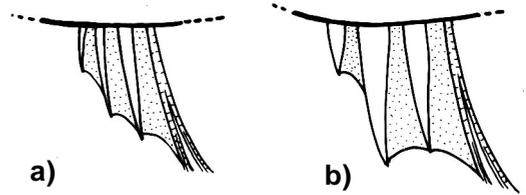
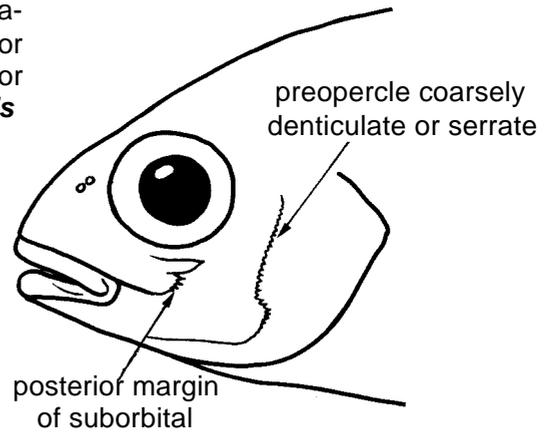


4b. Body depth 2.5-3.0 in SL; canine teeth in jaws absent; second anal spine usually longer and more robust than third spine (Fig. 19b) **Parascolopsis**



anal fin spines **Fig. 19**

1 b. Suborbital naked, with a large backwardly pointing spine and a series of smaller spines or serrations on its posterior margin (Fig. 20); posterior margin of preopercle coarsely denticulate or serrate (Fig. 20); canine teeth absent **Scolopsis**



Scolopsis **Fig. 20**

2.4 Information by Species

Nemipterus Swainson, 1839

NEMIP Nem

Genus: *Nemipterus* Swainson, 1839, *Nat. his. fishes*, 2: 223. Type species, *Dentex filamentosus* Valenciennes in C. & V. (1830b), by original designation.

Synonyms: Genus *Spondyliosoma* Cantor, 1850; Genus *Synagris* Günther, 1859; Subgenus *Anemura* Fowler, 1904; Subgenus *Odontoglyphis* Fowler, 1904; Subgenus *Ethyopteroma* Fowler, 1904.

Diagnostic Features: Small to medium-sized fish with a stender or moderately deep, laterally compressed body. Teeth small and conical or villiform, in tapering bands in both jaws; small pointed or recurved canine teeth anteriorly in the upper and lower jaw present in some species. Gill rakers short and stubby, 10 to 20 on first arch. A single dorsal fin with 10 spines and 9 soft rays (last ray branched at base); pectoral fins short to moderately long, with 2 unbranched and 13 to 16 branched rays; pelvic fins short or long, with 1 spine and 5 soft rays; anal fin with 3 spines and 7 or 8 soft rays (last ray branched at base); caudal fin forked; upper lobe of caudal fin rounded, pointed, falcate, or produced to form a short or very long trailing filamentous extension. Body covered with ctenoid scales, scales on top of head reaching forward to level of middle of eyes; suborbital naked, its posterior margin smooth; preopercle scaly, with 3 transverse scale rows, lower limb of preopercle naked; posterior margin of preopercle finely denticulate or smooth; opercle scaly; upper margin of opercle with a small, flat embedded spine. Lateral-line scales 45 to 51; 3½ to 4½ transverse scale rows above lateral line, 9 to 12½ rows below. **Colour:** extremely variable, but usually pinkish or silvery, with red, yellow and blue markings.

Biology, Habitat and Distribution: Benthic, inhabits marine waters, on sandy or muddy bottoms, usually in depths of 20 to 50 m, but some species occur down to 300 m; solitary or in large aggregations. *Nemipterus* species feed principally on small benthic invertebrates (polychaetes, crustaceans, cephalopods, molluscs) and small fishes. Males are usually larger and some species may be protogynous hermaphrodites.

Geographical Distribution: Indo-West Pacific region in tropical and subtropical coastal waters.

Interest to Fisheries: Important in fisheries, species of the genus *Nemipterus* are among the most important catch by weight throughout the Indo-West Pacific region. Catches of *Nemipterus* are usually not identified to species and separate catch statistics are available only for *N. virgatus* (see Table 1). The total reported catches of unclassified *Nemipterus* for 1987 was 120 000 m tons, with greatest catches being landed in the Philippines, Thailand, Hong Kong, Malaysia, Indonesia and Taiwan.

Nemipterus are caught most commonly using otter or pair trawls. Other commercial and artisanal gear includes seine net, gill net, longline, handline, fish stakes and traps, lift nets, surrounding nets, drive-in nets.

Nemipterus species are marketed mainly fresh; also salted and dried, dry-smoked, fermented, and steamed. Trash fish are made into fish balls and cakes, fish meal and surimi, or used as animal feed.

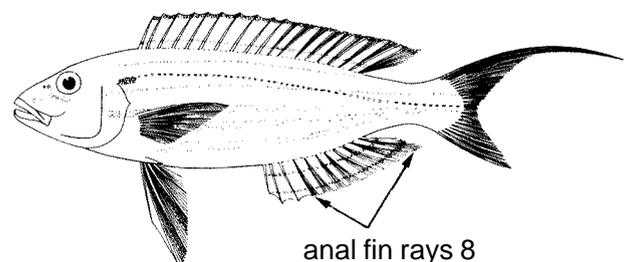
Literature: Fowler (1931 b); Weber & de Beaufort (1936); Akazaki (1962); Wongratana (1972, 1974); Bauchot *et al.* (1983); Russell (1986a).

Remarks: The original designation of the type species for the genus *Nemipterus*, *Dentex filamentosus* Valenciennes *in* C. & V. (1830b), is preoccupied by *Cantharus filamentosus* Rüppell (= *N. japonicus*). *N. nematophorus* (Bleeker) is the valid name for the species described by Valenciennes.

Key to the species of *Nemipterus*

1a. Anal fin with 3 spines and 8 rays (W. Pacific) *N. virgatus*
(Fig. 21, Plate III, g)

1b. Anal fin with 3 spines and 7 rays



N. virgatus

Fig. 21

2a. First two dorsal spines close together, almost fused, produced to form a very long filament (Fig. 22) (E. Indian Ocean and W. Pacific from S. China Sea to Indonesia)....

..... ***N. nematophorus***
(Fig. 22, Plate II, e)

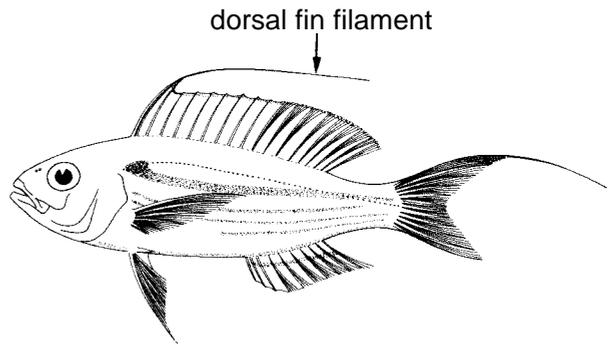
2b. First two dorsal spines separated by a membrane, not produced into a long filament, and shorter than the following spines

3a. Membrane between dorsal spines deeply incised (Fig. 23) (Indo-W. Pacific) ***N. peronii***
(Fig. 23, Plate II, h)

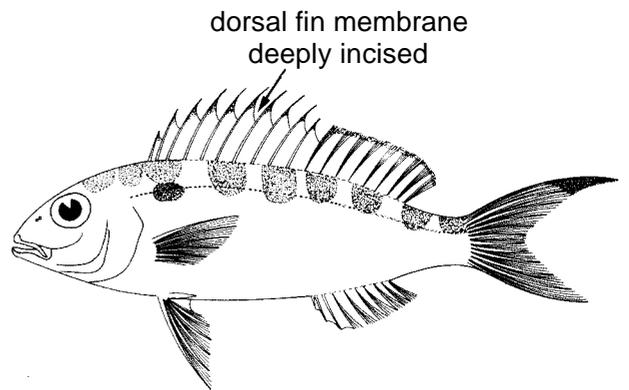
3b. Membrane between dorsal spines continuous or only slightly emarginate (Fig. 24)

4a. Upper lobe of caudal fin produced to an elongate point (Fig. 25a), falcate (Fig. 25b), or extended into a narrow filament (Fig. 25c)

5a. Upper lobe of caudal fin produced to an elongate point (Fig. 25a); dorsal fin elevated, first dorsal spine long, 1.1 to 1.4 in length of longest dorsal spine

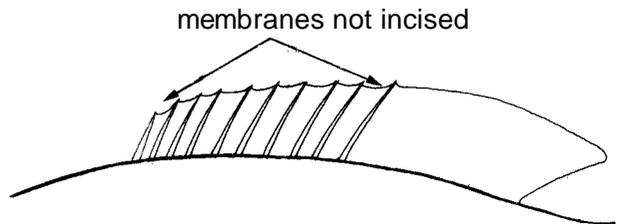


N. nematophorus Fig. 22



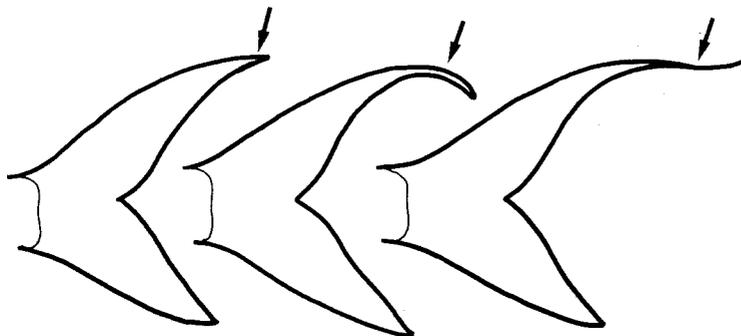
dorsal fin membrane deeply incised

N. peronii Fig. 23



membranes not incised

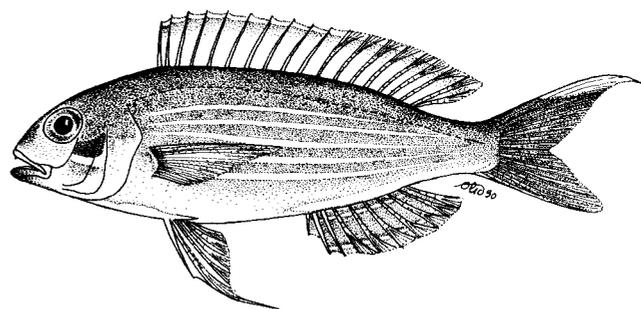
dorsal fin Fig. 24



a) elongate point b) falcate c) filamentous

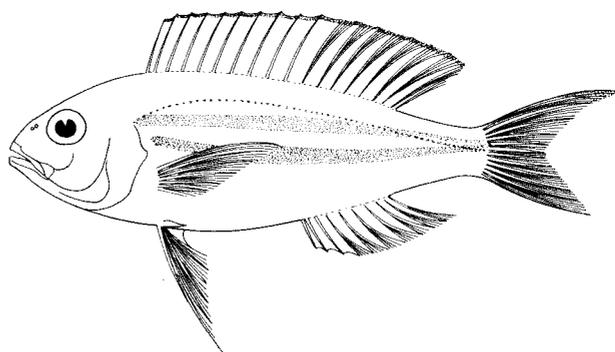
shapes of upper caudal fin lobe Fig. 25

- 6a. Pelvic fins reaching to or beyond level of origin of anal fin; pectoral fins reaching to or just beyond level of anus, 1.1 to 1.3 in head length; gill rakers 11 to 13; 5 pale golden stripes on sides beneath the lateral line; anal fin with a narrow golden stripe just above its base, this stripe extending out to tip of the last soft ray (Indonesia) **N. sp. 1**
(Fig. 26, Plate III, b)



Nemipterus sp. 1 Fig. 26

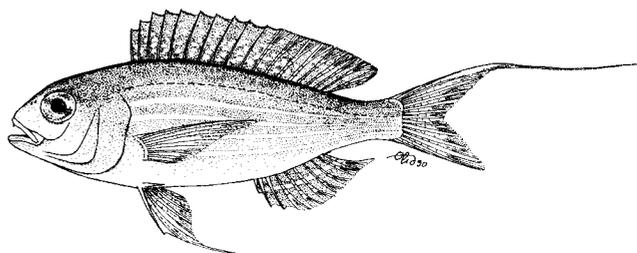
- 6b. Pelvic fins reaching to or short of level of origin of anal fin; pectoral fins reaching to or just short of level of origin of anal fin, 0.9 to 1.1 in head length; gill rakers 13 to 16; 2 narrow golden stripes on sides beneath the lateral line; anal fin without stripes (W. Pacific from S. Japan to Indonesia) **N. sp. 2**
(Fig. 27, Plate III, c)



Nemipterus sp. 2 Fig. 27

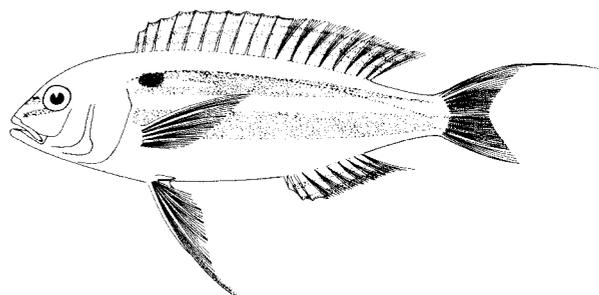
- 5b. Upper lobe of caudal fin falcate (Fig. 25b) or extended into a short or long filament (Fig. 25c); dorsal fin not notably elevated, first dorsal spine short, 1.3 to 2.9 in length of longest spine

- 7a. Pelvic fins very long, reaching to or beyond level of origin of anal fin
- 8a. Pectoral fins very long, reaching to or beyond level of origin of anal fin; caudal filament long (W. Indian Ocean) **N. randalli**
(Fig. 28, Plate III, a)



N. randalli Fig. 28

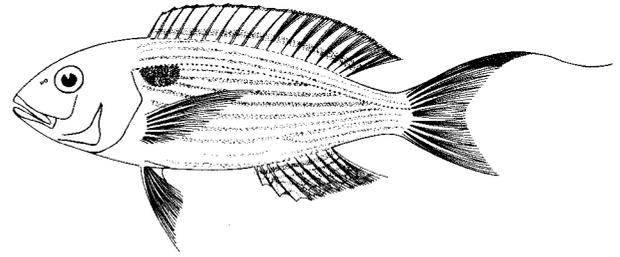
- 8b. Pectoral fins moderately long, reaching to beyond level of anus, but short of level of origin of anal fin; caudal filament short (W. Pacific) ... **N. marginatus**
(Fig. 29, Plate II, c)



N. marginatus Fig. 29

7b. Pelvic fins short or moderately long, not reaching to level of origin of anal

9a. Pectoral fins very long, reaching to or beyond level of origin of anal fin (Indo-W. Pacific)
 ***N. japonicus***
 (Fig. 30, Plate II, b)

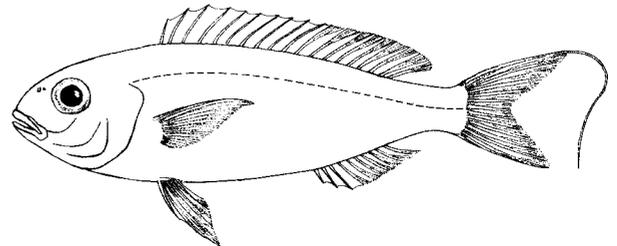


N. japonicus

Fig. 30

9b. Pectoral fins short or moderately long, not reaching to level of origin of anal fin

10a. A line drawn upwards from posterior edge of the sub-orbital reaching the dorsal profile at or behind origin of dorsal fin; gill rakers 14 to 20 N.E. Australia)
 ***N. aurifilum***
 (Fig. 31)



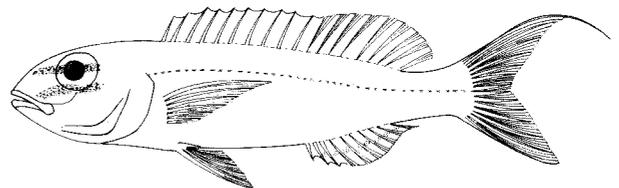
N. aurifilum

Fig. 31

10b. A line drawn upwards from posterior edge of the sub-orbital reaching the dorsal profile before origin of dorsal fin; gill rakers 10 to 16

11 a. Body elongate, depth 3.8 to 4.6 in SL (Indo-W. Pacific)
 ***N. zysron***
 (Fig. 32, Plate IV, a)

11b. Body moderately deep, depth 2.9 to 4.0 in SL

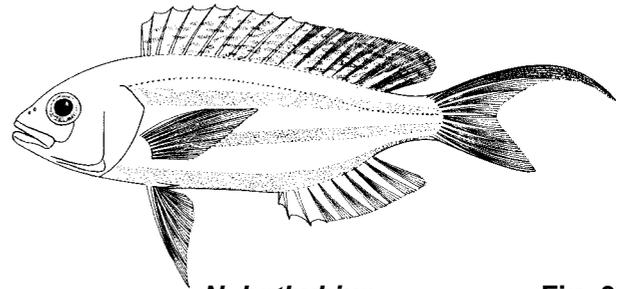


N. zysron

Fig. 32

12a. Eye tangent to or below a line from tip of snout to upper base of pectoral fin

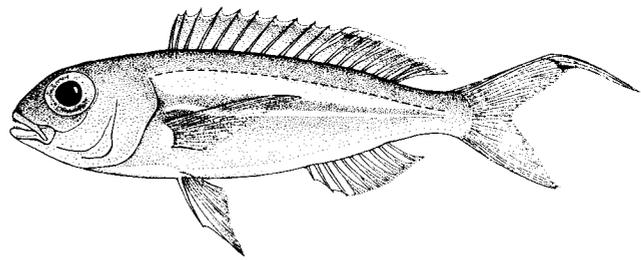
13a. Upper lobe of caudal fin falcate, ribbon-like, uniformly yellow; body depth 3.2 to 4.0 in SL; sides of body with two yellow stripes, the lower stripe originating behind base of pectoral fin; dorsal fin with undulating yellow lines (W. Pacific) ***N. bathybius***
(Fig. 33, Plate I, c)



N. bathybius

Fig. 33

13b. Upper lobe of caudal fin filamentous, yellow with red lower margin; body depth 2.9 to 3.6 in SL; sides of body with two yellow stripes, the lower stripe originating above upper base of pectoral fin; dorsal fin without undulating yellow lines (Indonesia) ***N. balinensis***
(Fig. 34, Plate I, a)

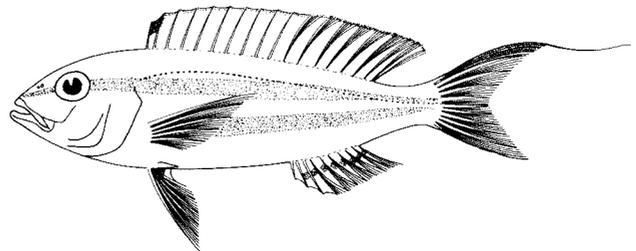


N. balinensis

Fig. 34

12b. Eye tangent to or above a line from tip of snout to upper base of pectoral fin

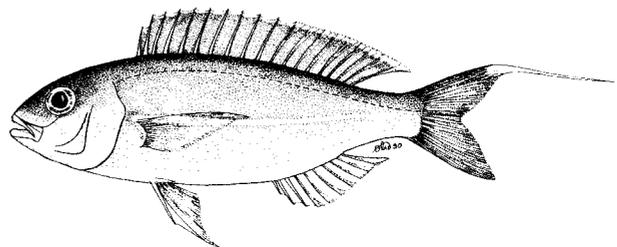
14a. Pectoral-fin rays ii, 14; pectoral and pelvic fins reaching to or just short of level of anus; sides of body with two yellow stripes; red spot between first two dorsal spines (W. Pacific) ***N. nemurus***
(Fig. 35, Plate II, g)



N. nemurus

Fig. 35

14b. Pectoral-fin rays ii, 14 to 16 (usually ii, 15 or 16); pectoral and pelvic fins reaching to or beyond level of anus; sides of body with indistinct mid-lateral yellow stripe; red spot between first two dorsal spines absent (Fiji, Vanuatu) ***N. vitiensis***
(Fig. 36, Plate III, h)



N. vitiensis

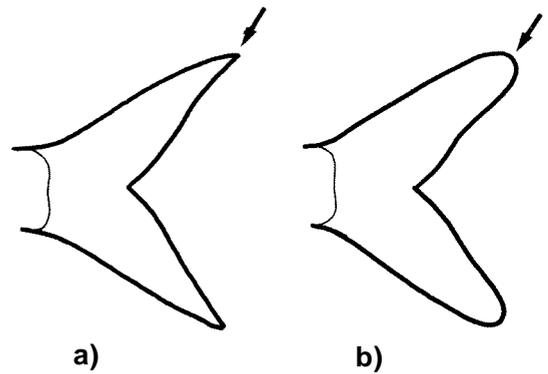
Fig. 36

4b. Upper lobe of caudal fin pointed (Fig. 37a) or rounded (Fig. 37b), not produced

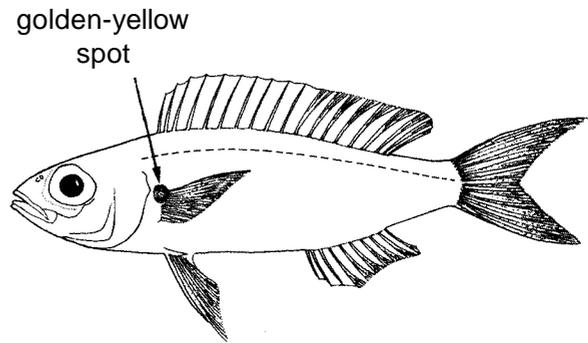
15a. Lower margin of eye below a line drawn from tip of snout to upper base of pectoral fin; suborbital narrow, 3.6 to 6.7 in eye diameter; golden-yellow spot, edged with red above and below, above upper base of pectoral fin (Indonesia).....
 ***N. balinensoides***
 (Fig. 38, Plate I, b)

15b. Lower margin of eye tangent to or above a line drawn from tip of snout to upper base of pectoral fin; suborbital deeper, 0.9 to 2.8 in eye diameter; no yellow spot above base of pectoral fin

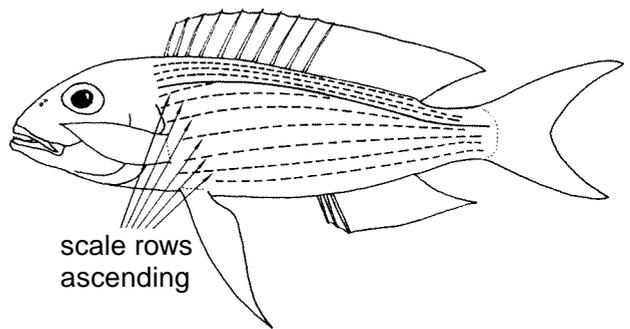
16a. Scales below lateral line in ascending rows anteriorly (Fig. 39)



shape of upper caudal fin lobe **Fig. 37**



N. balinensoides **Fig. 38**



longitudinal scale rows **Fig. 39**

- 17a. Upper lobe of caudal fin pointed, tip black (pigment retained in preserved specimens) (E. Australia)

..... *N. theodorei*
(Fig. 40, Plate III, f)

- 17b. Upper lobe of caudal fin rounded or slightly rounded, tip pink or same colour as rest of fin

- 18a. Dorsal fin with one or more distinctive stripes

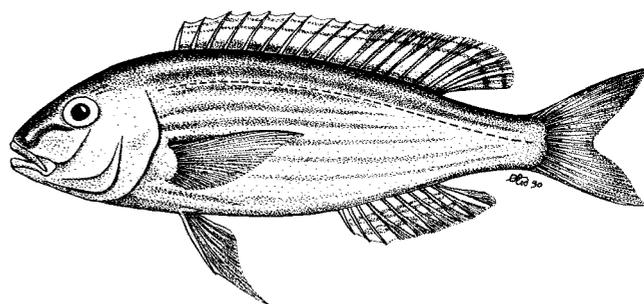
- 19a. Dorsal fin pale yellow, with a broad, bicoloured submedial stripe (yellow above, orange below), yellow margin and pale mauve submarginal stripe; anal fin with a single, pale lemon submedial stripe (sometimes broken) (W. Pacific)

..... *N. sp. 3*
(Fig. 41, Plate III, d)

- 19b. Dorsal fin translucent pink, with 2 or 3 narrow yellow medial stripes, and reddish yellow margin; anal fin with 2 narrow pale yellow medial stripes (Indonesia, N. Australia) *N. celebicus*
(Fig. 42, Plate I, e)

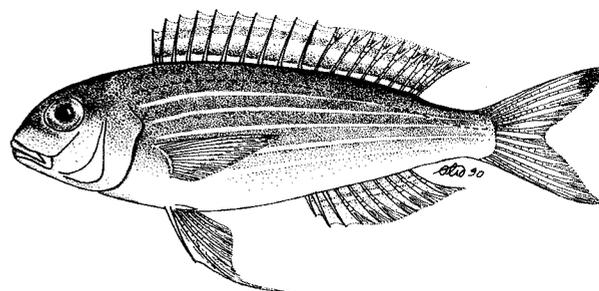
- 18b. Dorsal fin without stripes, uniformly rosy, with reddish or yellowish margin; anal fin with 2 to 5 yellowish undulating stripes (Indian Ocean)

..... *N. bipunctatus*
(Fig. 43, Plate I, d)



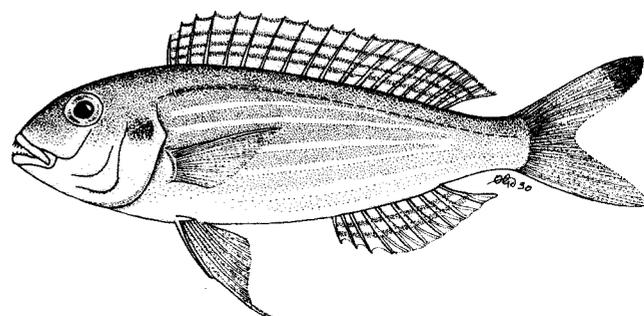
N. theodorei

Fig. 40



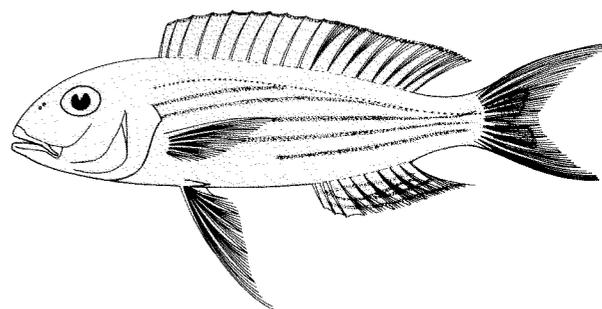
Nemipterus sp. 3

Fig. 41



N. celebicus

Fig. 42



N. bipunctatus

Fig. 43

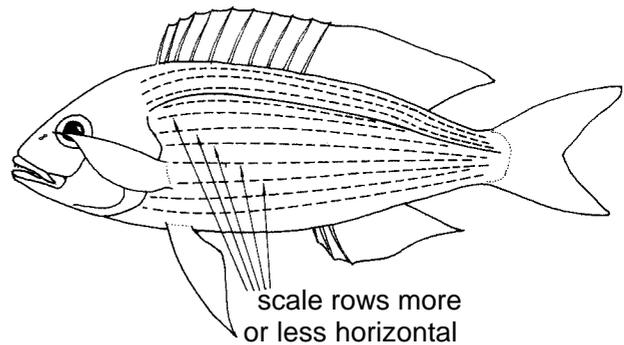
16b. Scales below lateral line in more or less horizontal rows anteriorly (Fig. 44)

20a. Pectoral fins reaching to or short of level of anus

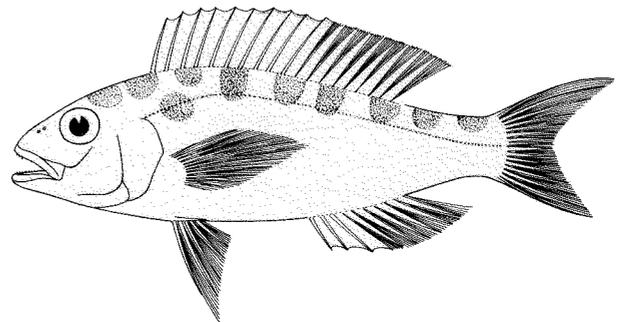
21 a. Pelvic fins short, reaching to or short of anus; a line drawn upwards from posterior edge of the suborbital reaching the dorsal profile at about origin of dorsal fin; body pink, with darker saddles on back; caudal fin with lower margin white-edged; dorsal and anal fins without stripes (E. Indian Ocean to W. Pacific) ***N. furcosus*** (Fig. 45, Plate I, f)

21 b. Pelvic fins very long, reaching to or beyond level of origin of anal fin; a line drawn upwards from posterior edge of the suborbital reaching the dorsal profile 2 or more scale rows before origin of dorsal fin; body pinkish; indistinct narrow, pale yellow stripes on sides, 2 above lateral line, 5 below; dorsal fin pale yellow, lacking stripes; anal fin with faint, broken yellow stripe near base which extends out on posterior rays to tip of fin (S. Indonesia). ***N. gracilis*** (Fig. 46, Plate I, g)

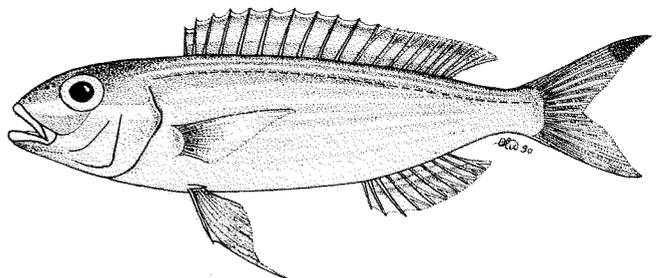
20b. Pectoral fins reaching to beyond level of anus



longitudinal scale rows Fig. 44

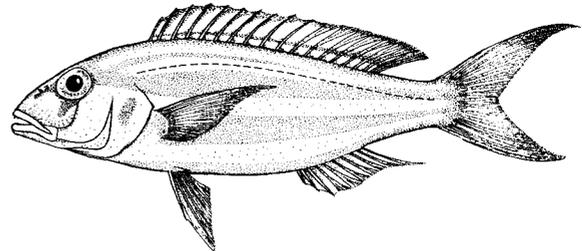


N. furcosus Fig. 45



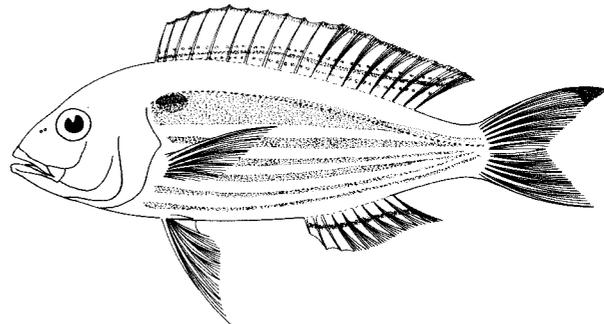
N. gracilis Fig. 46

- 22a.** Caudal fin forked or lunate, upper lobe falcate; last anal-fin ray elongate, notably longer than other rays; yellow teardrop-shaped bar beneath eye (W. Pacific, from Philippines to N. Australia) ***N. isacanthus***
(Fig. 47, Plate II, a)

***N. isacanthus*****Fig. 47**

- 22b.** Caudal fin forked, upper lobe pointed or rounded; last anal-fin ray not notably longer than other rays; yellow bar beneath eye absent

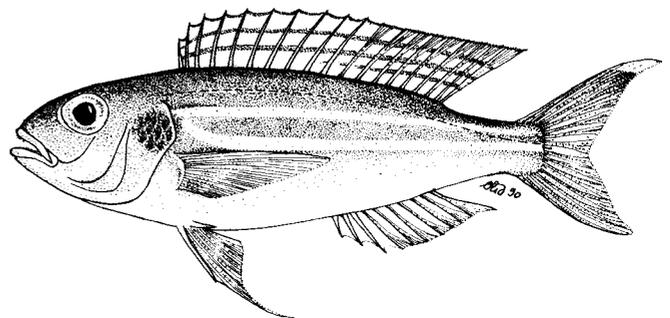
- 23a.** Body deep, depth 2.6 to 3.4 in SL; enlarged canines anteriorly in upper and lower jaws; red ovoid spot present below origin of lateral line; dorsal fin with narrow yellow stripe bordered on either side by translucent interspace that is edged by a narrow pale bluish-white stripe, this stripe extending obliquely upwards to just above mid-posterior margin of fin (W. Pacific, from Andaman Sea to Solomon Is) ***N. hexodon***
(Fig. 48, Plate I, h)

***N. hexodon*****Fig. 48**

- 23b.** Body moderately elongate, depth 3.1 to 4.0; enlarged canines anteriorly in upper jaw only; red spot below origin of lateral line absent; colour of dorsal fin not as above

- 24a.** Pelvic fins very long, reaching to or beyond level of origin of anal fin (W. Pacific)
..... ***N. nematopus***
(Fig. 49, Plate II, f)

- 24b.** Pelvic fins moderately long, not reaching to level of origin of anal fin

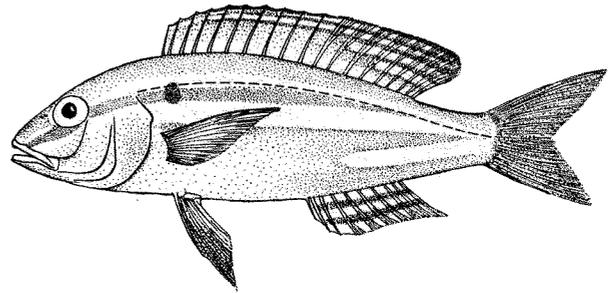
***N. nematopus*****Fig. 49**

- 25a.** Preopercle naked width 1.4 to 1.7 in scaly width; pectoral-fin length 1.1 to 1.5 in head length; caudal fin pink, with upper tip same colour as rest of fin (Gulf of Thailand, Indonesia).....

..... ***N. mesoprion***
(Fig. 50, Plate II, d)

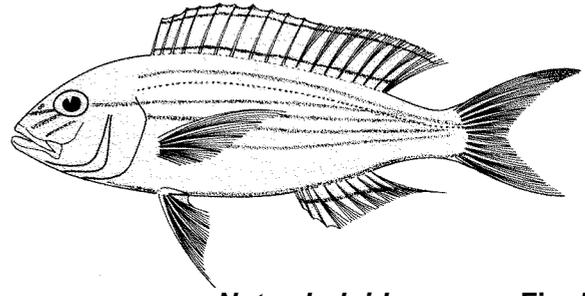
- 25b.** Preopercle naked width 1.8 to 2.4 in scaly width; pectoral-fin length 1.0 to 1.1 in head length; caudal fin pink, with upper tip sulphur-yellow (W. Pacific, from Andaman Sea to Indonesia)

..... ***N. tambuloides***
(Fig. 51, Plate III, e)



N. mesoprion

Fig. 50



N. tambuloides

Fig. 51

Nemipterus aurifilum (Ogilby, 1910)

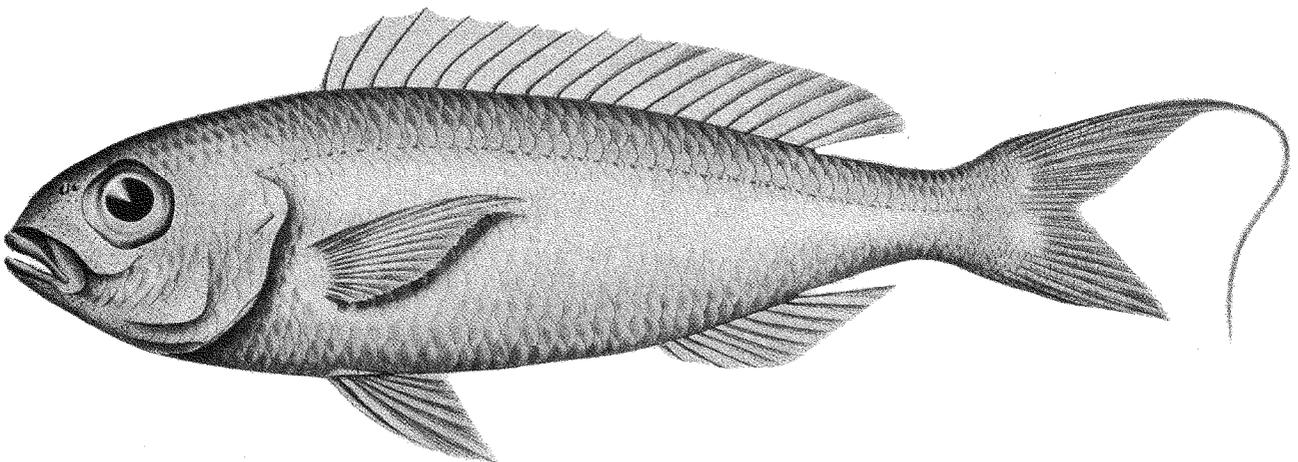
Fig. 52

NEMIP Nem 14

Pentapus aurifilum Ogilby, 1910, Endeavour Ser., 1: 93 (Southern Queensland).

Synonyms: None.

FAO Names: En - Yellow-lip threadfin bream.



(from Ogilby)

Fig. 52

Diagnostic Features: Body depth 3.2 to 3.8 in SL; snout length a little less than diameter of eye; diameter of eye 2.6 to 3.4 in head length; lower margin of eye tangent to or just below a line from tip of snout to upper base of pectoral fin; interorbital width 1.3 to 1.5 in eye; suborbital depth 2.2 to 4.7 in eye diameter; a line drawn up from the posterior edge of suborbital reaching the dorsal profile at or just behind origin of dorsal fin; preopercle naked width 1.4 to 1.9 in scaly width; pectoral fins moderately long, 1.0 to 1.3 in head length, reaching to or just beyond anus; pelvic fins shorter, 1.3 to 1.6 in head length, reaching to or

just short of anus; caudal fin forked, upper lobe produced into a long trailing filament; 3 or 4 pair of small recurved canines anteriorly in upper jaw; gill rakers 14 to 20. **Colour:** upper part of body red, shading through rose-pink on the sides to pearly-white on the ventral surface; a yellow lateral stripe from upper corner of opercle to upper caudal base; a pair of yellow stripes, united anteriorly, from the isthmus to the lower caudal lobe, passing just outside the bases of the pelvic and anal fins; upper lip saffron-yellow; dorsal, anal, pectoral and pelvic fins hyaline, the dorsal fin edged with gold; caudal fin pink with a broad greenish-yellow edge and the filamentous ray brilliant sulphur-yellow.

Geographical Distribution: Eastern Australia, from southern Queensland to northern New South Wales (Fig. 53).

Habitat and Biology: A benthic species, found on sand or mud bottoms in depths of 24 to 220 m. Feeds on small crustaceans.

Size: Maximum size is 18.5 cm SL, commonly 14 cm SL.

Interest to Fisheries: Taken by handline and bottom trawl in deeper water off the Queensland coast. Considered a good food fish. No major fishery exists.

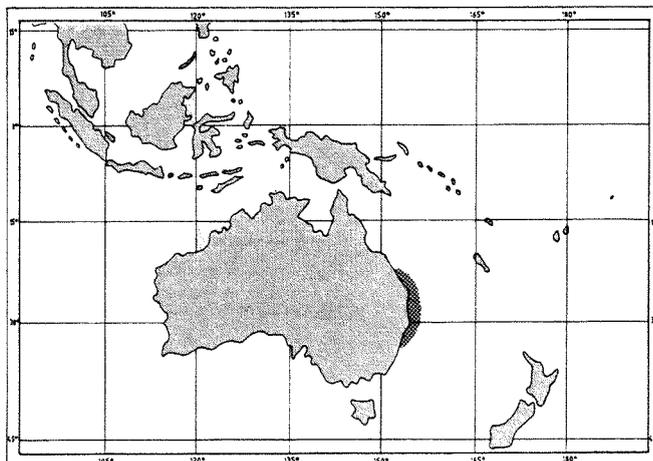


Fig. 53

Local Names: AUSTRALIA: Yellowlip, Yellowlip butterfly bream (Queensland).

Literature: Grant (1982).

Remarks: This species is very similar to *N. bathybius*, but can be distinguished by having a more slender body, wider interorbital, and shorter pectoral fins.

Nemipterus balinensis (Bleeker, 1858-9)

Fig. 54, Plate I, a

NEMIP Nem 15

Dentex balinensis Bleeker, 1858-9, Nat. Tijdschr. Ned.-Indië, 17: 155 (Boleling, northern Bali).

Synonyms: None.

FAO Names: En - Balinese threadfin bream.

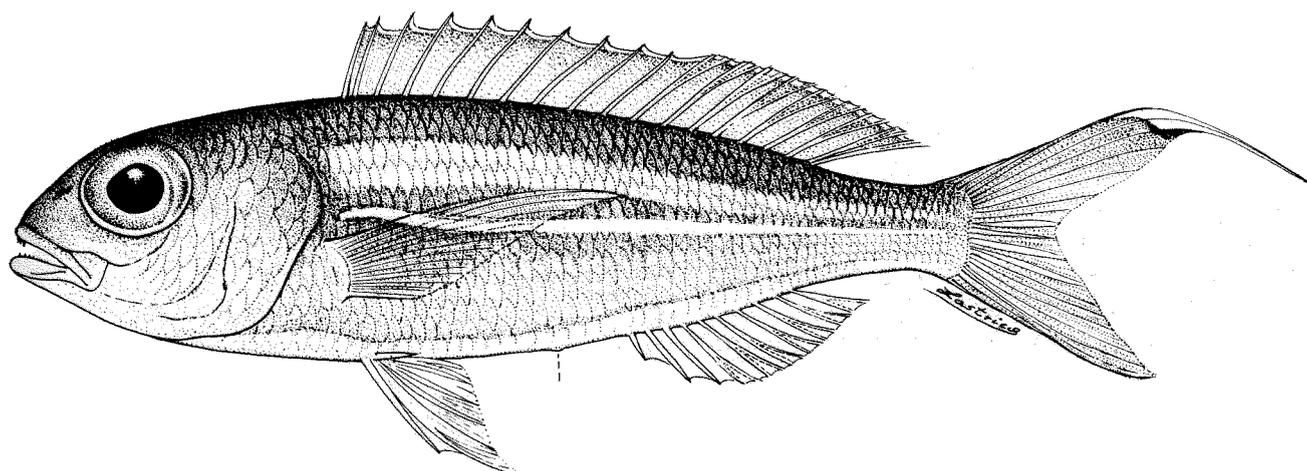


Fig. 54