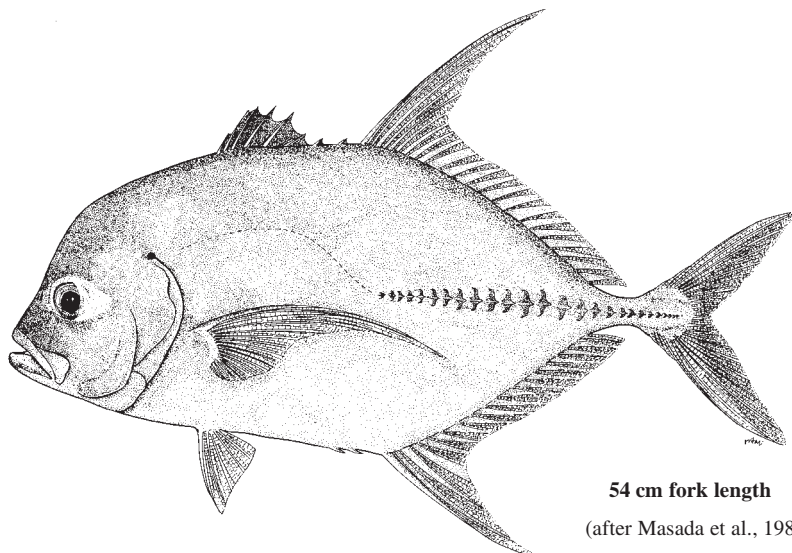


***Caranx lugubris* Poey, 1860**

**Frequent synonyms / misidentifications:** *Caranx ascensionis* Cuvier, 1833 [Smith-Vaniz and Randall, 1994, *Bull. Zool. Nomen.*, 15 (4), have petitioned the International Commission of Zoological Nomenclature to conserve the name *C. lugubris*]; *C. ishikawai* Wakiya, 1924 / None.

**FAO names:** En - Black jack; Fr - Carangue noire; Sp - Jurel negro.



54 cm fork length

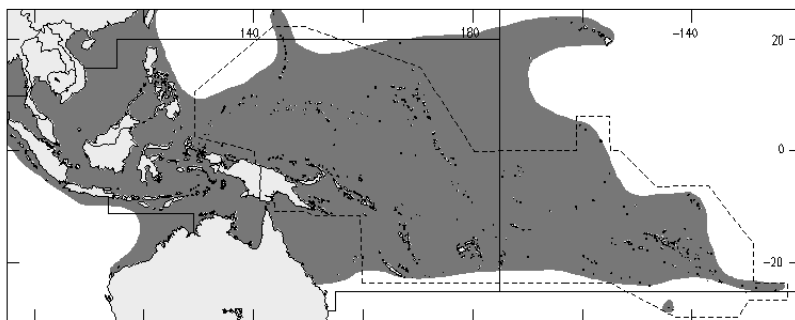
(after Masada et al., 1984)

**Diagnostic characters:** Body oblong, compressed; dorsal profile strongly convex anteriorly, ventral profile only slightly convex; **profile of head relatively steep and angular**. Adipose eyelid moderately developed, weak anteriorly, posterior eyelid extends onto eye to rear half of pupil. End of upper jaw extends to below middle of eye. Upper jaw with outer row of strong canines widely spaced in adults, and an inner band of small villiform teeth, widest at symphysis; on lower limb of first gill arch jaw with a single row of strong conical teeth widely spaced in adults. Gill rakers (including rudiments) 6 to 8 on upper limb and 17 to 22 on lower limb of first gill arch (total 23 to 30). Two separate dorsal fins, the first with VIII spines, the second with I spine and 20 to 22 soft rays; anal fin with II detached spines followed by I spine and 16 to 19 soft rays; total soft dorsal- and anal-fin rays 37 to 41; **dorsal-fin lobe contained 2.3 to 5.3 times in fork length in specimens larger than 15 cm fork length**. Straight part of lateral line with 26 to 32 strong scutes. **Breast completely scaly**. Vertebrae 10+14. **Colour: in life, head, body, and fins essentially uniform grey to brown, median fins and lateral-line scutes usually dark brown to black; upper end of opercle frequently with a dark spot, much smaller than pupil diameter.**

**Size:** Largest specimen examined 73.5 cm fork length (maximum weight not recorded).

**Habitat, biology, and fisheries:** Uncommon in shoal areas, confined to clear, offshore waters usually at depths of 25 to 65 m. Its early life history is unknown. Feeds primarily on fishes. Caught primarily on hook-and-line; also with traps and gill nets.

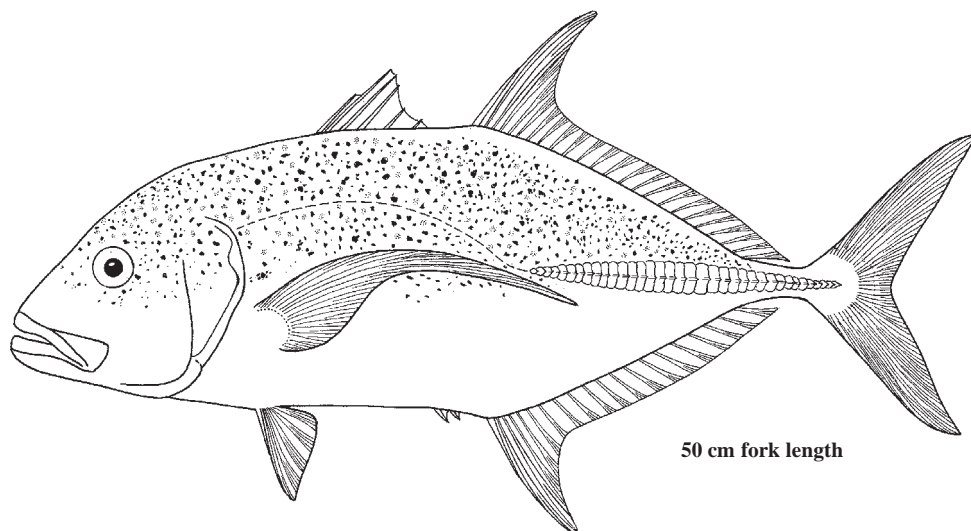
**Distribution:** A circumtropical species, very widespread but restricted to oceanic insular habitats.



***Caranx melampygyus* Cuvier, 1833**

**Frequent synonyms / misidentifications:** *Caranx stellatus* Eydoux and Souleyet, 1841; *C. medusicola* Jordan and Starks, 1895 / None.

**FAO names:** **En** - Bluefin trevally; **Fr** - Carangue aile bleue; **Sp** - Jurel de aleta azul.

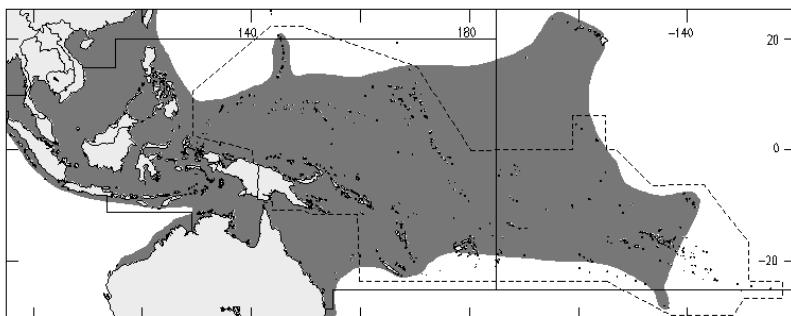


**Diagnostic characters:** Body oblong, compressed; dorsal profile moderately convex to second dorsal fin, ventral profile only slightly convex. Adipose eyelid weakly developed, small anteriorly, posterior adipose eyelid extends onto eye to rear border of pupil in large adults. End of upper jaw extends to below anterior margin of eye. Upper jaw with outer row of strong canines widely spaced in adults, and an inner band of small villiform teeth, widest at symphysis; on lower limb of first gill arch with a single row of strong conical teeth widely spaced in adults. **Gill rakers (including rudiments)** 5 to 9 on upper limb and 17 to 21 on lower limb of first gill arch (**total 25 to 29, usually 26 or 27**). Two separate dorsal fins, the first with VIII spines, the second with I spine and 21 to 24 soft rays; anal fin with II detached spines followed by I spine and 17 to 20 soft rays, total soft dorsal- and anal-fin rays 39 to 44; dorsal-fin lobe contained 4.2 to 6.7 times in fork length in specimens larger than 15 cm fork length. Straight part of lateral line with 0 to 10 anterior scales followed by 27 to 42 strong scutes. **Breast completely scaly.** Vertebrae 10+14. **Colour:** adults with head and dorsal half of body brassy, suffused with blue, and covered with small blue black spots (forming at about 16 to 22 cm fork length and increasing in number with size); ventrally body generally silvery white; **second dorsal, anal, and caudal fins electric blue;** pelvic fins whitish and pectoral fins mostly pale yellow; **in juveniles and young adults, head and body silvery grey and fins pale to dark dusky, except pectoral fins yellow.**

**Size:** Maximum verified size 80 cm total length and 6.8 kg; reported to attain 100 cm total length.

**Habitat, biology, and fisheries:** Invariably associated with reef habitats throughout its broad range; most common in offshore areas. Feeds primarily on other fishes; reported to move up onto reef flats at night to feed. Caught primarily on hook-and-line and by spearing; also with traps and gill nets. An excellent sports fish.

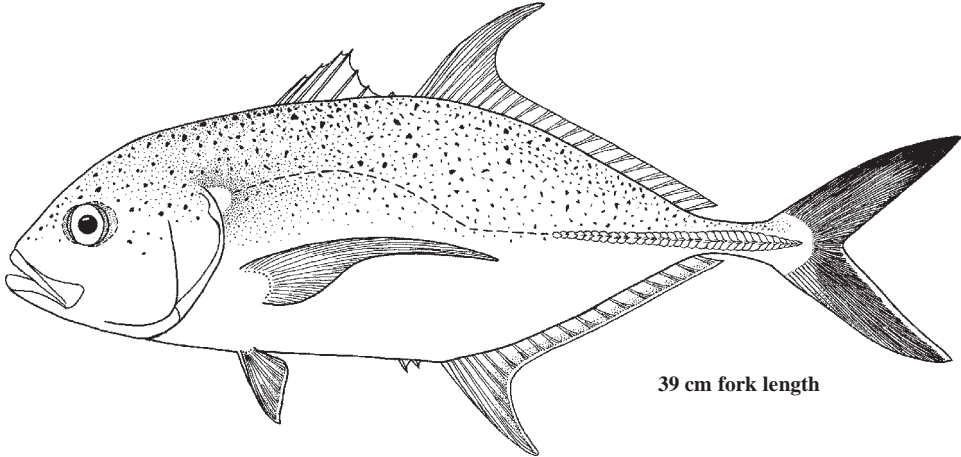
**Distribution:** Common throughout most of the western Indian Ocean, except apparently unrecorded from the Persian Gulf; elsewhere generally distributed throughout the Indo-West Pacific and tropical Eastern Pacific.



***Caranx papuensis*** Alleyne and Macleay, 1877

**Frequent synonyms / misidentifications:** *Caranx regularis* Garman, 1903; *C. celetus* Smith, 1968 / *C. melampyrgus* Cuvier, 1833 and "*C. sansun*."

**FAO names:** En - Brassy trevally; Fr - Carangue bronze; Sp - Jurel bronceado.

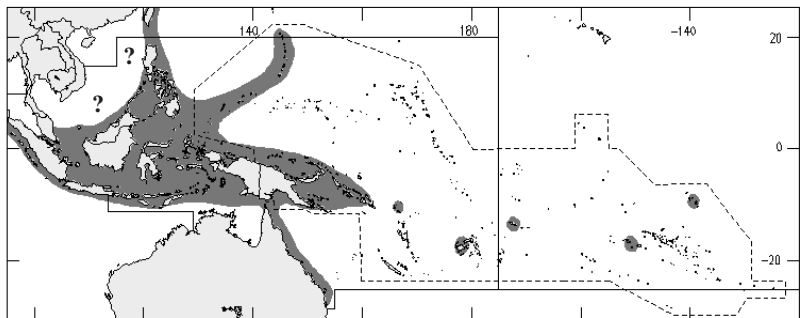


**Diagnostic characters:** Body oblong, compressed; dorsal profile moderately convex to second dorsal fin, ventral profile only slightly convex. Adipose eyelid weakly developed. End of upper jaw extends to below middle of eye. Upper jaw with outer row of strong canines widely spaced in adults, and an inner band of small villiform teeth, widest at symphysis; on lower limb of first gill arch jaw with a single row of strong conical teeth, widely spaced in adults. **Gill rakers (including rudiments)** 7 to 9 on upper limb and 18 to 21 on lower limb of first gill arch (**total 26 to 30**). Two separate dorsal fins, the first with VIII spines, the second with I spine and 21 to 23 soft rays; anal fin with II detached spines followed by I spine and 16 to 19 soft rays; total soft dorsal- and anal-fin rays 37 to 41; dorsal-fin lobe contained 4.1 to 5.6 times in fork length in specimens larger than 15 cm fork length. Straight part of lateral line with 0 to 3 anterior scales followed by 31 to 39 strong scutes. **Breast naked ventrally, usually with a small patch of prepelvic scales.** Vertebrae 10+14. **Colour:** in life, adults with head and body brassy to yellowish green above, silvery below; a conspicuous pale spot, approximately diameter of pupil, on shoulder just behind posterodorsal margin of opercle; small black spots (forming at about 25 cm fork length) scattered on body above lateral line, becoming more numerous with age; caudal fin with upper lobe uniformly dusky, on lower limb of first gill arch lobe dusky to bright yellow with a distinct, narrow white border; other fins pale to dusky yellow; anal and pelvic fins also with narrow white distal margins.

**Size:** Maximum verified size 68 cm fork length and 6.4 kg; commonly to at least 55 cm fork length.

**Habitat, biology, and fisheries:** Predominantly a seaward reef species although juveniles have been taken in estuaries; common on mainland reefs but rarely captured in offshore areas. Feeds primarily on other fishes. Caught primarily on hook-and-line and by spearing; also with gill nets and other artisanal gear.

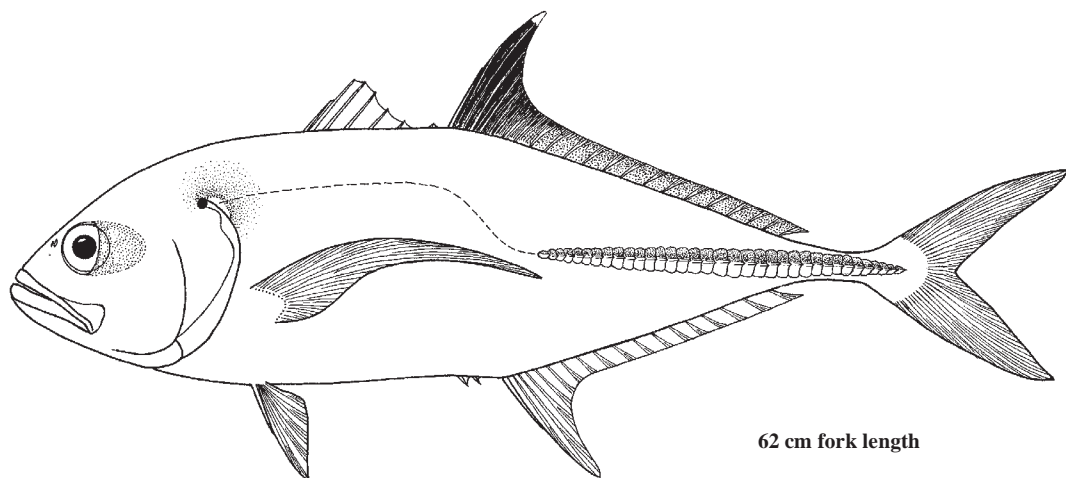
**Distribution:** In the Indian Ocean from South Africa to Zanzibar, the Malagasy Republic, Mauritius, Seychelles, and Sri Lanka; elsewhere in the Indo-West Pacific from Ryukyu Islands to Australia and eastward to the Mariana and Marquesas islands.



*Caranx sexfasciatus* Quoy and Gaimard, 1825

**Frequent synonyms / misidentifications:** *Caranx marginatus* Gill, 1863; *C. elacate* Jordan and Evermann, 1904 / None.

**FAO names:** En - Bigeye trevally; Fr - Carangue vorace; Sp - Jurel voraz.

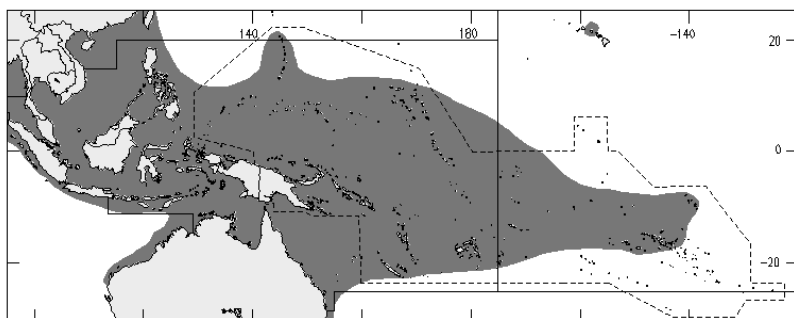


**Diagnostic characters:** Body oblong, compressed; **dorsal profile moderately convex anteriorly**, ventral profile only slightly convex; postorbital head length contained 6.4 to 8.2 times in fork length in specimens larger than 15 cm fork length. Adipose eyelid well developed, moderate anteriorly, posterior eyelid extends onto eye to rear border of pupil. End of upper jaw extends to beyond posterior margin of eye. Upper jaw with outer row of strong canines widely spaced in adults, and an inner band of small villiform teeth, widest at symphysis; on lower limb of first gill arch jaw with a single row of strong conical teeth widely spaced in adults. Gill rakers (including rudiments) 6 to 8 on upper limb and 15 to 19 on lower limb of first gill arch (total 21 to 25). Two separate dorsal fins, the first with VIII spines, the second with I spine and 19 to 22 soft rays; anal fin with II detached spines followed by I spine and 14 to 17 soft rays; total soft dorsal- and anal-fin rays 33 to 39; **dorsal-fin lobe contained 5 to 6.6 times in fork length in specimens larger than 15 cm fork length**. Straight part of lateral line with 0 to 3 anterior scales followed by 27 to 36 strong scutes. **Breast completely scaly. Vertebrae 10+15. Colour:** in life, adults with head and body silvery olive to iridescent blue-green above, silvery olive to whitish below; **small blackish spot, much smaller than pupil diameter, at upper angle of opercle (this spot evident on specimens of about 14 cm fork length); second dorsal fin olive to blackish, the lobe with a white tip (white tip becomes more obvious with increasing size);** anal and caudal fins yellowish to black; **lateral-line scutes dark to black.** In juveniles and young adults, head, body, and scutes more silvery and fins paler (grey to yellow) except upper half of dorsal-fin lobe and upper lobe of caudal fin usually dark.

**Size:** Maximum verified size 78 cm fork length and 7.7 kg; commonly to about 60 cm fork length.

**Habitat, biology, and fisheries:** A reef-associated species commonly caught in large numbers hand-lining around lights at night in waters inside the reef; juveniles may occur in estuaries. Feeds primarily on fishes and crustaceans. Caught mainly on hook-and-line; also with gill nets, purse seines, and other artisanal gear.

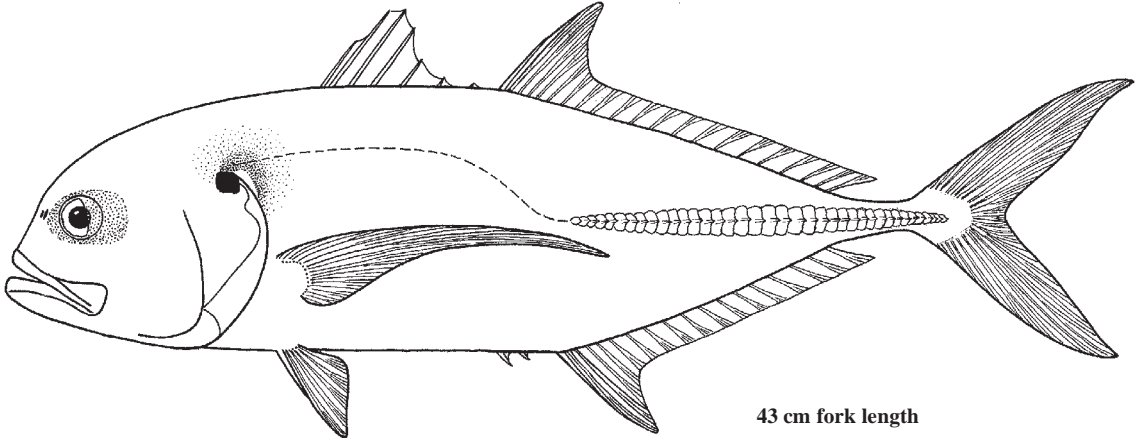
**Distribution:** Broadly distributed throughout the tropical Indo-West Pacific, including Hawaii; also occurs in the eastern Pacific Ocean and from Ecuador to Mexico, including the Galapagos Islands.



***Caranx tille* Cuvier, 1833**

**Frequent synonyms / misidentifications:** *Caranx cynodon* Bleeker, 1851 / *Caranx sexfasciatus* (Quoy and Gaimard, 1825).

**FAO names:** En - Tille trevally; Fr - Carangue tille; Sp - Jurel tille.



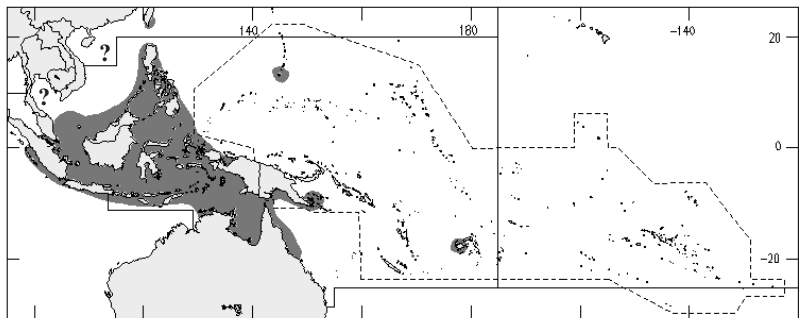
43 cm fork length

**Diagnostic characters:** Body oblong, compressed; **dorsal profile strongly convex anteriorly**, ventral profile only slightly convex; postorbital head length contained 5.7 to 7.3 times in fork length in specimens larger than 15 cm fork length. Adipose eyelid well developed, moderate anteriorly, posterior eyelid extends onto pupil. End of upper jaw extends beyond posterior margin of eye. Upper jaw with outer row of strong canines widely spaced in adults, and an inner band of small villiform teeth, widest at symphysis; on lower limb of first gill arch jaw with a single row of strong conical teeth widely spaced in adults. Gill rakers (including rudiments) 6 to 8 on upper limb and 15 to 17 on lower limb of first gill arch (total 22 to 25). Two separate dorsal fins, the first with VIII spines, the second with I spine and 20 to 22 soft rays; anal fin with II detached spines followed by I spine and 16 to 18 soft rays; total soft dorsal- and anal-fin rays 36 to 40; **dorsal-fin lobe contained 5.7 to 8.8 times in fork length in specimens larger than 15 cm fork length**. Straight part of lateral line with 0 to 2 anterior scales followed by 33 to 42 strong scutes. **Breast completely scaly. Vertebrae 10+14. Colour:** in life, adults with head and body dark olive-green to bluish grey above, shading to silvery white below; **blackish spot, at least 1/2 diameter of pupil, at upper margin of opercle (this spot evident on specimens of about 20 cm fork length); second dorsal fin olive-grey to blackish, the lobe without a white tip;** anal and caudal fins yellow-olive to blackish; **lateral-line scutes grey, except dark in caudal peduncle region;** in juveniles and young adults, head and body pale olive to silvery grey and fins uniformly pale to dusky.

**Size:** Maximum verified size 69 cm fork length and 4.3 kg.

**Habitat, biology, and fisheries:** A coastal species with a preference for inshore neritic waters, mainly around rocky and coral reefs. Feeds primarily on other fishes and crustaceans. Caught mainly on hook-and-line; also with gill nets, purse seines, and other artisanal gear.

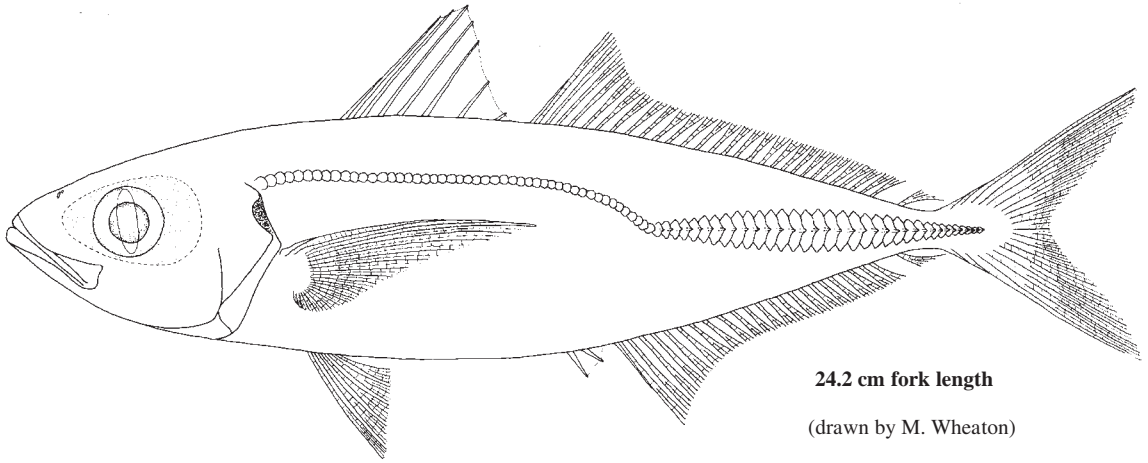
**Distribution:** South Africa northward at least to Zanzibar, northeast coast of Malagasy Republic, and Sri Lanka; elsewhere in the Indo-West Pacific known from Okinawa, Guam, the Philippines, Indonesia, northern Australia, New Guinea, and Fiji.



***Decapterus kurroides* Bleeker, 1855**

**Frequent synonyms / misidentifications:** *Decapterus kurroides akaadsi* Abe, 1958 / None.

**FAO names:** **En** - Redtail scad; **Fr** - Comète mauouane; **Sp** - Macarela mauuana.



24.2 cm fork length

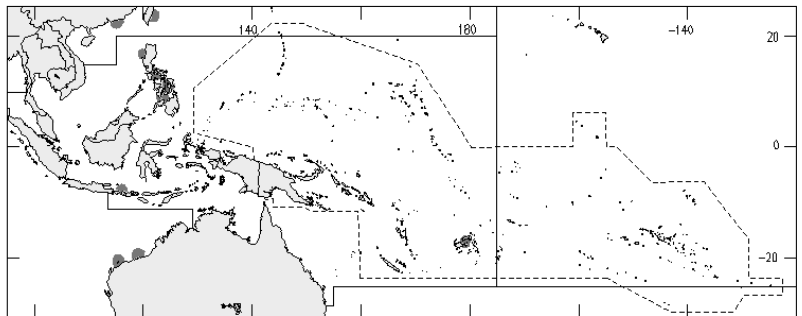
(drawn by M. Wheaton)

**Diagnostic characters:** Body elongate, moderately slender and slightly compressed. Adipose eyelid well developed, completely covering eye except for a vertical slit centred on pupil; Scales on top of head extend forward to anterior margin of pupil. Oral valve (membrane) at symphysis of upper jaw dusky or transparent. Posterior end of upper jaw straight above, slightly concave and not noticeably slanted anterovertally. Upper jaw with a narrow band of minute teeth, widest anteriorly; lower jaw with a single irregular series of minute teeth. Gill rakers (including rudiments) 9 to 12 on upper limb and 26 to 32 on lower limb of first gill arch (total 36 to 41). **Shoulder girdle (cleithrum) margin with 2 small papillae, the lower papilla larger.** Two widely separate dorsal fins, the first with VIII spines, the second with I spine and 28 to 30 soft rays (including finet); anal fin with II detached spines followed by I spine and 22 to 26 soft rays (including finlet); **terminal dorsal- and anal-fin rays each consisting of a widely detached finlet;** pectoral fins moderately long (88 to 105% of head length), tip of appressed fins typically extending to or slightly beyond a vertical line from second dorsal-fin origin. Lateral line anteriorly with a low regular arch, with junction of curved and straight parts below vertical from eleventh to thirteenth soft rays of second dorsal fin; **scales in curved part of lateral line 47 to 55; scutes in curved part 0 to 2; straight part without anterior scales, and with 31 to 36 scutes; total scales and scutes in lateral line (excluding scales on caudal fin) 80 to 86.** Vertebrae 10+14. **Colour:** in life, bluish green above, silvery white below; moderate black blotch on margin of opercle near upper edge; **caudal fin red;** spinous dorsal and second dorsal-fin lobe sometimes dark, anal and pelvic fins pale dusky to white.

**Size:** Largest specimen examined 41 cm fork length and 44 cm total length; commonly to about 30 cm fork length.

**Habitat, biology, and fisheries:** A deep-water, schooling species taken in depths of 100 to 300 m, but usually below 150 m. Feeds primarily on smaller planktonic invertebrates. Caught with midwater trawls.

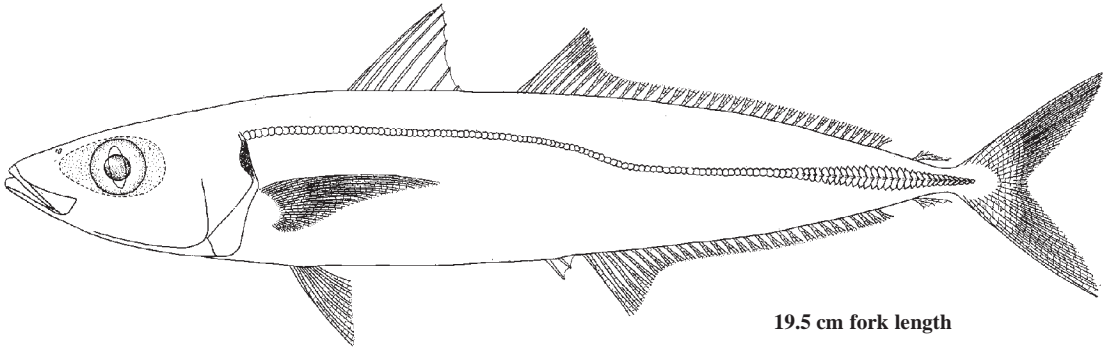
**Distribution:** Distribution poorly known, due to the deep-water habitat preference of this species. In the Indian Ocean known from off Kenya, Tanzania, and Reunion Island; elsewhere in the Indo-West Pacific known from Japan, Taiwan Province of China, Indonesia, the Philippines, and Australia.



***Decapterus macarellus* Cuvier, 1833**

**Frequent synonymys / misidentifications:** *Decapterus jacobus* (Cuvier, 1833); *D. pinnulatus* (Eydox and Souleyet, 1841); *D. canonoides* Jenkins, 1903 / *Decapterus macrosoma* Bleeker, 1851 (a valid species, but this name has often been misapplied to *D. macarellus*).

**FAO names:** En - Mackerel scad; Fr - Comète maquereau; Sp - Macarela caballa.



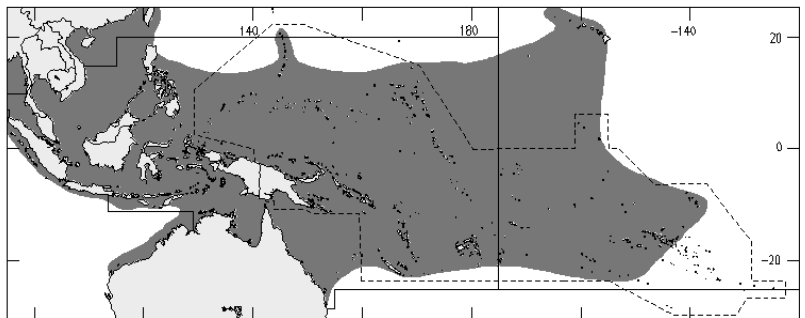
(drawn by M. Wheaton)

**Diagnostic characters:** Body very elongate, slender and nearly round in cross-section. Adipose eyelid well developed, completely covering eye except for a vertical slit centred on pupil. Scales on top of head extend forward to anterior margin of pupil. **Oral valve (membrane) at symphysis of upper jaw conspicuously white in adults. Posterior end of upper jaw straight above, moderately rounded and noticeably slanted anteroventrally.** Both jaws without teeth. Gill rakers (including rudiments) 10 to 13 on upper limb and 34 to 41 on lower limb of first gill arch (total 45 to 54). **Shoulder girdle (cleithrum) margin with 2 small papillae, the lower papilla larger.** Two widely separate dorsal fins, the first with VIII spines, the second with I spine and 31 to 37 soft rays (including finlet); anal fin with II detached spines followed by I spine and 27 to 31 soft rays (including finlet); **terminal dorsal- and anal-fin rays each consisting of a widely detached finlet;** pectoral fins short (58 to 72% of head length), **tip of appressed fins falling considerably short of a vertical line from second dorsal-fin origin.** Lateral line anteriorly with a low regular arch, with junction of curved and straight parts below vertical from eleventh to thirteenth soft rays of second dorsal fin; **scales in curved part of lateral line 58 to 75, no scutes in curved part; straight part with 18 to 39 scales,** followed by 24 to 40 scutes; total scales and scutes in lateral line (excluding scales on caudal fin) 110 to 138. Vertebrae 10+14. **Colour:** in life, bluish green above, silvery below; small black blotch on margin of opercle near upper edge; caudal fin yellow-green; dorsal-fin lobe sometimes dark distally, anal and pelvic fins pale to whitish.

**Size:** Largest specimen examined 30 cm fork length and 32 cm total length; commonly to about 26 cm fork length.

**Habitat, biology, and fisheries:** A schooling species, occurring mostly in open water and common in insular habitats. Sometimes near the surface but usually taken in depths between 40 and 200 m. Feeds primarily on smaller planktonic invertebrates. Caught with purse seines and trawls.

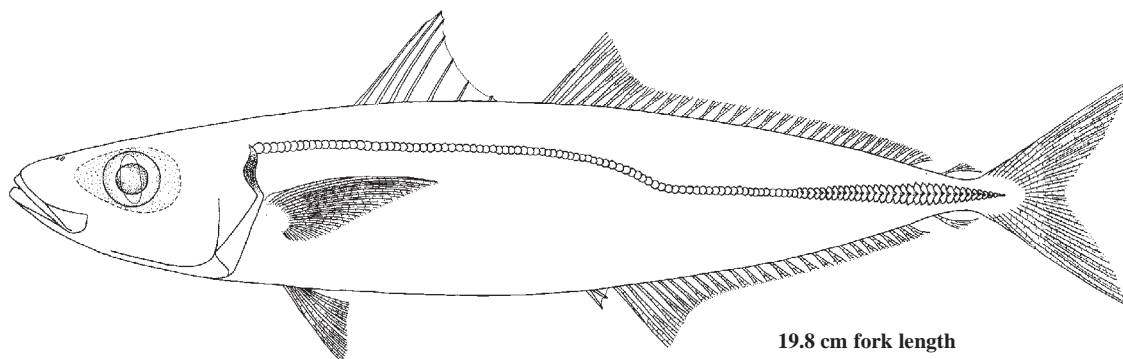
**Distribution:** A circumtropical species. Widespread throughout the tropical Indian Ocean, including the Red Sea but not the Persian Gulf; in the Indo-West Pacific to the Marquesas Islands, north to southern Japan and south to Australia.



***Decapterus macrosoma* Bleeker, 1851**

**Frequent synonyms / misidentifications:** *Decapterus afuerae* Hildebrand, 1946; *D. lajang* (a synonym of *D. russelli*, but this name has often been misapplied to *D. macrosoma*) / *Decapterus macarellus* (Cuvier, 1833).

**FAO names:** En - Shortfin scad; Fr - Comère fine; Sp - Macarela alicorta.



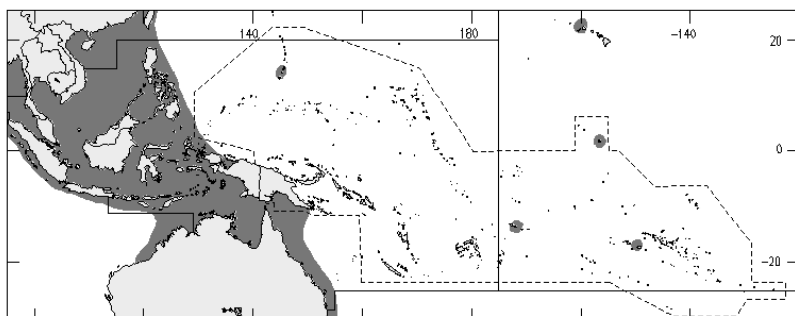
(drawn by M. Wheaton)

**Diagnostic characters:** Body very elongate, slender and nearly rounded. Eye moderate, with adipose eyelid well developed, completely covering eye except for a vertical slit centred on pupil. Scales on top of head do not extend forward to beyond posterior margin of pupil. Oral valve (membrane) at symphysis of upper jaw dusky or transparent. **Posterior end of upper jaw concave above, rounded and produced below.** Upper jaw without teeth and lower jaw with a single series of minute teeth. Gill rakers (including rudiments) 10 to 12 on upper limb and 34 to 38 on lower limb of first gill arch (total 43 to 50). **Shoulder girdle (cleithrum) margin with 2 small papillae, the lower papillae larger.** Two widely separate dorsal fins, the first with VIII spines, the second with I spine and 33 to 39 soft rays (including finlet); anal fin with II detached spines followed by I spine and 27 to 31 soft rays (including finlet); **terminal dorsal- and anal-fin rays each consisting of a widely detached finlet;** pectoral fins short (61 to 75% of head length), **tip of appressed fins falling considerably short of a vertical line from second dorsal-fin origin.** Lateral line anteriorly with a low regular arch, with junction of curved and straight parts below vertical from eleventh to thirteenth soft rays of second dorsal fin; **scales in curved part of lateral line 58 to 72; no scutes in curved part; straight part with 14 to 29 scales** followed by 24 to 40 scutes; total scales and scutes in lateral line (excluding scales on caudal fin) 110 to 126. Vertebrae 10+14. **Colour:** in life, metallic blue above, silvery below; small black blotch on margin of opercle near upper edge; caudal fin hyaline to dusky and dorsal-fin lobe sometimes dark distally; other fins mostly pale.

**Size:** The smallest Indo-West Pacific species of *Decapterus*. Maximum fork length about 30 cm, but rarely exceeding 25 cm fork length.

**Habitat, biology, and fisheries:** A schooling species, in depths between 30 and at least 170 m, reported to occur much deeper. Feeds primarily on smaller planktonic invertebrates. Caught with purse seines and trawls.

**Distribution:** Widespread in the tropical Indo-West Pacific, from East Africa, including the Red Sea but not the Persian Gulf, north to southern Japan and south to Australia and eastward to Hawaii; also present in the eastern Pacific Ocean, from the Gulf of California and Peru.

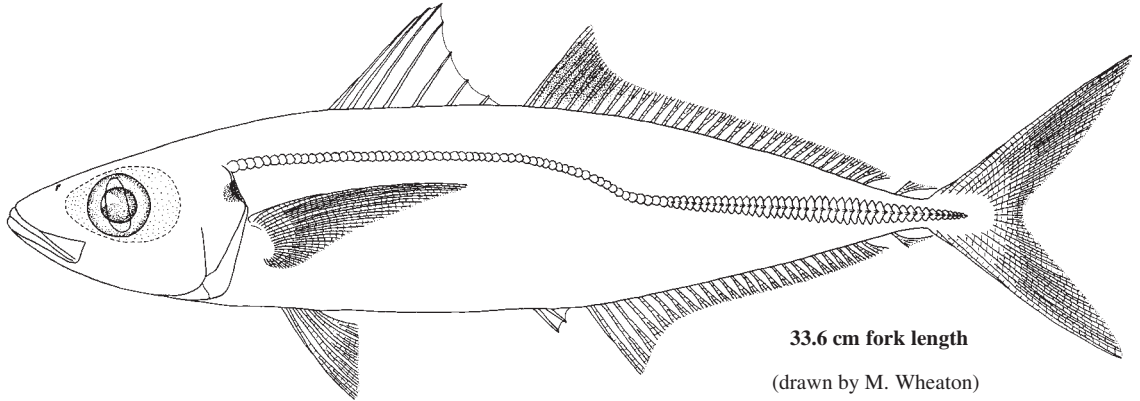




***Decapterus muroadsi*** (Temminck and Schlegel, 1844)

**Frequent synonyms / misidentifications:** *Caranx scombrinus* Valenciennes, 1844; *Decapterus hypodus* Gill, 1862 / *Decapterus macarellus* (Cuvier, 1833).

**FAO names:** En - Amberstripe scad.

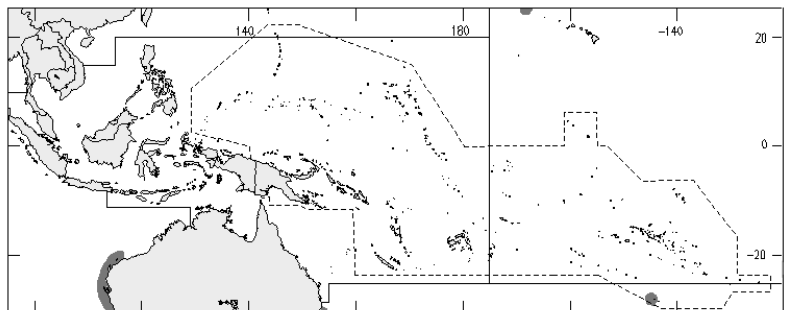


**Diagnostic characters:** Body very elongate, slender and nearly rounded. Eye moderate, with adipose eyelid well developed, completely covering eye except for a vertical slit centred on pupil. Scales on top of head do not extend forward to anterior margin of pupil. **Oral valve (membrane) at symphysis of upper jaw white. Posterior end of upper jaw straight above, not noticeably slanted anteroventrally.** Upper jaw with irregular series of minute teeth anteriorly, becoming obsolete with age; lower jaw with a single series of minute teeth. Gill rakers (including rudiments) 13 to 15 on upper limb and 36 to 42 on lower limb of first gill arch (total 47 to 56). **Shoulder girdle (cleithrum) margin with 2 small papillae, the lower papillae larger.** Two widely separate dorsal fins, the first with VIII spines, the second with I spine and 29 to 33 soft rays (including finlet); anal fin with II detached spines followed by I spine and 25 to 28 soft rays (including finlet); **terminal dorsal- and anal-fin rays each consisting of a widely detached finlet;** pectoral fins short (71 to 93% of head length), tip of appressed fins falling usually short of a vertical line from second dorsal-fin origin. Lateral line anteriorly with a low regular arch, with junction of curved and straight parts below vertical from eleventh to thirteenth soft rays of second dorsal fin; **scales in curved part of lateral line 54 to 76; no scutes in curved part; straight part with 5 to 15 scales** followed by 32 to 42 scutes; total scales and scutes in lateral line (excluding scales on caudal fin) 102 to 121. Vertebrae 10+14. **Colour:** in life, bluish green above, silvery below; small black blotch on margin of opercle near upper edge; amber stripe often present on sides; **caudal fin with lower lobe dusky and upper lobe greenish yellow;** dorsal-fin lobe usually dark distally; other fins mostly pale.

**Size:** Maximum fork length at least 45 cm; commonly to about 30 cm fork length.

**Habitat, biology, and fisheries:** A pelagic schooling species. Feeds primarily on smaller planktonic invertebrates. Caught with purse seines and trawls.

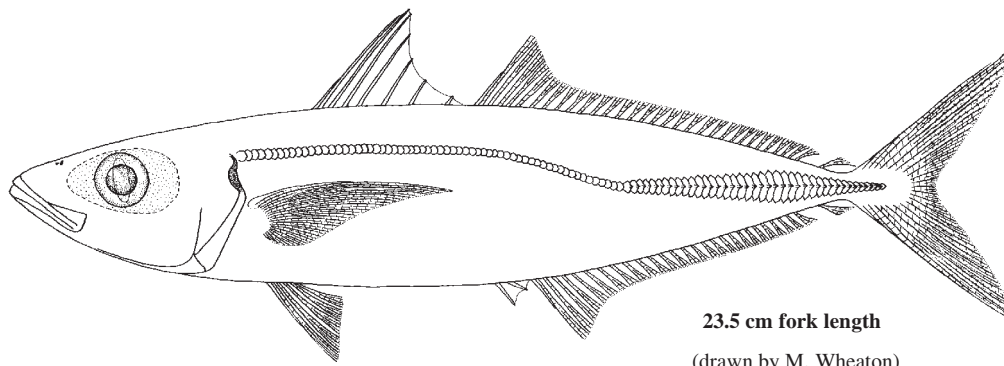
**Distribution:** Broadly distributed, warm-temperate Indo-West Pacific species known from Australia, southern Japan, northern Hawaiian Islands, Rapa, Easter Island, Nazca Ridge, the eastern Pacific Ocean (Gulf of California to Peru), and an apparently relict population at St. Helena Is. in the mid-South Atlantic Ocean.



***Decapterus russelli*** (Rüppell, 1830)

**Frequent synonyms / misidentifications:** *Decapterus kiliche* (Cuvier, 1833); *D. dayi* Wakiya, 1928; *D. lajang* Bleeker, 1885 (this name has often been misapplied to *D. macrosoma*) / *Decapterus maruadsi* (Temminck and Schlegel, 1844) (a questionably valid species, apparently restricted to Japan and the South China Sea, but this name has often been misapplied to *D. russelli*); *D. tabl* Berry, 1968.

**FAO names:** **En** - Indian scad; **Fr** - Comère indienne; **Sp** - Macarela indica.



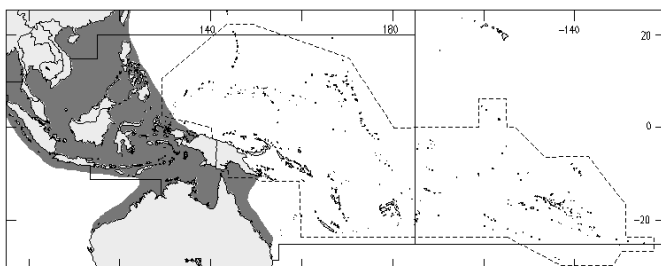
**Diagnostic characters:** Body elongate, moderately slender and slightly compressed. Eye moderate, with adipose eyelid well developed, completely covering eye except for a vertical slit centred on pupil. Scales on top of head do not extend forward to beyond centre of pupil. Oral valve (membrane) at symphysis of upper jaw dusky or transparent. Posterior end of upper jaw straight above, slightly concave and not noticeably slanted anteroventrally. Both jaws with an irregular row of minute teeth anteriorly and a single series posteriorly. Gill rakers (including rudiments) 10 to 14 on upper limb and 30 to 39 on lower limb of first gill arch (total 41 to 53). **Shoulder girdle (cleithrum) margin with 2 small papillae, the lower papilla larger.** Two widely separate dorsal fins, the first with VIII spines the second with I spine and 28 to 33 soft rays (including finlet); anal fin with II detached spines followed by I spine and 25 to 29 soft rays (including finlet); **terminal dorsal- and anal-fin rays each consisting of a widely detached finlet;** pectoral fins 76.5 to 97% of head length, tip of appressed fins falling short of to slightly beyond a vertical line from second dorsal-fin origin. Lateral line anteriorly with a low regular arch, with junction of curved and straight parts below vertical from eleventh to thirteenth soft rays of second dorsal fin; **scales in curved part of lateral line 42 to 62, scutes in curved part 0 to 4, straight part with 0 to 4 scales, followed by 30 to 40 scutes; total scales and scutes in lateral line (excluding scales on caudal fin) 77 to 102.** Vertebrae 10+14. **Colour:** in life, bluish green above, silvery below; small black blotch on margin of opercle near upper edge; **caudal fin hyaline to dusky brown**, second dorsal fin hyaline basally, light dusky distally; other fins mostly hyaline, except pelvic fins of adult males slightly dark.

**Size:** Largest specimen examined 35 cm fork length; commonly to about 20 cm fork length.

**Habitat, biology, and fisheries:** The most common species of *Decapterus* in inshore waters in depths not exceeding 100 m. Reaches sexual maturity during the first year of life at about 12 cm total length. Fish of 15 cm total length (average weight 50 g) and 2 to 3 years of age are the most frequent in catches. Feeds primarily on smaller planktonic invertebrates. Caught with purse seines and trawls.

**Distribution:** Broadly distributed throughout the Indian Ocean and from Japan to Australia in the western Pacific Ocean.

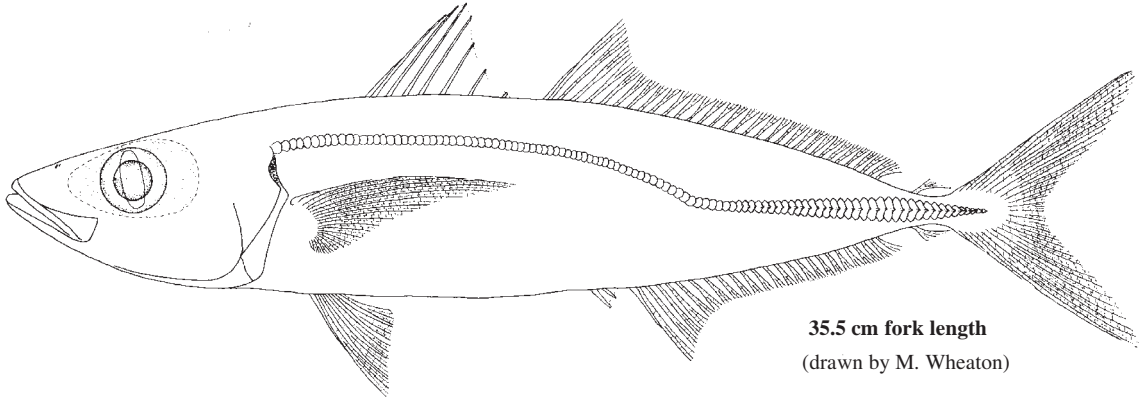
**Remarks:** Two somewhat different morphological "forms" of *Decapterus* are here recognized as *D. russelli*. The more abundant form is characterized by a more robust body, larger scales, fewer scales in the curved part of the lateral line and tends to have more gill rakers. The more elongate "lajang" form attains a larger size and usually has shorter pectoral fins. Some morphologically intermediate specimens exist and because the "lajang" form tends to be more typical of fish from insular habitats, the observed differences are believed to be environmentally determined.



***Decapterus tabl* Berry, 1968**

**Frequent synonyms / misidentifications:** None / In Japan, the name *Decapterus russelli* has often been misapplied to this relatively common species. The misapplication of the name originates with Bertin and Dollfus (1948, *Mem.Mus.natn.Hist.Nat.*) who made an invalid neotype selection for *D. russelli* (Rüppell).

**FAO names:** En - Roughear scad; Fr - Comère queue rouge; Sp - Macarela rabo colorado.



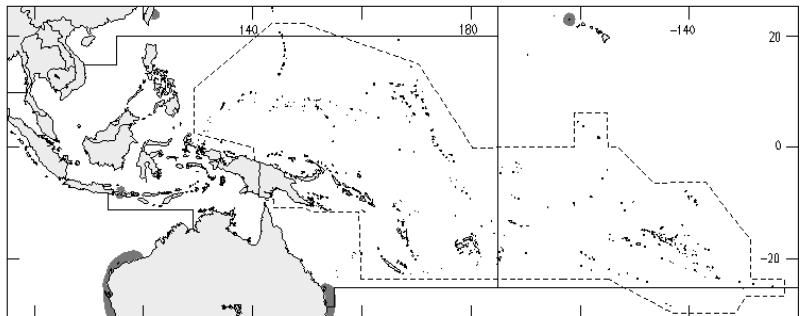
**Diagnostic characters:** Body very elongate, slender and nearly rounded. Eye moderate, with adipose eyelid well developed, completely covering eye except for a vertical slit centred on pupil. Scales on top of head extend forward to anterior margin of pupil. **Posterodorsal margin of opercular membrane minutely serrated in adults. Oral valve (membrane) at symphysis of upper jaw dusky or transparent. Posterior end of upper jaw straight above, slightly concave and not strongly slanted anteroventrally.** Upper jaw with an irregular series of minute teeth anteriorly that become obsolete with age. Lower jaw with a single series of minute teeth. Gill rakers (including rudiments) 10 to 12 on upper limb and 30 to 33 on lower limb of first gill arch (total 41 to 45). **Shoulder girdle (cleithrum) margin with 2 small papillae, the lower papilla larger.** Two widely separate dorsal fins, the first with VIII spines, the second with I spine and 30 to 34 soft rays (including finlet); anal fin with II detached spines followed by I spine and 24 to 26 soft rays (including finlet); **terminal dorsal- and anal-fin rays each consisting of a widely detached finlet;** pectoral fins 62 to 83% of head length, tip of appressed fins falling slightly to distinctly short of a vertical line from second dorsal-fin origin. Lateral line anteriorly with a low regular arch, with junction of curved and straight parts below vertical from eleventh to fourteenth soft rays of second dorsal fin; **scales in curved part of lateral line 61 to 73; no scutes in curved and straight part with 4 to 12 scales, followed by 30 to 40 scutes; total scales and scutes in lateral line (excluding scales on caudal fin) 103 to 118.** Vertebrae 10+14. **Colour:** in life, metallic blue to greenish above, silvery below; small black blotch on margin of opercle near upper edge; **caudal fin bright red and tips of soft dorsal-fin rays tinged with red.**

**Size:** The largest Indo-West Pacific species of *Decapterus*. Maximum fork length about 48 cm, commonly to 35 cm fork length.

**Habitat, biology, and fisheries:** Most captures of this deep-water, schooling species are from depths of 200 to 360 m. Feeds primarily on smaller planktonic invertebrates. Caught with purse seines and trawls.

**Distribution:** Distribution poorly known, due to the deep-water habitat preference of this species. In the

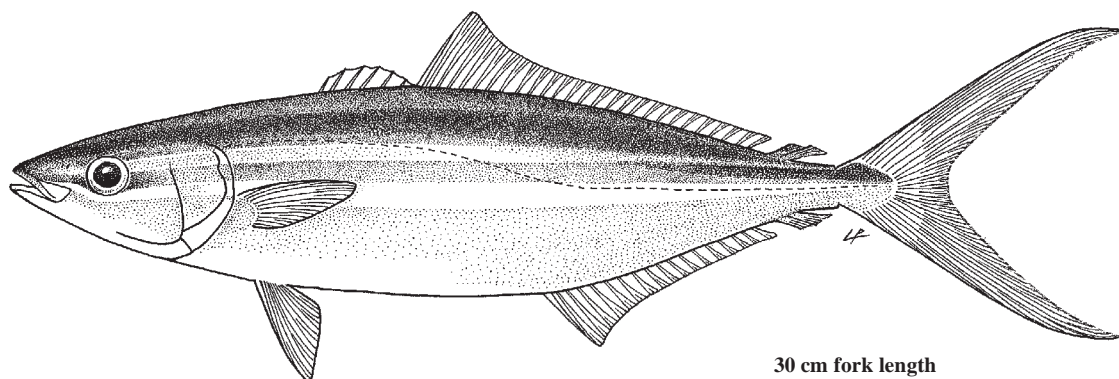
Indian Ocean known from a single collection off Kenya. Elsewhere in the Indo-West Pacific known from Japan and Okinawa, Indonesia, Australia, and the Hawaiian Archipelago (Necker Island). Also occurs in the western Atlantic Ocean: Bermuda, South America off Colombia and Verlezuela, and at St. Helena in the mid-South Atlantic.



*Elagatis bipinnulata* (Quoy and Gaimard, 1825)

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** **En** - Rainbow runner; **Fr** - Comère saumon; **Sp** - Macarela salmón.

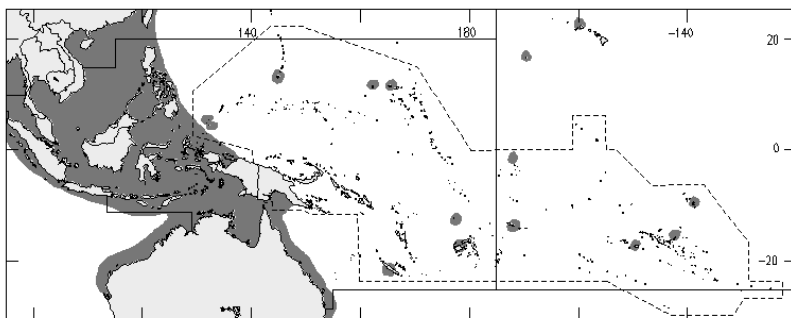


**Diagnostic characters:** Body greatly elongate, almost fusiform. Head and snout pointed; mouth small, **upper jaw ending distinctly before eye (to below anterior margin of eye in young)**. Teeth in jaws in villiform bands, minute teeth also on roof of mouth and on tongue. **Dorsal fin with VI spines, followed by I spine and 25 to 30 soft rays including a detached terminal 2-rayed finlet; anal fin with only I spine, slightly detached from rest of fin and covered by skin in fish of larger sizes, followed by a second spine continuous with the following 18 to 22 soft rays, including a detached 2-rayed finlet;** anal-fin base relatively short, contained about 1.5 times in second dorsal-fin base; pectoral fins short, about 2 times in head length and about as long as pelvic fins; caudal fin deeply forked. Lateral line with a slight anterior arch. No scutes; caudal peduncle grooves present. Vertebrae 10+14. **Colour: dark olive-blue or green dorsally and white ventrally; 2 narrow light blue or bluish white stripes along sides, with a broader olive or yellowish stripe between them; fins dark with an olive or yellow tint.**

**Size:** Maximum fork length 107 cm (possibly to 120 cm); commonly to 80 cm fork length. Maximum weight 10.5 kg.

**Habitat, biology, and fisheries:** A pelagic species, usually found at or near the surface, over reefs or sometimes far offshore; may form sizeable schools. Feeds on invertebrates and small fishes. Caught mainly on hook-and-line; also with gill nets. An excellent sports fish.

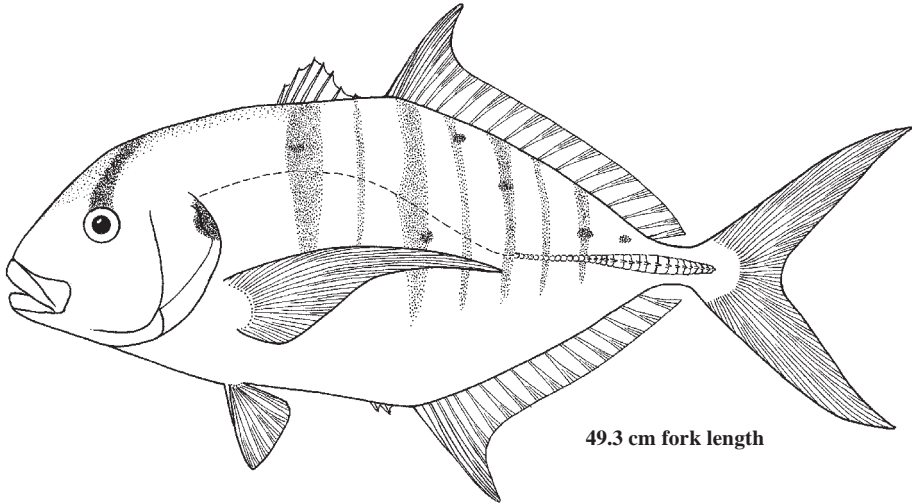
**Distribution:** Widespread circumtropical species.



***Gnathanodon speciosus* (Forsskål, 1775)**

**Frequent synonyms / misidentifications:** *Caranx speciosus* (Forsskål, 1775) / None.

**FAO names:** **En** - Golden trevally; **Fr** - Carangue royale jaune; **Sp** - Jurel dorado.

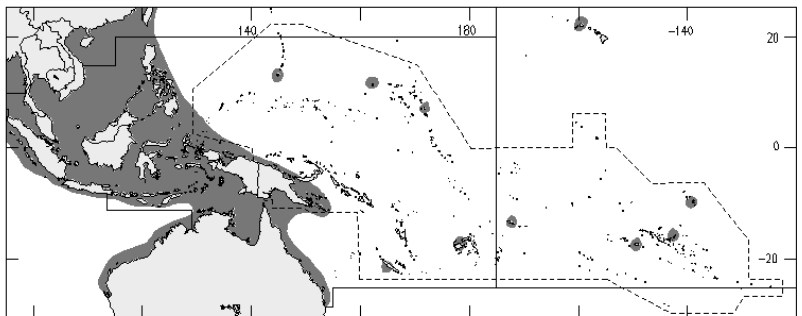


**Diagnostic characters:** Body compressed, oblong, **lips noticeably papillose and upper jaw strongly protactile**. Eye diameter smaller than snout length. **Upper jaw without teeth; lower jaw with a few feeble teeth in young (smaller than 10 cm fork length) absent in adults**. Gill rakers (including rudiments) 7 to 9 on upper limb and 19 to 22 on lower limb of first gill arch (total 27 to 30). Two separate dorsal fins, the first with VII spines, the second with I spine and 18 to 20 soft rays; anal fin with II detached spines followed by I spine and 15 to 17 soft rays; lobe of second dorsal fin shorter than head length. Lateral line anteriorly with a moderate regular arch, with junction of curved and straight parts below vertical from between ninth and fourteenth soft rays of second dorsal fin; chord of curved part of lateral line longer to slightly shorter than straight part of lateral line, contained 0.75 to 1.3 times in straight part; straight part of lateral line with 17 to 24 scales followed by 17 to 26 scutes. **Breast completely scaly**. Vertebrae 10+14. **Colour:** **juveniles and young adults silvery to yellow with 7 to 11 black bands, usually alternating broad and narrow**; the first band oblique through eye, the second crossing back and opercle; upper margin of opercle black; **all fins yellow, tips of caudal-fin lobes black; dark opercular spot also fades with age and body becomes yellow-green dorsally, pale yellow below**.

**Size:** Maximum size not known but reported to attain 110 cm fork length. South African spearfishing record 14.5 kg.

**Habitat, biology, and fisheries:** Found inshore, including rocky reefs, deep lagoons, and seaward reefs. A bottom feeder that uses its highly protractile mouth to root the sand and small crevices for crustaceans, molluscs, and small fishes. Young display "piloting" habits with sharks and other large fish such as groupers; their maneuverability protects them from their host, and the association probably affords them some protection from other predators. Caught mainly with gill nets and by spearing.

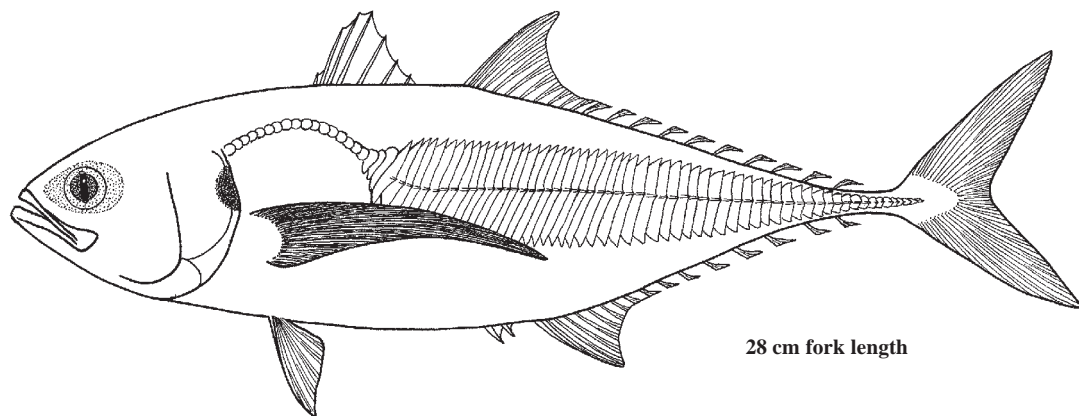
**Distribution:** Broadly distributed throughout the Indo-West Pacific, including Hawaii; also occurs in the eastern Pacific Ocean, from Peru to Baja California.



***Megalaspis cordyla* (Linnaeus, 1758)**

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** **En** - Torpedo scad; **Fr** - Comère torpille; **Sp** - Macarela torpedo.

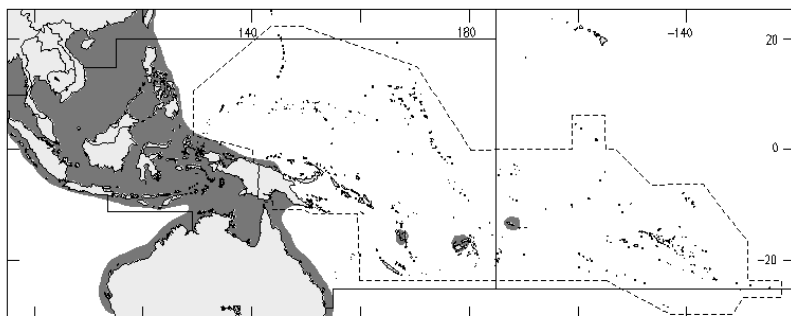


**Diagnostic characters:** Body elongate, subcylindrical, a little compressed posteriorly, and **caudal peduncle strongly compressed with a marked medial keel**; snout and lower jaw pointed. Eye moderate, with well developed adipose eyelid completely covering eye except for a vertical slit centred on pupil. Upper jaw extending posteriorly to centre of eye. Upper jaw with small villiform teeth, outer teeth moderately enlarged; lower jaw with a single row of small teeth, except a narrow band anteriorly. Gill rakers (including rudiments) 8 to 11 on upper limb and 18 to 22 on lower limb of first gill arch (total 26 to 32). Shoulder girdle (cleithrum) margin smooth, without papillae. Two separate dorsal fins, the first with VIII spines, **the second with I spine and 18 to 20 soft rays, posterior 7 to 9 rays consisting of detached finlets**; anal fin with II detached spines followed by I spine and 16 or 17 soft rays, **posterior 8 to 10 rays consisting of detached finlets**; spinous dorsal fin moderately high, longest spine height about equal to length of soft dorsal-fin lobe. **Lateral line strongly arched anteriorly, with junction of curved and straight parts below vertical from fourth or fifth spine of dorsal fin**; chord of curved part of lateral line contained 3.6 to 4.7 times in straight part (to caudal-fin base); scales in curved part of lateral line 21 to 28; straight part with **51 to 59 very large scutes**. Breast naked ventrally and laterally in a triangular area for about one third distance to pectoral-fin base. Vertebrae 10+14. **Colour:** head and body bluish grey to green dorsally, sides and belly silvery; large black opercular spot; dorsal and anal fins pale to yellow, distally dusky; pectoral and pelvic fins pale, with upper half dusky; caudal fin dark, especially leading and trailing edges of fin.

**Size:** Maximum reported total length 80 cm; commonly attains 30 to 40 cm total length and 3 to 4 kg.

**Habitat, biology, and fisheries:** A pelagic, schooling species. Feeds primarily on other fishes. Caught on hook-and-line, with beach seines, trawls, purse seines, and traps.

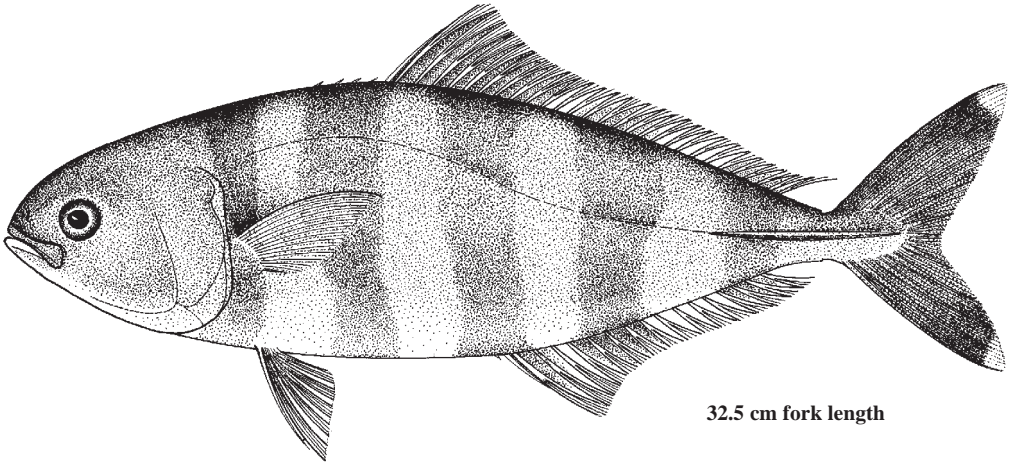
**Distribution:** Broadly distributed throughout the Indian Ocean; elsewhere in the Indo-West Pacific from Japan to Australia and eastward to Fiji. Records of the species from Hawaii are erroneous.



***Naukrates ductor*** (Linnaeus, 1758)

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** **En** - Pilotfish; **Fr** - Poisson pilote; **Sp** - Pez piloto.



32.5 cm fork length

**Diagnostic characters:** Body elongate, shallow and barely compressed, with nearly equal upper and lower profiles, but head profile tapering sharply above anterior half of upper jaw to produce a nearly blunt snout. **Upper jaw very narrow, posteriorly and extending to about below anterior margin of eye.** Teeth minute, in a band in upper and lower jaws. Gill rakers (including rudiments) 6 or 7 on upper limb and 15 to 20 on lower limb of first gill arch (total 21 to 27). **Dorsal fin with IV or V spines** (first spine minute and/or last spine may be reduced and embedded in fish larger than 20 cm fork length), followed by I spine and 25 to 29 soft rays; **anal fin with II spines slightly separated from rest of fin** (first spine may be reduced and embedded) followed by I spine and 15 to 17 soft rays; second dorsal-fin lobe short, contained 7.1 to 8.2 times in in fork length; anal-fin base short, contained 1.6 to 1.9 times in second dorsal-fin base. No scutes; **caudal peduncle with a well-developed lateral, fleshy keel on each side and dorsal and ventral peduncle grooves.** Vertebrae 10+15. **Colour:** in live fish, 6 or 7 black bands against a light silvery background, but there also is a transient coloration (possibly aggressive display) with bands disappearing and most of fish silvery white with 3 broad blue patches in tandem across back; in fresh or preserved specimens, head dark, 5 or 6 dark, broad body bands and a similar band at end of caudal peduncle, bands 3 to 6 extending through soft dorsal- and anal-fin membranes, and the bands persistent at all sizes; rest of body bluish (fresh) or light to dusky; **white tips prominent on upper and lower lobes of caudal fin, and smaller white tips on anterior lobes of second dorsal and anal fins;** fins otherwise dusky to dark.

**Size:** Maximum size 63 cm fork length and 70 cm total length; commonly to 35 cm fork length; weight 0.5 kg at 33 cm fork length.

**Habitat, biology, and fisheries:** Primarily pelagic in oceanic waters. This species has a semi-obligate relationship with large sharks, rays and other fishes, turtles, and flotsam. Juveniles are frequently found in association with jellyfish; the larvae are widespread in epipelagic oceanic waters. Maturity is reached by at least 23 cm fork length. Caught with pelagic trawls.

**Distribution:** Widespread circumtropical species.

