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TWO NEW *XIPHINEMA* SPECIES FROM PORTUGAL
(NEMATODA, DORYLAIMIDA)

by

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Soil samples collected from various localities by one of us (M.J. Pereira) in Portugal contained two species of *Xiphinema* which to the best of our knowledge are new to science. They are described and illustrated in this paper. Nematodes were extracted from soil samples by the Cobb wet sieve technique, killed and fixed in 5% hot formalin and mounted in glycerin on nematology slides by the slow method. Specimens were measured with the aid of a camera lucida.

XIPHINEMA DISSIMILE sp. n. (Fig. 1 - Table I)

Holotype female: L=5.1 mm; a=106; b=11.1; c=109; c'=1.4; V=44; odontostyle=131 μ m; odontophore=73 μ m; oral aperture to guiding ring=113 μ m; tail=47 μ m; J=15 μ m; body diameter at lip region=15 μ m; body diameter at guiding ring=36 μ m; body diameter at base of oesophagus=43 μ m; body diameter at vulva=49 μ m; body diameter at anus=33 μ m; body diameter at beginning of J=12 μ m; tail peg=10 μ m.

Allotype male: L=4.6 mm; a=93; b=9.5; c=101; c'=1.3; odontostyle=125 μ m; odontophore=67 μ m; oral aperture to guiding ring=115 μ m; tail=45 μ m; J=13 μ m; body diameter at lip region=14 μ m; body diameter

¹ The assistance of Mr. V. Radicci in preparing the illustrations is acknowledged.

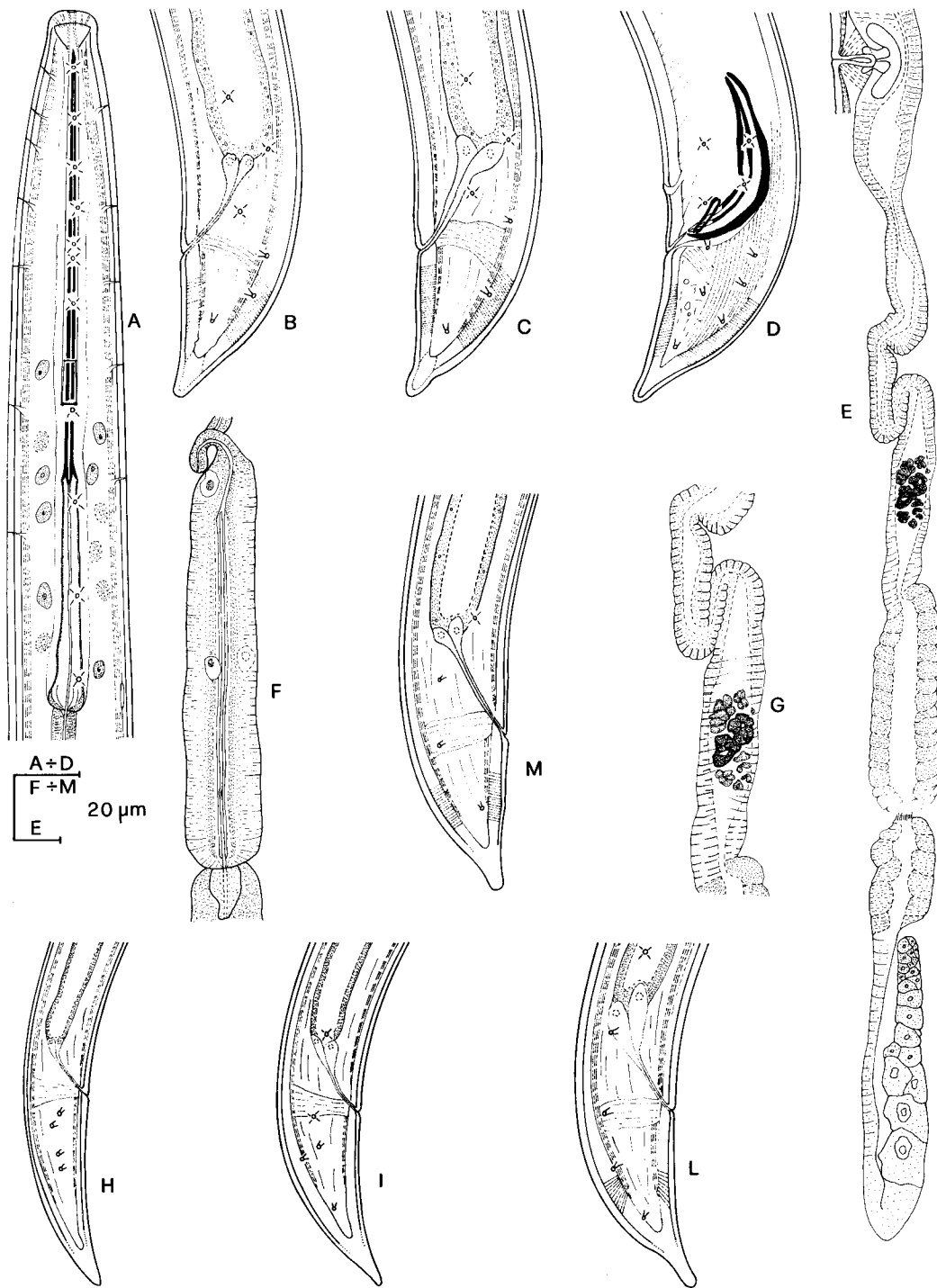


Fig. 1 - *Xiphinema dissimile* sp. n.: female anterior region (A), posterior region (B and C), posterior part of oesophagus (F), posterior branch of female genital tract (E), pseudo «Z» differentiation (G); posterior region of the male (D); tail of the juveniles 4th stage (M), 3rd stage (L), 2nd stage (I), 1st stage (H).

Table I - *Morphometrics of Xiphinema dissimile sp. n. (paratypes).*

S t a g e s	Range (Means \pm Standard Deviation)					
	L ₁	L ₂	L ₃	L ₄	♀♀	♂♂
n	3	7	8	4	14	6
L mm	1.33 – 1.53 (1.43 \pm 0.10)	1.86 – 2.13 (1.96 \pm 0.09)	2.53 – 2.93 (2.76 \pm 0.15)	2.76 – 3.46 (3.12 \pm 0.29)	4.60 – 5.80 (5.00 \pm 0.37)	4.13 – 5.66 (4.76 \pm 0.69)
a	49.2 – 63.2 (56.1 \pm 7.00)	49.0 – 64.3 (60.3 \pm 5.34)	66.1 – 81.0 (72.2 \pm 6.11)	70.2 – 83.7 (79.2 \pm 6.20)	89.6 – 118.2 (102.2 \pm 7.49)	86.0 – 125.0 (104.4 \pm 17.43)
b	4.8 – 6.2 (5.4 \pm 0.74)	5.3 – 5.8 (5.4 \pm 0.20)	6.2 – 8.2 (7.3 \pm 0.72)	6.47 – 11.4 (8.4 \pm 2.11)	9.2 – 12.3 (10.4 \pm 0.89)	9.01 – 11.4 (10.2 \pm 0.93)
c	23.5 – 25.5 (24.5 \pm 1.00)	32.5 – 38.4 (36.1 \pm 1.98)	44.3 – 53.6 (48.8 \pm 3.75)	53.1 – 83.7 (63.0 \pm 14.1)	97.0 – 135.0 (111.6 \pm 11.48)	89.8 \pm 116.6 (103.4 \pm 11.15)
c'	2.9 – 3.8 (3.2 \pm 0.48)	1.9 – 2.8 (2.3 \pm 0.27)	1.8 – 2.3 (2.0 \pm 0.17)	1.3 – 2.0 (1.7 \pm 0.27)	1.2 – 1.5 (1.3 \pm 0.09)	1.2 – 1.4 (1.3 \pm 0.08)
V	—	—	—	—	43.2 – 48.6 (46.1 \pm 1.61)	—
Odontostyle μ m	55.3 – 62.6 (59.3 \pm 3.70)	76.6 – 89.3 (81.0 \pm 4.56)	90.6 – 101.3 (95.1 \pm 3.85)	101.3 – 110.0 (104.5 \pm 4.14)	121.3 – 134.3 (129.3 \pm 3.74)	115.3 – 131.3 (124.0 \pm 5.66)
Odontophore μ m	40.3 – 45.5 (43.7 \pm 2.95)	46.6 – 51.6 (50.0 \pm 1.84)	54.0 – 60.6 (56.5 \pm 2.52)	58.0 – 66.0 (60.7 \pm 3.66)	72.0 – 78.0 (74.3 \pm 1.92)	63.3 – 72.6 (69.1 \pm 3.42)
Replacement odontostyle μ m	72.6 – 83.3 (78.2 \pm 5.36)	94.6 – 101.3 (98.7 \pm 2.27)	110.0 – 118.0 (115.0 \pm 2.67)	120.6 – 134.0 (124.5 \pm 6.44)	—	—
Oral aperture to guiding ring μ m	50.6 – 55.3 (53.7 \pm 2.71)	70.0 – 94.6 (76.2 \pm 8.44)	84.3 – 98.0 (88.7 \pm 4.26)	77.3 – 100.6 (90.6 \pm 9.81)	116.0 – 127.3 (120.9 \pm 3.89)	114.6 – 122.0 (117.8 \pm 2.66)
Tail μ m	56.6 – 60.0 (58.2 \pm 1.71)	52.0 – 59.3 (54.2 \pm 2.73)	50.0 – 63.3 (56.7 \pm 4.60)	41.3 – 57.6 (50.5 \pm 6.91)	41.3 – 52.6 (45.3 \pm 3.11)	41.3 – 50.6 (46.0 \pm 3.15)
J μ m	8.6 – 12.0 (10.6 \pm 1.80)	13.3 – 17.3 (15.0 \pm 1.33)	11.3 – 24.6 (18.4 \pm 4.05)	13.3 – 21.6 (16.7 \pm 3.54)	12.6 – 16.6 (14.6 \pm 1.09)	13.3 – 19.3 (15.8 \pm 1.99)
Body diam. at lip region μ m	8.6 – 10.0 (9.5 \pm 0.81)	10.0 – 10.6 (10.2 \pm 0.29)	10.6 – 12.0 (11.2 \pm 0.52)	11.6 – 14.0 (12.7 \pm 1.12)	13.3 – 15.3 (14.5 \pm 0.64)	13.3 – 14.6 (14.1 \pm 0.64)
Body diam. at guiding ring μ m	16.0 – 24.0 (20.2 \pm 4.01)	23.3 – 28.0 (24.8 \pm 1.63)	25.3 – 31.3 (28.1 \pm 2.01)	28.0 – 32.6 (30.0 \pm 1.94)	34.0 – 38.6 (36.3 \pm 1.08)	33.3 – 38.6 (35.3 \pm 1.96)
Body diam. at base of oesophagus μ m	20.5 – 27.3 (24.1 \pm 3.42)	28.6 – 34.6 (30.8 \pm 2.13)	32.0 – 39.3 (35.4 \pm 2.88)	34.6 – 40.2 (37.2 \pm 2.32)	40.6 – 46.0 (43.1 \pm 1.58)	38.6 – 45.3 (42.3 \pm 2.35)
Body diam. at mid body or vulva μ m	22.6 – 27.3 (25.6 \pm 2.63)	30.0 – 38.0 (32.6 \pm 3.05)	34.6 – 44.0 (38.4 \pm 3.46)	38.3 – 41.3 (39.4 \pm 1.35)	46.6 – 52.6 (49.3 \pm 1.77)	42.0 – 48.6 (45.9 \pm 2.77)
Body diam. at anus μ m	15.3 – 20.0 (18.2 \pm 2.54)	21.3 – 27.3 (24.0 \pm 2.01)	25.3 – 31.3 (28.5 \pm 2.16)	29.3 – 31.3 (30.3 \pm 0.85)	32.6 – 36.6 (34.0 \pm 1.25)	32.6 – 36.0 (34.7 \pm 1.31)
Body diam. at beginning of J μ m	6.0 – 6.6 (6.4 \pm 0.35)	8.0 – 12.0 (9.6 \pm 1.28)	8.6 – 14.6 (11.8 \pm 2.38)	11.3 – 14.0 (12.3 \pm 1.16)	12.6 – 18.0 (14.3 \pm 1.28)	10.6 – 18.6 (14.0 \pm 2.77)
Tail peg μ m	—	—	—	—	10.0 – 13.0 (10.5 \pm 0.5)	11.0 – 12.0 (11.5 \pm 0.5)
Spicules μ m	—	—	—	—	—	66.6 – 71.3 (67.4 \pm 1.92)
Lateral guiding piece μ m	—	—	—	—	—	13.3 – 15.3 (14.0 \pm 0.88)

at guiding ring=37 μm ; body diameter at base of oesophagus=44 μm ; body diameter at mid body=49 μm ; body diameter at anus=35 μm ; body diameter at beginning of J=11 μm ; spicules=67 μm ; lateral guiding piece=12 μm ; tail peg=11 μm .

Description: female *habitus* from J shape to slightly curved ventrally in open C when heat-relaxed; body robust, cylindrical, tapering very gradually toward the anterior extremity, more abruptly posteriorly; cuticle smooth, apparently composed of two layers, 3-3.5 μm thick along body, more thickened in the neck region where it measures 4.5-5 μm at the base of the lip region, and in the caudal region where it is 6.5-7 μm ventrally and 8.5-9 μm dorsally in the post anal portion; lateral hypodermal cords readily visible throughout the length of the body, 11-11.5 μm wide at mid-body or 22-23% of the corresponding body diameter; lateral body pores well evident, 10-11 in the range of the odontostyle, arranged in a single row in the neck region, in a double row in the rest of the body from the beginning of the intestine; dorsal and ventral body pores clearly evident in the neck region, less so in the rest of the body, 7-8 dorsally and 5-6 ventrally in the range of the odontostyle; labial region expanded, 6-7 μm high, with rounded contour, offset from the rest of the body by a wide constriction; amphids large, stirrup shaped with wide aperture as a straight transverse slit; odontostyle robust, 2.5-3 μm in diameter; basal flanges 11-11.5 μm wide and «tube» variable in length, depending on retraction or protraction of the stylet; oesophagus dorylaimoid with anterior part tubular; basal enlarged portion occupying 1/4 of the total oesophagus length and measuring 130-132 μm long and 23-24 μm wide, containing three large nuclei; oesophageal-intestinal valve long and piriform; female reproductive system amphidelphic with equally developed branches; vulva slit-like, situated slightly anteriorly to mid body; vagina depth half or more of the corresponding body diameter; gonads with reflexed ovaries; oviduct consisting of a narrow cylindrical part and a large pouch separated from the uterus by a robust sphincter preceded by a well developed pseudo «Z» differentiation in the uterus, consisting of sclerotized pieces, petal shaped, often joined as a rosette (Fig. 2); uterine pouch well developed containing agglomerates of spermatozoa; prerectum 650-680 μm long; rectum almost equal the body width at anus; tail short, almost conoid, slightly rounded dorsally and straight ventrally, on the same line of the body profile; terminal peg with large base, ventrally in line with body profile and dorsally slightly separated from the rest of the tail contour; three to four caudal pores are evident on each side of the tail.

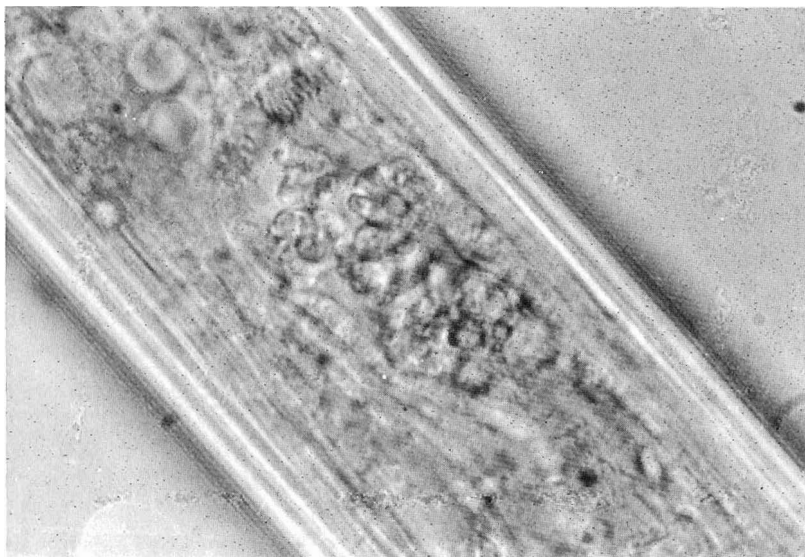


Fig. 2 - *Xiphinema dissimile* sp. n.: the «Z» pseudo-organ.

Male: general appearance similar to female with posterior part of the body more curved; morphology and anatomy similar to female except in the genital apparatus and the somatic structures associated with it; spicules robust, curved, not cephalated with enlarged central portion; lateral guiding pieces almost straight, rounded and more robust posteriorly, narrow at distal end; precloacal pair of papillae preceded by four ventral single supplements, ventrosublateral body pores arranged in two lines in posterior part of the body; tail similar to that of female, less rounded dorsally and bearing 5-6 pairs of caudal pores.

Juveniles: morphologically similar to adult females from which differ by the size; tail of first stage elongated and conoid.

Type habitat and locality: rhizosphere of *Cupressus* spp. at Escaroupim, Salvaterra de Magos, Portugal (province of Ribatejo).

Type material: holotype, allotype, ten paratype females, four paratype males and juveniles in the collection of the Istituto di Nematologia Agraria

del Consiglio Nazionale delle Ricerche, Bari, Italy; two paratype females and one paratype male, Nematology Department Rothamsted Experimental Station, Harpenden, Herts, England; two paratype females and one paratype male, Plant Nematology Laboratory Collection, United States Department of Agriculture, Beltsville, Maryland, U.S.A.

Differential diagnosis. *Xiphinema dissimile* sp. n. resembles *X. diversicaudatum* (Micoletzky, 1927), Thorne, 1939, *X. lusitanicum* Sturhan, 1983, *X. malawiense* Brown, Luc et Saka, 1983 and *X. pseudocoxi* Sturhan, 1984. It differs from *X. diversicaudatum* in having a differently shaped tail (clearly rounded with digitate terminus in *X. diversicaudatum*), more slender body («a» value 102 vs 74 in *X. diversicaudatum*), shorter odontostyle (129 vs 143 μm in *X. diversicaudatum*) and higher value of «c» ratio (111 vs 78 in *X. diversicaudatum*); *X. dissimile* sp. n. differs from *X. lusitanicum* in having a shorter odontostyle (129 vs 172 μm in *X. lusitanicum*) and odontophore (74 vs 110 μm in *X. lusitanicum*), anteriorly situated vulva (46 vs 53 in *X. lusitanicum*), more slender body («a» value 102 vs 71.5 in *X. lusitanicum*), bisexual status and shorter distance of guiding ring from anterior end (120 vs 152 μm in *X. lusitanicum*); it differs from *X. malawiense* in having larger body length (5 vs 2.65 mm in *X. malawiense*), longer odontostyle (129 vs 111 μm in *X. malawiense*) and more slender body («a» value 102 vs 52 in *X. malawiense*); *X. dissimile* finally differs from *X. pseudocoxi* in its longer body (5 vs 3.5 mm in *X. pseudocoxi*) and longer odontostyle (129 vs 106 μm in *X. pseudocoxi*).

XIPHINEMA LAFOENSE sp. n. (Fig. 3 - Table II)

Holotype female: L=4 mm; a=123; b=9.7; c=150; c'=1.2; V=50; odontostyle=74 μm ; odontophore=50 μm ; oral aperture to guiding ring=65 μm ; tail=27 μm ; J=9 μm ; body diameter at lip region=13 μm ; body diameter at guiding ring=21 μm ; body diameter at base of oesophagus=29 μm ; body diameter at vulva=33 μm ; body diameter at anus=21 μm ; body diameter at beginning of J=11 μm .

Allotype male: L=4.1 mm; a=131; b=10.2; c=143; c'=1.2; odontostyle=75 μm ; odontophore=53 μm ; oral aperture to guiding ring=65 μm ; tail=29 μm ; J=6 μm ; body diameter at lip region=13 μm ; body diameter at guiding ring=21 μm ; body diameter at base of oesophagus=28 μm ; body diameter at mid body=31 μm ; body diameter at anus=23 μm ; body diameter at beginning of J=9 μm ; spicules=41 μm ; lateral guiding piece=6.5 μm .

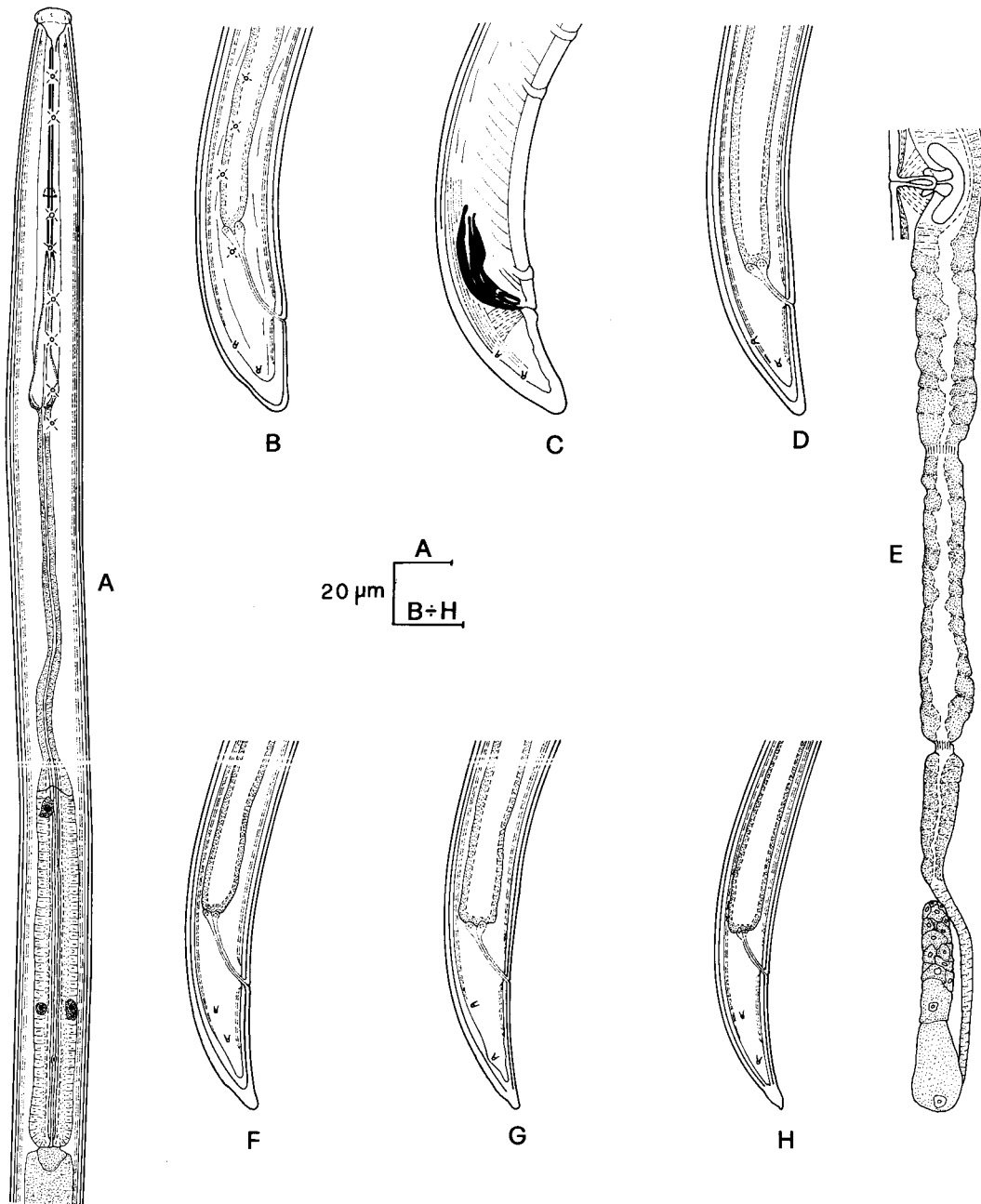


Fig. 3 - *Xiphinema lafoense* sp. n.: female anterior region (A), posterior region (B), posterior branch of female genital tract (E); tail of the juveniles 4th stage (D), 3rd stage (F), 2nd stage (G), 1st stage (H).

Table II - Morphometrics of *Xiphinema lafoense* sp. n. (paratypes).

Stages	Range (Means \pm Standard Deviation)					
	L ₁	L ₂	L ₃	L ₄	♀♀	♂♂
n	1	3	5	3	9	4
L mm	1.4	2.00 - 2.13 (2.09 \pm 0.08)	2.33 - 3.16 (2.68 \pm 0.35)	2.80 - 2.80 (2.80 \pm 0.00)	3.30 - 4.36 (3.94 \pm 0.33)	3.53 - 4.23 (3.93 \pm 0.32)
a	62	76.0 - 83.3 (80.4 \pm 3.89)	87.5 - 110.1 (99.2 \pm 9.58)	102.5 - 110.6 (106.1 \pm 4.12)	105.4 - 134.9 (122.0 \pm 8.27)	117.6 - 141.0 (131.0 \pm 11.78)
b	6.3	6.2 - 7.1 (6.7 \pm 0.43)	6.6 - 11.2 (7.9 \pm 1.89)	7.6 - 7.9 (7.7 \pm 0.17)	8.5 - 11.1 (9.9 \pm 0.87)	8.8 - 10.5 (9.8 \pm 0.76)
c	36	43.4 - 55.1 (51.2 \pm 6.75)	72.8 - 105.3 (81.7 \pm 13.63)	75.0 - 87.5 (82.1 \pm 6.45)	127.0 - 171.0 (150.6 \pm 13.14)	112.7 - 151.2 (137.0 \pm 17.43)
c'	2.8	2.1 - 3.0 (2.4 \pm 0.54)	1.5 - 1.8 (1.6 \pm 0.12)	1.7 - 1.9 (1.8 \pm 0.14)	1.1 - 1.4 (1.2 \pm 0.09)	1.2 - 1.4 (1.3 \pm 0.08)
V	-	-	-	-	50.8 - 53.0 (52.0 \pm 0.63)	-
Odontostyle μ m	38.6	48.0 - 51.3 (50.0 \pm 1.74)	59.3 - 61.3 (60.2 \pm 1.01)	61.3 - 63.3 (62.4 \pm 1.01)	72.6 - 82 (75.8 \pm 3.05)	72.6 - 75.3 (73.6 \pm 1.16)
Odontophore μ m	33.3	39.5 - 43.3 (42.0 \pm 2.19)	45.3 - 50.0 (46.6 \pm 1.89)	45.3 - 48.6 (47.5 \pm 1.91)	50.0 - 54.6 (52.3 \pm 1.79)	51.3 - 54.0 (52.8 \pm 1.15)
Replacement odontostyle μ m	46.6	60.6 - 63.3 (61.7 \pm 1.40)	71.3 - 74.6 (73.1 \pm 1.50)	76.6 - 78.0 (77.0 \pm 0.81)	-	-
Oral aperture to guiding ring μ m	36	45.3 - 46.6 (46.1 \pm 0.75)	52.6 - 56.6 (55.0 \pm 1.50)	54.0 - 56.6 (55.7 \pm 1.50)	60.6 - 68.6 (64.5 \pm 2.63)	62.6 - 65.3 (64.1 \pm 1.15)
Tail μ m	40	38.6 - 46.0 (41.0 \pm 4.27)	30.0 - 36.0 (32.9 \pm 2.37)	32.0 - 37.3 (34.2 \pm 2.76)	24.6 - 28.6 (26.2 \pm 1.24)	27.3 - 31.3 (28.8 \pm 1.75)
J μ m	14.6	10.0 - 10.0 (10.0 \pm 0.00)	6.6 - 10.0 (8.4 \pm 1.23)	8.0 - 10.0 (9.3 \pm 1.15)	7.3 - 10.0 (8.6 \pm 0.95)	5.3 - 8.3 (6.8 \pm 1.26)
Body diam. at lip region μ m	10	10.4 - 10.6 (10.5 \pm 0.12)	10.6 - 12.0 (11.4 \pm 0.77)	11.3 - 12.6 (11.9 \pm 0.65)	12.0 - 13.3 (12.3 \pm 0.46)	12.0 - 12.6 (12.5 \pm 0.30)
Body diam. at guiding ring μ m	16	17.3 - 19.3 (18.4 \pm 1.01)	18.6 - 20.0 (19.1 \pm 0.77)	18.6 - 20.0 (19.3 \pm 0.70)	21.3 - 23.3 (22.0 \pm 0.84)	20.6 - 21.3 (21.0 \pm 0.40)
Body diam. at base of oesophagus μ m	18.3	23.3 - 26.0 (24.4 \pm 1.40)	24.0 - 26.6 (25.5 \pm 1.09)	24.0 - 26.6 (25.7 \pm 1.50)	26.0 - 30.6 (28.5 \pm 1.49)	27.3 - 28.0 (27.6 \pm 0.40)
Body diam. at mid body or vulva μ m	22.6	24.0 - 28.0 (26.0 \pm 2.00)	26.0 - 29.3 (26.9 \pm 1.37)	25.3 - 27.3 (26.4 \pm 1.01)	30.6 - 34.6 (32.2 \pm 1.34)	29.3 - 30.6 (30.0 \pm 0.53)
Body diam. at anus μ m	14	15.3 - 18.6 (17.0 \pm 1.66)	18.6 - 20.6 (19.7 \pm 0.77)	18.6 - 20.0 (19.3 \pm 0.70)	20.6 - 23.3 (21.5 \pm 0.95)	22.0 - 23.3 (22.3 \pm 0.65)
Body diam. at beginning of J μ m	8.6	6.6 - 8.0 (7.3 \pm 0.7)	8.0 - 9.3 (8.6 \pm 0.65)	8.0 - 10.0 (8.6 \pm 1.15)	11.3 - 12.6 (11.9 \pm 0.56)	8.6 - 10.6 (9.6 \pm 0.87)
Spicules μ m	-	-	-	-	-	41 - 42 (41.5 \pm 0.5)
Lateral guiding piece μ m	-	-	-	-	-	6 - 7 (6.5 \pm 0.88)

Description: female *habitus* slightly ventrally curved as an open C when heat-relaxed; body slender, cylindrical, tapering very gradually toward the anterior extremity and more abruptly posteriorly; cuticle very finely transversely striated at the neck and caudale regions, apparently smooth along the mean portion of the body and composed of two layers 2-2.5 μm thick along the body, slightly more thickened in the neck region 3-3.5 μm and more thickened in the caudal region where it is 3.5-4 μm ventrally and 4-4.5 μm dorsally in the post anal portion; lateral hypodermal cords readily visible throughout the length of the body, 7-8 μm wide at mid body or 25-26% of the corresponding body diameter; lateral pores irregularly spaced on the anterior quarter of the body, 3-4 in the range of the odontostyle; dorsal and ventral pores not visible along the body; labial region expanded, flattened frontally and rounded laterally, 5-5.5 μm high, clearly separated from the rest of the body by a constriction; amphids large, stirrup shaped with large aperture as an irregular transverse slit; odontostyle very robust, 1.5 μm in diameter; guiding ring large 4.5-5 μm in diameter with «tube» not well evident or very short in length; odontophore slender with narrow flanges at the base; oesophagus dorylaimoid with anterior part tubular and basal bulb long and narrow occupying almost 1/3 of the total length, measuring 140-150 μm long and 14-15 μm wide containing three nuclei; the dorsal oesophagus gland nucleus lying near the duct of dorsal gland and larger than the two ventrosublateral ones, lying just behind the central portion; oesophageal-intestinal valve large and heart-shaped; female reproductive system amphidelphic with equally developed branches; vulva slit-like situated at or slightly posteriorly mid-body; vagina 2/3 of the corresponding body diameter deep; gonads with ovaries reflexed; oviduct consisting of a narrow, almost cylindrical part and a large pouch separated from the uterus by a robust sphincter; no «Z» or pseudo «Z» differentiation is visible in the uterus, consisting by a cylindrical part without any special features and a pouch well developed containing agglomerates of spermatozoa; prerectum 400-450 μm long; rectum as long as 1.5 body width at anus; tail conoid with rounded terminus, slightly rounded dorsally and straight ventrally, bearing two caudal pores on each side.

Male: general appearance similar to female, with posterior part of the body more curved; spicules robust, curved, not cephalated with enlarged central portion; lateral guiding pieces slightly curved and bifid at distal end; precloacal pair of papillae followed by four ventral single supplements; tail similar to that of female, less rounded dorsally and bearing two pairs of caudal pores.

Juveniles: morphologically similar to adult females but smaller. Tail of first stage elongated and conoid.

Type habitat and locality: rhizosphere of an old and abandoned grapevine at Varzea, S. Pedro do Sul, Portugal (province of Beira Alta).

Type material: holotype, allotype, five paratype females, two paratype males and juveniles in the collection of the Istituto di Nematologia Agraria del Consiglio Nazionale delle Ricerche, Bari, Italy; two paratype females and one paratype male, Nematology Department, Rothamsted Experimental Station, Harpenden, Herts, England; two paratype females and one paratype male, Plant Nematology Collection, United States Department of Agriculture, Beltsville, Maryland, U.S.A.

Differential diagnosis: *Xiphinema lafoense* sp. n. is easily distinguished by its unusually long and narrow oesophageal glandular bulb (140-150 μm long, about 1/3 of the total length of oesophagus). Among the species with the lip region expanded and separated from the rest of the body by a constriction and a conoid shaped tail, *X. lafoense* resembles *X. algeriense* Luc et Kostadinov, 1981, *X. conurum* Siddiqi, 1964 and *X. pachydermum* Sturhan, 1983. *X. lafoense* sp. n. differs from *X. algeriense* in having a shorter body (3.9 vs 4.3 mm), shorter tail (26 vs 42 μm), shorter odontostyle and odontophore (76 vs 116 μm and 52 vs 63 μm respectively) and more slender body («a» value 122 vs 107); furthermore, *X. lafoense* may be separated from *X. algeriense* by the «Z» differentiation in the uterus, clearly evident in *X. algeriense* and absent in *X. lafoense*. Apart from having a different tail shape (conical elongated in *X. conurum*, rounded conoid in *X. lafoense*), the new species differs from *X. conurum* in having a shorter odontostyle (76 vs 114 μm), shorter tail (26 vs 64 μm), more slender body («a» value 122 vs 88) and posteriorly situated vulva (V=52 vs 48.5). Finally, *X. lafoense* can be separated from *X. pachydermum*, also found in Portugal, by the longer body (3.9 vs 2.3 mm), the different shape of the tail (conoid with pointed terminus in *X. pachydermum*), the shorter odontostyle (76 vs 84 μm), the more slender body («a» value 122 vs 67) and the anteriorly situated vulva (V=52 vs 59).

S U M M A R Y

Two species of *Xiphinema* from Portugal are described. *Xiphinema dissimile* sp. n. found in the rhizosphere of *Cupressus* spp. which is similar to *X. diversicaudatum* (Micoletzky, 1923) Thorne, 1939, *X. lusitanicum* Sturhan, 1983, *X. malawiense* Brown, Luc et Saka, 1983 and *X. pseudocoxi* Sturhan, 1984 and *X. lafoense* sp. n. found in the rhizosphere of grapevine, which resembles *X. algeriense* Luc et Kostadinov, 1981, *X. conurum* Siddiqi, 1964 and *X. pachydermum* Sturhan, 1983.

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