

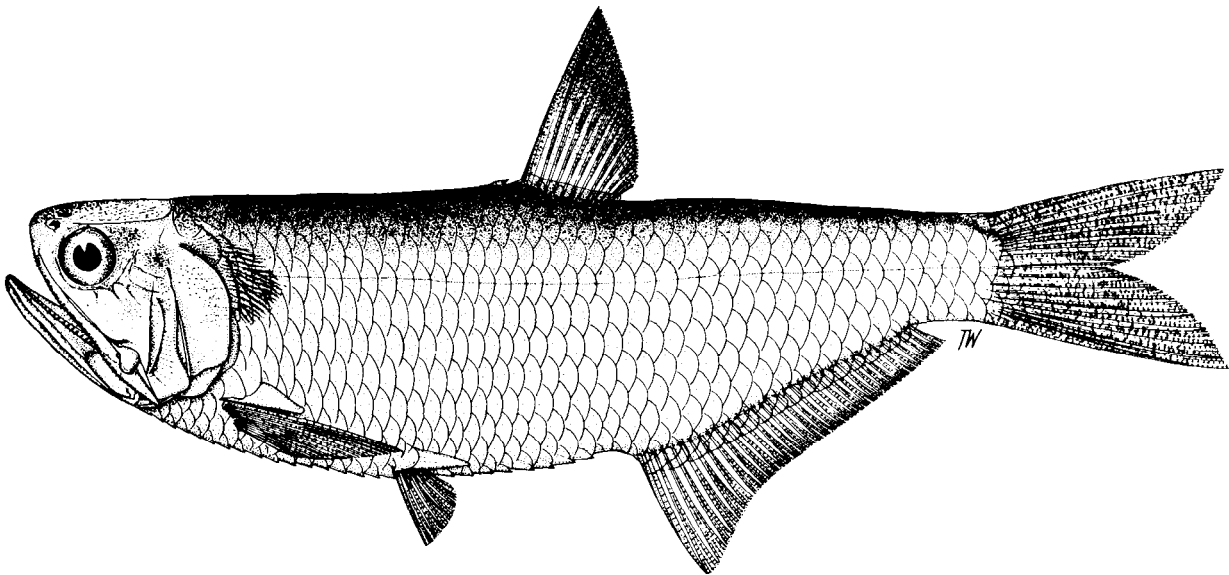
***Thryssa polybranchialis*** Wongratana, 1983

ENGR Thrys 15

*Thryssa (Scutengraulis) polybranchialis* Wongratana, 1983, Japan J. Ichthyol., 29(4):402, fig.21 (Canara, Cochin, and Porto Novo and Waltair, India).

**Synonyms** : *Thryssa polybranchialis*: Wongratana, 1980:278, pls 243,244 (revision; name not validly published).

**FAO Names** : En - Humphead thryssa.



**Diagnostic Features** : Body compressed, belly with 15 to 17 plus 9 or 10 = 25 to 27 keeled scutes from isthmus to anus. A distinct hump at nape; tip of snout above upper rim of eye. Maxilla short, not quite or only just reaching to edge of gill cover; first supra-maxilla minute, oval. Lower gillrakers 25 to 27. Anal finrays iii (rarely iv) 35 to 39. A dark blotch behind upper part of gill opening. Of Indian species, only *T. kammalensoides* has a similar short maxilla and such a high gillraker count (24 or 25), but anal finrays only iii 31 or 32, no blotch behind gill cover, and tip of snout at about level of eye centre.

**Geographical Distribution** : Indian Ocean (eastern and western coasts of India).

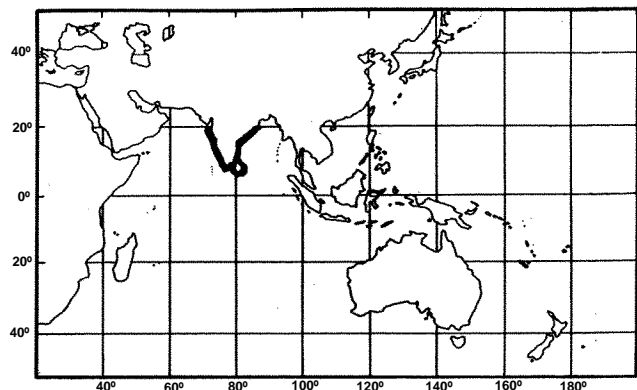
**Habitat and Biology**: Marine, pelagic and presumably schooling. Undoubtedly confused with other species in the past. More data needed.

**Size** : To 17 cm standard length.

**Interest to Fisheries** : Presumably contributes to artisanal clupeoid catches.

**Local Names** :

**Literature** :



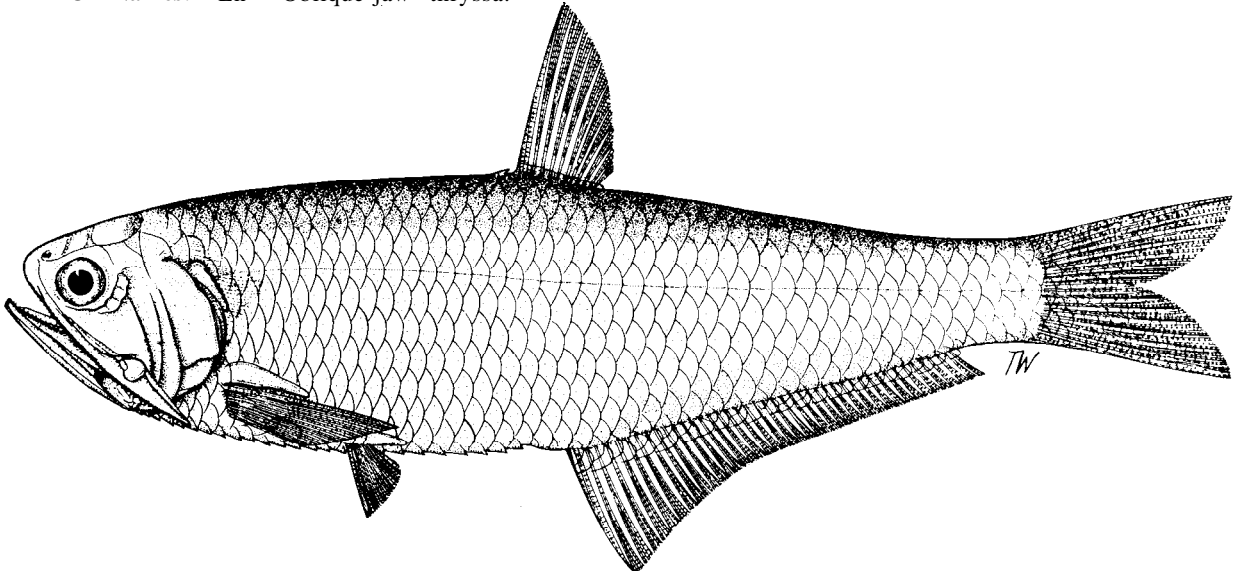
***Thryssa purava*** (Hamilton-Buchanan, 1822)

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*Clupea purava* Hamilton-Buchanan, 1822, *Fishes of the Ganges*:238,382 (Ganges estuaries).

**Synonyms** : *Thryssa megastoma* Swainson, 1839:293 (on *Pedda poorwah* of Russell, 1803:73, pl.190); *Engraulis annandalei* Chaudhuri, 1916:419, fig.3 (Chilka Lake); *Engraulis kempfi* Chaudhuri, 1916:421, fig.4 (Chilka Lake); *Engraulis rambhae* Chaudhuri, 1916:423, fig. 5 (Chilka Lake); *Thryssa purava*-Whitehead, 1973b:231, fig.55 (synopsis; excluding references to *saman* and *hornelli*); Wongratana, 1980:286, pls 253,254 (revision). The types of *annandalei*, *kempfi* and *rambhae* were documented by Babu Rao, 1971:482.

**FAO Names**: En - Oblique-jaw thryssa.



**Diagnostic Features** : Body compressed, belly with 15 to 17 (usually 16) plus 10 or 11 (rarely 9 or 12) = 26 or 27 (less often 25 or 28) keeled scutes from isthmus to anus. Tip of snout a little above level of eye centre. Maxilla moderate, projecting slightly beyond edge of gill cover, or at most to halfway to pectoral fin base; first supra-maxilla small; angle of mouth rather oblique, teeth of lower jaw slightly enlarged. Lower gillrakers 17 to 21, most often 18 or 19. Anal with iii (rarely iv) 38 to 44 (usually 41 or more) finrays. An indistinct dark blotch behind upper part of gill opening and a faint dark line along back. Of Indian Ocean species with a moderate maxilla (to beyond gill cover, but not to pectoral fin base), *T. hamiltonii* and *T. spinidens* have not more than 15 gillrakers, and *T. gautamiensis* and *T. malabarica* have fewer anal finrays (usually iii 34 to 37, sometimes 38); *T. whiteheadi* of the "Gulf" differs mainly in having enlarged teeth also in the upper jaw, and no first supra-maxilla; *T. dayi* of the Arabian Sea is extremely similar, but the maxilla reaches to the pectoral fin base.

**Geographical Distribution** : Indian Ocean (eastern coasts of India, possibly also Burma).

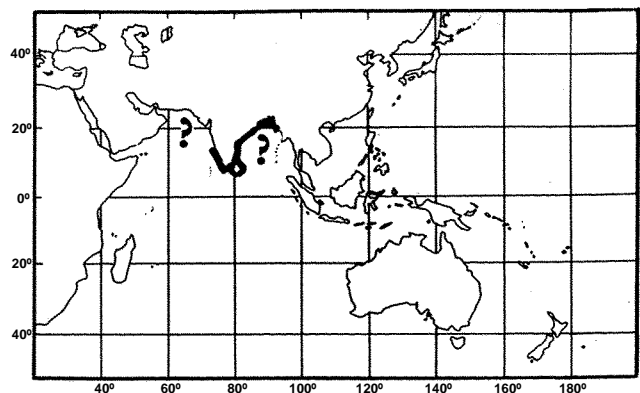
**Habitat and Biology** : Marine, pelagic, presumably schooling, mostly inshore and entering estuaries, also Chilka Lake (thus able to withstand lowered salinities). More data needed, based on correct identifications; if referring to this species, then Bapat and Bal (1950) considered it a surface plankton feeder, chiefly on prawn larvae, also small fishes (e.g. *Stolephorus*) and cypris.

**Size** : To 15.5 cm standard length.

**Interest to Fisheries** : Apparently common, thus presumably contributing to artisanal catches of clupeoids.

**Local Names** :

**Literature** : Palekar & Karandikar (1952 -breeding), Rao (1967 - larvae), Moona (1968 -skull). These should be treated with caution since the identification is not certain.



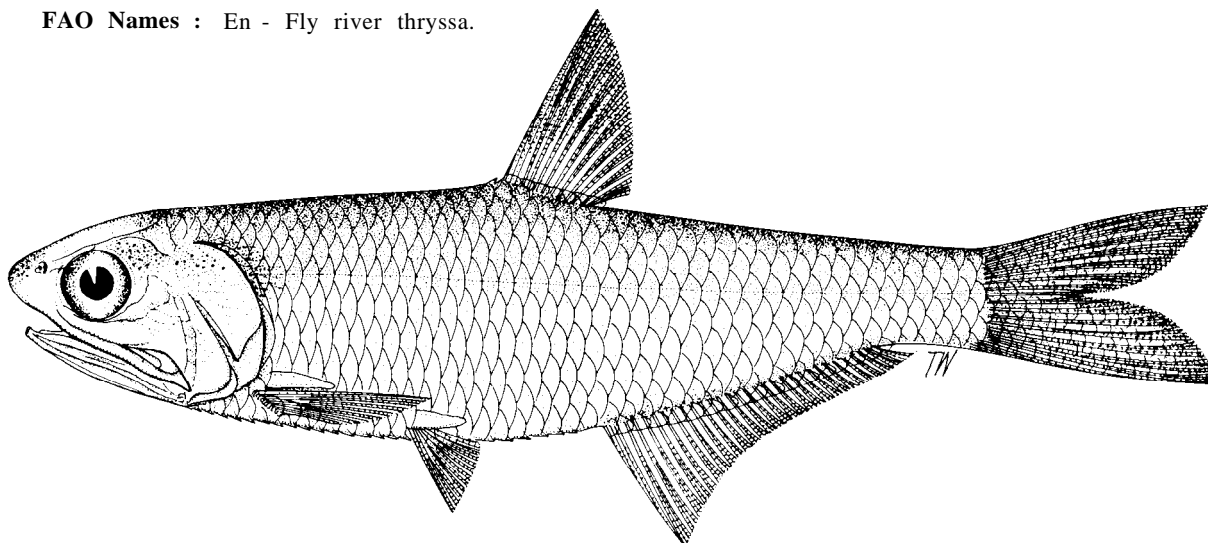
***Thryssa rastrosa*** Roberts, 1978

ENGR Thrys 9

*Thryssa rastrosa* Roberts, 1978, *Smithson.Contr.Zool.*, (281):29, fig.10b (Fly River, New Guinea).

Synonyms : *Thryssa rastrosa*-Wongratana, 1980:263, pls 227,228 (revision).

FAO Names : En - Fly river thryssa.



**Diagnostic Features :** Body compressed, belly with 17 to 19 plus 10 or 11 = 27 to 29 keeled scutes from isthmus to anus. Maxilla short, not quite reaching to hind border of pre-operculum; first supra-maxilla short, not more than half length of second. Lower gillrakers very numerous, 55 to 61. Anal finrays iii or iv 29 to 32. No black area behind upper part of gill opening. Of species found in Papua New Guinea or adjacent areas, *T. scratchleyi*, *T. aestuarius* and *T. kammalensis* also have a short maxilla, but the lower gillrakers are not more than 32 (in fact no other species of *Thryssa* has more than 32); species of *Setipinna* have a filamentous first pectoral finray, and *Papuengraulis* has a tiny dorsal fin (5 or 6 finrays only) and neither has so many gillrakers.

**Geographical Distribution :** Fly River, Papua New Guinea.

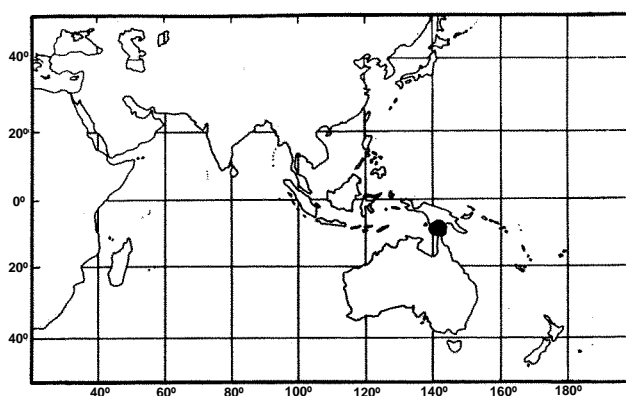
**Habitat and Biology :** Known only from the upper and middle reaches of the Fly River, i.e. up to 850 km from the mouth, thus perhaps a wholly riverine species. The very high number of gillrakers suggests filter feeding; a specimen from the upper parts of the Fly River had fed on planktonic calanoid copepods.

**Size :** To 11.6 cm standard length.

**Interest to Fisheries :** Perhaps contributes to local artisanal catches.

**Local Names :**

**Literature :** Roberts (1978 - ecological data).



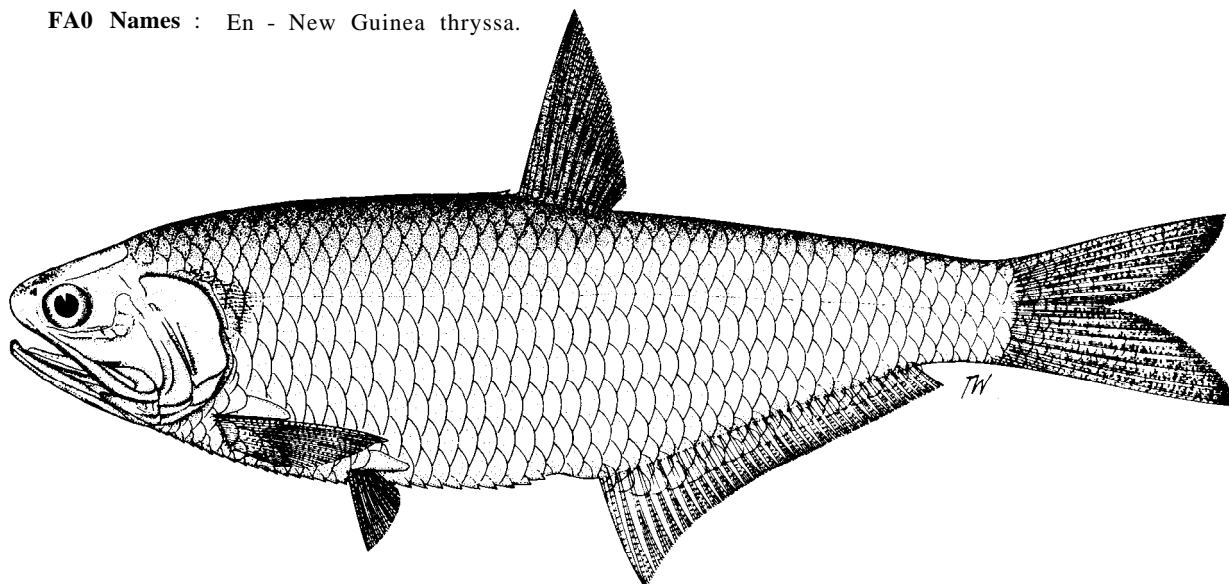
***Thryssa scratchleyi*** (Ramsay & Ogilby, 1886)

ENGR Thrys 11

*Engraulis scratchleyi* Ramsay & Ogilby, 1886, Proc.Linn.Soc.N.S.W., (2)1:18 (Strickland River, Papua New Guinea).

**Synonyms** : *Engraulis scratchleyi*:Weber & de Beaufort, 1913:34 (Lorentz and Strickland Rivers, compiled); *Thrissocles scratchleyi*:Fowler, 1941d:670 (compiled); *Scutengraulis scratchleyi*:Munro, 1967:47, pl.3, fig.41 (Strickland River); *Thryssa scratchleyi*-Taylor, 1964:68, pl.2 (above Roper River Mission, Gulf of Carpentaria); Roberts, 1978:28, fig.10a (Fly River, Papua New Guinea); Wongratana, 1980:264, pls 229,230 (revision).

**FAO Names** : En - New Guinea thryssa.



**Diagnostic Features** : Body compressed, belly with 19 plus 12 = 31 keeled scutes from isthmus to anus. Maxilla short, only reaching to front border of pre-operculum; first supra-maxilla about two thirds of second. Lower gillrakers 18 to 23. Anal finrays iii 35 to 39. No dark blotches on nape or behind upper part of gill opening. Of species in the area, *T. rastrosa* has more gillrakers (55 to 61), as also *T. aestuaria* (27 to 29), which also has a distinct dark blotch on nape, while *T. hamiltonii* has a longer maxilla (reaching beyond gill opening). Species of *Setipinna* have a filamentous first pectoral finray, and *Papuengraulis* has a tiny dorsal fin (5 or 6 finrays).

**Geographical Distribution** : Papua New Guinea (Strickland, Lorentz and Fly Rivers) and in rivers entering the Gulf of Carpentaria.

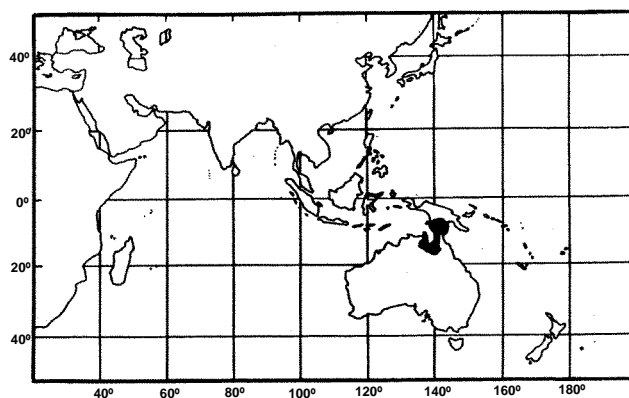
**Habitat and Biology** : Riverine, reaching nearly 900 km up the Fly River, but also down to the estuary; possibly catadromous. Piscivorous (at least as large adults), recorded as feeding on *Clupeoides papuensis* and *Melanotaenia nigra* in the Fly River (Roberts, 1978:14).

**Size** : To 37 cm standard length (Roberts, 1978:28), thus by far the largest anchovy known.

**Interest to Fisheries** : Its large size implies that it makes a useful contribution to artisanal riverine catches.

**Local Names** :

**Literature** : Roberts (1978 - food, ecology).



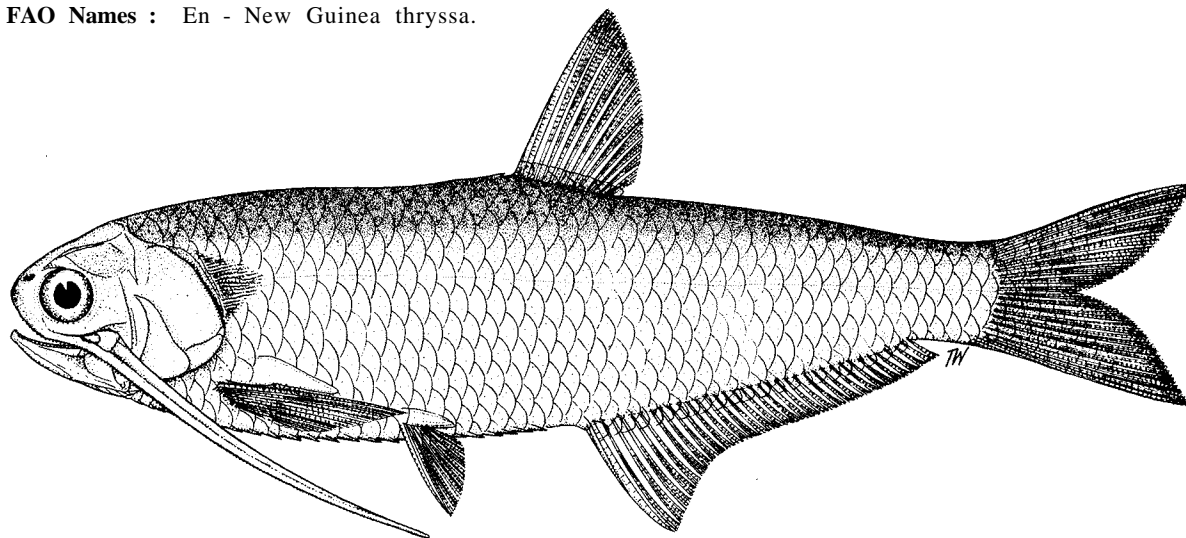
***Thryssa setirostris*** (Broussonet, 1782)

ENGR Thrys 3

*Clupea setirostris* Broussonet, 1782, *Ichthyol.*:unpaged, pl.2 (Tana Island, New Herbrides).

**Synonyms** : *Clupea mystacina* Schneider, 1801:428 (on J.R. Forster ms name, Tana Island); Lichtenstein, 1844:295 (same); *Clupea seticornis* Rees, 1807:unpaged (under *Clupea*); *Thryssa macragnathos* Bleeker, 1849a:14 (Madura near Bangkallang, Kammal, Surabaya); *Thrissoles setirostris*:Fowler, 1941d:679 (Durban, Thailand, the Philippines); *Thryssa setirostris*:Chu, Tchang & Chen, 1963:112, fig.87 (China); *Thryssa setirostris*-Taylor, 1964:69 (near Darwin, Australia); Whitehead, 1965a:275 (Red Sea (?), Gulf of Aden); *Idem*, 1968a:22(Arabian Sea, Bay of Bengal); Losse, 1968:11, p1.4c (East Africa); Whitehead, 1973b:230, fig.53 (synopsis); Wongratana, 1980:293, pls 261,262 (revision); SFGA, 1987:206, fig.55.5 (south to perhaps East London).

**FAO Names** : En - New Guinea thryssa.



**Diagnostic Features** : Body fairly compressed, belly with 16 to 18 plus 9 or 10 = 25 to 28 keeled scutes. Distinguished from all other *Thryssa* species (in fact all other anchovies) by the very long maxilla, reaching at least to tip of pectoral fin, usually to pelvic fin base or even to anal fin origin (to middle of pectoral fin in *T. dussumieri*); also unique is the high coronoid process of the lower jaw, the jaw rising steeply in the mouth (found also in species of *Coilia*). Lower gillrakers 10 to 12 (usually 17 to 19 in *T. dussumieri*). Head with gold tints; anal and caudal fins deep yellow; a black area behind upper part of gill opening. See ENGR Thrys 3, Fishing Area 51, also Fishing Areas 57/71.

**Geographical Distribution** : Widespread in Indian Ocean (eastern coasts from Gulf of Oman south to Port Alfred, but not yet in Red Sea or off Madagascar; coasts of Pakistan, India and probably Burma) and in western Pacific (Indonesia, Thailand, the Philippines to Taiwan Island; also, northern Australia, Papua New Guinea, Solomon Islands and New Hebrides).

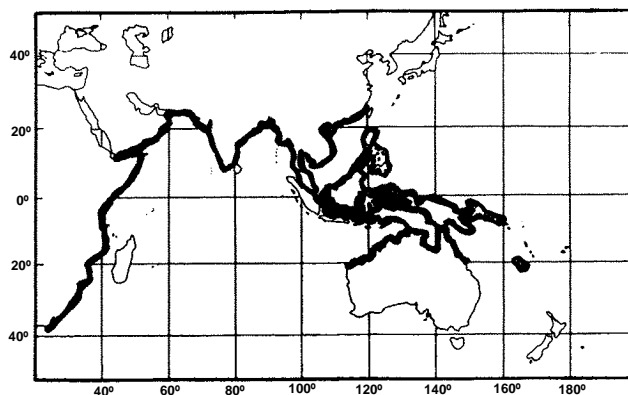
**Habitat and Biology** : Marine, pelagic, presumably schooling, mostly (or always ?) close inshore, entering bays and estuaries. More data needed, including some functional explanation for the extraordinarily long maxillae. Feeds mainly on crustaceans (amphipods, zoea larvae, *Acetes*, fide Basheerudin & Nayar, 1962).

**Size** : To at least 15 cm standard length.

**Interest to Fisheries** : Contributes to general clupeoid catches, but no special fishery.

**Local Names** : INDONESIA: Puger (Bangkok - fide Weber & de Beaufort, 1913:41).

**Literature** : Basheerudin & Nayar (1962 - juveniles).



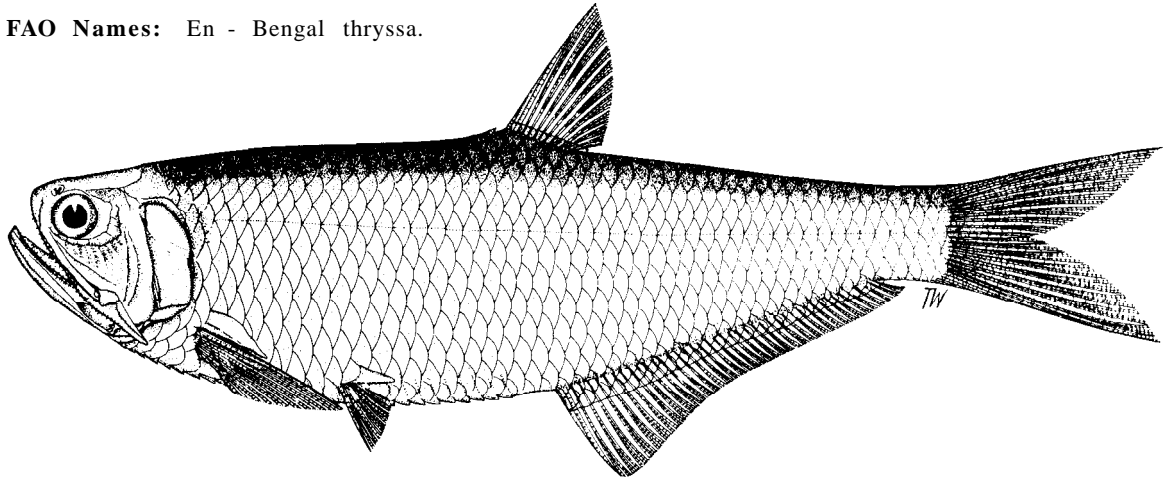
**Thryssa spinidens** (Jordan & Seale, 1925)

ENGR Thrys 21

Xenengraulis spinidens Jordan & Seale, 1925, Copeia, (141):29 (Calcutta, Rangoon, Thailand).

**Synonyms** : Xenengraulis spinidens Jordan & Seale, 1926:369 (repeat); Fowler, 1941d:668 (compiled); Thryssa spinidens-Wongratana, 1980:292, pls 259,260 (revision).

**FAO Names:** En - Bengal thryssa.



**Diagnostic Features** : Body compressed, belly with 16 (rarely 17) plus 11 to 13 (mostly 12) = 27 to 29 keeled scutes from isthmus to anus. Tip of snout on level with upper rim of eye, well above eye centre. Maxilla moderate, projecting a little beyond gill cover; first supra-maxilla minute, usually absent; teeth in jaws enlarged, especially in lower jaw. Lower gillrakers 13 to 15. Anal with iii (rarely iv) 41 to 45 finrays. A dark blotch indistinct or absent behind upper part of gill opening; no dark lines along back. Of Bay of Bengal species with a moderate maxilla, T. malabarica, T. purava and T. gautamiensis have more gillrakers (17 to 21); T. hamiltonii has smaller jaw teeth and fewer anal finrays (iii 32 to 39).

**Geographical Distribution** : Indian Ocean (northeastern Bay of Bengal, from Calcutta south to the Indian Ocean coast of Thailand, perhaps to Pinang).

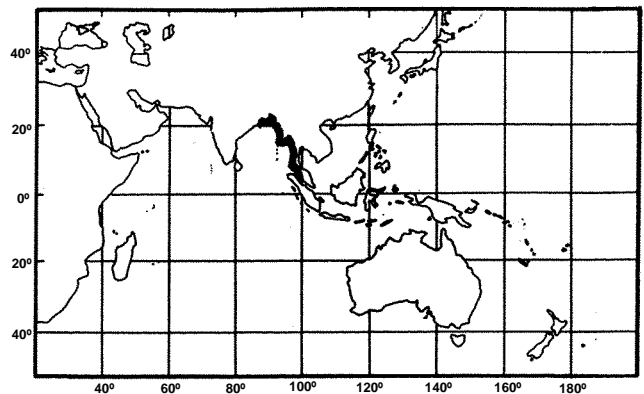
**Habitat and Biology** : Marine, pelagic, presumably schooling and inshore. More data needed.

**Size** : To 16.5 cm standard length.

**Interest to Fisheries** : Unknown.

**Local Names** :

**Literature** :



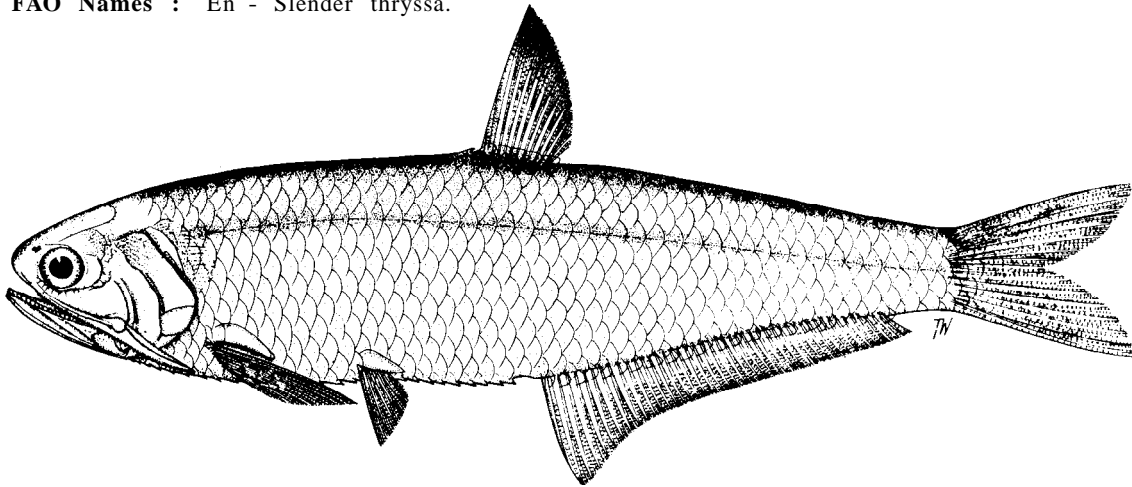
**Thryssa stenosoma** Wongratana, 1983

ENGR Thrys 19

Thryssa (Scutengraulis) stenosoma Wongratana, 1983, Japan J. Ichthyol., 29(4):404, fig.23 (Godavari estuary eastern coast of India, also Ganges).

**Synonyms** : Thryssa purava: probably misidentified as such by earlier authors; Thryssa stenosoma: Wongratana, 1980:289, pls 255, 256 (revision; name not validly published).

FAO Names : En - Slender thryssa.



**Diagnostic Features :** Body somewhat compressed, fairly slender, its depth 23 to 27% of standard length, belly with 15 to 17 plus 10 to 12 = 26 to 28 keeled scutes from isthmus to anus. Tip of snout at about level of eye centre or just a little higher. Maxilla long, reaching to pectoral fin base or slightly beyond; first supra-maxilla minute, oval; teeth in lower jaw slightly enlarged. Lower gillrakers 17 to 19. Anal with iii 40 to 45 finrays. No blotch behind upper part of gill opening; a pair of dark lines along back. Of Indian Ocean species with a similar maxilla, T. mystax has fewer gillrakers (usually 15 or 16, rarely 17) and anal finrays (not more than 37), and T. dayi and T. vitrirostris are not known from the Bay of Bengal (both are deeper-bodied); T. purava has a shorter maxilla (not to pectoral fin base) and is also deeper-bodied.

**Geographical Distribution :** Indian Ocean (northern part of Bay of Bengal, in Godavari and Ganges estuaries).

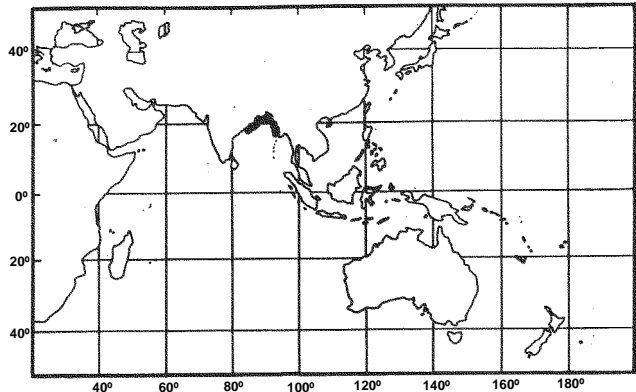
**Habitat and Biology :** Estuarine, but presumably also found inshore. More data needed.

**Size :** To 15 cm standard length.

**Interest to Fisheries :** Unknown.

**Local Names :**

**Literature :** Perhaps included in studies of T. purava.



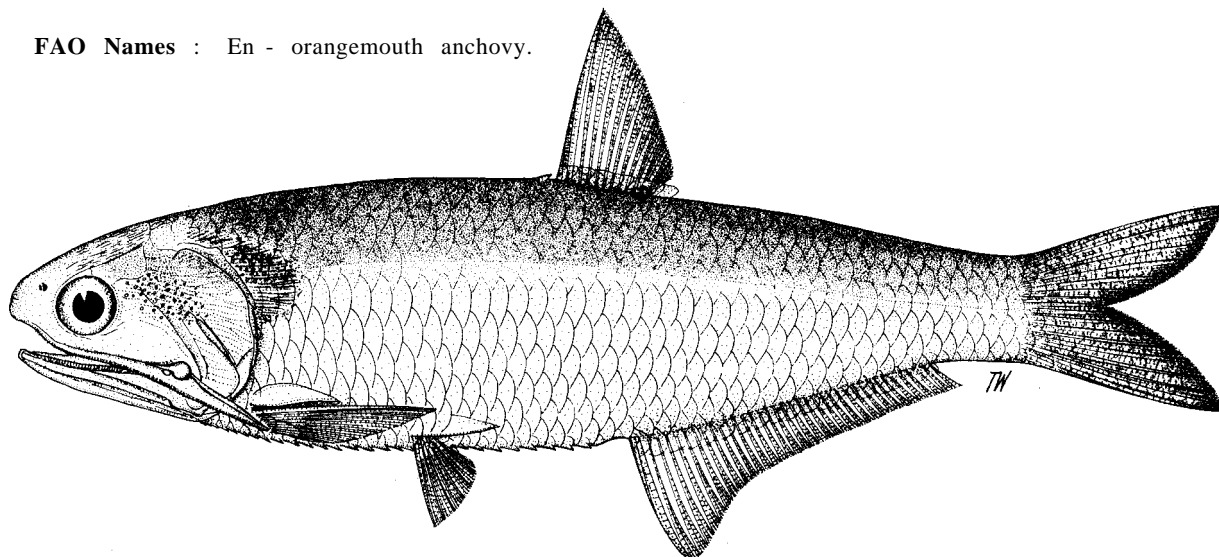
**Thryssa vitrirostris** (Gilchrist & Thompson, 1908)

ENGR Thrys 2

Engraulis vitrirostris Gilchrist & Thompson, 1908, Ann.S.Afr.Mus., 6:201 (Durban).

**Synonyms :** Thrissocles vitrirostris (misspelt):Fowler, 1941d:678 (Delagoa Bay); Thrissocles malabaricus: Smith, 1949:95, pl.5, fig.121 (south to Port Alfred); Losse, 1968:111, pl.4b (Dar-es-Salaam north to Formosa Bay); Thryssa vitrirostris-Whitehead, 1965a:274 (the "Gulf"); Idem, 1973b:233, fig.57 (synopsis); Wongratana, 1980:269, pls 236, 237 (revision); SFSa, 1987:206, fig.55.6 (south to Port Alfred).

FAO Names : En - orangemouth anchovy.



**Diagnostic Features** : Body compressed, belly with 16 to 19 (usually 17 or 18) plus 8 to 12 (usually 10 or 11) = 24 to 30 (usually 27 to 29) keeled scutes from isthmus to anus. Maxilla long, reaching beyond base of first pectoral finray; first supra-maxilla a minute oval. Lower gillrakers 18 to 24 (mostly 20 to 23), the serrae on the inner edge in distinct clumps in larger fishes. Anal fin with iii (rarely iv) 31 to 40 (mostly 32 to 38) finrays. A dark blotch behind upper part of gill opening; inside of gill cavity bright orange. Overlaps the range of 13 other species of *Thryssa*, of which five have a similar maxilla, very small first supra-maxilla and overlapping gillraker counts. However, *T. gautamiensis*, *T. malabarica*, *T. purava* and *T. whiteheadi* all have the tip of the snout at or above the level of the centre of the eye, and the last two, plus *T. stenosoma*, have at least 38 (but usually 40 or more) branched anal finrays. Difficulties are most likely to arise on the eastern coast of India; the clumped gillraker serrae in larger fishes will further help to separate the species. See ENGR Thrys 2, Fishing Area 51, also Fishing Areas 57/71.

**Geographical Distribution** : Indian Ocean (Madagascar, coasts of Africa from Port Alfred at about 33° 30'S, northward to the "Gulf" (but not Red Sea), coasts of Pakistan and India, perhaps to Calcutta and off Burma, but no records).

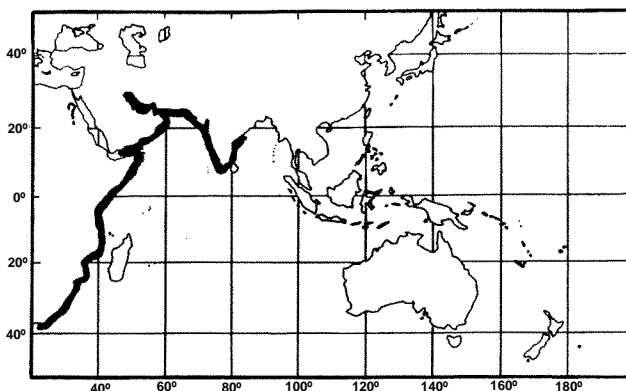
**Habitat and Biology** : Marine, pelagic, presumably schooling, inshore, entering estuaries and lagoons (perhaps used as nursery areas), but found further out in rainy seasons when coastal waters are freshened by rivers. More data needed.

**Size** : To 17.8 cm standard length.

**Interest to Fisheries** : A fairly common species, thus presumably making a significant contribution to clupeoid catches by artisanal fishermen.

**Local Names** : THE "GULF": Kawa (at Bendar Abbas), Lacheh; SOUTH AFRICA: Orangebek-glasneus.

**Literature** : Dutt (1961 - deep orange gill cavity, cf. light orange in *T. mystax*)



*Thryssa whiteheadi* Wongratana, 1983

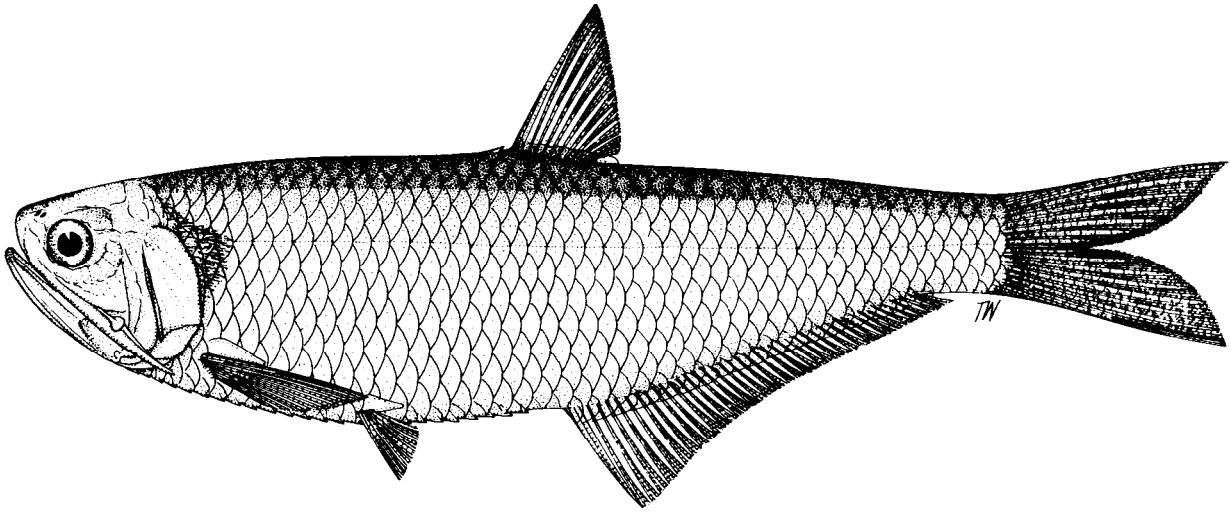
ENGR Thrys 17

*Thryssa (Scutengraulis) whiteheadi* Wongratana, 1983, *Japan J. Ichthyol.*, 29(4):403, fig.22 (Basra, Bushire, Persis, Hanburt, the "Gulf").

**Synonyms** : *Thrissoocles purava*: Misra, 1947:117 (Hor-el-Hammar); *Engraulis vitirostris*: Blegvad & Loppenthin, 1944:60 (Bushire Roads); *Thryssa purava*: Whitehead, 1965a:273 (Blegvad's specimen No.4 only); *Thryssa mystax*: Kuroshima & Abe, 1972:48, p.1.2 (the "Gulf"); *Thryssa whiteheadi*-Wongratana, 1980:285, pls 251,252 (revision; name not validly published).



FAO Names : En - Whitehead's thryssa.



**Diagnostic Features :** Body compressed, belly with 15 or 16 (rarely 17) plus 10 or 11 (rarely 12) = 25 to 27 (rarely 28) keeled scutes from isthmus to anus. Tip of snout above level of eye centre, usually at about level of upper rim of eye. Maxilla moderate, its tip projecting just a little beyond edge of gill cover; first supra-maxilla absent; jaw teeth slightly enlarged compared with other species. Lower gillrakers 18 to 21 (usually 19). Anal with iii 40 to 43 (rarely 42) finrays. Blotch behind upper part of gill opening absent or very indistinct. Of species recorded from the "Gulf", it most closely resembles *T. hamiltonii*, which has only 11 to 15 gillrakers, small jaw teeth and fewer anal finrays (usually iii 32 to 38); in *T. vitirostris* and *T. setirostris* the maxilla tip reaches to the pectoral fin base or further. Of species outside the "Gulf", *T. purava* is extremely close, differing mainly in having enlarged teeth only in the lower jaw, and a small first supra-maxilla present.

**Geographical Distribution :** The "Gulf" only, but perhaps reaches into the Gulf of Oman.

**Habitat and Biology :** Marine, pelagic, presumably schooling. More data needed.

**Size :** To 15.8 cm standard length.

**Interest to Fisheries :** Apparently common, but seldom seen in the market at Kuwait (Kuronuma & Abe, 1972).

**Local Names :** KUWAIT: Boefchah.

**Literature :**

