

**Free-living Marine Nematodes. II.**  
***Thoracostoma pacifica* n. sp. from the Coast of Oregon**

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*Thoracostoma pacifica* n. sp. was taken from collections made by Steven Meredith on 10 September 1963 from sediments under mussel beds located in the high-tide zone at Haystack Rock, Oregon. The collection contains 19 males, 15 females, and 5 juveniles.

**DESCRIPTION OF MALE** (Fig. 1, A–J): (4 specimens): L = 25.4 mm (24.2–27.8 mm), a = 83.9 (80.0–91.8), b = 6.7 (6.1–7.7), c = 139.9 (133.5–153.0).

This is a long, slender nematode with marked tapering anteriorly in the esophageal region. There is no posterior tapering other than that encountered on the short, conical tail.

The cephalic capsule extends 44–45  $\mu$  posteriorly; head diameter at level of posterior limits of cephalic capsule is 86–90  $\mu$ . The structure of the cephalic capsule is relatively simple, but manifests considerable variation: the lobes may be smooth and rounded, or possess anteriorly directed points within the fenestrae, or occasionally possess small locules. No cuticular granulation is present posterior to the capsule. There is a circle of six minute papillae positioned relatively far back from the stomal opening. Cephalic setae are ten, each being about 5.2  $\mu$  long. There are six rows of clustered cervical setae immediately behind the head. The positioning of these setae is not constant; in the lateral rows they number about ten. The cuticle is thick and smooth. Somatic setae are present in six rows running the entire length of the body: they are short and conical, about 3  $\mu$  long.

The paired ocelli are positioned between 200 and 250  $\mu$  posteriorly. Eighty to 86  $\mu$  posterior to the ocelli is another pair of pigmented structures of less definite contour than the

ocelli. In both cases the pigment is rust-colored. Usually no definite lens is to be seen; however, in sufficient specimens the lenses are distinct, although seemingly weakly developed.

The esophagus is long and conoid. Esophageal diameter immediately behind the ocelli is 50–52  $\mu$ , and at its base the esophagus measures 100  $\mu$ . The nerve ring is located at 28% of the esophagus; the excretory pore was not observed. Body diameter at base of esophagus is about 240  $\mu$ . The cardia is short: 65  $\mu$  wide and 40  $\mu$  long. It is surrounded by intestinal tissue.

The spicular apparatus was studied after it was removed from the body by dissection. The spicules are complex, quite broad in the dorso-ventral plane. They are 285–290  $\mu$  long. The lateral pieces (Fig. 1, E and F) lie outside of the spicules; are forked proximally, the end of the dorsal fork being located directly over the spicule: distally the lateral pieces are tuboid, with lateral striations at the terminus. The terminus bears hook-like processes and a very small pore. A gubernaculum was not observed.

A large ventral supplement is located about 81  $\mu$  anterior to the cloacal opening. Genital setae are as illustrated (Fig. 1, J). There are two subventral rows of prominent preanal papillae, numbering 10 to 12 per side.

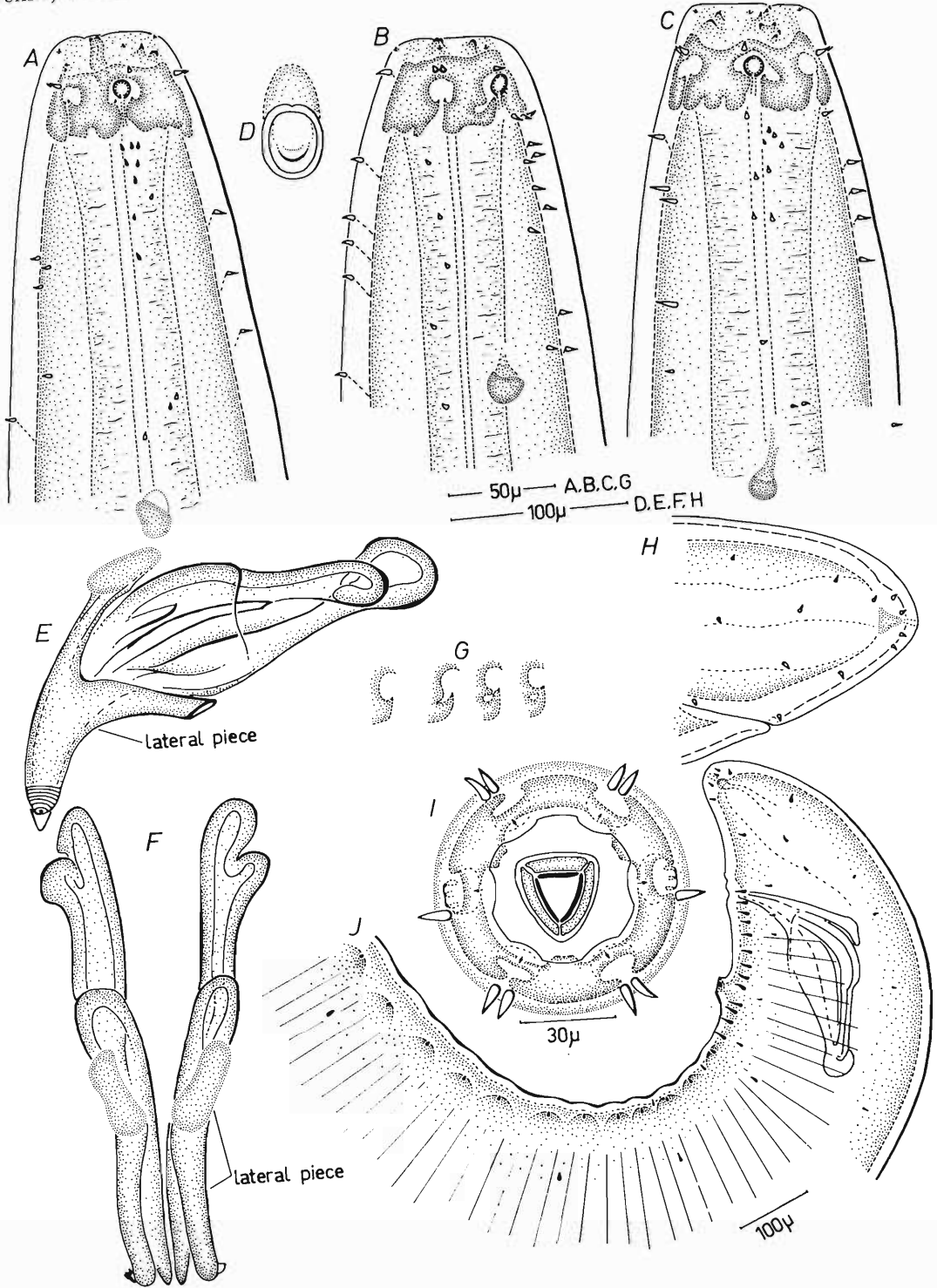
The tail is short and conical, about 90% of the anal diameter in length. Caudal glands are located subdorsally over the intestine; however, they are not distinct and the exact location is difficult to determine.

**DESCRIPTION OF FEMALE** (Fig. 2): (4 specimens): L = 28.6 mm (27.4–30.0 mm), a = 72.0 (69.1–75.0), b = 8.7 (7.0–10.5), c = 143 (137.0–150.0), V = 65.7% (62.5–69.5%).

In general the female resembles the male with the exception that it becomes broader in

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Fig. 1. *Thoracostoma pacifica* n. sp. A, male anterior. B and C, females, anterior. D, ventral preanal supplement. E, spicular apparatus, lateral view. F, spicular apparatus, dorsal view. G, portions of capsular lobes showing progressive variation in contour leading to formation of locule. H, female tail. I, face view of male. J, male posterior.



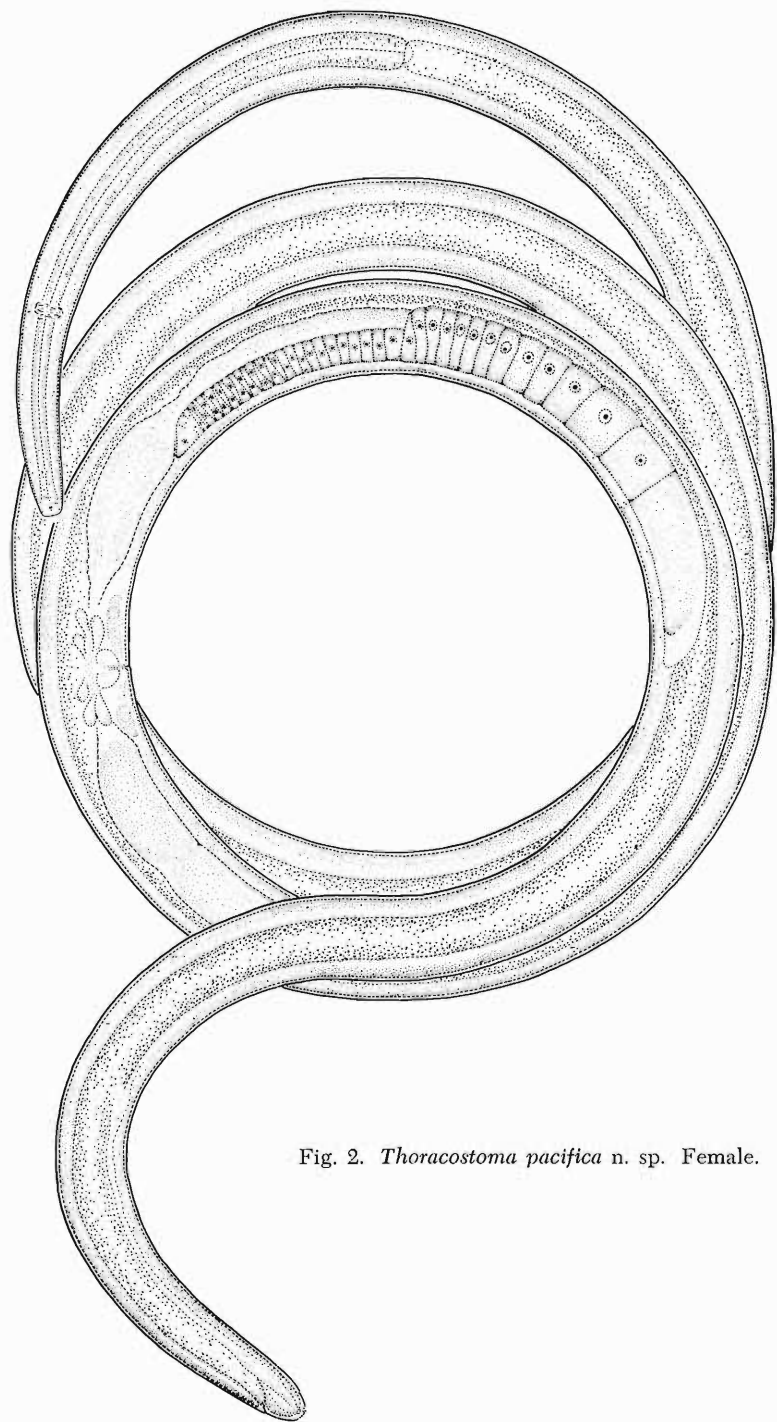


Fig. 2. *Thoracostoma pacifica* n. sp. Female.

the mid-body region. Measurements and descriptions of characters common to the two sexes are the same as given for the male with two exceptions: (1) the female tail is about 75% of the anal diameter in length, and (2) the sculpturing of the cephalic capsule is more often elaborated in the female (the contours are less uniform and locules appear more frequently).

The vulva is surrounded by a circle of about 12 genital setae. The ovaries are paired and outstretched.

REMARKS: As has been often expressed by other authors, the taxonomy of this relatively large genus is made difficult by numerous weak or partial descriptions. Descriptions of new species should never be based upon juvenile or female specimens alone. Careful attention must be paid to details of the male spicular apparatus, supplement, genital papillae, and setae. The density of the cuticle and muscle overlying the spicular apparatus will often necessitate that these structures be removed for study.

The following eight species are more or less closely related to *T. pacifica*. Differentiating features are given.

(1) *T. angustifissulatum* Mawson, 1956 in Inglis, 1964 is related to this species and appears to be a different species than that described by Mawson. At such time as a revision of the genus is made it would be desirable to compare the specimens studied by these authors. Inglis' species differs from mine in possessing but five pairs of preanal papillae, is less than one-half the total length, and has a greater number of locules in the cephalic capsule.

(2) *T. aucklandiae* Ditlevsen, 1921 possesses only two pairs of preanal papillae and is less than one-half the length.

(3) *T. campbelli* Ditlevsen, 1921 possesses sclerotized granules posterior to the cephalic capsule, only five pairs of preanal papillae. (The nematode described in Stekhoven and Mawson, 1955, as *T. campbelli* appears to be another species.)

(4) *T. magnificum* Timm, 1951: spicules much narrower, less complex; nine pairs of papillae. This species was reported from Point Barrow, Alaska, and is probably the most closely related to *T. pacifica*.

(5) *T. karachiense* Timm, 1959: only four

pairs of preanal papillae; less than one-half the length.

(6) *T. philippinensis* Allgen, 1951. The description of this species is weak; however, it is the only one of Allgen's numerous *Thoracostoma* species which I consider sufficiently described to be recognized again. The fenestrae are larger; amphid larger; spicules narrower. Allgen gave no mention of preanal papillae, but it would be reasonable to suggest that they were overlooked.

(7) *T. tabarini* Inglis, 1958: fenestrae of cephalic capsule much shallower.

(8) *T. zaeae*, Inglis, 1964: cephalic capsule much more complex; spicules thinner; only two pairs of preanal supplements.

HOLOTYPE (male): Slide DM123A.

ALLOTYPE (female): Slide DM123B.

PARATYPES (18 males, 14 females): Slides DM123A-DM123M.

The collection is being temporarily maintained by the author. Institutional deposition will be published at a later date.

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