

**A Butterfly Fish, *Chaetodon selene*, from  
the Izu Peninsula, Japan, with a  
Note on Juvenile**

Fujio Yasuda, Hajime Masuda,  
and Shinri Takama  
(Received April 12, 1975)

In Japanese waters, *Chaetodon selene* has been known only from two records, one from Yokohama, Kanagawa Pref. by Martens (1876) and another from Kashiwajima, Kōchi Pref. by Kamohara (1961). A young specimen about 15 mm in standard length (initial phase, Fig. 1), was caught by a dip net in shore water at a depth of 5 meters on a rocky bottom at Ōsezaki, Izu Peninsula, Shizuoka Pref., on 15th November, 1973. The fish was fed on chopped clam and reared in an aquarium kept at about 25°C by one of us (S. Takama). After 13 months, the fish grew to about 70 mm in standard length



Fig. 1. Initial phase of the specimen about 15 mm in standard length.

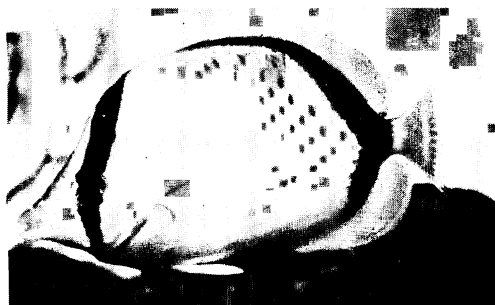


Fig. 2. Second phase of the specimen after 13 months' rearing, about 70 mm in standard length.

(second phase, Fig. 2).

Since 1968 about ten specimens of this species, ranged between 15~50 mm in body length, have been caught every Autumn by one of us (S. Takama) at Ōsezaki, Shizuoka Pref. Morphometrics, meristics and color in formalin were also presented from another specimen, Cat. No. ZUMT (Department of Zoology, University Museum, University of Tokyo) 53950, caught from rocky shore at Futo, Izu peninsula, Shizuoka Pref. at a depth of 10 meters, on 11th January 1975, by one of us (H. Masuda).

In this paper, the juvenile color pattern and subsequent changes of this species were described for the first time.

*Chaetodon selene* Bleeker

*Chaetodon selene* Bleeker, 1853, p. 76; Martens, 1876, pp. 323, 388; Weber and Beaufort, 1936, p. 90; Kamohara, 1961, p. 5~6, pl. 3; Shen, 1973, p. 41, fig. 38. For other synonymy see Weber and Beaufort (1936: 90).

**Description**

D. XII, 21; A. III, 19; P<sub>1</sub>. 16 (1st non-segmented) P<sub>2</sub>. I, 5; caudal branched rays 8+7. Vertebrae 10+14 (urostyle is counted as one).

Scales 30 between gill opening and caudal base; lateral line obliquely ascending in a straight line till below about ninth to tenth dorsal spine thence descending in a curve line towards end of dorsal fin; scales above lateral line at dorsal origin 6 and scales below lateral line at anal origin 14.

Measurements expressed in hundredths of standard length (49 mm): depth of body through base of 4th dorsal spine 67.3, head length to fleshy rim of opercle 38.7, snout length 14.2, horizontal diameter of orbit 12.2, interorbital width 12.2, least depth of caudal peduncle 11.2, snout to dorsal origin 57.1, snout to dorsal end 97.9, snout to anal origin 75.5, snout to anal end 95.9, snout to pectoral insertion 40.8, snout to pelvic insertion 44.8, dorsal base 61.2, anal base 38.7, length of longest (4th) dorsal spine 28.5, length of longest (2nd) anal spine 19.3, length of pectoral fin 24.4, length of pelvic fin 26.5, length of pelvic spine 22.4.

Color in formalin: Ground color of body

greyish. A blackish brown ocular band, much narrower than eye, originating at first dorsal spine, passing eye on its course to isthmus. Interorbital space and tip of upper jaw without marking. A broad blackish brown band running along base of dorsal, crossing caudal peduncle and terminating on soft anal; both its ends pointed. Brilliant orange part of dorsal, anal and caudal of living specimens turned pale. Base of caudal fin blackish. Sides of body below lateral line with narrow pale brown lines following the oblique series of scales. Pectorals and caudal transparent, pelvics greyish.

Change of color and fin shape with growth:

The initial color pattern of the specimen about 15 mm. (Fig. 1) Ground color milky white. A blackish brown ocular band, narrower than eye, originating at first dorsal spine, across eye on its course to isthmus; its borders above eye with narrow orange margins. Interorbital space and tip of upper jaw without marking. Dorsal and anal fins orange, and transparent marginally. A broad blackish brown band extending from middle part of dorsal fin, passing along the bases of soft dorsal and caudal, terminating on soft anal. Pectorals and caudal transparent, pelvics whitish.

From the underwater photograph of this initial specimen, before the specimen was caught, following markable characters in natural condition of this young stage were observed, which are as follows; The spinous part of dorsal and pelvic fin are very large and pointed compared with the body proportionately and also the ocular band and posterior side of black band which runs along dorsal and anal fins were shown symmetrically on its white body.

After 13 months (Fig. 2); Ground color of body milky white. A brown central spot on each scale on body forming numerous interrupted stripes following the oblique series of scales. The spots which appeared around black line along base of dorsal are yellowish.

A black ocular band, much narrower than eye, originating at first dorsal spine passing eye on its course to isthmus. Between both eyes three narrow orange lines crossing interorbital space; tip of upper jaw orange; fleshy rim of opercle orange. A broad black band running along base of dorsal, passing across caudal peduncle and terminating on soft anal; both its

ends pointed. Dorsal, anal and base of caudal orange. A narrow orange line originating at the top margin of eye, running along posterior border of ocular band and entire inside border of black band, along bases of dorsal and anal. Pectorals and caudal transparent, pelvics whitish.

Note:

The juvenile color pattern of the present species is similar to the young of *Chaetodon vagabundus* Linnaeus. Therefore, the young stage of this species might have been confused with the young of *Chaetodon vagabundus* Linnaeus in the natural condition up to now.

# Acknowledgments

We thank Dr. Yoshiaki Tominaga of the university of Tokyo, who assisted us in obtaining the copies of the literature and critically read the manuscript.

# Literature cited

- Bleeker, P. 1853. Bijdrage tot de kennis der ichthyologische fauna van Solor. Nat. Tijdschr. Ned. Indië 5: 67~96.
- Kamohara, T. 1961. Additional records of marine fishes from Kochi Pref., Japan, including one new genus of the Paraperid. Rept. Usa Mar. Biol. St., 8 (1): 5~6, Pl. 3.
- Martens, E. von. 1876. Die Preussische Expedition nach Ost-Asien. Zoolog. Abth. Erster Band. 2te Hälfte. Berlin. 8: 193~412, Pls. 1~15.
- Shen, S.-C. 1973. Ecological and morphological study on fish-fauna from the waters around Taiwan and its adjacent islands. 3. Study on the Chaetodont fishes (Chaetodontidae) with description of a new species and its distribution. Rept. Inst. Fish. Biol. Ministry of Economic Affairs and Nat. Taiwan Univ. 3 (1): 1~75, 77 figs.
- Weber, M. & L. F. de Beaufort. 1936. The fishes of the Indo-Australian Archipelago 7. xvi+607 pp., 106 figs.
- (FY. Tokyo University of Fisheries, Konan, Minatoku, Tokyo 108; HM. Diving Center, College of Marine Science and Technology, Tokai University, Futo, Ito-shi, Shizuoka Pref. 413-02; ST. 277, Teramae-cho, Kanazawa-ku, Yokohama 236)

伊豆半島のテングチョウチョウウオ

安田 富士郎・益田 一・高間 真理

1973 年 11 月 15 日および 1975 年 1 月 11 日静岡県

Yasuda, Masuda, and Takama : A Butterfly Fish, *Chaetodon selene*

伊豆半島富戸および大瀬崎より採集されたテングチョウチョウオについて形態，体色の変化を報告した．このうち大瀬崎より採集された標本から始めて幼魚の体色，斑紋がわかりさらに飼育観察から斑紋の変化が

追跡できた．

(安田，108 東京都港区港南 東京水産大学；益田，413-02 伊東市富戸 東海大学海洋学部ダイビングセンター；高間，236 横浜市金沢区寺前町 277)