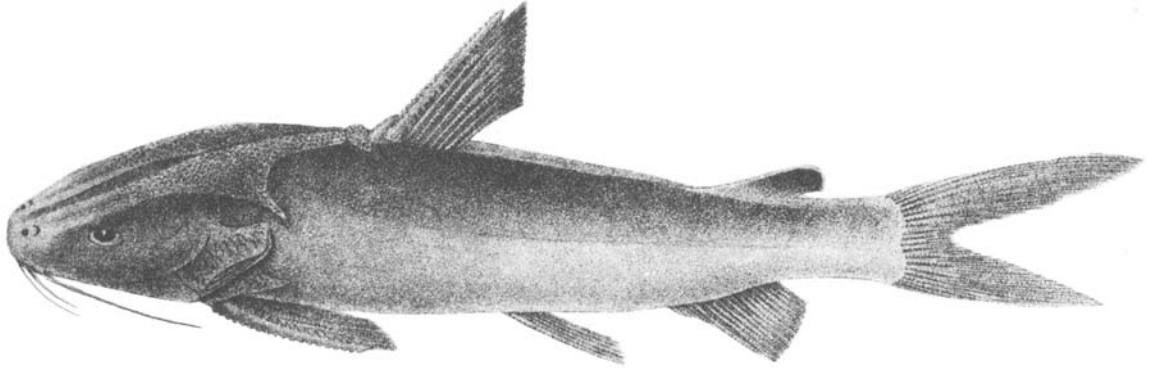


Arius gagora (Hamilton, 1822)

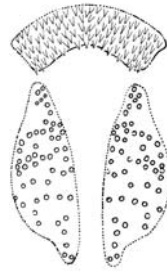
Frequent synonyms / misidentifications: *Arius jella* Day, 1877 (probable); *A. macracanthus* Günther, 1864 (synonym recorded in literature) / None.

FAO names: En - Gagora catfish.

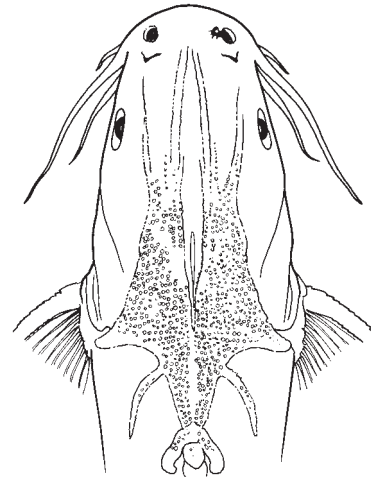


(from Day, 1877)

Diagnostic characters: **Head shield extensive and granular**, supraoccipital process granular; dorsomedian head groove narrow and deeper posteriorly. Eye 6 to 8 times in head length. **Snout rounded**, moderately long, **3 times eye diameter**. Band of upper jaw teeth 4 to 5 times longer (across mouth) than broad (width of band); **palatal teeth in 2 oval-oblong patches, 1 on each side, placed well forward on palate and usually parallel to each other, extensive**; palatal teeth molariform. No filament on dorsal fin; dorsal-fin spine strong and stout, 1/2 to 2/3 of head length; pectoral-fin spine slightly longer and stronger, strong serrae along its hind margin; anal-fin rays 18 or 19. Adipose-fin base 2/3 of dorsal-fin base. **Colour:** purplish above, white below; fins dusky; **adipose fin with blackish spot**.



upper tooth patches



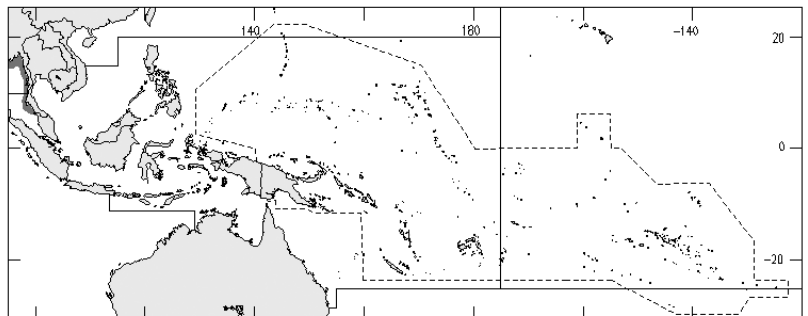
dorsal view of head

Size: Maximum total length 1 m.

Habitat, biology, and fisheries: Inshore waters, tidal reaches of rivers and fresh waters. Diet unknown.

Distribution: India to Thailand.

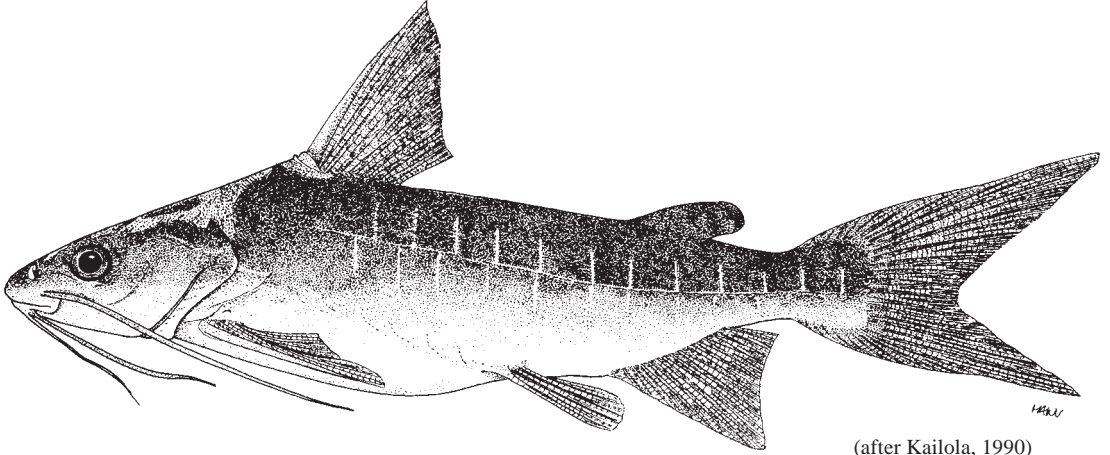
Remarks: The above data are derived from the literature. No types nor material which could be identified as this species were examined by the writer. See remark on species account of *A. maculatus*: if that observation is correct then *A. gagora* is not a Western Central Pacific species.



Arius graeffei Kner and Steindachner, 1866

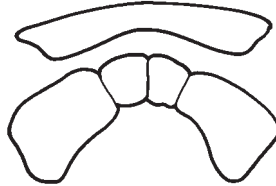
Frequent synonyms / misidentifications: *Arius australis* Günther, 1866; *A. curtisii* Castelnau, 1878 / None.

FAO names: En - Blue salmon catfish.

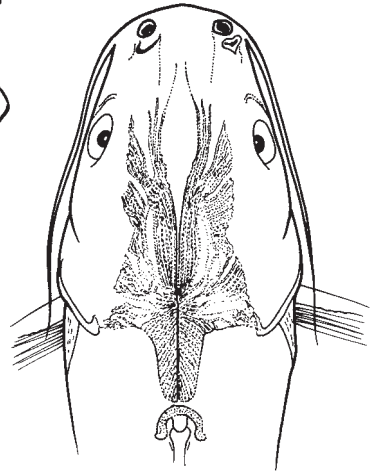


(after Kailola, 1990)

Diagnostic characters: Head shield finely granular; dorsomedian head groove narrow and lanceolate. Juveniles may bear a crescentic groove between anterior nostrils. Eye of moderate size, 10 to 28% of head length. **Usually 4** (occasionally 2) **oval patches of small, fine, and sharp teeth arranged across palate, 2** (occasionally 1) **on each side**; outer autogenous ("palatine") patches considerably larger than inner (vomerine) patches which may be united to form a single large median patch medially; long axis of inner tooth patches horizontal. Maxillary barbels reaching opposite base of dorsal-fin spine, but usually not so far. Total gill rakers on first gill arch 16 to 23; **rakers present on hind aspect of all gill arches**. Anal-fin rays 15 to 21. **Serrae on pectoral-fin spine of moderate size**. Swimbladder with smooth, unnotched sides. **Colour:** body colour variable, usually dark brown, bluish purple, dark olive or fawn above, white to pale cream below, back and sides iridescent; occasional individuals blotched black and white; fins tan or bluish charcoal.



upper tooth patches

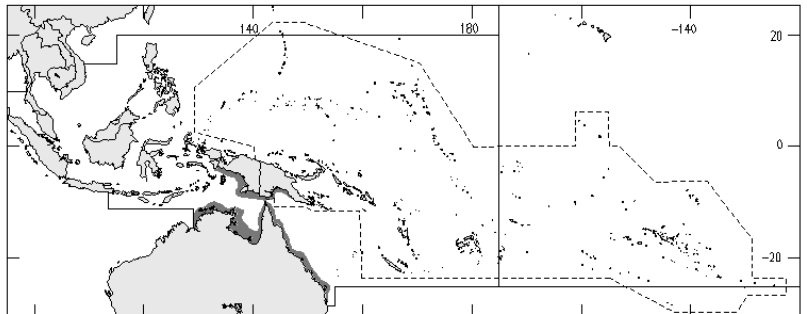


dorsal view of head

Size: Maximum standard length about 50 cm.

Habitat, biology, and fisheries: Rivers and associated coasts, ranging from fresh to salt water. Diet omnivorous and opportunistic.

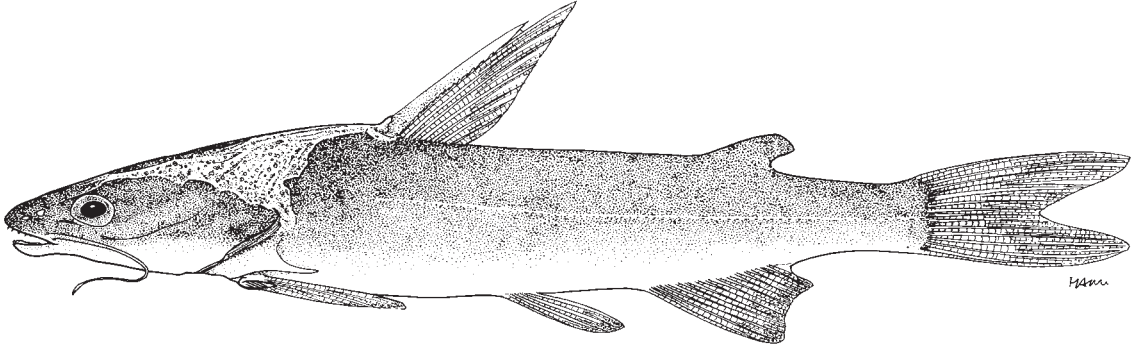
Distribution: Southern New Guinea and northern Australia.



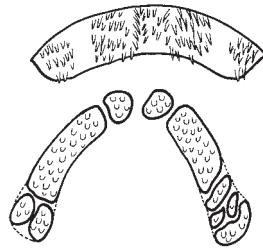
Arius harmandi (Sauvage, 1883)

Frequent synonyms / misidentifications: *Arius brevirostris* Steindachner, 1901 (probable) / None.

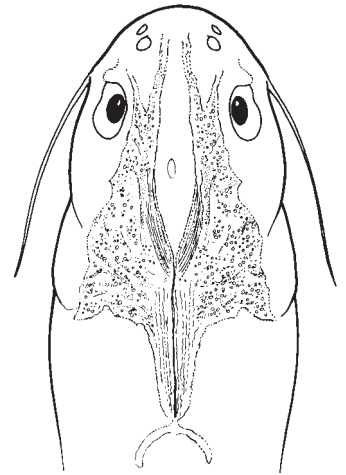
FAO names: En - Harmand's catfish.



Diagnostic characters: Head shield finely granular; dorsomedian head groove lanceolate, reaching base of supraoccipital process and bordered posteriorly by raised striae; **process almost oblong, strongly keeled and striate, striae running parallel to keel.** Eye 4 to 5 times in head length. **Jaw teeth very long and slender, sharp, barely depressible;** palatal teeth granular, conical and short, sharp or blunt, non-depressible; **palatal teeth arranged into 4 patches (2 on each side of palate) forming a broad band parallel to curve of mouth:** inner (vomarine) patches rounded and separated at midline, outer autogenous ("palatine") patches crescentic, 3 to 4 times larger than inner patches and narrowly separated from them (separation may disappear in larger fish). Palate smooth. Total gill rakers on first gill arch 17; **rakers present on hind aspect of all gill arches** (few on first arch). Dorsal-fin spine and pectoral-fin spines moderately slender; anal-fin rays 19 or 20. Adipose-fin base slightly shorter than dorsal-fin base. **Colour:** coloration in life unknown.



upper tooth patches

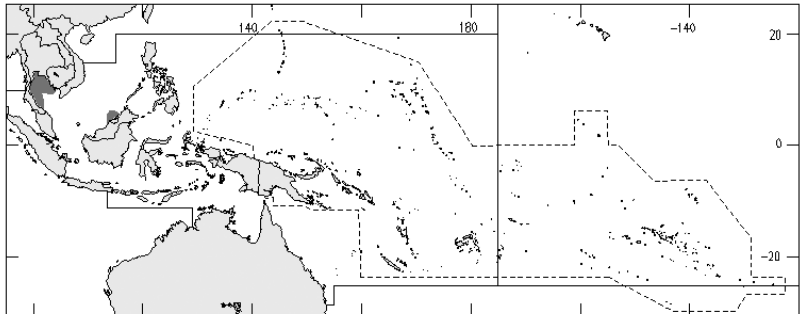


dorsal view of head

Size: Maximum standard length 12 cm.

Habitat, biology, and fisheries: Probably turbid coastal waters, estuaries and tidal reaches of rivers. No information on diet.

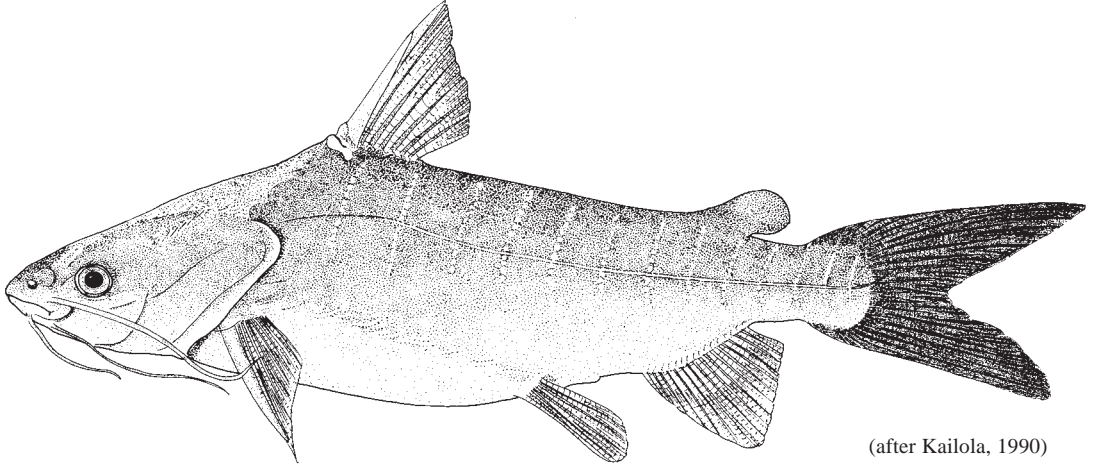
Distribution: Gulf of Thailand; Baram River (Borneo).



Arius leptaspis (Bleeker, 1862)

Frequent synonyms / misidentifications: None / *Arius graeffei* Kner and Steindachner, 1866; *A. proximus* Ogilby, 1898.

FAO names: En - Boofhead catfish.



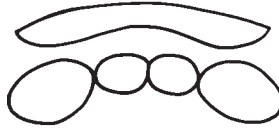
(after Kailola, 1990)

Diagnostic characters: Body slightly tapered posteriorly, caudal peduncle depth 7 to 10% of standard length. Head slightly depressed, its height 1.2 to 2.4 (mean 1.5) in its width, which is 67 to 83% of standard length. **Head shield** rugose to granular, **very extensive; dorsomedian head groove ends well before base of supraoccipital process.** Eye situated well before midhead length and just visible from above. **Snout rounded. Mouth broad, gape 35 to 58% of head length.** Fine, conical, and sharp **teeth in 4 patches across front of palate**, outer autogenous ("palatine") patches larger than inner (vomarine) patches. **Maxillary barbels 23 to 51% of standard length, reaching level of supraoccipital process at least;** chin-barbel bases not well separated. Gill openings wide. **Total gill rakers on first gill arch 13 to 22; rakers absent from hind aspect of first 2 gill arches.** Anal-fin rays 16 to 22. Swimbladder sides smooth. **Colour:** body blue, green or grey, back and sides iridescent bronze or coppery and sides with **vertical series of bright golden spots;** caudal fin charcoal, sometimes with distinct white margin.

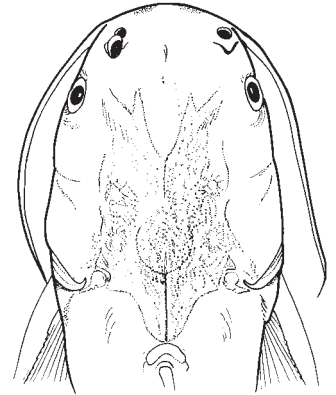
Size: Maximum standard length 65 cm.

Habitat, biology, and fisheries: Rivers and coastal waters. Diet omnivorous and opportunistic.

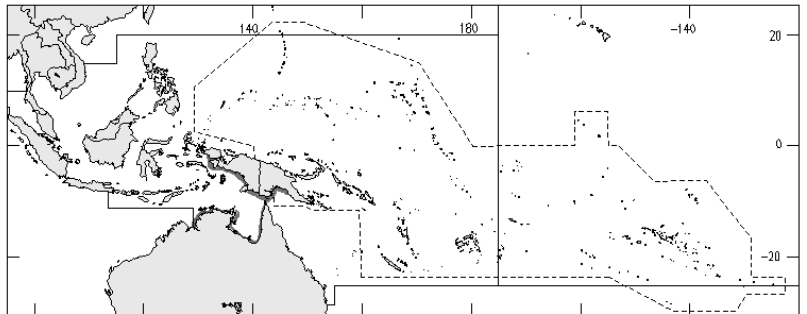
Distribution: Southern New Guinea and northern Australia.



upper tooth patches

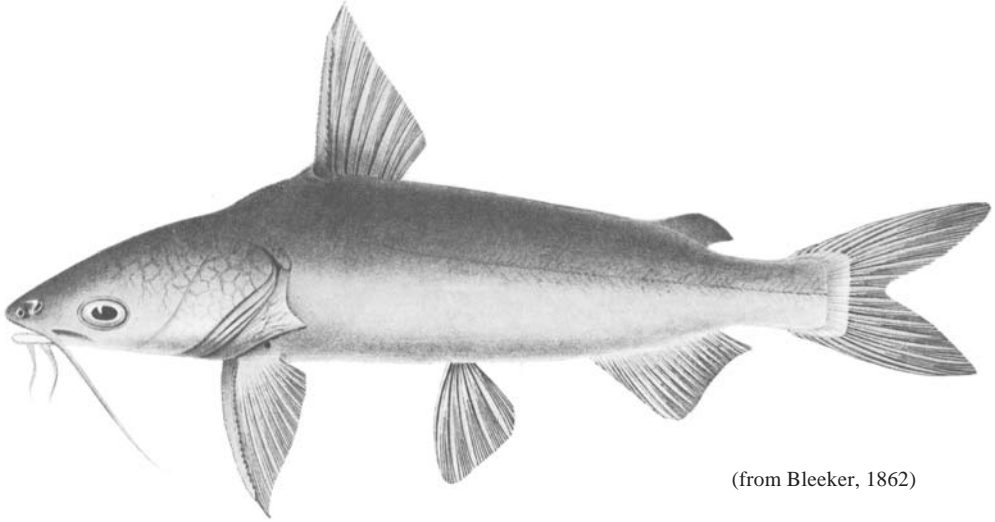


dorsal view of head



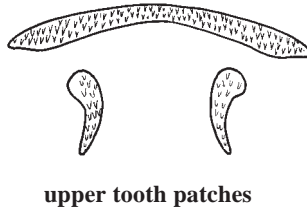
Arius leptotacanthus Bleeker, 1849

Frequent synonyms / misidentifications: *Arius goniaspis*: Herre, 1926 (non Bleeker) / None.
FAO names: En - Smoothspined catfish.

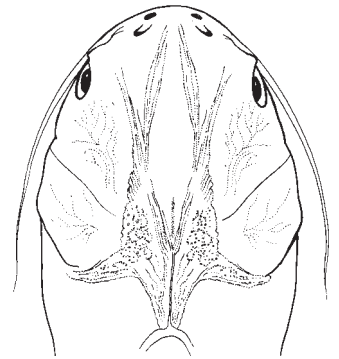


(from Bleeker, 1862)

Diagnostic characters: Head shield striate anteriorly and rugose or granular posteriorly, **lateral ethmoid (before eye) moderately prominent**; dorsomedian head groove shallow and broad; **supraoccipital process short and triangular with a high keel**; **postcleithral ("humeral") process very rugose**. **Predorsal profile elevated at nape**. Eye 5.7 to 6.1 times in head length. Snout rounded. **Palatal teeth in 2 patches on each side of palate; patches elliptical or pear-shaped, their bases anterior and their long axes parallel or diverging posteriorly, their outer border emarginate**; teeth conical and peg-like, tips blunt. **Barbels flattened**. Total gill rakers on first gill arch 13 to 15; **rakers present on hind aspect of all gill arches**. Dorsal- and pectoral-fin spines slender and striate, **pectoral-fin spine evenly and strongly serrated on hind border**; spines about same length and 2/3 of head length; anal-fin rays 18 to 21. **Lateral line bifurcates at tail base**. **Colour:** coloration in life unknown.



upper tooth patches

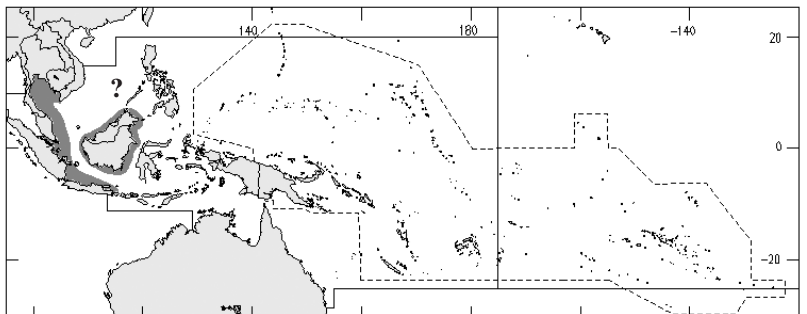


dorsal view of head

Size: Maximum standard length 25 cm.

Habitat, biology, and fisheries: Coastal waters and estuaries.

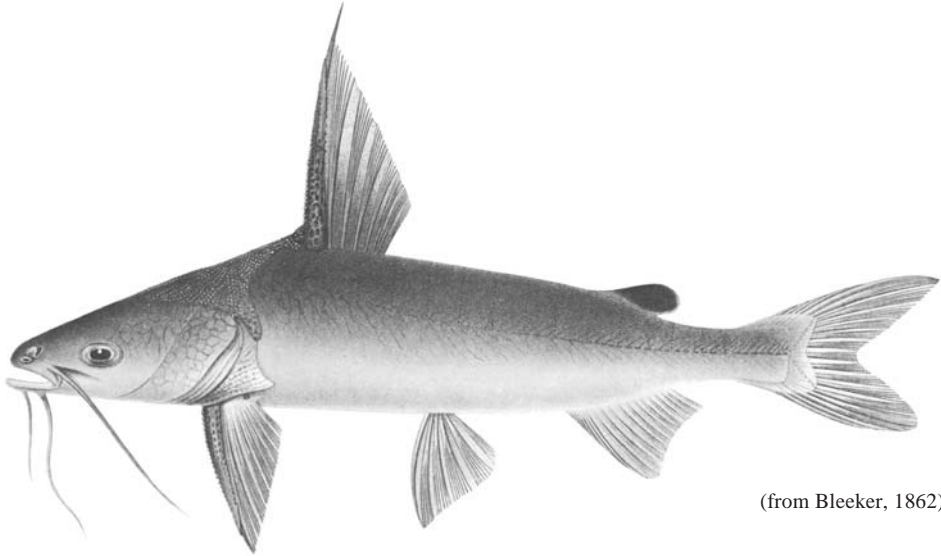
Distribution: From the Gulf of Thailand to Indonesia (Java, Madura); also recorded from Kalimantan and Sumatra.



***Arius macronotacanthus* Bleeker, 1846**

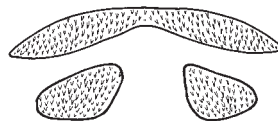
Frequent synonyms / misidentifications: *Arius parvipinnis* Day, 1877 (probable); *A. arius*: Cantor, 1850 (non Hamilton, 1822) / None.

FAO names: En - Largespined catfish.

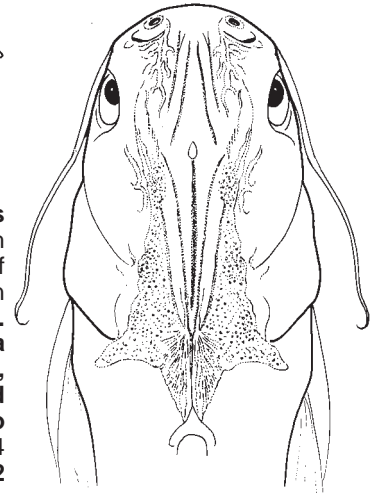


(from Bleeker, 1862)

Diagnostic characters: Head shield granulated in clusters; dorsomedian head groove narrow, deeper posteriorly. Eye 5.7 to 6.5 times in head length. Snout rounded to truncate, its length 34 to 37% of head length. **Mouth strongly curved, gape wide, 44 to 45% of head length;** jaws strong. **Teeth in 1 patch on each side of palate; tooth patches ovate or pear-shaped, long axes of patches strongly diverging,** parallel to curve of the mouth; palatal teeth conical, sharp, and strong. Maxillary barbels reaching middle of pectoral fin or further, 30 to 44% of standard length. Total gill rakers on first gill arch 14; **rakers present on hind aspect of all gill arches.** **Dorsal-fin spine equal or subequal to head length, tipped with a filament, spine very strong, compressed, its basal half thick, rugose and pitted, granulated along leading edge, serrated strongly along hind edge;** pectoral-fin spine similar in form to dorsal-fin spine, 2/3 to 3/4 of head length. Adipose-fin base 2/3 to 3/4 of dorsal-fin base; anal-fin rays 18 to 21. **Caudal-peduncle depth 2.2 to 2.4 in its length. Lateral line bifurcates at tail base.** **Colour:** body bluish charcoal to tan above, white below; anal fin dark and paired fins bluish brown above, adipose fin with a large black patch; barbels and fin filament dark.



upper tooth patches

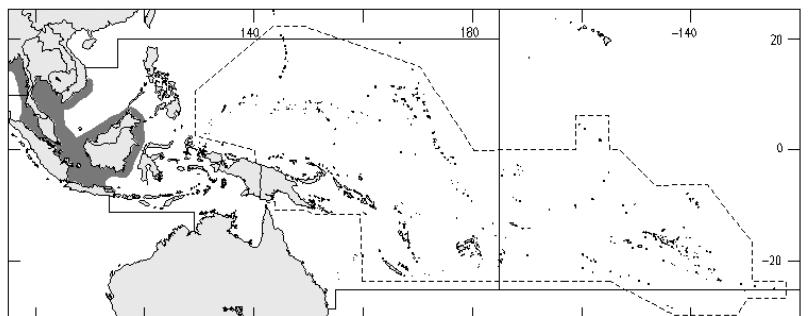


dorsal view of head

Size: Maximum total length about 30 cm.

Habitat, biology, and fisheries: Coastal waters and estuaries. Diet unknown.

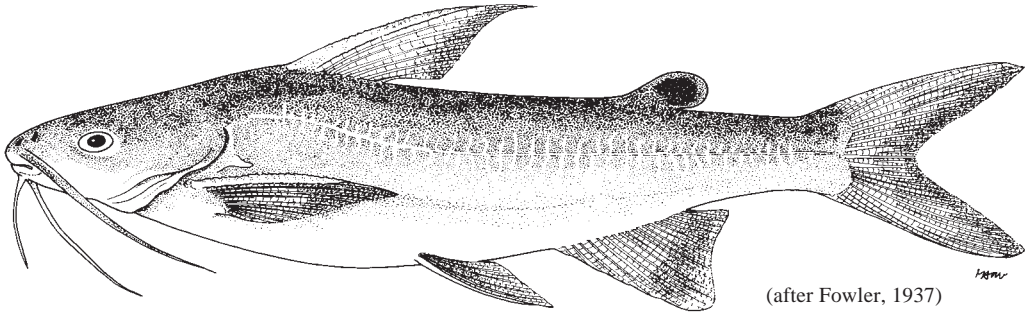
Distribution: From the east coast of India through Singapore, Thailand, and Malaysia to Indonesia (Sumatra, Java, Kalimantan).



Arius maculatus (Thunberg, 1792)

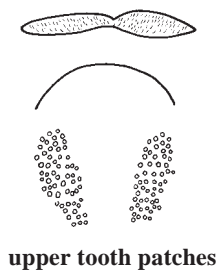
Frequent synonyms / misidentifications: *Arius pidada* Bleeker, 1846; *A. arius*: Bleeker, 1858 (non Hamilton, 1822); *Hemipimelodus bicolor* Fowler, 1935 (probable); *H. atripinnis* Fowler, 1937 (probable); *Arius gagoroides* Bleeker, 1846. Synonyms recorded in literature: *A. heckelii* Bleeker, 1846; *A. angulatus* Bleeker, 1846; *A. chondropterygioides* Bleeker, 1846; *A. viviparus* Bleeker, 1846; *A. borneensis* Bleeker, 1851 / None.

FAO names: **En** - Spotted catfish; **Fr** - Mâchoiron tacheté; **Sp** - Bagre manchado.

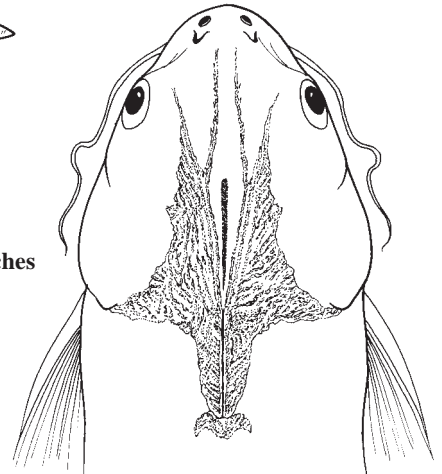


(after Fowler, 1937)

Diagnostic characters: Head shield and supraoccipital process striate, rugose, and finely granular; dorsomedian head groove narrower and deeper posteriorly. Eye 4.3 to 6.8 (mean 5.6) times in head length. Snout rounded. Mouth gape 31 to 41% (mean 35.6%) of head length. Band of upper jaw teeth 5 to 8.2 (mean 6.2) times longer (across mouth) than broad (width of band), teeth depressible. **Palatal teeth in 2 oval patches, 1 on each side, placed well back on palate, their long axes tending to converge posteriorly, teeth molariform to peg-like and conical with blunt tips, up to about 40 in number, but usually less.** Maxillary barbels 17 to 34% (mean 23.1%) of standard length, extending or not extending to pectoral-fin base. **Total gill rakers on first gill arch 17 to 21; rakers present on hind aspect of all gill arches.** Dorsal-fin spine $\frac{2}{3}$ to $\frac{4}{5}$ of head length, **a filament on its tip**; pectoral-fin spine subequal to dorsal-fin spine and slightly stronger; **anal-fin rays 19 to 23.** Adipose-fin base $\frac{1}{2}$ to $\frac{4}{5}$ of dorsal-fin base. **Caudal peduncle slender, 1.9 to 2.4 (mean 2.1) in its depth. Lateral line bifurcates at tail base. Colour:** body bluish brown above, white below; fins yellow, dorsal and caudal fins with dark margins, upper aspect of pectoral and pelvic fins and mid-anal fin dark, **adipose fin with large black spot.**



upper tooth patches



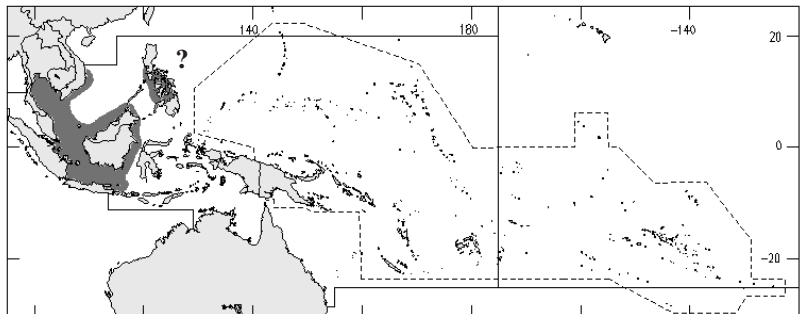
dorsal view of head

Size: Maximum standard length about 40 cm.

Habitat, biology, and fisheries: Inshore coastal waters, estuaries, and tidal reaches of rivers. Diet unknown.

Distribution: Thailand, Indonesia (Sumatra, Java, Kalimantan), Malaysia, China, Ryukyu Islands, and probably the Philippines.

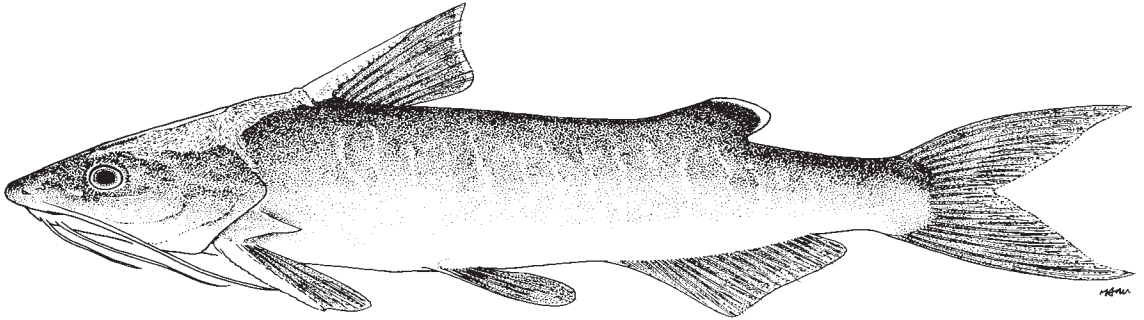
Remarks: *Arius macracanthus* Günther may belong in the synonymy of this species rather than in that of *A. gagora* (Hamilton), where it is referred by Day (1877), Smith (1931), and Jayaram (1982).



Arius manillensis Valenciennes in Cuvier and Valenciennes, 1840

Frequent synonyms / misidentifications: *Pseudarius philippinus* Sauvage, 1880 / None.

FAO names: En - Manila sea catfish.



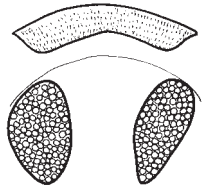
Diagnostic characters: Head length 27 to 33% of standard length. Head shield granular, dorsomedian head groove long and shallow, deeper posteriorly; supraoccipital process covered with granular striae. **Snout strongly projecting**, moderately acute, 2 to 2.8 times eye diameter. **Mouth subinferior, jaw teeth largely exposed**; eye 4.5 to 6.8 times in head

length. Band of upper jaw teeth 5.5 to 7.3 times longer (across mouth) than broad (width of band), jaw teeth villiform and depressible; **palatal teeth in 2 ovate patches** (elongate with emarginate outer margins in young fish), **1 on each side, placed far forward: small and forward in young fish, extending over much of anterior palate surface in older fish**; palatal teeth blunt, rounded and coarsely granular, very numerous in large fish. Total gill rakers on first gill arch 18; **rakers present on hind aspect of all gill arches**. Dorsal-fin spine stout, 2/3 of head length; pectoral-fin spine slightly longer than dorsal-fin spine, its hind border strongly serrated; anal-fin rays 17 to 20. Adipose-fin base 1/2 to 2/3 of dorsal-fin base. **Colour:** body blackish charcoal above, white-cream below, back and sides iridescent silver and bronze; fins blackish, **dorsal and adipose fins with narrow white border**.

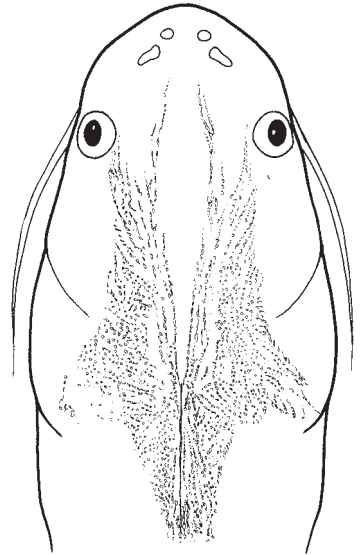
Size: Maximum total length 35 cm.

Habitat, biology, and fisheries: Present in inshore, brackish, and fresh waters. Diet includes gastropod molluscs.

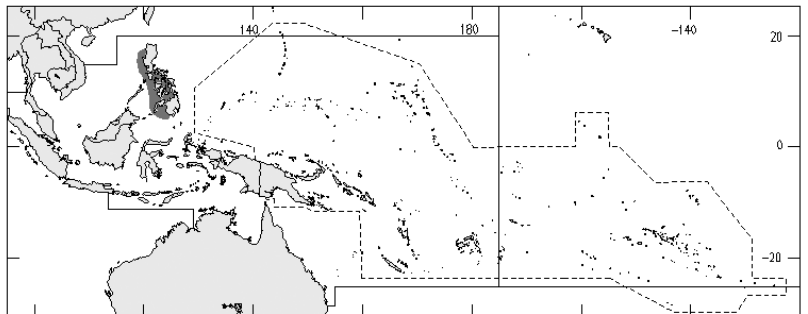
Distribution: Only known from the Philippines.



upper tooth patches



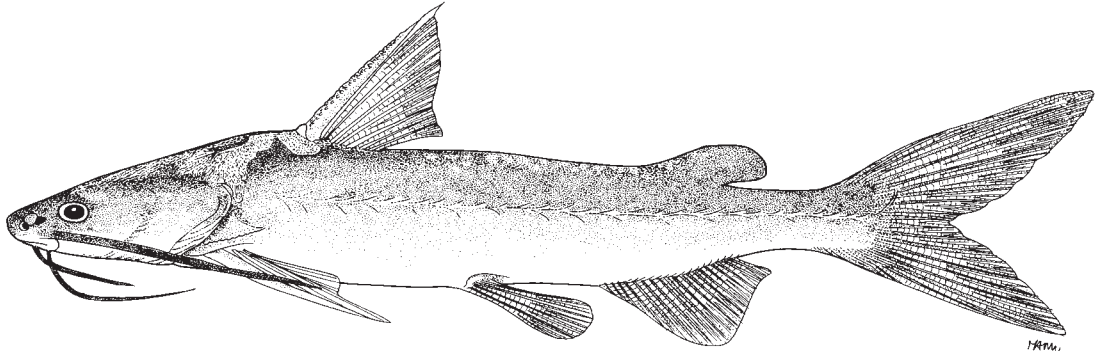
dorsal view of head



Arius (Hexanematichthys) mastersi Ogilby, 1898

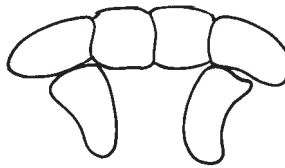
Frequent synonyms / misidentifications: *Arius sagoroides* Hardenberg, 1941; *Tachysurus (Pararius) godfreyi* Whitley, 1941 / None.

FAO names: En - Master's catfish.

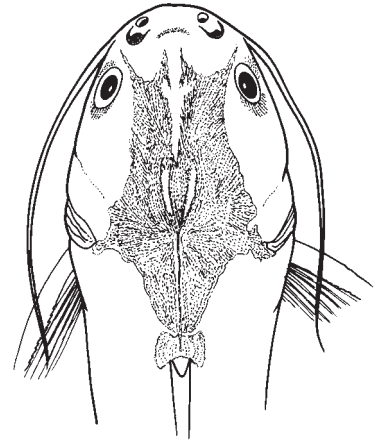


(after Kailola, 1990)

Diagnostic characters: Body tending to cylindrical posteriorly, caudal peduncle noticeably compressed. Head depressed and broad. Head shield granular and extensive; supraoccipital process broad and short; predorsal (nuchal) bone expands with age, becoming broad, oblong, and butterfly-shaped. Snout always with crescent-shaped depression between nostrils. Three patches of stout and conical sharp teeth on each side of palate, 2 patches aligned transversely at front, the third situated behind and at right angles to them. Barbels robust and strap-like. Total gill rakers on first gill arch 12 to 18; no rakers on hind aspect of first 2 gill arches. Anal-fin rays 16 to 20. Total number of vertebrae 60 or 61 (52 to 54 free). **Colour:** body silvery grey to olive blue above with cream spots over back, white below; barbels brown. Peritoneum dark grey or brown.



upper tooth patches

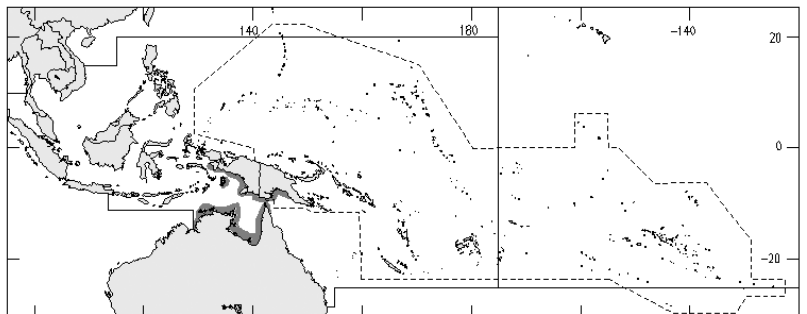


dorsal view of head

Size: Maximum standard length 51 cm.

Habitat, biology, and fisheries: Coastal waters, tidal mudflats, and estuaries. Predaceous, consuming prawns, crabs, fish, and miscellaneous food items.

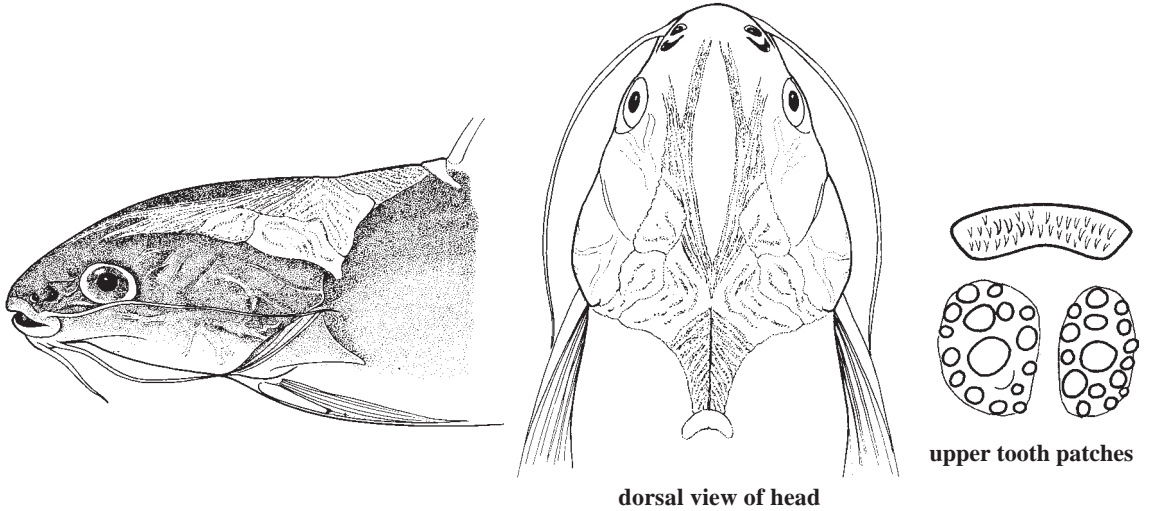
Distribution: Southern New Guinea and northern Australia.



***Arius microcephalus* Bleeker, 1855**

Frequent synonyms / misidentifications: *Arius sciurus* Smith, 1931 (probable) / None.

FAO names: En - Squirrelheaded catfish.



dorsal view of head

Diagnostic characters: Head 3.3 to 4 in standard length, **slightly wider than high; predorsal profile convex.** Head shield finely granular, granules arranged into striae over **keeled supraoccipital process.** **Eye placed high on head,** 4.5 to 5.2 times in head length and twice in snout length. Snout rounded, about 40% of head length, lips fleshy, jaw teeth exposed. **Mouth small, its gape 30 to 31% of head length.** Band of teeth on upper jaw oblong, 3 to 4 times longer than broad; **palatal teeth in 2 patches, 1 on each side of palate, patches large and ovate, situated close behind band of jaw teeth, their long axis directed along palate; palatal teeth globular and low, rounded, fewer than 25 in each patch.** Dorsal-fin spine strong and/or slender, 4/5 of head length or subequal to head length; pectoral slightly shorter than dorsal-fin spine, its hind border lined with strong serrae; anal-fin rays 18 to 20. Adipose-fin base 4/5 of, or equal to dorsal-fin base. Maxillary barbels extending to pectoral-fin base in young, not beyond preopercular margin in larger fish. Total gill rakers on first gill arch 14 or 15; **rakers present on hind aspect of all gill arches. Lateral line bifurcates at tail base. Colour:** body bluish green above, white to silvery below; fins dusky yellow, **unpaired fins with dark margins, large black spot on adipose fin.**

Size: Maximum total length 60 cm.

Habitat, biology, and fisheries: Tidal reaches of rivers and inshore turbid and brackish waters. Diet unknown but probably consists of molluscs or thick-shelled crustaceans.

Distribution: East Thailand and Borneo (Malaysia, Indonesia).

Remarks: One of Bleeker's types was examined by the writer, but a search of the USNM collection failed to locate Smith's types. Smith (1931) compared *Arius sciurus* with *A. microcephalus*, stating that the forms differed on relative head width, maxillary-barbel length and fin-spine thickness. However, there is little difference between the stated head width of the 2 nominal taxa. Barbel length usually "shortens" as catfish grow and the fin spines had been removed in the Bleeker type examined.

