterior to Weberian complex, 68 to 73.

Species of other catfish families: no dendritic organ posterior to anus.

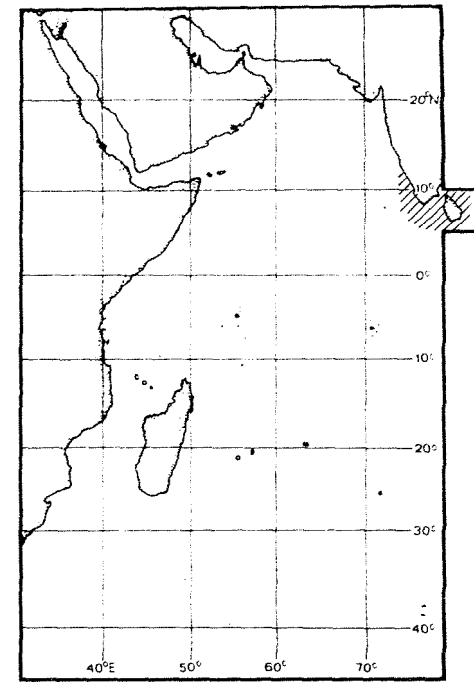

P. lineatus

SIZE:

Maximum: reportedly 150 cm; common to 80 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Within the area, along the west and south coasts of India and off Sri Lanka. Ranges eastward from east India along the coasts of Bangladesh and Burma, through the Indo-Australian Archipelago and the Philippine Islands as far as Papua, New Guinea.



Found chiefly in estuaries and lagoons, and sometimes up rivers in nearly fresh waters. Juveniles probably form dense aggregations.

Major food items are crustaceans, molluscs and fishes.

PRESENT FISHING GROUNDS:

Taken incidentally throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls, seines and on hook and line.

Marketed mostly fresh.

PLOT Plot 2

1983

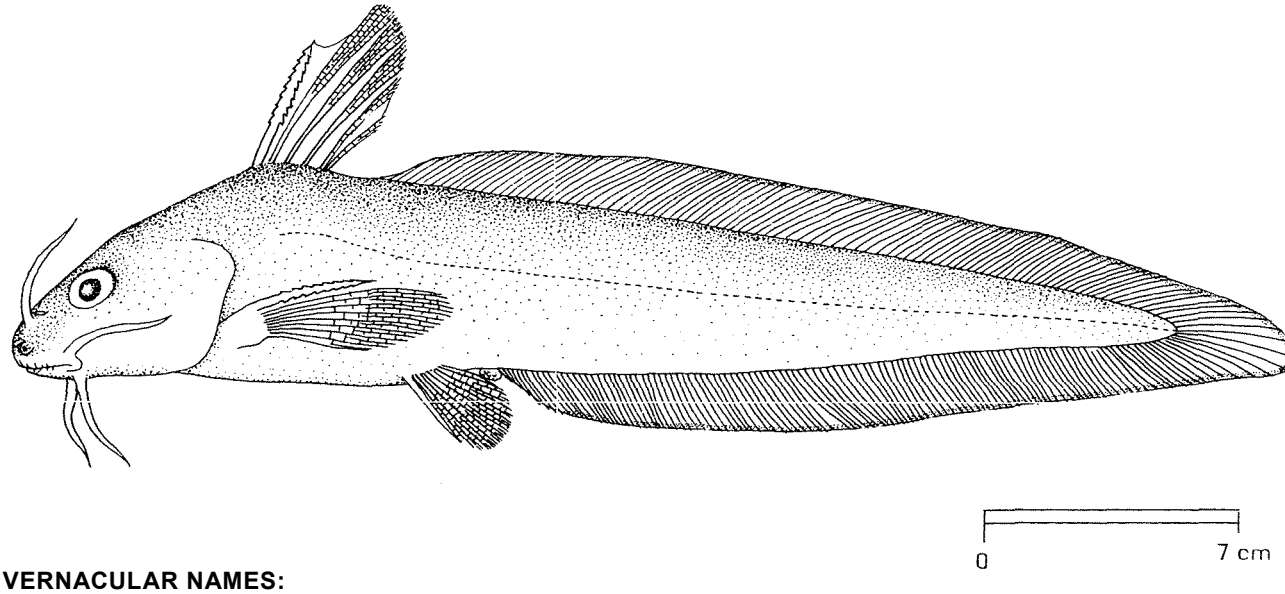
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: PLOTOSIDAE

FISHING AREA 51
(W. Indian Ocean)

Plotosus limbatus Valenciennes, 1840

OTHER SCIENTIFIC NAMES STILL IN USE : None. Often misidentified as Plotosus anguillaris (= P. lineatus) and Plotosus canius



VERNACULAR NAMES:

FAO :
En - Darkfin eel catfish
Fr - Balibot aile noire
Sp - Patuna aleta negra

NATIONAL:

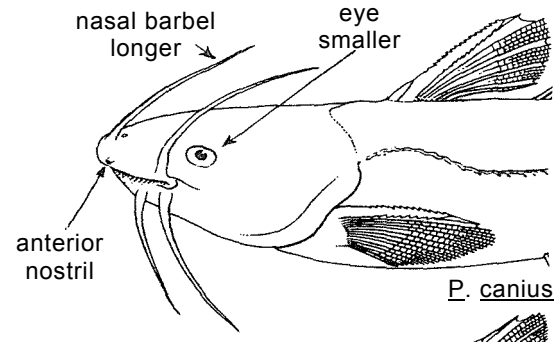
DISTINCTIVE CHARACTERS:

Head moderately large, profile arched from tip of snout to dorsal fin origin; 4 pairs of barbels (1 nasal, 1 maxillary, 2 mental), the nasal barbels extending to middle or posterior borders of eyes (somewhat longer in juveniles), maxillary barbels extending from just short of opercular margin to pectoral spine origin; anterior nostrils located above edge of upper lip; eyes moderate to large, 13 to 20% of head length; teeth in upper jaw pointed, in 2 rectangular patches of 2 to 4 rows each; teeth in lower jaw in 2 patches of approximately 4 rows each, the anterior teeth pointed, posterior teeth molar-like; teeth on palate in a triangular patch, pointed and/or molar-like. Twenty to 25 gillrakers on anterior edge of first arch; 0 to 10 ridge-like rakers on rear face, confined to upper limb; papillae rarely present on gill arches, never vermiform. First dorsal fin with 1 spine and 4 to 6 soft rays, the last ray double at base; pectoral fins with 13 to 16 soft rays; pelvic fins with 12 to 16 rays; dorsal procurrent caudal fin (second dorsal fin) with 106 to 133 rays; caudal fin with 9 to 11 rays; anal fin with 87 to 126 soft rays; total number of rays in confluent fins 210 to 243. Vertebrae posterior to Weberian complex 69 to 77. Dendritic organ present posterior to anus.

Colour in preservative: body reddish brows to dark brown, sometimes fading to a lighter brown ventrally. Fins often blackish brown, usually with a black border.

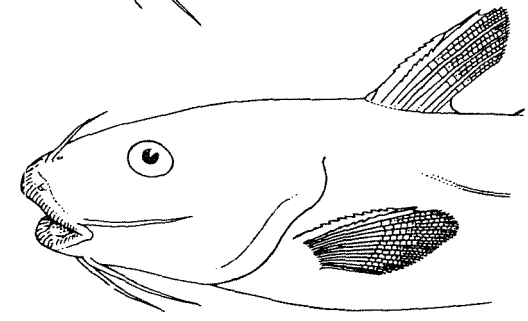
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Plotosus canius: dorsal profile of head straight (arched in P. limbatus); eye smaller, 7 to 12% of head length (11 to 20% in P. limbatus); nasal barbels longer, extending well behind eyes (extending only as far as posterior borders of eyes or slightly beyond in P. limbatus); anterior nostrils at edge of upper lip; large, vermiform papillae always present on second and subsequent gill arch faces (rarely present and never vermiform in P. limbatus); more total rays in confluent fins, 247 to 281 (210 to 243 in P. limbatus); more vertebrae posterior to Weberian complex, 73 to 80 (69 to 76 in P. limbatus); fins rarely with darker edges.



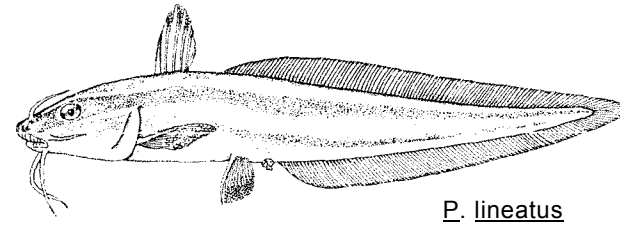
P. canius

P. lineatus: 2 or 3 pale stripes usually present on head and body (no stripes in P. limbatus); maxillary barbels shorter, extending somewhat behind eye (extending almost to opercular edge or beyond in P. limbatus); fewer soft pectoral fin rays, 9 to 13 (13 to 16 in P. limbatus); fewer total rays in confluent fins, 139 to 200; fewer vertebrae posterior to Weberian complex, 49 to 58; a smaller species, maximum approximately 30 cm standard length (about 40 cm standard length in P. limbatus).


P. limbatus

P. nkunga: fewer gillrakers on anterior edge of first arch, 16 to 21 (20 to 25 in P. limbatus); body with or without 2 pale, faint stripes (stripes never present in P. limbatus); dorsal fin lower, longest dorsal ray 45 to 65% of head length (52 to 90% in P. limbatus); pelvic fins shorter, 34 to 43% of head length (37 to 56% in P. limbatus).

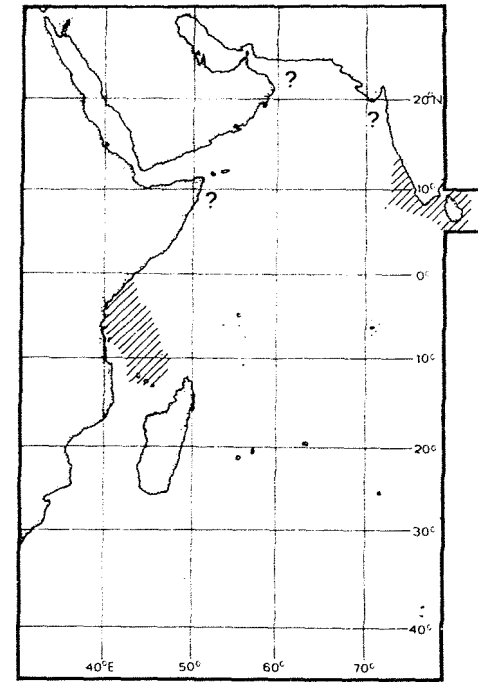
Species of other catfish families: no dendritic organ posterior to anus.


P. lineatus

SIZE:

Maximum: 41 cm standard length; common to 30 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:



Within the area, known from off Kenya, Aldabra and along the southwest coasts of India and Sri Lanka. Reports of P. anguillaris (= P. lineatus) and P. canius from Pakistan, Iran, Oman, Yemen and Somalia may be misidentifications of P. limbatus. Also found on the southeast coast of India.

Found in estuaries and along open coasts. Juveniles form dense aggregations.

Major food items are probably crustaceans, molluscs and fishes.

PRESENT FISHING GROUNDS:

Taken incidentally throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls, seines and on hook and line.

Marketed mostly fresh.

PLOT Plot 3

1983

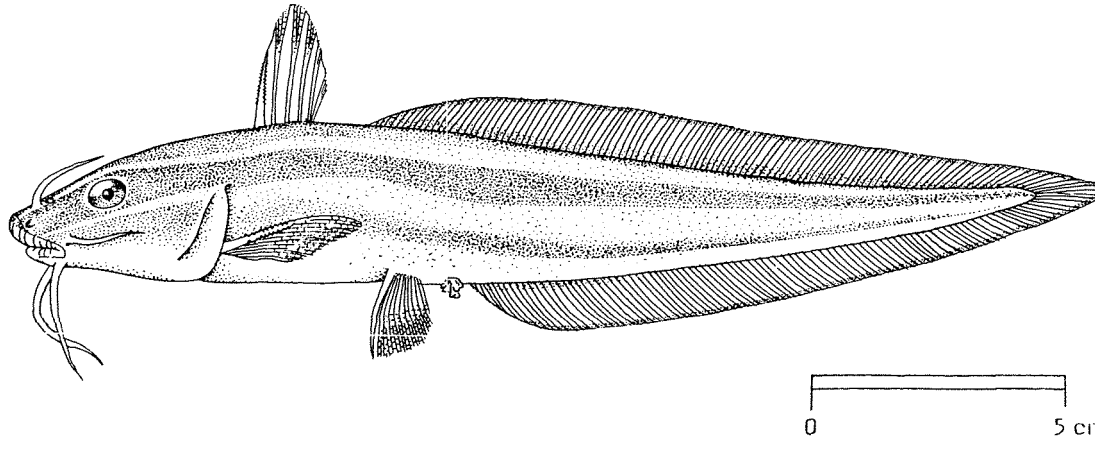
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: PLOTOSIDAE

FISHING AREA 51
(W. Indian Ocean)

Plotosus lineatus (Thunberg, 1787)

OTHER SCIENTIFIC NAMES STILL IN USE: Plotosus anguillaris (Bloch, 1794)
Plotosus arab Bleeker, 1862



VERNACULAR NAMES:

FAO : En - Striped eel catfish
Fr - Balibot rayé
Sp - Patuna rayada

NATIONAL:

DISTINCTIVE CHARACTERS:

Head moderately large, profile slightly arched from tip of snout to dorsal fin origin; 4 pairs of barbels (1 nasal, 1 maxillary, 2 mental), the nasal barbels not extending well beyond posterior borders of eyes, maxillary barbels extending slightly beyond; anterior nostrils located on end of snout at edge of upper lip; eyes moderate to large, 12 to 26% of head length; teeth in upper jaw pointed, in 2 patches of 2 or 3 rows each, each patch tapering to a point laterally; teeth in lower jaw conical anteriorly, molar-like posteriorly, in 3 rows; teeth in palate molar-like, in a crescentic to triangular patch. Twenty-two to 32 gillrakers on anterior edge of first arch; 0 to 7 ridge-like rakers on rear face, confined to upper limb; gill arch faces without papillae. First dorsal fin with 1 spine and 4 soft rays, the last ray usually double at base; pectoral fins with 9 to 13 soft rays; pelvic fins with 10 to 13 rays; dorsal procurrent caudal fin (or second dorsal fin) with 69 to 115 rays; caudal fin with 9 to 11 rays; anal fin with 58 to 82 soft rays; total number of rays in confluent fins 139 to 200. Vertebrae posterior to Weberian complex 49 to 58. Dendritic organ present posterior to anus.

Colour in preservative: brown or black above, whitish below, with 2 or 3 stripes (white or yellow in life); 2 of the stripes extend from snout to near caudal peduncle; the third stripe extends from belly backward to caudal peduncle; stripes absent in some specimens; margins of median fins blackish. Small juveniles may have a dark belly.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Plotosus canius: stripes absent, median fins usually without dark borders; eye smaller, 7 to 12% of head length (12 to 26% in P. lineatus); nasal and maxillary barbels longer, both extending the length of head; large vermiform papillae present on faces of second and subsequent arches (absent in P. lineatus); more total rays in confluent fins, 247 to 281 (139 to 200 in P. lineatus); more vertebrae posterior to the Weberian complex, 73 to 80 (49 to 58 in P. lineatus); a large species reportedly reaching 1.5 m in length (P. lineatus reaching only 30 cm).

P. limbatus: stripes absent; maxillary barbels longer, extending almost to opercular edge or beyond (just opposite posterior border of eye in P. lineatus); more soft pectoral fin rays, 13 to 16 (9 to 13 in P. lineatus); more total rays in confluent fins, 210 to 243. more vertebrae posterior to Weberian complex, 69 to 76; a larger species reaching approximately 41 cm standard length (30 cm in P. lineatus).

P. nkunga: stripes absent or, if present, very faint and not extending onto head; fewer gillrakers on anterior edge of first arch, 16 to 21 (22 to 32 in P. lineatus); more total rays in confluent fins, 202 to 237; more vertebrae posterior to Weberian complex, 68 to 73; a larger species reaching 51 cm standard length.

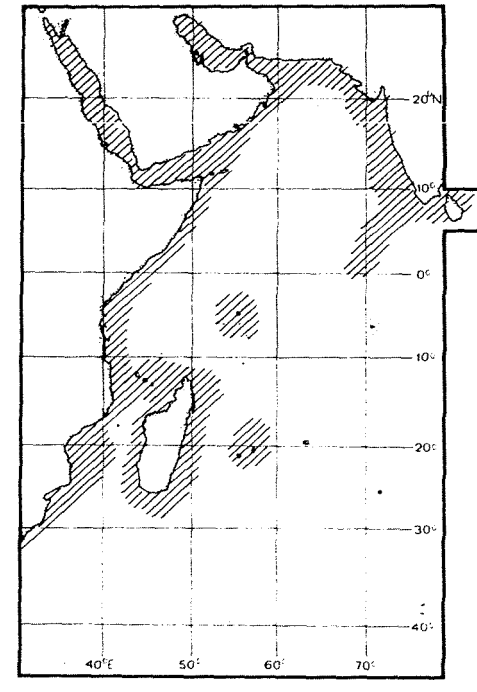
Species of other catfish families: no dendritic organ posterior to anus.

SIZE:

Maximum: about 30 cm; common to 25 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Along the entire coastline of Fishing Area 51, including islands north of approximately 30° S. Plotosus lineatus ranges as far east as Samoa, north to Japan, and as far south as Australia.



Found on reefs, along open coasts, in estuaries, and in tidal pools. Juveniles form dense aggregations.

Major food items are small crustaceans, molluscs and fishes.

PRESENT FISHING GROUNDS:

Throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls, seines and on hook and line.

Marketed mostly fresh.

PLOT Plot 4

1983

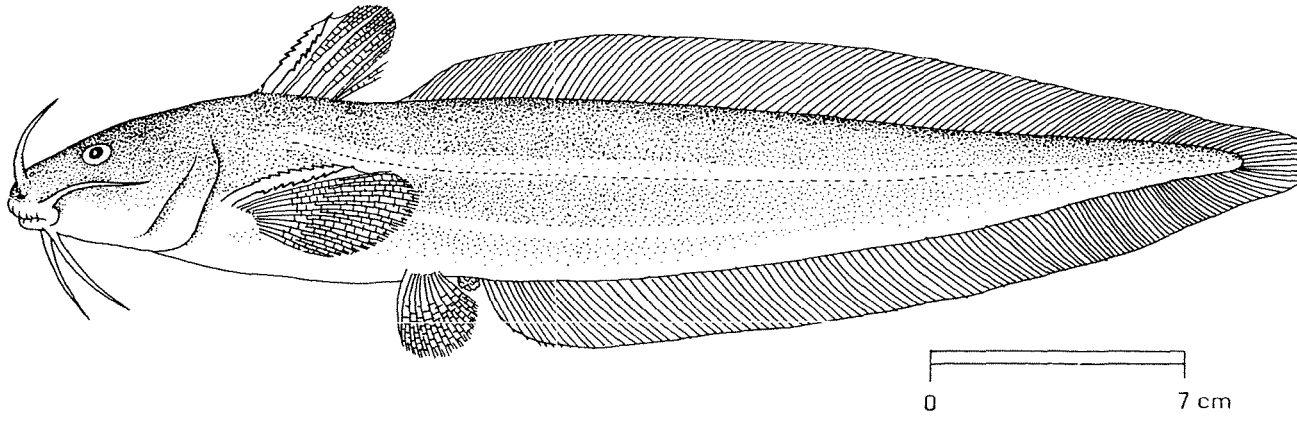
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: PLOTOSIDAE

FISHING AREA 51
(W. Indian Ocean)

Plotosus nkunga Gomon & Taylor, 1982

OTHER SCIENTIFIC NAMES STILL IN USE: None. Misidentified as Plotosus anguillaris (= P. lineatus) and Plotosus limbatus



VERNACULAR NAMES:

FAO : En - Stinging eel catfish
Fr - Balibot aiguillon
Sp - Patuna picadora

NATIONAL:

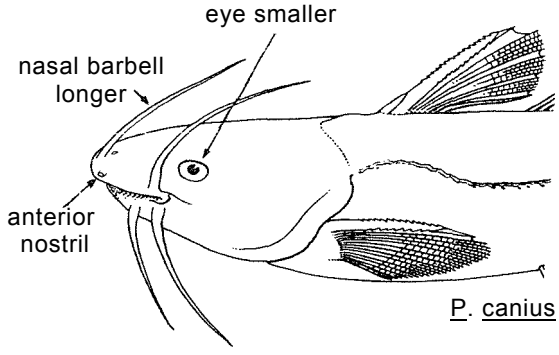
DISTINCTIVE CHARACTERS:

Head moderately large, profile slightly arched from tip of snout to dorsal fin origin; 4 pairs of barbels (1 nasal, 1 maxillary, 2 mental), the nasal and maxillary barbels extending at most to hind border of eyes or slightly beyond; anterior nostrils located on end of snout above edge of upper lip; eyes moderate to large, 11 to 18% of head length; teeth in upper jaw pointed, in 2 rectangular or triangular patches of 2 to 4 rows each; teeth in lower jaw in 2 patches of 3 or 4 rows each, anterior teeth pointed, posterior teeth molar-like in adults; teeth on palate in a triangular patch, painted and/or molar-like. Sixteen to 21 gillrakers on anterior edge of first arch; 3 to 10 ridge-like rakers on rear face confined to upper limb; no vermiform papillae on faces of gill arches. First dorsal fin with 1 spine and 4 soft rays, the last ray double at base; pectoral fins with 11 to 15 soft rays; pelvic fins with 13 or 14 rays; dorsal procurrent caudal fin (or second dorsal fin) with 104 to 120 soft rays; caudal fin with 9 or 10 rays; anal fin with 88 to 109 soft rays; total number of rays in confluent fins 202 to 237. Vertebrae posterior to Weberian complex 68 to 73. Dendritic organ present posterior to anus.

Colour in preservative: body greyish to reddish brown, fading to a lighter brown to cream ventrally. Two faint, pale longitudinal stripes sometimes present on body, but never extending onto head. Fins same colour as upper body except in some juveniles in which fins are darker; median fins with or without darker border.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

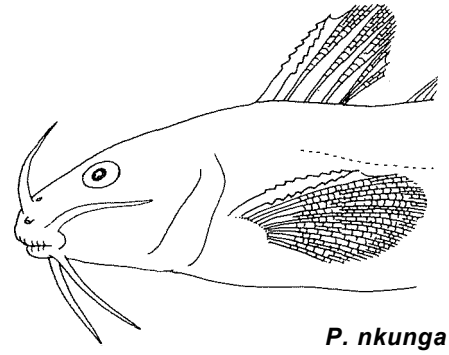
Plotosus canius: eye smaller, 7 to 12% of head length (11 to 18% in P. nkunga); nasal barbels longer, extending well behind eyes; anterior nostrils at edge of upper lip; large vermiform papillae present on second and subsequent gill arch faces (absent in P. nkunga); more gillrakers on anterior edge of first arch, 22 to 26 16 to 21 in P. nkunga); more total rays in confluent fins, 247 to 281 (202 to 237 in P. nkunga); more vertebrae posterior to Weberian complex, 73 to 80 (68 to 73 in P. nkunga); body never with stripes (faint, pale stripes sometimes present in P. nkunga).



P. canius

P. limbatus: more gillrakers on anterior edge of first arch, 20 to 25; never any stripes on body; dorsal fin higher, 52 to 90% of head length (45 to 65% in P. nkunga); pelvic fins longer, 37 to 56% of head length (34 to 43% in P . nkunga).

P. lineatus: 2 pale stripes usually present on head and body stripes absent, or if present, faint and not extending onto head in P. nkunga); more gillrakers on anterior edge of first arch, 22 to 32; fewer total rays in confluent fins, 139 to 200; fewer vertebrae posterior to Weberian complex, 49 to 58; a smaller species reaching approximately 30 cm standard length (51 cm standard length in P. nkunga).

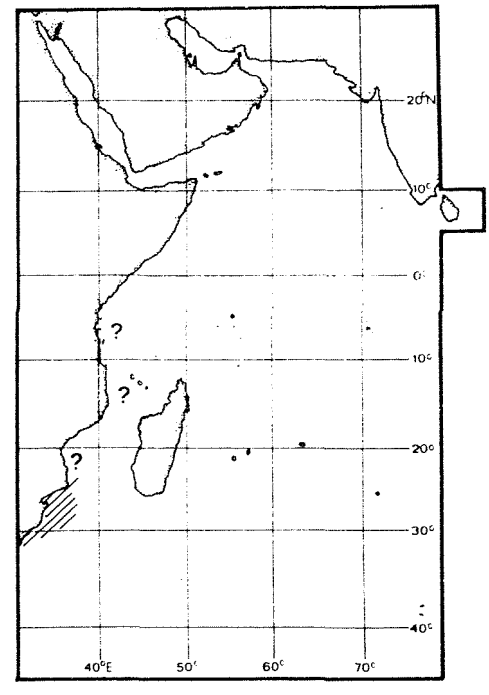

P. nkunga

SIZE:

Maximum: about 51 cm: common to 35 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

South Africa from 26°35'E in the south to 27°02'S in the north. Questionable records from the coast of Mozambique and off Zanzibar.



Found in estuaries and along open coasts.

Major food items are benthic invertebrates.

PRESENT FISHING GROUNDS:

Taken incidentally throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls, seines and on hook and line.

Marketed mostly fresh.