

MCZ  
LIBRARY

DEC 05 1995

HARVARD  
UNIVERSITY

# Free-living marine nematodes from Deseado river estuary, Santa Cruz, Argentina. 12

(Ironoidea, Leptosomatidae, Thoracostomatinae)

By Catalina T. Pastor de Ward

Pastor de Ward, C. T. (1995): Free-living marine nematodes from Deseado river estuary, Santa Cruz, Argentina. 12. (Ironoidea, Leptosomatidae, Thoracostomatinae). – Spixiana 18/3: 201-209

Three species of the family Leptosomatidae are discussed from various habitats of the Deseado river estuary. Two species are new to science: *Pseudocella chincha*, spec. nov. and *Thoracostoma dentatum*, spec. nov. The diagnostic feature of *Pseudocella chincha*, spec. nov. is the presence of teeth on the mandibular ridges. *Thoracostoma dentatum*, spec. nov. has a typical teeth configuration. The description of the genital apparatus of *Thoracostoma setosum* is added.

Catalina T. Pastor de Ward, Centro Nacional Patagónico, C. C. 128, (9120) Puerto Madryn, Chubut, Argentina

## Introduction

This work is the twelfth of a series about marine nematodes from various habitats of the Deseado river estuary, Santa Cruz, Argentina. Within the family Leptosomatidae two new species are described. *Thoracostoma setosum* Linstow, 1896, a well known species is reported from Argentine coasts, and details of the genital apparatus are given for the first time, with other additional information not included in the previous description.

All species described in this paper have been found in the microhabitat formed between surface valve crests of *Aulacomya atra atra* and the colonial ascidean *Didemnum studeri*.

## Material

Deseado river estuary is located 47°45'S and 65°55'W. The samples were taken during the period 1976-1979. The specimens have been fixed following Ditlevsen's (1911) method, stained with blue Nilo and preserved in pure glycerine. The drawings were made using a Zeiss microscope drawing device and photographs were taken with a Zeiss photomicroscopy equipped with differential interference contrast (DIC). The material, including the type specimens, has been deposited in the Museo de Ciencias Naturales, Bernardino Rivadavia, Buenos Aires. The De Man's ratios used in this paper are explained as follows: L = total length; a = L/maximum width (at the middle of the body in males and at the vulva level in females); b = L/esophageal length; c = L/tail length; Spic. (A. D.) = spicular length in microns (in anal diameters); %V = distance for anterior end to the vulvae opening in percentage of the total length.

The abbreviations used are: m = male; f = female; AD. = anal diameter; Cg. = glandular cell; ODD. = dorsal odontium; ODL. = lateral odontium; ON. = onchium; TRO. = trophies; cl = cloaca; SUP. = pre-cloacal organ; V. = vulva.

## Results

All species belong to Ironoidea, family Leptosomatidae, subfamily Thoracostomatinae.

### *Pseudocella chincha*, spec. nov.

Figs 1A-J, 2a-j

Types. Holotype: ♂, No. 962; allotype: ♀, No. 967, Isla Quiroga, 5/5/77.

#### Description

De Man's ratios. ♂. L: 7.700 µm; a: 38.5; b: 5.9; c: 45.3; Spic.: 170; Gub.: 80. – ♀. L: 7.30 µm; a: 36.5; b: 5.9; c: 52.1; %V: 60.3.

Six labial papillae and 6+4, 15 µm long cephalic setae. Buccal cavity formed by three microlabium with well developed mandibular ridges. The dorsal mandibular ridge is oval shaped and the sublateral triangular shaped with one tooth pointing upwards. Onchium present, 7 µm wide and 15 µm long. Irregular cephalic capsule 50-25 µm long and 25-50 µm wide, with anchor shaped channels in front of the amphids (Fig. 1B). Interlobular channels in subdorsal and subventral position, long, narrow and wide in lateral position, behind the amphids. Amphids 10 µm in diameter.

Cervical setae in series 4-2-2-1-1 and 4-2-2-1-2, have been observed, 5 µm or just behind cephalic capsule. Strong pigmentation on oesophageal walls.

Male genitalia. Testes opposite in left position to the intestine. Asymmetrical spicules 170 µm long (1.2 A. D.). Gubernaculum, 40 µm long with dorso-caudal median piece 40 µm long and a ventro-caudal apophysis 80 µm long. Pre-cloacal cup organ presents 100 µm from the cloaca and seven bursal papillae. Sixteen bursal setae, 15 µm long also have been observed, from pre-cloacal organ to 60 µm behind the cloaca.

Female genitalia. Antidromously reflexed ovaries.

Discussion. *Pseudocella chincha* is related to *Pseudocella panamaense* (Allgen, 1947), *P. wieseri* Hope, 1967, *P. elegans* (Ditlevsen, 1926), and *P. coeca* (Ssaweljev, 1912). From these the new species is differentiated by the presence of teeth on the microlabium. *Pseudocella chincha* differs from *P. pseudocellum* (Filipjev, 1927) in general measurements and by position and number of cervical setae.

### *Thoracostoma dentatum* sp. nov

Figs 4a-d, 5A-J, 6a-h

Types. Holotype: ♂, No. 940; allotype: ♀, No. 942. Ba. Uruguay, La Trampa, 27/1/75. In eulittoral mud.

#### Description

De Man's ratios. ♂. L: 14.800 µm; a: 59.2; b: 7.0; c: 74; Spic.: 270; Gub.: 160. – ♀. L: 14.500 µm; a: 48.3; b: 6.0; c: 96.6; V%: 59.3.

Six labial papillae and 6+4 cephalic setae, six 12 µm and four 15 µm long. Cephalic diameter 70-60 µm. Three microlabium present with mandibular ridges, one dorsal with three central pieces having two teeth each and a small tooth on both sides. On sublateral microlabium there are three teeth on each lateral side. Pigment spot, cup shaped 130 µm (1.8 C. D.). Trophies 10 µm long and 8 µm wide. Cephalic capsule 20 µm in its longer zone and 40 µm in the trophies zone and presents a lot of holes and channels 10 µm long in subdorsal and subventral position. Amphids 10 µm wide and 10 µm long. Cervical setae present, the first two crowns have four setae in sublateral position and one in subventral and subdorsal position. The third and fourth crown have two setae in sublateral position and one in subdorsal and subventral position respectively.

Female genitalia. Antidromously reflexed ovaries.

Male genitalia. Two opposite testis. Bicephalized spicules with velum, 270 µm long (1.35 A. D.), paired gubernaculum 180 µm long with distal ornamentation transverse to the spicules. A pair of gubernaculum pieces around the spicules in ventral position (Fig. 5A). Cup shaped pre-spicular organ,

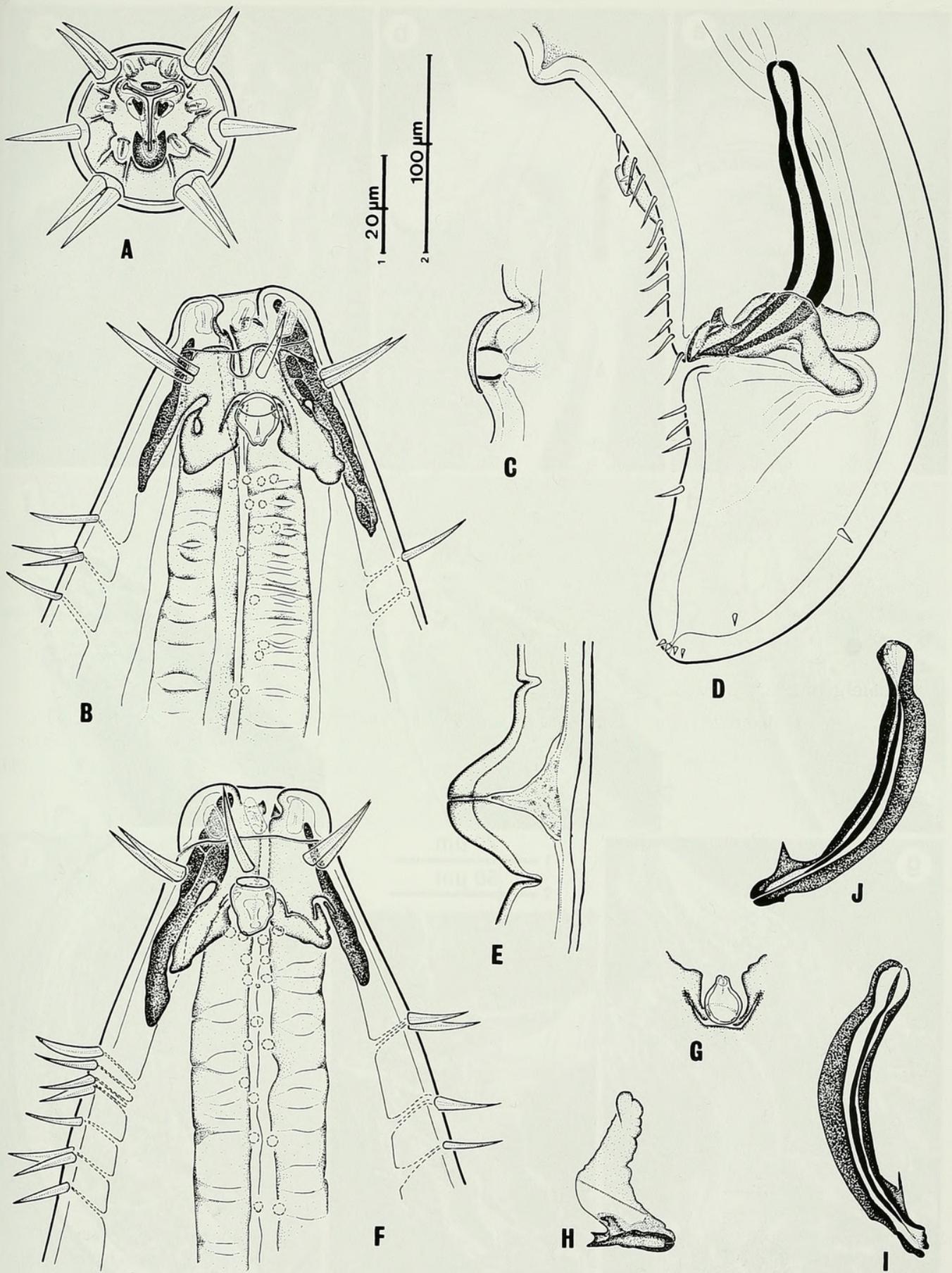


Fig. 1. *Pseudocella chincha*, spec. nov. A. Head, face view. B, F. Lateral view of anterior part of body. C. Cloacal supplement. D. Spicular apparatus. E. Pre-cloacal papillae. G. Amphid. H. Gubernaculum (right). I-J. Right and left spicules. Scales. 1: A, B, C, E, F, G; 2: D, H, I, J.

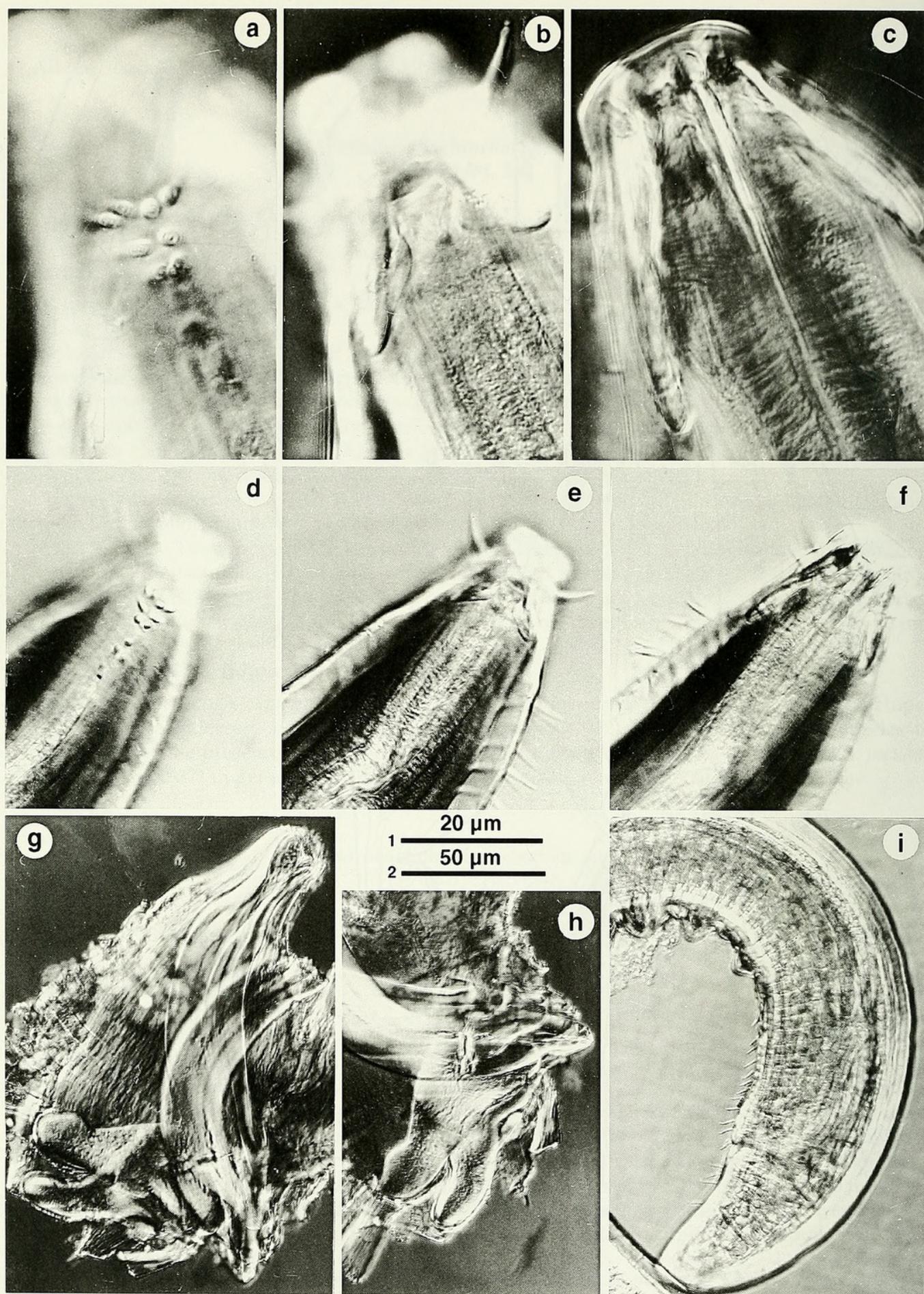


Fig. 2. *Pseudocella chincha*, spec. nov. a-c. Head, lateral view. e-g. Anterior end, lateral view. h. Spicula. i. Gubernaculum. j. Pre-cloacal organ and bursal setae. Scales. 1: a, b, c; 2: e, r, g, h, i, j.

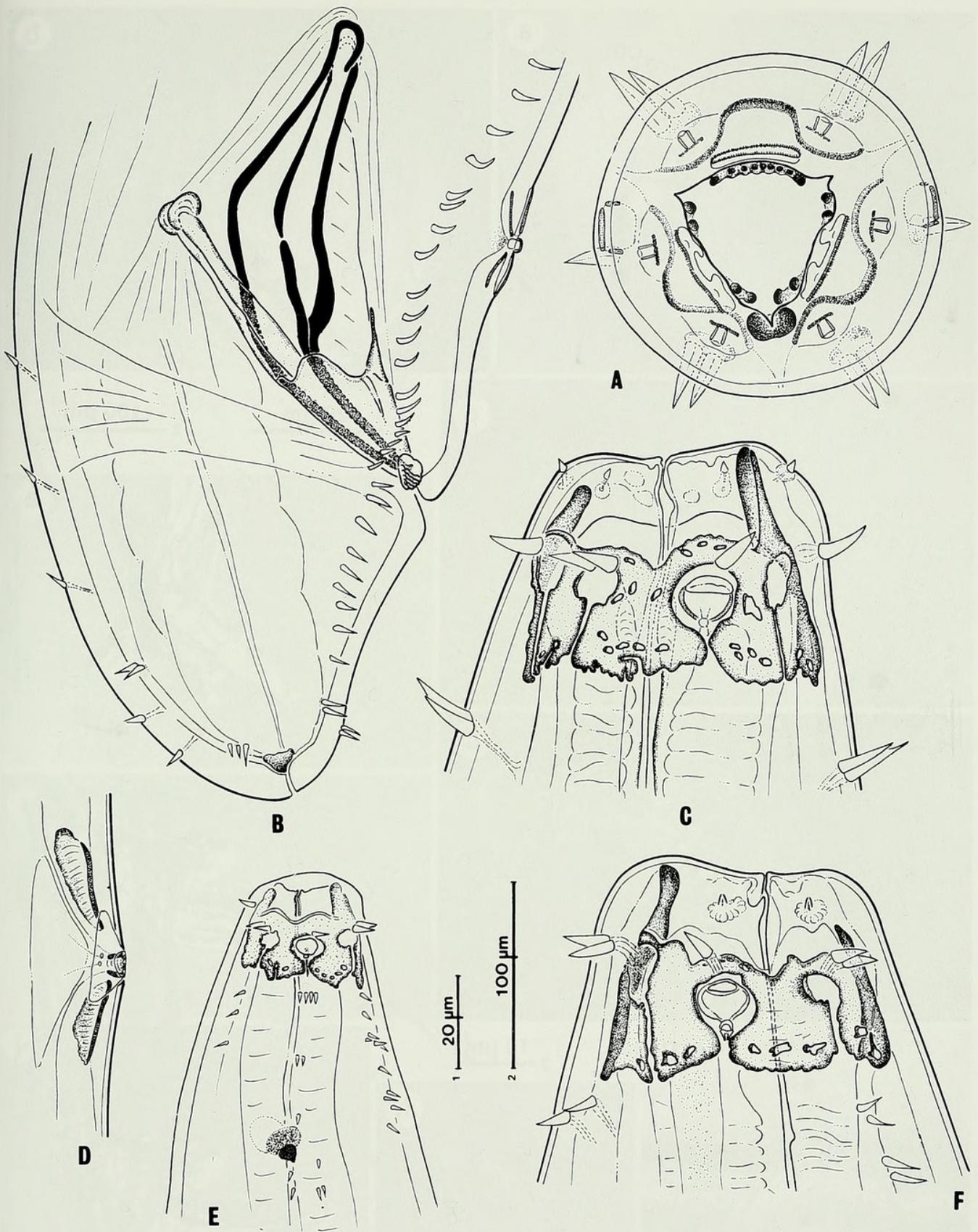


Fig. 3. *Thoracostoma setosum* forma 1. A. Head, face view. B. Posterior end, lateral view. C, F. Head, lateral view. D. Pre-cloacal organ. E. Anterior end, lateral view, pigment spot. Scales. 1: A, C, D, F; 2: B, E.

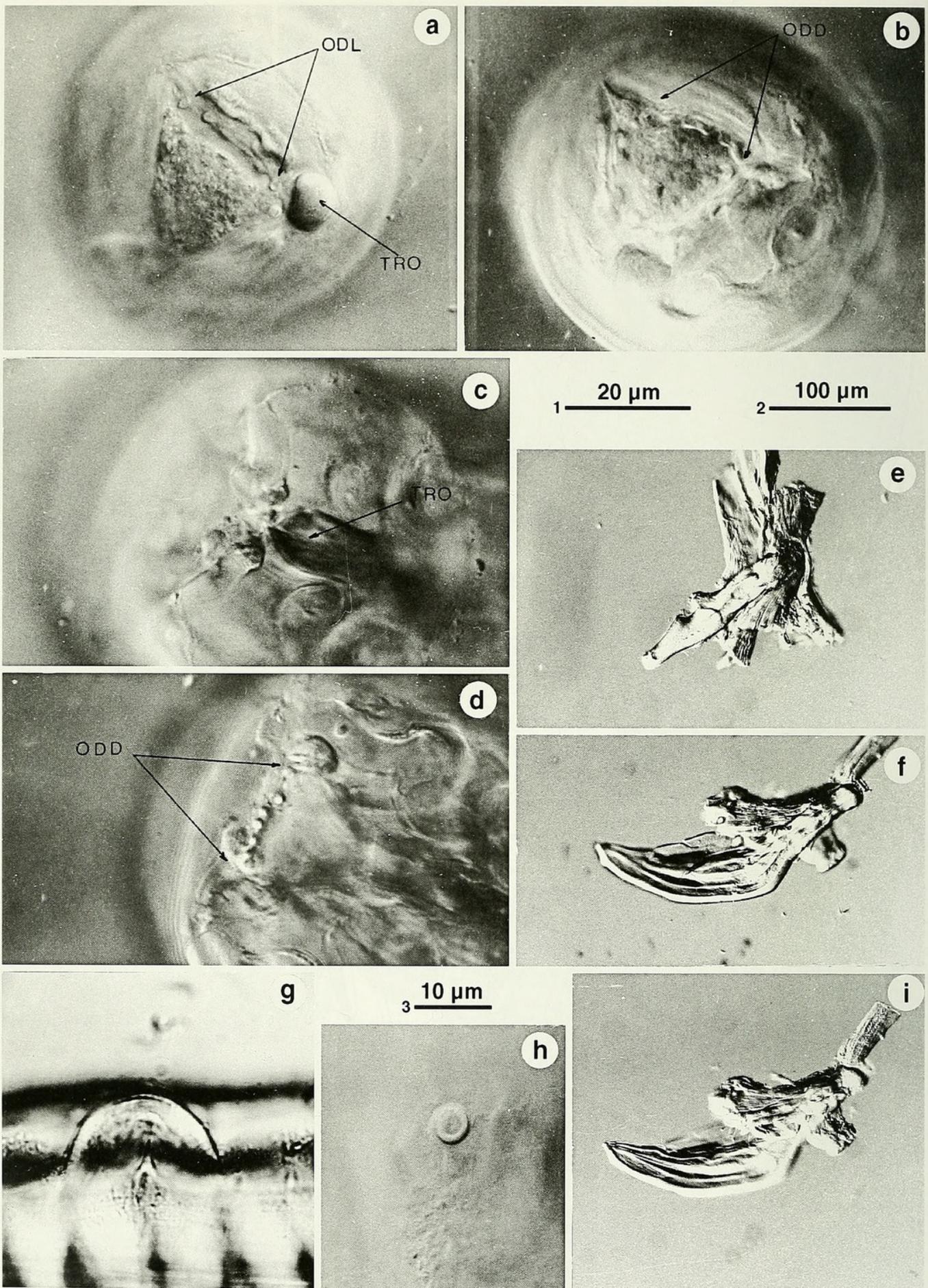


Fig. 4. a-d. *Thoracostoma dentatum*. a-b. Head, face view. c, d. Head, face subventral view. e-i. *Thoracostoma setosum*. e. Gubernaculum. f, i. Spicules. g. Pre-cloacal organ, lateral view. h. Pre-cloacal organ, ventral view. Scales. 1: a, b, c, e, g; 2: d, f, h.

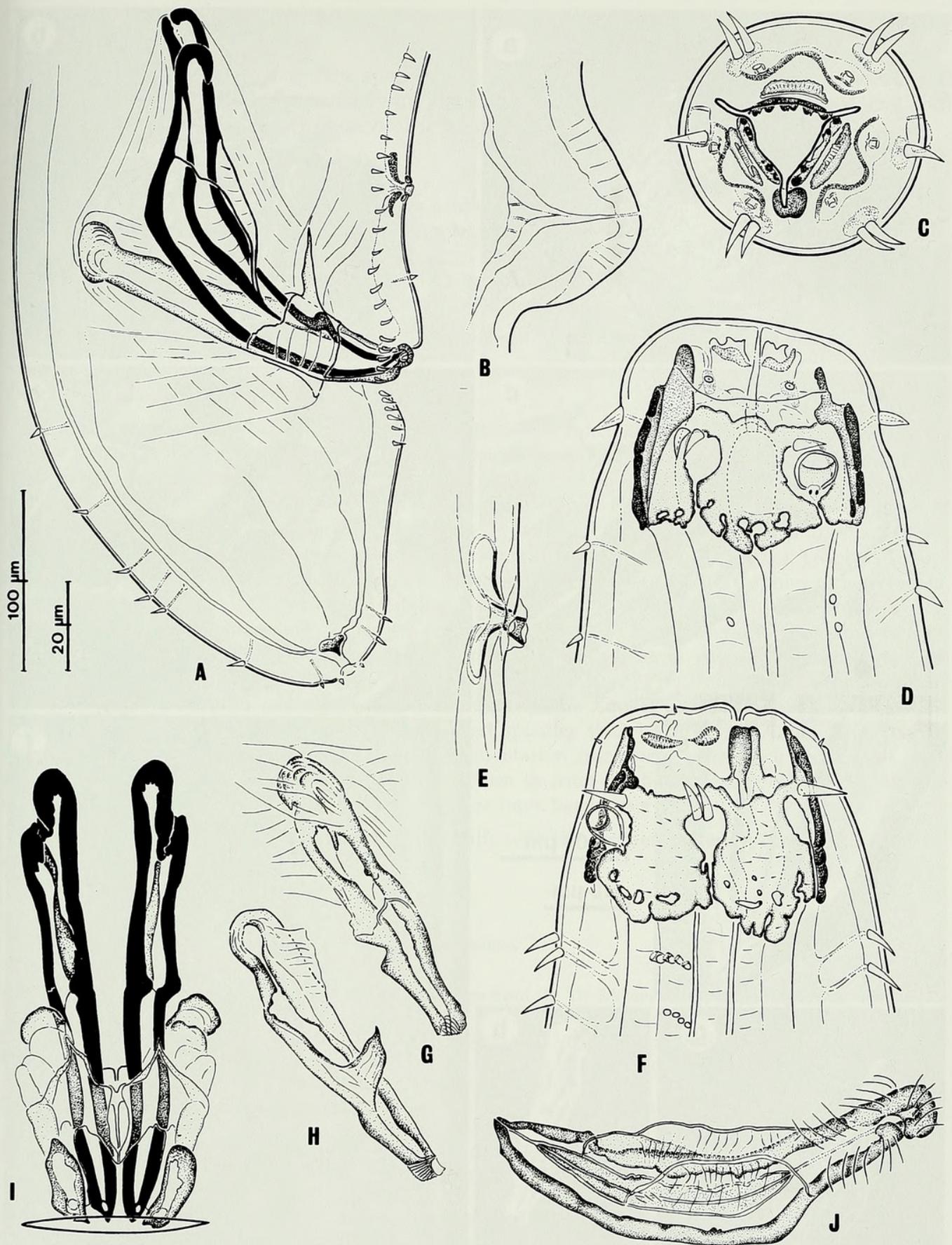


Fig. 5. *Thoracostoma dentatum*. A. Spicular apparatus. B. Pre-cloacal papillae. C. Head, face view. D-F. Head, lateral view. E. Pre-cloacal organ. G-H. Gubernaculum. I. Spicular apparatus, ventral view. J. Spicule. Scales: 1: A, G, H, I, J; 2: B, C, D, E, F.

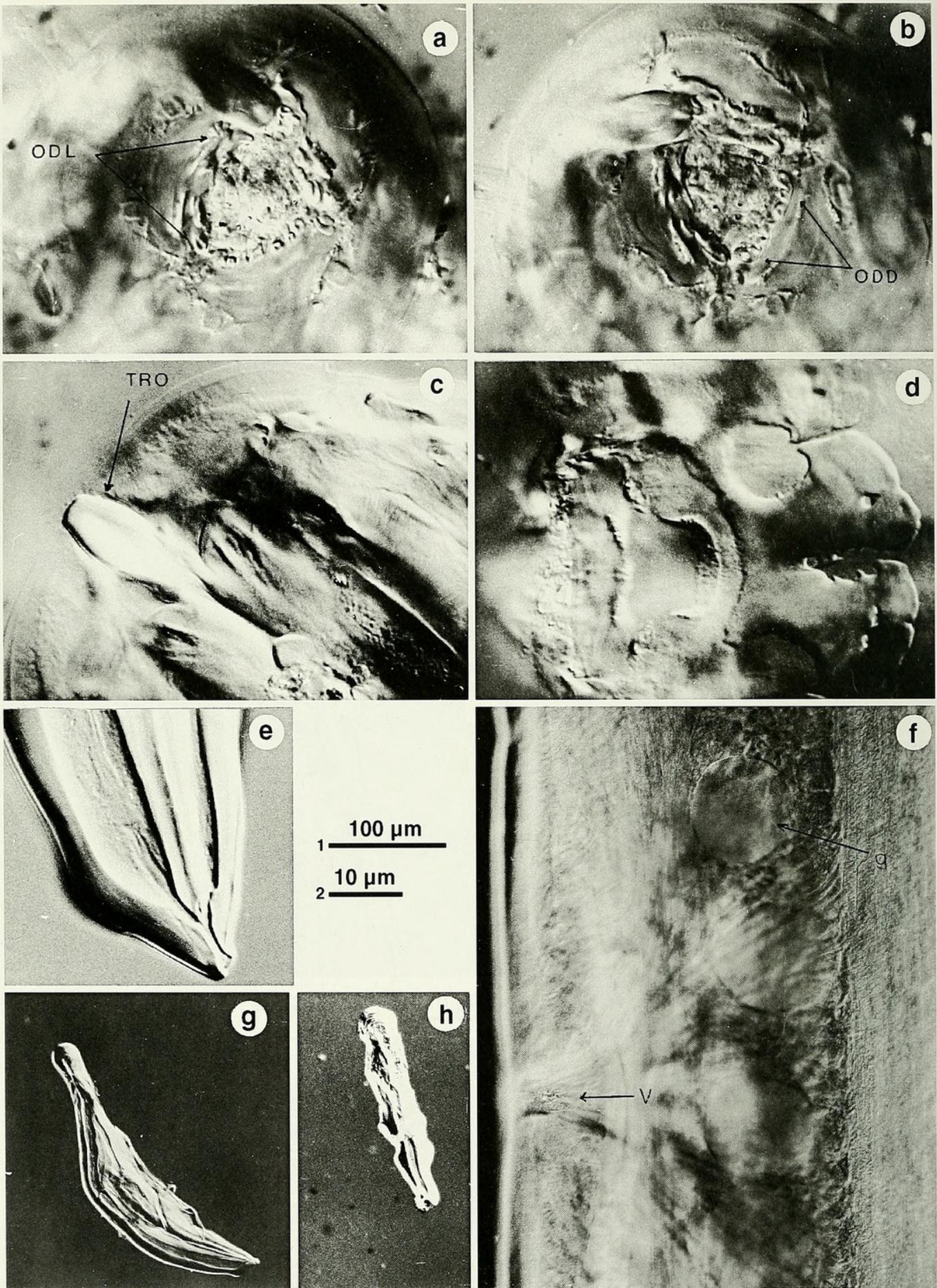


Fig. 6. *Thoracostoma dentatum*. a,b. Head, face view. c. Trophies. d. Cephalic capsule. e. Spicule tip. f. Vulva and glands. g. Spicule. h. Gubernaculum. Scales. 1: g, h; 2: a, b, c, d, e, f.

100  $\mu\text{m}$  (0.4 A. D.) in front of the cloacal opening (Fig. 5e). In subventral position 18 bursal setae and five papillae have been observed.

Discussion. *Thoracostoma dentatum*, spec. nov. is a species closely related to *Thoracostoma setosum* (Linstow, 1896) but differs by the following diagnostic features: teeth configuration on dorsal and sublateral microlabium, number of cervical setae, and position of pigment organ.

### *Thoracostoma setosum* (Linstow, 1896)

Figs 3A-F, 4e-h

Types. Paratypes:  $\delta$ , No. 919. Isle Quiroga, 5/5/77. Littoral fringe microhabitat *Didemnum-Aulacomya*; 1 $\varphi$ , 1 $\delta$ , No. 911, 912. 1/2/78. Isle Quinta, infralittoral coarse sand.

Geographical distribution: Fuegian Archipelago; South Georgia Island; Chile.

#### Description

De Man's ratios.  $\delta$  (1). 14.040  $\mu\text{m}$ ; a: 56.2; b: 6.40; c: 63.8; Spic.: 280; Gub.: 200. –  $\delta$  (2). 19.400  $\mu\text{m}$ ; a: 64.6; b: 10.7; c: 97.0; Spic.: 270; Gub.: 200. –  $\varphi$ . 19.600  $\mu\text{m}$ ; a: 57.6; b: 7.00; c: 98.0; V%: 57.1.

Six labial papillae and 6+4 cephalic setae, six 10  $\mu\text{m}$  and four 15  $\mu\text{m}$  long. Cephalic diameter 50-60  $\mu\text{m}$ . Three microlabium present with mandibular ridges. One dorsal mandibular ridge with seven small teeth centrally positioned and a tooth on both sides. Two sublateral mandibular ridges with a pair of big teeth on each lateral side. Pigment spot, cup shaped 180  $\mu\text{m}$  (3 C. D.). Trophies 10  $\mu\text{m}$  long and 5  $\mu\text{m}$  wide. Cephalic capsule 20  $\mu\text{m}$  in its longer zone and 50  $\mu\text{m}$  in the trophies zone, presents a lot of holes and channels 15  $\mu\text{m}$  long in subdorsal and subventral position. Amphids 10  $\mu\text{m}$  wide and 10  $\mu\text{m}$  long. Cervical setae present, the first crown has four setae in sublateral position and two in subventral and subdorsal position. The second crown has two setae in sublateral position, one in subdorsal and subventral respectively.

Female genitalia. Antidromously reflexed ovaries.

Male genitalia. Two opposite testis. Bicephalized spicules with velum, 280-270  $\mu\text{m}$  long, paired gubernaculum 160-200  $\mu\text{m}$  long with distal ornamentation transverse to the spicules. Small crus present. Cup shaped pre-spicular organ, 100-145  $\mu\text{m}$  in front of the cloacal opening (Fig. 4h). In subventral position 22 bursal setae and five papillae have been observed.

Discussion. The mentioned specimens agree totally with the excellent redescription of *Thoracostoma setosum* (Linstow, 1896) by De Man (1904).

#### References

- Allgen, C. 1947. West American marine nematodes (Papers from Dr. Th. Mortensen's Pacific Expedition 1914-16). - Vidensk. Meddr. dansk. naturh. Foren. **110**: 65-219
- De Man, J. G. 1904. Nematodes libres (Expedit. Antarctique Belge). - Result. Voyage S. Y. Belgica: 1-51.
- Ditlevsen, J. 1911. Danish free-living nematodes. - Vidensk. Meddr. dansk naturh. Foren. **63**: 213-256
- 1926. Free-living Nematodes. - The Danish Ingolf-Exped. **4** (6): 1-42
- Filipev, I. 1927. Les nematodes libres des mers septentrionales appartenant à la famille des Enoplidae. - Arch. Naturgesch. **91** A (6): 1-126
- Hope, D. 1967. Free-living marine nematodes of the genera *Pseudocella* Filipjev, 1927, *Thoracostoma* Marion, 1870 and *Deontostoma* Filipjev, 1916 (Nematoda: Leptosomatidae) from the west coast of North America. - Trans. Am. microsc. Soc. **86**: 307-334
- Linstow, O. v. 1896. Nematelminthen. - Hamburger Magelhaensische Sammelreise (Hamburg), 22 pp.
- Ssaweljev, S. 1912. Zur Kenntnis der freilebenden Nematoden des Kolafjords und des Relictensee Mogilnoje. - Trudy imp. S.Petersb. Obshch. Estest. **43**: 108-126



Pastor de Ward, Catalina T. 1995. "Free-living marine nematodes from Deseado river estuary, Santa Cruz, Argentina. (Ironoidea, Leptosomatidae, Thoracostomatinae)." *Spixiana* 18, 201–209.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/89573>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/66106>

**Holding Institution**

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

**Sponsored by**

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

**Copyright & Reuse**

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Zoologische Staatssammlung München

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.