

A Rare Myctophid Fish, *Diaphus bertelseni*, from the Stomach of Bryde's Whale Captured in the Subtropical Western North Pacific

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In the course of a study on the feeding habits of whales, one intact specimen of *Diaphus bertelseni* was found in the stomach of a Bryde's whale caught in the subtropical North Pacific by the whaler "Daisan Nisshin Maru". The species was first recorded from the tropical Atlantic under the name of *Diaphus* sp. B by Backus et al. (1965), which was later described as *D. bertelseni* by Nafpaktitis (1966). In the Pacific this species is reported from off Hawaii by Clarke (1973) without a morphological description. Knowledge about its geographical distribution and the range of morphological variation has been extremely restricted due to scanty collection of specimens. Considering the facts mentioned above and that there has been no morphological description for the Pacific specimen, a description of the present material was made in comparison with the Atlantic specimens. The present specimen is thought to be the largest one hitherto recorded.

Diaphus bertelseni Nafpaktitis

(New Japanese name: Tokkuri-hadaka)

(Fig. 1)

Material. ORI (Ocean Research Institute, University of Tokyo)-1400, one mature male,

100.5 mm SL, found in the stomach of a Bryde's whale captured in May 8, 1979 at 25°41'N, 160°30'E. Based on its undigested condition, it is apparent that the specimen was eaten at the locality where the whale was captured.

Description. Counts and measurements of the present material are followed by those of the Atlantic specimens reported by Nafpaktitis (1968) in parentheses. The counts and measurements of the Atlantic specimens, are based on 4 and 13 specimens, respectively.

D. 14 (14~15); A. 14 (15); P. 10 (11); V. 8 (8); gill rakers on the first arch 6+1+12, total 19 (5+1+12, total 18); AO photophore 6+4 (6+4, rarely 7+3); lateral line scales 35 (35, rarely 34). The tiny spine at base of the outermost ventral fin ray was not counted.

Measurements are expressed in hundredths of standard length. Head length 33.2 (average 34.4, range 33.4~33.8); eye diameter 9.4 (9.9, 9.6~10.2); head depth 26.5 (26.6, 25.9~27.6); body depth 26.9 (27.1, 26.1~28.6); least depth of caudal peduncle 12.4 (12.7, 12.2~13.0); length of dorsal fin base 23.4 (22.9, 21.3~23.9); length of anal fin base 17.2 (19.4, 18.0~20.9); predorsal 47.8 (46.6, 44.9~47.8); preventral 49.3 (50.5, 48.3~52.4); prepectoral 33.3 (33.8, 32.5~34.7); preanal 69.9 (69.9, 67.2~71.4). Snout length 1.5 (1.5~2.0) in eye diameter; upper jaw length 1.4 (1.4~1.5) in head length; eye diameter 2.5 (2.3~2.5) in upper jaw length; eye diameter 3.6 (3.4~3.6) in head length.

Body shape stubby; a round Dn directed forward in a cup-shaped recess; a well defined Vn along the anterior to antero-ventral margin of orbit; body photophore large with AO photophore interspace smaller than the diameter of

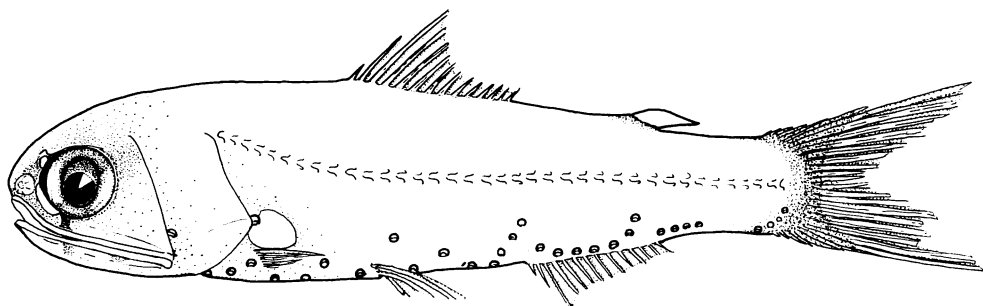


Fig. 1. *Diaphus bertelseni* Nafpaktitis. Mature male, 100.5 mm SL, ORI-1400.

photophore; upper series of lateral body photophores such as PLO, VLO, SAO₃, Pol and Prc₃ low; counts of gill rakers and AO_p photophores low. Luminous scale attached to PLO photophore is roughly oval and extremely large, extending posteriorly to between PO₂ and PO₃. Its horizontal diameter is about 5 times as large as that of PLO. These morphological characters, together with the counts and measurements, agree well with those of the Atlantic specimens.

The following features, which have not been clearly described, are remarkable in the present specimen. The pupil is vertically elliptical with an aphakic space above the lens as observed in *D. brachycephalus* Tåning. Whitish pigment patterns, roughly crescent-shaped, are present in the anterior and posterior parts of the iris. Bases of the adipose and caudal fins are densely pigmented. Two pairs of pigment patches are recognized on both sides of the ventral surface of the lower jaw with the anterior pair larger than the posterior one. The tip of gill rakers on the first arch is not tapered bearing several spines. Gill rakers on the second arch are of fan-like shape and spiny.

Distribution. Due to the scanty collection data, it is difficult to infer the exact pattern of distribution. The two records, including the present one, from the Pacific are restricted to the northern rim of the North Equatorial Current between 21°N and 25°N. Juveniles may possibly occur in more northern regions in the western Pacific due to transportation by the Kuroshio. In the Atlantic *D. bertelseni* is grouped as a questionably tropical-subtropical species (Nafpaktitis et al., 1977).

Acknowledgment

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- ニタリクジラの胃内より出現したハダカイワシ科の 1 稀種 *Diaphus bertelseni* トックリハダカ (新称)
- 川口弘一・河村章人
- 南鳥島の東北東 500 km の海域で獲れたニタリクジラの胃内よりハダカイワシ科ハダカイワシ属の稀種 *Diaphus bertelseni* の雄の 1 成熟個体が得られた。本種は大西洋の熱帯亜熱帯海域から報告があるが、太平洋からはハワイ沖の報告があるのみである。とくに親魚の採集例が極めて少なく、地理分布、形態変異の幅等の知見が限られている。そこで従来報告と比較しつつ記載を行い、従来報告のなかった特徴についても言及した。
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