

## Two New Species of *Ascarophis* (Nematoda, Spirurida) from Marine Fishes of Japan and Palau<sup>1)</sup>

By

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Two new species of *Ascarophis* were obtained from marine fishes collected during the spring of 1978 at southern Japan and the summer of 1980 at the Palau Islands. The nematodes were fixed in hot saline solution, preserved in 5% formalin and cleared in glycerin or Gater's solution. The specimens are deposited in the collection of the National Science Museum, Tokyo.

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### *Ascarophis nasonis* n. sp.

(Figs. 1-6)

*Habitat.* Stomach of *Naso unicornis* (FORSSKÅL) (type host) and *N. lituratus* (BLOCH et SCHNEIDER).

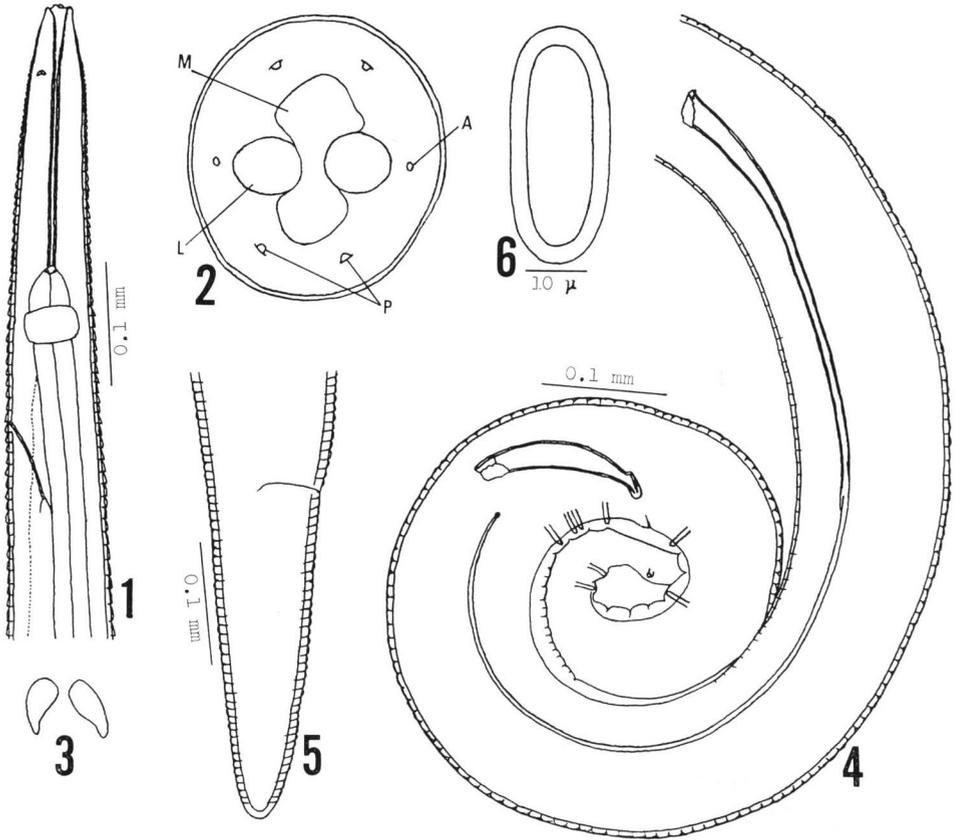
*Locality.* Irabu Island, Okinawa Prefecture, southern Japan (type locality) and Palau Islands.

*Specimen No.* NSMT-As 1496, 1499, 1503 and 1589.

*Description.* Body filiform, tapering anteriorly. Head end slightly wider. Male smaller, spirally coiled posteriorly. Cuticle transversely striated. Mouth dorsoventrally elongate, with a pair of lateral pseudolabia. Two lateral amphids and four cephalic papillae present. Vestibule slender, with very fine transversely striated chitinous wall. Esophagus divided into two portions; the anterior short and muscular, the posterior very long and glandular. Cervical papillae bifurcate, slightly asymmetrical, at junction between first and second quarter of vestibule. Nerve ring anterior of muscular esophagus. Excretory pore at some distance posterior to nerve ring.

*Male.* Body 16.7-20.4 mm long by 0.12-0.15 mm wide at posterior end of esophagus. Head end 19-22  $\mu$  wide. Cuticular transverse striation at 10-19  $\mu$  intervals at posterior end of esophagus. Vestibule 0.18-0.20 mm long, 0.96-1.29% of body length. Esophagus 5.72-7.71 mm long, 33.5-40.4% of body length; muscular and glandular esophagus 0.27-0.32 mm and 5.45-7.40 mm long, respectively, showing a

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Figs. 1-6. *Ascarophis nasonis* n. sp. — 1. Anterior end of female. — 2. Apical view of head end (from SEM-micrograph). — 3. Cervical papilla. — 4. Posterior end of male. — 5. Posterior end of female. — 6. Egg. A, amphid; L, pseudolabium; M, mouth; P, cephalic papilla.

ratio of 1: 20.2-23.8. Cervical papillae, nerve ring and excretory pore 44-64  $\mu$ , 0.21-0.26 mm and 0.27-0.35 mm from head end, respectively. Caudal alae narrow; several longitudinal striae running on ventral surface anterior to caudal alae. Four pairs of preanal papillae and five pairs of postanal papillae pedunculate, of them posterior-most pair has short peduncle. Spicules dissimilar; right spicule short and stout, 0.14-0.20 mm long, left spicule slender, 0.81-1.10 mm long; spicule ratio 1: 5.4-6.6. Tail bluntly pointed, 0.27-0.38 mm long.

Female. Body 25.3-32.5 mm long by 0.23-0.34 mm wide at vulvar region. Head end 23-26  $\mu$  wide. Cuticular transverse striation at 17-26  $\mu$  intervals at posterior end of esophagus. Vestibule 0.17-0.20 mm long, 0.60-0.74 % of body length. Esophagus 7.82-10.45 mm long, 26.7-33.6 % of body length; muscular and glandular esophagus 0.32-0.39 mm and 7.48-10.00 mm long, respectively, showing a ratio of 1: 22.1-29.4.

Cervical papillae, nerve ring and excretory pore 36–62  $\mu$ , 0.23–0.26 mm and 0.29–0.35 mm from head end, respectively. Vulva near midbody, 14.3–19.2 mm from head end and divided body length in proportion of 1: 0.95–1.52. Uterus didelphic, amphidelphic. Eggs elliptical, smooth, thick-shelled, 37–42  $\times$  17–21  $\mu$ , containing larva. Tail bluntly pointed, 0.25–0.30 mm long.

*Discussion.* The present species most resembles *A. orientalis* SPASSKY et RAKOVA, 1958 in having large body size, four pairs of preanal and five pairs of postanal papillae, and an equatorial vulva. *A. orientalis*, however, has very finely striated cuticle (intervals 2–4  $\mu$ ), shorter glandular esophagus (2.218 mm long in the male and 2.880 mm long in the female), less spicule ratio (1: 3.3), shorter female tail (68  $\mu$  long), and oval eggs (44–52  $\mu$  long by 28–32  $\mu$  wide) with a plug bearing two filaments.

*Ascarophis adioryx* n. sp.

(Figs. 7–12)

*Habitat.* Attached to stomach wall of *Adioryx spinifer* (FORSSKÅL) (type host) and *A. ruber* (FORSSKÅL).

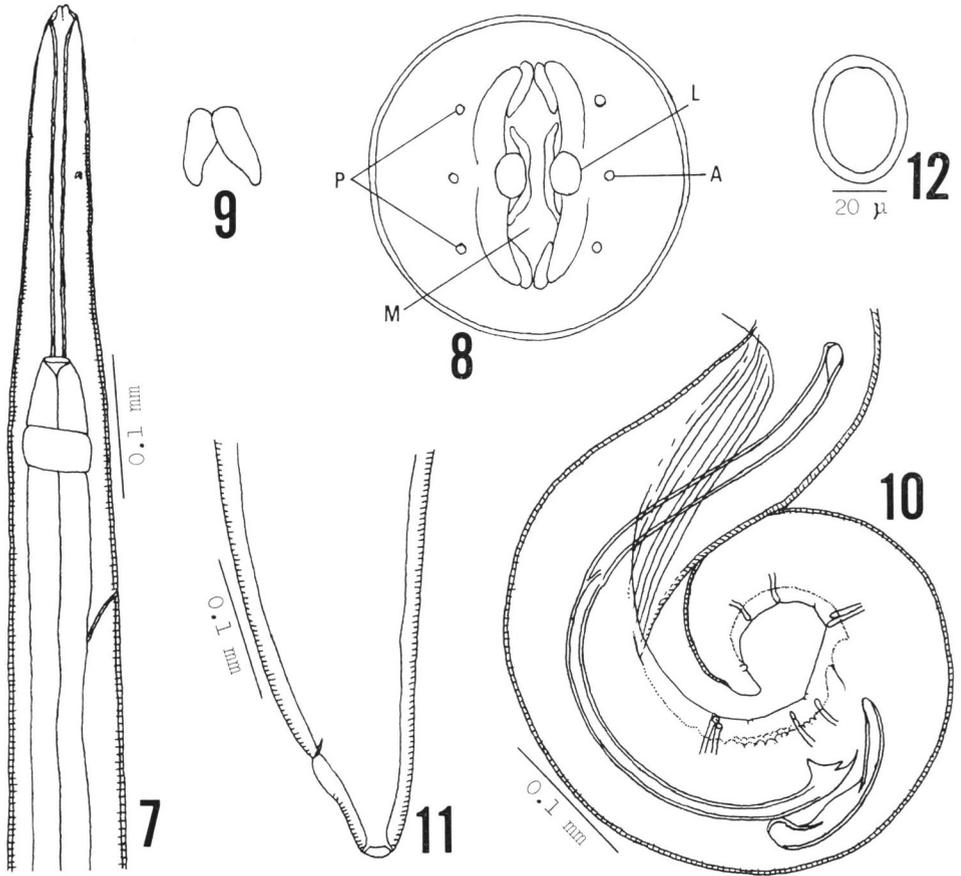
*Locality.* Palau Islands.

*Specimen No.* NSMT-As 1588 and 1611.

*Description.* Body filiform, tapering anteriorly. Male smaller, spirally coiled posteriorly. Cuticle transversely striated. Mouth dorsoventrally elongate, with lateral edge projected like bank. Two lateral pseudolabia, two lateral amphids and four cephalic papillae present. Vestibule slender, with very fine transversely striated chitinous wall. Esophagus divided into two portions; the anterior short and muscular, the posterior long and glandular. Cervical papillae bifurcate, slightly asymmetrical, anterior to midlevel of vestibule. Nerve ring anterior of muscular esophagus. Excretory pore at some distance posterior to nerve ring.

*Male.* Body 7.0–9.0 mm long by 31–39  $\mu$  wide at midlevel of vestibule, and 0.08–0.11 mm wide at posterior end of esophagus. Cuticular transverse striation at 4–5  $\mu$  intervals at level of posterior end of esophagus. Vestibule 0.20–0.24 mm long, 2.4–3.0% of body length. Esophagus 1.62–2.22 mm long, 20.5–26.2% of body length; muscular and glandular esophagus 0.32–0.40 mm and 1.30–1.85 mm long, respectively, showing a ratio of 1: 3.8–5.0. Cervical papillae, nerve ring and excretory pore 0.09–0.13 mm, 0.24–0.28 mm and 0.30–0.36 mm from head end, respectively. Caudal alae narrow; several longitudinal striae running on ventral surface anterior to caudal alae. Four pairs of preanal papillae and five pairs of postanal papillae pedunculate, of them posteriormost pair has short peduncle. Spicules dissimilar; right spicule short, 0.14–0.17 mm long, left spicule slender, 0.53–0.61 mm long, with triangular process at ventral distal end; spicule ratio 1: 3.4–3.8. Tail bluntly pointed, 0.13–0.20 mm long.

*Female.* Body 12.4–15.9 mm long by 39–46  $\mu$  wide at midlevel of vestibule, and 0.13–0.18 mm wide at vulvar region. Cuticular transverse striation at 5–6  $\mu$  intervals at level of posterior end of esophagus. Vestibule 0.22–0.26 mm long, 1.5–1.9% of body



Figs. 7–12. *Ascarophis adioryx* n. sp. — 7. Anterior end of female. — 8. Apical view of head end (from SEM-micrograph). — 9. Cervical papilla. — 10. Posterior end of male. — 11. Posterior end of female. — 12. Egg. A, amphid; L, pseudolabium; M, mouth; P, cephalic papilla.

length. Esophagus 2.10–2.53 mm long, 15.3–17.2% of body length; muscular and glandular esophagus 0.40–0.46 mm and 1.70–2.13 mm long, respectively, showing a ratio of 1: 3.9–5.3. Cervical papillae, nerve ring and excretory pore 0.10–0.12 mm, 0.27–0.31 mm and 0.34–0.40 mm from head end, respectively. Vulva a little posterior to midbody, 7.0–9.0 mm from head end and divided body length in proportion of 1.1–1.4: 1. Uterus didelphic, amphidelphic. Eggs oval, smooth, thick-shelled,  $44\text{--}47 \times 31\text{--}35 \mu$ , containing larva. Tail short, bluntly pointed,  $61\text{--}87 \mu$  long.

*Discussion.* The present species resembles *A. helix* COBB, 1928 and *A. distortus* FUSCO et OVERSTREET, 1978 in having almost equal body size, long vestibule, a vulva nearly equatorial and eggs without filaments. *A. helix*, though the male has not been described, differs by having a cuticle with conspicuous helicoid striations, shorter tail

(26  $\mu$  long) and smaller eggs (40  $\mu$  long by 24  $\mu$  wide). In *A. distortus*, the spicule ratio is greater (1: 5–7), the eggs measure smaller (32–38  $\mu$  long by 23–26  $\mu$  wide), and the tail is longer (265–327  $\mu$  long in the male and 232–302  $\mu$  long in the female).

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