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NEW RECORDS OF *XIPHINEMA DENTATUM* STURHAN (NEMATODA: DORYLAIMIDA) FROM SERBIA WITH DESCRIPTION OF THE MALE

by
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Summary. Females and a male of *Xiphinema dentatum* Sturhan, 1978 found in Serbia are briefly described. The variability of the species is discussed and illustrated.

Xiphinema dentatum Sturhan, 1978 was originally described from Germany. It has been also recorded from Yugoslavia (Barsi and Horvatić, 1986; Barsi, 1989) and from the Slovak Republic (Lišková, 1994). During 1989 populations of this species were found in two new localities in Serbia. They are briefly described and illustrated and their variability is discussed.

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 dentatum was found in the rhizosphere of *Vitis silvestris* Gmel. (in a forest) at Novi Ledinci - Fruška gora mountain (UTM square DR00) and lilac (*Syringa vulgaris* L.) near Zlot on Malinik mountain (EP77).

Female (Table I; Fig. 1, A-F, H) habitus as open C after fixation; body cylindrical, tapering very gradually towards the extremities. Lip region slightly rounded, offset from the rest of the 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 enlarged portion occupying about 1/4 of its total length and measuring 102-123 µm long and 26-34 µm wide. Reproductive system amphidelphic, with equally developed branches; vulva slit like, situated more or less at mid body. Z-differentiation (Z-organ) with irregularly dentated weakly sclerotized bodies with more or less visible vesicles. Ovijector with characteristic inner epithelium in the form of more or less protruded tufts. Intrauterine eggs 222-231 x 40-41 µm. Tail short, rounded, with characteristic middle cuticular layer.

The male (Table I; Fig. 1, G) was found in the rhizosphere of lilac in a population from Malinik mountain. It is similar to the female in general morphology and body shape, except that it is more curved in the posterior region. Testes two, dorylaimoid, containing apparently normal sperm. Spicules 70 µm long, massive

TABLE I - *Morphometrics of Xiphinema dentatum from Serbia.*

Locality and host:	Malinik mountain <i>Syringa vulgaris</i> (Population I)	Malinik mountain <i>S. vulgaris</i> (Population II)	Novi Ledinci <i>Vitis silvestris</i>
n	14♀♀	1♂	15♀♀
L mm (*)	3.60, 0.21 (3.21-3.89)	3.65	3.57, 0.24 (2.99-3.90)
a	55.4, 3.2 (52.2-62.3)	60.8	53.8, 2.1 (49.3-56.5)
b	7.4, 0.5 (6.4-8.1)	8.0	7.9, 0.7 (6.2-9.0)
c	103.8, 8.5 (89.6-119.8)	92.6	99.8, 6.9 (88.3-117.1)
c'	0.75, 0.05 (0.69-0.85)	0.84	0.78, 0.03 (0.69-0.81)
V	49.5, 2.6 (43.5-52.3)	–	50.4, 0.8 (48.9-51.6)
Total spear length μm	219.4, 5.3 (211.1-227.5)	206.1	218.9, 4.5 (209.9-227.5)
Odontostyle μm	133.9, 4.4 (126.3-140.8)	128.2	132.4, 3.2 (125.7-138.3)
Odontophore μm	85.6, 2.0 (81.7-89.2)	77.9	86.5, 2.1 (81.7-90.5)
Oral aperture to guiding ring μm	127.3, 3.7 (120.7-134.5)	124.4	127.4, 2.2 (123.8-132.0)
Tail μm	34.8, 2.5 (30.8-39.0)	39.4	35.8, 2.0 (31.4-37.7)
J (hyaline portion of tail) μm	10.1, 0.7 (9.2-11.3)	9.7	10.4, 0.8 (9.4-12.5)
Body diameter at lip region μm	15.2, 0.4 (14.5-15.7)	15.5	15.4, 0.6 (14.2-16.3)
Body diameter at guiding ring μm	46.7, 1.1 (44.9-48.4)	42.7	46.7, 1.4 (44.0-49.0)
Body diam. at base of oesophagus μm	56.7, 2.3 (52.8-60.3)	52.8	56.6, 2.0 (52.5-60.3)
Body diameter at vulva/middle body μm	65.0, 2.9 (61.3-70.4)	60.0	66.5, 3.5 (57.8-71.6)
Body diameter at anus μm	46.4, 2.0 (42.7-48.7)	46.5	46.0, 1.7 (42.7-49.0)
Body diameter at beginning of J μm	31.5, 1.7 (28.3-35.2)	28.9	31.5, 0.9 (30.2-33.9)

(*) Mean, Std (Min-Max).

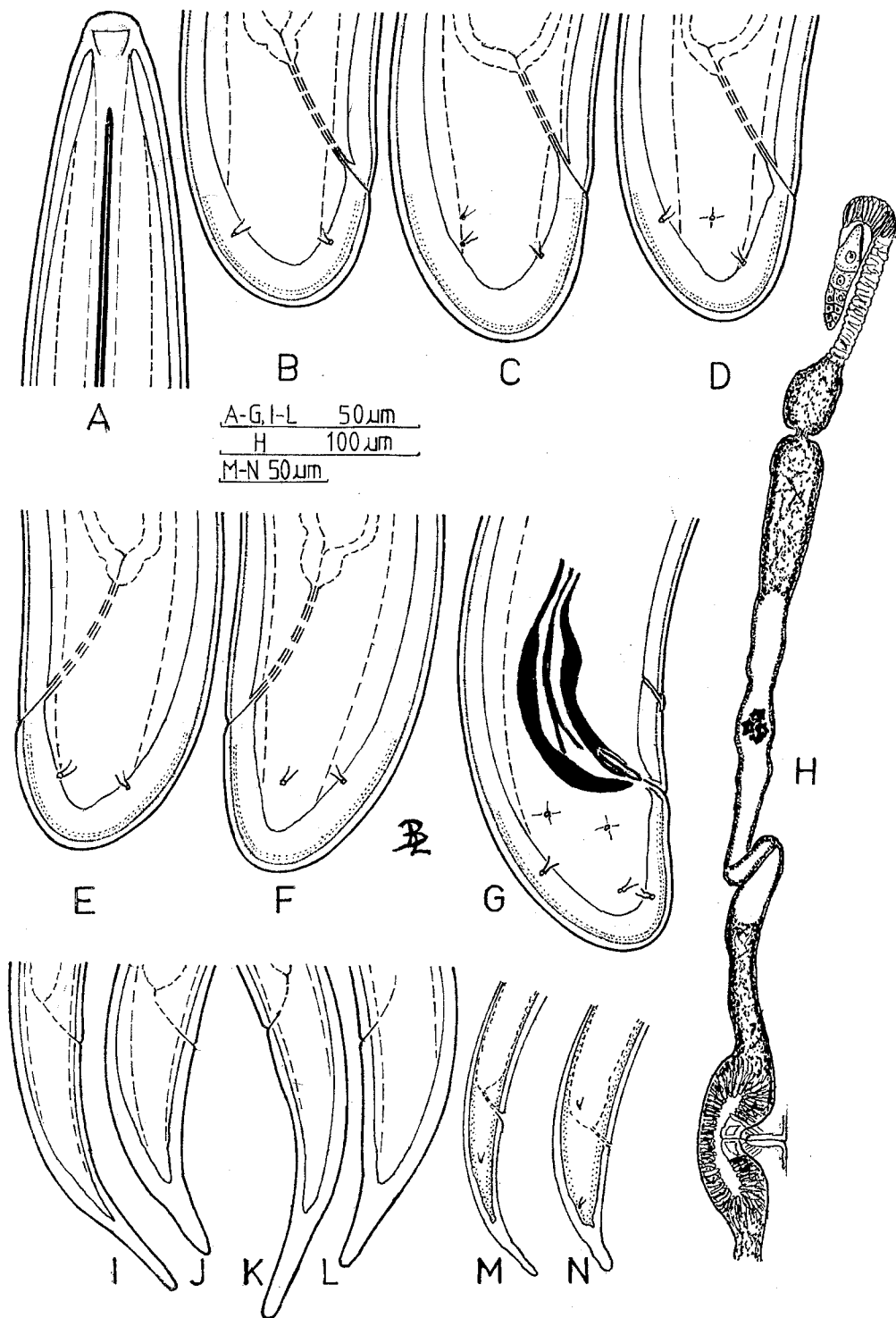


Fig. 1 - *Xiphinema dentatum*: A, female anterior region; B-F, female posterior region; G, male posterior region; H, genital tract of female; I-J, posterior regions of J1 and J2 from Ledinci; K-L, posterior regions of J1 and J2 from Malinik; M-N, posterior regions of J1 and J2 from Germany (after Sturhan, 1978).

TABLE II - *Morphometrics of X. dentatum*.

Locality and host	(Sturhan, 1978)			(Barsi, 1989)		(Liškova, 1994)
	(holotype)	(pop. I)	(pop. I+II)	Ledinci <i>Picea</i> sp.	Ledinci <i>Corylus avellana</i>	Gôtovany <i>Picea abies</i>
n	1♀	10♀♀	6♀♀	17♀♀	6♀♀	13♀♀
L mm	3.43	3.58 (3.08-3.88)	3.53 (3.27-3.71)	4.00 (3.7-4.3)	3.5 (3.4-3.7)	3.6 (3.2-3.9)
a	58	56 (52-62)	58 (57-60)	62 (57-67)	57 (50-59)	48 (46-51)
b	7.0	7.2 (5.9-8.3)	7.3 (6.6-8.0)	7.8 (7.2-8.8)	7 (6.8-7.4)	7 (6.5-7.7)
c	94	100 (86-113)	106 (97-116)	113 (98-122)	111 (107-121)	99 (85-112)
c'	–	0.75 (0.65-0.82)	0.73 (0.66-0.79)	0.7 (0.7-0.8)	0.7 (0.7-0.7)	0.7 (0.6-0.8)
V	47.3	46.8 (43.7-49.1)	46.0 (44.2-48.4)	46 (44-48)	46 (43.5-48)	50 (49-52)
Total spear length µm	–	219 (212-229)	213 (206-220)	–	–	–
Odontostyle µm	128	134 (129-142)	131 (122-136)	135 (130-139)	135 (129-139)	143 (138-148)
Odontophore µm	87	84 (76-90)	83 (78-87)	86 (79-94)	85 (81-89)	89 (84-92)
Oral aperture to guiding ring µm	112	119 (104-131)	113 (107-117)	129 (119-143)	120 (115.5-130.5)	125 (120-130)
Tail µm	–	36 (32-41)	34 (29-37)	35 (33-39)	32 (30-35)	37 (33-42)
J (hyaline portion of tail) µm	–	–	–	11 (9-14)	10 (10-11)	14 (12-16)
Body diameter at lip region µm	–	–	–	15.5 (14.5-16)	15 (15-16)	15 (12-16)
Body diameter at guiding ring µm	–	–	–	45.5 (42-49)	44 (42.5-45.5)	47 (44-52)
Body diam. at base of oesophagus µm	–	–	–	55 (49-60)	53 (50-57)	65 (60-76)
Body diameter at vulva µm	–	–	–	64 (56-69)	62.5 (57-69)	75 (72-84)
Body diameter at anus µm	–	–	–	46 (42.5-49)	44.5 (44-47.5)	51 (44-57)
Body diameter at beginning of J µm	–	–	–	32 (29-37)	30 (29-32.5)	36 (29-40)

TABLE III - *Morphometrics of J1 and J2 of X. dentatum.*

Locality	(Sturhan, 1978)			Sturhan (1978)		
	Ledinci (original)	Malinik (original)		Ledinci (original)	Malinik (original)	
n	6 J1	5 J1	4 J1	4 J2	6 J2	5 J2
L mm	1.11, 0.04 (1.05-1.16)	1.08, 0.05 (1.00-1.13)	1.11 (1.03-1.19)	1.52, 0.12 (1.40-1.71)	1.33, 0.05 (1.22-1.38)	1.43 (1.30-1.61)
a	41.3, 2.0 (37.2-43.9)	38.3, 1.3 (36.3-40.2)	42 (38-47)	42.6, 1.6 (40.9-45.2)	40.7, 1.6 (37.6-42.8)	43 (38-47)
b	3.9, 0.1 (3.8-4.0)	4.2, 0.2 (3.9-4.5)	4.3 (3.9-4.6)	4.8, 0.5 (4.1-5.4)	4.1, 0.2 (3.9-4.3)	4.5 (3.9-5.0)
c	15.1, 0.5 (14.3-15.8)	14.2, 0.6 (13.5-15.2)	12 (10-14)	25.7, 2.4 (23.3-29.6)	22.7, 0.8 (21.8-24.5)	23 (22-24)
c'	4.05, 0.24 (3.76-4.49)	4.19, 0.33 (3.83-4.67)	4.4 (3.8-4.6)	2.33, 0.22 (2.00-2.62)	2.49, 0.14 (2.34-2.69)	2.5 (2.4-2.6)
Total spear length μm	105.3, 1.3 (103.7-107.5)	105.2, 5.0 (100.4-114.2)	109 (107-112)	129.5, 5.0 (123.0-135.0)	128.0, 4.1 (121.7-133.0)	130 (125-134)
Odontostyle μm	60.0, 1.3 (58.7-62.5)	61.0, 2.3 (59.0-65.3)	62 (60-65)	72.9, 4.0 (68.7-77.5)	74.3, 3.9 (67.8-77.8)	75 (69-78)
Odontophore μm	45.3, 1.2 (43.7-47.7)	44.2, 2.7 (41.4-48.9)	47 (46-49)	56.0, 1.5 (54.0-57.5)	53.7, 1.9 (51.4-56.5)	55 (52-57)
Replacement odontostyle μm	73.5, 1.3 (71.2-75.0)	72.5, 3.0 (67.8-75.3)	75 (74-77)	96.2, 4.5 (89.1-101.5)	92.9, 3.0 (89.1-97.9)	93 (91-94)
Oral aperture to guiding ring μm	53.4, 1.8 (50.0-55.8)	52.8, 2.5 (48.9-56.5)	50 (49-51)	65.4, 3.2 (60.0-67.8)	69.2, 3.4 (65.3-73.4)	65 (61-70)
Tail μm	73.7, 2.7 (71.2-79.0)	75.8, 3.3 (72.9-82.2)	85 (81-87)	59.0, 2.9 (55.0-62.5)	58.6, 3.1 (54.3-61.5)	63 (59-67)
J (hyaline portion of tail) μm	23.0, 2.2 (21.2-27.6)	24.8, 3.9 (22.6-32.6)	–	25.3, 1.8 (22.6-27.5)	21.5, 3.6 (15.1-26.3)	–
Body diameter at lip region μm	8.5, 0.4 (7.9-8.8)	8.6, 0.2 (8.2-8.8)	–	9.9, 0.2 (9.5-10.0)	9.9, 0.2 (9.4-10)	–
Body diameter at guiding ring μm	20.0, 0.3 (19.5-20.7)	20.5, 0.6 (19.5-21.3)	–	26.0, 1.0 (25.1-27.5)	25.6, 0.9 (24.5-27.3)	–
Body diam. at base of oesophagus μm	25.8, 1.0 (24.5-27.5)	27.0, 0.8 (25.5-27.6)	–	33.8, 2.5 (30.7-37.5)	31.5, 1.0 (29.5-32.6)	–
Body diameter at middle body μm	27.0, 1.1 (25.0-28.1)	28.1, 1.3 (26.4-30.1)	–	35.7, 3.3 (30.7-37.5)	32.7, 2.1 (29.8-36.6)	–
Body diameter at anus μm	18.2, 0.7 (17.5-19.3)	18.1, 1.1 (16.3-19.4)	–	25.5, 2.2 (23.2-28.7)	23.5, 0.8 (22.6-25.1)	–
Body diameter at beginning of J μm	7.3, 0.5 (6.4-8.1)	5.9, 0.9 (5.0-7.5)	–	12.1, 1.9 (10.0-15.0)	10.0, 1.0 (8.8-11.3)	–

with 19 µm long lateral guiding pieces. The adanal pair of papillae is preceded by a series of four single supplements in ventromedian positions. Tail rounded.

The morphometrics of females are given in Table I. These populations generally agree morphometrically almost in every character reported for the type and other populations (Table II). In the populations from Malinik mountain (Table I) the vulva is generally situated near midbody, like the population from the Slovak Republic (Liškova, 1994), with a wider range of variability in population I in comparison with the others (Table II). The population from the Slovak Republic somewhat differ from other populations in having a thicker body, wider body diameter at vulva, and longer odontostyle and tail.

Morphometric characteristics of the first and second juvenile stages (Fig. 1, I-N) found in the populations from Ledinci (not reported in Barsi, 1989), Malinik mountain and Germany (Table III) are generally similar, with the exception of the tail length, which is shorter in both stages

from Ledinci and Malinik mountain compared with the type population.

Differences between populations from Serbia, Slovak Republic and type populations from Germany may be considered as intraspecific variation.

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