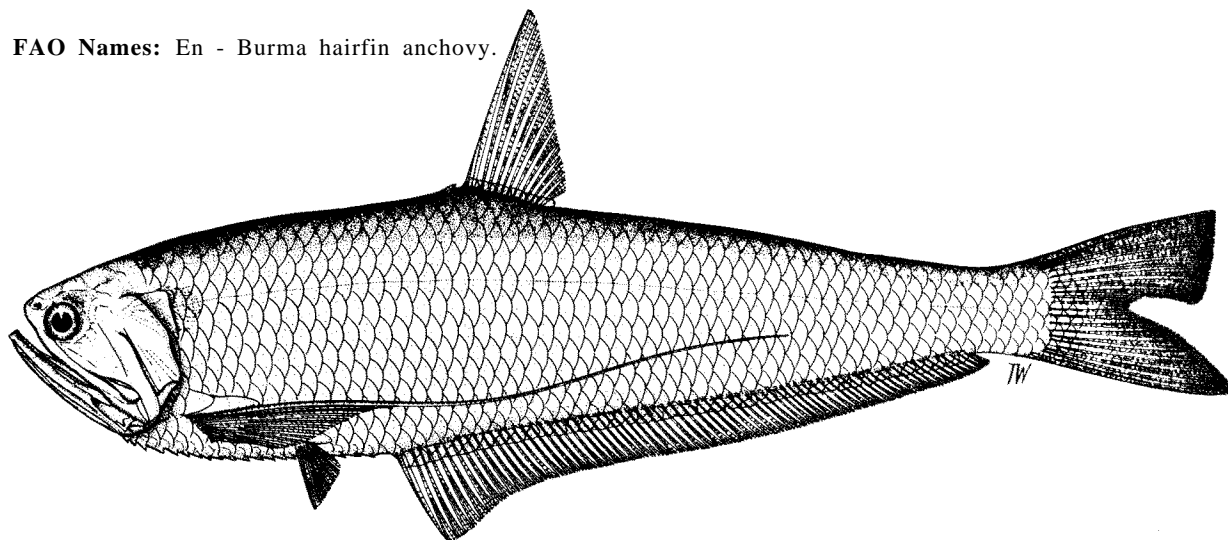


FAO Names: En - Burma hairfin anchovy.



Diagnostic Features : Body compressed, belly with 15 plus 6 or 7 = 21 or 22 keeled scutes from isthmus to anus. Lower gillrakers 21 or 22, their serrae in distinct clumps. Pectoral filament long, reaching to base of 45th to 51st anal finray; anal fin with iii 69 to 74 finrays; upper caudal lobe truncated, shorter than lower. In scutes, anal finrays and caudal fin shape it closely resembles *S. phasa* and *S. brevifilis* of Indian fresh waters, but these have fewer gillrakers (17 to 19). Other species of *Setipinna* have fewer anal finrays, but more scutes.

Geographical Distribution : Burma (Irrawady River at Rangoon and probably as far up as Mandalay, also Sittang River).

Habitat and Biology : Riverine, but probably tolerating some salinity in estuaries, thus not unlike *S. phasa*, but more data needed.

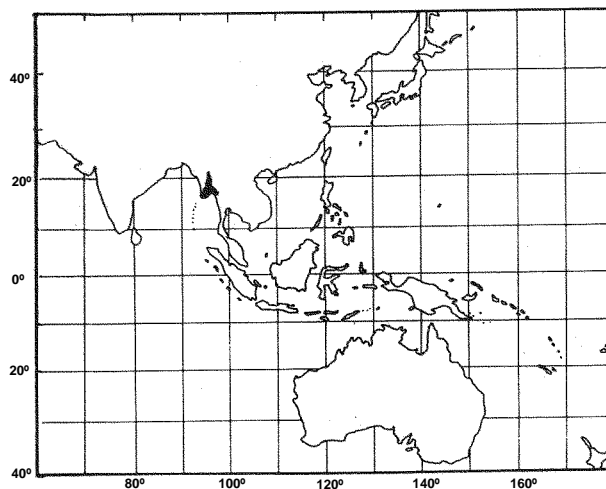
Size : To 18.5 cm standard length (Wongratana, 1980), but perhaps growing as large as *S. phasa* (about 28 cm standard length).

Interest to Fisheries : No data, but presumably similar to *S. phasa*.

Local Names :

Literature :

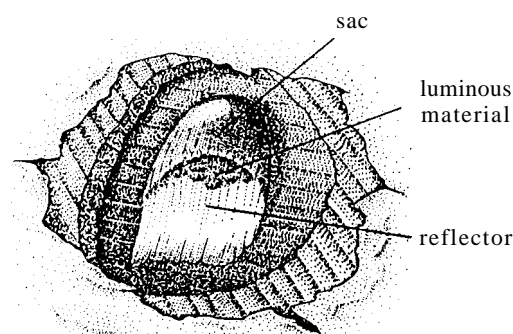
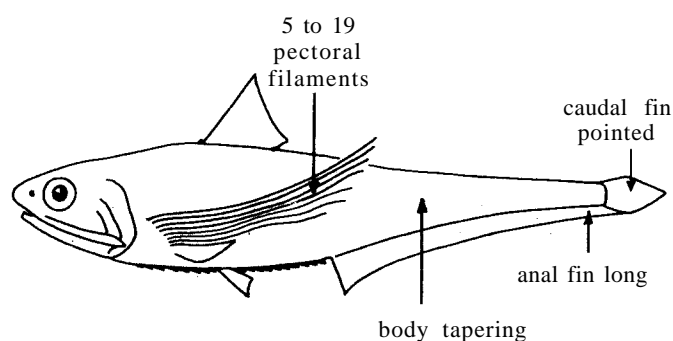
Remarks : References to *Setipinna* in Burmese fresh waters, e.g. by Day (1878) and later authors, most likely concern *S. wheeleri*.



Coilia Gray, 1831

ENGR Coil

[*Mystus* Linnaeus, 1754, *Chinensis Lagerströmiana-Dissertatio*:26, fig.12 (type: *Mystus ensiformis* Linnaeus = *Clupea mystus* Linnaeus). Pre-1758, thus inadmissible]. *Mystus* Lacepède, 1803, *Hist.nat.poiss.*, 5:466 (type: *Mystus clupeoides* Lacepède, 1803 = *Clupea mystus* Linnaeus; pre-occupied by *Mystus* of Gronovius, 1763, Klein, 1775 and Scopoli, 1777 = a catfish). *Coilia* Gray, 1830, *Illustr.Indian zool.*, Hardwicke, 1(1):pl.85, fig.2 (caption only; this part of Gray's Illustrations was issued 6 January 1830 fide Sawyer, 1953); *Idem*, 1831, *Zool.misc.*:9 (type: *Engraulis (Coilia) hamiltonii* Gray, 1830 = *Mystus ramcarati* Hamilton-Buchanan). *Choetomus* McClelland, 1843, *Calcutta J.nat.Hist.*, 4:405 (type: *Choetomus playfairii* McClelland, 1844 = *Clupea mystus* Linnaeus). *Leptonurus* Bleeker, 1849, *Verh.batav.Genoot.Kunst.Wet.*, 22:14 (type: *Leptonurus chrysostigma* Bleeker, 1849 = *Coilia dussumieri* Valenciennes). *Demicoilia* Jordan & Seale, 1925, *Copeia*, (141):28 (type: *Coilia quadragesimalis* Valenciennes, 1848 = *Mystus ramcarati* Hamilton-Buchanan).

light organ in *Coilia dussumieri*

Diagnostic Features : Medium-sized “rat-tailed” anchovies (mostly to 15 to 20 cm standard length, but some to 25 or even 35 cm), characterized by a long tapering body; belly rather rounded before pelvic fin base. A total of 11 to 61 scutes (usually with a complete series before pelvic fin base, but beginning behind pectoral fin base in some and very few or even no pre-pelvic scutes in others); a small spine-like scute just before dorsal fin origin. Maxilla short in some, reaching to or beyond edge of gill-cover, or even beyond pectoral fin base in others; first supra-maxilla present, elongate; jaw teeth small. Lower gillrakers fairly short, 21 to 36, their serrae not clumped. Pectoral fin with upper 5 to 19 finrays filamentous and reaching at least to anal fin origin; dorsal fin far forward, beginning in first third of body length; anal fin long with 80 or more finrays, the final finray joined to the caudal fin; the latter very small, pointed. Specimens with damaged tails (presumably bitten off by a predator) are not infrequent, the caudal fin regenerating. In one species (*C. dussumieri*) small light organs are developed on the body, the only case known among clupeoid fishes.

Biology, Habitat and Distribution : Marine, pelagic and coastal, often frequenting estuaries and tolerating lowered salinities (but probably not fully fresh waters). Although the body form parallels that of the macrourids, species of *Coilia* are not deep-water fishes. Feed on small fishes, crustaceans, etc. Indo-West Pacific only; not along western shores of Indian Ocean, but from about Karachi to Indonesia (Bali), not to the Philippines, Papua New Guinea or Australia, but northward to China and Japan.

Species: Wongratana (1980) recognized 13 species, which can be placed in two main groups:

- (1) Scutes 11 to 23, maxilla not to edge of gill cover
 - (a) Pectoral filaments 6 (rarely 5)
 - C. dussumieri* Valenciennes, 1848 Indian Ocean, Thailand, Indonesia
 - C. neglecta* Whitehead, 1968 Indian Ocean, Indonesia
 - C. ramcarati* (Hamilton-Buchanan, 1822) India (Ganges)
 - (b) Pectoral filaments 10 to 14 (or 16 to 19 in *C. rebentischii*)
 - C. borneensis* Bleeker, 1851 Indonesia (Kalimantan, ? Java and Sumatra)
 - C. coomansi* Hardenberg, 1934 Indonesia (Kalimantan)
 - C. rebentischii* Bleeker, 1859 Viet Nam, Kalimantan
 - C. reynaldi* Valenciennes, 1848 Bay of Bengal
- (2) Scutes 34 to 61, maxilla to edge of gill cover or beyond, pectoral filaments 6 (or 7 in *C. grayii*)
 - C. brachygnathus* Krayenberg & Pappenheim, 1908 China (freshwater)
 - C. grayii* Richardson, 1845 China, also southern India
 - C. lindmani* Bleeker, 1858 Indonesia to Viet Nam
 - C. macrognathos* Bleeker, 1852 Andaman Sea, Kalimantan, Sarawak
 - C. mystus* (Linnaeus, 1758) Andaman Sea, China
 - C. nasus* Schlegel, 1846 China

Remarks : The genus *Demicoilia* was based on mutilated specimens lacking the end of the body; that a superficially normal caudal fin can be regenerated around a vertebra (with or possibly without migration of anal finrays) is well shown by Menon (1951) and discussed by Jones & Menon (1952).

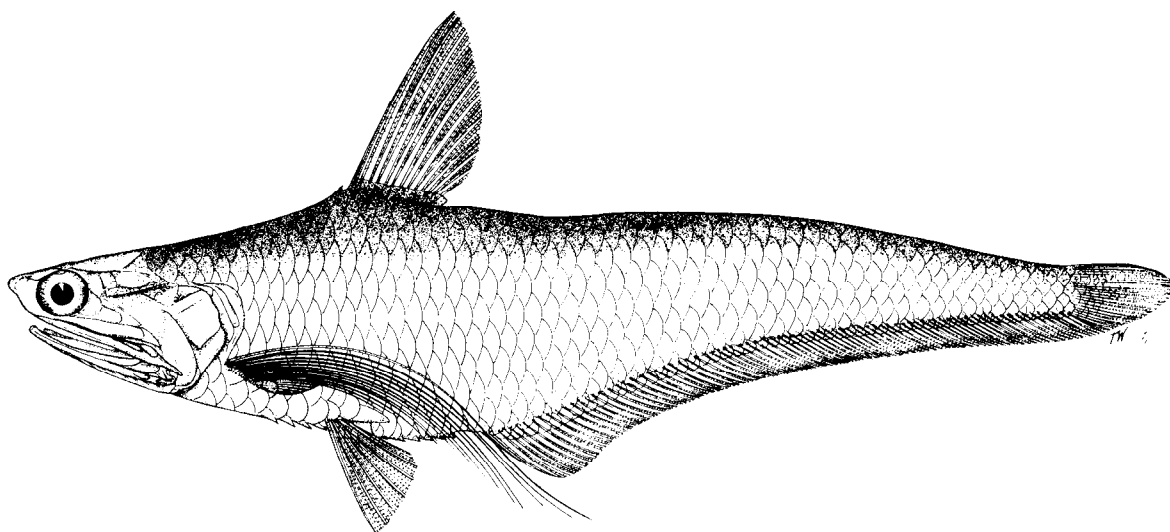
Coilia borneensis Bleeker, 1852

ENGR Coil 5

Coilia borneensis Bleeker, 1851, *Natuurk.Tijdschr.Ned.-Indie*, 258 (Banjermasin, Kalimantan; name only, thus a *nomen nudum*); *Idem*, 1852, *Ibid.*, 3:437 (Banjermasin, also Pamangkat).

Synonyms :? *Coilia polyfilis* Volz, 1903, *Zool.Anz.*,26:559 (Banjuasin, Palembang, southeastern Sumatra); *Coilia borneensis*-Weber & de Beaufort, 1913:52 (Bleekersspecimens in Leiden); Fowler, 1941:717 (compiled); Whitehead, Boeseman & Wheeler,1966:139, p1.18, fig.2 (types of *borneensis*); Wongratana, 1980:313, pl.286 (revision). **Note**: Indian records of *C. borneensis* probably refer to *C. reynaldi*, a very similar species (see Remarks).

FAO Names : En - Bornean grenadier anchovy.



Diagnostic Features: Body tapering, belly rounded before pelvic fins, with 4 or 5 plus 7 or 8 = 11 to 13 keeled scutes from just behind pectoral fin base to anus. Maxilla short, not reaching to edge of gill cover. Lower gillrakers 32. Pectoral fin with 13 or 14 long filaments and 5 to 7 branched finrays, much shorter than those of pelvic fin, the latter with 6 finrays. Of species with more than 7 pectoral filaments, *C. reynaldi* occurs only in the Indian Ocean; of Indonesian species, *C. rebentischii* has more pectoral filaments (16 to 19), while *C. coomansi* has fewer (10 or 11), but more pre-pelvic scutes (11 or 12).

Geographical Distribution : Indonesia (Kalimantan at Pamangkat on the western coast and Banjermasin on the Barito River to the south).

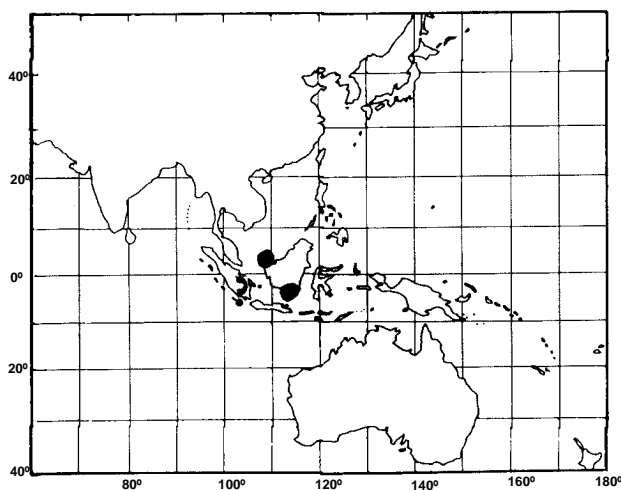
Habitat and Biology : Evidently riverine, or at least estuarine, but perhaps also in the sea. More data needed.

Size : To 12.4 cm standard length, but perhaps larger.

Interest to Fisheries : Unknown.

Local Names :

Literature : Uncertainty over identifications makes previous literature suspect.



Remarks : Whitehead (1967a:152 and 1969a:272) considered borneensis a synonym of C. reynaldi Wongratana (1980:314) acknowledged the similarity, but kept them distinct species on the following characters:

	<u>C. reynaldi</u>	<u>C. borneensis</u>
Scutes	6 to 9 plus 7 to 11 = 13 to 19	4 to 5 plus 7 or 8 = 11 to 13
Pectoral filaments	10 to 13	13 or 14
Scales on isthmus	covering half of isthmus	none or at most 1 or 2 on base of isthmus
Striae on front part of scales	reticulated	horizontal lines

These differences are not very trenchant and further study may well bring the two species together again, possibly as subspecies, reynaldi from the Indian Ocean and borneensis from Indonesia.

Coilia polyfilis Volz is tentatively included here. The holotype has 4 plus 8 scutes and 31 lower gillrakers, but 11 pectoral filaments plus 8 branched finrays, thus slightly outside the recorded range for C. borneensis.

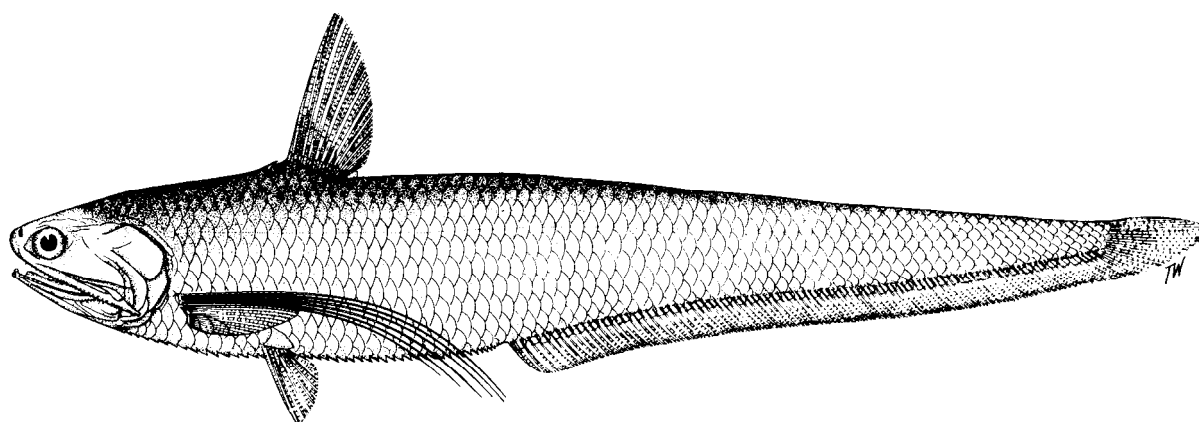
Coilia brachygnathus Kreyenberg & Pappenheim, 1908

ENGR Coil 9

Coilia brachygnathus Kreyenberg & Pappenheim, 1908, Sber.Ges.naturf.Freunde Berl., (4):96 (Tung Ting Lake and Hankow).

Synonyms : Coilia rendahli: Jordan & Seale, 1926:362 (Shanghai); Fowler, 1931a:83 (compiled); Wongratana, 1980:323, pl.293 (revision); Coilia brachygnathus-Yuen, Lin, Qin & Liu, 1976:9, tabs 5,6 (Yangtse River, meristics); Anon., 1977:122, pl.2 upper, fig.8 (distributional map) (Yangtse River, description, etc.); Yuen, Qin, Liu & Lin, 1980:71, tab.5 (Yangtse River, synopsis); Qin & Yuen, 1980:2 (Taihu Lake, biol.); Zhou & Lin, 1985:107, figs 1-3 (electrophoretograms) (protein analysis, cf. nasus); Qin, Yuen & Gu, 1986:108, figs 56, 57, 58-59 (otoliths) (Taihu Lake populations).

FAO Names : En - Yangtse grenadier anchovy.



Diagnostic Features : Body tapering, belly rounded before pelvic fins, with 18 to 20 plus 34 to 36 = 54 or 55 keeled scutes from isthmus to anus. Maxilla short, not reaching to edge of gill cover. Lower gillrakers 21 to 24. Pectoral fin with 6 long filaments and 11 (rarely 12) branched finrays, longer than those of pelvic fin. All other species in Chinese and Japanese waters have the maxilla reaching well past the edge of the gill cover, also C. grayii and C. mystus have more gillrakers (25 to 31) and these and C. nasus have about 3 scales on the base of the isthmus (naked in C. brachygnathus).

Geographical Distribution : Freshwater in Yangtse system (from near mouth to beyond Tung Ting Lake, thus at least 1 000 km up river), perhaps in Yellow River also, but not in sea.

Habitat and Biology : Purely freshwater in tributaries and associated lakes.

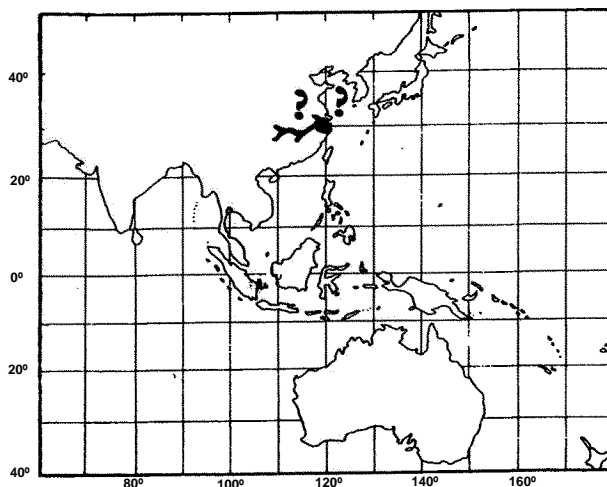
Size : To 27 cm standard length.

Interest to Fisheries : An important commercial fish in the Yangtse River system.

Local Names :

Literature : Numerous papers from Dr Yuen Chuan-fu and his colleagues in Nanjing University (see Synonymy).

Remarks : Wongratana (1980) believed C. brachygnathus to be C. nasus, but the latter has a long maxilla (to well beyond gill cover); the maxilla in C. brachygnathus was described as at most reaching the gill cover in adults as well as juveniles (as also in C. rendahli) and Yangtse River specimens can be distinguished from sympatric C. nasus on this character.



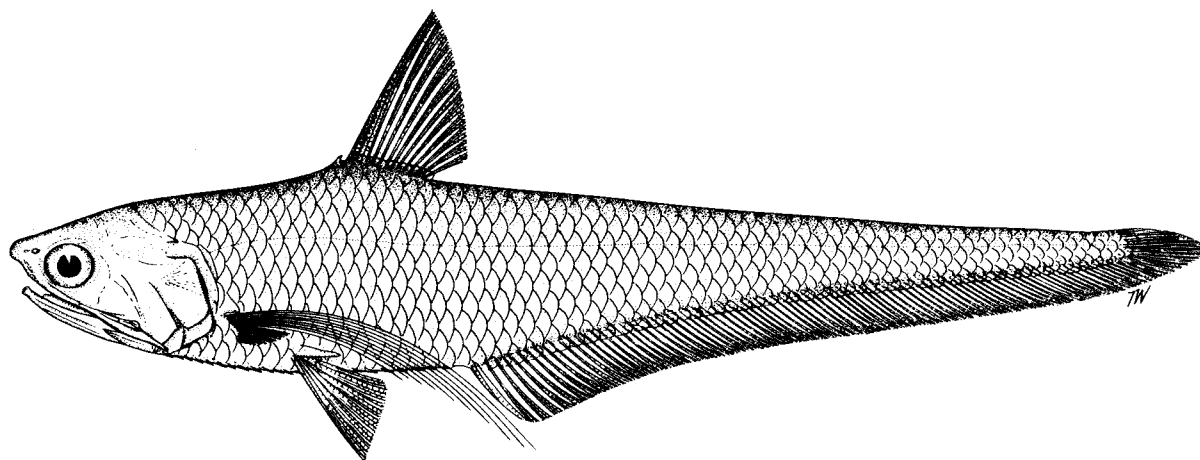
Coilia coomansi Hardenberg, 1934

ENGR Coil 7

Coilia coomansi Hardenberg, 1934, Treubia, 14(3):294 (lower part of Kapuas River, western Kalimantan).

Synonyms : Coilia coomansi: Hardenberg, 1936:228 (Peniti River, Pontianak, Telok Pekadai, western Kalimantan); Fowler, 1941d:717 (compiled); Wongratana, 1980:316, pl.286 (Banjermasin on Barito River and Djungkat, Kapuas system, Kalimantan; revision).

FAO Names: En - Cooman's grenadier anchovy.



Diagnostic Features : Body tapering, belly rounded in front of pelvic fins, with 11 or 12 plus 9 to 11 = 20 to 23 keeled scutes from isthmus to anus. Maxilla short, not reaching beyond edge of gill cover. Lower gillrakers 31 to 33. Pectoral fin with 10 or 11 long filaments and 7 or 8 branched finrays, much shorter than those of pelvic fin. Of species with more than 7 pectoral filaments, C. reynaldi occurs only in the Indian Ocean; of Indonesian species, C. borneensis and C. rebentischii have more pectoral filaments (11 to 13 and 16 to 19) and fewer scutes (11 to 13).

Geographical Distribution : Indonesia (south-western coast of Kalimantan from Pontianak to the Barito River; also Palembang on the Musi River, Sumatra).

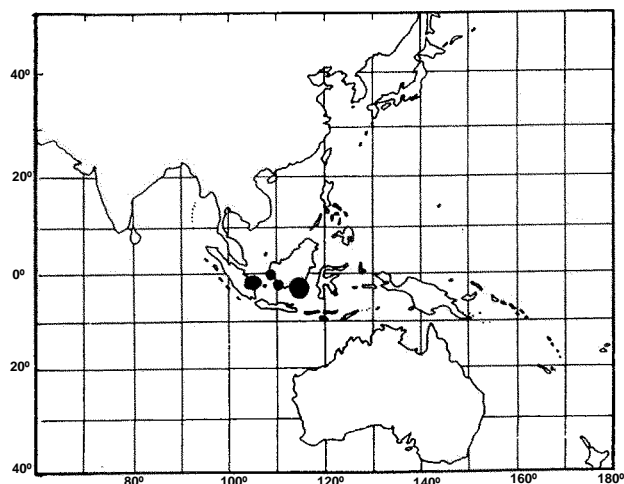
Habitat and Biology : Coastal and estuarine, but the extent of its movements into the sea or up rivers is not known.

Size : To 12.3 cm standard length (Wongratana, 1980), but perhaps larger.

Interest to Fisheries : Unknown, but its rarity in museum collections may not reflect its actual abundance.

Local Names :

Literature : As noted by Wongratana (1980: 316), perhaps all records since description of the species have been either compilations or misidentifications.



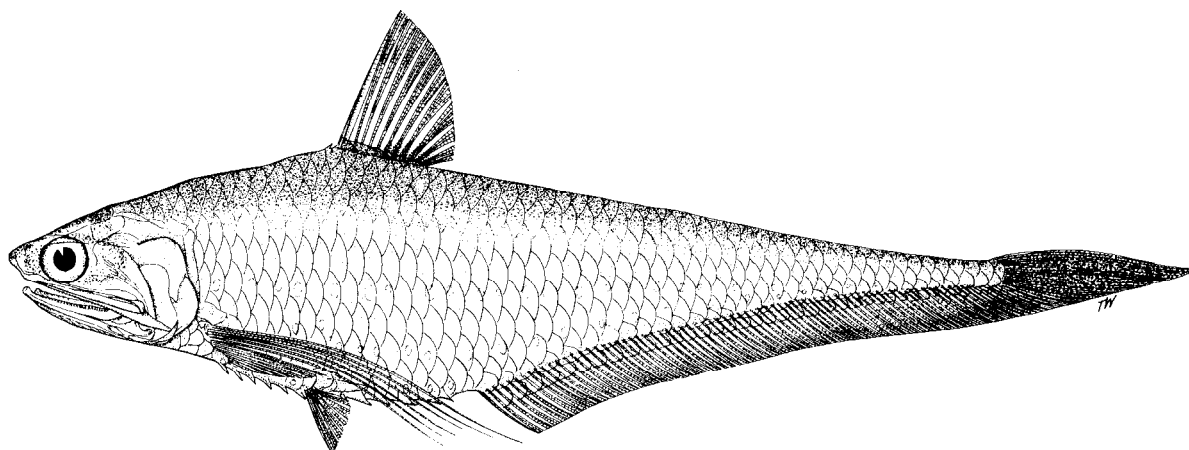
Coilia dussumieri Valenciennes, 1848

ENGR Coil 2

Coilia dussumieri Valenciennes, 1848, Hist.nat.pois., 21:81, pl.610 (Bombay).

Synonyms: Leptonurus chrysostigma Bleeker, 1849c:14 (Madura, near Kammal and Surabaya); Coilia quadrifilis Günther, 1868:403 (Penang, Singapore); Weber & de Beaufort, 1913:51 (compiled); Demicoilia margaritifera Jordan & Seale, 1926:363 (Colombo, Ceylon); Coilia dussumieri-Day, 1878:631, pl.158, fig.8 (Bombay, Orissa, estuaries and the sea); Fowler, 1941d:714 (Bombay, but Seychelles an error); Jones & Menon, 1952:24, figs 5,6a-e (larvae, tail) (Jaunput, Chandipur, Burhabalang estuary); Bal & Joshi, 1956:91 et seq. (Bombay, biology); Moona, 1960:313 et seq. (Bombay, skull); Haneda, 1961:46, figs 1,2 (light organs); Whitehead, Boeseman & Wheeler, 1966:144, pl.19 fig.2 (Bleeker's figure) (lectotype of chrysostigma); Whitehead, 1967a:154 (lectotype off dussumieri); Idem, 1969a:275, fig.58 (compiled) Idem, 1973b:244, fig.68 (synopsis); Seshagiri Rao, 1975:736 (Gollapalem, Masulipatam); Wongratana, 1980:320, pls 291,292 (revision); Whitehead, 1985:15, figs 15,16 (light organs); Whitehead & Bauchot, 1986:30 (lectotype of dussumieri).

FAO Names: En - Goldspotted grenadier anchovy.



Diagnostic Features : Body tapering, belly rounded before pelvic fins, with 5 or 6 (rarely 4) plus 7 to 9 = 12 to 15 keeled scutes from just behind pectoral fin base to anus. Maxilla short, not quite reaching to edge of gill cover. Lower gillrakers 23 to 26. Pectoral fin with 6 long filaments and 9 to 11 (rarely 8) branched finrays, longer than those of pelvic fin, which has i 6 finrays. Flanks and belly with golden or pearly spots in rows below scales, also along isthmus, along edge of lower jaw and a few on cheek and gill cover (light organs, with a pocket for luminous material and a silvery reflector below - see Whitehead, 1985:fig.16), the disposition of the light organs varying a little between individuals; their terminology was illustrated by Haneda (1961:fig.1). The presence of light organs distinguishes this species from all other species of Coilia. Otherwise it is virtually identical to C. neglecta (see under that species). Of other species with not more than 7 pectoral filaments, C. ramcarati has i 8 or 9 pelvic finrays, and all others have over 30 scutes. See ENGR Coil 2, Fishing Area 51.

Geographical Distribution : Indian Ocean (coasts of India from Bombay to Calcutta, probably also Burma, Thailand and Malaysia) and western central Pacific area (Thailand to Java, presumably also Kalimantan). The Seychelles record given by Fowler (1941d:715) and Smith & Smith (1963:8, p1.4 J) was based on a Mahe specimen listed by Valenciennes (1848:83), but there is no such specimen in Paris and *Coilia* is quite unknown along the coast of Africa; in fact, Mahé is to the south of Cannanore, India.

Habitat and Biology : Coastal and estuarine, in fully saline water, but also able to tolerate lowered salinities, perhaps almost fresh water. Feeds on copepods, prawn and fish larvae, various unidentified crustaceans and cypris, also stomatopod larvae, mysids, polychaete larvae, isopods and *Sagitta*. Breeding season perhaps extended; probably enters estuaries to breed (larvae about 5 km up Burhabalang estuary, Orissa in May and June - Jones & Menon, 1952).

Size : To 16.4 cm standard length (Wongratana, 1980), but perhaps to 20 cm total length (Bal & Joshi, 1956).

Interest to Fisheries : Found in appreciable numbers in Indian coastal waters and at the mouths of estuaries, where it is caught by bagnet (*dol*, Bombay area) and forms an important food item locally.

Local Names : INDIA: Mandeli (Bombay).

Literature : In addition to works given in the synonymy, see also Delsman (1932 - eggs, if correctly identified), Bapat & Bal (1950 - food), Joshi & Bal (1953 - skeleton), Palekar & Karandikar (1953 -maturity).

Remarks : The presence of light organs in *C. dussumieri* is unique amongst clupeoid fishes, but occurs in a genus that has departed more than any other from the typical clupeoid form.

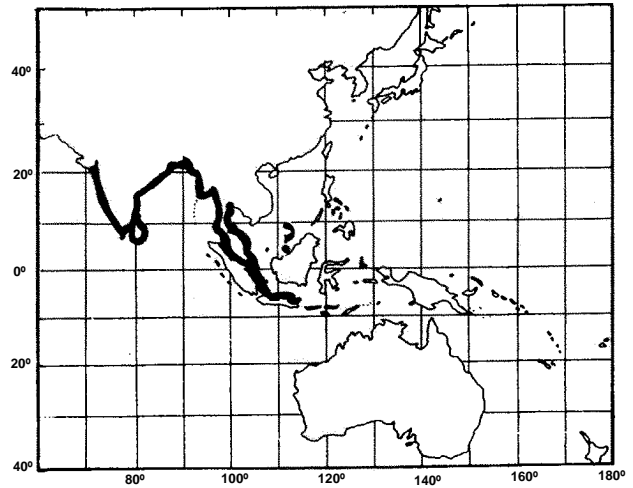
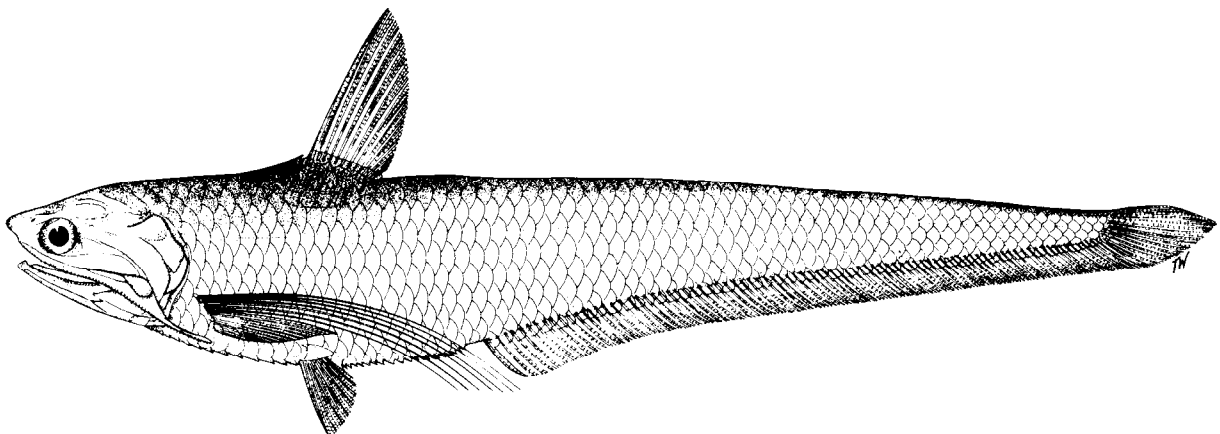
Coilia grayii Richardson, 1845

ENGR Coil 13

Coilia grayii Richardson, 1845, *Ichthyol.voy.Sulphur*:99, p1.54, figs 1,2 (China Seas); *Idem*, 1846, *Ichthyol. seas China Japan*:309 (type and a Reeves drawing, the latter from Canton).

Synonyms : *Coilia mystus*:Whitehead, 1966a:39 (type of *grayii*); Talwar, 1973 (Kerala, India); *Coilia grayii*-Jordan & Seale, 1926:361 (Hong Kong); Fowler, 1931a:82, fig.22 Hong Kong, compiled); *Idem*, 1941d:722 Viet Nam, Suchow); Chu, Tchang & Chen, 1963:115 (East China Sea); Wongratana, 1980:324, pls 294,295 (revision); Yuen, Qin, Liu & Lin, 1980:74 (China coasts); Chen 1986:101, fig.1 (Pearl River, larvae, juveniles).

FAO Names : En - Gray's grenadier anchovy.



Diagnostic Features : Body tapering, belly rounded before pelvic fins, with 12 to 15 plus 22 to 29 = 36 to 44 keeled scutes from isthmus to anus. Maxilla long, reaching to or beyond base of first pectoral finray. Lower gillrakers 28 to 31. Pectoral fin with 7 filaments and 10 or 11 (rarely 12) branched finrays, longer than those of pelvic fin, which has 6 finrays. All other species with a long maxilla have only 6 pectoral filaments; otherwise it very closely resembles C. mystus.

Geographical Distribution : East and South China Seas (from at least Suchow south to Hainan and most likely to Viet Nam), also Indian Ocean (Kerala - see Remarks).

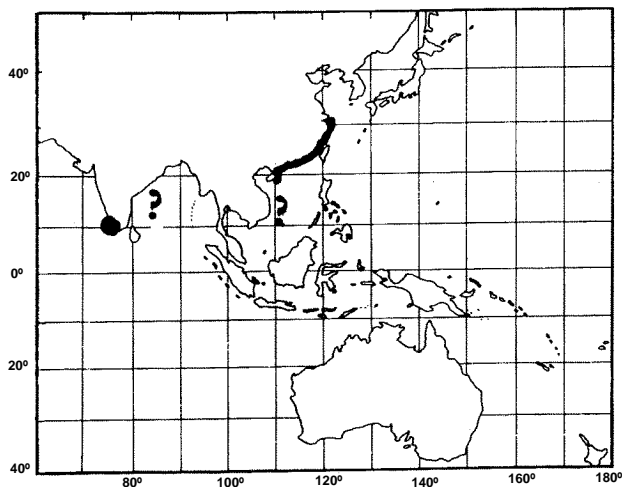
Habitat and Biology : Coastal and estuarine, presumably with a biology similar to that of other members of the genus. More specimens and data needed.

Size : To 25 cm standard length.

Interest to Fisheries :

Local Names : HONG KONG: Fung mi, Fung ne, Fung we.

Literature : Probably included in references to C. mystus.



Remarks : Among the species with a low number of pectoral filaments, C. grayii is the only one with a count of 7 (6 in all the rest). At present, this extra filament is the sole distinction from C. mystus. Whitehead (1966a:40) doubted the significance of an extra filament; Wongratana (1980:325) was hesitant, but preferred to keep grayii separate. One of the types of C. mystus has 7 filaments (see under that species). Talwar (1971) reported four specimens of C. mystus from the southeastern coast of India. Wongratana (1980:524) identified one of these as C. grayii, thus well out of the normal range of the species (the provenance and identification seem secure).

Coilia lindmani Bleeker, 1858

ENGR Coil 10

Coilia lindmani Bleeker, 1858, Act.Soc.sci.Indo-Neerl., 3:48 (Palembang, southeastern Sumatra).

Synonyms : Coilia macrognathos aequidentata Chabanaud, 1924:59 (Saigon River mouth, Viet Nam); Coilia lindmani-Weber & de Beaufort, 1913:49 (compiled); Fowler, 1941d:723 (same); Whitehead, Boeseman & Wheeler, 1966:142, pl.19, fig.1 (Bleeker's figure) (type of lindmani); Wongratana, 1980:325, pls 296,297 (revision); Whitehead & Bauchot, 1986:30 (types of aequidentata).

FAO Names: En - Lindman's grenadier anchovy.

