

**A KEY FOR THE IDENTIFICATION OF *SCOLOPSIS*
FROM THAILAND
(Pisces : Nemipteridae)**

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ABSTRACT

An artificial key is given for 10 species of monocle breams (*Scolopsis* spp.) known to inhabit the seas of Thailand. *Scolopsis taeniopterus* (Cuvier), an economically important species from the Malay peninsula, is shown to be the correct identification for a fish which has been locally misidentified as *S. cancellatus* (Cuvier). *S. siamensis*, a species described by AKASAKI (1962), is also considered to be *S. taeniopterus*. *S. erioma* Jordan and Richardson *S. personatus* (Cuvier), and *S. torquatus* (Cuvier) are here reported for Thailand for the first time.

INTRODUCTION

Thailand or Siam is noted for the highly diversified fish fauna inhabiting the coast lines and coral reefs. This fauna belongs to the vast and incredibly rich Indo-West Pacific assemblage that has its centre of evolution and distribution in Southeast Asia. Most of the Thai fishes from the Gulf of Thailand are therefore likely to be found in the Andaman Sea, and a thorough assessment of what actually lives there is important for the proper development of the fisheries of Thailand.

Little is known of the Nemipteridae of Thailand. Since I published taxonomic study of the genus *Nemipterus*, (WONGRATANA, 1972, 1975), there have been enquiries for further work on the genus *Scolopsis*, which is placed in the same family. Scolopsid fishes or monocle breams are collectively known as Pla Sai Khao in Thai by most local marine biologists. They are moderate sized fishes and occur in most area of the tropical and subtropical seas of the Indo-West Pacific. Most of them are brightly coloured. In Thailand different species of this genus are selectively caught by traps and baited hooks. The only major local

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area for such fishing methods is along the Andaman coast, especially near Phuket island. In recent years, with the introduction of trawling to this country, *S. taeniopterus* has proved to be the most abundant species of *Scolopsis* in Thailand, Malaysia and Singapore (ROFEN, 1963; WONGRATANA, 1967, 1968) and probably elsewhere too. The other species which appear in the catch, but in a very much lesser numbers, are *S. dubiosus* Weber and *S. personatus* (Cuvier). They are sold fresh or used for fish balls, the remainder part sometimes being used in salted and dried form.

As there is no single comprehensive work dealing with all Thai scolopsids, it is hoped that the present paper (which provides a key and figures of 10 species) will furnish a reliable guide for identification. This study is chiefly based on my own recently collected specimens, now deposited in the reference collection of the Marine Fisheries Laboratory, Department of Fisheries, Bangkok, Thailand. With the opportunity of doing my postgraduate study in the British Museum (Natural History), London, I also have been able to examine some type material and other specimens for further details.

I should like to take this opportunity to express my hearty thanks to Dr. M. Akasaki of the Fisheries Laboratory, Department of Agriculture, Miyasaki University, Japan, for further details on his *S. siamensis* and for supplying me his paper on the sparoid fishes. My sincere appreciations is also extended to Dr. P. J. P. Whitehead of the British Museum (Natural History), London, for his valuable comments and going through the manuscript. Mr. C. Tewsuwan, Mrs. P. Chuenchitpong and especially Mr. B. Mianmanus willingly helped in drawings. My wife, Marasri L. Wongratana, was very helpful in preparing the manuscript.

This work is dedicated to Mr. Wichai Chomjurai, my late colleague, who contributed much knowledge on the tagging programmes of both pelagic and demersal fishes of commercial importance of Thailand.

IDENTIFICATION

Scolopsid fishes are readily recognised and easily separated from other sparoid fishes by the presence of a spine on the suborbital bone. Although their occurrence and importance in nearly every part of this

area is well established and has frequently been recorded, identifications of most species are frequently very inaccurate. One of the major problems is in colouration, which shows individual variation; there are differences in markings when examined alive underwater, on deck or shortly after death, and in preserved material as well.

Since the studies of BLEEKER (1877), FOWLER (1931) and WEBER & DE BEAUFORT (1936) on scolopsids in this area, there has been no other real attempt to reidentify their material or bring up to date the systematics and distribution of all the species of *Scolopsis*. The latest work on scolopsid fishes is included in "Studies on the spariform fishes" by AKASAKI (1962), but the paucity of his material prevented him from clarifying the taxonomy of most species.

The Status of *S. taeniopterus*

The main purpose of this paper is to stimulate further study on the status of the economically important *S. taeniopterus*, which from time to time has been misrecorded as *S. cancellatus* (Cuvier) by biologists in Thailand, Malaysia and Singapore. At the same time a key is given for 10 scolopsid species found in Thai waters. An expanded account will be prepared in the future.

In early 1971, my attention was drawn to the identification of *S. cancellatus* from Thailand, Malaysia and Singapore. When captured this fish is recognised immediately as being different from related species by its unique colouration. Its head and body are generally greyish olive with a pale bluish band from the eye curving along the lateral line to caudal base. There is a narrow blue band between the eyes and another broader one on the preorbital, these are very prominent. Dorsal and pectoral fins are largely yellow, but there is a blue median band over both dorsal fins; upper axil of pectoral fin with a bright orange triangular spot; caudal fin rosy with yellow upper tip and sometimes with several narrow transverse bluish yellow bands.

Reviewing the nominal Thai species I found that this fish seemed to agree in all respects with the detailed description and especially the coloured figure of BLEEKER'S *S. taeniopterus* (1877), but not with his

S. cancellatus. As I have not been able to study the type specimens of *S. taeniopterus* and *S. cancellatus*, both described by CUVIER (1830), I tentatively follow the work of Bleeker and some subsequent authors who described this fish.

FOWLER (1931) recorded *S. cancellatus* from Java on a basis of a preserved specimen, 230 mm S.L. He distinguished it in his key from related species by its unique fresh colour pattern (which was similar to that given by Bleeker).

WEBER & DE BEAUFORT (1936) recorded the range of this fish as Singapore, Banka, Java (Batavia) to the east coast of the Malay Peninsula. They separated it from *S. cancellatus* by its slightly more scales along the lateral line (49-50 instead of 44-46). Their short description of colour pattern hardly applies to any other species, and the existence of a narrow longitudinal band on the dorsal fin corresponds well to the blue median band noted by Bleeker for *S. taeniopterus*.

UMALI (1936) and later HERRE (1953) reported *S. cancellatus* from various localities in the Philippines. First confusion in naming this fish arose when SCOTT (1959) reported both *S. taeniopterus* and *S. cancellatus* from Malaysian waters. It is likely that the fresh colour description for his *S. cancellatus* is a repetition of that given by Bleeker for *S. taeniopterus*. Furthermore, close examination of the photograph of Scott's *S. cancellatus* shows a resemblance to the black and white photographs of typical *S. taeniopterus* given by other authors (UMALI, 1936; ROFEN, 1963; and ANON., 1964, in Thai but also under the name *S. cancellatus*). On the other hand his *S. taeniopterus* is probably *S. personatus* which is common off the east coast of Malaysia (nos. 192 and 193 in WONGRATANA, 1968).

For Thailand the same misidentification is found in ANON. (1964) and since then this error has been followed by subsequent authors (BANASOPIT & WONGRATANA, 1967; WONGRATANA, 1967, 1968) and all local biologists who conducted studies on the biology and biometrics of this fish. Thus, *S. cancellatus* recorded from Thai waters should be regarded as *S. taeniopterus*.

The earliest record of *S. taeniopterus* from the Gulf of Thailand was correctly made by ROFEN (1963). However, he was not aware of Scott's error and made further confusion by combining Scott's *S. taeniopterus* with this fish. During preparation of the manuscript on the Nemipteridae for FAO identification sheets for fishery purpose (edited by FISCHER & WHITEHEAD, 1974) Dr. D. Eggleston also agreed with me in the identification of this fish as well as regarding it as one of the commercial species in the Southeast Asian waters.

Other species

Zoogeographically speaking there is little doubt that *S. cancellatus* must also be found in the Malay Peninsula. According to HERRE (1953), this fish ranges from the Andaman Islands, East Indies and Philippines to the Riu Kiu Islands, Hawaii, New Hebrides, and the Marshall and Samoan Islands. AKASAKI (1962) extends its range to Okinawa and other Japanese localities. Recently LATIFF (1971) regarded *S. cancellatus* as a very rare fish in the trawl catches in Penang waters. The most reliable evidence is the presence in the British Museum of specimens of this species from Sumatra (BMNH. 1855.12.26.486, 1 example) and Cocos Keeling (BMNH. 1949.11.29.118-121, 4 examples).

However, it is worthwhile mentioning here that during my extensive collecting surveys of the sea fishes of the Gulf of Thailand and Andaman Sea during 1965 to 1967 and 1969 to 1974, no single specimen of *S. cancellatus* was found. The followings ten species of monocle breams were collected by me during those years: *Scolopsis bilineatus* (Bloch), *S. ciliatus* (Lacépède), *S. dubiosus* Weber, *S. erioma* Jordan & Richardson, *S. leucotaenia* (Bleeker), *S. margaritifera* (Cuvier), *S. personatus* (Cuvier), *S. taeniopterus* (Cuvier), *S. torquatus* (Cuvier), and *S. vosmeri* (Bloch). Since the Malay Peninsula is regarded as a crossway of sea fishes between the Indian Ocean and the tropical West Pacific, the British Museum specimens of some particular species show that other species may be expected from Thailand, as perhaps *S. cancellatus* (Cuvier), *S. inermis* (Schlegel), *S. monogramma* (Cuvier), *S. phaeops* (Bennett) and *S. temporalis* (Cuvier).

In this study, *S. temporalis* of BANNASOPIT & WONGRATANA (1967), and WONGRATANA (1968) is reidentified as *S. dubiosus*; and two undescribed

fishes nos. 192 and 193 in WONGRATANA (1968) are now found to be *S. personatus*. The records and figures of *S. bilineatus*, *S. monogramma* and *S. temporalis* for Thailand in FOWLER (1934, 1935, 1937) and later followed by SUVATTI (1950) are tentatively believed to be *S. dubiosus*.

Scolopsis siamensis, recently described from a single specimen (157mm, Holotype FAKU 29354) as a new species, from the Gulf of Thailand by AKASAKI (1962) is in fact *S. taeniopterus*.

Artificial key to *Scolopsis* found in Thai waters

1. a. Suborbital spine small and feeble, 11 moderately close-set spiny gill rakers, snout short and blunt, scales large, those on top of head beginning above middle of eyes; head, body and fins orange but tinged with yellow, a longitudinal darker band on sides, opercle and preopercle with a large yellow blotch, eyes with a broad longitudinal yellow band, scales on sides with a yellow spot at centre *S. erioma* (Fig. 1)
- b. Suborbital spine distinct, 5-6 short gill rakers 2
2. a. Maxilla with a row of close-set denticles along its upper border; head and body grevish olive with a silvery streak along back close to dorsal fin base, preorbital whitish, scales on middle of sides with a yellow spot on centre *S. cilliatu*s (Fig. 2)
- b. Maxilla smooth 3
3. a. Depth 2.1-2.8 in S.L., second anal spine more or less thicker and always longer than the third spine 4
- b. Depth 2.4-3.2 in S.L., second anal spine always slightly shorter than the third spine 7
4. a. Second anal spine slightly thicker than the third spine; flanks with a broad straight or curved white band bordered above and below by a broad or narrow dark stripe 5
- b. Second anal spine very much thicker than the third one; flanks without dark bands or lines, a white transverse band crossing from nape over opercle, a dark spot at axil of pectoral fin 6

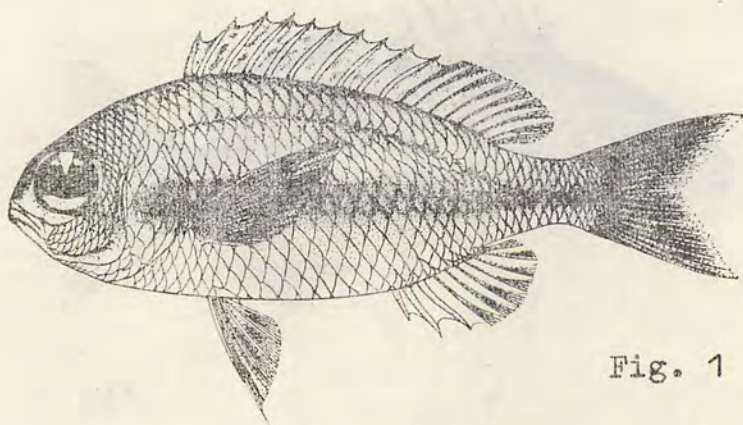


Fig. 1

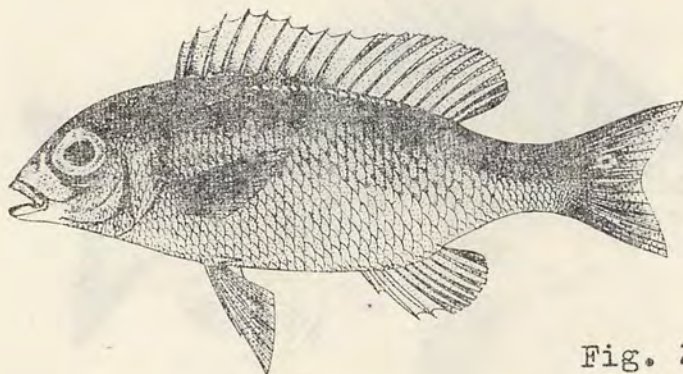


Fig. 2

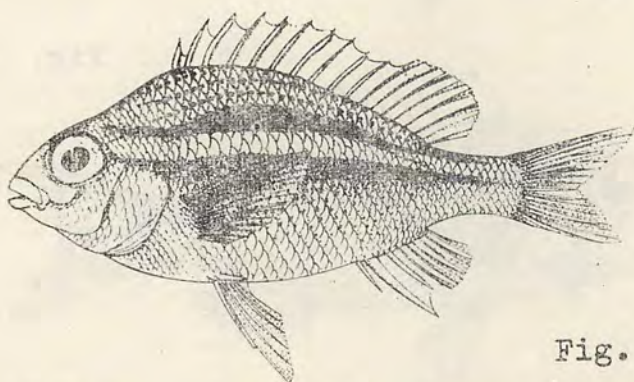


Fig. 3

- Fig. 1: *Scolopsis erioma* Jordan and Richardson, drawn by B. Mianmanus.
Fig. 2: *Scolopsis ciliatus* (Lacépède), drawn by P. Chuenchitpong.
Fig. 3: *Scolopsis leucoteania* (Bleeker), drawn by Phuenchitpong.

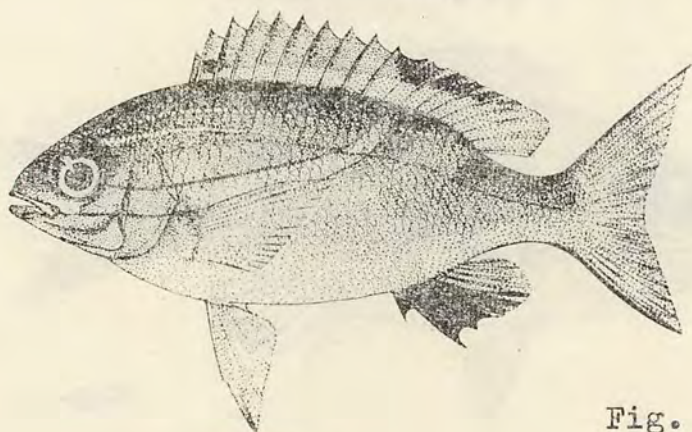


Fig. 4

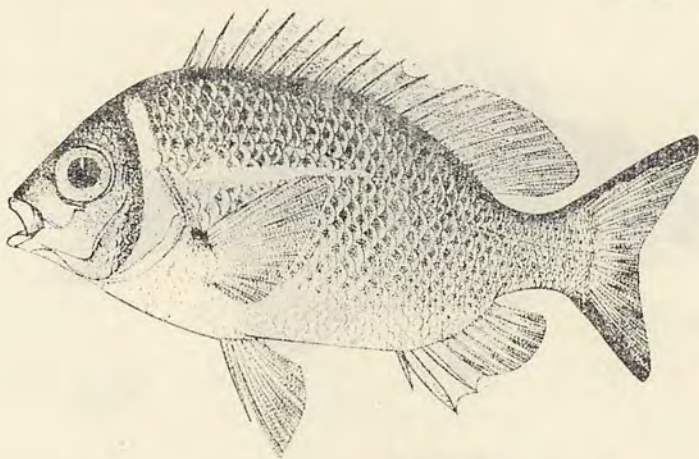


Fig. 5

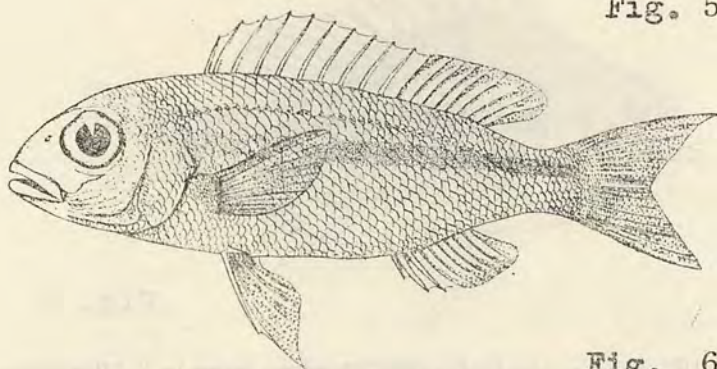


Fig. 6

Fig. 4: *Scolopsis bilineatus* (Bloch), drawn by C. Tewsuan.

Fig. 5: *Scolopsis vosmeri* (Bloch), drawn by C. Tewsuan.

Fig. 6: *Scolopsis personatus* (Cuvier), drawn by T. Wongratana.

5. a. Scales on head begin between eyes, lateral scales 36-40; a broad lateral white band from eyes to caudal base bordered above and below by a broad dark band, no dark marking on dorsal and anal fins *S. leucotaenia* (Fig. 3)
- b. Scales on head begin before eyes at a line joining anterior nostrils, lateral scales 40-46; a broad curved white band from below eyes to base of soft dorsal fin, this band narrowly bordered above and below by a narrow dark red stripe, dorsal and anal fins with dark markings *S. bilineatus* (Fig. 4)
6. a. A lateral white band below anterior part of lateral line, scales on sides with a dark spot at centre, median fins dirty red, serration on preopercular margin not distinct *S. vosmeri* (Fig. 5)
- b. Body without white lateral band, upper posterior edge of operculum reddish, scales on sides with yellow tinge, median fins bright yellow, serration on preopercular margin distinct . . . *S. torquatus* (Fig. 7)
7. a. 36-40 scales in lateral line, scales on head begin just before front border of eyes; depth 2.4-2.6 in S.L., diameter of eyes much longer than snout length; middle of flanks without any dark or light lateral band, colour on snout plain, scales on flanks with dark posterior edges *S. margaritifer* (Fig. 10)
- b. 45-51 scales in lateral line, scales on head begin some distance behind nostrils; depth 2.9-3.2 in S.L., diameter of eyes shorter than snout length; middle of flanks with blue or darkish band, snout with bright blue band joining eyes, scales on flanks with light or darker centres 8
8. a. Upper base of pectoral fin without prominent marking, a more or less developed dark band on flanks from eyes to caudal base, this band bordered above and below by a diffused yellowish stripe; snout with two very pale lines joining both eyes, their enclosed area greenish; inside of operculum bright yellow, dorsal fin bluish yellow becoming pale violet submarginally, anal fin very pale orange, caudal fin dusky yellow and with blue inner edge *S. personatus* (Fig. 6)
- b. Upper base of pectoral fins with a prominent spot, a bright blue band across snout and joining eyes 9

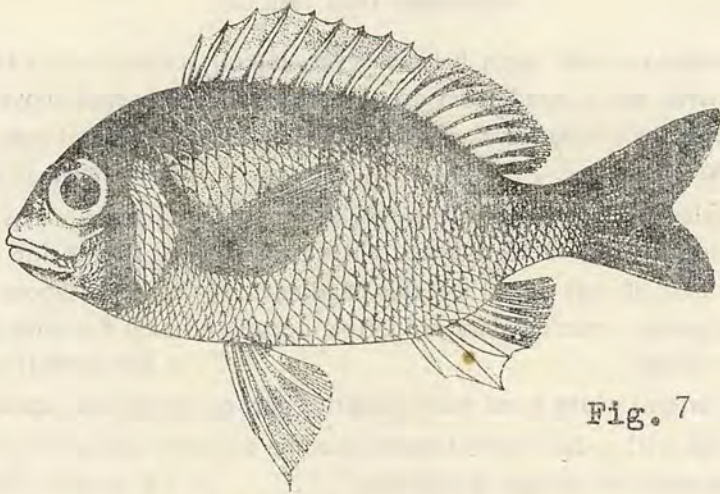


Fig. 7

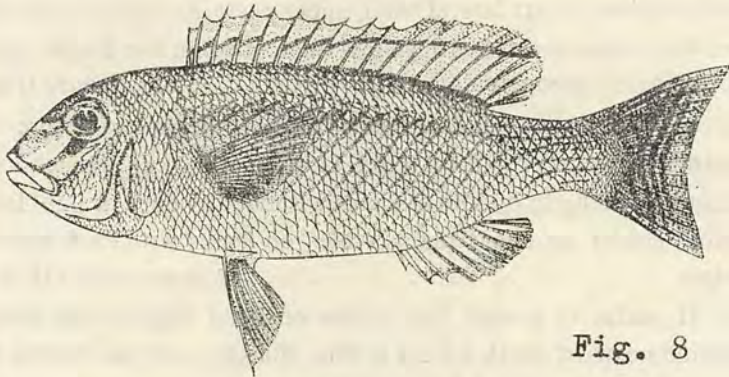


Fig. 8

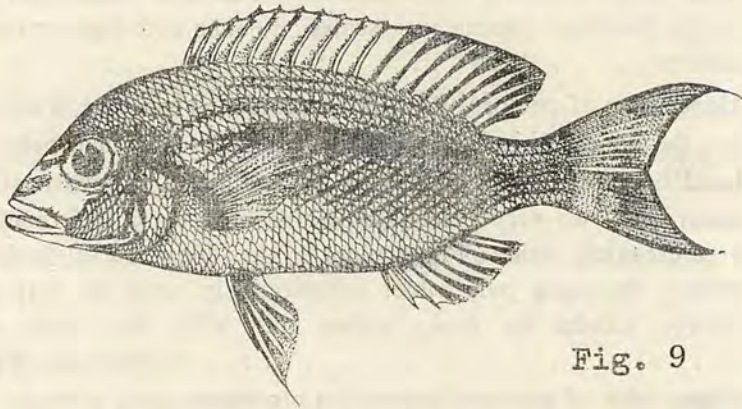


Fig. 9

- Fig. 7: *Scolopsis torquatus* (Cuvier), drawn by B. Mianmanus.
Fig. 8: *Scolopsis taeniopterus* (Cuvier), drawn by P. Chuenchitpong.
Fig. 9: *Scolopsis dubiosus* Weber, drawn by T. Wongratana.

9. a. Depth 3.0-3.2 in S.L.; head and body greyish olive, a pale bluish white lateral band from eyes and curving along the lateral line, this band sometimes bordered inferiorly by a pale greyish band, a blue spot on upper surface of caudal peduncle, a bright blue band between eyes, another one from eyes acrossing preorbital to middle of maxillary, inside of operculum yellowish, dorsal and pectoral fins largely yellow, a blue median band over both dorsals, upper axil of pectoral fins with a bright orange triangular spot, caudal rosy with yellow tip *S. taeniopterus* (Fig. 8)
- b. Depth 2.8-2.9 in S.L.; head and body greyish olive, a broad dark grey lateral band on flanks and below it a series of yellow and bluish lines running through scale rows; an oblique brown streak crossing pectoral fin base, a bright blue band between eyes, caudal moderately forked, its upper lobe little produced in adult *S. dubiosus* (Fig. 9)

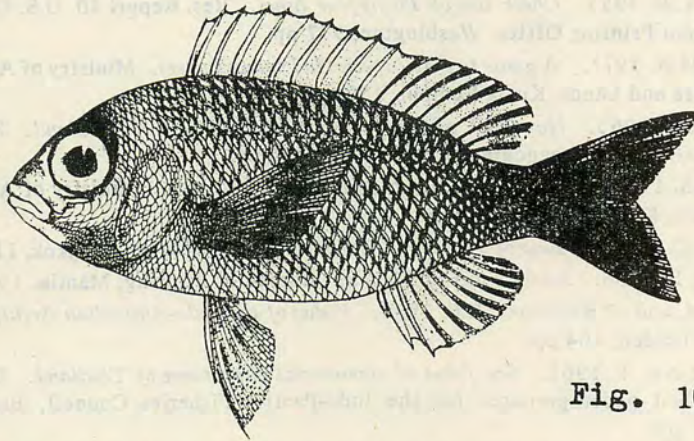


Fig. 10

Fig. 10: *Scolopsis margaritifera* (Cuvier), drawn by B. Mianmanus

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