MAROUBRA YASUDAI, A NEW SPECIES OF PIPEFISH (SYNGNATHIDAE) FROM HONSHU ISLAND, JAPAN

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With Text-figures 1–2

Abstract

A new species of gastrophorine (trunk-pouch) pipefish, characterized, in part, by having the lateral trunk ridge continuous with the confluent lateral and superior tail ridges and by the presence of spine-like points on the principal body ridges, is described from rocky marine habitats in depths of 28–30 m. *Maroubra yasudai* differs from its only congener, the endemic Australian *M. perserrata* Whitley, in having more trunk rings (22–23 versus 16–17) and dorsal-fin rays (33–36 versus 23–26), in other meristic and morphological features, and in attaining a larger size (ca. 162 mm SL versus 72 mm SL).

A pipefish of uncertain identity has, for several years, been known to occur in Japanese waters, but it has not been subject to critical study. Through the courtesy of C. Araga, Seto Marine Biological Laboratory (SMBL) and T. Yoshino, University of the Ryukyus (URM), I have been able to examine specimens of this fish, and find it to represent an undescribed species of *Maroubra* Whitley 1948, heretofore considered a monotypic genus endemic to Australia. Although study material is limited and there is little information on distribution or preferred habitat, I here describe this gastrophorine (trunk-pouch) species from four specimens collected off Honshu I., Japan.

Methods are those of Dawson (1977). Measurements are in millimeters (mm); proportional data are referred to standard length (SL) or head length (HL); as employed here, the term "venter" refers to the ventral surface of head or body; counts of holotype are marked with an asterisk.

Maroubra yasudai n. sp.

(New Japanese name: Daidai-yoji)

(Figs. 1–2)

Syngnathinae sp. Hiyama and Yasuda, 1971: 310, pl. 346 (color plate only); Burgess and Axelrod, 1973 : 213, pl. 378 (as "unidentified pipefish," reproduction of color plate in Hiyama and Yasuda, 1971); Masuda et al., 1975 (and 1980): 185, pl. 25, fig. H (descriptive notes, color fig.).

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Material examined.

Holotype: SMBL 81026 (161.5 mm SL, presumptive male), Japan, Honshu I., Shizuoka Pref., W coast of Izu Oceanic Park, rocky reef, ca. 30 m, Oct. 1979, H. Masuda and party.

Paratypes: SMBL 81025 (1, 135.5), data as for holotype. URM P.0001 (1, 148) and URM P.0002 (1. 158.5), Izu Oceanic Park, in small cave, 28 m, 27 Mar. 1977, H. Masuda and party.

Diagnosis. Trunk rings 22–23; total subdorsal rings 9–10; snout slender, its depth 8–10 in snout length.

Description. Rings 22–23*+28–29*, dorsal-fin rays 33*–36, subdorsal rings 3–2*+6–7*, pectoral-fin rays 20*–22, anal-fin rays 4*, caudal-fin rays typically 10*. Measurements (mm) of the presumptive male holotype (SMBL 81026) and proportional data, based on four fish ca. 135.5–161.5 mm SL, follow: SL 161.5, HL 25.2, snout length 13.4, snout depth 1.6, length of dorsal-fin base 19.0, anal ring depth 4.5, trunk depth 5.7, pectoral-fin length 3.4, length of pectoral-fin base 3.0, snout length in HL 1.8–1.9, snout depth in snout length 8.4–9.9, length of dorsal-fin base in HL 1.2–1.4, anal ring depth in HL 5.0–5.6, trunk depth in HL 3.5–4.4, pectoral-fin length in HL 6.8–7.4, length of pectoral-fin base in pectoral-fin length 1.1–1.2.

Superior trunk and tail ridges discontinuous near rear of dorsal-fin base, lateral trunk ridge confluent with lateral and superior tail ridges, inferior trunk ridge continuous with inferior tail ridge (Fig. 1). Median ventral trunk ridge prominent,

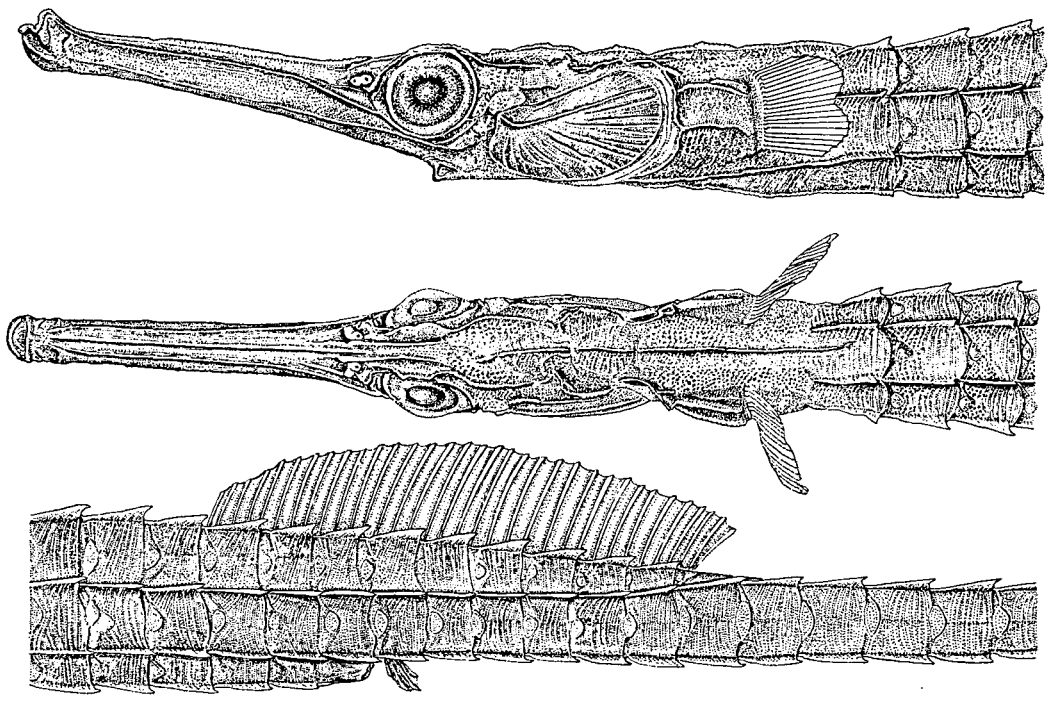

Fig. 1. *Maroubra yasudai.* Lateral and dorsal aspects of head and anterior trunk rings, together with section of body illustrating configuration of principal ridges and dorsal and anal fins. From 135.5 mm SL female or subadult male paratype (SMBL 81025).

originates on 1st trunk ring; venter essentially flat between inferior and median ventral trunk ridges in females, concave in mature males. Median dorsal snout ridge low, usually with a shallow emargination on anterior third of snout length, originates near rear of upper jaw, terminates above nares or on anterior half of interorbital; supranarial ridges parallel posterior part of median dorsal snout ridge, terminate posteriad on interorbital near vertical midline of orbits; dorsal rim of orbit flared somewhat laterad, edged with a few enlarged denticulations; nuchal, prenuchal and frontal ridges distinct, irregularly emarginate, thin and translucent in lateral aspect; opercle with a complete longitudinal ridge and with 3–4 supplemental ridges and additional striae below; margins of head ridges largely entire to minutely denticulate. Pectoral-fin base protruding a little laterad, the superior and inferior ridges prominent. Body surfaces depressed between elevated principal ridges; superior and inferior ridges a little flared or angled laterad; ridges of each ring low in front, higher behind, terminating distally in a prominent spine-like point, the margins otherwise largely entire; scutella without longitudinal keels. Dorsal-fin base not elevated; pectoral fin emarginate, the median rays shorter than those above and below; dermal flaps absent from head and body.

Ground color of female or immature male paratype (Fig. 2) tan in preservative, shading to dark brown on distal half of tail; side of head with a dark brown stripe

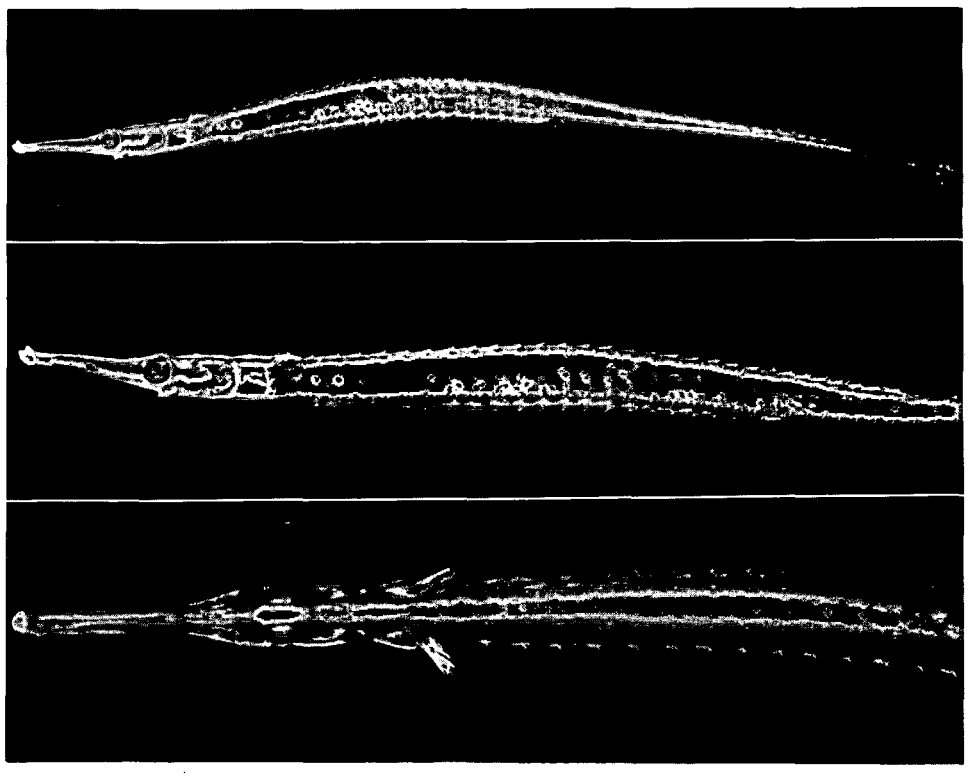

Fig. 2. *Maroubra yasudai*. SMBL 81025 (135.5 mm SL, female or subadult male paratype).

on snout, postorbital, and anterior part of opercle; dorsum of head with narrow brown, bilateral, stripes originating above orbits and extending posteriad along superior body ridges to terminate near the 9th–10th tail ring; pectoral-fin base with a dark stripe between superior and inferior ridges; body elsewhere with faint irregular concentrations of brownish microchromatophores but without prominent markings; dorsal, pectoral and anal fins hyaline; upper third of caudal fin pale, remainder of fin dark brown. Color photographs in Hiyama and Yasuda (1971) and Masuda et al. (1975) show living specimens to have similar dark stripes on head and body, and a red or reddish-orange ground color.

Etymology. The species is named after the late Dr. Fujio Yasuda (Laboratory of Ichthyology, Tokyo University of Fisheries), in recognition of his contributions to Japanese ichthyology.

Comparisons. *Maroubra yasudai* has more trunk rings and total rings (respectively, 22–23 and 50–52 versus 16–17 and 42–45) than its only congener, *M. perserrata* Whitley (1948). Additionally, *M. yasudai* has more dorsal-fin rays (33–36 versus 23–26), somewhat greater numbers of pectoral-fin rays (20–22 versus 16–20), as well as more subdorsal trunk rings (3.0–2.0 versus 0.5–0.0), subdorsal tail rings (6.0–7.0) versus 4.75–5.75) and total subdorsal rings (9.0–9.75 versus 4.75–5.75) than 16 compared specimens of *M. perserrata*. These species have similar proportional values for most treated characters, but *M. yasudai* has a considerably higher snout depth in snout length ratio (8.4–9.9 versus 3.9–6.3 ($\bar{x}$=4.9) in *M. perserrata*). These species share the dark lateral stripe on the head, and some specimens of *M. perserrata* have narrow, dark, bilateral stripes on dorsum of head and trunk, similar to those described above for *M. yasudai*. Both species appear to frequent rocky marine habitats, but *M. yasudai* attains a greater length (at least 161.5 mm SL versus ca. 72 mm SL for *M. perserrata*).

Compared to other pipefishes recorded from Japanese waters, the principal body ridge configuration (Fig. 1, bottom) distinguishes *M. yasudai* from all species except *Solegnathus hardwickii* (Gray) and some specimens of *Syngnathus schlegeli* Kaup, a species wherein lateral trunk and tail ridges are variably continuous or discontinuous. Presence of a caudal fin and absence of a distally coiled (prehensile) tail distinguishes *Maroubra yasudai* from *Solegnathus hardwickii* which lacks the caudal fin and has a prehensile tail. *Maroubra yasudai* is readily distinguished from *Syngnathus schlegeli* by the presence of spine-like points on the principal body ridges (absent in other than postlarval *S. schlegeli*), more pectoral-fin rays (20–22 versus 11–15), and more subdorsal trunk rings (3–2 versus 1.5–0 in *S. schlegeli*).

Remarks. Brooding males of *Maroubra* have eggs deposited on the venter of the trunk separated, on the ventral midline, by the median ventral ridge which bears a thin, membranous, longitudinal fold. There are no protective lateral plates or fleshy membranes, but ventral surfaces are concave between the inferior and median ventral trunk ridges. Present material does not include brooding fish, but three specimens (including holotype) have bilaterally concave ventral trunk surfaces. One of these (URM P.0002) has a fleshy cutaneous layer overlying much of the

bony venter, and these fish are presumably males. The remaining specimen (SMBL 81025), with essentially flat surfaces on either side of the median ventral trunk ridge, is considered to be a female or immature male.

The caudal fin is damaged in the four specimens treated here, but there are 10 caudal-fin rays in the holotype and one paratype (URM P.0001). One fish (URM P.0002) has a regenerated tail with 27 rings (omitted from diagnosis and description) and an aberrant 8-rayed caudal fin. The tail of the remaining fish is evidently not regenerated, but the anomalous caudal fin has 11 rays.

Although presently known only from the vicinity of the Izu Oceanic Park, *Maroubra yasudai* should be expected in rock crevices or caves, in depths of ca. 15–35 m, elsewhere along the southeastern coast of Honshu I., as well as off Shikoku and Kyushu Is., Japan.

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