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Records of Y-Patched Barracudinas, *Lestidium prolixum*,  
Outside Wakasa Bay, Sea of Japan (Paralepididae: Osteichthyes)

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**Records of Y-Patched Barracudinas, *Lestidium prolixum*,  
Outside Wakasa Bay, Sea of Japan (Paralepididae: Osteichthyes)<sup>1)</sup>**

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Abstract: Three individuals of Y-patched barracudinas, *Lestidium prolixum*, were caught by motor trawlers outside Wakasa Bay, central west Honshu (Japan) on 22 April (2 indiv.) and 1 May (1 indiv.), 1991. These records seem mark the northern extreme of distribution in the Sea of Japan.

The bathypelagic fishes of the family Paralepididae (Aulopiformes), which resemble sphyrenids (barracudas), are known to form large shoals. Taxonomic studies have been made by Harry (1951, 1953 a, b) and Kawaguchi (1986). Fishes in the genus *Lestidium* are very common off the southern part of the Japanese Islands, from Suruga Bay to the Okinawa Islands, particularly off the southern part of Kyushu (Yamakawa, 1984; Ozawa, 1986, 1988). Tabeta (1972) reported that many individuals of *L. prolixum* were stranded on the beaches of northern Kyushu, facing the Straits of Tsushima, during winter months peaking in December. The Straits in fact mark the entrance to the Sea of Japan, although their depth, about 150 m, has been considered to be a barrier for invasion and/or migration of barracudinas and other bathypelagic fishes from the northern coast of Kyushu to the Sea of Japan.

Prior to the reports of Ozawa (1988) and Tabeta (1972), *L. prolixum* had not been included in the checklists of fishes from the Philippines (Herre, 1953) or Korea (Mori, 1952), let alone the Sea of Japan.

Recently, three barracudinas were caught by motor trawlers fishing for the bathypelagic firefly squid, *Watasenia scintillans*, 10 km off the southwestern coast of Cape Echizen, Wakasa Bay, central west Honshu Island, Japan (Fig. 1).

Two specimens caught on 22 April and one on 1 May, 1991, from a depth of 200 m, were forwarded to the Fukui Prefectural Fisheries Experimental Station. They were subsequently identified as *Lestidium prolixum* Harry (Harry, 1953b). Measurements and counts are shown in Table 1.

In spite of their adult size, the specimens were immature. Therefore, the occurrence or otherwise of hermaphroditism could not be determined. Many aulopiforms are synchronous hermaphrodites, ovotestis having been observed in a specimen of *L. pseudosphyraenoides* by Mead (1960).

Body slender, elongate and strongly compressed, its deepest and widest dimensions being midway between pectoral and pelvic fins. Posterior part of trunk and tail tapered (Fig. 2). Head and snout long, the latter broad and anteriorly projected (Fig. 3). Mouth large, with 3 canines and several rows of minute, retrose teeth, more than 70 in number, on maxillary (Fig. 3). Two rows of teeth on mandible. Minute teeth on palatine not visible from lateral view. Eye and pupil large and vertically oval. Pupil

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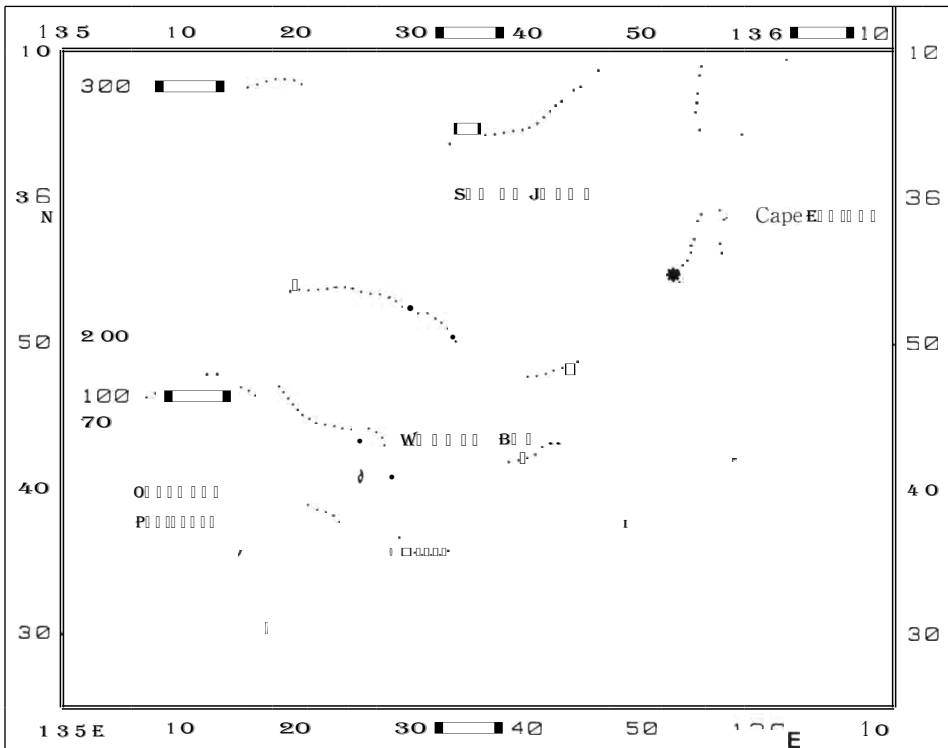


Fig. 1. Map of Wakasa Bay, Sea of Japan, showing the collecting sites (asterisk) of the barracudina, *Lestidium prolixum* Harry, 1953. E: longitude, N: North latitude.

Table 1. Measurements and counts of the barracudinas, *Lestidium prolixum*, caught by motor trawlers outside Wakasa Bay, Sea of Japan.

Character/Specimen	No.1	No.2	No.3
Total length (mm)	273.4	179.3	288.3
Standard length (mm)	265.2	170.0	283.5
Head length (mm)	53.4	33.3	58.0
Depth (mm)	18.0	11.3	22.8
Width (mm)	12.2	6.4	13.8
Snout (mm)	26.7	18.0	29.9
Eye diameter (mm)	8.7	5.8	9.4
Weight of body (g)	41.3	8.2	61.3

Dorsal fin ray, 10; Anal fin ray, 30-31; Pectoral fin rays, 11-12.

much larger than lens (Fig. 3). Pelvic fin smaller than 1st dorsal fin, its base anterior to the latter. Second dorsal fin adipose (Fig. 2). Cloaca just beneath 1st dorsal fin base (Fig. 2). A tubular, luminous organ in the mid-ventral line (Fig. 4). Four pores above and below each lateral line scale.

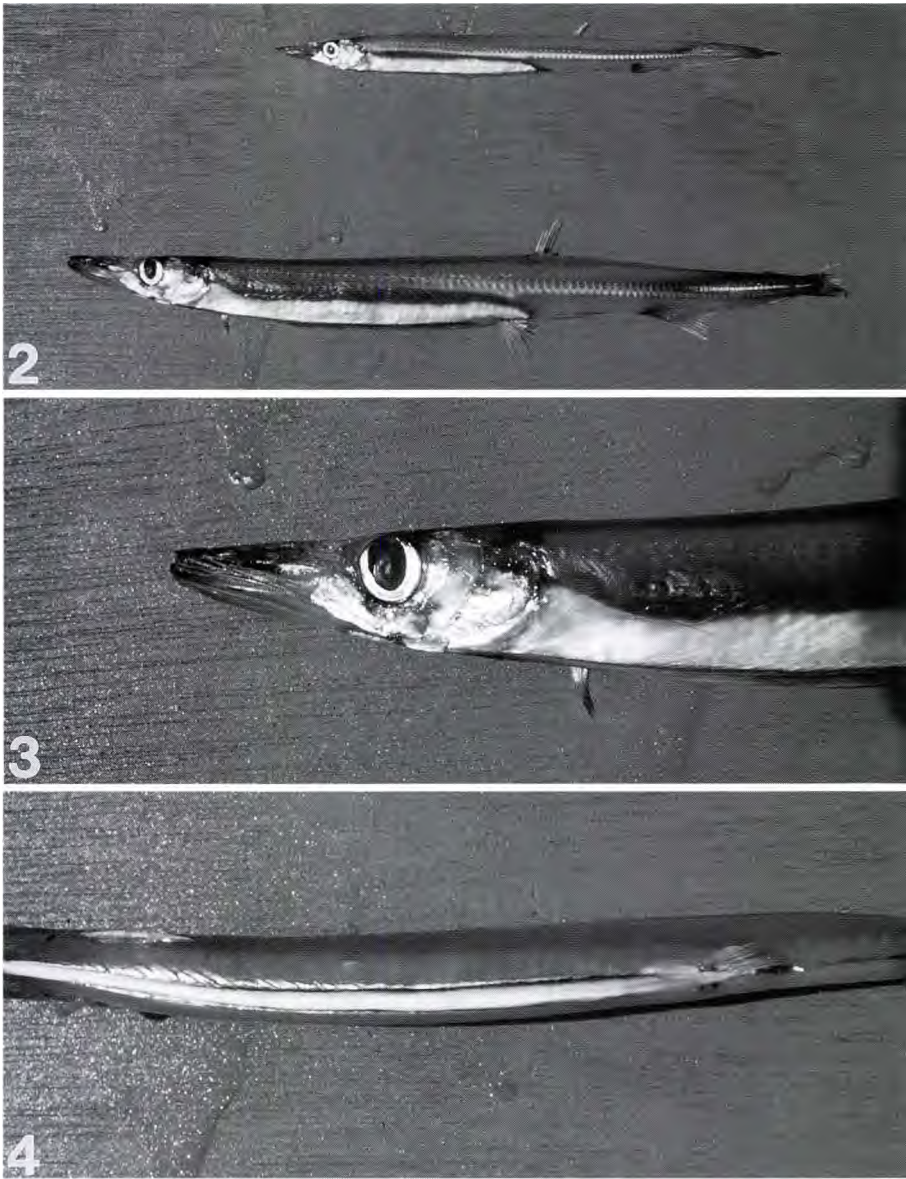


Fig. 2. Side view of barracudinas, *Lestidium prolixum* (169 and 265 mm total length), caught by a motor trawler outside Wakasa Bay, Sea of Japan.

Fig. 3. Close up of head and thoracic region of a barracudina showing dentition on the maxillary, and lateral line scales with 4 pores above and below. Note that both the large lens and pupil are vertically oval in shape.

Fig. 4. Ventral view of a barracudina showing a belly luminous duct (organ), the anterior tip of which occurs just below the operculum.

Body color semi-transparent, but a Y-shaped, dark blotch on occiput. A black blotch absent from anterior margin of eye. Dark peritoneum obvious when viewed from mouth cavity. Belly brilliant, silver owing to rich guanin deposition.

Six *Lestidium* specimens, initially identified as *L. nudum* Gilbert (Matsubara, 1938, 1955), were presented to the Stanford University Museum, where it was noticed that one specimen represented a new species. This was subsequently described by Harry (1953 a, b) as *L. prolixum*, on the basis of having more lateral-line segments than any other Pacific Ocean species and a higher number of pores in each lateral-line section than normally occurs in the latter.

Haneda (1958, 1964) reported that the macroscopical and histological structures of the luminous organ of *L. prolixum* differed from those of another Japanese bar-racudina, *L. japonicum*. However, Kawaguchi (1986) referred *L. japonicum* to the genus *Lestrolepis*, and included *Lestidium atlanticus*, which occurs in southern Japanese waters, in *Lestidium*.

Before the collection of the present specimens, *L. prolixum* has not been recorded from the middle regions of the Sea of Japan (Lindberg and Legeza, 1965; Tsuda, 1990). The present records may mark the northern extreme of the species distribution in the Sea of Japan.

Another interesting, recent record is that of a manefish, *Caristius macrops*, 16.0 cm long, also caught from off Wakasa Bay by a motor trawler fishing for firefly squid on 17 May, 1990. This may be the first record from the Sea of Japan, and also marks the northern extreme of the species distribution. Similar cases of northward extensions of distribution of warm-water (tropical and subtropical) fishes, such as *Beryx decadactylus*, *Rexea prometheoides*, and *Chaetodermis penicilligera*, for example, found in the more northern waters adjacent to Niigata and Sado Island have already been reported by Honma *et al.* (1990) and Honma (1991).

#### References

- Haneda, Y. 1958: Preliminary report on a luminous fish of the family Paralepididae. Sci. Rep. Yokosuka City Mus., (3), 31-35. (in Japanese with English summary)
- Haneda, Y. 1964: Further report on the luminous fish of the family Paralepididae. Sci. Rep. Yokosuka City Mus., (10), 1-6.1 p1.
- Harry, R. R. 1953a: Studies on the bathypelagic fishes of the family Paralepididae. 1. Survey of the genera. Pacif. Sci., 7: 219-249.
- Harry, R. R. 1953b: Studies on the bathypelagic fishes of the family Paralepididae (order Inioimi). 2. A revision of the North Pacific species. Proc. Acad. Nat. Sci., Philadelph., 105: 169-230.
- Harre, A. W. 1953: Check list of Philippine fishes. Res. Rep., 20, Fish Wildlife Serv. U. S. Dept. Interior, 1-999.
- Honma, Y. 1991: A list of fishes found in the vicinity of Sado Marine Biological Station-VII. Rep. Sado Mar. Biol. Stat., Niigata Univ., (21), 11-35.
- Honma, Y., M. Sato and R. Mizusawa 1990: Further additions to "A list of fishes collected in the Province of Echigo, including Sado Island" (XII). Uo, (39), 15-30. (in Japanese with English summary)
- Kawaguchi, K. 1986: Keys to the Japanese species of the order Myctophiformes. Uo, (36), 15-45. (in Japanese)
- Lindberg, G. U. and M. I. Legeza 1965: Fishes of the Sea of Japan and the adjacent areas of the Sea of Okhotsk and the Yellow Sea. Pt. 2. Teleostomi, XII. Acipenseriformes—XXVIII. Polynemiformes. 1-391pp. Acad. Nauk SSSR. (in Russian)
- Matsubara, K. 1938: Studies on the deep-sea fishes of Japan. VII. On some rare or imperfectly known lantern-fishes found in Kumano-Nada. J. Imp. Fish. Inst., 33: 52-60.

- Matsubara, K. 1955: Fish Morphology and Hierarchy. 3 vols., 1-1605 pp. Ishizaki-shoten (Tokyo).
- Mead, G. W. 1960: Hermaphroditism in archibenthic and pelagic fishes of the order Iniomi. Deep Sea Res., 6: 234-235.
- Mori, T. 1952: Check list of the fishes of Korea. Mem. Hyogo Univ. Agr., 1(3), 1-228.
- Ozawa, T. (ed.) 1986: Studies on the Oceanic Ichthyoplankton in the Western North Pacific. 1-430 pp. Kyushu Univ. Press (Fukuoka).
- Ozawa, T. 1988: Paralepididae. 239-241. in ed. by Okiyama, M. "An Atlas of the Early Stage Fishes in Japan". Tokai Univ. Press (Tokyo). (in Japanese)
- Tabeta, O. 1972: An ecological study on the fishes stranded upon the beach of northern Kyushu. J. Shimonoseki Univ. Fish., 21:81-151, 3 pls.
- Tsuda, T. 1990: Colors Illustration of the Fishes of the Sea of Japan. 1-612 pp. Katsurashoboh (Toyama). (in Japanese)
- Yamakawa, T. 1984: *Lestidium prolixum*. in ed. by Japan Fisheries Resources Conservation Association, "Fishes of the Okinawa Trough and the Adjacent Waters I". Tosho Printing (Tokyo).

