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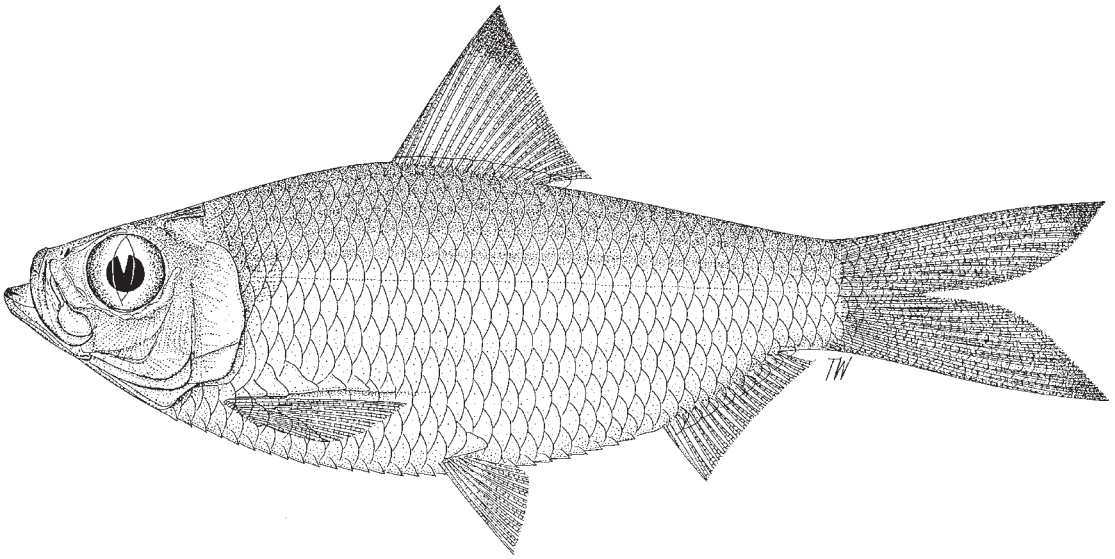
Herklotsichthys castelnaui (Ogilby, 1897)

Frequent synonyms / misidentifications: *Harengula abbreviata* (non Valenciennes, 1847); *Herklotsichthys* species C [Whitehead, 1985] / None.

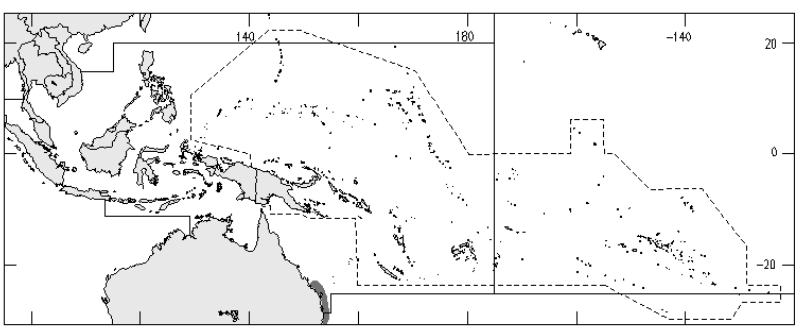
FAO names: En - Castelnau's herring.



Diagnostic characters: Body moderately deep, depth 30 to 38% of standard length or greater; **abdomen strongly keeled with 16 or 17 prepelvic and 12 or 13 postpelvic scutes (total 27 to 29); pelvic scute with ascending arms. Upper jaw rounded, without distinct median notch or cleft**. **Two supramaxilla present; second asymmetrical (lower part larger than upper)**. **No prominent ridge of teeth on palatine and pterygoids**. **With 3 to 7 frontoparietal striae on top of head**. **Two fleshy outgrowths on posterior margin of gill opening**. **Lower gill rakers 42 to 52 (unusually 51 or 52)**. **Branchiostegal rays usually 6, rarely 7.** Dorsal-fin origin moderately anterior to midpoint of body. Anal fin well posterior to vertical through base of posteriormost dorsal-fin ray. **Two posteriormost anal-fin rays not enlarged**. **Tips of pectoral fins reaching, or nearly reaching, to vertical through origin of dorsal fin**. Pelvic-fin insertion about equal with vertical through base of third dorsal-fin ray; **pelvic fins with i unbranched and 7 branched soft rays**. **Vertical striae on scales continuous across centre of scale**. **No elongate wing-like scales beneath normal-paired predorsal scales**. **Colour:** bluish green above, silvery below; **with 3 golden-brown longitudinal dark lines along upper flank; no dark spot posterior to gill cover (patch of golden brown posterior to gill opening in large fish); no spots on flanks; upper caudal tip black**, dorsal fin with distinct pale band separating grey base from black tip; a dark line along upper edge of caudal peduncle.

Size: Maximum standard length 14 cm, commonly to 10 cm.

Habitat, biology, and fisheries: Coastal, pelagic, schooling. Possibly comprised of an eastern (*Herklotsichthys castelnaui*) and western Australian species pair (*H. blackburni* is the western counterpart with only 38 to 47 gill rakers). Off Australia, spawning occurred over a 3-month period (mid-July to mid-October), with peak spawning occurring around the first week of September. Possibly semi-lunar peaks in spawning activity, apparently associated with moon phases. More data are needed on the biology of this species. No separate statistics reported for the species.

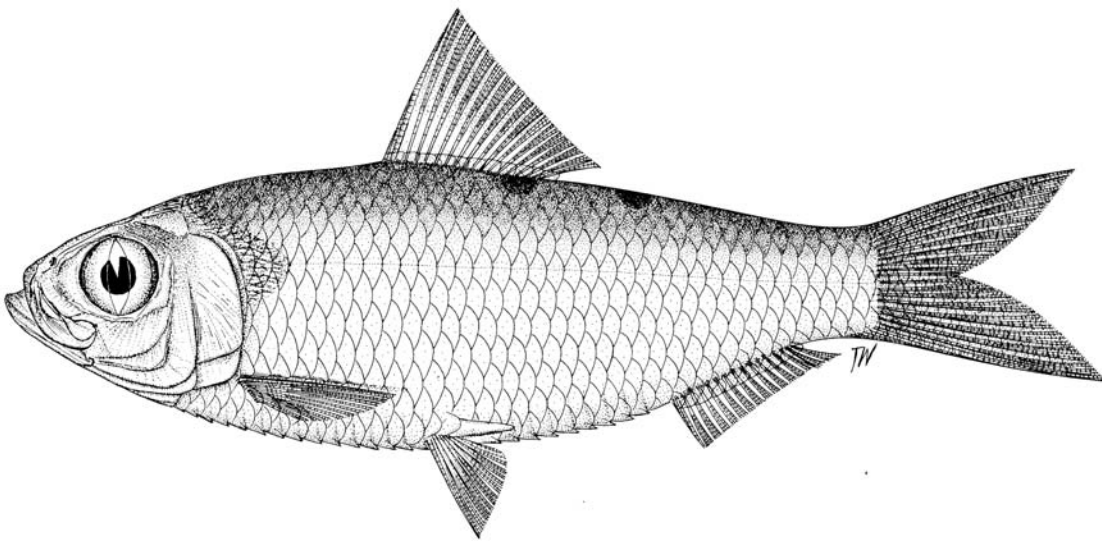


Distribution: Eastern Australia (Queensland southward to New South Wales).

Herklotsichthys dispilonotus (Bleeker, 1852)

Frequent synonyms / misidentifications: *Harengula dispilonotus* Bleeker, 1852 / None.

FAO names: En - Blacksaddle herring.

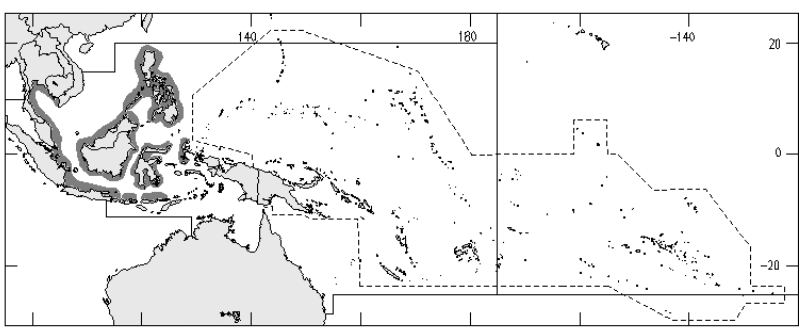


Diagnostic characters: Body moderately deep, depth 30 to 35% of standard length; **abdomen strongly keeled with 14 or 15 prepelvic and 11 to 13 postpelvic scutes (total 26 to 28); pelvic scute with ascending arms. Upper jaw rounded, without distinct median notch or cleft**. **Two supramaxilla present; second asymmetrical (lower part larger than upper)**. **Well-developed, prominent ridge of teeth on palatine and pterygoids**. **With 5 to 7 frontoparietal striae on top of head**. **Two fleshy outgrowths on posterior margin of gill opening**. **Lower gill rakers 28 to 38**. **Branchiostegal rays usually 6.** Dorsal-fin origin distinctly anterior to midpoint of body. Anal fin well posterior to vertical through base of posteriormost dorsal-fin ray. **Two posteriormost anal-fin rays only very slightly enlarged**. Tips of pectoral fins reaching, or nearly reaching, to vertical through origin of dorsal-fin. Pelvic-fin insertion about equal with a point between verticals through bases of first to third dorsal-fin rays; **pelvic fins with i unbranched and 7 branched soft rays**. Predorsal scales uneven in middorsal region. **Vertical striae on scales continuous across centre of scale**. **No elongate wing-like scales beneath normal-paired predorsal scales**. **Colour: 2 dark saddle-like blotches on dorsum,** one at posterior part of dorsal-fin base and the other located a short distance posterior to the first.

Size: Maximum standard length 8.5 cm, commonly to 7 cm.

Habitat, biology, and fisheries: Coastal, pelagic, schooling. In Thailand, this species frequents brackish waters, especially those near mouths of rivers and lakes. More data needed. No separate statistics; enters artisanal fisheries, but uncommon.

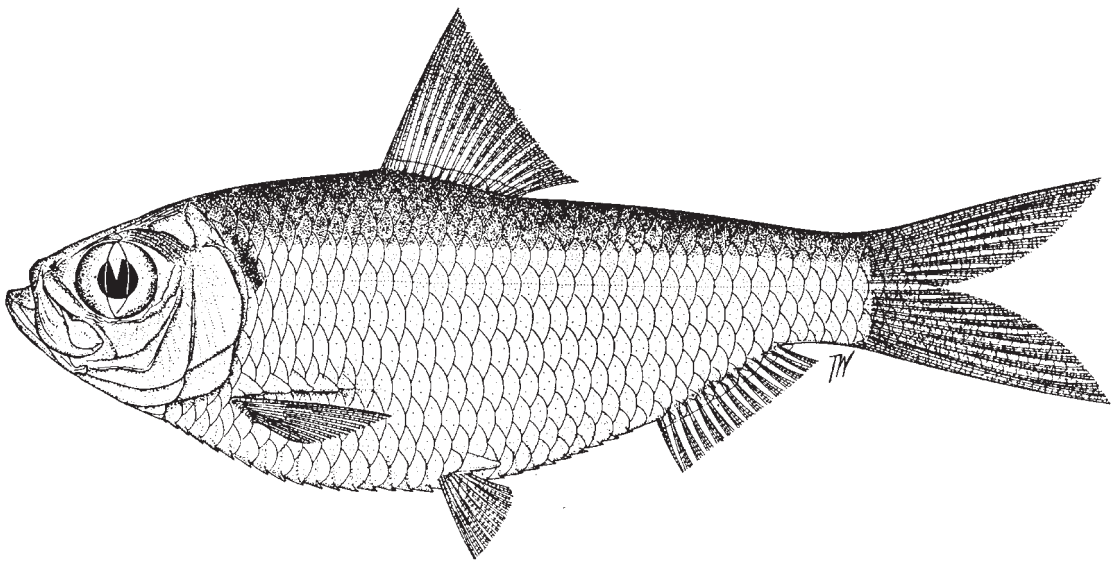
Distribution: Western Pacific from Gulf of Thailand, Indonesia, and the Phillippines (apparently not present in eastern Indian Ocean).



Herklotsichthys gotoi Wongratana, 1983

Frequent synonyms / misidentifications: None / None.

FAO names: En - Goto's herring.

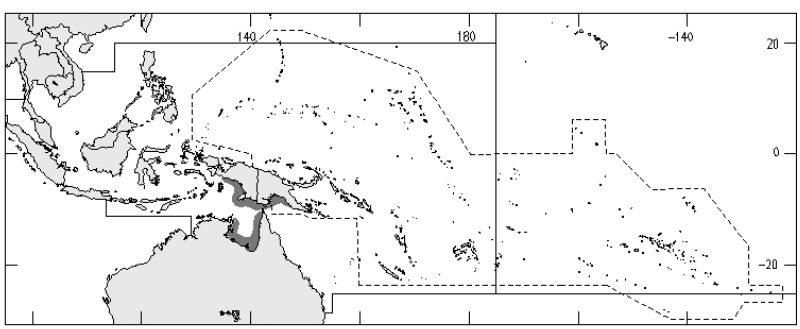


Diagnostic characters: Body moderately deep, depth 38 to 41% of standard length; **abdomen strongly keeled with 17 prepelvic and 12 postpelvic scutes (total 29); pelvic scute with ascending arms. Upper jaw rounded, without distinct median notch or cleft**. **Two supramaxilla present; second asymmetrical (lower part larger than upper)**. **No prominent ridge of teeth on palatine and pterygoids**. **About 5 frontoparietal striae on top of head**. **Two fleshy outgrowths on posterior margin of gill opening**. **Lower gill rakers 32 to 38. Branchiostegal rays usually 6, rarely 7.** Dorsal-fin origin distinctly anterior to midpoint of body. Anal fin well posterior to vertical through base of posteriormost dorsal-fin ray. **Two posteriormost anal-fin rays not noticeably enlarged**. Tips of pectoral fins reaching to vertical through origin of dorsal-fin. Pelvic-fin insertion about equal with vertical through middle of dorsal fin; pelvic fins with i unbranched and 7 branched soft rays. **Scales just posterior to base of posteriormost dorsal-fin ray with a posterior median prolongation. Vertical striae on scales continuous across centre of scale**. **No elongate wing-like scales beneath normal-paired predorsal scales**. **Colour: no spots on flank, except for a single elongated dark spot on shoulder posterior to gill cover; no dark lines along upper flank; dorsal fin without dark tips**.

Size: Maximum standard length at least 10 cm, commonly to 8 cm.

Habitat, biology, and fisheries: Coastal, pelagic, schooling; appears to enter estuaries, if not to ascend some way up rivers. More data needed. Possibly enters artisanal fisheries, but does not appear to be common.

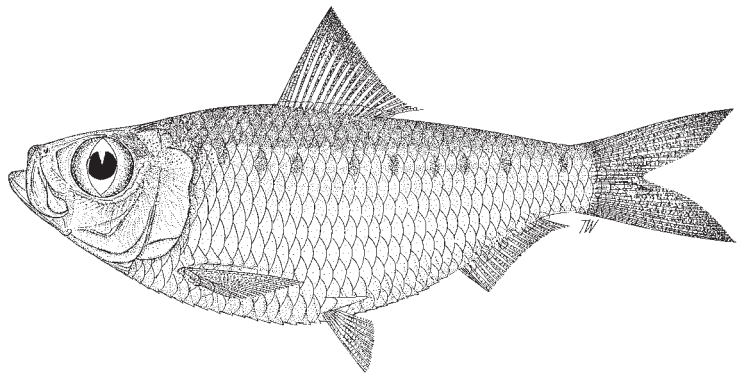
Distribution: Western Pacific from New Guinea (Mimika River) and northern Australia (Gulf of Carpenteria).

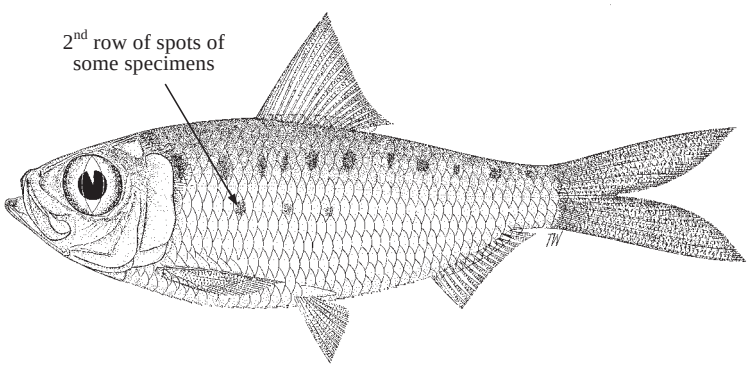


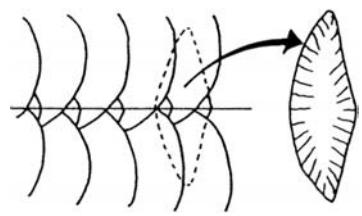
Herklotsichthys koningsbergeri (Weber and de Beaufort, 1912)

Frequent synonyms / misidentifications: *Harengula maccullochi* Whitley, 1931 / None.

FAO names: En - Koningsberger's herring.





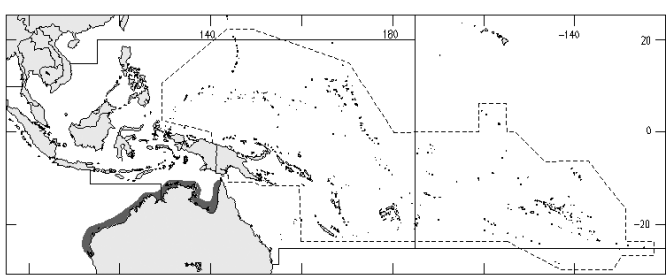


Diagnostic characters: Body fairly deep, depth 33 to 41% of standard length; **abdomen strongly keeled with 16 or 17 prepelvic and 11 to 13 postpelvic scutes (total 27 to 30); pelvic scute with ascending arms. Upper jaw rounded, without distinct median notch or cleft**. **Two supramaxilla present; second asymmetrical (lower part larger than upper)**. **No prominent ridge of teeth on palatine and pterygoids**. **With 5 to 8 frontoparietal striae on top of head**. **Two fleshy outgrowths on posterior margin of gill opening**. **Lower gill rakers 28 to 31. Branchiostegal rays usually 6, rarely 7.** Dorsal-fin origin slightly anterior to midpoint of body. Anal fin well posterior to vertical through base of posteriormost dorsal-fin ray. **Two posteriormost anal-fin rays not noticeably enlarged**. Tips of pectoral fins reaching well posterior to vertical through origin of dorsal-fin. Pelvic-fin insertion about equal with vertical through middle of dorsal fin; **pelvic fins with i unbranched and 7 branched soft rays**. Postdorsal scales without a prominent posterior median prolongation. **Vertical striae on scales continuous across centre of scale**. **Posterior margin of scales not denticulated**. **Elongate wing-like scales present beneath normal-paired predorsal scales**. **Colour:** head gold with green-blue iridescence on upper operculum and around eyes; mouth and interorbital charcoal; body dark grey, silvery white below; nape rich brown; **a series of large and almost vertically oval black spots on the flank, sometimes with a second partial row of spots below the first;** dorsal and caudal fins green yellow, iridescent stippled dusky; caudal fin streaked grey; other fins hyaline.

Size: Maximum standard length 14 cm, commonly between 6 and 12 cm.

Habitat, biology, and fisheries: Coastal, pelagic, schooling; enters inlets and lower reaches of rivers. More data needed. No separate statistics; perhaps not sufficiently abundant.

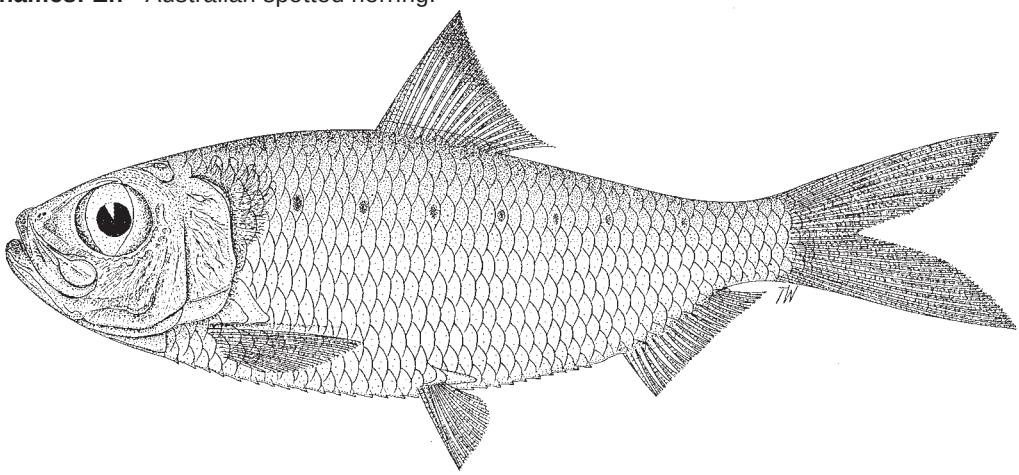
Distribution: Tropical Indo-Pacific from western Australia to Gulf of Carpenteria.

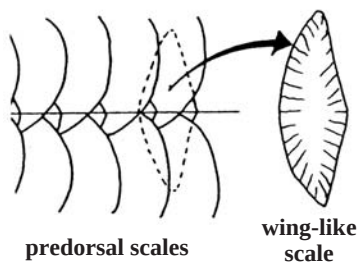


Herklotsichthys lippa (Whitley, 1931)

Frequent synonyms / misidentifications: None / *Harengula koningsbergeri* (Weber and de Beaufort, 1912).

FAO names: En - Australian spotted herring.



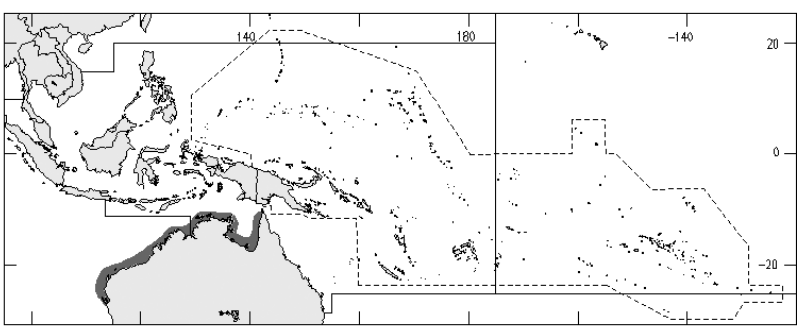


Diagnostic characters: Body moderately deep, depth 27 to 34% of standard length; **abdomen strongly keeled with prepelvic and postpelvic scutes; pelvic scute with ascending arms. Upper jaw rounded, without distinct median notch or cleft. Two supramaxilla present; second asymmetrical (lower part larger than upper). No prominent ridge of teeth on palatine and pterygoids. With 3 to 7 frontoparietal striae on top of head. Two fleshy outgrowths on posterior margin of gill opening. Lower gill rakes 28 to 37. Branchiostegal rays usually 6, rarely 7.** Dorsal-fin origin slightly anterior to midpoint of body. Anal fin well posterior to vertical through base of posteriormost dorsal-fin ray. **Two posteriormost anal-fin rays not noticeably enlarged.** Tips of pectoral fins almost reaching to vertical through origin of dorsal-fin. Pelvic-fin insertion about equal with vertical through middle of dorsal fin; **pelvic fins with i unbranched and 7 branched soft rays**. **Vertical striae on scales continuous across centre of scale**. **Posterior margin of scales not denticulated**. **Elongate wing-like scales present beneath normal-paired predorsal scales**. **Colour:** body and head iridescent; head gold, green below; mouth charcoal; stippling on cheeks extending to shoulder region; body dark grey above shading to silvery white below; **a single row of 14 to 19 small round black spots on the flank with a single larger dark spot on shoulder at dorsal angle to gill cover;** dorsal and caudal fins olive-yellow; dorsal fin dusky stippled; upper and lower edges of caudal fin black; other fins hyaline.

Size: Maximum standard length 14 cm, commonly between 7 and 13 cm.

Habitat, biology, and fisheries: Coastal, pelagic, schooling. More data needed. No separate statistics; possibly more abundant than *Herklotsichthys koningsbergeri*.

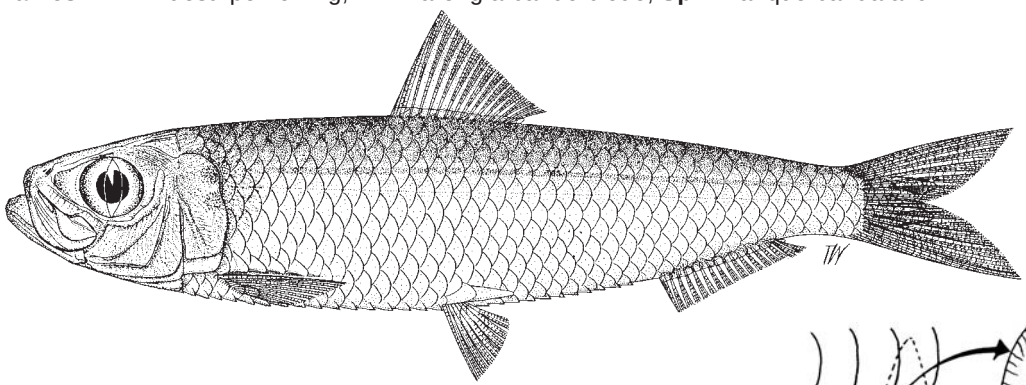
Distribution: Indo-Pacific from western Australia to Gulf of Carpenteria, Cape York, and Aru Islands.

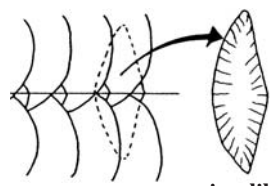


Herklotsichthys quadrimaculatus (Rüppell, 1837) HES

Frequent synonyms / misidentifications: None / None.

FAO names: En - Bluestripe herring; **Fr** - Hareng à bande bleue; **Sp** - Aranque banda azul.

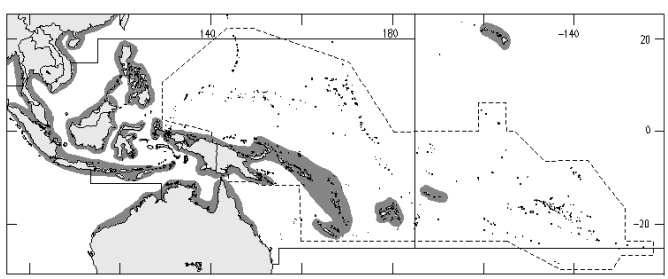




Diagnostic characters: Body slender, depth 18 to 30% of standard length; **abdomen strongly keeled with 16 to 19 (usually 18) prepelvic and 12 to 14 (usually 13) postpelvic scutes (total 29 to 32, usually 31); pelvic scute with ascending arms. Upper jaw rounded, without distinct median notch or cleft. Two supramaxilla present; second asymmetrical (lower part larger than upper). No prominent ridge of teeth on palatine and pterygoids. With 4 to 6 frontoparietal striae on top of head. Two fleshy outgrowths on posterior margin of gill opening. Lower gill rakers 30 to 36. Branchiostegal rays 6.** Dorsal-fin origin distinctly anterior to midpoint of body. Anal fin well posterior to vertical through base of posteriormost dorsal-fin ray. **Two posteriormost anal-fin rays very slightly enlarged**. Tips of pectoral fins not reaching to vertical through origin of dorsal fin. Pelvic-fin insertion about equal with vertical through middle of dorsal fin; **pelvic fins with i unbranched and 7 branched soft rays**. Several postdorsal scales immediately anterior to caudal fin with a posterior median prolongation. **Vertical striae on scales continuous across centre of scale. Posterior margin of scales denticulated. Elongate wing-like scales present beneath normal-paired predorsal scales. Colour: flanks silvery with an electric blue stripe preceded by 1 or 2 orange spots; no series of dark spots along flanks; dorsal fin without prominent markings.**

Size: Maximum standard length 14 cm, commonly between 8 and 10 cm.

Habitat, biology, and fisheries: Coastal, pelagic, schooling; forms dense schools during daytime along the shoreline and among reefs in a few metres of water. During night time disperses into deeper waters and moves up into water column, may also move further offshore (at least adults) during night time. Feeds on zooplankton, mainly at night, chiefly juvenile stage copepods, but larger prey as adults (chaetognaths, polychaetes, shrimps, and small fishes; at no time is phytoplankton consumed). Relatively fast-growing, short-lived species. In Kiribati, grows to length of 11 cm and 15 g, and lives up to 1 year. Breeds during first year (ca. 8.3 cm standard length, and at age of about 172 days) and probably survives only a few months after attaining sexual maturity. Multiple spawner, spawning probably throughout period of August to May. Approximately 20% of population spawns during each month. Batch fecundity estimated at 1 700 to 3 200 eggs/spawning. Relative fecundity estimated at 283 to 354 eggs/g. Reproductive life span estimated at 112 to 173 days. Most previous data published under the name *Herklotsichthys punctatus*, a valid species which apparently is a Red Sea endemic. In 1995, FAO's Yearbook of Fishery Statistics reports of total catch of 185 t of *H. quadrimaculatus* taken from Fiji; otherwise no separate statistics available, but probably combined with *Sardinella* catches. Of local importance as tuna baitfish in artisinal fisheries.

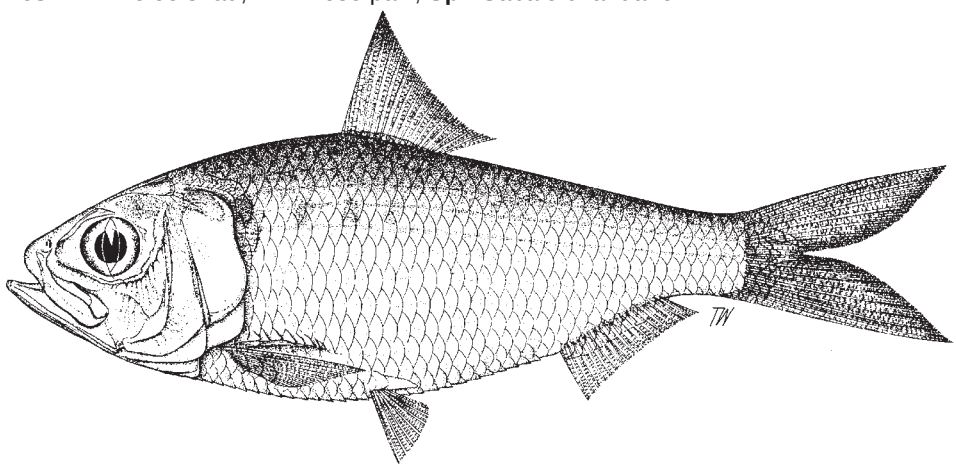


Distribution: Widespread Indo-West Pacific from entire eastern coast of Africa, Madagascar, Mauritius eastward to Japan, including Indonesia, eastern Australia, south to New Caledonia, and eastward to Samoa. Introduced accidentally into Hawaii, where it is now abundant.

Hilsa kelee (Cuvier, 1829) HIX

Frequent synonyms / misidentifications: *Alausa kanagurta* Bleeker, 1852; *Alosa malayana* Bleeker, 1866; *Clupea durbanensis* Regan, 1906; *C. platygaster* Günther, 1868; *Hilsa kanagurta (*Bleeker, 1852); *Alosa brevis* Bleeker, 1848; *Macrura durbanensis* (Regan,1906); *M. kelee* (Cuvier, 1829) / *Hilsa ilisha* (Hamilton, 1822).

FAO names: En - Kelee shad; **Fr** - Alose palli; **Sp** - Sábalo chandano.

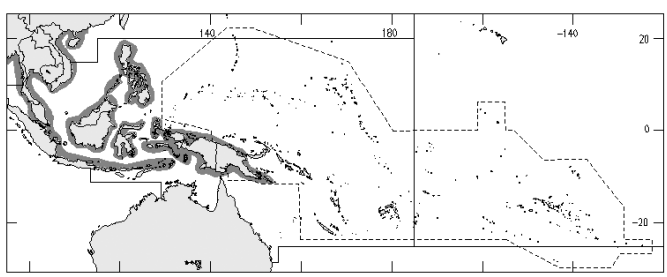


Diagnostic characters: A moderate-sized herring-like species with fairly deep and strongly compressed body, **abdomen with sharply-keeled 15 to 17 prepelvic and 12 to 14 postpelvic scutes (total scutes 27 to 31, usually 28 to 30)**; **pelvic scute with ascending arms**; head length 22.5 to 32.5% of standard length. **With 8 to 14 (mostly 10 to 12) frontoparietal striae on top of head. Mouth terminal**; **upper jaw with a distinct median notch or cleft when seen from front; most of lower jaw overlapped by upper when mouth closed. Two supramaxillae present and well developed.** Posterior extent of maxilla about reaching vertical through anterior margin of pupil. **No fleshy outgrowths on posterior margin of gill opening**. **Opercle smooth, without bony striae. Gill rakers fine and numerous (about 100 to 175 for fish 7.5 to 23.5 cm of standard length), those on inner arches curled outward; outer row of gill filaments on first arch not more than 1/2 length of inner corresponding ones.** Branchiostegal rays usually 6. Dorsal-fin origin slightly before midpoint of body; **last dorsal-fin ray not elongated**. Anal-fin base short and lying well posterior to vertical through base of posteriormost dorsal-fin ray; **2 posteriormost anal-fin rays not distinctly enlarged**; **anal-fin rays 20 to 22**. Pelvic-fin insertion at vertical through bases of anterior dorsal-fin rays; pelvic fins with i unbranched and 7 branched soft rays. **Vertical striae on scales overlapping at centre of scale; scales fimbriated and with small perforations posteriorly.** Scales moderate, **lateral scales 39 to 44**. **A series of small triangular scales above axil of pectoral fins**. **Colour:** back blue-green, flanks silvery; **a black spot behind gill cover, usually followed by up to 10 spots along flank**.

Size: Maximum standard length 25 cm, commonly between 15 and 18 cm.

Habitat, biology, and fisheries: Marine, pelagic, but entering estuaries and able to tolerate low salinities (7‰). Apparently not abundant. Feeds chiefly on phytoplankton (mainly diatoms, also dinoflagellates), but also copepods, molluscan and crustacean larvae, prawns, amphipods, and polychaetes. Spawns (at least in Godavari estuary) around February. Apparently does not form large schools, but enters artisanal fisheries (e.g. in Godavari estuary, eastern coast of India). Caught mainly with set nets and beach seines. Marketed fresh, dried, dried-salted, boiled, or made into fish balls.

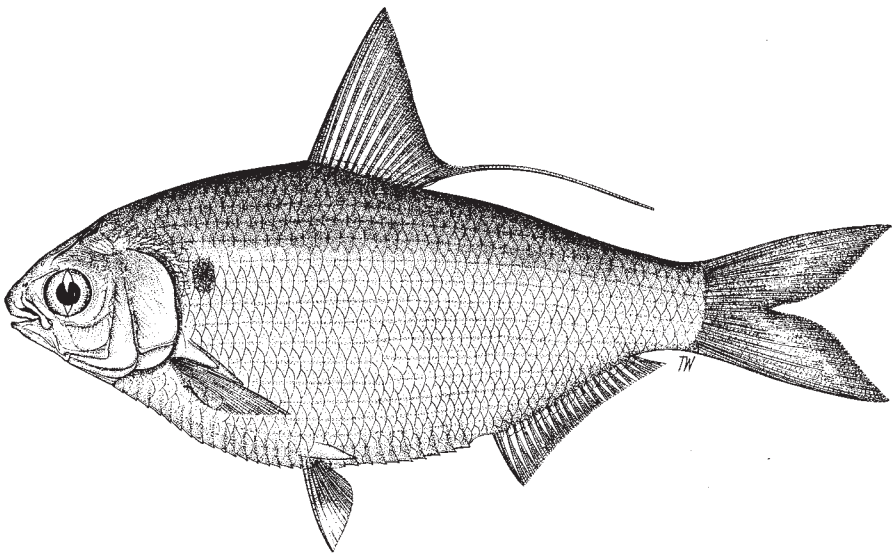
Distribution: Indo-West Pacific (probably all coasts of Indian Ocean, from Gulf of Oman and Gulf of Aden south to Durban and Madagascar, across Bay of Bengal to Andaman Sea, Indonesia, Gulf of Thailand, Java Sea, north to Hong Kong, and east to Papua New Guinea, and possibly further).

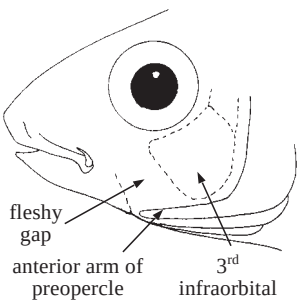


Nematalosa come (Richardson, 1846)

Frequent synonyms / misidentifications: None / None.

FAO names: En - Western Pacific gizzard shad.



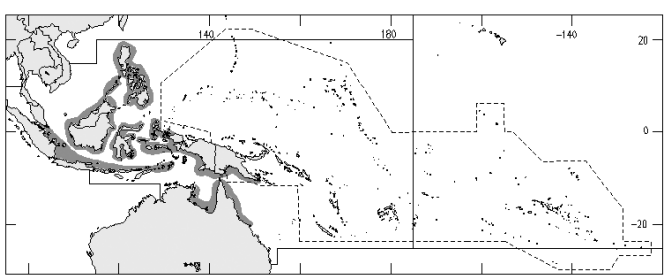


Diagnostic characters: A medium-sized marine gizzard shad; **body rather compressed, deeper in larger fish, depth 36 to 45% of standard length; abdomen fully scuted with 18 or 19 (rarely 20) prepelvic and 10 to 13 (usually 11 or 12) postpelvic scutes; total number of scutes 29 to 31 (usually 30) scutes; pelvic scute with ascending arms. Top of head with 5 to 10 frontoparietal striae**. **Mouth subterminal, with snout rounded and projecting**, edge of lower jaw strongly flared outward; dentary bones meeting at an obtuse angle, sometimes forming an almost transverse cleft; premaxillae short, maxilla expanded at tip and actually or apparently turned downward; **upper jaw with a distinct median notch when seen from front; with a single small supramaxilla**. Maxilla reaching posteriorly about to vertical through anterior margin of eye. **No fleshy outgrowths on posterior margin of gill opening**. **Opercle smooth, without bony striae**. **Anterior arm of preopercle with fleshy triangular area above, not covered by third infraorbital bone**. **Gill rakers fine, numerous. Gill filaments fairly short at angle of first arch. Branchiostegal rays 5**. Dorsal-fin origin moderately anterior to midpoint of body; **last dorsal-fin ray filamentous.** Anal fin shorter than head; anal-fin origin posterior to vertical through base of posteriormost dorsal-fin ray; anal-fin rays 21 to 24. Pelvic-fin insertion posterior to, or at, vertical through dorsal-fin origin; pelvic fins with i unbranched and 7 branched soft rays. **Predorsal scales paired and overlapping in midline**. **Posterior margin of scales not denticulated. Axillary scale of pectoral fin well developed, comprised of 2 elongate scales**. Lateral-line scales 43 to 49. **Colour:** a dark spot behind gill opening; tips of pelvic and anal fins milky white in fresh specimens.

Size: Maximum standard length 21 cm, commonly between 15 and 18 cm.

Habitat, biology, and fisheries: Marine, pelagic. More data needed. Contributes to local clupeoid catches, but not of importance.

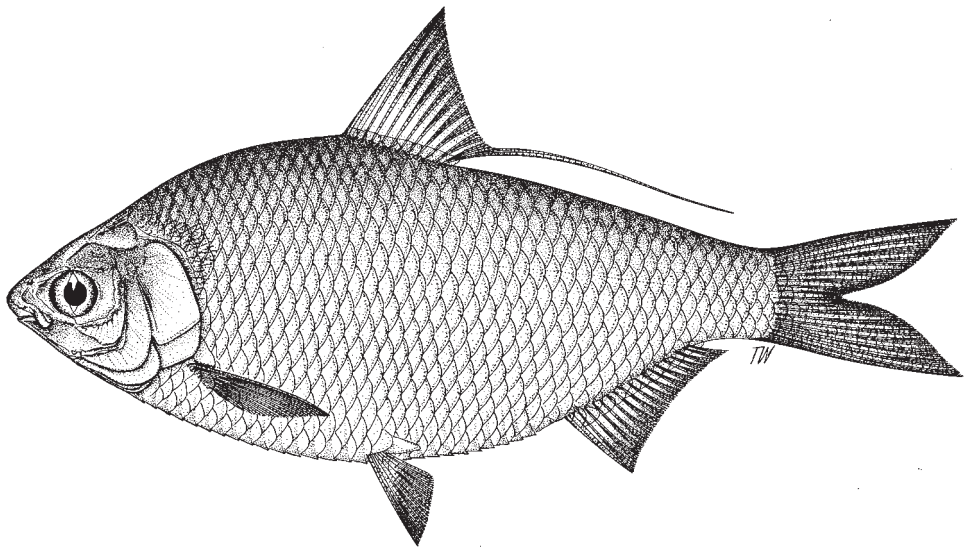
Distribution: Western Central Pacific, including coasts of Queensland, Papua New Guinea and Irian Jaya (both on southern coasts only), Java Sea, the Philippines, north to East China Sea (i.e. Ryukyu Islands at about 23°N).



Nematalosa erebi (Günther, 1868)

Frequent synonyms / misidentifications: *Chatoessus horni* Zeitz, 1896; *C. richardsoni* Castelnau, 1873; *Fluvialosa erebi* (Günther, 1868); *Nematalosa elongata* (Macleay, 1883) / None.

FAO names: En - Australian river gizzard shad.

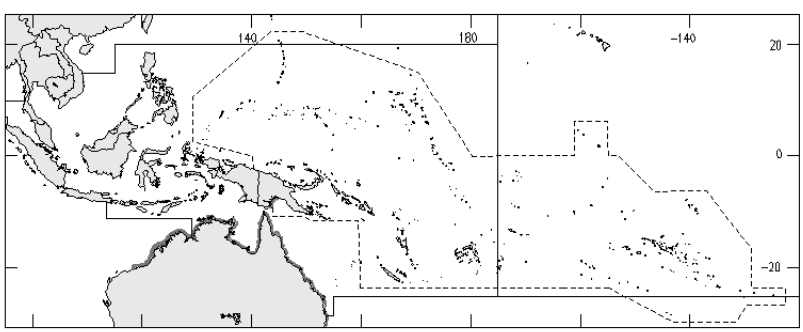


Diagnostic characters: A medium-sized riverine gizzard shad; **body compressed, rather deep, but slender in smaller fish, depth about 28 to 47% of standard length; abdomen fully scuted with 14 to 18 (usually 16 or 17) prepelvic and 11 to 14 (usually 12 or 13) postpelvic scutes; total number of scutes 25 to 31 (usually 28 to 30); pelvic scute with ascending arms. Frontoparietal striae 2 to 7. Mouth inferior, with snout rounded and projecting; edge of lower jaw strongly flared outward**. Premaxillae short, maxilla expanded at tip and actually or apparently turned downward, with **a single small supramaxilla**. Maxilla reaching vertical through anterior margin of eye. **No fleshy outgrowths on posterior margin of gill opening. Opercle smooth without bony striae. Anterior arm of preopercle with a fleshy triangular area above, not covered by third infraorbital bone. Gill rakers fine, numerous. Gill filaments fairly short at angle of first arch. Branchiostegal rays 6, sometimes 5**. Dorsal-fin origin moderately anterior to midpoint of body; **last dorsal-fin ray filamentous**. Anal fin shorter than head; anal fin well posterior to vertical through base of posteriormost dorsal-fin ray. Pelvic-fin insertion posterior to vertical through bases of anterior dorsal-fin rays; pelvic fins with i unbranched and 7 branched soft rays. **Predorsal scales paired and overlapping in midline. Posterior margin of scales not denticulated. Axillary scale of pectoral fin rudimentary**. Lateral-line scales 40 to 45. **Colour:** no prominent dark spot behind gill opening.

Size: Maximum standard length to 32.5 cm, commonly between 20 and 25 cm.

Habitat, biology, and fisheries: Riverine, often far from sea, but also in estuaries; occurs in Lakes Albert and Alexandrina near mouth of Murray River. More data needed on food and breeding. Of small local interest only.

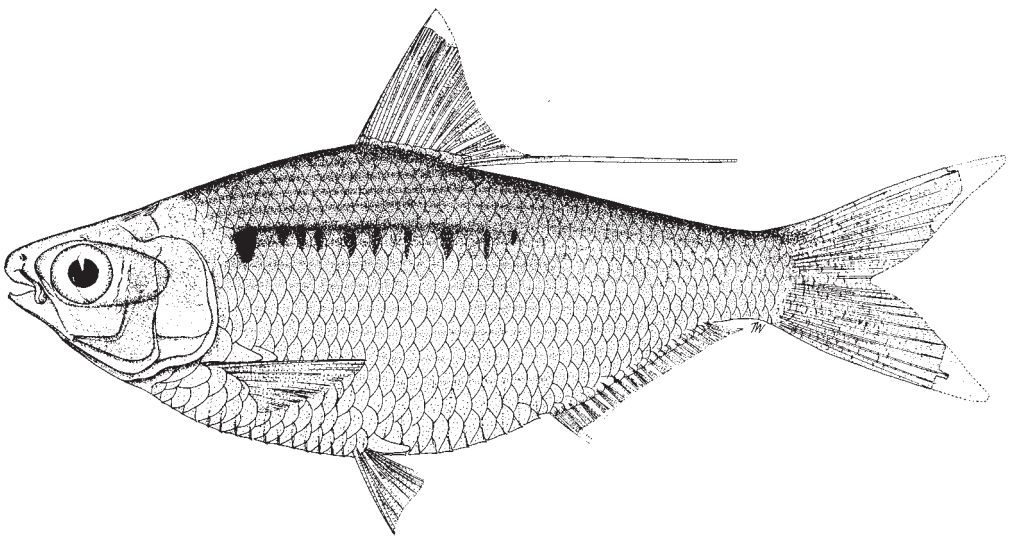
Distribution: Western Pacific in rivers and estuaries of northern Australia and southwestern Papua New Guinea.



Nematalosa galatheae Nelson and Rothman, 1973

Frequent synonyms / misidentifications: None / *Nematalosa nasus* (Bloch, 1795).

FAO names: En - Galathea gizzard shad.

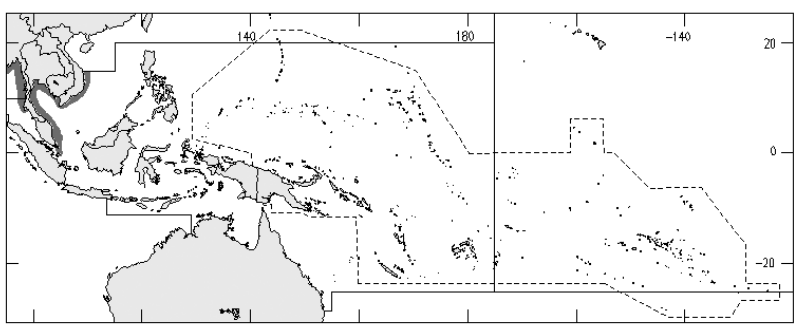


Diagnostic characters: A medium-sized marine gizzard shad; **body compressed, becoming deeper with growth, depth about 36 to 44% of standard length; abdomen fully scuted with 16 or 17 (usually 17) prepelvic and 8 to 11 (usually 10) postpelvic scutes; total number of scutes 24 to 28 (usually 27); pelvic scute with ascending arms. A pair of deep grooves in spongy skin on top of head, converging posteriorly. Frontoparietal striae 5 to 9. Mouth inferior, lower jaw strongly flared outward, with snout rounded and projecting**. Premaxillae short, maxilla expanded at tip and actually or apparently turned downward. **Upper jaw with distinct median notch; with a single small supramaxilla**. Maxilla not reaching posteriorly to vertical through anterior margin of eye. **No fleshy outgrowths on posterior margin of gill opening. Opercle smooth without bony striae. Anterior arm of preopercle with third infraorbital bone immediately above it, no fleshy gap between. Gill rakers fine, numerous. Gill filaments fairly short at angle of first arch**. Branchiostegal rays 5. Dorsal-fin origin moderately anterior to midpoint of body; **last dorsal-fin ray filamentous**. Anal fin shorter than head length; anal-fin origin lying posterior to vertical through base of posteriormost dorsal-fin ray. Pelvic-fin insertion at vertical through bases of anterior dorsal-fin rays; pelvic fins with i unbranched and 7 branched soft rays. **Predorsal scales paired and overlapping in midline. Posterior margin of scales not denticulated. Axillary scale of pectoral fins present, comprised of 2 or 3 pointed scales**. Lateral-line scales 43 to 46. **Colour: a dark spot behind gill opening, followed by a series of smaller spots along flank**.

Size: Maximum standard length 16.3 cm.

Habitat, biology, and fisheries: Marine, but may also penetrate and presumably breed in fresh water, but more specimens and data are needed. Probably of local interest.

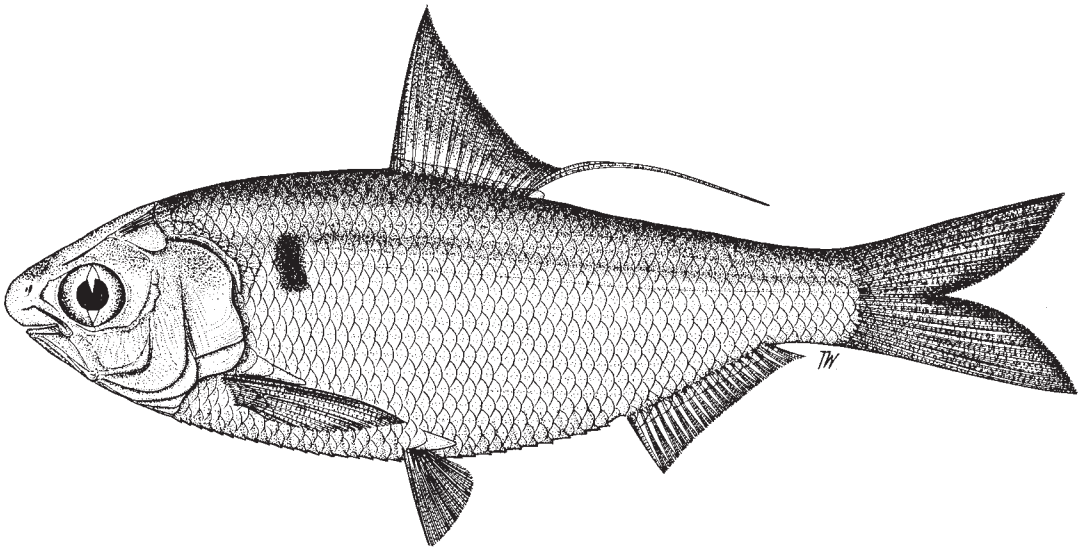
Distribution: Indo-West Pacific from southwest coast of India, (presumably Bay of Bengal), off Andamanan Sea coast of Thailand, and Penang, Gulf of Thailand, to Viet Nam.



Nematalosa japonica Regan, 1917

Frequent synonyms / misidentifications: None / None.

FAO names: En - Japanese gizzard shad.

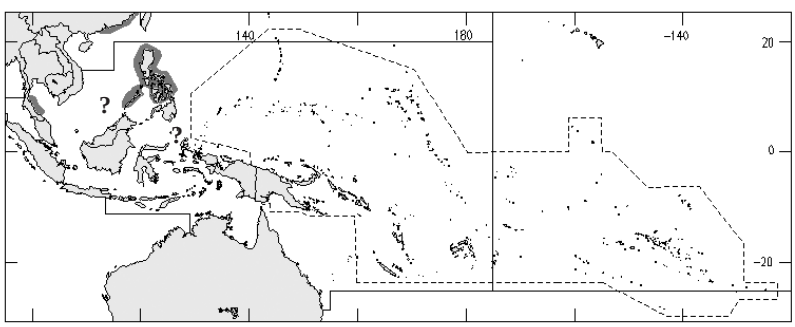


Diagnostic characters: A medium-sized marine gizzard shad; **body generally more slender than in other *Nematalosa* species, depth 33 to 38% of standard length; abdomen fully scuted with 16 to 19 (usually 18) prepelvic and 13 to 16 (usually 14 or 15) postpelvic scutes; total number of scutes 30 to 34 (usually 32 or 33); pelvic scute with ascending arms. Frontoparietal striae 5 or 6. Mouth inferior, edge of lower jaw strongly flared outward**. Premaxillae short, maxilla expanded at tip and actually or apparently turned downward. **Upper jaw with distinct median notch when seen from front; with a single small supramaxilla**. Maxilla reaching posteriorly to a point between verticals through anterior margin and middle of eye. **No fleshy outgrowths on posterior margin of gill openings. Opercle smooth without bony striae. Anterior arm of preopercle with a small fleshy triangle above, not covered by third infraorbital bone. Gill rakers fine, numerous. Gill filaments fairly short at angle of first arch**. Branchiostegal rays usually 6, sometimes 5. Dorsal-fin origin moderately anterior to midpoint of body; **last dorsal-fin ray filamentous**. Anal fin shorter than head length; origin posterior to vertical through base of posteriormost dorsal-fin ray. Pelvic-fin insertion at vertical through bases of anterior dorsal-fin rays; pelvic fins with i unbranched and 7 branched soft rays. **Predorsal scales paired and overlapping in midline; axillary scale of pectoral fins well developed, comprised of 2 or 3 pointed scales. Posterior margin of scales distinctly denticulated**. Lateral-line scales 47 to 51. **Colour:** a dark spot behind gill opening.

Size: Maximum standard length about 19 cm.

Habitat, biology, and fisheries: Marine, schooling nearshore over sand or mud. Filter-feeder. Breeds around May in Japanese waters. Of local interest in Japan, where it is caught by set net or gill net.

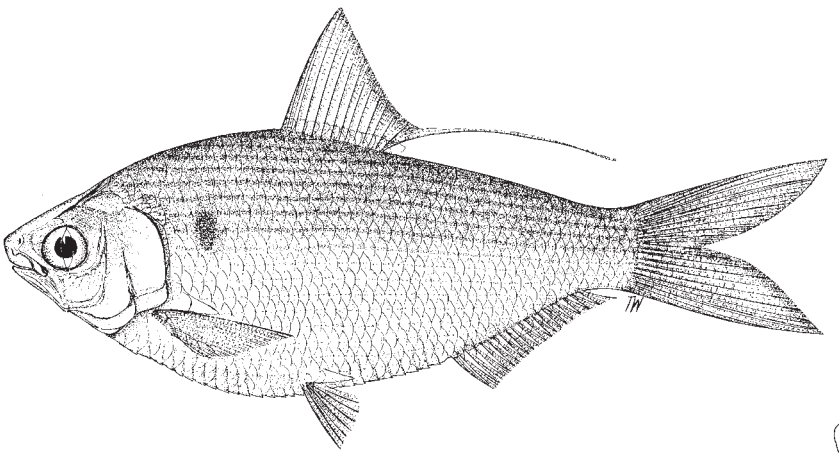
Distribution: Western Pacific (from Matsushima Bay, Sea of Japan, at about 36°N, southward to Taiwan Province of China, Hong Kong, the Philippines, and a single record from the Gulf of Thailand).

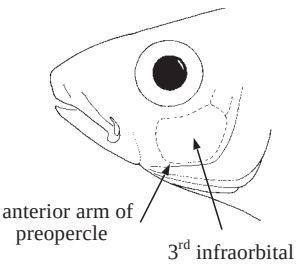


Nematalosa nasus (Bloch, 1795)

Frequent synonyms / misidentifications: *Chatoessus chrysopterus* Richardson, 1846; *Clupanodon nasica* Lacepède, 1803; *Dorosoma nasus* (Bloch, 1795) / None.

FAO names: En - Bloch's gizzard shad; **Fr** - Chardin gros nez; **Sp** - Machuelo narigón.



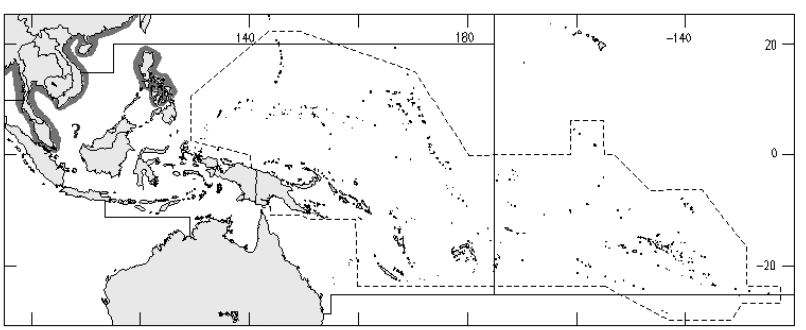


Diagnostic characters: A medium-sized marine gizzard shad; **body oval, becoming deeper in larger fish, depth about 34 to 41% of standard length; abdomen fully scuted with 17 to 19 (usually 18) prepelvic and 11 to 13 (usually 12) postpelvic scutes; total number of scutes 28 to 31 (usually 30); pelvic scute with ascending arms. Frontoparietal striae 6 to 11. Mouth inferior, lower jaw strongly flared outward**. Premaxillae short, maxilla expanded at tip and actually or apparently turned downward. **Upper jaw with distinct median notch when seen from in front; with a single small supramaxilla**. Maxilla reaching posteriorly to vertical through anterior margin of eye. **No fleshy outgrowths on posterior margin of gill opening. Opercle smooth without bony striae. Anterior arm of preopercle with third infraorbital bone immediately above it, no fleshy gap between. Gill rakers fine, numerous. Gill filaments fairly short at angle of first arch**. Branchiostegal rays 6. Dorsal-fin origin moderately anterior to midpoint of body; **last dorsal-fin ray filamentous**. Anal fin shorter than head; lying well posterior to vertical through base of posteriormost dorsal-fin ray; with 19 to 22 fin rays. Pelvic-fin insertion at vertical through base of anterior dorsal-fin rays; pelvic fins with i unbranched and 7 branched soft rays. **Predorsal scales paired and overlapping in midline. Posterior margin of scales distinctly denticulated. Axillary scale of pectoral fin present, 1 or 2 in number. Lateral-line scales 46 to 49**. **Colour:** blue-brown on back, flanks silvery, without spots; **a dark spot behind gill opening**.

Size: Maximum standard length 21 cm, commonly between 13 and 15 cm.

Habitat, biology, and fisheries: Marine, pelagic, probably entering estuaries. Feeds on detritus. Records of spawning in Chilka Lake, east coast of India, in August. No special fishery, but contributes to clupeid catches; in Saudi Arabia it is caught in set nets and traps, but commands only low to medium prices in markets. Other gears include purse seines. Marketed fresh, dried, dried-salted, boiled, or made into fish balls.

Distribution: Indo-West Pacific from the Persian Gulf, to India and Andaman Sea, Gulf of Thailand, South China Sea to the Philippines; north to Hong Kong and southern Japan or southern tip of Korea. It seems possible that the wide geographic range for *Nematalosa nasus* may indicate that more that one species is actually represented among specimens presently identified as this species.



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