

below. **Colour:** dark olive on top of head, paler on back, ventral surface white; a whitish stripe from above eye to end of dorsal fin; a pale blue stripe from behind eye to upper part of caudal peduncle; a second slightly broader, whitish stripe from behind eye almost to upper base of pectoral fin, thence along body to middle of caudal-fin base; a third, pale blue stripe from below eye to base of pectoral fin; interspaces between these stripes brownish-orange; 2 blue stripes on snout; the first joining eyes through nostrils; the second across front of snout; 2 narrow blue lines below eye crossing suborbital; a black spot on upper base of caudal fin.

Geographical Distribution: Northwestern Australia: Gulf of Carpentaria to Abrolhos Islands (Fig. 168).

Habitat and Biology: A benthic species, very common on shallow inshore reefs and adjacent sand or mud bottoms, in depths down to 20 m. Feeds on small fishes and benthic invertebrates.

Size: Maximum size is 20 cm SL, commonly 15 cm SL.

Interest to Fisheries: Unimportant as a food fish. No major fishery exists.

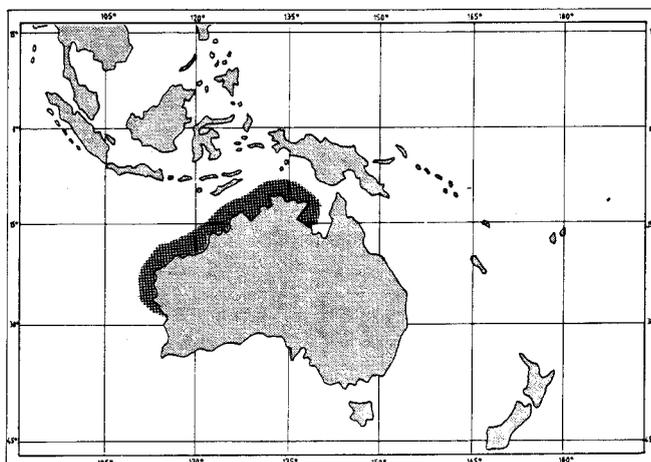


Fig. 168

Local Names: AUSTRALIA: Jurgen (Western Australia).

Literature: Sainsbury *et al.* (1984); Allen & Swainston (1988).

Remarks: This species has been commonly referred to as *Scaevius nicanor* Whitley, but *S. milii* is an older name.

Scolopsis Cuvier, 1815

NEMIP Scol

Genus: *Scolopsis* Cuvier, 1815, *Mém. Mus. Hist. Nat., Paris.*, 1: 361. Type species "le curite de Russel" (= *Scolopsides kurita* Cuvier *in* C. & V., 1830a), by subsequent designation of Jordan (1917).

Synonyms: Genus *Scolopsides* Cuvier, 1829; Subgenus *Ctenoscolopsis* Fowler, 1931b.

Diagnostic Features: Small to medium-sized fish with a slender or moderately deep, laterally compressed body. Teeth villiform or small, conical, in tapering bands in both jaws; canine teeth absent. Gill rakers short and stubby, 8 to 12 on first arch. Pectoral fins short to moderately long, with 2 unbranched and 12 to 17 branched rays; second anal spine usually longer and more robust than first or third; caudal fin emarginate or forked; upper lobe and/or lower lobe of caudal fin pointed, falcate or produced to form short filamentous extensions. Body covered with ctenoid scales; scales on top of head reaching forward to level of middle of eyes, to level of nostrils or to in front of nostrils; suborbital naked, with a large backwardly pointing spine and a series of smaller spines or serrations on its posterior margin; a small antrorse spine beneath eye in some species; 4 to 7 transverse rows of cheek scales, lower limb of preopercle naked or scaly; posterior margin of preopercle serrate or spinous; opercle scaly; upper margin of opercle with a small, flat embedded spine. Lateral line 35 to 49, 3 to 5½ transverse scale rows above lateral line, 12 to 18 rows below. **Colour:** extremely variable.

Biology, Habitat and Distribution: Benthic, usually occurring on reefs or on sandy or muddy bottoms close to reefs, in depths down to 60 m; either solitary or in aggregations. *Scolopsis* species feed primarily on small crustaceans on the bottom. Juveniles of several species are Batesian mimics of other fishes. Some species are protogynous hermaphrodites.

Geographical Distribution: Widespread throughout the Indo-West Pacific region, in tropical and subtropical waters.

Interest to Fisheries: No major fishery exists for species of *Scolopsis*, although *S. taeniopterus* is trawled in small quantities in the South China Sea and Gulf of Thailand. Small numbers of other species are taken by artisanal fishermen mainly by handline. Some of the smaller species of *Scolopsis* are also captured live for the aquarium trade. Marketed fresh (whole), dry-salted, dry-smoked and as fish balls and fish cakes.

Literature: Fowler (1931 b); Weber & de Beaufort (1936); Wongratana (1978).

Remarks: Some authors have included *Parascolopsis* in the genus *Scolopsis*, but they are retained here as separate taxa on the basis of differences in jaw structure, development of the infraorbital bones, number of epipleural ribs and degree of development of the second anal spine.

Key to the Species of *Scolopsis*

- 1a. Small antrorse spine or bony ridge present below eye (Fig. 169a)
- 2a. Maxillary denticulate on its external edge (Fig. 170a) (Andaman Sea, W. Pacific)
..... *S. ciliatus*
(Fig. 171, Plate VII, b)
- 2b. Maxillary smooth along its external edge (Fig. 170b)

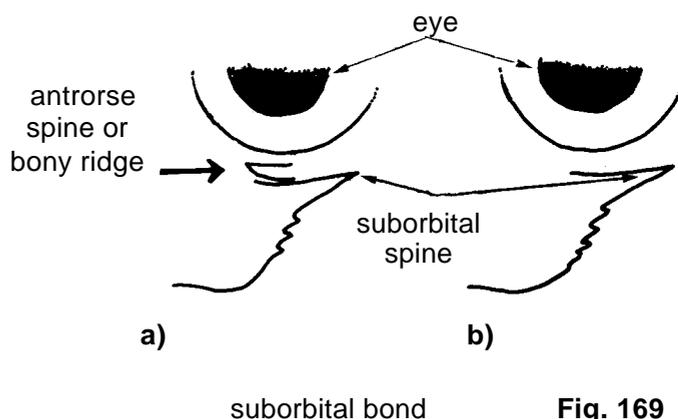
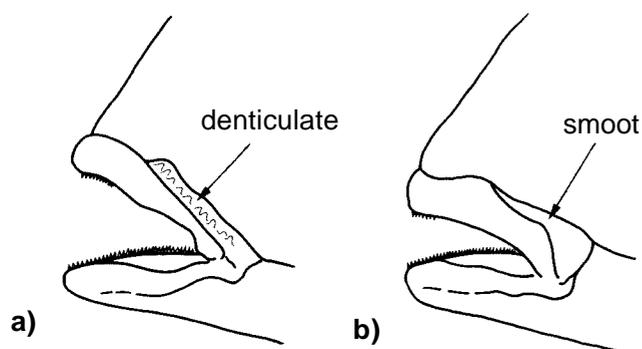
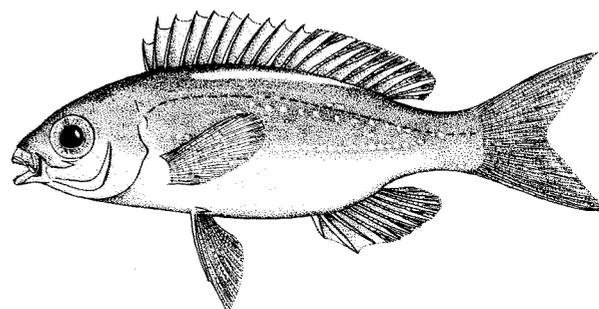


Fig. 169



outer surface of maxillary bone Fig. 170



S. ciliatus Fig. 171

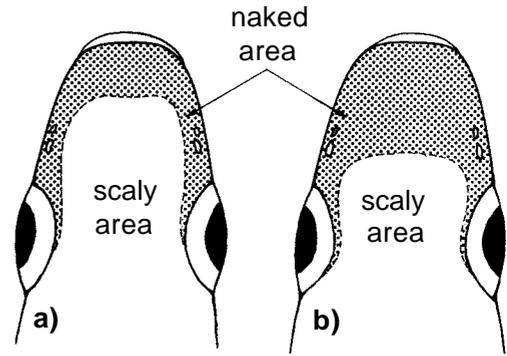
3a. Scales on top of head reaching forward to between level of snout and anterior nostril (Fig. 172a)

4a. Body depth 2.5 to 3.0 in SL; pectoral fins reaching to level of anus; anterior part of anal fin black (W. Pacific and E. Indian Ocean; Fiji to Laccadive Is) ***S. bilineatus*** (Fig. 173, Plate VI, f)

4b. Body depth 2.0 to 2.6 in SL; pectoral fins not reaching to level of anus; anterior part of anal fin not black (Indo-W. Pacific) ***S. vosmeri*** (Fig. 174, Plate VIII, g)

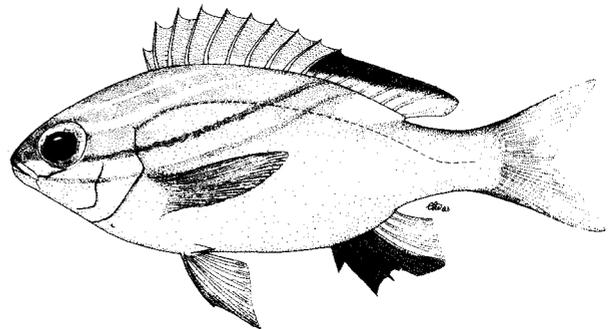
3b. Scales on top of head not extending forward to level of posterior nostril (Fig. 172b) (W. Pacific and E. Indian Ocean: Solomon Is to Maldives) ***S. xenochrous*** (Fig. 175, Plate VIII, h)

1 b. Small antrorse spine or bony ridge below eye absent (Fig. 169b)

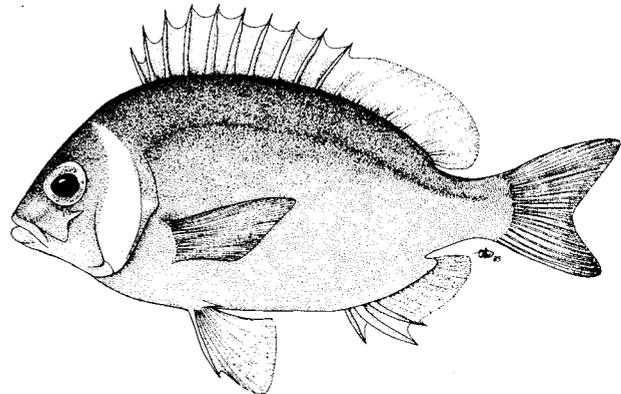


top of head, showing forward extent of scales

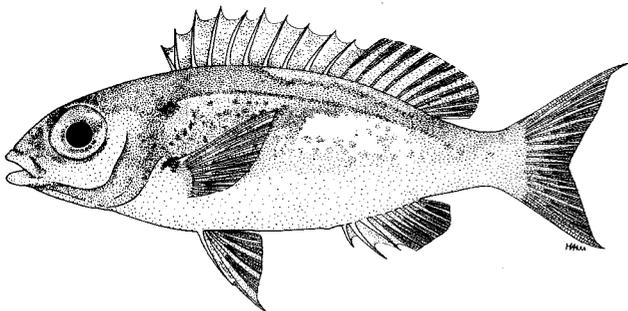
Fig. 172



S. bilineatus Fig. 173

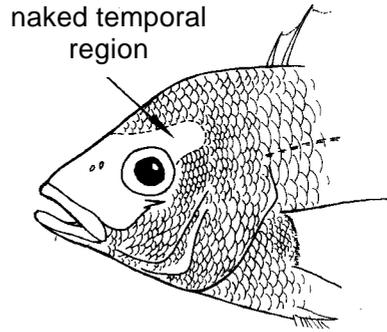


S. vosmeri Fig. 174



S. xenochrous Fig. 175

5a. Temporal region naked (Fig. 176)
 (Solomon Is, N. New Guinea, Sula-
 wesi) ***S. temporalis***
 (Fig. 177, Plate VIII, e)

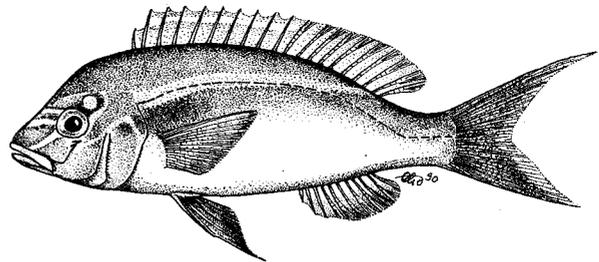


extent of scales on head **Fig. 176**

5b. Temporal region scaled

6a. Head scales reaching forward
 only to level of mid-pupil (Fig.
 178a)

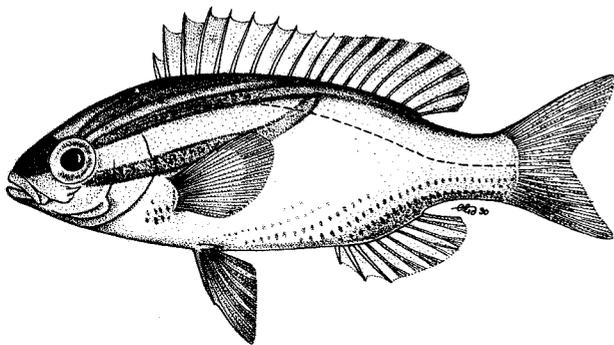
7a. Lateral-line scales 41 to
 43 (rarely 44); lower limb
 of preopercle scaly (W.
 Pacific: Samoa to Philip-
 pines) ***S. trilineatus***
 (Fig. 179, Plate VIII, f)



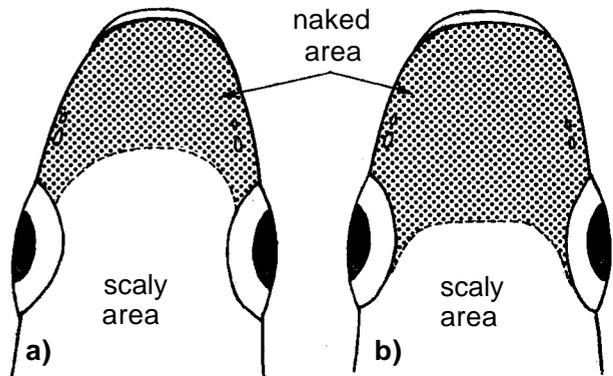
S. temporalis **Fig. 177**

7b. Lateral-line scales 45 to
 47; lower limb of pre-
 opercle naked (W. Indian
 Ocean and Andaman
 Sea) ***S. ghanam***
 (Fig. 180, Plate VII, e)

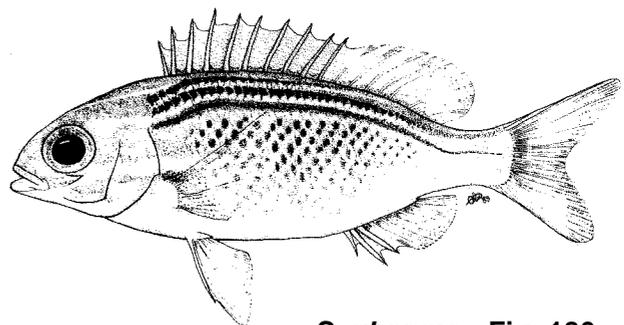
6b. Head scales reaching forward
 to or in front of level of anteri-
 or margin of eye (Fig. 178b)



S. trilineatus **Fig. 179**



top of head, showing
 forward extent of scales **Fig. 178**



S. ghanam **Fig. 180**

8a. Lateral-line scales 37 to 39 (W. Pacific) ***S. margaritifer***
(Fig. 181, Plate VII, h)

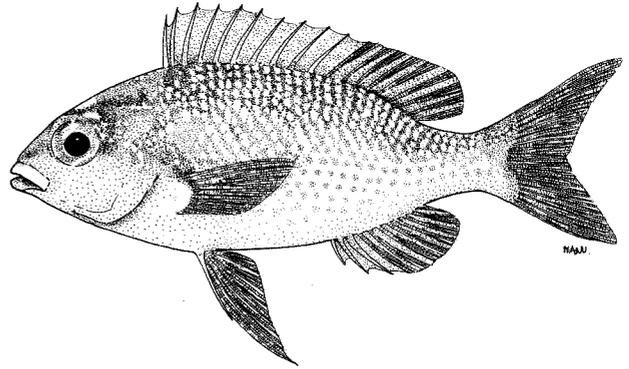
8b. Lateral-line scales 42 to 48

9a. Pectoral-fin rays ii, 14; 3 scale rows between lateral line and dorsal origin; colour pattern consisting of 3 irregular dark stripes horizontally on upper half (W. Pacific and Cocos-Keeling Is) ***S. lineatus***
(Fig. 182, Plate VII, f)

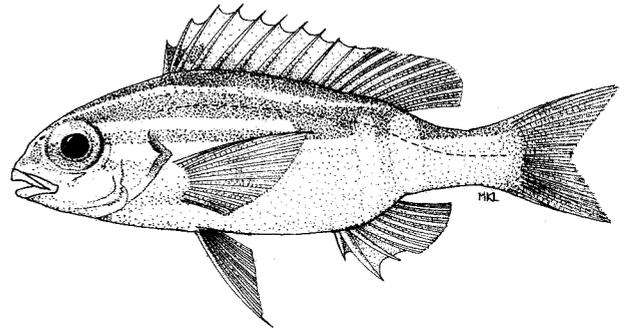
9b. Pectoral-fin rays ii, 15 to 16; 4 to 5 scale rows between lateral line and dorsal origin; colour pattern not as above

10a. Large, dark ovoid spot, transected by lateral line, on upper part of body beneath middle of dorsal fin (W. Indian Ocean: Bay of Bengal).. ***S. bimaculatus***
(Fig. 183, Plate VII, a)

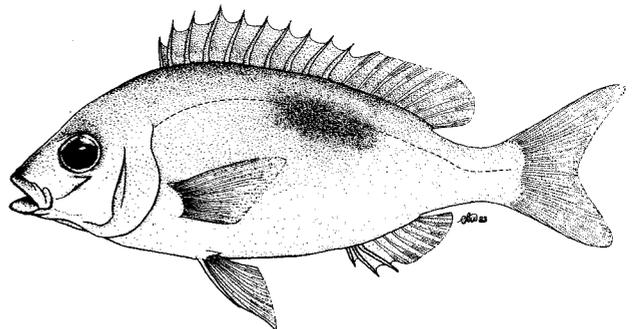
10b. No dark ovoid spot on upper part of body



S. margaritifer Fig. 181



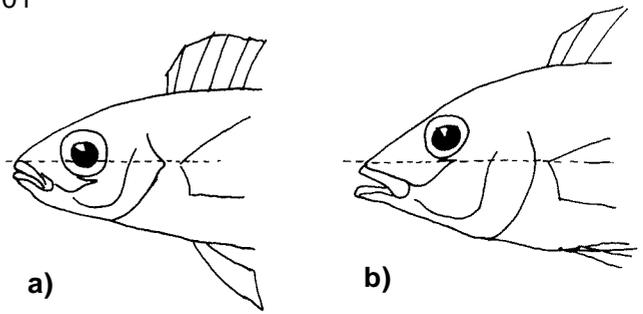
S. lineatus Fig. 182



S. bimaculatus Fig. 183

11a. Lower margin of eye distinctly below line from snout to upper pectoral base (Fig. 184a) (W. Indian Ocean: Chagos Is, Seychelles, Mauritius, Réunion, Madagascar) . **S. frenatus** (Fig. 185, Plate VII, c)

11 b. Lower margin of eye tangent to or above a line from snout to upper pectoral base (Fig. 184b)



position of eye relative to a line from tip of snout to upper pectoral fin base

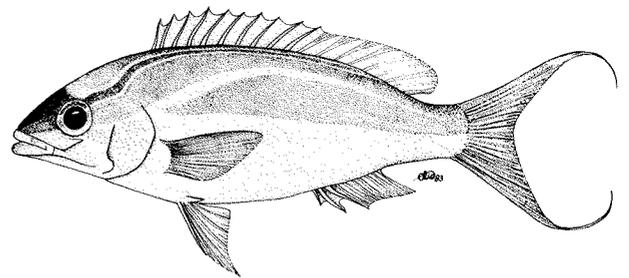
Fig. 184

12a. Head scales reaching forward to or nearly to level of posterior nostril

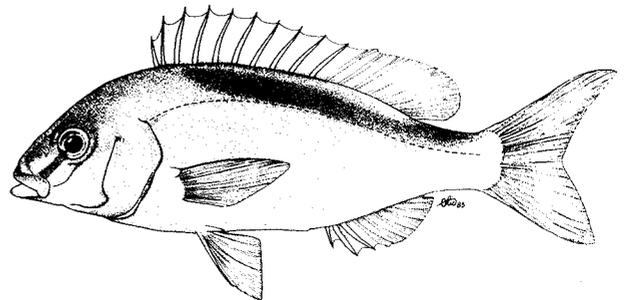
13a. Dusky stripe present above lateral line (Persian Gulf, Gulf of Oman; Red Sea, Gulf of Aden)
..... **S. taeniatus**
(Fig. 186, Plate VIII, c)

13b. Dusky stripe above lateral line absent

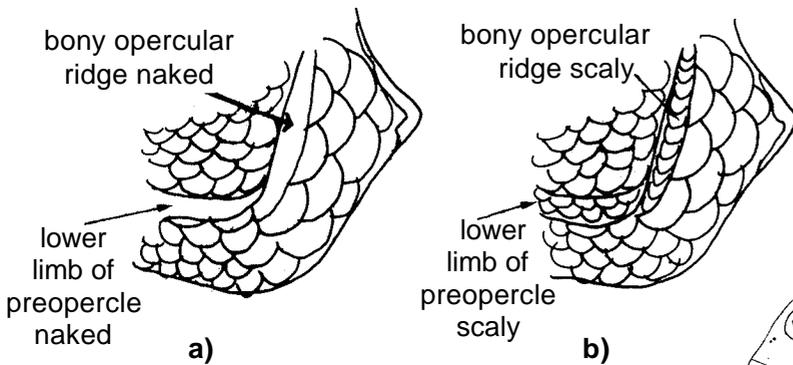
14a. Bony opercular ridge naked or nearly so; lower limb of preopercle naked or nearly so (Fig. 187a) (W. Pacific: N. Australia to Philippines).....
... **S. taeniopterus**
(Fig. 188, Plate VIII, d)



S. frenatus Fig. 185

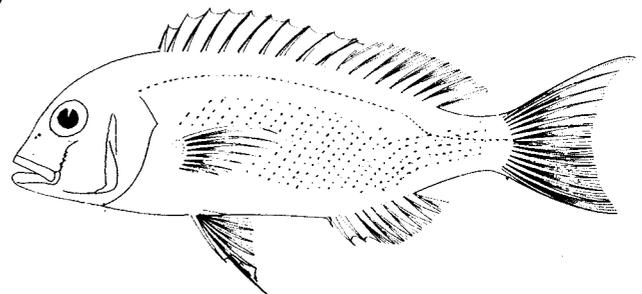


S. taeniatus Fig. 186



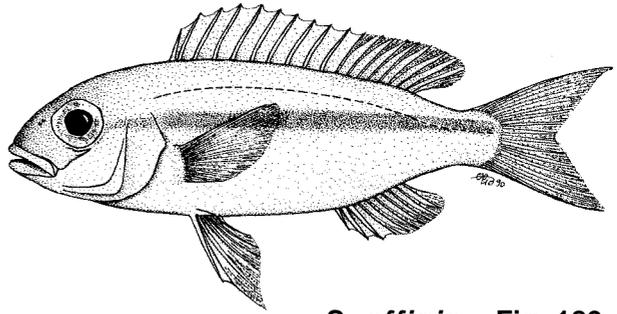
scales on preopercle and opercle

Fig. 187



S. taeniopterus Fig. 188

- 14b.** Bony opercular ridge scaly; lower limb of preopercle with 1 or 2 scale rows (Fig. 187b) (W. Pacific: N. Australia to Philippines) ***S. affinis***
(Fig. 189, Plate VI, d)

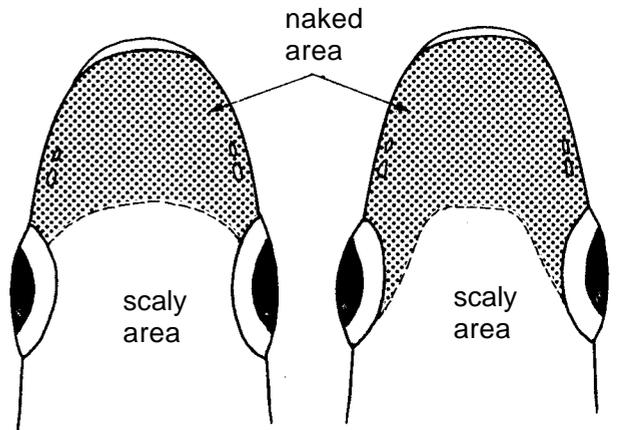


S. affinis Fig. 189

- 12b.** Head scales not reaching forward to level of posterior nostril

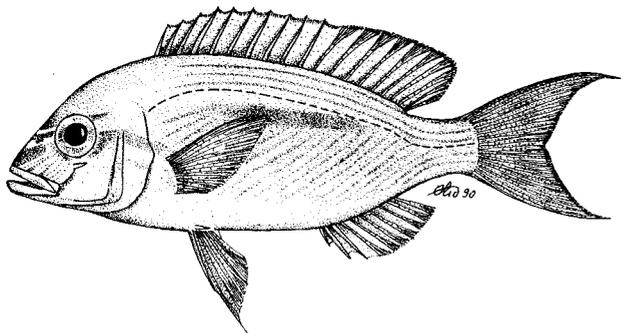
- 15a.** Transverse scale rows between lateral line and first dorsal spine 4; patch of scales on top of head truncated anteriorly (Fig. 190a) (Southern Indonesia, Sri Lanka, Maldives) ***S. auratus***
(Fig. 191, Plate VI, e)

- 15b.** Transverse scale rows between lateral line and first dorsal spine 5 or 6; scales on top of head not truncated anteriorly (Fig. 190b) (W. Pacific and E. Indian Ocean) ...
..... ***S. monogramma***
(Fig. 192, Plate VIII, b)

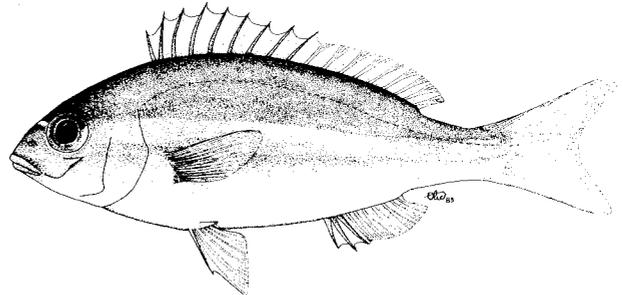


shape of anterior margin of head scales

Fig. 190



S. monogramma Fig. 192



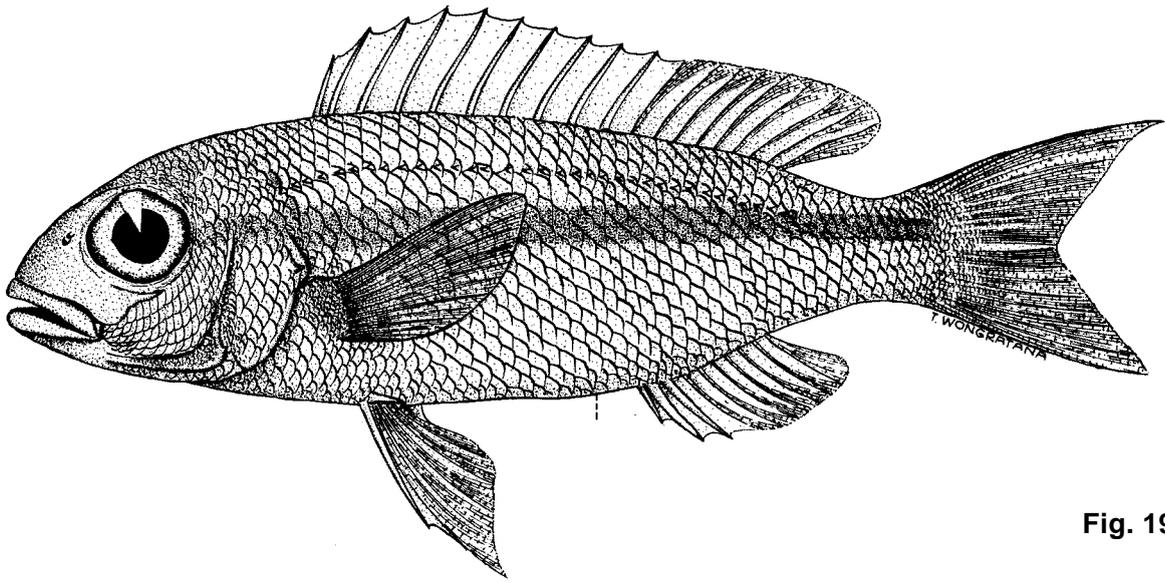
S. auratus Fig. 191

Scolopsis affinis Peters, 1877**Fig. 193, Plate VI, d****NEMIP Scol 9**

Scolopsis affinis Peters, 1877, Monatsber. Akad. Berlin, 1876: 832 (New Britain, New Ireland).

Synonyms: None.

FAO Names: En - Peters' monocle bream.

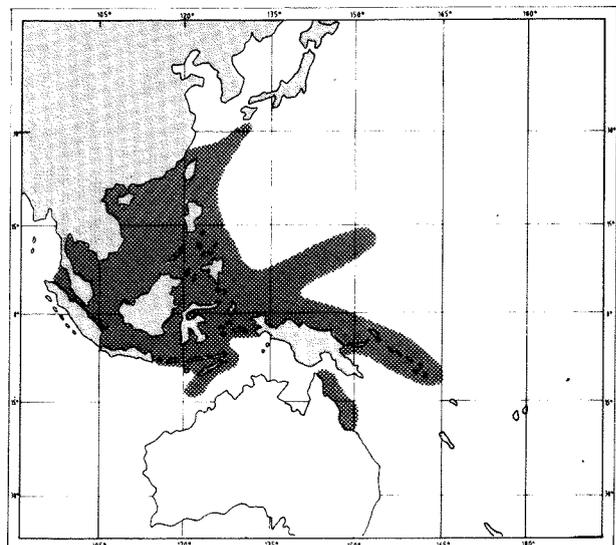
**Fig. 193**

Diagnostic Features: Body depth 2.9 to 3.3 in SL; snout length about equal to diameter of eye; head scales reaching forward to level of posterior nostrils; lower limb of preopercle scaly; antrorse suborbital spine absent; suborbital depth 1.7 to 2.9 in eye diameter; lateral-line scales 43 to 46; pectoral-fin rays ii, 14 to 16 (usually ii, 14 or 15); pelvic fins long, reaching to or beyond level of anus; caudal fin forked, larger specimens with upper and lower lobes falcate. **Colour:** body silvery-white, greyish on back above lateral line; a broad yellow midlateral stripe (yellowish in larger specimens) from behind eye to caudal peduncle; top of head and snout dusky grey; an indistinct bluish stripe between eyes; a narrow white stripe from middle of upper lip to below eye; caudal fin yellow, with a narrow pale blue margin. Juveniles with dusky brown stripe on either side of dorsal midline, and dusky brown midlateral stripe, yellowish above anteriorly.

Geographical Distribution: Western Pacific Ocean, including Ryukyu Islands, Philippines, South China Sea, Indonesia, New Guinea, Solomon Islands, northeastern Australia, and the Andaman Sea (Fig. 194).

Habitat and Biology: A benthic species, found on sand or mud bottoms close to reefs, in depths to 60 m. Occurs solitary or in small aggregations.

Size: Maximum size is 19.5 cm SL, commonly 15 cm SL.

**Fig. 194**

Interest to Fisheries: Appears occasionally in small numbers in local markets. No major fishery exists.

Local Names: PHILIPPINES: Silay, Buruba, Tagisang lawin.

Literature: Masuda *et al.* (1975, 1984); Rau & Rau (1980, as *S. personatus*); Gloerfelt-Tarp & Kailola (1984); Myers (1989, as *S. monogramma*).

Remarks: This species has been incorrectly referred to as *S. personatus* (= *S. auratus*) by some authors.

Scolopsis auratus (Park, 1797)

Fig. 195, Plate VI, e

NEMIP Scol 3

Perca aurata Park, 1797, *Trans. Linn. Soc.*, 3: 35 (Bengkulu, Sumatra).

Synonyms: *Lutjanus aureovittatus* Lacépède (1802); *Scolopsides personatus* Cuvier *in* C. & V. (1830a).

FAO Names: En - Yellowstripe monocle bream. Fr - Mamila à bande dorée. Sp - Besugato de banda dorada.

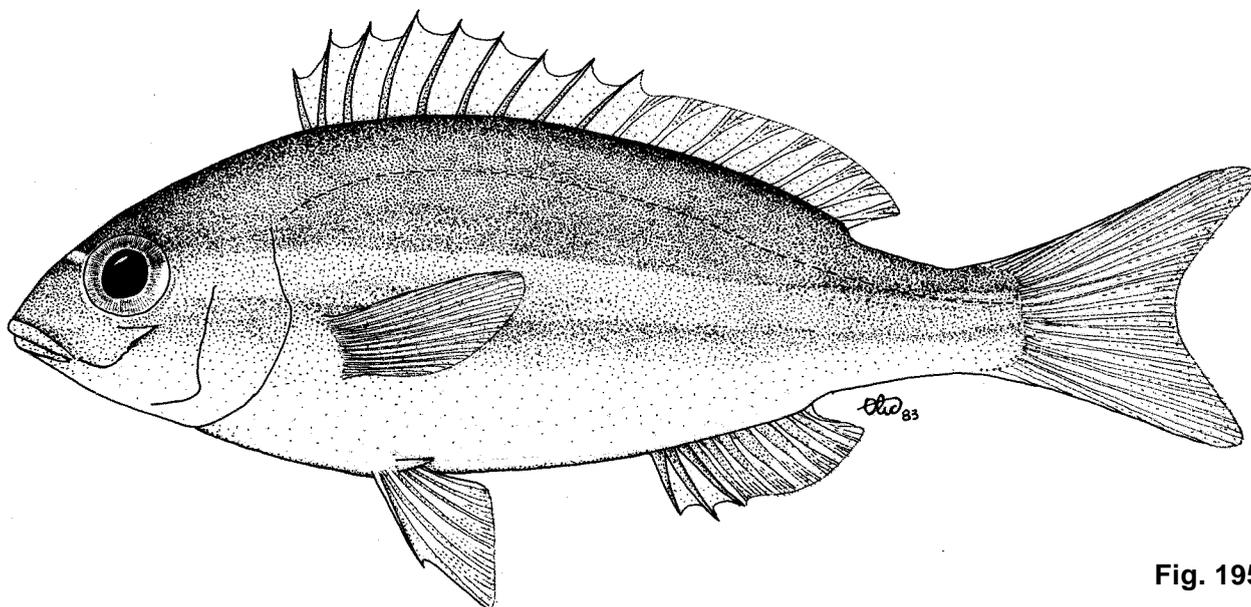


Fig. 195

Diagnostic features: Body depth 2.9 to 3.1 in SL; snout length about equal to or a little greater than diameter of eye; head scales reaching forward to or just behind level of anterior margin of eye; scaly area between eyes truncated anteriorly; lower limb of preopercle scaly; antrorse suborbital spine absent; suborbital depth 1.8 to 2.6 in eye diameter; lateral-line scales 46 to 48; pectoral-fin rays ii, 15 or 16, (Usually ii, 15); pelvic fins long, reaching to or just beyond level of anus; caudal fin forked. **Colour:** body silvery-white, dusky blue on back; a broad golden-yellow midlateral stripe from behind eye to base of caudal fin; snout dusky; a narrow pale bluish stripe joining eyes behind nostrils; caudal fin golden-yellow.

Geographical Distribution: Eastern Indian Ocean, including the Maldives, Sri Lanka, and southern Indonesia (Fig. 196).

Habitat and Biology: A benthic species, found close to reefs.

Size: Maximum size is 21 cm SL, commonly 18 cm SL.

Interest to Fisheries: Appears occasionally in small numbers in local markets. No major fishery exists.

Local names: INDONESIA: Pasir-pasir.

Literature: Fischer & Bianchi (1984); Gloerfelt-Tarp & Kailola (1984).

Remarks: This species has been reported by most authors under the name *S. personatus*, but *S. auratus* is an older name.

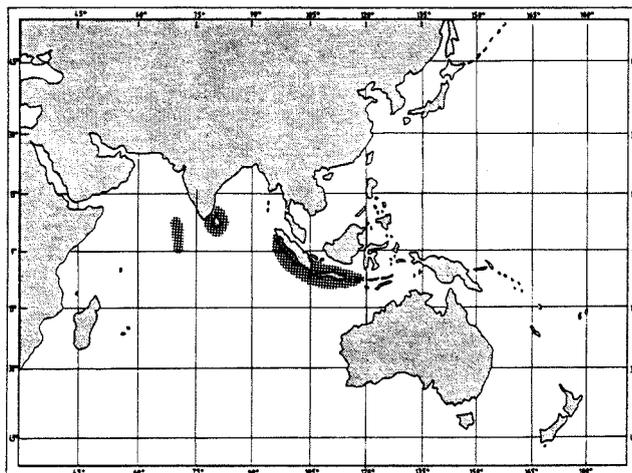


Fig. 196

Scolopsis bilineatus (Bloch, 1793)

Fig. 197, Plate VI, f-g-h

NEMIP Scol 4

Anthias bilineatus Bloch, 1793, Naturges. Ausländ. Fische, 7: 3, pl. 325, fig. 1 (Japan).

Synonyms: *Lutjanus ellipticus* Lacépède (1802); *Perca frenata* Günther (1859); *Scolopsis bleekeri* Günther (1859).

FAO Names: En - Two-lined monocle bream; Fr - Mamila griffée. Sp - Besugato rayado.

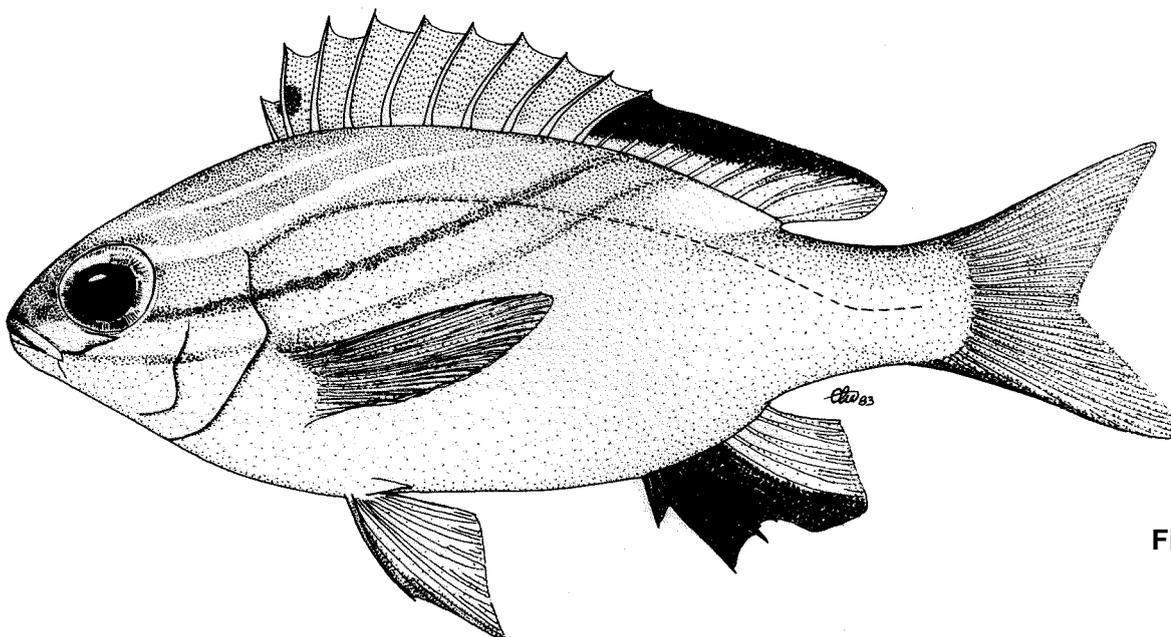


Fig. 197

Diagnostic Features: Body depth 2.5 to 3.0 in SL; snout length less than diameter of eye; head scales reaching to or just in front of anterior nostrils; lower limb of preopercle scaly; antrorse suborbital spine present beneath eye; suborbital depth 2.8 to 5.6 in eye diameter; lateral-line scales 43 to 47 (usually 45 or 46); pectoral-fin rays ii, 14 to 16 (usually ii, 15); pelvic fins long, reaching to or almost to level of origin of anal fin; caudal fin forked. **Colour:** head and upper part of body olive or greyish-brown, pearly-white below; a dark red-edged pearly-white stripe ascending from mouth to base of the soft dorsal fin; two narrow yellow stripes on head; the first from top of snout through upper part of eye to beneath middle of spinous dorsal fin; the second, parallel to first, from above eye to beneath dorsal fin origin; a yellow middorsal stripe from above eyes along base of dorsal fin; a whitish patch just below base of posterior half of soft dorsal rays; spinous dorsal fin yellow, soft dorsal with anterior half deep red or black, remaining part transparent; anterior half of anal fin deep red or black, remaining part transparent; caudal fin transparent, outer caudal rays reddish. Juveniles with 3 dark brown stripes on upper part of body, interspaces between stripes yellow; ventral half of body silvery-white (Plate VI, g); specimens from Fiji uniformly yellow, with only traces of dark stripes on upper part of body (Plate VI, h); black spot between first 4 dorsal spines.

Geographical Distribution: Eastern Indian Ocean from the Laccadive Islands, Sri Lanka, Andaman Sea, Western Australia, and the Western Pacific from the Ryukyu Islands to eastern Australia and eastwards to New Caledonia and Fiji (Fig. 198).

Habitat and Biology: A benthic species, common on coral reefs, in depths to 20 m. Occurs solitary or in small aggregations. Feeds on small fishes and benthic invertebrates. A protogynous hermaphrodite. Juveniles appear to be Batesian mimics of poison-fanged blenniids (*Meiacanthus*).

Size: Maximum size is 15.5 cm SL, commonly 13 cm SL.

Interest to Fisheries: Appears occasionally in small numbers in local markets. Caught mainly by handline. Live specimens captured by hand net for the aquarium export trade in the Philippines. No major fishery exists.

Local Names: PHILIPPINES: Silay (Visayan), Buruba, Tagisang lawin (Tagalog). MALAYSIA: Timun-timun; INDONESIA: Pasir-pasir (W. Java), Kinolu pinhiti (Ceram - Wahi), Sidemo karang (Ambon), Aoloumang (Ambon - Hitu), Ija puti (Ambon - Luhu), Lisila (Saparua - Haria), Mata baban (Geser). PAPUA-NEW GUINEA: Wonano (Port Moresby). AUSTRALIA: Bridled monacle bream, bridled spine-cheek, yellow-finned spine-cheek (Queensland). THAILAND: Pla Sai Khao. LACCADIVE ARCHIPELAGO: Kolkodin (Bitra). JAPAN: Futasuji-tamagashira.

Literature: Masuda *et al.* (1975, 1984); Fourmanoir & Laboute (1976); Jones & Kumaran (1980); Rau & Rau (1980); Schroeder (1980); Grant (1982); Fischer & Bianchi (1984); Gloerfelt-Tarp & Kailola (1984); Shen (1984); Allen & Steene (1987); Allen & Swainston (1988); Myers (1989).

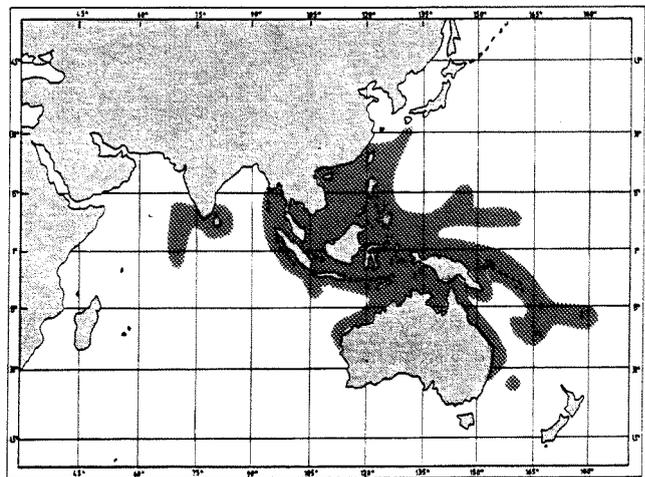


Fig. 198