

Ramnogaster Whitehead, 1964

CLUP Ramno

Ramnogaster Whitehead, 1964, Ann.Mag.nat.Hist., (13)7:324 (type: Clupea arcuata Jenyns).

Diagnostic Features : Small clupeid fishes of South American freshwaters, the body strongly compressed and the belly sharply keeled. Posterior frontal fontanelles on top of head reduced in size and finally occluded in fishes of 7 or 8 cm standard length (retained in Platanichthys, see page 121). No sharp backward-pointing (retrorse) spine near front of maxilla (cf. Rhinosardinia). Pelvic finrays i 6 (cf. i 7 in Rhinosardinia, Lile, Strangomera). Very closely resembles Sprattus, which lacks a bony capsule (bulla) in the pterotic bone. Flanks silvery, without a bright silver stripe (cf. Platanichthys).

Biology, Habitat and Distribution : Littoral areas, estuaries and rivers from Uruguay to Patagonia.

Interest to Fisheries : Probably of little importance.

Species : De Buen (1952) recognized three species, with some overlap in proportional and meristic characters. One of these (R. pallida) is probably Platanichthys platana, but the other two seem distinct:

Ramnogaster arcuata (Jenyns, 1842), western South Atlantic

Ramnogaster melanostoma (Eigenmann, 1907), western South Atlantic.

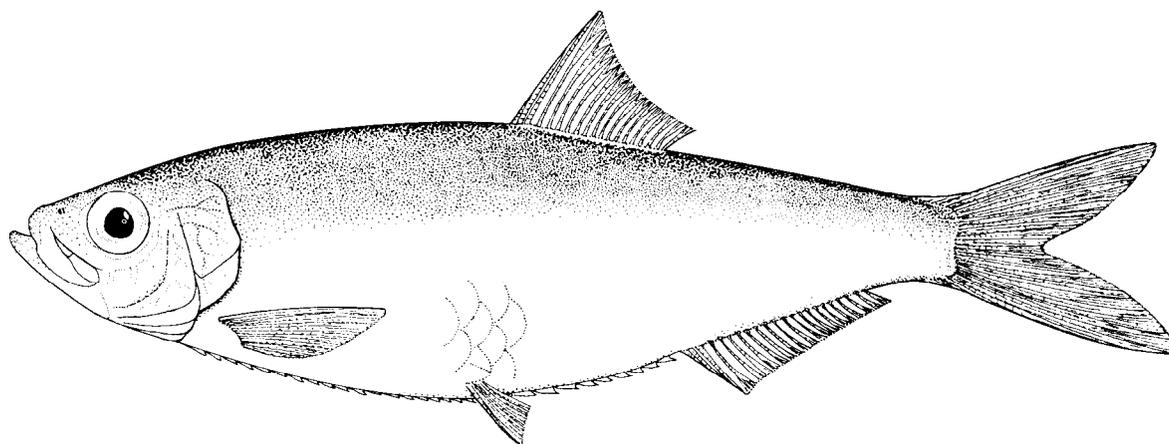
Ramnogaster arcuata (Jenyns, 1842)

CLUP Ramno 1

Clupea arcuata Jenyns, 1842, Zool.voy.Beagle, fishes:134 (Bahia Blanca, Argentina).

Synonyms : Clupea arcuata Regan, 1917:228 (Bahia Blanca, Montevideo); Norman, 1937:39, fig. 16; Fowler, 1945:2, fig. (all Chile refs); Ringuet, Arámburu & Arámburu, 1967:56 (Mar del Plata, good synonymy); Spratella arcuata: de Buen, 1952:5 (La Paloma, Uruguay); Ramnogaster arcuata - Whitehead, 1964:324 (type, review).

FAO Names : En - Jenyns's sprat.



Diagnostic Features : Body moderately deep and compressed, its depth about 30% of standard length, belly sharply keeled. Distinguished from the very similar R. melanostoma of freshwaters by having more dorsal finrays (18 or 19; cf. 15 or 16), more pectoral finrays (16; cf. 13 or 14) and more gillrakers (total 41 to 45; cf. 36 to 38). Resembles Platanichthys platana, which has a distinct silver stripe along the flank, and the first (anterior) supra-maxilla minute or absent; separated from small Sardinella and Harengula by the evenly rounded hind margin of the gill opening (cf. with two fleshy outgrowths), and from Sprattus fuegensis by having i 6 pelvic finrays (cf. i 7).

Geographical Distribution : Western South Atlantic (coasts of South America, from Uruguay and southern Brazil (estuary of the Lagoa dos Patos) southward to at least Bahia Blanca, Argentina; some of the more southerly records (even to the Beagle Channel) must refer to Sprattus fuegensis.

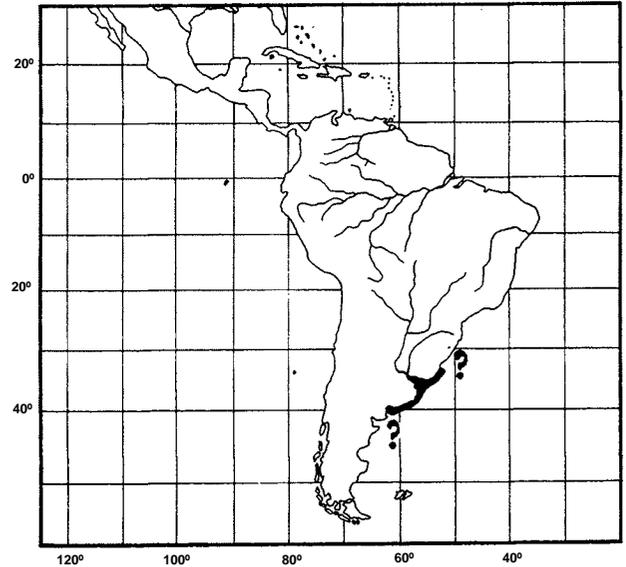
Habitat and Biology : Coastal, pelagic, schooling, apparently inshore but not entering freshwater. More data needed.

Size : To 9 cm standard length, usually about 7 to 8 cm.

Interest to Fisheries : Perhaps of local importance.

Local Names :-

Literature : De Buen (1952 - review).



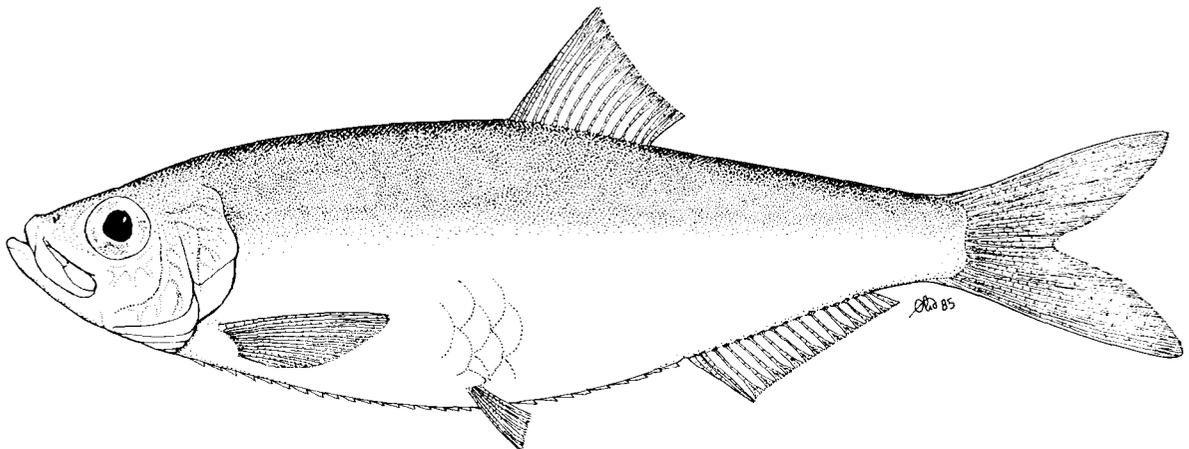
Ramnogaster melanostoma (Eigenmann, 1907)

CLUP Ramno 2

Pomolobus ? melanostomus Eigenmann, 1907, Proc.Wash.Acad.Sci., 8:452, pl. 23, fig. 6 (Buenos Aires).

Synonyms : Clupea melanostoma:Regan, 1917:229 (Rio de la Plata); Norman, 1937:39 (same); Ringuélet, Arámburu & Arámburu, 1967:58 (Rio de la Plata, Paraná delta, good synonymy); Clupea melanostoma limnoica Arámburu, 1961:2, pl. 1 (Buenos Aires); Ringuélet et al., 1967:59, fig. 1 B (same); Spratella melanostoma:de Buen, 1952:6 (Nueva Palmira, mouth of Uruguay River); Ramnogaster melanostoma - Whitehead, 1964:326 (mention).

FAO Names : En - Uruguay river sprat.



Diagnostic Features : Body moderately deep and compressed, its depth about 30% of standard length, belly sharply keeled. Distinguished from the very similar R. arcuata of coastal waters by having fewer dorsal finrays (15 or 16; cf. 18 or 19), fewer pectoral finrays (13 or 14; cf. 16) and fewer gillrakers (total 36 to 38; cf. 41 to 45). Resembles the fresh and brackish water Platanichthys platana, which has a distinct silver stripe along the flank and the first (anterior) supra-maxilla minute or absent. Separated from small Sardinella and Harengula by the evenly rounded hind margin of the gill opening (cf. with two fleshy outgrowths).

Geographical Distribution : Western South Atlantic (Uruguay, Argentina, in estuary and lower reaches of Rio de la Plata and associated rivers, e.g. Paraná and Uruguay rivers).

Habitat and Biology : Apparently confined to freshwater at mouths of rivers and their lower reaches, presumably schooling. More data needed.

Size : To 10 cm standard length.

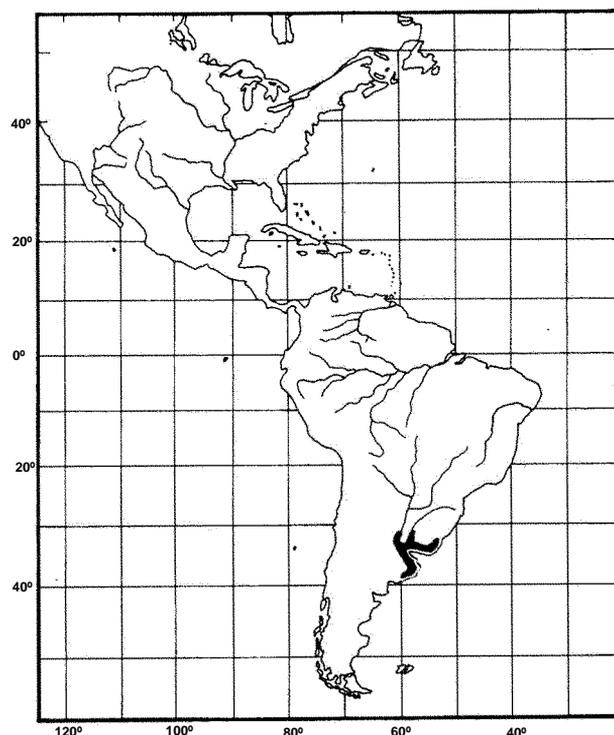
Interest to Fisheries : Perhaps makes a small contribution locally.

Local Names : ARGENTINA: Mandufia.

Literature : See under Synonyms.

Remarks : According to Ringuélet, Arámburu & Arámburu (1967), two subspecies can be recognized:

- (a) R. melanostoma melanostoma: body slender, its depth 27 to 31% of standard length; dorsal finrays 16 or 17; Rio de la Plata and middle and lower reaches of Rio Paraná and Rio Uruguay.
- (b) R. melanostoma limnoica: body deep, its depth 33 to 41% of standard length; dorsal finrays 13 or 14; brackish lagoons around Buenos Aires.

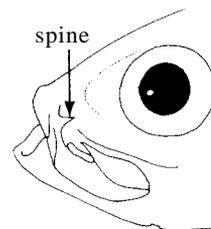


Rhinosardinia Eigenmann, 1912

CLUP Rhino

Heringia Fowler, 1911, Proc.Acad.nat.Sci.Philad., 63:207 (type: Clupea amazonica Steindachner; name preoccupied in Diptera). Rhinosardinia Eigenmann, 1912, Mem.Carnegie Mus., 5:445 (type: Rhinosardinia serrata Eigenmann=R. amazonica).

Diagnostic Features : Small freshwater clupeids of South America, the body fairly strongly compressed and the belly sharply keeled. A sharp backward-pointing (retorse) spine on upper part of maxilla at about level of eye centre. This retrorse spine is unknown in any other clupeid fish and thus immediately distinguishes the genus. Anterior (first) supra-maxilla normal (minute or absent in Platanichthys). Hind border of gill opening evenly rounded (with two fleshy outgrowths in Sardinella and Harengula). Anal fin short (about 15 to 18 finrays; cf. 30 or more in the pristigasterids Pellona, Ilisha, etc.). Flanks with or without a distinct silver stripe.



Biology, Habitat and Distribution : Fresh- and brackishwaters, perhaps to quite high salinities, presumably schooling; from the Orinoco south to Salvador, Brazil.

Interest to Fisheries : Probably of little importance.

Species : Three species are given in FWNA (1964:411, key), but Eigenmann's R. serrata is undoubtedly R. amazonica. The status of R. bahiensis is probably secure, but its distinction relies almost wholly on its higher vertebral and scale counts (based on rather few specimens); the presence of a silver lateral stripe in R. bahiensis but not R. amazonica, used in the key of FWNA and by Whitehead (1973a:53), is doubtful (see under species):

R. amazonica (Steindachner, 1879), western South and central Atlantic.

R. bahiensis (Steindachner, 1879), western South and central Atlantic.

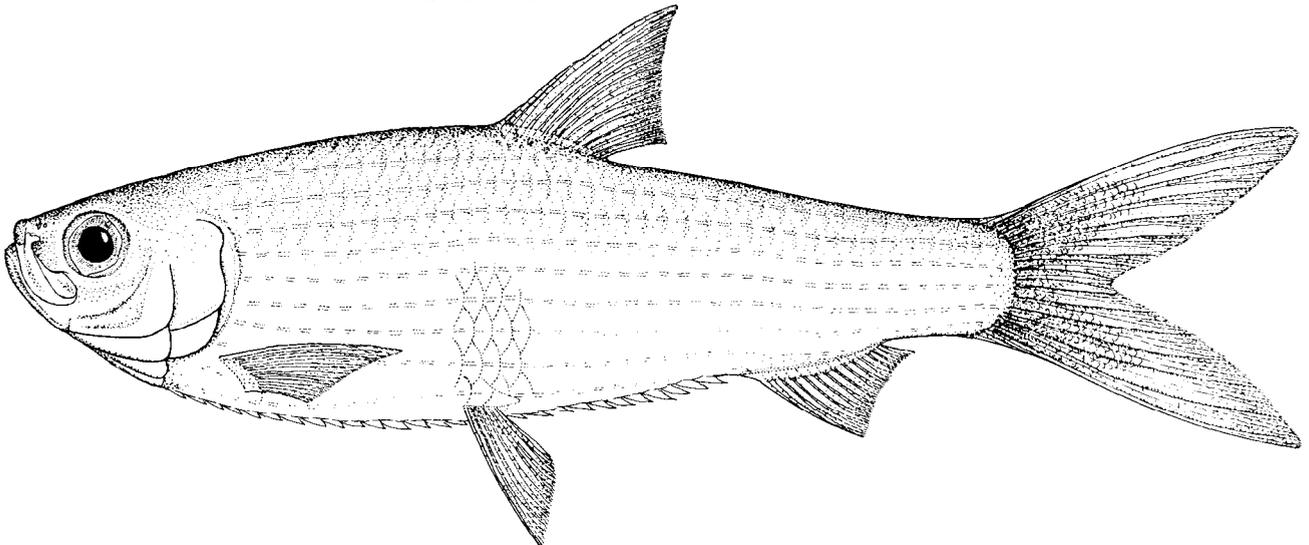
Rhinosardinia amazonica (Steindachner, 1879)

CLUP Rhino 1

Clupea amazonica Steindachner, 1879, Sber.Akad.Wiss.Wien, 80:183 (Amazon at Pará); Idem, 1880, Ichthyol.Beitr., (8):65 (repeat).

Synonyms : *Heringia amazonica*:Fowler, 1911:207 (Surinam); Regan, 1917:394 (Guyana); *Rhinosardinia serrata* Eigenmann, 1912:445,fig. 39 (maxilla), pl. 62, figs 3,4 (Guyana); FWNA, 1964:413, figs 102, 103 (maxilla); *Rhinosardinia amazonica* - FWNA, 1964:412 (compiled); Whitehead 1970:12 (types of *C. amazonica*; *R. serrata* a synonym); Idem, 1973a:53, fig. 15 (Guyanas); Cervigón, 1982:212, fig. 1A (maxilla) (Orinoco).

FAO Names : En - Amazon spinejaw sprat.



Diagnostic Features : Body moderately slender, but compressed, its depth about 25 to 28% of standard length, belly strongly keeled. Distinguished from the very similar *R. bahiensis* mainly by having fewer vertebrae (38 or 39; cf. 43 in *R. bahiensis*) and fewer scales in lateral series (39 to 41; cf. 45); other characters apparently overlap. Easily separated from all other clupeids in the area by the sharp backward-pointing (retorse) spine on the upper part of the maxilla at about the level of the eye centre (see under genus). A silver stripe along flank in some specimens vide Cervigón (1983:213). Two distinct parallel striae on scales.

Geographical Distribution : Western central and South Atlantic (lower reaches of the Orinoco, rivers of the Guianas, Amazon at Pará, but undoubtedly elsewhere in its lower part).

Habitat and Biology : Freshwaters of rivers, but also tolerating brackishwater, presumably schooling. Feeds on zooplankton. More data needed.

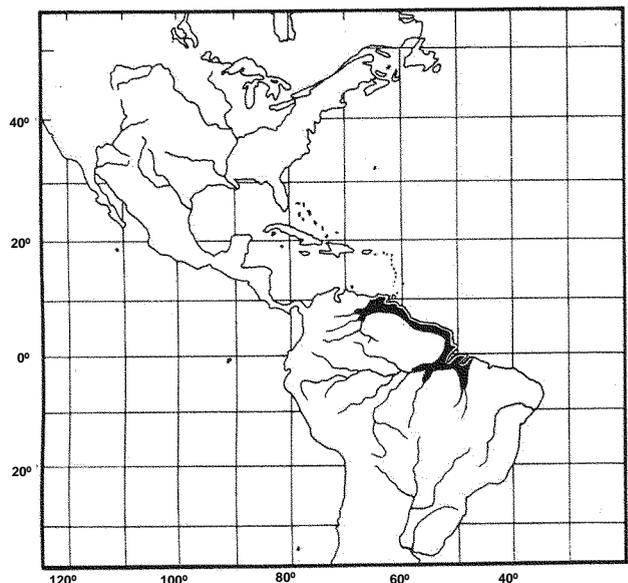
Size : To 8 cm standard length, usually around 5 cm.

Interest to Fisheries : Probably of little importance.

Local Names : -

Literature : Cervigón (1983 - Orinoco material, some notes on biology).

Remarks : Cervigón (1983:213) noted an increase in gillrakers with size of fish in his 17 Orinoco specimens, but not in all cases. Much more material should be studied before the species can be properly diagnosed and its distribution confirmed.



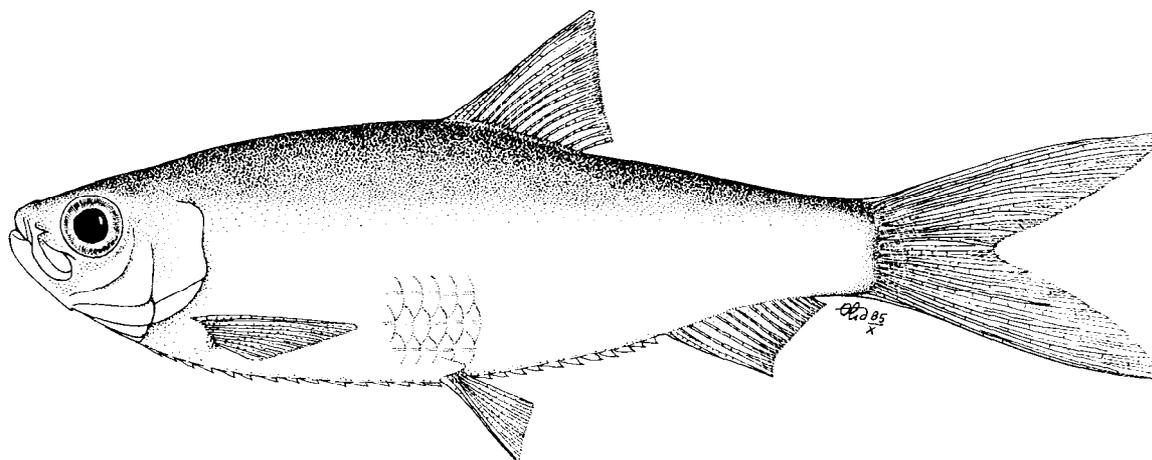
Rhinosardinia bahiensis (Steindachner, 1879)

CLUP Rhino 2

Pellonula bahiensis Steindachner, 1879, *Sber.Akad.Wiss.Wien*, 80:181, pl. 3, fig. 2 (Bahia, Brazil); *Idem*, 1880, *Ichthyol.Beitr.*, (8):63, pl. 3, fig. 2 (repeat). Note: the figure seems based in part on *Lile piquitinga*.

Synonyms : *Sardinella pernambucana* Schreiner & Ribeiro, 1903:72 (Pernambuco); *Heringia bahiensis*: Regan, 1917:395 (compiled); FWNA 1964:411 (key only); Whitehead, 1970:14 (type of *P. bahiensis* - but the chosen lectotype and paralectotype are *Lile piquitinga*, not *Rhinosardinia*); Cervigón, 1983:213, fig. 1B (maxilla) (Orinoco); Whitehead & Nelson, 1984:65 (identity of lectotype reported, new lectotype proposed).

FAO Names : En - Bahia sprat.



Diagnostic Features : Body moderately slender, but compressed, its depth about 25% of standard length, belly strongly keeled. Distinguished from the very similar *R. amazonica* mainly by having more vertebrae (43; cf. 38 or 39 in *R. amazonica*) and more scales in lateral series (45; cf. 39 to 41); other characters apparently overlap. Easily separated from all other clupeids in the area by the sharp backward-pointing (retorse) spine on the upper part of the maxilla at about the level of the eye centre (see under genus). The silver stripe along the flank, reported in FWNA (1964:411) and by Whitehead (1970, 1973a), may merely have resulted from inclusion of *Lile piquitinga* in Steindachner's type material and his figure of the species. Two distinct parallel striae on scales.

Geographical Distribution : Western central and South Atlantic (lower reaches of Orinoco *vide* Cervigón, 1983; Surinam *vide* Nelson, in *litt.*; Pernambuco, Brazil - Schreiner & Ribeiro's *S. pernambucana*; Bahia, Brazil -the types).

Habitat and Biology : Freshwaters of rivers, but probably also tolerating brackishwater. More data needed.

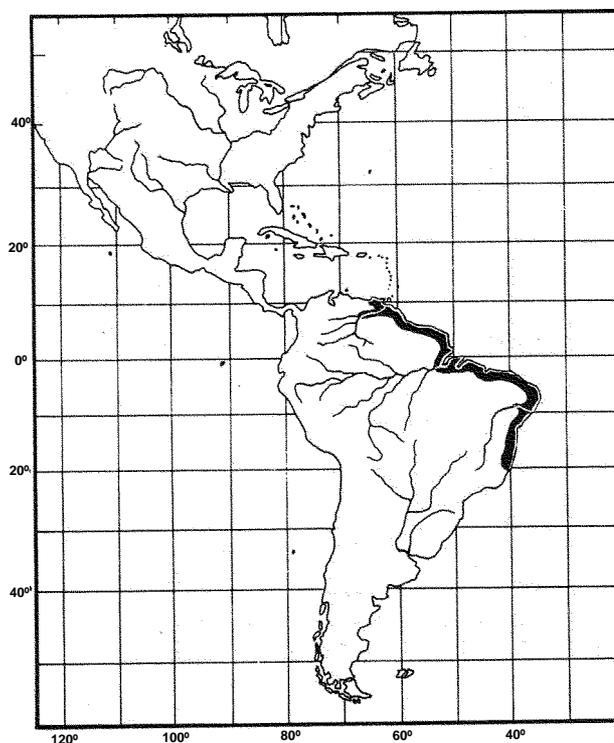
Size : To 8 cm standard length, perhaps more.

Interest to Fisheries : Probably of little importance.

Local Names :-

Literature : Cervigón (1983 - Orinoco, single specimen).

Remarks : The high vertebral count is surprising in view of the apparent overlap of almost all other characters; unfortunately, only the types and Venezuelan and Surinam specimens have been counted, so that many records of the species are unconfirmed and its real distribution is not certain.



Lile Jordan & Evermann, 1896

CLUP Lile

Lile Jordan & Evermann, 1896, Bull.U.S.natn.Mus., 47(1):428, 429 (type: Clupea stolifera Jordan & Gilbert).

Diagnostic Features : Small marine fishes of central and South America, the body elongate to moderately deep, compressed, belly strongly keeled. No backward-pointing (retorse) spine on upper part of maxilla (cf. Rhinosardinia); a well-developed first (anterior) supra-maxilla (cf. minute or absent in Platanichthys). Hind border of gill opening evenly rounded (with two fleshy outgrowths in Sardinella, Harengula and Opisthonema). Pelvic finrays i 6 (as in Rhinosardinia, but i 7 or i 8 in all other clupeid genera in this area). A very distinct silver stripe along flank.

Biology, Habitat and Distribution : Coastal, pelagic, schooling, probably entering somewhat brackish-waters; western South and central Atlantic, eastern central Pacific.

Interest to Fisheries : Probably of local interest, perhaps more as a baitfish than for food.

Species : The presence of a distinct Atlantic and Pacific species does not appear to have been questioned, although the two are extremely similar. Regan's Lile platana is Platanichthys. There are thus two species recognized:

L. piquitinga (Schreiner & Ribeiro, 1903), western South and central Atlantic

L. stolifera Jordan & Gilbert, 1881), eastern central Pacific.

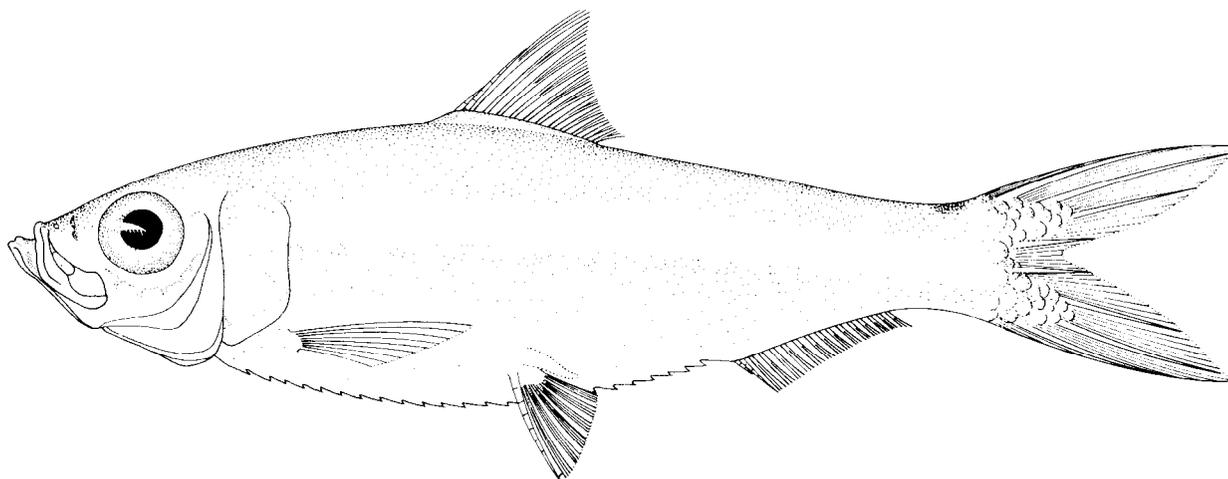
Lile piquitinga (Schreiner & Ribeiro, 1903)

CLUP Lile 1

Sardinella piquitinga Schreiner & Ribeiro, 1903, Archos Mus.nac.Rio de J., 12:72 (Salvador, Brazil).

Synonyms : Piquitinga of Marcgraf, 1648:159, figure (Recife); Clupea argentata Swainson, 1839:386 (Pernambuco - nomen oblitum); Sardinella sardina:Starks, 1913:8 (L. Papary, near Natal, Brazil); Lile piquitinga - Regan, 1917:393 (Pernambuco); Cervigón, 1966:132, fig. 56 (Venezuela); Whitehead, 1973a:48, fig. 13 (Pernambuco, key, Swainson's C. argentata discussed, also Marcgraf's Piquitinga); Gaspar, 1976:4 (Fig.), 5 (osteology).

FAO Names : En - Atlantic piquitinga.



Diagnostic Features : Body fairly slender, quite strongly compressed, belly sharply keeled. The very bright silver stripe along the flank distinguishes it from all similar clupeids in the area except Platanichthys platana, which has i 6 pelvic finrays (cf. i 7 in Lile) and first supra-maxilla minute or absent; and Rhinosardinia species (sharp backward-pointing spine on upper part of maxilla on a level with centre of eye). Closely resembles the Pacific L. stolifera, but caudal fin tips not black. See CLUP Lile 1, Area 31.

Geographical Distribution : Western central Atlantic (Nueva Esparta, Venezuela), western South Atlantic (coasts of Brazil from Recife and Lake Papary near Natal south to Bahia and Espirito Santo); possibly it also occurs between Venezuela and Brazil.

Habitat and Biology : Coastal, pelagic, schooling, inshore and beaches; probably entering somewhat brackishwater (estuaries, lagoons and mangrove swamps). More data needed.

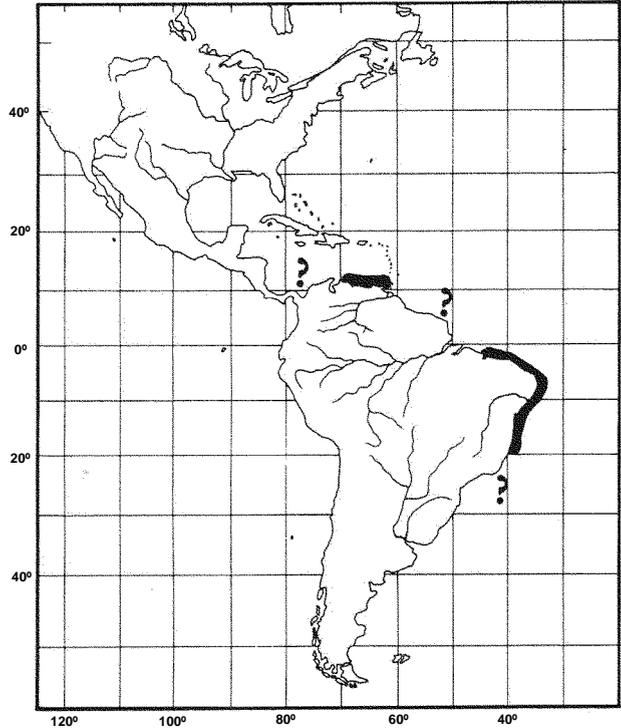
Size : To 15 cm standard length, common around 12 cm.

Interest to Fisheries : Perhaps makes a small local contribution to clupeoid catches.

Local Names : BRAZIL: Piquitinga, Pitim pitinga.

Literature : Whitehead (1973a - nomenclature, historical aspects).

Remarks : It was the search for the original illustration of Marcgrave's Piquitinga that led to the rediscovery of the holograph score of Mozart's 'Così fan tutte' and other musical treasures lost since the war (Whitehead, 1982a).



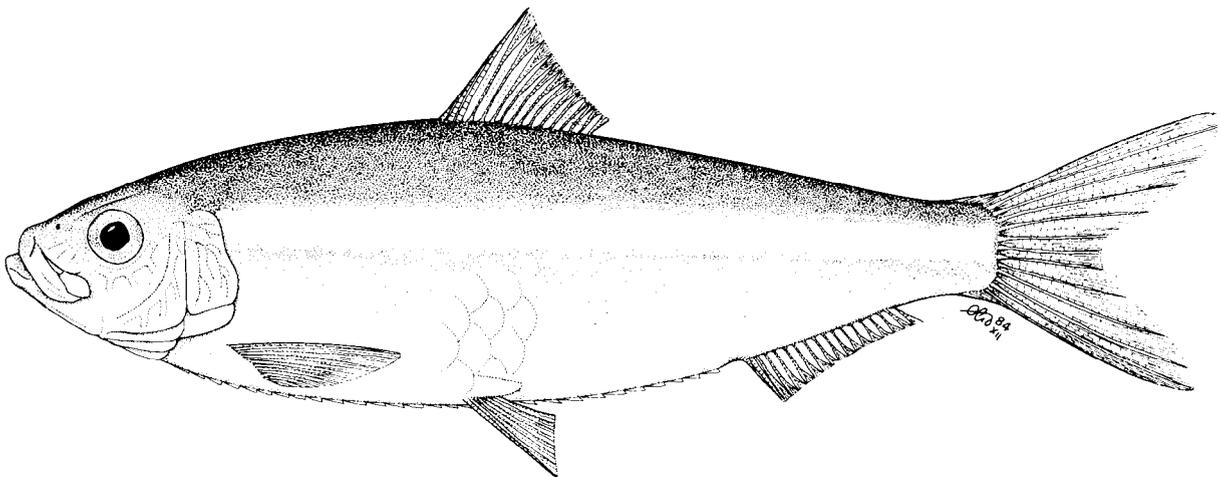
Lile stolidifera (Jordan & Gilbert, 1881)

CLUP Lile 2

Clupea stolidifera Jordan & Gilbert, 1881, Proc.U.S.natn.Mus., 4:339 (Mazatlan, Mexico).

Synonyms : Sardinella stolidifera:Jordan & Everman, 1896:431; Gilbert & Starks, 1904:39 (Panama Bay); Meek & Hildebrand, 1923:182 (Panama); Harengula stolidifera:Evermann & Radcliffe, 1917:21 (Capon, Peru); Lile stolidifera - Regan, 1917:393 (Mexico); Hildebrand, 1946:90 (Gulf of Guayaquil, Peru); Peterson, 1956:176 (Gulf of Nicoya, Costa Rica); Chirichigno, 1963:13, fig. 5 (Pta Pizzaro, Pta Rico, Peru).

FAO Names : En - Pacific piquitinga.



Diagnostic Features : Body moderately slender, quite strongly compressed, belly sharply keeled. The bright silver stripe along the flank distinguishes it from all similar clupeids in the area. Hind border of gill opening evenly rounded (with two fleshy outgrowths in Harengula and Opisthonema, the latter with a filamentous last dorsal finray).

Geographical Distribution : Eastern central Pacific (Gulf of California southward to Gulf of Guayaquil, Peru).

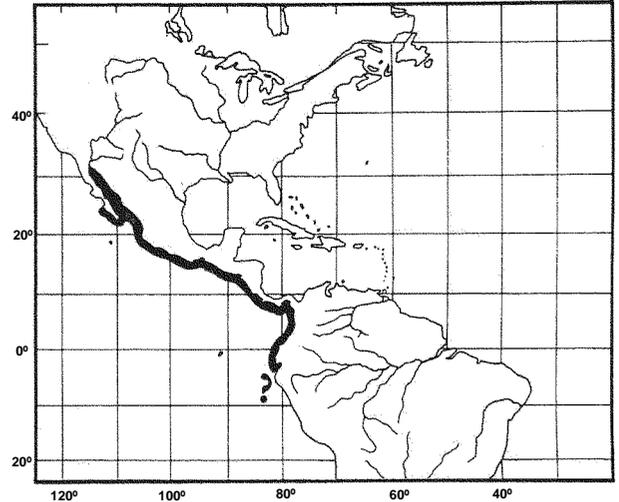
Habitat and Biology : Coastal pelagic, schooling, inshore and beaches; possibly enters somewhat brackishwaters like its Atlantic counterpart.

Size : To 13 cm standard length, usually around 10 cm.

Interest to Fisheries : Perhaps makes a small local contribution to clupeoid catches.

Local Names : PERU: Pelada.

Literature : Meek & Hildebrand (1923 - Panama); Hildebrand (1946 - Peru).

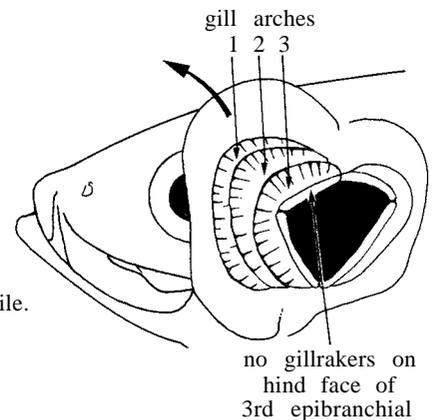


Strangomera Whitehead, 1964

CLUP Strang

Strangomera Whitehead, 1964, Ann.Mag.nat.Hist., (13)7:323 (type: Clupea bentincki Norman).

Diagnostic Features : Closely resembling the Northern Hemisphere herrings (Clupea), but more lower gillrakers (65 to 95; cf. 40 to 51), gillrakers absent on posterior (inner) face of third epibranchial (upper part of third arch, and epibranchial (upper arch) gillrakers of first arch curled upward. Pelvic finrays i 7 (cf. i 6 in Ramnogaster, Platanichthys; i 8 in New World Sardinella). The high gillraker count distinguishes it from Sprattus. No dark spots on flank (cf. Sardinops, which also has bony radiating striae on the gill cover).



Biology, Habitat and Distribution : Coastal, pelagic, schooling; eastern South Pacific.

Interest to Fisheries : Apparently supports a moderate fishery in Chile.

Species : A single species, usually placed in Clupea in the literature:

S. bentincki (Norman, 1936), eastern South Pacific.

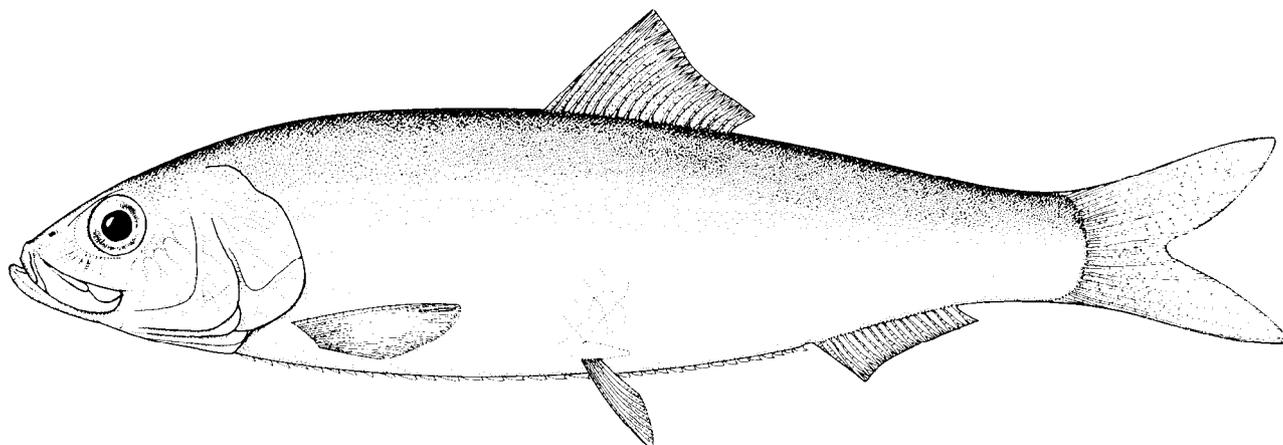
Strangomera bentincki (Norman, 1936)

CLUP Strang 1

Clupea bentincki Norman, 1936, Ann.Mag.nat.Hist., (10)17:491 (Talcahuano, Chile).

Synonyms : Clupea bentincki:Norman, 1937:38, fig. 15 (Talcahuano, Chile); Fowler, 1945:2 (ref. only); Clupea (Antu) bentincki:De Buen, 1958:89, fig. 1 (subspecies cuga, Valparaiso) Clupea bentincki:Leible & Alveal, 1982:14,fig. 1 (synopsis); Clupea (Strangomera) bentincki:Whitehead, 1964:323 distinction from species of Clupea, key); Bore & Martinez, 1981:unpaged, colour photo (synopsis).

FAO Names : En - Chilean herring.



Diagnostic Features : Body slender, rather rounded in cross-section, belly not strongly keeled. Resembles Sardinops sagax, but no series of dark spots along flank and gill cover smooth (cf. bony radiating striae in Sardinops); also resembles Sprattus fuegensis, but many more and finer lower gillrakers (65 to 95; cf. less than 50).

Geographical Distribution : Eastern South Pacific (Coquimbo at 29°31'S, Valparaiso and south to Talcahuano, Chile; perhaps reaches further south to Mocha Island, but more southerly records may refer to Sprattus fuegensis).

Habitat and Biology : Coastal, pelagic, schooling at or near surface, occurring at 0 to 70 m. Feeds on plankton, especially diatoms (filter-feeding). Breeds mainly June-November, from about 10 cm; apparently releases planktonic eggs (cf. the demersal eggs of Northern Hemisphere Clupea). More data needed.

Size : To about 15 cm standard length.

Interest to Fisheries : A significant fishery off Chile between Valparaiso and Talcahuano, mainly at Coquimbo and Talcahuano (35 000 tons in 1981 *vide* Leible & Alveal, 1982). In 1983 a total of 18 557 tons was recorded (Chile only). Around 80% of the catch is used for fishmeal.

Local Names : CHILE: Sardina común; Sardina, Sardina anchoa, Sardina da invierno (Talcahuano).

Literature : Leible & Alveal (1982 - synopsis); Bore & Marlines (1981 - synopsis).

Remarks : De Buen (1958:89) recognized a northern and a southern subspecies:

S. bentincki bentincki: lower gillrakers 75 to 95; eye 25 to 28.6% of head length; Talcahuano and southward.

S. bentincki cuga: lower gillrakers 65 to 75; eye 21.7 to 26.1% of head length; Valparaiso to Talcahuano.

The anatomical differences from the Northern Hemisphere Clupea and the probability that this fish does not lay demersal adhesive eggs seem to show that it is not more closely related to Clupea than to some other clupeid genus; however, its actual relationships have yet to be determined.

