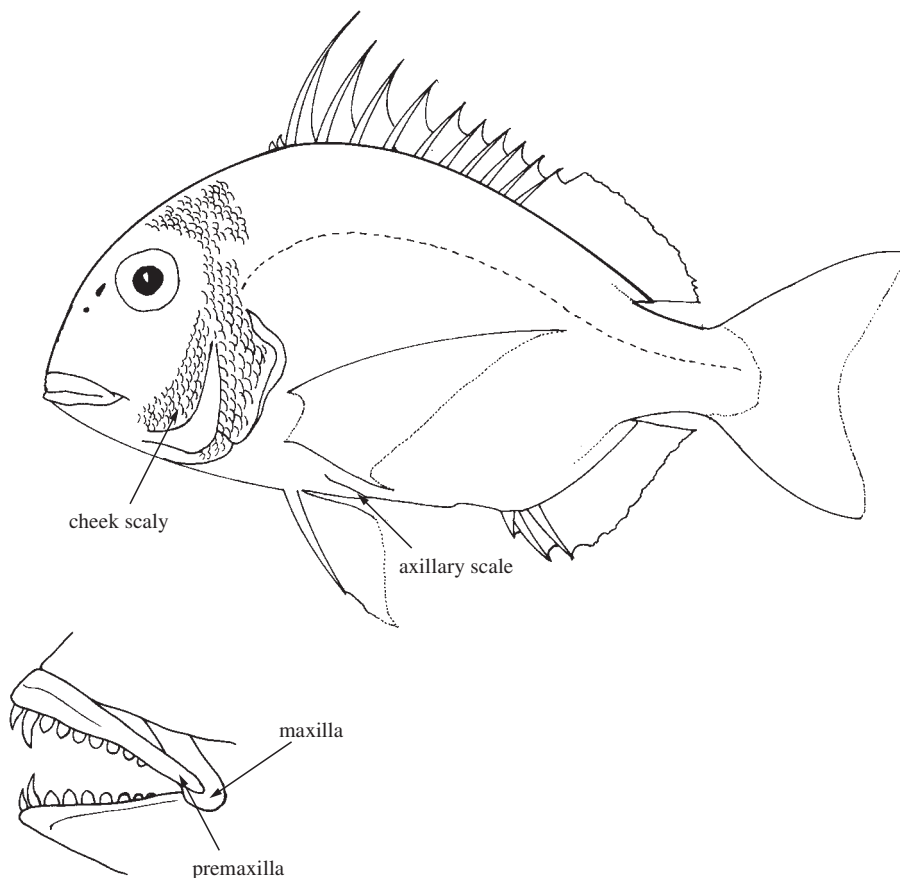


SPARIDAE

Porgies (seabreams)

by K.E. Carpenter

Diagnostic characters: Body oblong, moderately deep and compressed (size to 75 cm). Head large, often with a steep upper profile; snout scaleless, cheeks scaly, preopercle with or without scales, without spines or serrations on margin; opercle scaly, without spines. Mouth subhorizontal and slightly protrusible, **upper jaw never reaching backward beyond a vertical line through middle of eye; hind tip of premaxilla overlapping maxilla; maxilla in sheath formed by first 2 circumorbital bones when mouth closed; jaw teeth well developed, differentiated into either conical (canine-like), or flattened (incisor-like), and often rounded (molar-like);** roof of mouth (vomer and palatines) toothless. Gill rakers variable, 7 to 20 on lower limb of first gill arch. **Dorsal fin single, with X to XIII spines and 9 to 17 soft rays** (last ray double, counted as 1), the spiny and soft portions not separated by a notch, anterior spines sometimes elongate or filamentous; **anal fin with III spines and 7 to 15 soft rays** (last ray double, counted as 1), the spines, especially the second, often stout; caudal fin moderately deeply emarginate or forked; pectoral fins usually long and pointed; **pelvic fins** below or just behind pectoral-fin bases, with I spine and 5 soft rays, and **with an axillary scale at their base** (axillary pelvic process). Scales cycloid (smooth) or weakly ctenoid (rough to touch); a single continuous lateral line extending backward to base of caudal fin. **Colour:** overall colour highly variable, from pinkish or reddish to yellowish or greyish, often with silvery or golden reflections, often with dark or coloured spots, stripes, or bars.



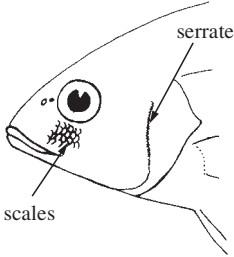
Habitat, biology, and fisheries: Seabreams inhabit tropical and temperate coastal waters. They are demersal inhabitants of the continental shelf and the slope. The smaller species, as well as the young of large species, usually form aggregations, while large adults are less gregarious or solitary and occur in deeper waters. Occasionally they are found in estuaries which are used as nurseries. Hermaphroditism is widespread in this family. Most seabreams are excellent food fish and are of notable commercial importance. From 1990 to 1995, the FAO Yearbook of Fishery Statistics reports a range of yearly catch of around 2 170 to 4 020 t of Sparidae from the Western Central Pacific.

Similar families occurring in the area

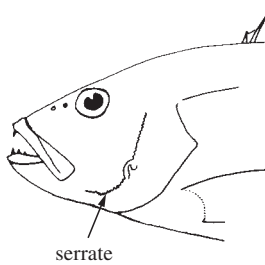
Haemulidae: edge of preopercle serrate; suborbital space scaly; at least 2 conspicuous pores beneath chin; never with molar teeth.

Lutjanidae: edge of preopercle usually serrate, and often excavated to accommodate a bony knob; never molar or incisor-like teeth; roof of mouth usually toothed (except in *Aphareus*).

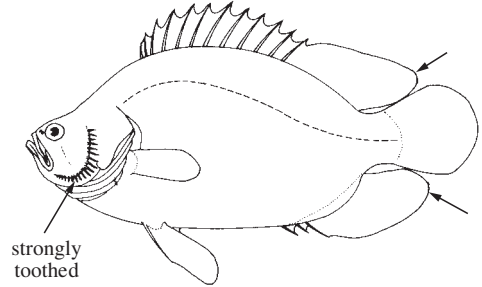
Lobotidae: edge of preopercle strongly toothed; never molar teeth; dorsal, anal, and caudal fins rounded, appearing as a single tri-lobed fin ('triple-tails').



Haemulidae



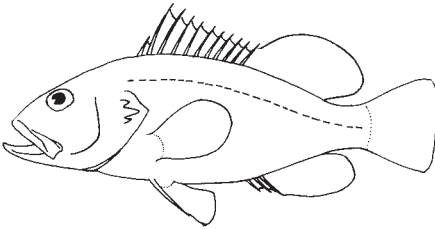
Lutjanidae



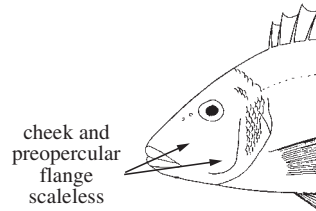
Lobotidae

Serranidae: edge of preopercle serrate; suborbital space scaly; similar species lack axillary scale of pelvic fins; caudal fin generally rounded, never forked; also never molar teeth.

Lethrinidae: posterior tip of maxilla overlapping premaxilla (posterior tip of premaxilla overlapping maxilla in Sparidae); cheek and preopercular flange scaleless (but scales present on cheek in *Wattsia*, *Monotaxis*, *Gymnocranius*, and *Gnathodentex*); 8 to 11 soft dorsal-fin rays (9 to 17 in Sparidae); incisor-like teeth never present.



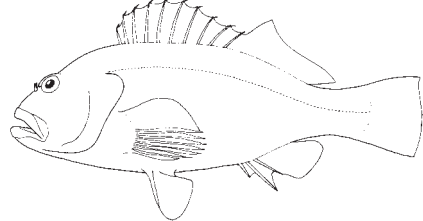
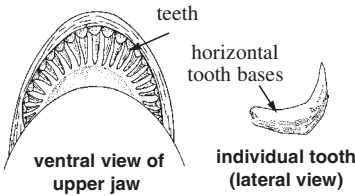
Serranidae



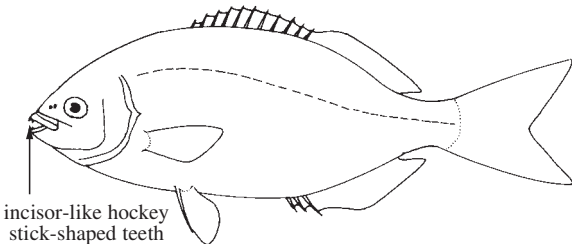
Lethrinidae (*Lethrinus*)

Kyphosidae: head entirely scaly, except for snout; teeth in jaw incisor-like, close-set, and of a peculiar hockey-stick shape, with their base set horizontally, resembling a radially striated bone inside mouth.

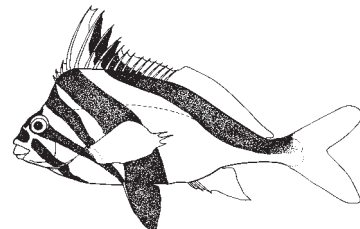
Cirrhitidae and Cheilodactylidae: lower pectoral-fin rays simple and thickened.



Cirrhitidae



Kyphosidae



Cheilodactylidae

Key to the species of Sparidae occurring in the area

- 1a. Only conical teeth laterally in jaws (Fig. 1). (*Dentex*) → 2
- 1b. Lateral teeth include molars → 3
- 2a. Dorsal fin with XII spines and 10 soft rays (Fig. 2) *Dentex tumifrons*
- 2b. Dorsal fin with XIII spines and 9 soft rays (Fig. 3) *Dentex fourmanoiri*

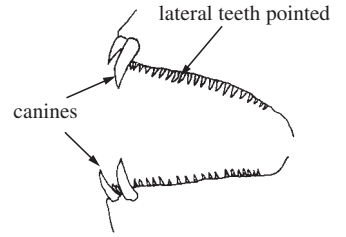


Fig. 1 *Dentex*

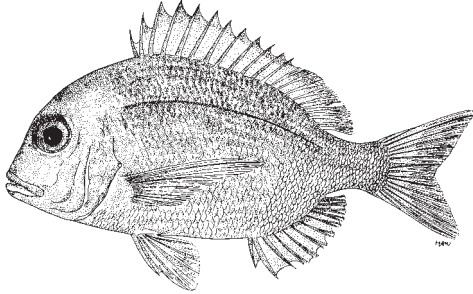


Fig. 2 *Dentex tumifrons*

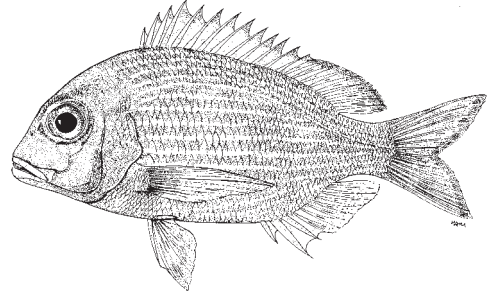
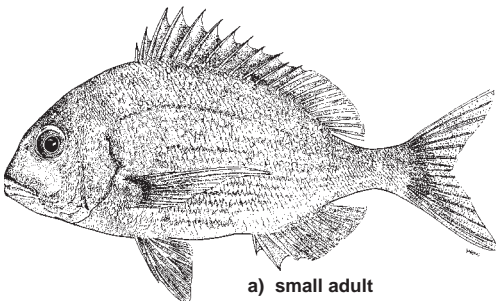
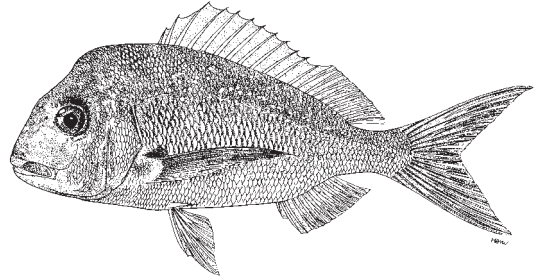


Fig. 3 *Dentex fourmanoiri*

- 3a. Interorbital area scaly. → 4
- 3b. Interorbital area not scaly. → 7
- 4a. No elongate or extended dorsal-fin spines (Fig. 4a, b) *Pagrus auratus*
- 4b. Dorsal fin with third and fourth spines elongate and filamentous → 5



a) small adult



b) large adult

Fig. 4 *Pagrus auratus*

- 5a. First 2 dorsal-fin spines minute (Fig. 5a); 8 soft rays in anal fin (Fig. 6) *Argyrops spinifer*
- 5b. First 2 dorsal-fin spines well developed (Fig. 5b); 9 soft rays in anal fin (*Eynniss*) → 6

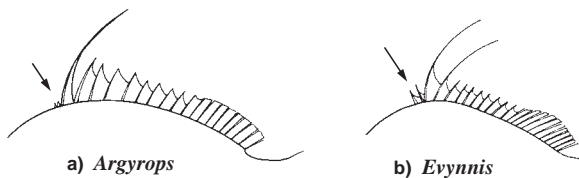


Fig. 5 dorsal-fin spines

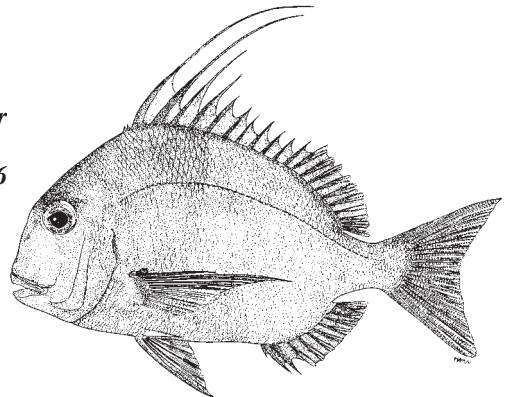


Fig. 6 *Argyrops spinifer*

- 6a. Transverse series of scales between lateral line and fourth dorsal-fin spine usually 5 ½ (rarely 4 ½); vomer with conical teeth (Fig. 7) *Evynnis japonica*
- 6b. Transverse series of scales between lateral line and fourth dorsal-fin spine usually 6 ½ (rarely 5 ½); vomer toothless *Evynnis cardinalis*
(only unconfirmed and doubtful reports from the Philippines)
- 7a. Transverse series of scales between lateral line and fourth dorsal-fin spine 5 ½ or 6 ½; dorsal-fin spines moderately slender, not strongly appearing alternately broad and narrow on each side; 1 enlarged molar posteriorly on each jaw (Figs 8a and 9) . *Rhabdosargus sarba*
- 7b. Transverse series of scales between lateral line and fourth dorsal-fin spine 3 ½ or 4 ½; dorsal-fin spines strong, appearing alternately broad and narrow on each side; no single greatly enlarged molar posteriorly in jaws (Fig. 8b) (*Acanthopagrus*) → 8

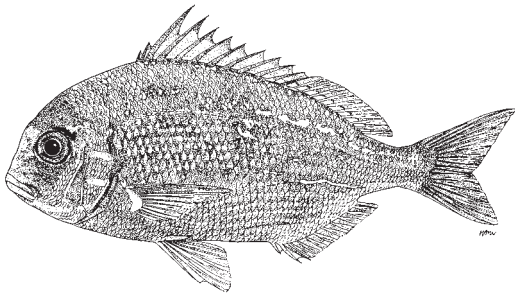
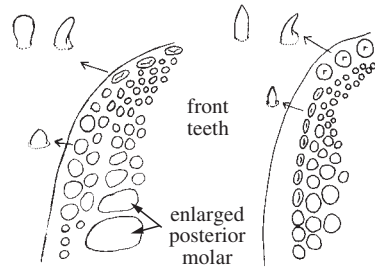


Fig. 7 *Evynnis japonica*



a) *Rhabdosargus* b) *Acanthopagrus*

Fig. 8 right half of upper jaw and roof of mouth

- 8a. Pelvic, anal, and caudal fins, particularly the spines and soft rays, blackish; margin of soft-rayed part of anal fin rounded posteriorly (Fig. 10) *Acanthopagrus berda*
- 8b. Pelvic and anal fins and ventral part of caudal fin, particularly the spines and soft rays, yellowish and whitish, sometimes with blackish areas on inter-ray membranes; margin of soft-rayed part of anal fin nearly straight → 9

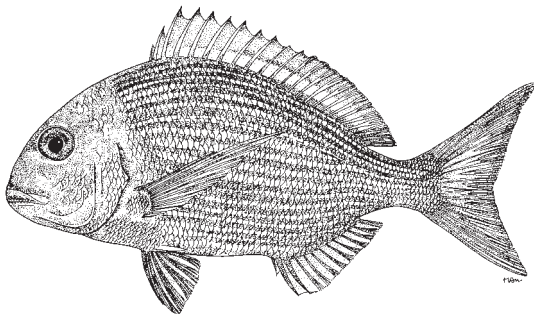


Fig. 9 *Rhabdosargus sarba*

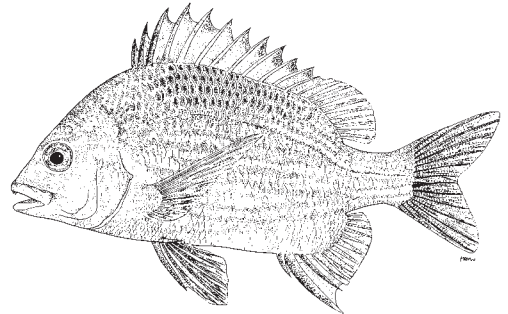


Fig. 10 *Acanthopagrus berda*

- 9a.** Transverse series of scales between lateral line and median dorsal-fin spines typically 4 ½ (rarely 3 ½) (Fig. 11) *Acanthopagrus australis*
(southeastern Australia, from central Queensland south to eastern Victoria)
- 9b.** Transverse series of scales between lateral line and median dorsal-fin spines typically 3 ½ (rarely 4 ½) (Fig. 12) *Acanthopagrus latus*
(in the area, northern Australia, and northwestern South China Sea, and northernmost Luzon)

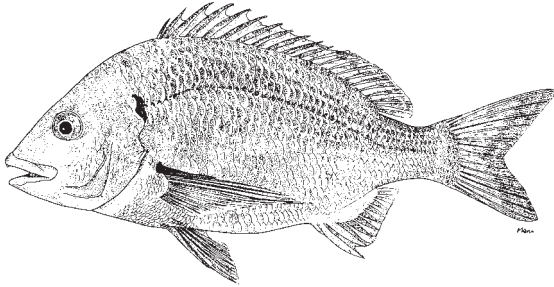


Fig. 11 *Acanthopagrus australis*

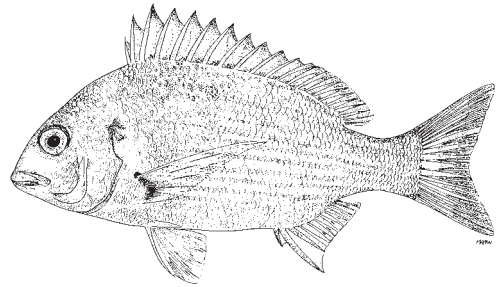














Fig. 12 *Acanthopagrus latus*

List of species occurring in the area

The symbol  is given when species accounts are included. A question mark indicates that presence in the area is uncertain.

-  *Acanthopagrus australis* (Günther, 1859)
-  *Acanthopagrus berda* (Forsskål, 1775)
-  *Acanthopagrus latus* (Houttuyn, 1782)
- ?  *Acanthopagrus palmaris* (Whitley, 1935)
-  *Argyrops spinifer* (Forsskål, 1775)
-  *Dentex fourmanoiri* Akuzaki and Séret, 1999
-  *Dentex tumifrons* (Temminck and Schlegel, 1842)
- ?  *Evynnis cardinalis* (Lacepède, 1802)
-  *Evynnis japonica* Tanaka, 1931
-  *Pagrus auratus* (Bloch and Schneider, 1801)
-  *Rhabdosargus sarba* (Forsskål, 1775)

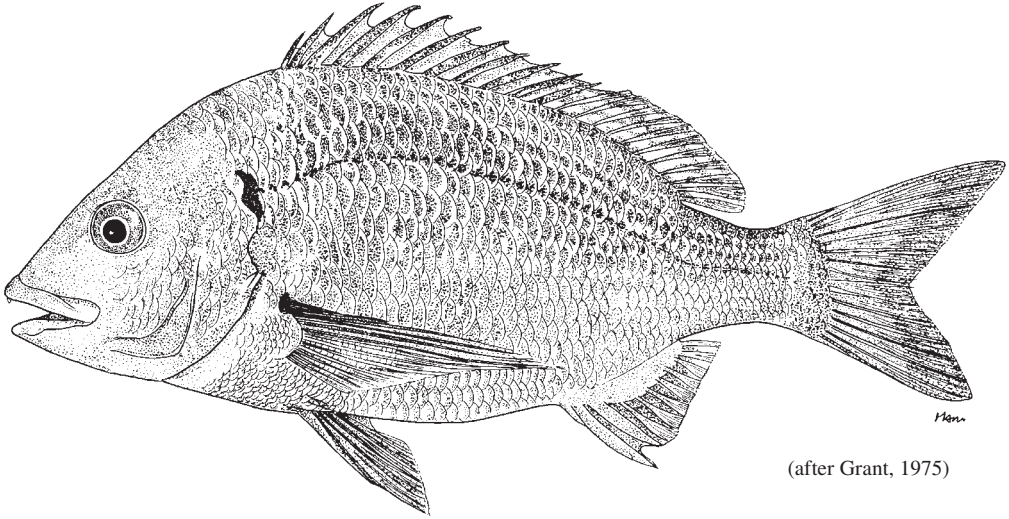
References

- Akazaki, M. and B. Séret. 1999. *Dentex fourmanoiri*, a new species of sea bream (Sparidae: Denticinae) from off New Caledonia. In *Proc. 5th Indo-Pac. Fish Conf. (Nouméa, 3-8 Nov. 1997)*, edited by B. Séret and J.-Y. Sire. Paris, Soc. Fr. Ichtyol., pp. 177-183.
- Gloerfelt-Tarp, T. and P. Kailola. 1984. *Trawled fishes of southern Indonesia and northwestern Australia*. Jakarta, Dir. Gen. Fish. (Indonesia), German Tech. Coop., Aust. Dev. Assoc. Bur., 406 p.
- Kuiter, R.H. 1993. *Coastal fishes of South-eastern Australia*. Honolulu, Univ. Hawaii Press, 437 p.

Acanthopagrus australis (Günther, 1859)

Frequent synonyms / misidentifications: None / None.

FAO names: En - Australian seabream.



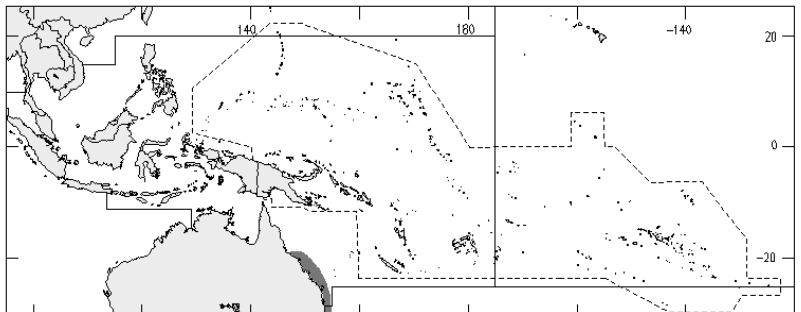
(after Grant, 1975)

Diagnostic characters: Body fairly deep and compressed, its depth about 2.1 to 2.3 times in standard length. **Head** 2.8 to 3 times in standard length, its **upper profile straight** (sometimes a bulge above eye); **snout pointed**; eye moderate in size. **In both jaws, 4 to 6 large, moderately compressed teeth in front, followed by 4 or 5 rows of molar-like teeth**; upper lateral teeth of outer row conical and blunt. First gill arch with 9 gill rakers on lower limb. Dorsal fin with XI or XII spines and 10 or 11 soft rays, fourth to sixth spines longest (spines appear alternately broad and narrow on either side). Anal fin with III spines and 8 soft rays, first spine shorter than eye diameter, **second spine flattened laterally, much longer and stronger than third; margin of soft-rayed part of anal fin nearly straight**. Pelvic fins with I strong spine. Caudal fin slightly forked, with rounded lobes. Scales large, 43 to 46 in lateral line (to base of caudal fin); **4 ½ (rarely 3 ½) scale rows between lateral line and fourth dorsal-fin spine**; a scaly sheath at base of dorsal and anal fins; a long pelvic axillary process. **Colour:** body silvery bronze; **pelvic and anal fins and ventral part of caudal fins, particularly the spines and soft rays yellowish and whitish, sometimes with blackish areas on inter-ray membranes**; a dark blotch at origin of lateral line and a dark spot at upper base of pectoral fins.

Size: Maximum total length 75 cm, commonly to 30 cm.

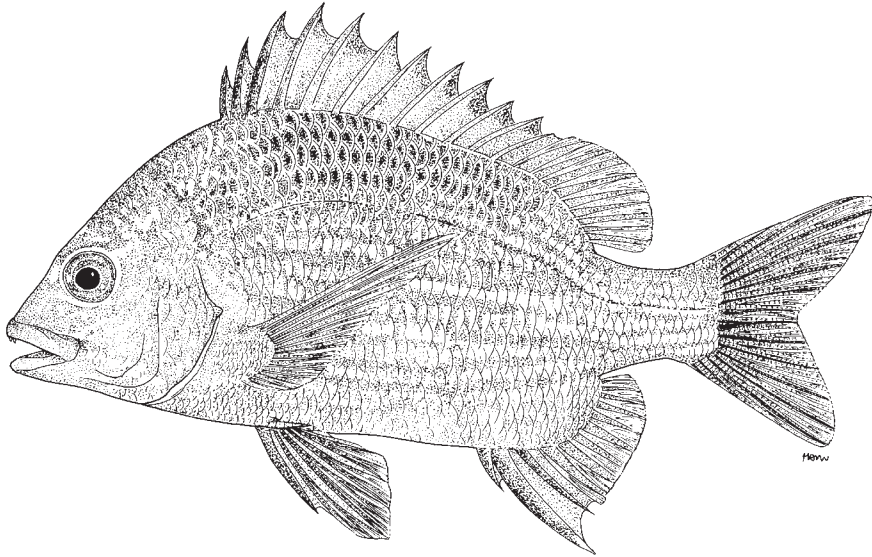
Habitat, biology, and fisheries: Most common in estuaries but also found on inshore reefs, and sandy, muddy, and rocky coastal areas. Feeds on a wide variety of benthic crustaceans and molluscs and small fish. One of the most common fishes caught by anglers where it occurs throughout its range. A popular food fish in Australia, caught mostly by hook-and-line by anglers and commercially caught with tunnel nets, gill nets, and to a lesser extent as bycatch in trawling and trapping fisheries.

Distribution: Australia, from Townsville south on the east coast and from Barrow Island south on the west coast.



Acanthopagrus berda (Forsskål, 1775)

(Plate XVI, 115)

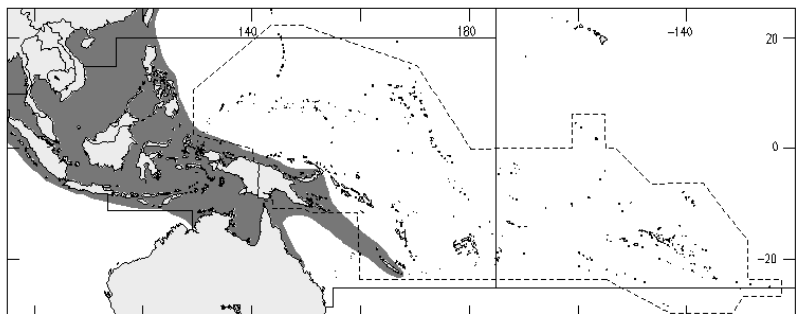
Frequent synonyms / misidentifications: *Mylio berda* (Forsskål, 1775) / None.**FAO names:** En - Picnic seabream; Fr - Pagre picnic; Sp - Sargo picnic.

Diagnostic characters: Body fairly deep and compressed, its depth about 2 times in standard length. **Head** 3 or 4 times in standard length, its **upper profile straight** (sometimes a bulge above eye); **snout pointed**; eye moderate in size; ventral profile almost straight to anus. **In both jaws, 4 to 6 large, moderately compressed teeth in front, followed by 3 to 5 rows of molar-like teeth**; upper lateral teeth of outer row conical and blunt. Gill rakers 9 to 11 on lower limb of first gill arch. Dorsal fin with XI (rarely XII) spines and 10 to 13 (usually 11 or 12) soft rays, fourth to sixth spines longest (spines appear alternately broad and narrow on either side). Anal fin with III spines and 8 or 9 soft rays, first spine shorter than eye diameter, **second spine flattened laterally, much longer and stronger than the third; margin of soft-rayed part of fin convex, rounded**. Pelvic fins with I strong spine. Caudal fin slightly forked, with rounded lobes. Scales large, 43 to 45 in lateral line (to base of caudal fin); **usually 3 ½ scale rows between lateral line and fourth dorsal-fin spine**; a scaly sheath at base of dorsal and anal fins; a long pelvic axillary process. **Colour:** grey, dark silver grey or dull olive brown with silvery or brassy reflections upper part of body and **base of scales darkest**, lower part of head and body paler, a dark edge along opercle; spinous dorsal fin with a dark edge and spines often silvery; pectoral fins dusky with a yellow tinge, **soft dorsal, anal, pelvic, and caudal fins blackish**; caudal fin grey with darker shading.

Size: Maximum total length 75 cm, commonly to 30 cm.

Habitat, biology, and fisheries: A bottom-living fish, very shy, cunning. Found mainly on rough and muddy sand grounds in coastal waters, particularly in estuaries, from shallow water to depths of about 50 m. Juveniles usually occur in more sheltered shallow bays and estuaries. Feeds on a wide variety of bottom invertebrates (worms, molluscs, crustaceans, echinoderms, etc.). Not intensively fished. Caught with bottom trawls and handlines. Marketed fresh; the flesh is excellent.

Distribution: Widespread Indo-West Pacific from South Africa to India, extending to western Pacific, Japan, and northern Australia.

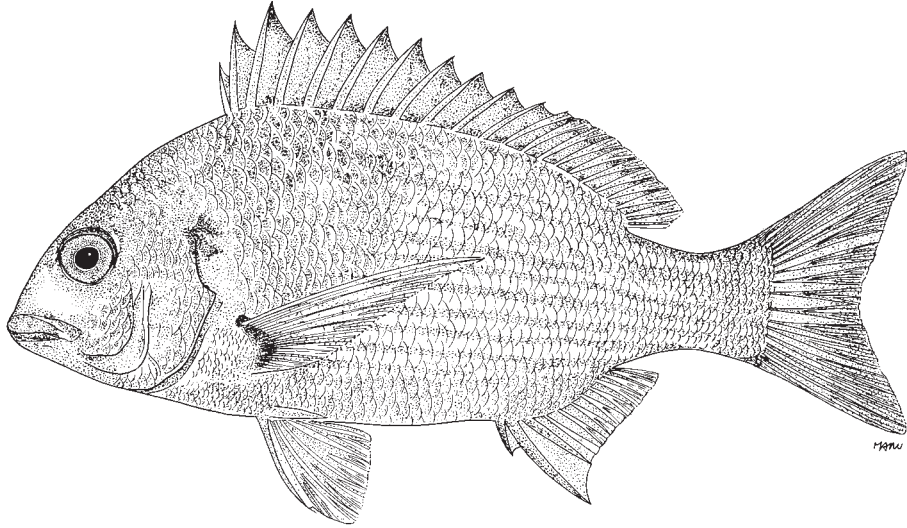


Acanthopagrus latus (Houttuyn, 1782)

(Plate XVI, 116)

Frequent synonyms / misidentifications: *Sparus latus* Houttuyn, 1782; *Mylio latus* (Houttuyn, 1782) / None.

FAO names: En - Yellowfin seabream; Fr - Pague à nageoires jaunes; Sp - Sargo aleta amarilla.

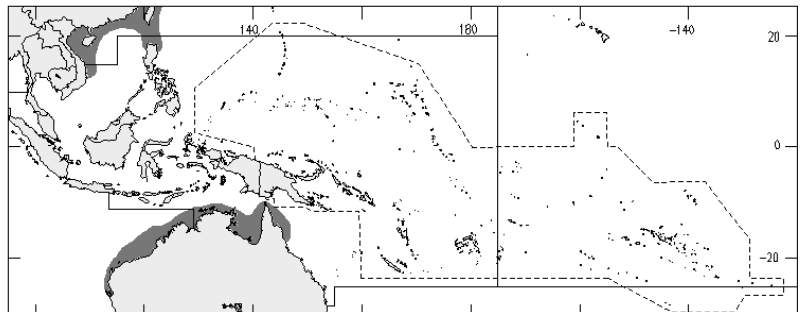


Diagnostic characters: Body fairly deep and compressed, its depth about 2 times in standard length. **Head** 3 times in standard length, its **upper profile notably convex** and angular due to a bulge at eye; eye moderate in size. **In both jaws, 4 to 6 large, moderately compressed teeth in front, followed by 3 to 5 rows of molar-like teeth;** upper lateral teeth of outer row conical and blunt. Dorsal fin with XI spines and 11 or 12 soft rays, fourth to sixth spines longest (spines appear alternately broad and narrow on either side). **Anal fin** with III spines and 8 or 9 soft rays, the first spine shorter than eye diameter, **second spine flattened laterally, much longer and stronger than third; margin of soft-rayed part of anal fin nearly straight.** Pelvic fins with I strong spine. Caudal fin slightly forked, with tips sharp. Scales large, about 48 to 50 in lateral line (to base of caudal fin); **3 ½ (rarely 4 ½) rows between lateral line and fourth dorsal-fin spine;** a scaly sheath at base of dorsal and anal fins; a long axillary pelvic process. **Colour:** pale grey to whitish, darker above, belly usually yellowish; golden streaks along longitudinal rows of scales; **a diffuse dark blotch at origin of lateral line;** a dark interorbital band and a dark edge along opercle; dorsal fin greyish to hyaline, **pelvic and anal fins yellowish and whitish, sometimes with blackish areas on inter-ray membranes;** **caudal fin greyish with dark blackish margin, lower part of fin with yellowish tinge; caudal fin with a black margin,** lower portion of fin with yellowish tinge.

Size: Maximum total length 45 cm, commonly to 30 cm.

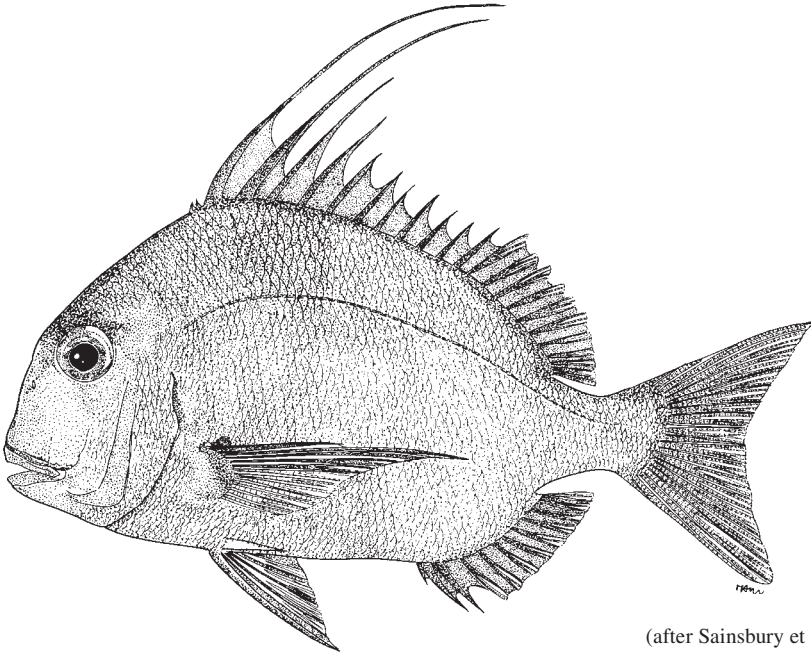
Habitat, biology, and fisheries: Inhabits shallow coastal waters to depths of about 50 m; enters estuaries. Carnivorous, feeds on invertebrates, mainly echinoderms, worms, crustaceans, and molluscs. Caught with bottom trawls and lines. Mainly exploited by artisanal fisheries. Marketed fresh, whole.

Distribution: Indo-West Pacific from the Persian Gulf and along the coasts of India; eastward extending to the Philippines, Japan, and northern Australia.



Argyrops spinifer (Forsskål, 1775)

(Plate XVI, 117 and 118)

Frequent synonyms / misidentifications: None / None.**FAO names:** En - King soldierbream; Fr - Spare royal; Sp - Sargo real.

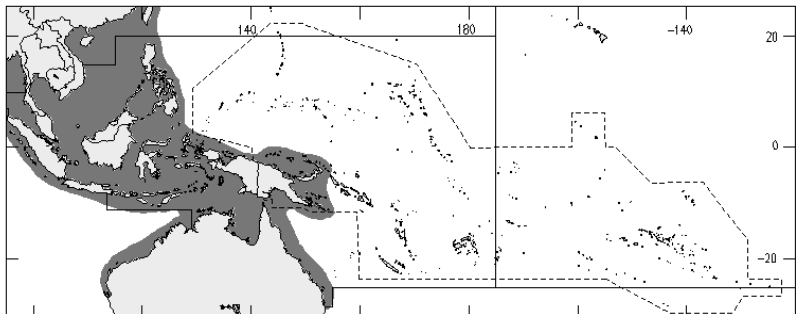
(after Sainsbury et al., 1985)

Diagnostic characters: Body deep, strongly compressed. Upper profile of head steep and almost straight from upper jaw to eye; eye moderately large. At front of jaws, 4 upper and 4 to 6 lower enlarged canines, followed in both jaws by 2 rows of molars, those of outer row bluntly conical anteriorly; small molars behind canines. Gill rakers 10 or 11 on lower limb of first gill arch. Dorsal fin with XI or XII spines and 10 or 11 soft rays, **the first 2 spines very short, third to fifth spines and sometimes to seventh spine flattened and much elongated** (in young reaching to level of caudal fin, shorter in old fish). **Anal fin with III spines** (second and third subequal) and **8 soft rays**. Caudal fin deeply emarginate to forked, with pointed lobes. Scales large, 50 to 54 in lateral line, **scaly area between eyes narrow, ending in a point**; soft dorsal and anal fins with low basal scaly sheaths. **Colour:** body mainly silvery pinkish, darker on head; usually dark **red on margin of upper part of opercle**; all fins red; young fish with several vertical red bars on body.

Size: Maximum total length 70 cm, commonly to 30 cm.

Habitat, biology, and fisheries: This common species inhabits a wide range of bottoms (usually at depths common between 5 and 100 m). The young individuals occur in very shallow waters of sheltered bays, the larger ones at greater depths. Feeds on bottom-living invertebrates, mainly molluscs. Caught with bottom trawls, longlines, handlines, stake traps, and fish traps. Mostly exploited by artisanal fisheries. Usually marketed fresh.

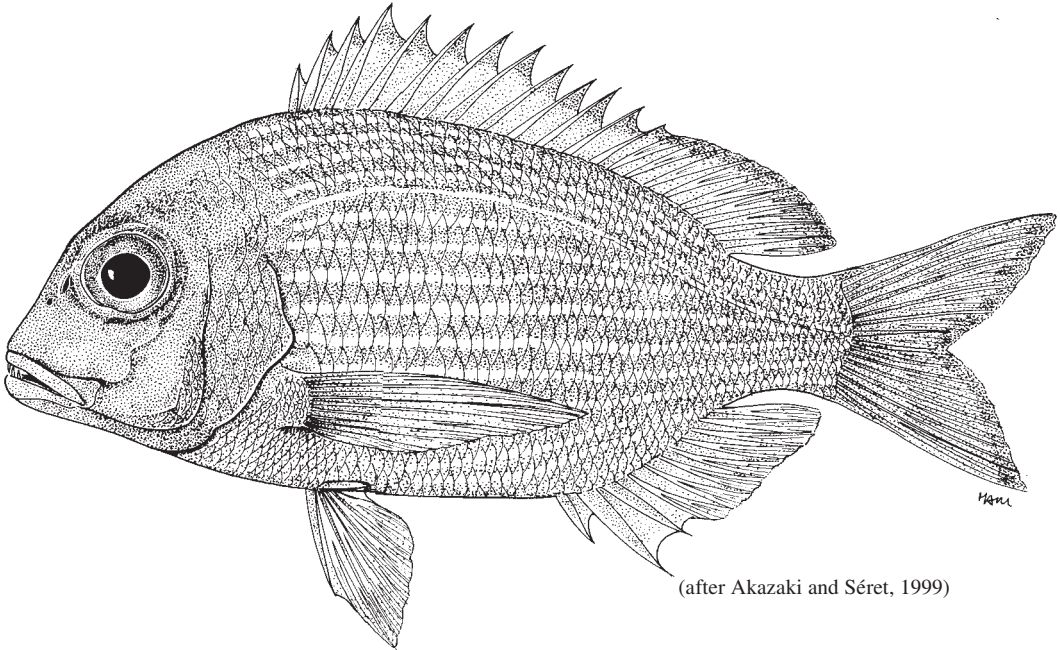
Distribution: Widespread Indo-West Pacific from South Africa, including the Red Sea and Persian Gulf, to the Indo-Malayan Archipelago to southern Japan and northern Australia.



Dentex fourmanoiri Akazaki and Séret, 1999

Frequent synonyms / misidentifications: None / None.

FAO names: En - Fourmanoir's seabream.



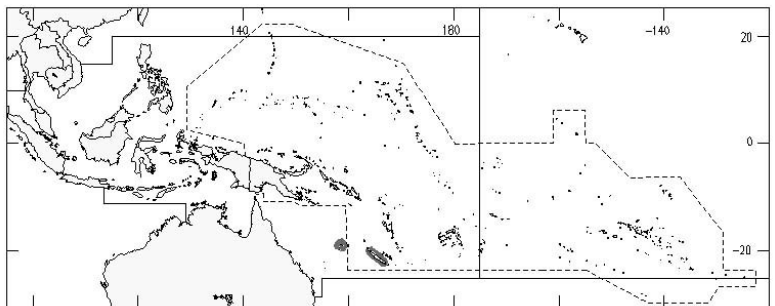
(after Akazaki and Séret, 1999)

Diagnostic characters: Body moderately deep and compressed, body depth greater than head length; profile of head with a bulge near eye; eye moderately large, 2.4 to 3.35 times in head length. **Front of upper jaw with 4 strong canines and lower jaw with 4 to 6 canines; a single series of conical teeth laterally in jaws. Dorsal fin with XIII spines and 9 soft rays**, none of the spines extended or filamentous; third to fifth spines longest. Anal fin with III spines and 8 soft rays, second spine is slightly longer than third spine. Caudal fin forked. Scales large, 45 to 50 in lateral line. Dorsal and anal fins with low scaly sheath. **Colour:** body reddish to slightly purplish, with silvery reflections, sometimes pronounced along centres of scales to form silvery indistinct stripes; dorsal and caudal fin pale yellowish with bright yellow distal margin; pectoral, pelvic, and anal fins pale.

Size: Maximum standard length so far recorded is 22.6 cm, and it likely gets larger.

Habitat, biology, and fisheries: Found so far mostly over soft bottoms at depths between 210 and 290 m. Caught by bottom trawl and bottom longline.

Distribution: So far known only from New Caledonia and Chesterfield Islands.

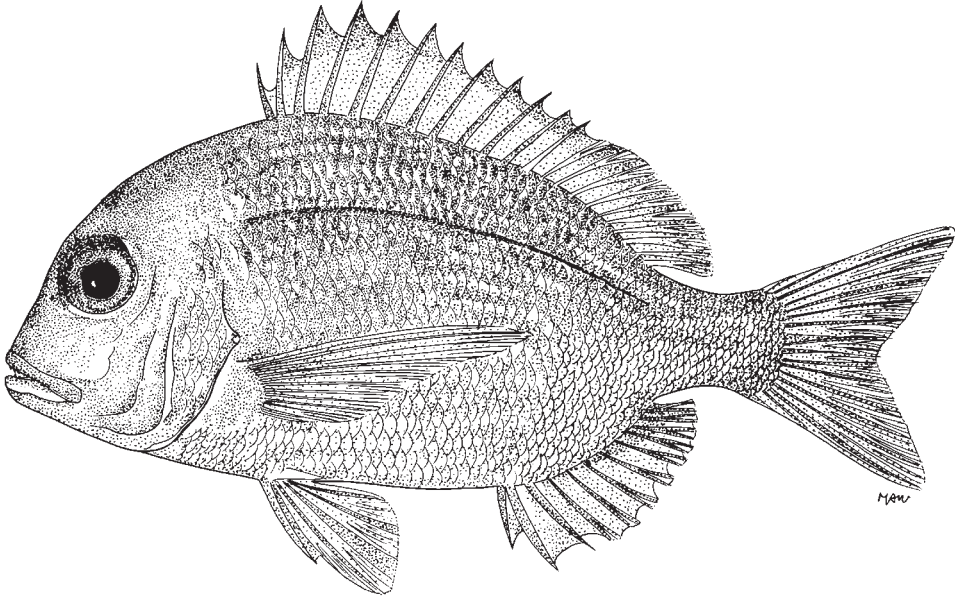


Dentex tumifrons (Temminck and Schlegel, 1842)

(Plate XVI, 119)

Frequent synonyms / misidentifications: *Taius tumifrons* (Temminck and Schlegel, 1842); *Dentex spariformis* (Ogilby, 1910) / None.

FAO names: En - Yellowback seabream.

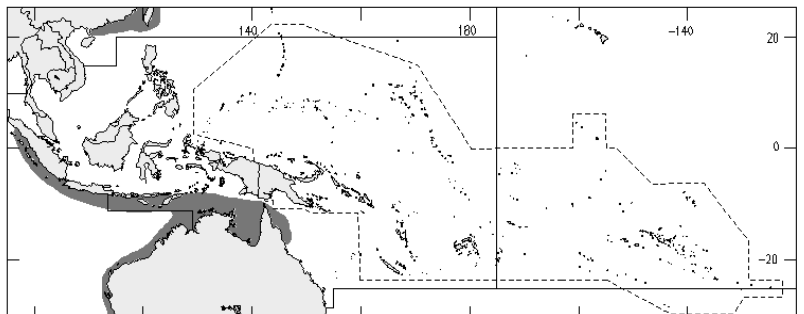


Diagnostic characters: Body deep and compressed; head large, slightly deeper than long, its profile with bulge near eye, more prominent in larger fish; eye moderate in size, 2.8 to 4.4 times in head length, close to front profile. **Front of upper jaw with 4 strong canines and lower jaw with 4 to 6 canines; a single series of conical teeth laterally in jaws. Dorsal fin with XII spines end 10 soft rays**, none of the spines extended or filamentous; third to fifth spines longest. Anal fin with III spines and 8 soft rays, second spine equal to or slightly longer than third. Caudal fin forked. Scales large, 46 to 50 in lateral line; dorsal and anal fins with low scaly sheath. **Colour:** back and upper sides orange-brown, lower sides and belly silvery; **3 golden yellow saddle-like blotches on back**, the first at origin of dorsal fin; dorsal, anal, and caudal fins orange-red.

Size: Maximum total length 40 cm.

Habitat, biology, and fisheries: Lives on mud and muddy-sand bottoms, from depths of 50 to 250 m. Spawns in late spring. Feeds on a wide range of bottom-living invertebrates and on fish. Caught mainly with bottom trawls and bottom longlines. Marketed mostly fresh, whole; also dried-salted.

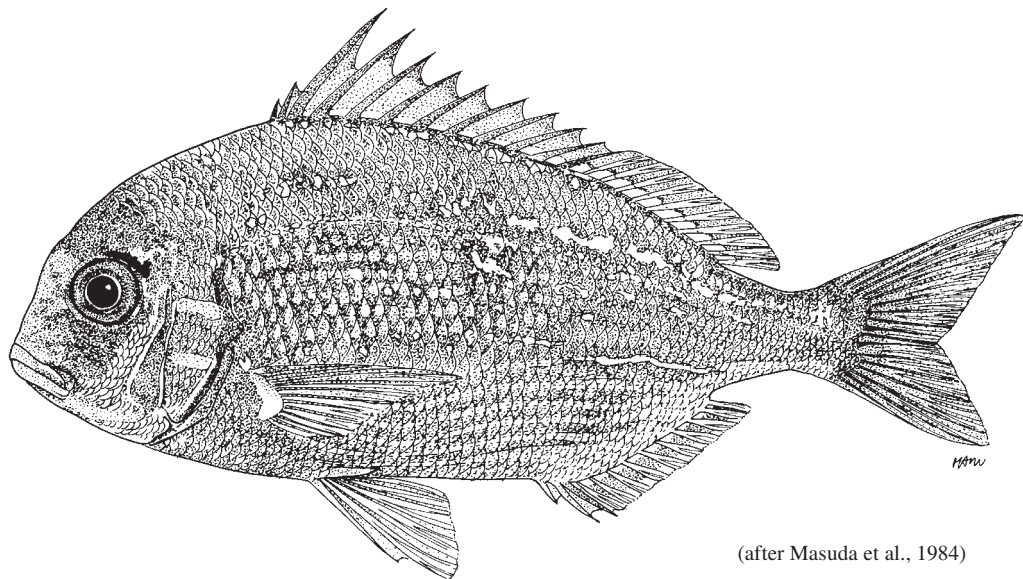
Distribution: Northern part of South China Sea, including northern coasts of the Philippines and northward to Japan, and southern Indonesia to northern Australia.



Evynnis japonica Tanaka, 1931

Frequent synonyms / misidentifications: None / None.

FAO names: En - Crimson seabream.



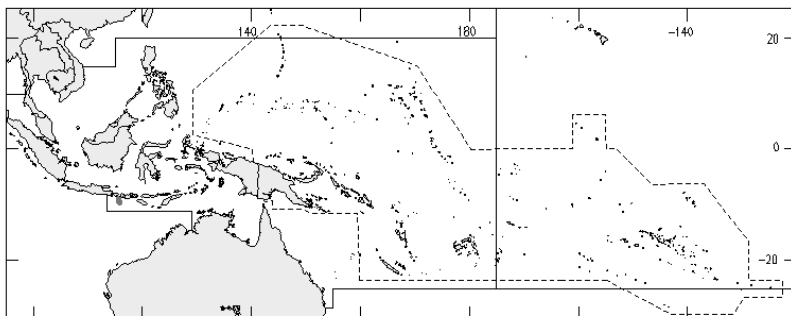
(after Masuda et al., 1984)

Diagnostic characters: Body robust and deeper than head, strongly compressed, depth of head much greater than its length; upper profile of head oblique, often with a bulge near eye; eye moderate in size, close to front profile. **Front of upper jaw with 4 canines and lower jaw with 4 to 6 canines; 2 lateral rows of weak molar teeth in jaws; vomer with conical teeth. Dorsal fin with XII spines and 10 soft rays, the first 2 spines short but well developed**, third and fourth (and sometimes fifth) spines elongated as fine filaments, spines becoming slightly shorter toward tail; soft part of dorsal fin slightly higher than posterior part of spinous fin. **Anal fin with III spines and 9 soft rays**, first spine short, second and third about equal in length but second a little shorter. Caudal fin slightly forked, with pointed lobes. Scales large, 54 to 61 in lateral line; transverse series of scales between lateral line and median dorsal-fin spines usually $6\frac{1}{2}$ (rarely $5\frac{1}{2}$); interorbital area scaly. **Colour:** pale, silvery pink, but more red on head, upper sides, fins and especially on filaments of dorsal fin; **rows of pale blue spots along scale rows.**

Size: Maximum total length 45 cm, commonly 15 to 25 cm.

Habitat, biology, and fisheries: Occurs over a wide range of bottom types but is more common close to reefs or on rough bottoms at depths greater than 100 m. Marketed mostly fresh, whole.

Distribution: Temperate West Pacific from Hokkaido to East China Sea; a single record from off Bali.

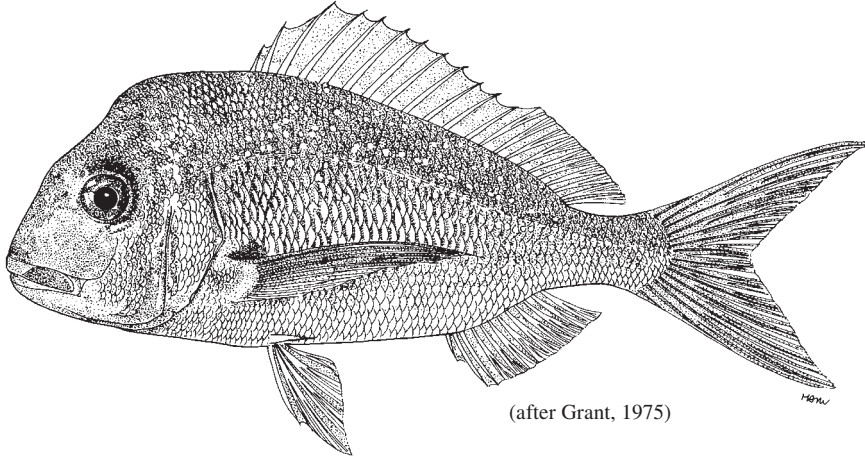


Pagrus auratus (Bloch and Schneider, 1801)

(Plate XVI, 120)

Frequent synonyms / misidentifications: *Sparus major* (Temminck and Schlegel, 1843); *Chrysophrys major* (Temminck and Schlegel, 1842); *C. auratus* (Bloch and Schneider, 1801) / None.

FAO names: En - Silver seabream.



(after Grant, 1975)

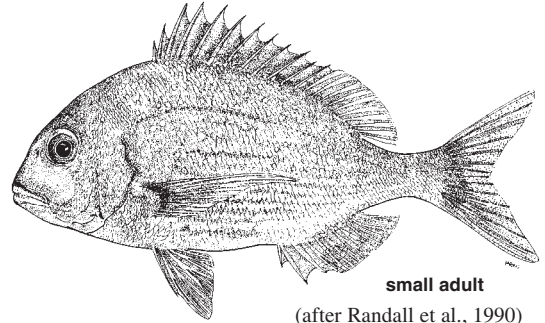
Diagnostic characters: Body robust, oblong, moderately compressed; upper profile of head convex with a bulge above eye in large specimens; eye moderate in size. Lower jaw slightly shorter than upper; 4 enlarged canines in front of upper jaw and 4 to 6 enlarged canines in lower jaw; **2 series of moderately large molar teeth on lateral side of jaws**. Dorsal fin single, with XII strong spines and 10 to 12 soft rays, **the spines not elongated into filaments** first spine about 1/2 length of second, which is about 1/2 as long as third, third to seventh spines longest, other spines gradually decreasing in length along fin. Anal fin with III stout spines and 7 to 9 soft rays, first spine short, about 1/2 length of second; second and third spines about equal in length. Caudal fin forked, with pointed lobes. Scales moderately large, lateral line with 53 to 64 scales; **interorbital area scaly**; absent from bases of soft dorsal and anal fins. **Colour:** head and upper body red-brown, sides and belly silvery; **numerous small bright blue spots on upper sides**; fins red or faint red; caudal fin with a white lower margin.

Size: Maximum total length 130 cm, commonly 20 to 40 cm.

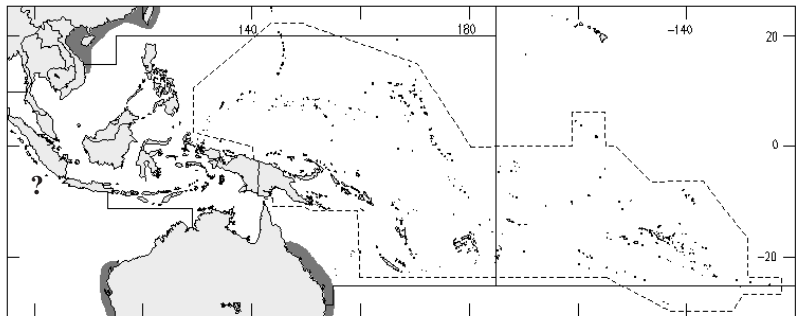
Habitat, biology, and fisheries: Bottom-living at depths of 10 to 150 m, often on rough grounds, but also on softer bottoms. Adult fish migrate into shallower parts of their depth range to spawn in late spring and summer; juvenile fish occur mainly in the shallower areas. Feeds on a wide range of bottom-living invertebrates, including echinoderms, worms, molluscs and crustaceans; also on fishes. Caught mainly with bottom trawls and bottom long lines. A popular food fish throughout its range. It is particularly high priced in Japan where it is much sought for ceremonial banquets and eaten raw. It is also prepared into a wide range of food products.

Distribution: Northeastern part of South China Sea (excluding the Philippines) and northward to Japan; southern part of Australia and New Zealand.

Remarks: In the northern part of its range it is often referred to as a distinct species *Pagrus major*, and it is possible this will be proven correct.

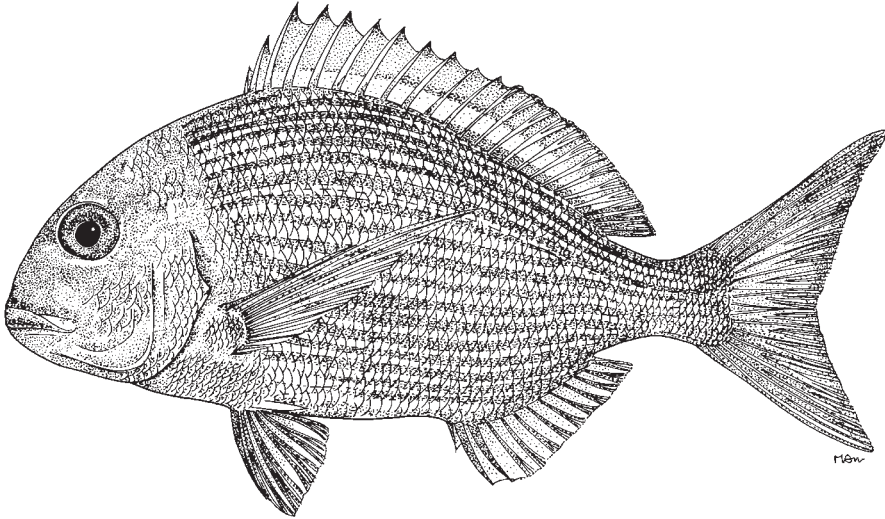


(after Randall et al., 1990)



Rhabdosargus sarba (Forsskål, 1775)

(Plate XVI, 121)

Frequent synonyms / misidentifications: *Sparus sarba* (Forsskål, 1775) / None.**FAO names:** **En** - Goldlined seabream; **Fr** - Sargue doré; **Sp** - Sargo dorado.

Diagnostic characters: Body deep (depth about 2 times in standard length), compressed. Head large, its length about 3 to 3.3 times in standard length; **upper profile convex, most strongly arched from snout to origin of dorsal fin**; eye moderate to small in large specimens; mouth almost horizontal, low. At front of jaws, 4 to 6 upper, and 6 to 8 lower, enlarged, compressed teeth, becoming subconical in large adults, followed by 4 or 5 rows of molar teeth in posterior part of upper jaw and, 2 to 4 rows in lower jaw, **the last molar in each jaw largest**. Gill rakers short, few, 7 to 9 on lower limb of first gill arch. Dorsal fin single, with XI or XII slender spines and 13 (rarely 12) to 15 soft rays, third and fourth spines longest. Anal fin with III spines and 11 soft rays, second and third spines subequal; pectoral fins long. Pelvic fins not reaching anus. Caudal fin forked. Scales cycloid (smooth), more than 50 in lateral line; **5 ½ or 6 ½ scale rows between lateral line and fourth dorsal-fin spine**; preopercle flange naked; dorsal and anal fins with a low scaly sheath; a long axillary pelvic process. **Colour:** overall bright silver grey; each scale with a golden centre so as to form longitudinal lines on body; belly with a bright, yellow band starting at pelvic fin and flaring upward and backward; dorsal fin hyaline at base, dusky at margin; pectoral and pelvic fins dusky yellowish green; anal fin with hyaline base, yellow toward margin; lower caudal-fin lobe yellow with tip and lower edge whitish.

Size: Maximum total length 60 cm, commonly to 40 cm.

Habitat, biology, and fisheries: A bottom-living coastal fish, to a depth of 60 m, sometimes entering estuaries. In the southern part of the area, spawning takes place near river mouths; after a short planktonic period, the young fish move into the estuaries, which act as nurseries, and move out into deeper waters with growth. Feeds on bottom invertebrates, mainly molluscs. Caught mainly with bottom trawls, gill nets, longlines, handlines, and stake traps. Marketed mostly fresh.

Distribution: Widespread Indo-West Pacific from South Africa to India, including the Red Sea and Persian Gulf, the southern half of Australia, and from the South China Sea to Japan.

