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FIRST RECORD OF *XIPHINEMA GLOBOSUM* STURHAN (NEMATODA: DORYLAIMIDA) FROM SLOVENIA

by
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Summary. *Xiphinema globosum* Sturhan, 1978 found for the first time in Slovenia is briefly described and illustrated. Its geographic distribution is also given.

Xiphinema globosum Sturhan, 1978 was originally described from Germany and has also been recorded from a few locations in Italy, mainly in the north (Roca and Lamberti, 1985). Populations from central Italy have previously been referred to *Xiphinema clavatum* Heyns, 1965 (Roca and Lamberti, 1978). The comparison of Italian populations with the

original description confirmed the presence of *X. globosum* in northern Italy, but revealed substantial differences in the population found in central Italy and this population was recently described as *Xiphinema coronatum* sp. n. (Roca, 1991).

Xiphinema globosum was found in two localities in Slovenia. It is briefly described and illustrated.

Table I - *Morphometrics of Xiphinema globosum from Slovenia.*

Locality and host	Podbrezje, <i>Picea excelsa</i>	
	16 ♀♀	9 ♂♂
n		
L mm	* 3.15±0.19 (2.85-3.45)	3.1±0.25 (2.61-3.4)
a	48.3±2 (46-52.1)	51.1±4.1 (43.3-55.2)
b	6.3±0.6 (5.4-7.4)	5.9±0.4 (5.1-6.5)
c	91.3±11.9 (77.3-116.3)	76.9±6.2 (70.3-88.6)
c'	0.72±0.06 (0.56-0.78)	0.8±0.04 (0.75-0.85)
V	41.8±0.8 (40.8-43.3)	—
Total spear length µm	231.6±4.3 (225-237.6)	230.8±6.3 (223.7-241.3)
Odontostyle µm	146.3±4.5 (140.1-155.9)	146.8±6.7 (138.2-159.6)
Odontophore µm	85.3±3.1 (79.2-90.5)	84±1.9 (81.7-88)
Oral aperture to guiding ring µm	138.7±4.9 (129.5-146.4)	134.7±5.9 (127-143.9)
Tail µm	34.8±2.7 (28.9-39)	39.2±1.6 (37.1-41.5)
J µm	10.7±1.4 (7.5-12.6)	10.2±1 (8.8-11.3)
Body diam at lip region µm	15.4±0.4 (15.1-16.3)	15.9±0.3 (15.1-16.3)
Body diam at guiding ring µm	50.4±1.6 (46.5-53.4)	50.1±1.1 (48.4-51.5)
Body diam at base of oesophagus µm	59±1.7 (57.2-61.6)	57.5±1.4 (56.2-60.3)
Body diam at vulva µm	65.2±2.5 (61.6-70.4)	—
Body diam at middle body µm	—	60.7±0.8 (59.7-61.6)
Body diam at anus µm	48.2±2.1 (44-51.5)	48.7±1 (46.9-50.3)
Body diam at beginning of J µm	32.5±2.6 (27-35.2)	30.8±1.9 (27.6-33.9)
Spicules µm	—	84.5±1.8 (80-85.5)

* Mean±STD (Min-Max).

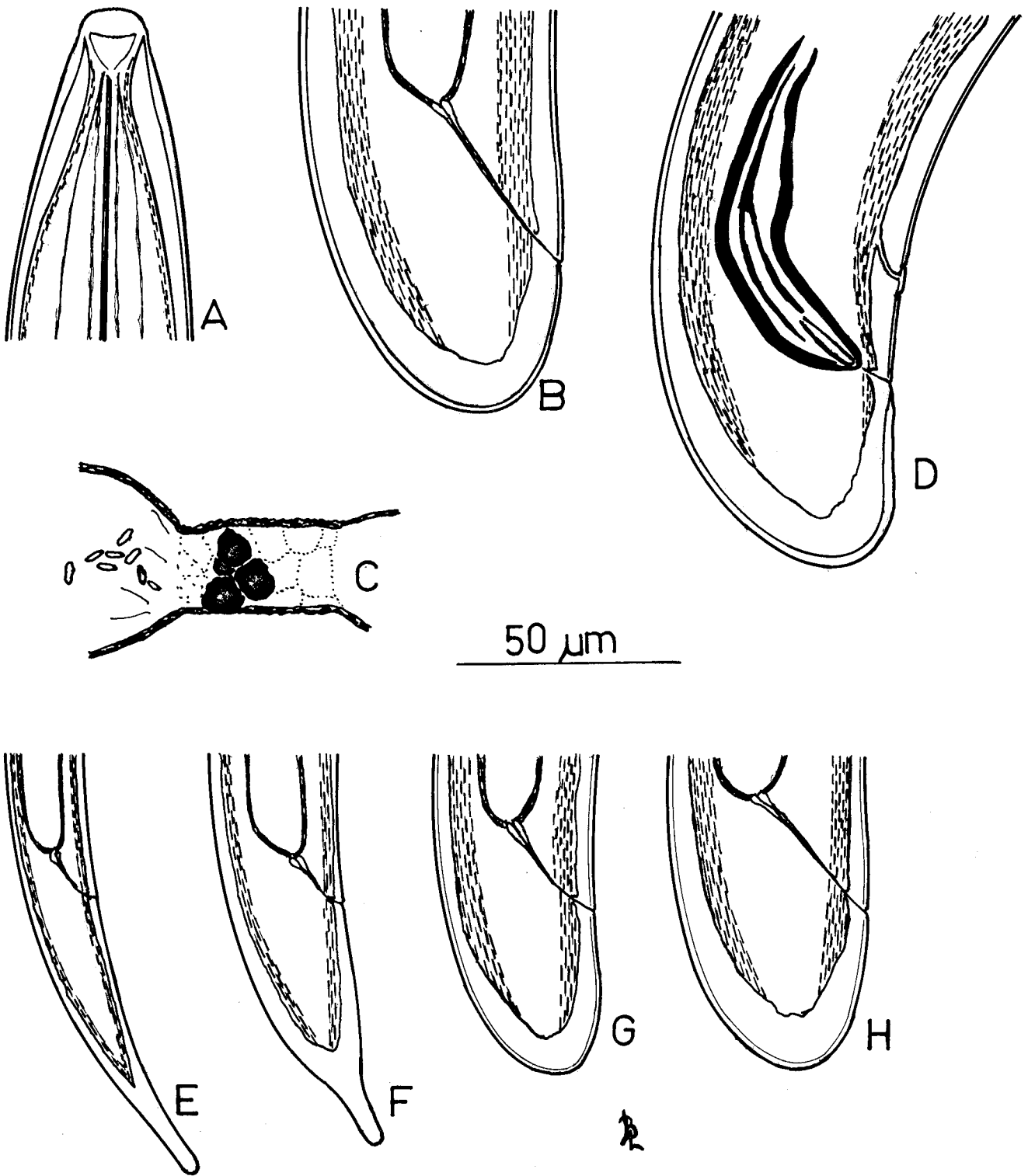


Fig. 1 - *Xiphinema globosum*. A: Female anterior region; B: Female tail; C: Pseudo-Z-organ in uterus; D: Male tail; E, F, G, H: Tails of L1, L2, L3 and L4.

Materials and methods

Nematodes were extracted using a modified Cobb's decanting and sieving technique (Flegg, 1967). Specimens were killed by hot FP 4-1, processed to glycerin by Andrassy's (1984) rapid method and mounted on permanent slides in dehydrated glycerin.

Results and discussion

Xiphinema globosum was found in the rhizosphere of *Picea excelsa* (Lam.) Lk. at Podbrezje (UTM square VM42) and in the rhizosphere of *Pteridium aquilinum* (L.) Kuhn at Idrija (VL29).

Female (Fig. 1, A-B). Body C shaped upon fixation. Lip region slightly rounded, offset from body by a shallow constriction. Amphid pouches stirrup-shaped with wide aperture. Odontostyle, odontophore and guiding sheath typical of the genus. Oesophagus dorylaimoid with the basal bulb occupying about 1/5 of total length; basal bulb measuring 99 (93-104) μm long and 27 (25-30) μm wide. A 2.5-5 μm long "mucro" is present in the slender part of the oesophagus. Nerve ring closely behind base of odontophore. Gonads am-

phidelpic, reflexed, with uteri joined to oviduct by a sphincter. Pseudo-Z-organ with 4-5 weakly sclerotized, irregularly shaped bodies of various sizes (Fig. 1, C). Intra-uterine eggs 195x44 (188-201 x 41-45) μm . Tail short, rounded.

Males (Fig. 1, D) morphologically similar to females, but posterior region more coiled. Spicules massive, lateral guiding pieces 18.5 (16.5-20) μm long. Supplements adanal pair plus 4-6. Tail rounded.

The morphometrics of females and males found at Podbrezje are given in Table I. They differ from the type population in shorter body length, smaller a, b and c values, slightly forwardly situated vulva in females, slightly longer odontostyle and shorter odontophore, longer distance of the fixed guiding ring from the oral aperture, slightly longer tail and slightly longer spicules in males.

Juvenile stages from Slovenia differ slightly from the type population in the length of the odontostyle, odontophore and replacement odontostyle, in the distance of the fixed guiding ring from oral aperture and in the tail length (Table II).

Differences between population from Slovenia and the type population of *X. globosum* may be considered as intra-specific variation.

Table II - *Morphometrics of larval stages of Xiphinema globosum from Slovenia.*

Stages	L1	L2	L3	L4
n	3	4	6	7
L mm	0.91±0.05 (0.87-0.97)	1.3±0.87 (1.2-1.42)	1.77±0.12 (1.65-1.94)	2.36±0.22 (2.05-2.57)
a	38.1±1.2 (36.7-38.9)	38.7±1.4 (37.5-40.6)	41.3±0.8 (39.8-42)	46.6±2.3 (43.7-49.1)
b	3.5±0.2 (3.3-3.8)	4.2±0.6 (3.5-4.9)	4.4±0.4 (3.9-5)	4.7±0.4 (4.2-5.5)
c	13.6±1.5 (12-15.1)	23.3±1.3 (21.4-24.3)	46.1±2.5 (42.4-49.8)	67.2±8.1 (55.5-75.7)
c'	4.11±0.39 (3.77-4.55)	2.31±0.1 (2.2-2.5)	1.17±0.06 (1.09-1.29)	0.86±0.08 (0.78-0.98)
Total spear length μm	105.9±2.6 (103-108)	126.2±4.4 (121.9-130.7)	161±1.8 (158.4-163.4)	195±4.9 (188.5-203.6)
Odontostyle μm	62.4±1.9 (60.3-64.1)	73.8±2.9 (71.6-77.9)	96.7±1.6 (95.5-99.3)	121.2±1.9 (119.4-124.4)
Odontophore μm	43.5±1.4 (42.7-45.2)	52.4±2.1 (50.3-55.3)	64.3±0.9 (62.9-65.4)	73.8±3.4 (69.1±79.1)
Replacement odontostyle μm	73.1±2.2 (71-75.4)	96.7±1 (95.5-98)	121.2±2.6 (116.9-124.4)	147.4±6 (140.8-157.1)
Oral aperture to guiding ring μm	54.8±1.4 (54-56.5)	69.7±2.2 (67.9-72.9)	89±5.6 (80.4-95.5)	113.7±3.6 (108.1-120)
Tail μm	67.5±4.6 (64.2-72.8)	55.9±2.6 (52.8-59)	38.5±1.4 (36.1-40.2)	35.3±1.8 (32.7-37.7)
J μm	25.1±2.2 (22.6-26.4)	23.5±2.1 (21.4-26.4)	9.4±0.5 (8.8-10)	8.8±1.2 (7.9-11.3)
Body diam at lip region μm	8.8	9.8±0.3 (9.4-10)	11.4±0.2 (11.3-11.7)	13.2±0.4 (12.5-13.8)
Body diam at guiding ring μm	19.4±0.1 (19.3-19.5)	25.9±0.5 (25.1-26.4)	33.1±1.1 (31.4-33.9)	40.9±1.7 (38.3-42.7)
Body diam at base of oesophagus μm	24.1±1.9 (22.6-26.4)	32.7±2.5 (28.9-34.9)	41.7±2.2 (38.3-44.9)	47.9±3.9 (42.7-53.4)
Body diam at middle body μm	24±2 (22.6-26.4)	33.6±2.8 (29.8-36.4)	42.9±2.7 (39.4-46.5)	50.6±4.1 (45.2-57.8)
Body diam at anus μm	16.4±0.5 (16-17)	24.1±1.2 (22.6-25.1)	32.8±2 (30.8-35.6)	40.8±2.7 (35.6-43.3)
Body diam at beginning of J μm	6.9±0.6 (6.3-7.5)	13.3±0.8 (12.6-14.4)	20.9±1.1 (19.8-22.6)	25.4±1.9 (23.5-29.5)

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