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Sea Whip Goby, *Bryaninops yongei*, Collected from Outer Shelf off Miyakojima, East China Sea

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The tropical Indo-Pacific goby genus *Bryaninops* comprises nine species of very small size which are commonly called "sea whip gobies" because they are commensal chiefly on gorgonians and antipatharians. Cryptic coloration is also characteristic of them (Larson, 1985). Due to such a specialized mode of life, this genus has been poorly studied unitl recently.

So far, eight species of *Bryaninops* have been recorded from the Japanese waters on the basis of very limited materials. They are *B. yongei* (Davis et Cohen), *B. erythrops* Jordan et Seale, *B. isis* Larson, *B. amplus* Larson, *B. natans* Larson, *B. loki* Larson, *B. ridens* Smith and *B. nexus* Larson (Larson, 1985, 1987; Masuda et al., 1988). Available records for these species have been restricted to the southernmost region of the Ryukyu Islands excepting Shizuoka Pref. for *B. yongei* and Wakayama Pref. for *B. amplus*.

During the recent cruise of R/V Hakuho-maru, Ocean Research Institute (KH 88-4; Sept. 20 to Oct. 31, 1988), two specimens of small gobies referable to *Bryaninops* were collected at the outer shelf off Miyakojima, East China Sea. Since this capture extends the bathymetrical ranges of this genus from 53 meters (Larson, 1985) to the unexpectedly deep zone of 138–158 m, the record of these materials is briefly described.

Collection data. Two specimens of *Bryaninops yongei* (Davis et Cohen) (Fig. 1) captured at the depth of 138–158 m by 2 m Sigsby-Agassiz type beam trawl from R/V Hakuho-maru at station 18 covering the distance between 25°12.3′N, 25°58.5′E and 25°10.4′N, 125°56.1′E in the subtropical waters off Miyakojima, East China Sea; October 19, 1988.

Observations. Selected proportional measurements of these specimens are given in Table 1. Despite slight differences in head proportions, they are readily referred to as *B. yongei* by the general agreement of major diagnostic features including the slightly scalloped preopercular edge and the restricted gill opening. In addition, their meristic counts well fit the known values of this species (Larson, 1985). This identification may also be substantiated by the following ecological evidence: 1) the specimens are a large male and a small female, 2) the antipatharian sea whip, *Cirrhipathes anguina* (Dana), on which *B. yongei* is commonly found, was collected simultaneously (Ohta, pers, comm.), 3) the known depth renges of *B. yongei* are exceptionally wide among its congeners: 3–45 m (Larson, 1985), and 4) the locality of Shizuoka Pref. for *B. yongei* representing the northernmost occurrence of the genus is likely to suggest its potential to invade deeper environments. This evidence also indicates the usual living conditions of the present specimens.

The brilliant body color in life was faded completely during preservation in alcohol, but a purplish tint was retained around the dorsum of the eyes for a while after collection. Although the color in alcohol is evenly white with several pigment blotches peculiar to this species, the transparent broad roof of the head is striking while its function is unknown.

Remarks. Records of sea whip gobies at the

Table 1. Selected proportional measurements of two specimens of *Bryaninops yongei* collected from the outer shelf off Miyakojima, East China Sea. Known ranges are given in parenthesis after Larson (1985). *Characters disagreeing with known values.

Character	Males	Females
Standard length, mm	20.0 (13.5–27.0)	16.1 (13.5–28.0)
Head length (in SL, %)	32.5 (29.1–35.6)	29.8 (27.8–34.3)
Head depth (〃)	16.0 (14.4–18.8)	13.7* (14.2–20.7)
Head width (〃)	15.0* (17.2–18.8)	14.3* (16.8–22.5)
Snout length (in HL, %)	24.6* (25.6–39.0)	25.0 (21.3–36.3)
Eye width (〃)	29.2 (24.4–31.7)	25.0 (21.3–32.0)
Upper jaw length (〃)	35.4 (34.9–50.6)	33.3* (36.8–46.5)

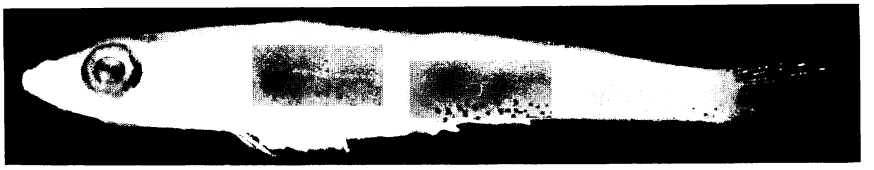

Fig. 1. *Bryaninops yongei*, male specimen, 20.0 mm in SL, collected from the outer shelf off Miyakojima, East China Sea.

outer shelf exceeding 100 m are conspicuous in view of the common patterns of depth distribution in gobies, although some species are known to occur beyond 200 m (Okiyama, 1982). Possible bias related to depth during collecting efforts and the specialized life style of these fishes may be responsible for the shortage of relevant information.

Despite limited data, the present collection may imply that if proper sets of environmental conditions are provided, depth of about 150 meters is not unsuitable at least for *B. yongei*. Of course, distribution of sea whips would be most important in this connection. In Japan, *Cirrhipathes anguinea* and *C. spiralis* are found along the Pacific coast south of Suruga Bay from 30 to 500 m in depth (Utinomi, 1965), but little data are available on their depth frequency distribution. Occurrence of a male-female pair of *B. yongei* in this limited material from unusual depth strongly suggests the possibility of sex reversal of this species as previously supposed (Larson, 1985).

Even if they could succeed in ordinary reproduction in such a deep spawning site, hatched larvae are likely to die quickly because well-developed gas bladder diagnostic of larval goby would be seriously handicapped under relevant circumstances. These deep inhabitants may thus be ascribed to the expatriates whose recruits depend on the shallower domains.

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宮古島沖合の外側陸棚上で採集されたガラスハゼ

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1988 年 10 月 19 日に宮古島西方の東支那海外側陸棚上（水深 135–158 m）で行ったビームトロールによって 2 個体のガラスハゼ *Bryaninops yongei* が採集された．これは雄（体長 20.0 mm）と雌（体長 16.1 mm）のペアであり，本種が共生するムチカラマツ *Cirrhipathes anguina* も同時に得られたことから，正常な生活をおこなっていたことが推定された．今回の採集深度はガラスハゼ属の分布下限を 53 m から約 100 m も拡大したことで特に注目される．環境条件が満たされれば一部のガラスハゼ類は著しく広い棲息深度帯を持つことが示唆されるが，深層域の個体が再生産に寄与する可能性は低いものと思われる．

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