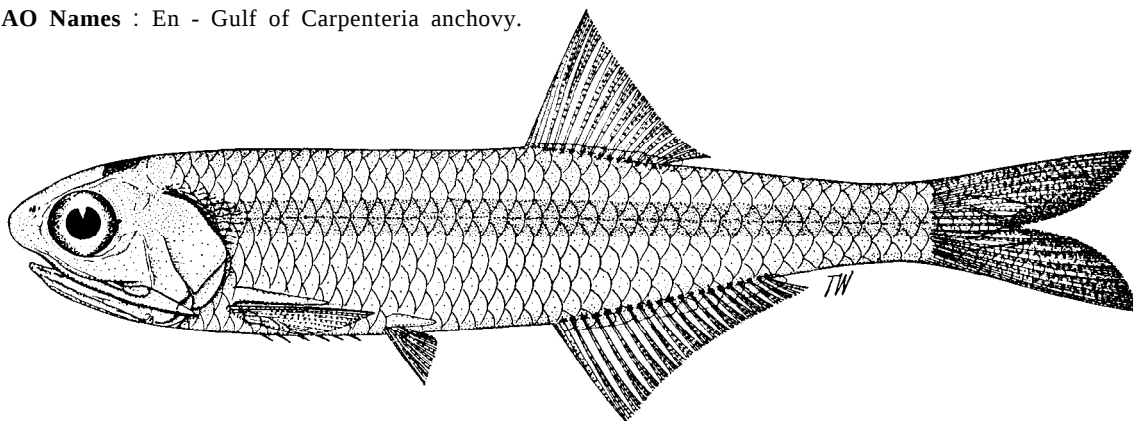


FAO Names : En - Gulf of Carpenteria anchovy.



Diagnostic Features : Body somewhat compressed, belly with 5 to 7 (usually 6) small needle-like pre-pelvic scutes. Maxilla tip pointed, reaching to or beyond hind border of pre-operculum, the latter concave, indented near maxilla tip. Lower gillrakers 22 to 25 (rarely 21). Fine teeth on upper edge of hyoid bones. Anal fin short, usually with iii 19 or 20 finrays, its origin rather far forward, below the second to sixth dorsal finray bases. The advanced anal and the presence of hyoid teeth distinguish this species from others in the area; similar hyoid teeth occur in S. commersonii (but only 1 to 4 scutes) and in S. insularis (but no double pigment line on back behind dorsal fin).

Geographical Distribution : Western Pacific (Gulf of Carpenteria, southern coast of Papua New Guinea; also Moreton Bay near Brisbane, Queensland).

Habitat and Biology : Presumed coastal, pelagic and schooling, but more material needed; probably tolerates lowered salinities, judging from the type locality and its occurrence in bays and inlets.

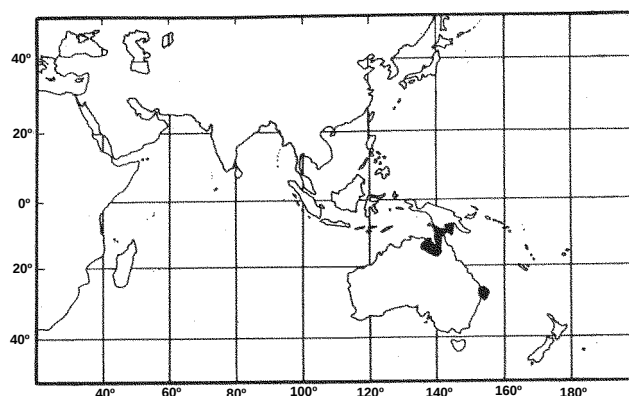
Size : To about 5 cm standard length.

Interest to Fisheries : Apparently not abundant.

Local Names :

Literature :

Remarks : Wongratana subsequently examined the types of Engraulis carpenteriae, of which the lectotype is his Stolephorus tysoni, but the paralectotypes are S. commersonii.



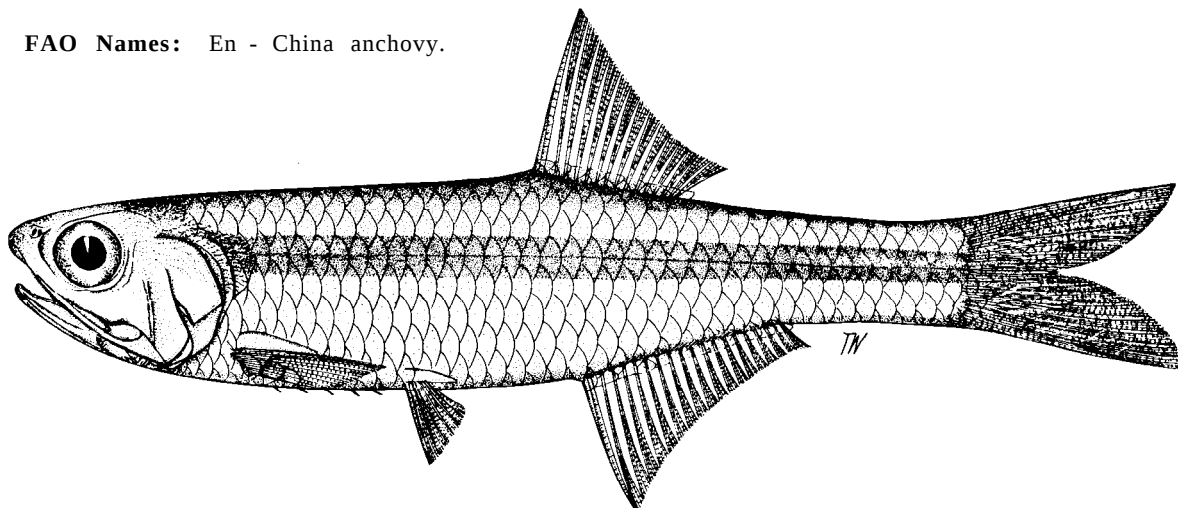
Stolephorus chinensis (Günther 1880)

ENGR Stol 10

Engraulis chinensis Günther, 1880, Rep.Voy.Challenger, 1:73 (Amoy = Xiamen).

Synonyms : Anchoviella chinensis:Fowler, 1941d:706 (compiled); Chu, Tchang & Chen, 1963:108, fig. 82 (Chinese records); Stolephorus commersonii:Whitehead, 1966a:37 (types of chinensis, Reeves specimens); Stolephorus chinensis:Whitehead, 1968a:17 (in key); Idem, 1969a:260 (Singapore, Thailand, Hong Kong, China); Idem, 1973b:220 (in key); Wongratana, 1980:240, pls 200,201(revision); Idem, 1985:28, fig.14 (key).

FAO Names: En - China anchovy.



Diagnostic Features : Body somewhat compressed, belly with 4 to 7 (usually 5 or 6) small needle-like pre-pelvic scutes. Maxilla tip pointed, reaching to hind border of pre-operculum, the latter convex, rounded. Lower gillrakers 24 to 28 (usually 26 or 27): Small teeth present on upper edge of hyoid bones. Pelvic fin tips not reaching to below dorsal fin origin; anal fin short, with usually iii 18 to 20 finrays, its origin under front half of dorsal fin base. Resembles S. commersonii, which has fewer scutes (usually 1 to 4) and pelvic fin tips reaching beyond dorsal fin origin; also S. insularis, which has a distinctly indented, concave hind border of the pre-operculum. Of species with a rounded, convex pre-opercular margin, S. indicus is round-bodied and S. waitei has fewer gillrakers (19 to 24).

Geographical Distribution : Western Pacific (Singapore northward to Amoy = Xiamen).

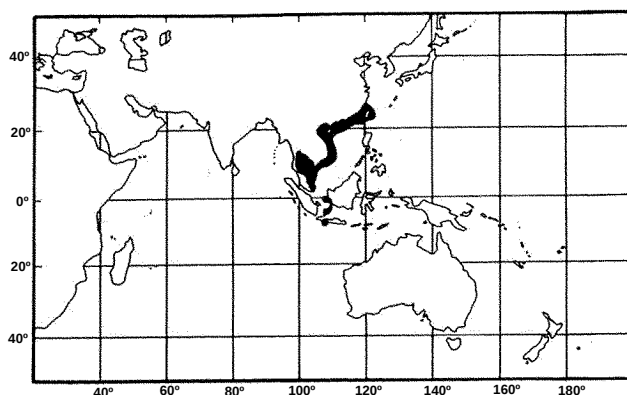
Habitat and Biology : Presumably coastal, pelagic and schooling, but more data needed.

Size : To 9 cm standard length.

Interest to Fisheries : Contributes to Stolephorus catches, but to an unknown extent.

Local Names :

Literature : Almost certainly misidentified as S. commersonii, thus data not retrievable.



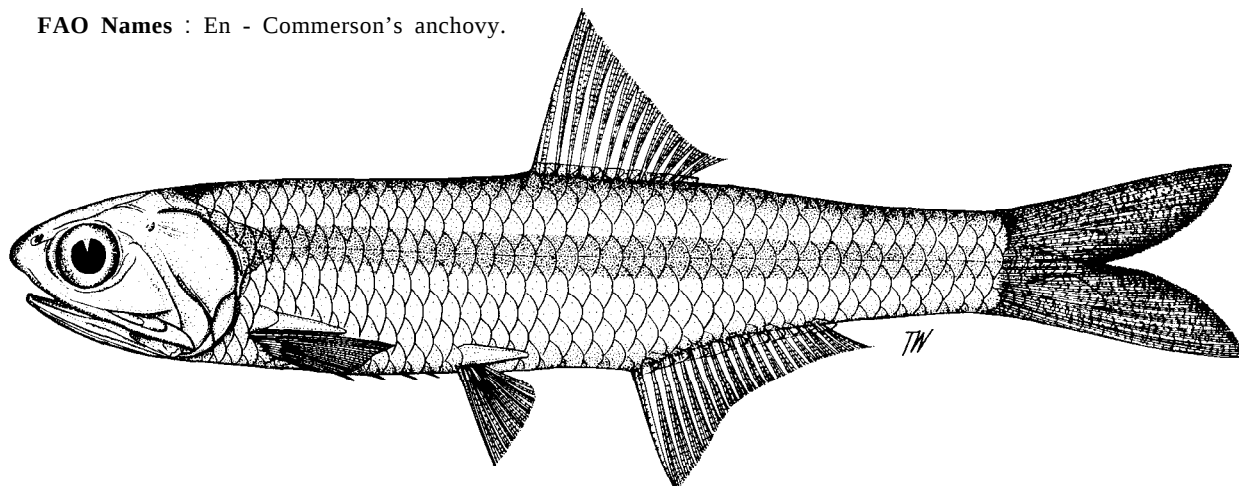
Stolephorus commersonii Lacepede, 1803

ENGR Stol 6

Stolephorus commersonii Lacepède, 1803, Hist.nat.Poiss., 5:381, 382, p1.12, fig.1 (Mauritius; based on notes by Commerson and a drawing).

Synonyms : Stolephorus commersonianus: Bleeker, 1872:128, p1.259, fig.1 (misspelling); Stolephorus rex Jordan & Seale, 1926:380 (Canara); Anchoviella commersonii: Fowler, 1941:703 (the Philippines, Borneo); Chu, Tchang & Chen, 1963:107, fig.81; Stolephorus commersonii-Losse, 1968:109 (East Africa); Whitehead, 1968a:l8 (Mombasa, Madagascar, Thailand); Idem, 1973b:226, fig.50 (synopsis); Wongratana, 1980:236, pls 196, 197 (revision); Lewis, Smith & Ellway, 1983: 17, 19 (Papua New Guinea); S. apiensis considered distinct contra Wongratana; Wongratana, 1985:28, fig.12 (key); Whitehead & Bauchot, 1986:50 (basis for commersonii; Clupea vittargentata not a synonym - see Engraulis capensis).

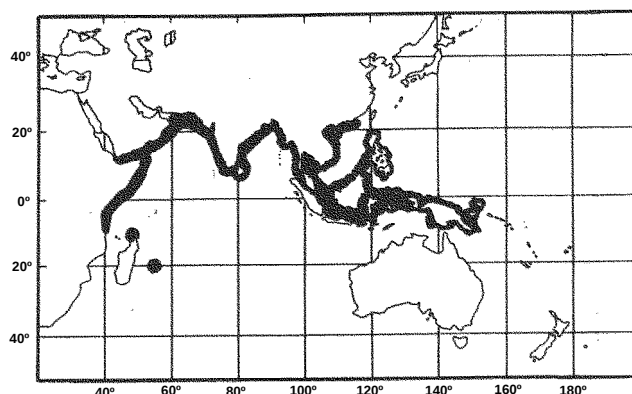
FAO Names : En - Commerson's anchovy.



Diagnostic Features : Body somewhat compressed, belly a little rounded, with 0 to 5 (usually 1 to 4 and mostly 2 or 3) small needle-like pre-pelvic scutes. Maxilla tip pointed, reaching to or a little beyond hind border of pre-operculum, the latter convex, rounded. Lower gillrakers usually 23 to 28. Small teeth present on upper edge of hyoid bones. Isthmus muscle tapering evenly forward to hind border of branchial membrane. Pelvic fin tips reaching to below anterior dorsal finrays; anal fin short, with usually iii 18 or 19 finrays, its origin below second half of dorsal fin base. Body light transparent fleshy brown, with a silver stripe down flank; a pair of dark patches behind occiput, followed by a pair of dark lines to dorsal fin origin. Closely resembles *S. apiensis* of Fiji and Samoa, which lacks pigment lines before the dorsal fin; and *S. brachycephalus* of Papua New Guinea, which has more anal finrays (usually iii 20 or 21), no hyoid teeth, and more scutes (usually 4 or 5). *Stolephorus waitei* has characteristic spots on the lower part of the head, and the pelvic fins do not reach to the dorsal fin origin (as also in *S. chinensis*). Other *Stolephorus* species have the hind border of the pre-operculum concave near the maxilla tip. See ENGR Stol 6, Fishing Area 51, also Fishing Areas 57/71.

Geographical Distribution : Widespread in Indian Ocean and western Pacific (eastern coast of Africa, from Gulf of Aden - but not Red Sea or the "Gulf" - to Zanzibar, northern Madagascar, Mauritius, eastward to Hong Kong, Papua New Guinea, but apparently replaced by *S. apiensis* in Fiji and Samoa). Winterbottom (1976:61) recorded this species as far south as the Umtata River, Transkei, but his specimen was *S. holodon*.

Habitat and Biology : Coastal, pelagic, schooling, apparently entering brackish water (Whitehead, 1968a:18 - Madagascar, Comoro Islands); present in Godavari estuary February to June in salinities of 19.6 to 32.0‰, but almost absent in subsequent flood season (Babu Rao, 1967:370). Feeds on surface plankton, mainly copepods and prawn larvae (Bapat & Bal, 1950). Egg oval with a knob (Babu Rao, 1966b:p1.4).



Size : To 10 cm standard length, mostly to 8 or 9 cm.

Interest to Fisheries : Not separately recorded, but undoubtedly part of the total catch of *Stolephorus* (231 344 tons in 1982).

Local Names : INDIA: Maya machi (Andaman Islands), Phansa (Calcutta - general term).

Literature : Babu Rao (1967 - bionomics, Andhra coast of India).

Remarks : Wongratana (1980:239) recorded a much higher gillraker count for nine specimens from Ponape, Caroline Island (32 to 35; cf. 23 to 28 in other specimens of *S. commersonii*), and found high counts also from Fiji (30 or 31) and the Philippines (to 30); he suggested a clinal increase. See also under *S. apiensis*.

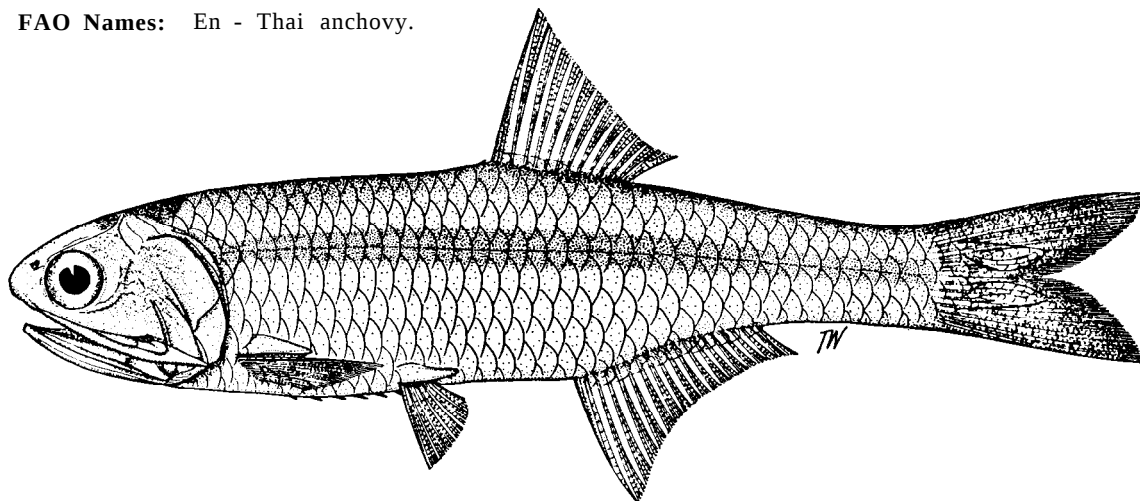
Stolephorus dubiosus Wongratana, 1983

ENGR Stol 16

Stolephorus dubiosus Wongratana, 1983, Japan J.Ichthyol., 29(4):400, fig.18 (Songkla Lake, Paknam, Bangkok and Samutsakorn, Thailand; Gulf of Thailand; Barito River, Kalimantan; and Orissa, India).

Synonyms : Stolephorus dubiosus-Wongratana, 1980:253, pls 214,215 (revision; name not validly published); Wongratana, 1985:29, fig.21 (key).

FAO Names: En - Thai anchovy.



Diagnostic Features : Body somewhat compressed, belly with 4 to 7 (usually 6 or 7) small needle-like pre-pelvic scutes; a small pre-dorsal spine and another on the pelvic scute. Maxilla tip pointed, reaching to or beyond hind border of pre-operculum, the latter concave, indented near maxilla tip. Gillrakers 25 to 31, usually 26 to 28. Anal fin short, usually with iii 18 or 19 finrays, its origin below about middle of dorsal fin base. A double pigment line on back behind dorsal fin. Of species with a spine on the pelvic scute, both S. baganensis and S. tri have fewer gillrakers (18 to 24 and 18 to 22).

Geographical Distribution : Eastern Indian Ocean (northern part of Bay of Bengal) and western Pacific (Gulf of Thailand, Java Sea to at least Kalimantan).

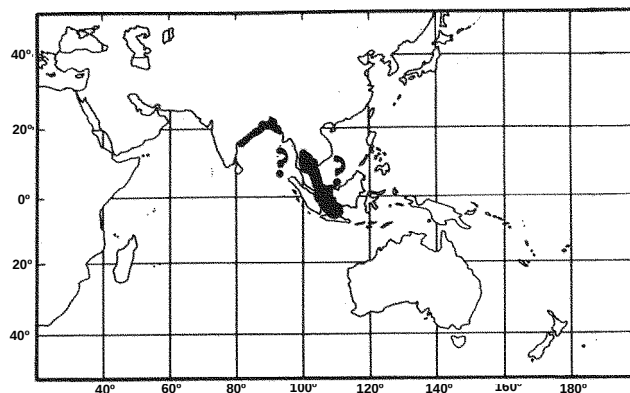
Habitat and Biology : Presumed coastal, pelagic and schooling, but evidently tolerates lowered salinities (e.g., in the Godavari, Songkla Lake and Barito River estuary) and possibly such places are its main habitat. More data needed.

Size : To 7.5 cm standard length.

Interest to Fisheries : Evidently contributes to artisanal fisheries, but perhaps not to any great extent.

Local Names :

Literature : Certainly misidentified in the past.



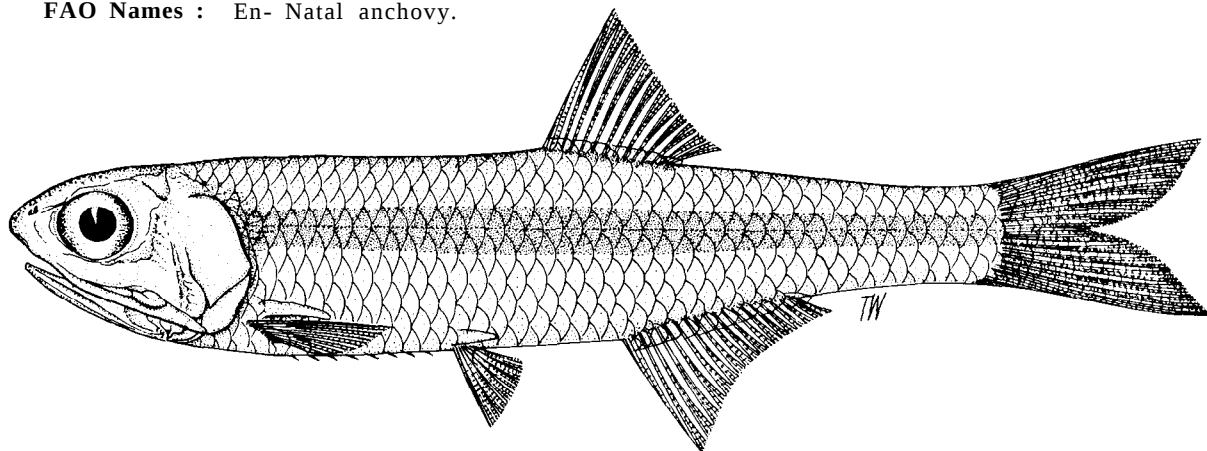
Stolephorus holodon (Boulenger, 1900)

ENGR Stol 11

Engraulis holodon Boulenger, 1900, Mar.Invest.S.Afr., (8):12, fig. 3 (Swartkops River, Algoa Bay, South Africa).

Synonyms : Anchoviella holodon:Fowler, 1941d:701 (compiled); Stolephorus commersonii:Winterbottom, 1976:61 (Umtata River, Transkei); Stolephorus holodon-Whitehead, 1973bb:220 in key); Wongratana,1980:245,pls 204, 205 (revision); Idem, 1985:29, fig.16 (key); SFSA, 1986:205, fig.55.2 (northern Mozambique to at least Swartkops estuary).

FAO Names : En- Natal anchovy.



Diagnostic Features : Body somewhat compressed, belly with 6 to 8 (usually 7) small needle-like pre-pelvic scutes. Maxilla tip pointed, reaching to or beyond hind border of pre-operculum, the latter concave, indented near maxilla tip. Lower gillrakers 24 to 29. Anal fin short, usually with iii 18 or 19 finrays, its origin below about middle of dorsal fin base. Of similar species in the area, Stolephorus indicus is round-bodied and has a shorter maxilla (not to hind border of pre-operculum); Encrasicholina punctifer has the anal fin origin behind the dorsal fin base (as also in Engraulis).

Geographical Distribution : Southwestern Indian Ocean (from northern Mozambique south to Port Elizabeth).

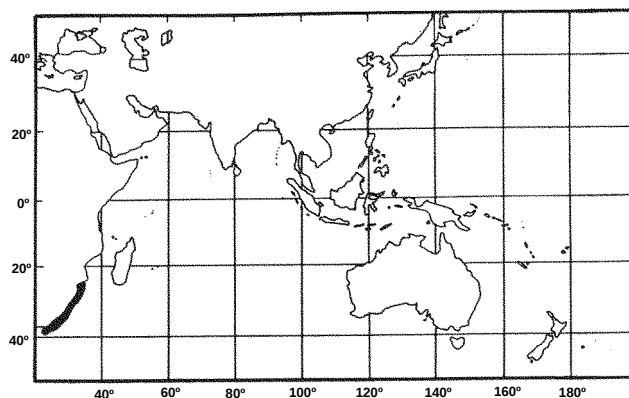
Habitat and Biology : Coastal, pelagic and schooling; records from the estuaries of the Swartkops and Kei Rivers suggest that it can tolerate brackish water. More data needed.

Size : To 8 cm standard length.

Interest to Fisheries : Probably little.

Local Names : SOUTH AFRICA: Doring ansjovis, Thorny anchovy.

Literature :



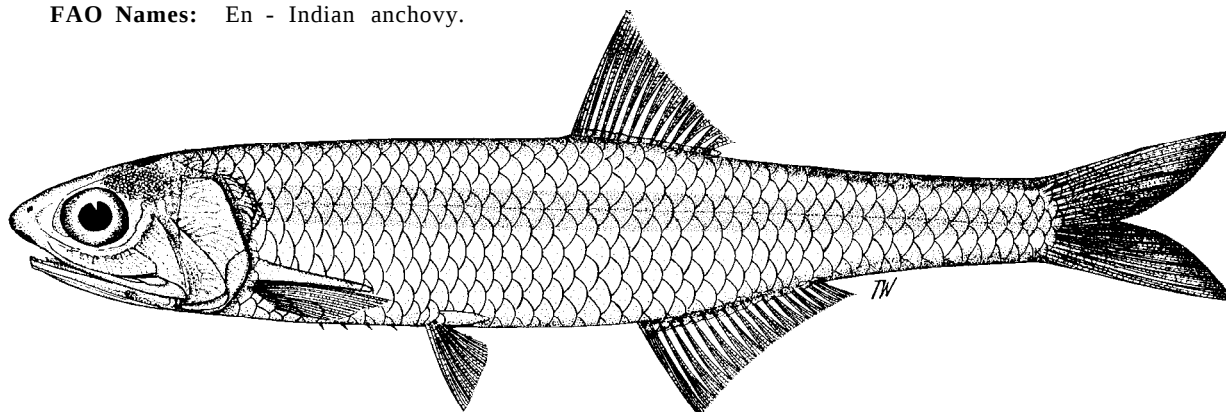
Stolephorus indicus (van Hasselt, 1823)

ENGR Stol 5

Engraulis indica van Hasselt, 1823, Algemeene Konst- en Letter-bode, 1(23):329 (Java, on Nattoo of Russell, 1803:71, p1.187).

Synonyms : Engraulis albus Swainson, 1839:293 (on Nattoo of Russell); Engraulis balinensis Bleeker, 1849:11 (Boeleing, Bali - in synonymy of S. indicus); Engraulis brownii:Cantor, 1850:1285 (Malay Peninsula and islands - not Atherina brownii Gmelin, 1789 = Anchoa hepsetus fide Whitehead, 1973a:132); Engraulis russellii Bleeker, 1852:472 (Rio, Indonesia - name only); Engraulis samaminan Montrouzier, 1857:208 (Woodlark = Moiou I.); Engraulis carpenteriae (part) de Vis, 1882:320 (Norman River, Gulf of Carpenteria - paralectotypes only); Anchoviella scitula Fowler, 1911:211, fig.2 (claimed from San Diego, California; evidently untrue - see Nelson, 1983:49); Stolephorus insularum Jordan & Seale, 1926:381 (Tahiti); Stolephorus extensus Jordan & Seale, 1926:382 (Mauritius); ? Stolephorus indicus nanus Hardenberg, 1933:263 (no locality, types lost); Anchoviella indica:Fowler, 1941d:706 (the Philippines, Kowloon; large synonymy); Stolephorus indicus-Munro, 1956:27, fig.185 (Queensland); Whitehead, 1965a:270 (Red Sea, the "Gulf"); Whitehead, Boeseman & Wheeler, 1966:114,115, p1.14, fig.4 (Bleeker's figure of russellii) (types of russellii and balinensis); Losse, 1968:107 (East Africa); Whitehead, 1973b:225, fig.49 (synopsis); Wongratana, 1980:231, pls 194,195 (revision); Lewis, Smith & Ellway, 1983:17,19 (New Guinea to Society Islands); Dor, 1984:43 (Red Sea, refs); Sainsbury, Kailola & Leyland, 1985:66,67 (good colour photo) (N.W. shelf of Australia); Wongratana, 1985:28, fig.11 (key); SFSA, 1986:206, fig.55.3 (south to Natal).

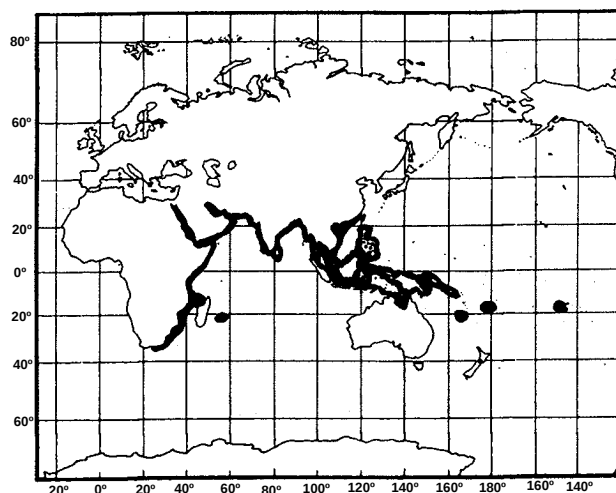
FAO Names: En - Indian anchovy.



Diagnostic Features : Body slender, elongate, rather round in cross-section, belly rounded, with 2 to 6 (usually 3 to 5, mostly 4) small needle-like pre-pelvic scutes. Maxilla tip pointed, reaching to or only just beyond front border of pre-operculum; hind border of pre-operculum convex, rounded. Lower gillrakers 20 to 28. Isthmus muscle tapering evenly forward to hind border of branchial membrane. Pelvic fin tips not reaching to below dorsal fin origin; anal fin short, with usually iii 16 to 18 finrays, its origin below centre of dorsal fin base. Body light transparent fleshy brown, with a silver stripe down flank; no dark pigment lines on back between head and dorsal fin. Species with such a short maxilla are: *S. advenus* (7 scutes) and *S. pacificus* (35 to 38 gillrakers); maxilla to or almost to hind border of pre-operculum in other *Stolephorus* species. See ENGR Stol 5, Fishing Area 51, also Fishing Areas 57/71.

Geographical Distribution : Widespread in Indian Ocean and western Pacific (entire eastern coast of Africa from the "Gulf" and the Red Sea south to Natal, Madagascar, Mauritius; eastward to Hong Kong, northern and eastern coasts of Australia south to Brisbane and further east to Samoa and Tahiti).

Habitat and Biology : Coastal, pelagic, schooling (but probably less so than other *Stolephorus* species); appears to enter at least the estuarine parts of rivers and perhaps tolerates brackish water. Feeds most likely on zooplankton, but more data needed. In Manila Bay, migrates out into deeper and more saline water to breed (at about 9 cm standard length and above), returning immediately after; the eggs are oval, with a small knob at one pole (Babu Rao, 1966b: p1.4).



Size : To 15.3 cm standard length, usually 10 to 12 cm.

Interest to Fisheries : Appears not to form very large schools, thus of minor interest although the largest of *Stolephorus* species; fragile and unsuitable as a tuna baitfish (Lewis, Smith & Ellway, 1983:17).

Local Names : INDIA: Maya machi (Andaman Islands), Phansa (Calcutta - general term).

Literature : Tiews, Ronquillo & Santos (1975 - breeding in Manila Bay), Baldwin (1984 -Fijian baitfish).

***Stolephorus insularis* Hardenberg, 1933**

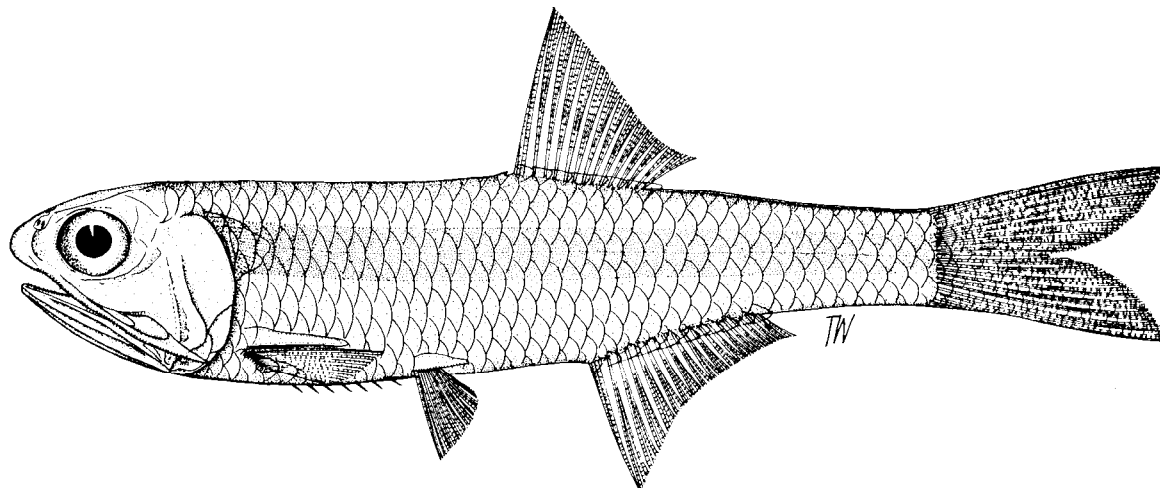
ENGR Stol 15

Stolephorus insularis Hardenberg, 1933a, *Natuurk.Tijdschr.Ned.-Indie*, 93(2):260 (Java, Lingga, Bawean, Kangean, Moluccas; excluding *S. insularis bataviensis*=*S. waitei*).

Synonyms : *Stolephorus baweanensis* Hardenberg, 1933a:261 (Bawean, Java Sea); *Stolephorus insularis oceanicus* Hardenberg, 1933a:261 (south coast of Java); *Anchoviella bataviensis*: Fowler, 1942d:708 (compiled; excluding *S. insularis bataviensis* itself); *Anchoviella baganensis*: Dutt & Babu Rao, 1958a:160 (east coast of India); *Stolephorus macrops*: Whitehead, 1968a:19 (Gulf of Aden, Bay of Bengal); *Idem*, 1969a:257 (Penang, Singapore); *Idem*, 1973b:223, fig.45 (key, compiled); *Stolephorus bataviensis*: Whitehead, 1969a:261 (the batch of 14 Singapore

fishes only); *Idem*, 1973b:227 (in part only); *Stolephorus insularis*-Wongratana, 1980:250, pls 212, 213 (revision); *Idem*, 1985:29, fig.20 (key). Note: as pointed out by Fowler (1941d:708) and Whitehead (1968a:20), Hardenberg's name *insularis* appears to be a junior primary homonym of *Stolephorus insularum* Jordan & Seale, 1926 = *S. indicus*. Authors, including Wongratana, have ignored this and there seems good reason to preserve the Hardenberg name.

FAO Names : En - Hardenberg's anchovy.



Diagnostic Features : Body somewhat compressed, belly with 4 to 8 (usually 6 or 7) small needle-like scutes; a small pre-dorsal spine in some specimens. Maxilla tip pointed, reaching to or beyond hind border of pre-operculum, the latter concave, indented near maxilla tip. Lower gillrakers 21 to 28 (usually 23 to 27). Fine teeth on upper edge of hyoid bones. Anal fin short, usually with iii 14 to 17 finrays, its origin below about middle of dorsal fin base. A double pigment line on back behind dorsal fin; tail deep yellow (at least in Indian specimens). Of species with an indented pre-operculum, *S. andhraensis* has fewer gillrakers (20 or 21 only) and *S. ronquilloi* has more (28 to 30, rarely 27); other species with a pre-dorsal spine also have a spine on the pelvic scute *S. dublosus*, *S. baganensis*, *S. tri*. Hyoid tooth patches are present in *S. commersonii* (but pre-operculum rounded, scutes usually 1 to 4) and in *S. carpenteriae* (but no pigment lines on back, anal origin under anterior part of dorsal fin base).

Geographical Distribution : Northern part of Indian Ocean (Gulf of Aden, not Red Sea or the "Gulf", eastward to Burma) and western Pacific (Gulf of Thailand, Java Sea, also Hong Kong, Fujian and Taiwan Island; if correctly identified, then reaches to Fiji and Samoa *vide* Lewis, Smith & Ellway, 1983).

Habitat and Biology : Coastal, pelagic and schooling; more data needed, based on correct identifications. Babu Rao (1965b, 1966a) recorded specimens from the Godavari estuary, thus implying tolerance of lowered salinities, but the identity of his material is not certain (perhaps *S. waitei*). Egg oval without a knob (if *S. baganensis* of Babu Rao, 1966b:pl.4 is *S. insularis*).

Size : To 6.4 cm standard length.

Interest to Fisheries : Appears to be fairly common throughout its range and probably contributes a significant proportion to *Stolephorus* catches. If correctly identified by Lewis, Smith & Ellway (1983), then of some interest as a baitfish, although rather fragile.

Local Names :

Literature : Previous identifications have not always been secure, but possibly the following refer to this species: Dutt & Babu Rao, 1958a (as *Anchoviella baganensis*, description), *Idem* 1958b (as *A. insularis*, description), Babu Rao, 1965b, 1966a, (as *Stolephorus insularis*, biometrics, subspecies, but perhaps *S. waitei*), Baldwin (1984 - Fijian baitfish).

Remarks : The occasional presence of a pre-dorsal spine (apparently lost in larger individuals) led to the identification of this species as *S. baganensis*, while the probable loss of Hardenberg's type specimens clouded the true identity of his *bataviensis* (= *S. waitei*). Wongratana (1980) finally resolved this problem. As a result, very few fishery or biological studies can be relied upon.

