

New species of the genera *Chronogaster* (Araeolaimida: Chronogasteridae) and *Dorylaimellus* (Dorylaimida: Belondiridae) from Vietnam (Nematoda)

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Gagarin, V.G. & Nguyen, V.T. 2004. New species of the genera *Chronogaster* (Araeolaimida: Chronogasteridae) and *Dorylaimellus* (Dorylaimida: Belondiridae) from Vietnam (Nematoda). *Zoosystematica Rossica*, **12**(2), 2003: 145-149.

Chronogaster pseudotypica sp. n. (fam. Chronogasteridae) and *Dorylaimellus vietnamicus* sp. n. (fam. Belondiridae) from freshwater bodies of Vietnam are described and illustrated.

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Introduction

The nematode samples were collected from the Cau River (North Vietnam) and the Mekong Delta (South Vietnam) by collaborators of the Institute of Ecology and Biological Resources (Hanoi, Vietnam). Nematodes were fixed in 4% formalin, processed with glycerin and mounted in permanent slides, from which the descriptions and illustrations were made under a light microscope.

Chronogaster pseudotypica sp. n. (Figs 1-7)

Holotype. ♀, **North Vietnam**, prov. Thai Nguyen, Cau River (affluent of Cam River), depth 1-2 m, silt, 20.III. 2002; slide 48/1, deposited at the Institute of Inland Waters Biology.

Paratypes. 12 ♀, collected with holotype; **South Vietnam**, Ho Chi Minh City coastal zone territory: 15 ♀ (only mature specimens), Mekong Delta, depth 1 m, silt; all specimens are deposited at the Institute of Ecology and Biological Resources (Hanoi).

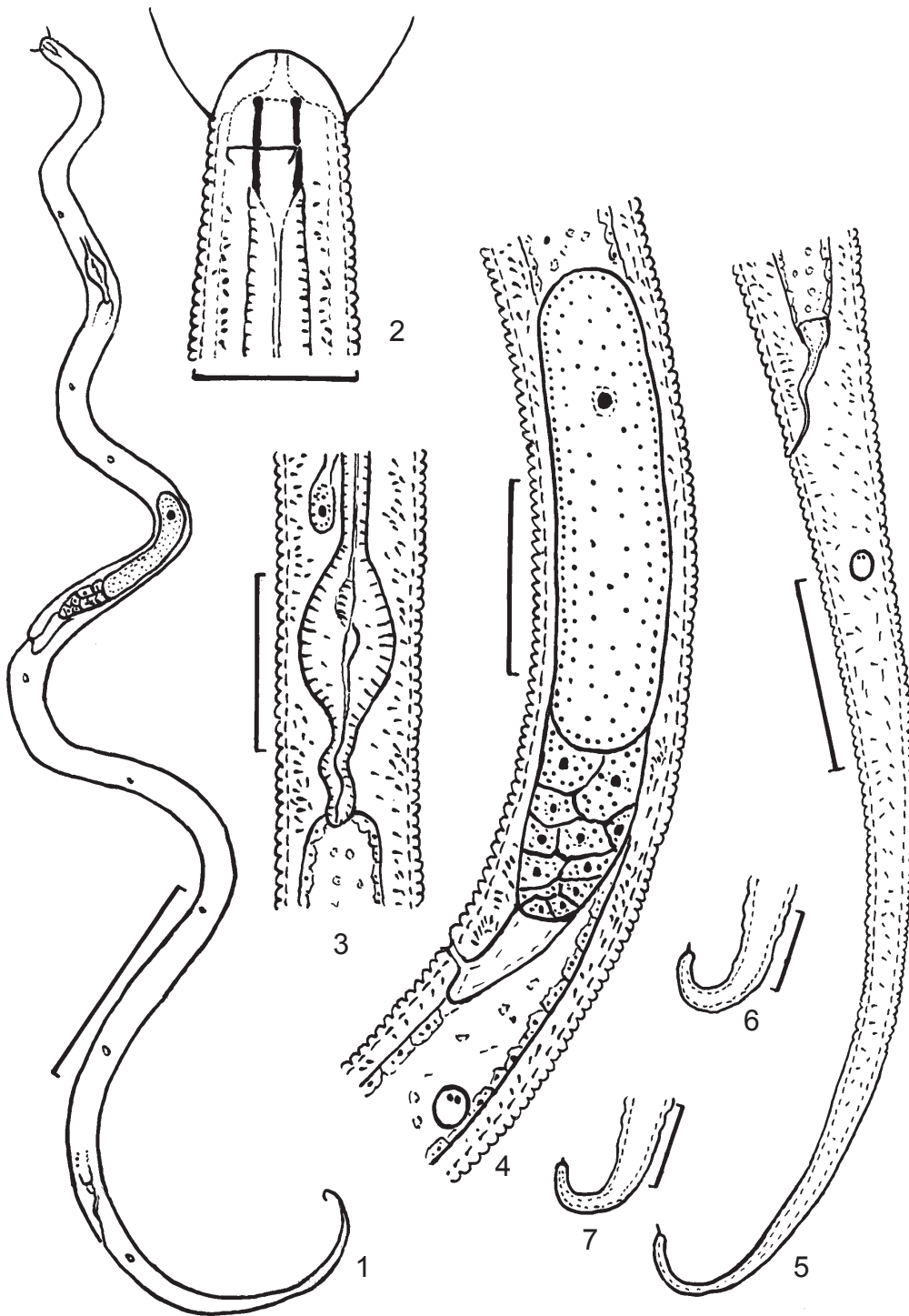
Measurements. See Table 1.

Description. Female. Cuticle annulated; annuli 1.8 µm wide in mid-body region, 1.5 µm wide at anterior part of oesophagus and on tail. Posterior end of tail appearing as smooth under light microscope. Lateral fields and longitudinal ridges absent. Hypodermal paralateral glands invisible. Vacuolated glandular bodies visible in eight females: one body in oesophagus region, 3-4 between posterior end of oesophagus and vulva, 3-

5 between vulva and anus, and one in tail. Elongate-ovoid crystalloids present along the entire body length, numerous in mature old females. Anterior body end narrowed. Lip papillae absent. Cephalic setae four in number, thin, slightly longer than width of lip region. Amphid stirrup-shaped, with aperture at mid-stoma. Cheilostoma comparatively high, not cuticularized. Prostoma cylinder-shaped, strongly cuticularized. Telostoma funnel-shaped. Tooth-like structures in stoma absent. Oesophagus muscular, comparatively long, with radial tubules. Nerve ring situated slightly posterior to the middle of oesophagus. Excretory pore and hemizonid invisible. Basal bulb oval, well developed, 24-28 µm long, 16-18 µm wide, with longitudinal rows of seven denticles each. Post-bulbar extension 15-18 µm long. Rectal bulb well developed. Tail arcuate ventrally, elongate-conoid, apically with a short central mucrois which, usually hardly visible. Female reproductive system prodelphic, monodelphic. Ovary reflexed, lying to the right from intestine. Posterior uterine sac very short. Vagina 7.0-8.5 µm long, perpendicular to body wall. Vulva in shape of small transverse slit situated in a depression. Egg 84 Ч 20 µm, found in one female.

Male unknown.

Comparison. The new species is similar to *Ch. cameroonensis* Heyns & Coomans, 1984 and *Ch. ethiopica* Abebe & Coomans, 1996 in the pres-



Figs 1-7. *Chronogaster pseudotypica* sp. n., female. 1, habitus; 2, head; 3, oesophagus bulb region; 4, vulva region; 5, tail; 6-7, shape of tail terminus. Scales: 100 μm (1), 30 μm (5), 25 μm (3, 4), 10 μm (2), 5 μm (6, 7).

Table 1. Measurements of *Chronogaster pseudotypica* sp. n. (females; all measurements in µm; NA, number of annuli).

Characteristics	Holotype	Paratypes			
		Cau River (n = 11)		Mekong Delta (n = 14)	
		range	mean	range	mean
L	1243	960-1210	1084	1109-1379	1234
a	52	40-71	49	52-77	61
b	4.9	4.3-5.3	4.7	4.3-5.3	4.8
c	8.1	6.4-8.1	7.3	7.2-9.1	8.2
c'	10.0	8.6-12.7	10.7	8.1-13.0	10.8
V	51.6	47.3-52.9	50.8	48.6-52.0	50.4
Oesophagus length	252	197-262	231	252-273	258
Posterior oesophagus end – vulva	389	241-336	304	294-441	364
Vulva – anus	448	343-504	398	399-525	461
Tail length	154	130-185	151	140-168	151
Labial region width	8	7-9	8	7-8	8
Cephalic setae length	8.5	8-10	9	8-10	9
Stoma length	10	10-11	10	10-11	10
Distance from stoma end to radial tubules	24	18-26	22	20-28	24
Ratio of rectum length to anal diameter	1.4	1.4-1.5	1.4	1.4-1.5	1.4
NA, oesophagus region	153	129-151	140	150-173	160
NA, posterior oesophagus end – vulva	232	176-227	200	220-263	241
NA, vulva – anus	275	222-280	248	272-312	291
NA, tail	100	97-101	98	100-111	105
NA, whole body	760	630-751	686	737-842	787

ence of crystalloids and vacuolated glandular bodies and the absence of lateral fields and hypodermal paralateral glands. *Ch. pseudotypica* sp. n. differs from *Ch. cameroonensis* in the shorter body (in *Ch. cameroonensis*, the body is 0.92-0.95 µm long), shorter and thicker tail (in *Ch. cameroonensis*, $c = 4.0-4.3$, $cr = 21.8-23.8$), position of vulva (in *Ch. cameroonensis*, $V = 43.5-44.5$), width of lip region (in *Ch. cameroonensis*, the lip region is 6 µm wide), size of egg (in *Ch. cameroonensis*, it is 65-70 Ч 17 µm), and position of radial tubules (in *Ch. cameroonensis*, they are situated at 14.0-14.5 µm from the base of stoma) (Heyns & Coomans, 1984). *Ch. pseudotypica* differs from *Ch. ethiopica* in the thicker tail (in *Ch. ethiopica*, $cr = 15.0-17.8$), position of vulva (in *Ch. ethiopica*, $V = 45.4-46.1$), longer stoma (in *Ch. ethiopica*, the stoma is 5.5 µm long), position of radial tubules (in *Ch. ethiopica*, they are situated at 14.0-14.5 µm from the base of stoma), and longer cephalic setae (in *Ch. ethiopica*, cephalic setae are 6 µm long, i.e. 0.85-1.0 times the lip region) (Abebe & Coomans, 1996).

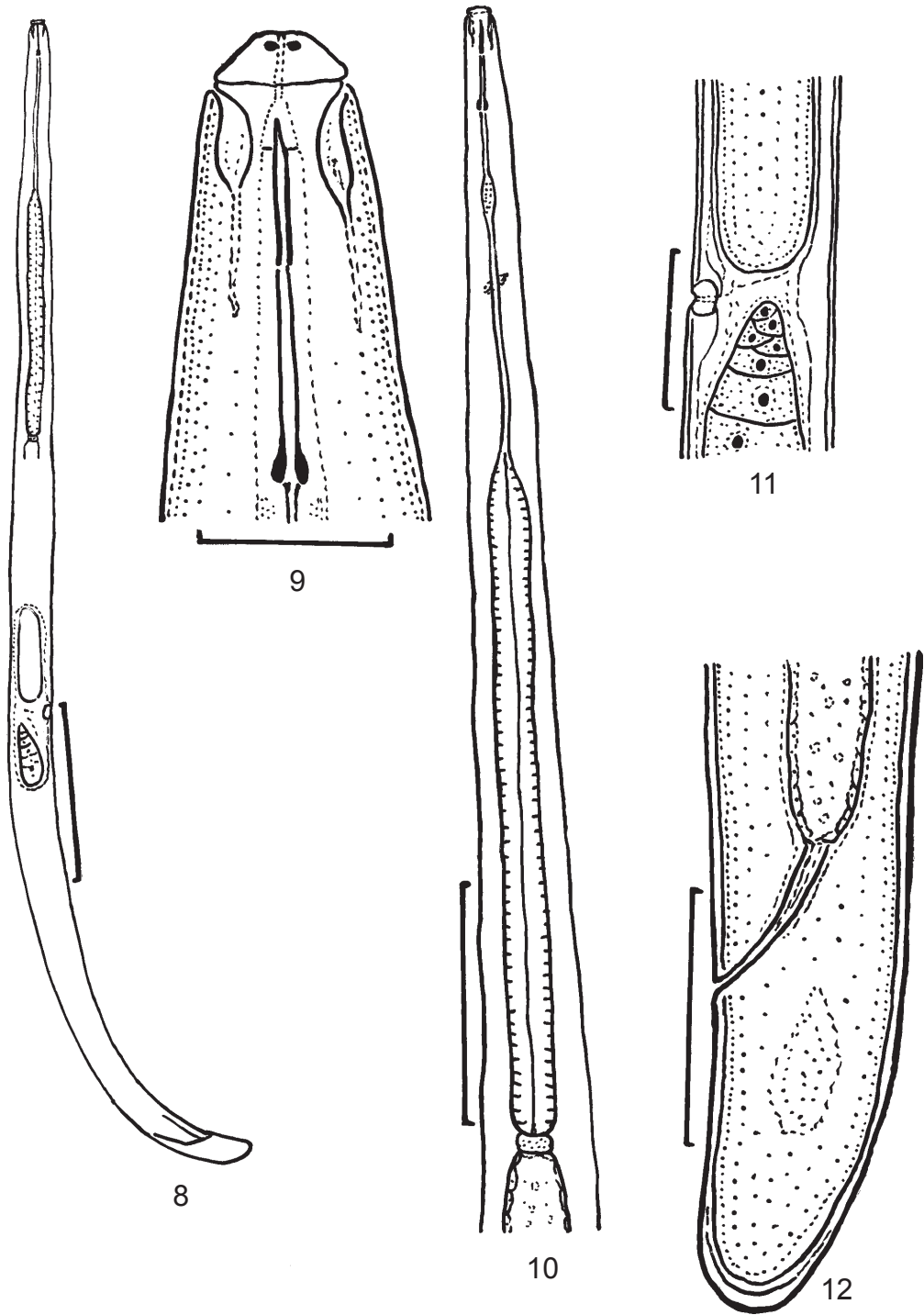
***Dorylaimellus vietnamicus* sp. n.**
(Figs 8-12)

Holotype. ♀, North Vietnam, prov. Bac Giang, Cau River (affluent of Cam River), depth 1 m, silt, 6.XII.2001; slide 50/1, deposited at the Institute of Inland Waters Biology.

Paratypes. 4 ♀, collected with holotype; deposited at the Institute of Ecology and Biological Resources (Hanoi).

Measurements. See Table 2.

Description. Female. Posterior body end curved ventrally when relaxed by gentle heating. Cuticle and subcuticle smooth. Cuticle at mid-body 1.0-1.2 µm thick. Lateral glandular organs absent. Body at proximal end of oesophagus 3.2-3.4 times as wide as in labial region. Lip region distinctly set off. Lip papillae invisible. Preoral labial disc absent. Vestibulum surrounded by four sclerotized pieces. Spear slender, slightly longer than width of lip region. Spear extension approximately 1.5 times as long as spear, with basal drop-shaped formation. Amphidial openings almost encircling the head. Oesophagus long, divided into narrow non-muscular anterior part and muscular posterior swelling surrounded by mus-



Figs 8-12. *Dorylaimellus vietnamicus* sp. n., female. **8**, habitus; **9**, head; **10**, anterior body end; **11**, vulva region; **12**, tail. Scales: 100 μ m (8), 50 μ m (10), 30 μ m (11), 20 μ m (12), 10 μ m (9).

Table 2. Measurements of *Dorylaimellus vietnamicus* sp. n. (females; all measurements in µm).

Characteristics	Holotype	Paratypes (n = 4)	
		range	mean
L	694	646-748	697
a	28	27-28	27
b	2.9	2.9-3.0	2.9
c	27.5	26.7-29.4	29.0
c'	1.7	1.7-1.8	1.7
∇	57.6	55.4-58.5	56.9
Oesophagus length	235	225-248	238
Posterior oesophagus end – vulva	165	133-189	160
Vulva – anus	270	266-287	276
Tail length	24	23-25	24
Labial region width	7	7	7
Spear length	8.0	8.0-8.5	8.5
Spear extension length	12	11-13	12
Ratio of length of posterior oesophagus section to length of anterior one	1.4	1.3-1.4	1.4
Ratio of prerectum length to anal diameter	5.0	4.5-5.2	4.8

cle sheath. Cardia rounded. Rectum 1.1-1.3 times as long as anal diameter of body. Vulva in shape of longitudinal slit, postequatorial. Vagina short, with muscular walls. Gonads paired, symmetrical, reflexed, comparatively short. Eggs 63-70 µ 20-22 µm. Tail cylindrical; tail terminus bluntly rounded, with two-layer cuticle.

Comparison. The new species is similar to *D. tenuidens* Thorne, 1939, but differs in the structure of spear extension, longer and slenderer tail (in *D. tenuidens*, *c* = 30, *cr* = 1.4), and longer prerectum (in *D. tenuidens*, the prerectum is 1.0-1.5 times as long as the anal diameter of body) (Thorne, 1939).

Acknowledgements

This work was partly supported by the Natural Science Council of Vietnam.

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Received 8 March 2003