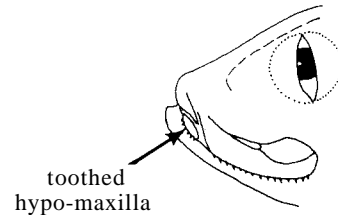


**Harengula** Valenciennes, 1847

CLUP Har

Harengula Valenciennes, 1847, Hist.nat.poiss., 20:227 (type: Harengula latulus Valenciennes = Clupea clupei Cuvier, 1829). Hyrtlinus Fowler, 1958, Notul.Nat., (310):5 (type: Hyrtlinus altiforma Fowler = Harengula jaguana Poey).

**Diagnostic Features** : The presence of a small toothed hypo-maxilla between the hind tip of the pre-maxilla and the expanded blade of the maxilla distinguishes Harengula from Sardinella and all other clupeoid genera, except the pristigasterids Pellona and Pliosteostoma, which have a long anal fin with more than 30 finrays (about 16 to 19 in Harengula), its base much longer than that of the dorsal fin (about equal in Harengula). Lower gillrakers less than 45 (more than 45 in adult Sardinella of New World).



**Biology, Habitat and Distribution** : Marine, pelagic and schooling fishes, especially of coastal waters. New World only (Atlantic and Pacific coasts), mainly in tropical and subtropical waters.

**Interest to Fisheries** : No major fisheries, but contribute to clupeoid catches.

**Species** : The most recent revision (Rivas, 1964) recognized 3 Atlantic and 1 Pacific species:

- H. clupei (Cuvier, 1829), western Atlantic
- H. humeralis (Cuvier, 1829), western Atlantic
- H. jaguana Poey, 1865, western Atlantic
- H. thrissina (Jordan & Gilbert, 1882), eastern Pacific.

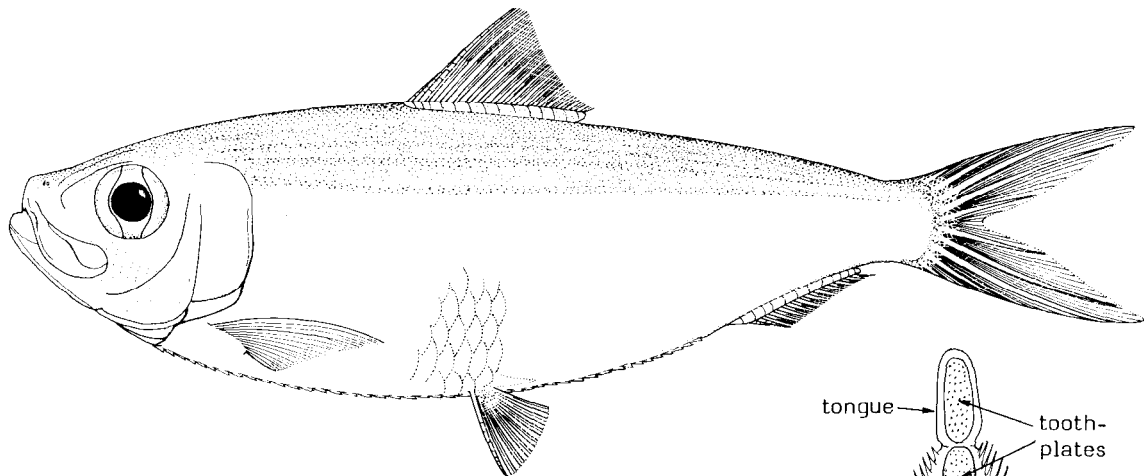
**Harengula clupei** (Cuvier, 1829)

CLUP Har 1

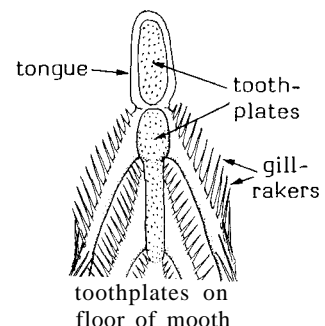
Clupea clupei Cuvier, 1829, Régne anim., 2nd ed., 2:318 (footnote, on Cailleu of Duhamel, 1776, Traité gén. pêches, pt. 2, (3): pl. 31, fig. 3; reproduced by Storey, 1938: fig. 16).

**Synonyms** : Clupea macrophthalma Ranzani, 1842:320, pl. 23, figs 1-4 (? Brazil); Harengula latulus Valenciennes, 1847:280, pl. 595 (? locality); Alosa bishopi Müller & Troschel, 1847:675 (Barbados); Schomburgk, 1848:19 (repeat); Harengula clupei - L- Storey, 1938:29; Rivas, 1950:289; FWNA, 1964:390, fig. 96; Cervigón, 1966:124, fig. 52; Whitehead, 1967:26 (H. latulus types, not from northern France, but from western Atlantic); Idem, 1973a:38, fig. 10 (Guianas); Whitehead & Bauchot, in press (types of latulus).

**FAO Names** : En - False herring.



**Diagnostic Features** : Tooth-plate on tongue and toothplate behind it (basihyal and basibranchial toothplates) broad, their width about 3 to 5 times in their combined length, the basibranchial toothplate with a distinct bulge in front. Lower gillrakers 28 to 34, usually 30 to 32. Scales fairly strongly attached, not easily lost. No dark pigment on dorsal fin tip. See CLUP Har 1, Fishing Area 31.



**Geographical Distribution :** Gulf of Mexico, southeastern Florida, Bahamas, entire Caribbean and West Indies and southward to Brazil.

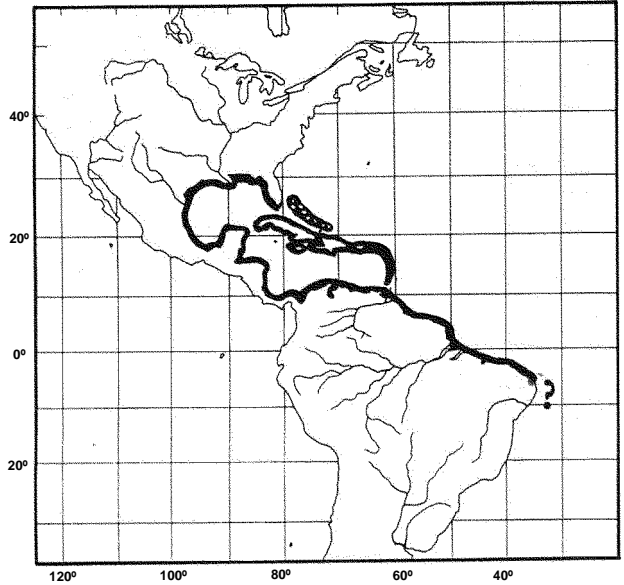
**Habitat and Biology :** Coastal, pelagic, estuaries and lagoons, tolerating quite low salinities, schooling, small individuals often occurring in numbers along sandy beaches.

**Size :** To 15 cm standard length, usually about to 10 cm.

**Interest to Fisheries :** Most frequently caught for bait with seines and cast nets in estuaries and bays (Rivas, 1950:292). Contributed to the 543 tons of the 'Harengula' catch for 1983.

**Local Names :** USA: False pilchard (AFS list); see also FWNA (1964:390) ; VENEZUELA: Carapachona.

**Literature :** See under synonyms.



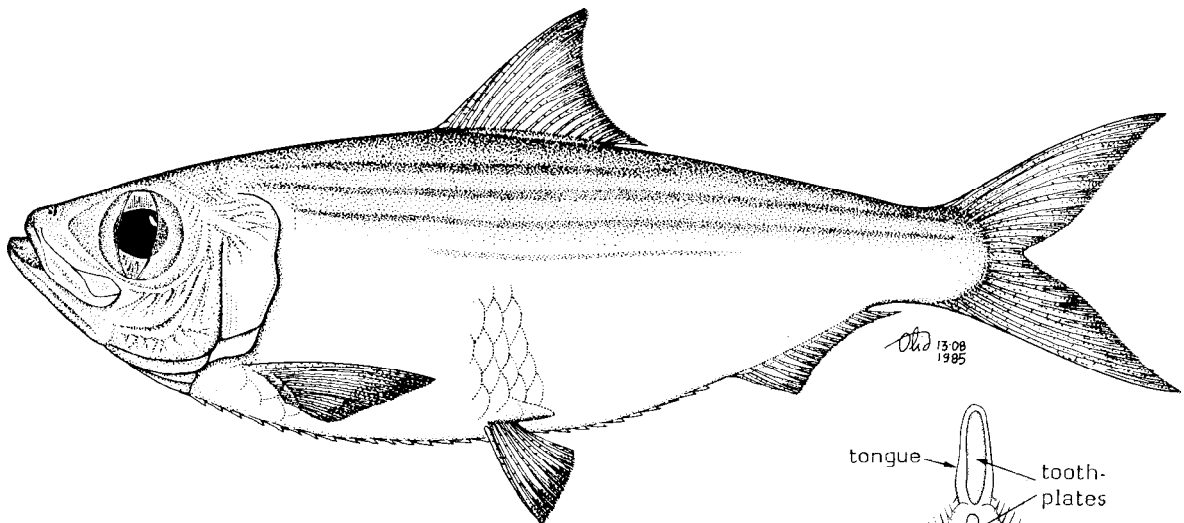
**Harengula humeralis** (Cuvier, 1829)

CLUP Har 3

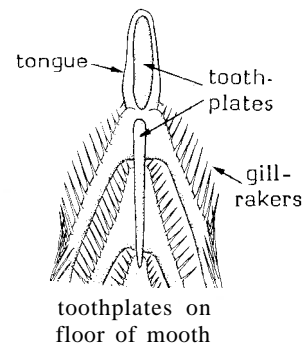
Clupea humeralis Cuvier, 1829, Règne anim., 2nd ed. 2:318 (footnote, on Sardine de la Martinique of Duhamel, 1776, Traité gén.pêches, pt. 2 (3) : pl. 31, fig. 4; reproduced by Storey, 1938: fig. 16).

**Synonyms :** Harengula maculosa Valenciennes, 1847:292 (Martinique); Alosa apicalis Müller & Troschel, 1847:675 (Barbados); Harengula sardina Poey, 1860:310 (Cuba); Harengula callolepis Goode, in Goode & Bean, 1879:152 (Bermuda); Harengula humeralis - Storey, 1938:28; Rivas, 1950:282; FWNA, 1964:387, fig. 95; Cervigón, 1966:122, fig. 51; Whitehead, 1967:27 (type: no types found for H. maculosa); Idem, 1973a:35, fig. 9 (Guianas); Whitehead & Bauchot, in press (type of maculosa lost).

**FAO Names :** En - Redear herring.



**Diagnostic Features :** Toothplate on tongue and toothplate behind it (basihyal and basibranchial toothplates) very narrow, their width about 10 times in combined length, the basihyal toothplate not bulging in front. Lower gillrakers usually 27 to 31. Scales thin, loosely attached, easily lost. Tips of anterior dorsal finrays dark.



**Geographical Distribution** : Bermuda, Florida, Bahamas, Caribbean, Guianas (but no records to the south of this; no Brazilian specimens in the extensive collections of the Museu de Zoologia, Sao Paulo, Brazil).

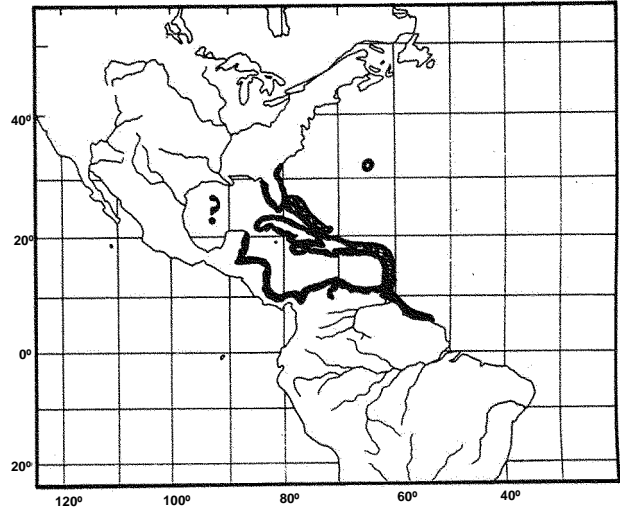
**Habitat and Biology** : Coastal, pelagic, schooling.

**Size** : To 17.2 cm standard length, usually about 10 cm.

**Interest to Fisheries** : Contributed to the 543 tons of the 'Harengula' catch for 1983.

**Local Names** : USA: See FWNA (1964:387); VENEZUELA: Manzanillera.

**Literature** : See under synonyms.



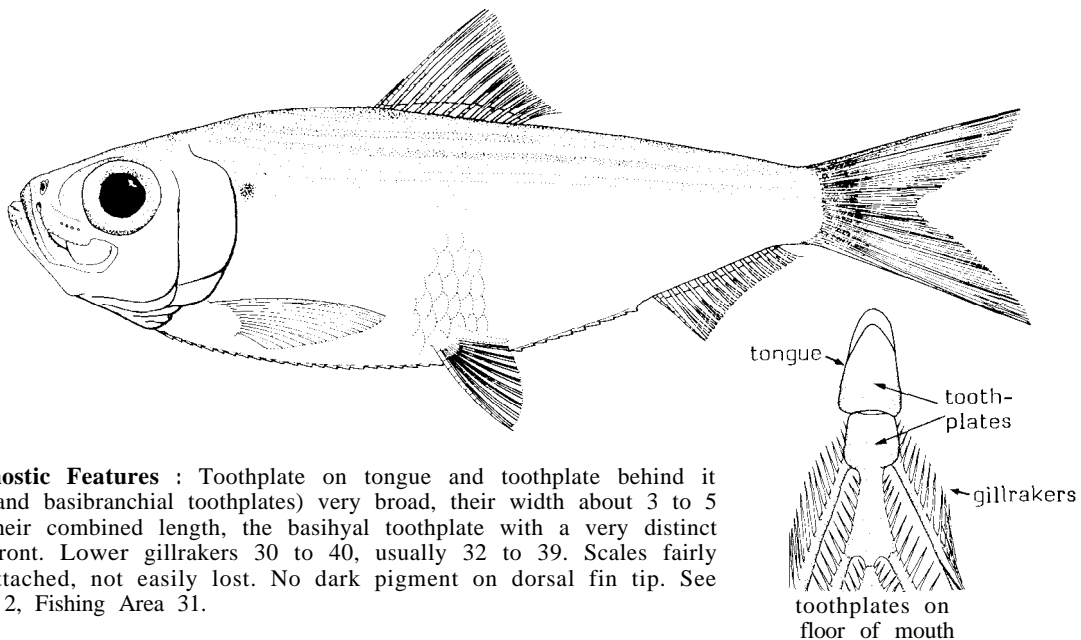
**Harengula jaguana** Poey, 1865

CLUP Har 2

*Harengula jaguana* Poey, 1865, *Repert.Fisico-Nat.Cuba*, 1:189 (Bahia de Jaqua, Cuba).

**Synonyms** : *Harengula humeralis* Valenciennes, 1847:293 (St. Domingo, Surinam, Brazil; name preoccupied by *Harengula humeralis* Cuvier, 1829 *vide* Whitehead, 1967:30); *Harengula pensacolae* Goode & Bean, 1879:152 (Pensacola, Florida); Storey, 1938:33; Rivas, 1950:292 (6 subspecies; see remarks); FWNA, 1964:393, fig. 97; Cervigón, 1966:125, fig. 53; *Harengula majorina* Storey, 1938:32; *Hyrtlinus altiforma* Fowler, 1958:6 (skeleton); *Harengula jaguana* - Whitehead, 1973a:41, fig. 11 (Guianas).

**FAO Names** : En- Scaled herring.



**Diagnostic Features** : Toothplate on tongue and toothplate behind it (basihyal and basibranchial toothplates) very broad, their width about 3 to 5 times in their combined length, the basihyal toothplate with a very distinct bulge in front. Lower gillrakers 30 to 40, usually 32 to 39. Scales fairly strongly attached, not easily lost. No dark pigment on dorsal fin tip. See CLUP Har 2, Fishing Area 31.

**Geographical Distribution** : New Jersey (USA), also Bermuda, southward to Florida, Gulf of Mexico (abundant), Caribbean to southern Brazil.

**Habitat and Biology** : Coastal, pelagic, schooling, perhaps also in estuaries and bays, but often confused with *H. clupeola* (with which it occurs over most of its range). Juveniles of 2.9 to 4.4 cm standard length appeared in Guanabara Bay, Rio de Janeiro, in May and migrated out in December or March at 7.5 to 8.0 cm (Hubold & Mazzetti, 1982). Breeds February to July (peak May and June) around Miami.

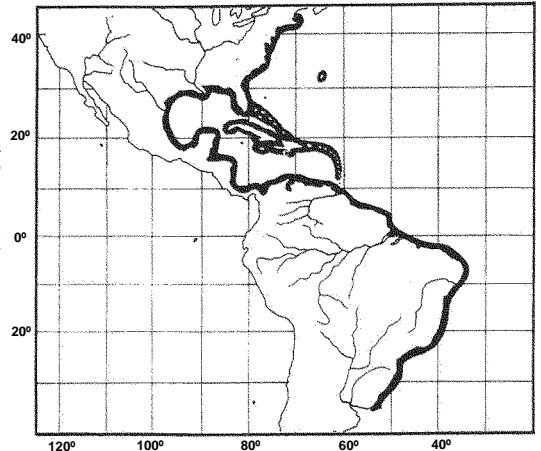
**Size** : To 15 cm standard length, usually to 12 cm.

**Interest to Fisheries** : Contributed to the 543 tons of the 'Harengula' catch for 1983.

**Local Names** : USA: Scaled sardine (AFS list); see also FWNA (1964:393).

**Literature** : Matsuura (1972 - as *H. pensacolae*, Brazil, eggs); Houde, Richards. & Saksena (19 - eggs, larvae); Hubbold & Mazzetti (1982 - Brazil, juveniles).

**Remarks** : Rivas (1950:280, key) recognized the following 6 subspecies: *pensacolae*, *majorina* and his own proposed names *floridana*, *caribbaea* and *pinensis*. Subsequently (Rivas, 1963:395, i.e. FWNA) he accepted that these forms intergrade in their defining characters -and separating on geographical grounds would be arbitrary. Nevertheless, specimens show differences in morphometric and meristic features over the rather extensive range of the species and at least some subspecies may eventually be recognized.



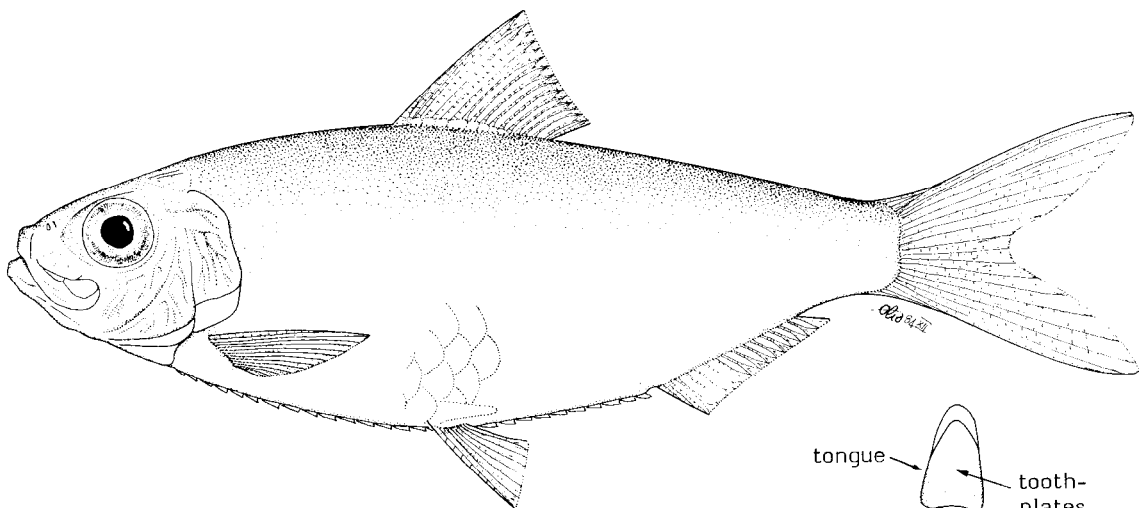
***Harengula thrissina*** (Jordan & Gilbert, 1882)

CLUP Har 4

*Clupea thrissina* Jordan & Gilbert, 1882, *Proc.U.S.natn.Mus.*, 5:353 (Cape San Lucas, Mexico).

**Synonyms** : *Harengula peruana* Fowler & Bean, 1923:2 (Callao, Peru); Rivas, 1950:287, fig. 39; Peterson, 1956:177 (Gulf of Nicoya, Costa Rica); *Harengula thrissina* - Hildebrand, 1946:88 (Peru); Rivas, 1950:287 (Gulf of California to Acapulco, Mexico); FWNA, 1964:387 (key; *peruana* kept separate).

**FAO Names** : En - Pacific flatiron herring.



**Diagnostic Features** : Toothplate on tongue and toothplate behind it (basihyal and basibranchial toothplates) broad, their width about 3 to 5 times in their combined lengths. Lower gillrakers 28 to 34. Last dorsal finray not elongate (cf. *Opisthonema*); anal finrays 15 to 17 (cf. more than 30 in species of *Pristigasteridae*).