

A New Species of *Polyipnus* (Stomiiformes, Sternoptychidae) from Suruga Bay, Japan

Masahiro Aizawa

University Museum, University of Tokyo, Hongo 7-3-1, Bunkyo-ku, Tokyo 113, Japan

Abstract A new species of marine hatchetfish, *Polyipnus surugaensis*, is described based on a specimen collected from Suruga Bay, Japan. This species is distinguished from congeners by the following character combination: the 3rd supra-abdominal photophore is higher in position than the 2nd; the predorsal dark pigmented area does not reach to the median line of the body and is separated from the subdorsal dark pigmented area; the posterior vomerine shaft is toothless.

The genus *Polyipnus* Günther, 1887 is one of the ten genera of the family Sternoptychidae and is characterized by having a pair of diverging spines just in front of the origin of the soft dorsal fin; ten abdominal photophores; three supra-abdominal photophores; a lateral photophore; three supra-pectoral photophores; an undivided anal fin (Schultz, 1938; Weitzman, 1974). This genus includes 23 species and has been divided into three complexes on the basis of post-temporal spination and photophore pattern (Baird, 1971; Borodulina, 1979, 1981; Harold, 1989). In the course of a taxonomic study of sternoptychids, the author obtained a specimen of *Polyipnus*, collected by midwater shrimp trawl from off Yui, Suruga Bay, Japan, which is distinct from all the known species of the genus. It is described herein as a new species.

Measurements and counts were made according to Hubbs and Lagler (1964) except for the following: body depth measured from the origin of the dorsal fin to the post-abdominal spine; post-temporal spine length measured from the anteriormost part of the post-temporal bone to tip of post-temporal spine. The caudal complex of preural and ural centra is counted as one. The nomenclature of the photophores follows Schultz (1961). Counts for vertebrae and unpaired fins were taken from radiographs.

Polyipnus surugaensis sp. nov.

(New Japanese name: Suruga-hounen-eso)

(Figs. 1, 2A)

Holotype. NSMT-P (Department of Zoology, National Science Museum) 21480; 37.1 mm SL, 49.5 mm TL, May 23, 1979, off Yui (35°05' N, 138°40' E), Suruga Bay,

Japan, midwater shrimp trawl (double rigged trawl).

Diagnosis. Combination of: the first and second supra-abdominal photophores at the same level, with the third elevated; the predorsal darkly pigmented area does not reach the median line of the body, and is separated from the subdorsal dark area; the anterior part of predorsal dark pigmented area is concave ventrally (Fig. 2A); the vomerine teeth are present only on lateral edge.

Description. Dorsal fin rays 12; anal fin rays 17; pectoral fin rays 13; pelvic fin rays 7; principal caudal rays 10+9; gill rakers on first arch 17 (7+10); number of vertebrae 32 (13+19).

Measurements of the holotype in percent standard length: head length 33.4; snout length 7.0; eye diameter 15.3; interorbital width 8.0; length of upper jaw 25.3; length of post-temporal spine 6.4; body depth 63.6; distance from the base of the pre-abdominal spine to the base of the post-abdominal spine 35.8; distance from the insertion of the 1st dorsal fin ray to insertion of the 1st anal fin ray 56.9; distance from the insertion of the last dorsal fin ray to insertion of the 1st anal fin ray 45.5; distance from the insertion of the last dorsal fin ray to insertion of the last anal fin ray 29.4; caudal peduncle depth 12.1; caudal peduncle length 17.5; dorsal fin base length 24.0; anal fin base length 29.1; distance from snout to origin of dorsal fin 58.5; distance from snout to origin of anal fin 72.7; distance from snout to insertion of anterior upper margin of pectoral fin 37.2; distance from snout to insertion of pelvic fin 65.8.

Measurements in percent head length (12.4 mm): snout length 21.1; eye diameter 46.0; interorbital width 24.4; post-temporal spine length 19.4; upper jaw length 75.8.

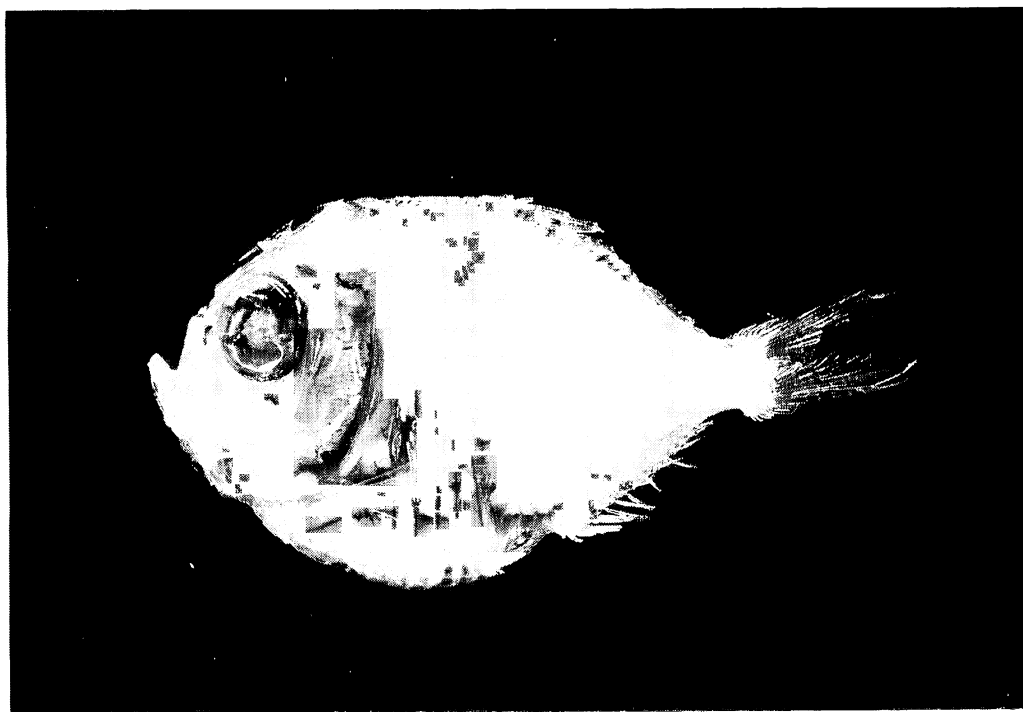


Fig. 1. *Polyipnus surugaensis* sp. nov., holotype, NSMT-P 21480, 37.1 mm SL.

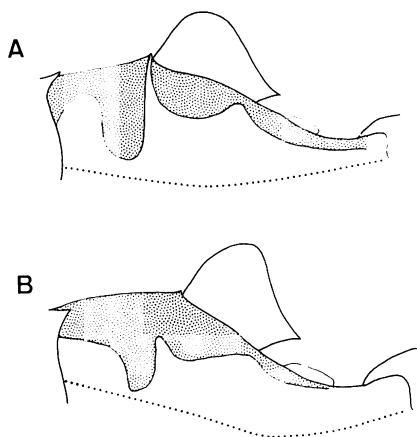


Fig. 2. Patterns of dorsal pigmentation. A, *Polyipnus surugaensis* sp. nov.; B, *Polyipnus triphanos* Schultz, 1938 (after Schultz, 1938).

The post-temporal spine is simple, needle-like, short, and directed slightly upward. The dorsal blade is small and spinous. The smooth scales of photophores are on abdominal, pre-anal, anal, and sub-caudal series. The ventral margin of the lower jaw is smooth. The preopercular spine is short and trian-

gular. The preopercular ridge is smooth.

The vomerine teeth are present only on lateral edge; the vomerine shaft is toothless. The palatine is toothed.

The predorsal darkly pigmented area is broad and short, not reaching to the median line of the body. It is separated from the subdorsal dark area below the dorsal fin. The anterior part of predorsal darkly pigmented area is concave ventrally. The dark area below the dorsal fin is notched at the end of the dorsal fin and continuous with the postdorsal dark area to the caudal fin (Fig. 2A). Triangular blotches are present at the base of each dorsal ray. Melanophores are present along the median line of the body and on the myosepta. All fin membranes lack pigment and are transparent.

Photophores (Fig. 1): The 1st and 2nd supra-abdominal photophores are at the level of the lower margin of the pectoral fin base. The 3rd photophore is higher by its diameter than the 1st and 2nd.

The 1st pre-anal photophore is the highest in this cluster; the 2nd to the 4th are almost level; the last (5th) is slightly higher than the 4th.

The anal photophores number 9. The last anal photophore is the smallest of this cluster.

The supra-anal cluster is separated from and higher than the anal cluster. The 1st supra-anal photophore is the lowest in position in this cluster. The 2nd and 3rd supra-anal photophores are closely set, but the former is slightly lower in position than the latter.

The sub-caudal photophores number 4 and are closely set. The anal and sub-caudal clusters are widely separated by the distance from the anterior margin of the 1st sub-caudal photophore to the posterior margin of the 2nd.

Etymology. The species name "*surugaensis*" refers to Suruga Bay, Japan, where the holotype was collected.

Remarks. This species belongs to the "*P. asteroides* Schultz, 1938 species complex" defined by Baird (1971) which have the following combination of characters: a simple, needle-like post-temporal spine; wide gap between supra-anal and anal clusters; smooth scales on abdominal, pre-anal, anal, and sub-caudal photophores.

Of the other members of the "*P. asteroides* species complex", *P. matsubarai* Schultz, 1961, *P. meteori* Kotthaus, 1967, *P. ruggeri* Baird, 1971, *P. kiwiensis* Baird, 1971 are different from the new species in having teeth on the posterior vomerine shaft. *P. asteroides* and *P. polli* Schultz, 1961 are distinguished by higher numbers of gill rakers (20–24) and a dorsal dark pigmented area (Baird, 1971).

Polyipnus surugaensis most closely resembles *P. triphanos* Schultz, 1938 but is distinguished by the following characters (characters of *P. triphanos* in parentheses): the position of the 3rd supra-abdominal photophore is higher than that of the 1st (lower than the 1st); the predorsal dark pigmented area is separated from the subdorsal (Fig. 2A) (continuous: Fig. 2B); anterior part of the predorsal dark area is concave (Fig. 2A) (almost flattened: Fig. 2B) (Schultz, 1938).

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駿河湾から得られたホウネンエソ属の新種

藍澤正宏

静岡県庵原郡由比沖の駿河湾から採集された個体にもとづいて、ホウネンエソ属の新種スルガホウネンエソ *Polyipnus surugaensis* sp. nov. を記載した。本種はホウネンエソ属の他種から第3腹部上部発光器が第1, 2より高位であること、背鰭前黒色帯が体側中線に達しないこと、背鰭前黒色帯の前下縁が湾入すること、背鰭前黒色帯と背鰭下黒色帯は背鰭起部で離れること、背鰭発光器が9個であること、鋤骨幹部に歯がないことなどの形質により明瞭に識別される。

(113 東京都文京区本郷 7-3-1 東京大学総合研究資料館動物部門)