

Remarks: Most authors have incorrectly applied the name *N. peronii* to this species, but *N. peronii* is a senior synonym of *N. tola* and *N. furcosus* is the correct name for this species.

Nemipterus gracilis (Bleeker, 1873)

Fig. 66, Plate I,g

NEMIP Nem 18

Dentex gracilis Bleeker, 1873, Verh. Akad. Amsterdam, 13: 34 (Java; Nias; Celebes; Amboina).

Synonyms: *Latilus upeneoides* Bleeker (1845) (*nomen nudum*).

FAO Names: En - Graceful threadfin bream.

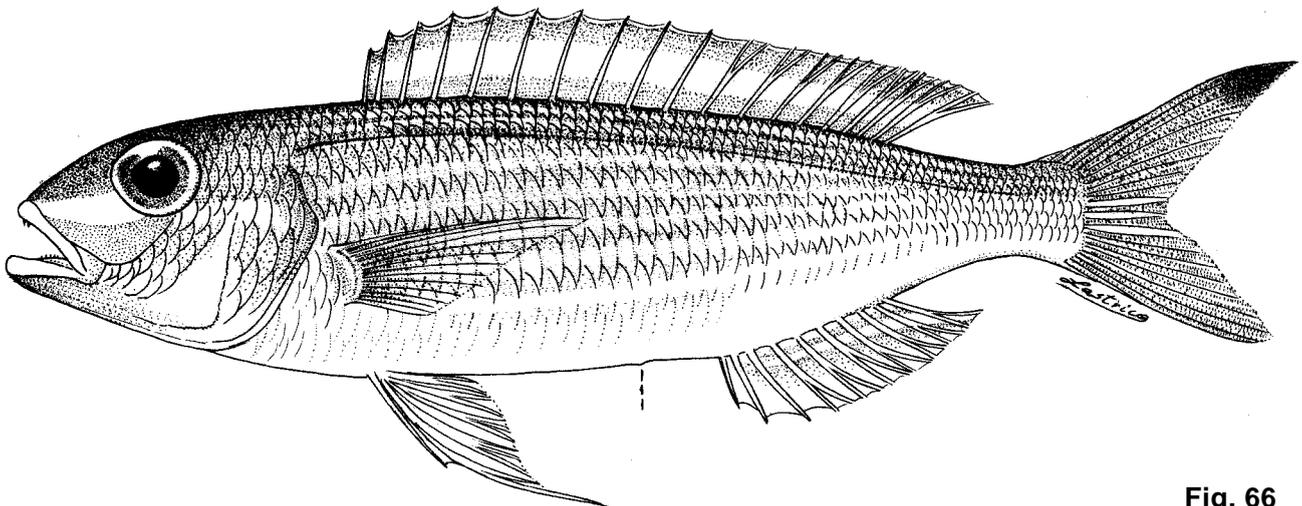


Fig. 66

Diagnostic Features: Body depth 3.4 to 3.9 in SL; snout length equal to or greater than diameter of eye; diameter of eye 2.7 to 3.6 in head length; lower margin of eye tangent to or just above a line from tip of snout to upper base of pectoral fin; interorbital width 0.9 to 1.8 in eye; suborbital depth 1.1 to 2.8 in eye diameter; a line drawn up from posterior edge of suborbital reaching the dorsal profile about 1 to 4 scale rows before origin of dorsal fin; preopercle naked width 1.2 to 1.9 in scaly width; pectoral fins moderately long, 1.1 to 1.4 in head length, reaching to about level of anus; pelvic fins very long, 0.9 to 1.3 in head length, reaching to between level of origin of anal fin and third anal spine; caudal fin forked, upper lobe slightly rounded; 3 or 4 pair of small recurved canines anteriorly in upper jaw; gill rakers 11 to 15. **Colour:** body pinkish above with silvery blue reflections, silvery on ventral half; scale rows on body with pale yellow stripes, 2 rows above lateral line, 5 rows below; head pinkish mauve with golden reflections; faint yellow stripe through nostril, and golden yellow stripe from upper lip to below eye (continued across preopercle and opercle in larger specimens); snout with violet reflections; lips yellow or reddish yellow; upper and middle part of opercle faint yellow; dorsal fin pink with narrow yellow margin and pinkish-red submargin, and broad median stripe of pale yellow (this stripe broken along its length by a series of pale mauve spots or continuous pale line in some specimens); anal fin transparent with faint, broken yellowish stripe near base which extends out on posterior rays to tip of fin; caudal fin pink, upper lobe yellowish and upper tip reddish; pectoral fins transparent; pelvic fins pale whitish, base of fins lemon-yellow.

Geographical Distribution: Indonesia: Sumatra to Flores (Fig. 67).

Habitat and Biology: A benthic species, occurs on mud or sand bottoms in depths of 30 to 90 m. Females with ripe ova were present in June in Flores.

Size: Maximum size is 18 cm SL, commonly 15 cm SL.

Interest to Fisheries: Taken by handline. Appears in small quantities in local markets. No major fishery exists.

Literature: Gloerfelt-Tarp & Kailola (1984, as *Nemipterus* sp. 1)

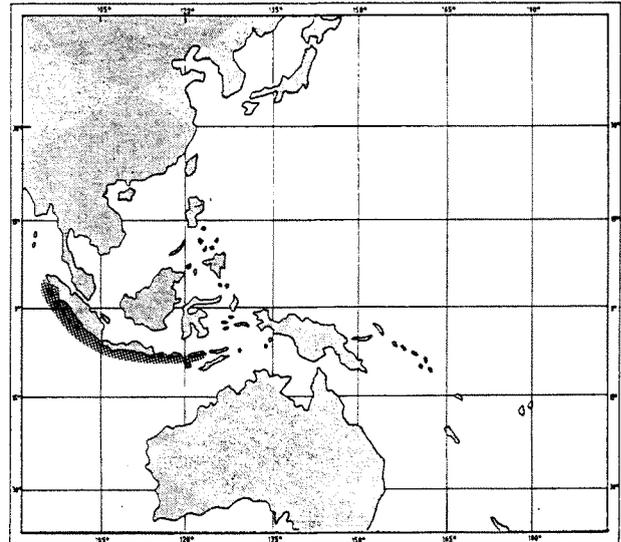


Fig. 67

Remarks: This species has been little recognized since its original description.

Nemipterus hexodon (Quoy & Gaimard, 1824)

Fig. 68, Plate I,h

NEMIP Nem 3

Dentex hexodon Quoy & Gaimard, 1824, Voy. "Uranie", Zool., : 301 (Timor).

Synonyms: *Dentex (Synagris) notatus* Day (1870); *Dentex taeniopterus* Valenciennes in C. & V. (1830b); *Dentex ruber* Valenciennes in C. & V. (1830b).

FAO Names: En - Ornate threadfin bream.

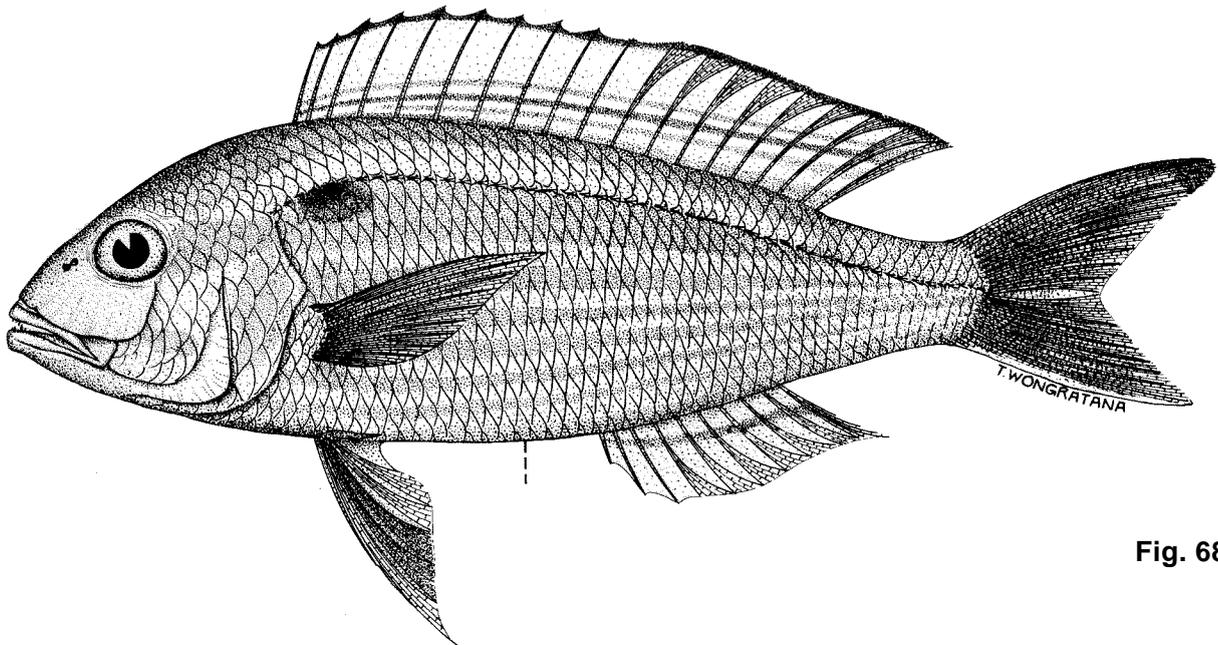


Fig. 68

Diagnostic Features: Body depth 2.6 to 3.4 in SL; snout length equal to or greater than diameter of eye; diameter of eye 3.2 to 4.6 in head length; lower margin of eye above a line from tip of snout to upper base of pectoral fin; interorbital width 1.3 to 1.9 in eye; suborbital depth 0.9 to 1.8 in eye diameter; a line drawn up from posterior edge of suborbital reaching the dorsal profile about 2 to 6 scale rows before origin of dorsal fin; preopercle naked width 1.3 to 1.9 in scaly width; pectoral fins long, 1.0 to 1.4 in head length, reaching to or beyond

level of anus; pelvic fins long, 1.2 to 1.6 in head length, reaching to or just beyond level of anus; caudal fin forked, upper lobe slightly longer than lower; 3 or 4 pair of small recurved canines anteriorly in upper jaw; gill rakers 11 to 17. **Colour:** upper part of body pinkish, paling to silvery white on ventral surface; 6 to 8 pale yellow stripes on sides from below lateral line; blood red, ovoid spot below origin of lateral line, bordered below by bright yellow; yellow stripe on either side of ventral midline, from isthmus to lower caudal base; golden reflections behind eye, on cheeks and opercle; dorsal fin translucent whitish, with a yellow margin; a narrow yellow stripe beginning anteriorly near base of fin and extending backwards to just above midposterior margin, this stripe bordered on either side by a translucent interspace that is edged by a narrow pale bluish-white stripe; caudal fin pinkish, upper lobe tipped with yellow; anal fin translucent; a narrow yellow stripe running from near anterior base of fin to midposterior margin (extending to tip of fin along posterior ray in larger specimens); base of fin beneath this stripe pale bluish white; pectoral and pelvic fins pale translucent pink; base of pelvic fins and axillary scale lemon-yellow.

Geographical Distribution: Indo-West Pacific from the Andaman Sea to the Solomon Islands (Fig. 69).

Habitat and Biology: A benthic species, occurs on mud or sand bottoms in depths of 10 to 80 m, but is most abundant in depths of 20 to 50 m. Biological data on *N. hexodon* has been summarized by Isarankura (1970). Females predominate at small sizes and males at larger sizes as a result of faster growth rates in males. In the Gulf of Thailand spawning probably occurs between February and March. Feeds mainly on small shrimps, squid, small fishes and benthic animals.

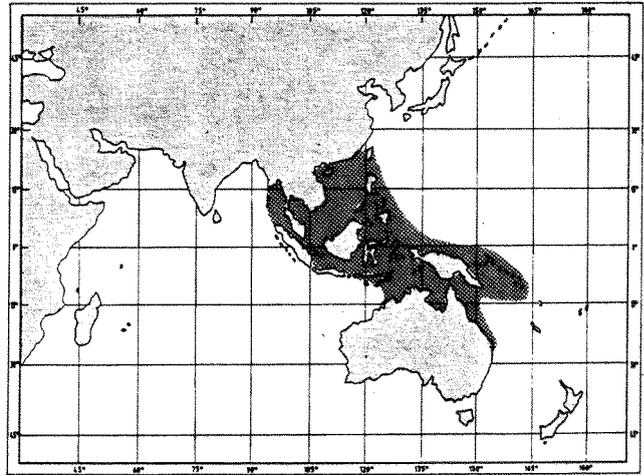


Fig. 69

Size: Maximum size is 21 cm SL, commonly 15 cm SL.

Interest to Fisheries: Taken by handline and bottom trawl together with other demersal fishes throughout the year. Appears in local markets. No major fishery exists.

Local Names: INDONESIA: Jamban, gresik. PHILIPPINES: Silay, Bagu, Bakag, Bisugong maylawi. THAILAND: Pla Sai Dang. MALAYSIA: Kerisi, gurisi merah, pasir-pasir. AUSTRALIA: Ornate threadfin bream, yellow-banded butterfly-bream, rainbow perch, gold perch (Queensland).

Literature: Rau & Rau (1980); Gloerfelt-Tarp & Kailola (1984); Sainsbury *et al.* (1984); Allen & Swainston (1988).

Nemipterus isacanthus (Bleeker, 1873)

Fig. 70, Plate II, a

NEMIP Nem 19

Dentex isacanthus Bleeker, 1873. *Verh. Akad. Amsterdam*, 13: 13 (Batavia, Java; Padang, Sumatra).

Synonyms: None.

FAO Names: En - Teardrop threadfin bream.

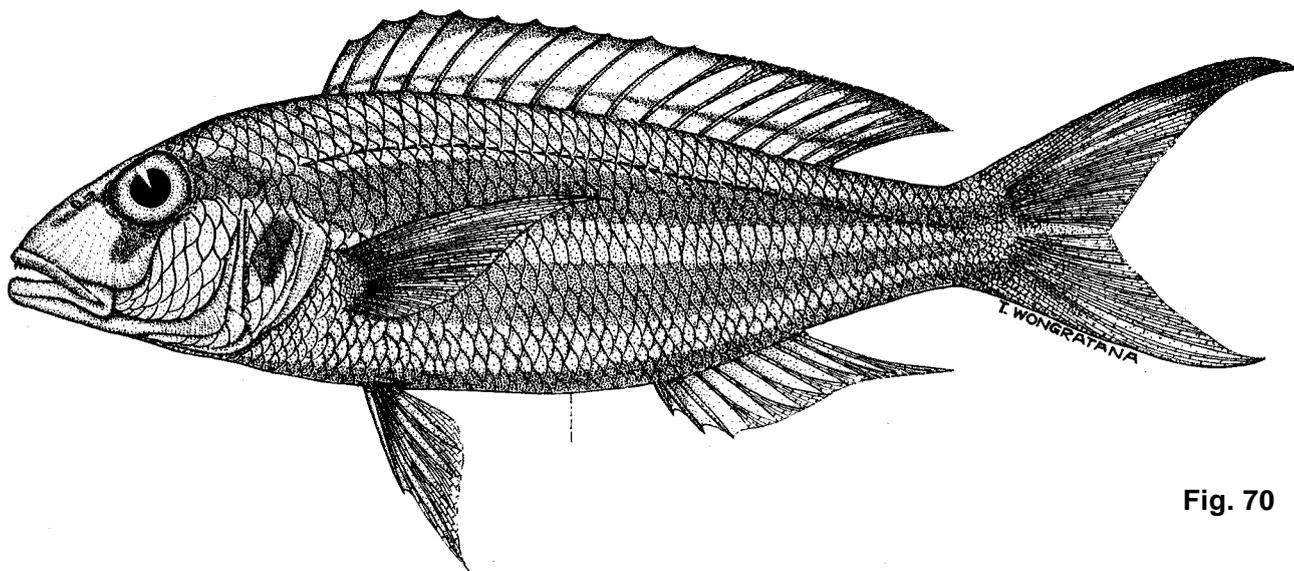


Fig. 70

Diagnostic Features: Body depth 3.0 to 3.5 in SL; snout length equal to or greater than diameter of eye; diameter of eye 3.0 to 3.7 in head length; lower margin of eye above a line from tip of snout to upper base of pectoral fin; interorbital width 1.4 to 1.9 in eye; suborbital depth 1.1 to 2.1 in eye diameter; a line drawn up from posterior edge of suborbital reaching the dorsal profile about 2 to 7 scale rows before origin of dorsal fin; preopercle naked width 1.7 to 2.7 in scaly width; pectoral fins long, 1.0 to 1.4 in head length, reaching to beyond level of anus; pelvic fins moderately long, 1.3 to 1.6 in head length, reaching to between just short of and just beyond level of anus; caudal fin deeply forked, upper lobe falcate; 3 pair of small recurved canines anteriorly in upper jaw; gill rakers 11 to 14. **Colour:** body pinkish mauve, silvery on lower part of sides and ventral surface; top of head and back yellow-tinged pink; two broad pale golden stripes along body; the first from beneath origin of lateral line to upper caudal-fin base; the second from behind pectoral-fin base to lower caudal-fin base; pale yellow stripe on either side of ventral midline; snout pinkish; yellow teardrop-shaped bar beneath eye, extending obliquely forwards about halfway down suborbital; upper lip yellow; bluish patch on upper part of opercle; dorsal fin translucent, with narrow, red-edged yellow margin, and narrow yellow submedial stripe; caudal fin pink, tip of upper lobe bright yellow, lower lobe yellow-tinged; anal fin and pelvic fins translucent whitish; pectoral fins translucent pinkish.

Geographical Distribution: West Pacific, including the Philippines, Gulf of Thailand, Strait of Malacca, Indonesia and northern Australia (Fig. 71).

Habitat and Biology: A benthic species, occurs on mud or sand bottoms in depths greater than 50 m.

Size: Maximum size 21 cm SL, commonly 17 cm SL.

Interest to Fisheries: Taken by handline and bottom trawl together with other species. Appears occasionally in local markets. No major fishery exists.

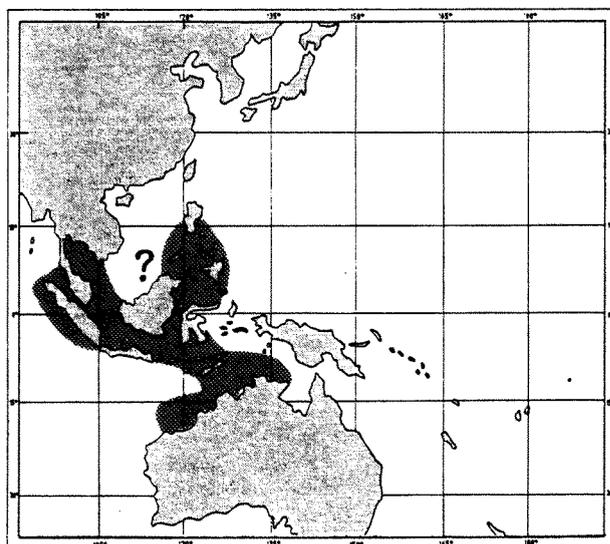


Fig. 71

Local Names: AUSTRALIA: Twin-lined threadfin-bream.

Literature: Gloerfelt-Tarp & Kailola (1984); Sainsbury *et al.* (1984, as *N. mesoprion* and *N. isacanthus*); Allen & Swainston (1988).

Remarks: The name *N. isacanthus* has been little recognized since its original description, and the name *N. bleekeri* has been misapplied to this species by some authors.

Nemipterus japonicus (Bloch, 1791)

Fig. 72, Plate II,b

NEMIP Nem 4

Sparus japonicus Bloch, 1791, *Naturges. Ausländ. Fische*, 5: 110 (no type locality given).

Synonyms: ?*Coryphaena lutea* Schneider *in* Bloch & Schneider (1801); *Cantharus filamentosus* Rüppell (1828-31 [1828]); *Dentex tambulus* Valenciennes *in* C. & V., (1830b); ?*Dentex striatus* Valenciennes *in* C. & V., (1830b); *Dentex blochii* Bleeker (1851 c); *Synagris grammicus* Day (1865); *Heterognathodon flaviventris* Steindachner (1866); *Synagris flavolinea* Fowler (1931a).

FAO Names: En - Japanese threadfin bream. Fr - Cohana japonaise. Sp - Baga japonesa.

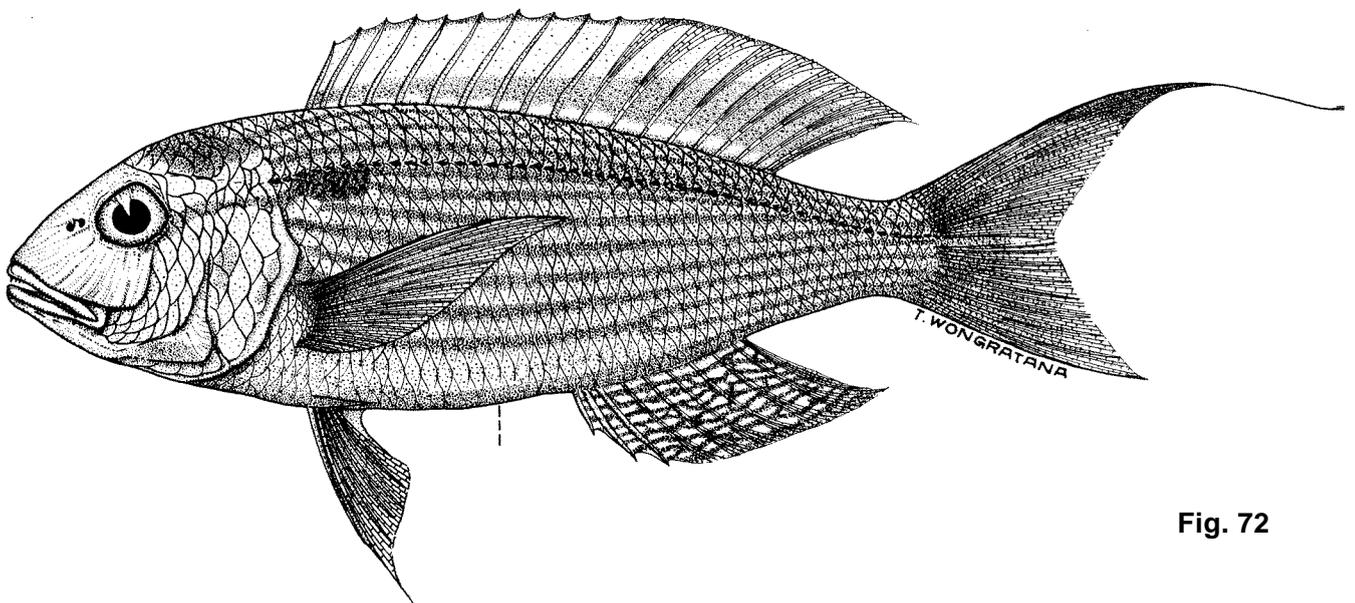


Fig. 72

Diagnostic Features: Body depth 2.7 to 3.5 in SL; snout length equal to or greater than diameter of eye; diameter of eye 3.2 to 4.4 in head length; lower margin of eye above a line from tip of snout to upper base of pectoral fin; interorbital width 1.0 to 1.9 in eye; suborbital depth 1.0 to 1.9 in eye diameter; a line drawn up from the posterior edge of suborbital reaching the dorsal profile 2 to 4 scale rows before origin of dorsal fin; preopercle naked width 1.1 to 2.0 in scaly width; pectoral fins very long, 1.0 to 1.3 in head length, reaching to or just beyond level of origin of anal fin; pelvic fins moderately long, 1.2 to 1.6 in head length, reaching to or just beyond anus; caudal fin moderately forked, upper lobe slightly longer than lower and produced into a short or moderately long filament; 4 or 5 pair of small recurved canines anteriorly in upper jaw; gill rakers 14 to 17. **Colour:** upper part of body pinkish, becoming silvery below; top of head behind eye with a golden sheen; 11 to 12 pale golden-

yellow stripes along body from behind head to base of caudal fin; a prominent red-suffused yellow blotch below origin of lateral line; dorsal fin whitish, margin of fin yellow, edged with red; a pale lemon stripe near base of dorsal fin, this stripe narrow anteriorly and widening on posterior part of fin; anal fin whitish with pale lemon broken lines or scribbles over most of fin; pectoral fin translucent pinkish; pelvic fins whitish with yellow axillary scale; caudal fin pink, upper tip and filament yellow.

Geographical Distribution: Widespread throughout the Indian Ocean and West Pacific. A report on *N. japonicus* as a Red Sea immigrant into the Mediterranean (Fischer & Whitehead, 1974) is unconfirmed (A. Bentuvia, *pers. comm.*, 1984). Similarly, a record of this species from northwestern Australia by Allen & Swainston (1988) is without basis (Fig. 73).

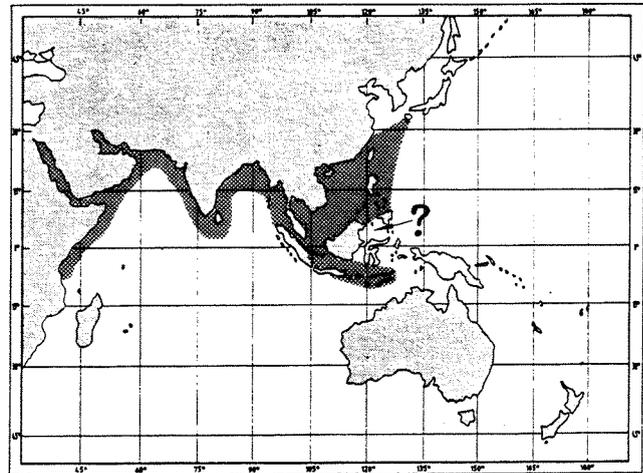


Fig. 73

Habitat and Biology: A benthic species, very abundant in coastal waters, found on mud or sand bottoms in 5 to 80 m, usually in schools. Small fish are generally most abundant in less than 27 m depth; only larger fish occur in depths greater than 45 m (Eggleston, 1973). Females predominate at small sizes and males at large sizes, due to faster growth rates in males (Lee, 1974).

Spawning occurs over an extended period, and is reported to take place from May to October in the South China Sea (Eggleston, 1973); from November to February in East Malaysian waters (Weber & Jothy, 1977); January and February off the coast of Mangalore, India (Kuthalingam, 1965); September to November (Krishnamoorthi, 1972), and December to February and June and July (Dan, 1980) at Waltair, India; and August to April at Kakinada, India (Murty, 1984). The diet consists mainly of small fishes, crustaceans, molluscs, (mainly cephalopods), polychaetes and echinoderms.

Estimates of the parameters of the von Bertalanffy growth curve made for the population from Kakinada, India (Murty, 1984) are: $L_{\infty} = 31.4$ cm TL, $K = 0.75$, $t_0 = -0.17$; for the population from Madras, India (Vivekanandan & James, 1986) are: $L_{\infty} = 30.5$ cm TL, $K = 1.00$, $t_0 = 0.23$; and for the population off the Strait of Malacca (Kedah State, Malaysia) (Isa, 1988) are: $L_{\infty} = 31.4$ cm TL, $K = 0.55$.

Size: Maximum size is 25 cm SL, commonly 15 cm SL.

Interest to Fisheries: Taken in commercial quantities by longlines, bottom trawls and gill nets. Juveniles are also caught in considerable quantities by shrimp trawlers using beam trawls. *N. japonicus* constitutes an important part of the trawl catch in the South China Sea (Eggleston, 1973; Lee, 1974; Weber & Jothy, 1977), Andaman Sea (Senta and Tan, 1975) and W. Bay of Bengal (Krishnamoorthi, 1972). Marketed mainly fresh, but also steamed, dried salted, dry-smoked, fermented or made into fish balls and fish meal. In the Philippines this species is especially valued in a convalescent diet.

Local Names: PHILIPPINES: Silay, Bakag, Bisugong bututan (Tagalog). JAPAN: Nihon-itoyori. MALAYSIA: Kerisi. THAILAND: Pla Sai Dang. INDIA: Rane (Goa). INDONESIA: Kerisi, Kripsi (Java), Gurisi (W. Java-Jakarta). KUWAIT: Bassi. BAHRAIN: Bassi, Bassij. PAKISTAN: Katti (Sindhi), Kolonto (Baluchi). TANZANIA: Koana. MADAGASCAR: Koana. BURMA: Shwe-nga. VIETNAM: Ca dong. HONG KONG: Kwa sam.

Literature: Kuronuma & Abe (1972); Lee (1974); Fischer & Whitehead (1974); Senta and Tan (1975); Randall et al. (1978); Rau & Rau (1980); Kyushin et al. (1982); Tan et al. (1982); Bianchi (1985a, 1985b); Bauchot & Bianchi (1984); Gloerfelt-Tarp & Kailola (1984); Al-Baharna (1986); Kuronuma & Abe (1986).

Nemipterus marginatus (Valenciennes, 1830)

Fig. 74, Plate II, c

NEMIP Nem 20

Dentex marginatus Valenciennes in C. & V., 1830b, Hist. nat. poiss., 6: 245 (Vanicolo; Java).

Synonyms: None.

FAO Names: En - Red filament threadfin bream.

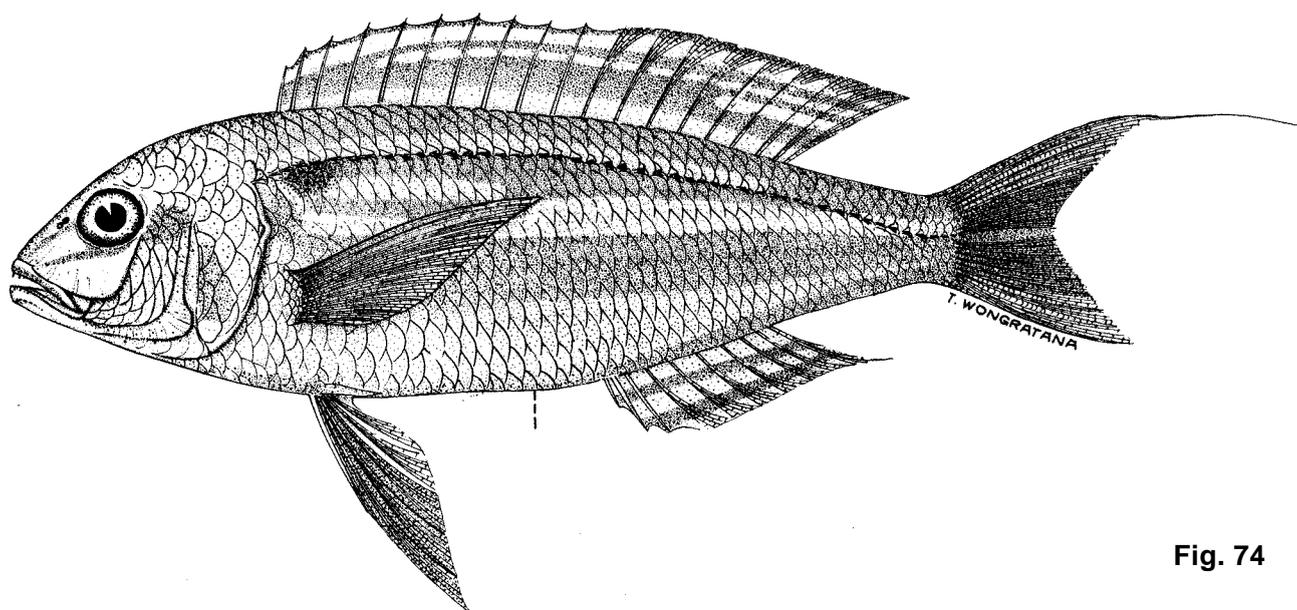


Fig. 74

Diagnostic Features: Body depth 3.1 to 3.8 in SL; snout length about equal to or a little longer than diameter of eye; diameter of eye 3.4 to 4.3 in head length; lower margin of eye above a line from tip of snout to upper base of pectoral fin; interorbital width 1.5 to 2.2 in eye; suborbital depth 1.0 to 2.6 in eye diameter; a line drawn up from the posterior edge of suborbital reaching the dorsal profile about 2 to 5 scale rows before origin of dorsal fin; preopercle naked width 1.3 to 1.9 in scaly width; pectoral fins long, 0.9 to 1.3 in head length, reaching to between level of anus and origin of anal fin; pelvic fins long, 0.9 to 1.3 in head length, reaching to or just behind level of origin of anal fin; caudal fin forked, upper lobe produced into a short filament; 3 to 5 pair of small recurved canines anteriorly in upper jaw; gill rakers 11 to 15. **Colour:** upper part of body rosy, silvery-white below; head with a narrow yellow stripe from below nostrils to eye and from middle of upper jaw to eye; a broad yellowish-orange stripe, divided above pectoral fin, along body from below origin of lateral line to upper part of caudal peduncle, this stripe with a reddish spot near its origin; a second yellowish-orange stripe from above base of pectoral fin to lower part of caudal peduncle; dorsal fin pale bluish, with a yellow margin and a broad yellow median stripe which subdivides into 3 yellow stripes posteriorly; anal fin pale bluish with 2 narrow yellow stripes; caudal fin including filament, reddish, its median rays yellowish; pelvic fins pink; pectoral fins translucent.

Geographical Distribution: West Pacific, including the South China Sea, Strait of Malacca, southern coasts of Sumatra and Java, northern Australia, and the Gulf of Papua, to the Solomon Islands (Fig. 75).

Habitat and Biology: A benthic species, found on sand or mud bottoms in depths between 12 and 70 m. Occurs in groups and feeds on small bottom-living animals.

Size: Maximum size is 15 cm SL, commonly 13 cm SL.

Interest to Fisheries: Commonly taken by trawlers in the South China Sea. This species is taken in small quantities (usually less than 1 kg per haul in South China Sea) along with other species. Regarded as a trash fish and used mainly for fish meal or animal feed.

Local Names: PHILIPPINES: Bisugo (Tagalog), Bak-ay (Visayan) JAPAN: Yume-itoyori. MALAYSIA: Kerisi.

Literature: Fischer & Whitehead (1974, as *N. mesoprion*); Kyushin *et al.* (1982); Tan *et al.* (1982); Gloerfelt-Tarp & Kailola (1984); Sainsbury *et al.* (1984).

Remarks: This species has previously been confused with *N. mesoprion*, and the name *N. marginatus* has been misapplied to another species. *N. mesoprion* closely resembles *N. marginatus* in colour pattern, but lacks the filamentous extension to the upper lobe of the caudal fin; the posterior margin of the suborbital is more or less straight, rather than evenly curved; and the upper stripe on the body is not divided anteriorly.

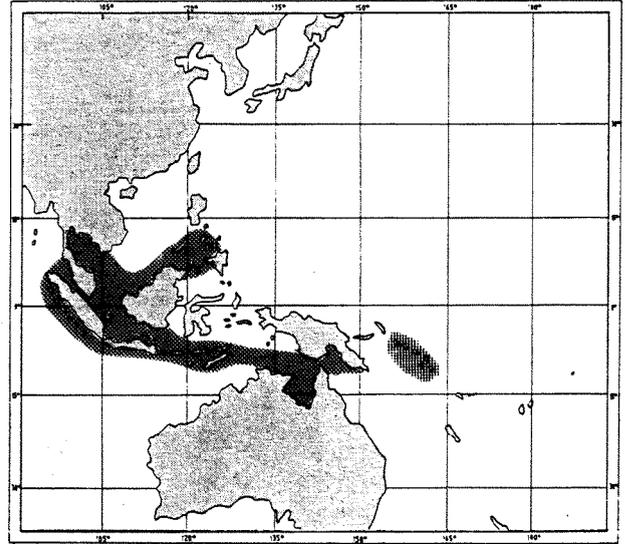


Fig. 75

Nemipterus mesoprion (Sleeker, 1853)

Fig. 76, Plate II, d

NEMIP Nem 6

Dentex mesoprion Sleeker, 1853a, Nat. Tijdschr. Ned.-Indië, 4: 255 (Priaman, Sumatra).

Synonyms: None.

FAO Names: En - Mauvelip threadfin bream.

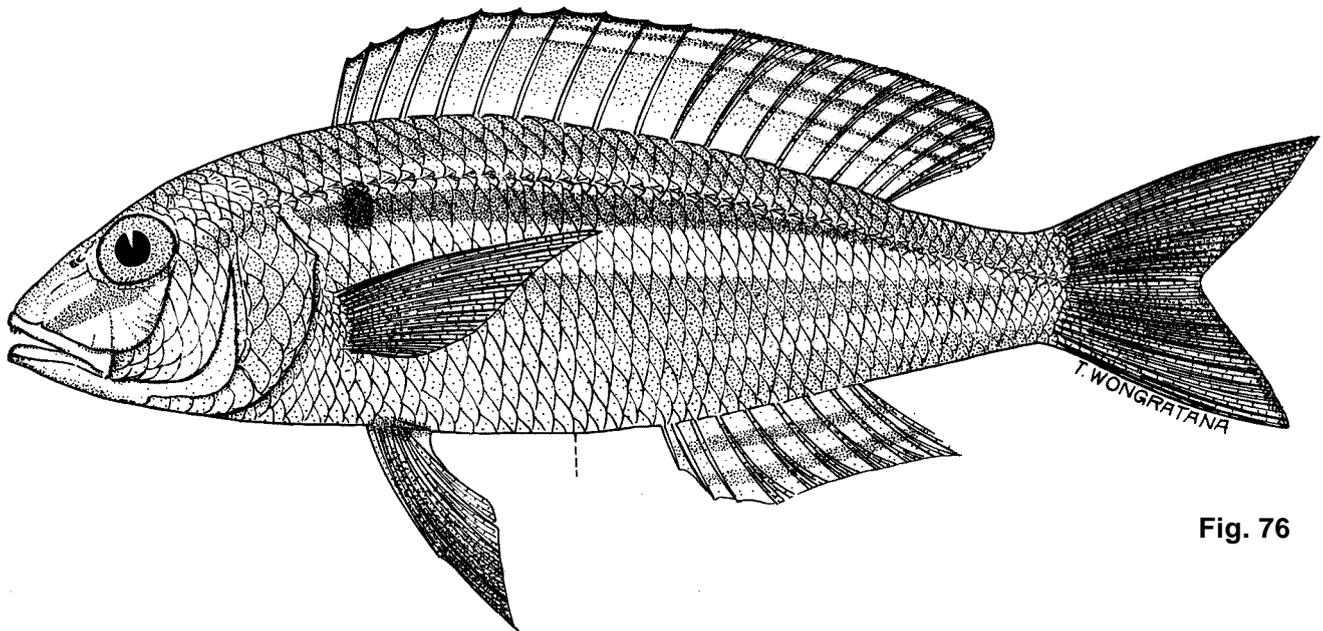


Fig. 76

Diagnostic Features: Body depth 3.3 to 3.8 in SL; snout length greater than diameter of eye; diameter of eye 3.4 to 4.1 in head length; lower margin of eye above a line from tip of snout to upper base of pectoral fin; interorbital width 1.6 to 1.9 in eye; suborbital depth 1.1 to 1.6 in eye diameter; a line drawn up from the posterior edge of suborbital reaching the dorsal profile about 4 to 7 scale rows before origin of dorsal fin; preopercle naked width 1.4 to 1.7 in scaly width; pectoral and pelvic fins long, reaching to between level of anus and origin of anal fin; pectoral fins 1.1 to 1.5 in head length, pelvic fins 1.1 to 1.4 in head length; caudal fin forked; 4 or 5 pair of small recurved canines anteriorly in upper jaw; gill rakers 11 to 14.

Colour: upper part of head and body pinkish, silvery white below; head with oblique golden yellow stripe from beneath eye to middle of upper jaw, and less distinct oblique yellow stripe from anterior of eye to near tip of snout; interspace between these stripes pinkish mauve (becomes dusky in alcohol); upper lip pale mauve; opercle with golden reflections; back with indistinct golden stripe beneath dorsal fin; red shoulder spot beneath third to fifth lateral-line scales; golden stripe beneath lateral line extending from shoulder spot to upper caudal base; golden stripe, broader and tapering posteriorly, from base of pectoral fin to midcaudal base; spinous dorsal fin with red margin, soft-rayed part of fin with yellow margin, base of fin pale mauve; anterior part of dorsal fin with broad pale yellow stripe, this dividing into 3 or 4 narrow yellow stripes posteriorly; anal fin pale bluish white, with two yellow stripes; caudal fin pinkish, upper and lower margins tinged yellowish; pectoral fins pale pink; pelvic fins with first two rays pink, inner rays hyaline.

Geographical Distribution: Known from southern Indonesia and the Gulf of Thailand (Fig. 77).

Habitat and Biology: A benthic species. Little is known of the habits of this species.

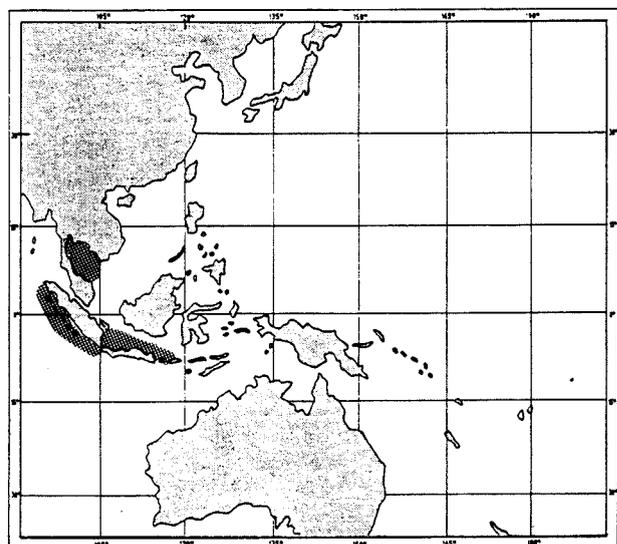


Fig. 77