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LONGIDORUS AETNAEUS, A NEW *LONGIDORIDAE*
SPECIES FROM ITALY

by

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During a survey of *Longidoridae* carried out in the period 1971-1973 in various regions of Italy, an undescribed species of *Longidorus* was found in the rhizosphere of *Juniperus* sp., in the National Park of Circeo, Latina. As it was found in low numbers and mainly in the juvenile stages it was not described at that time and therefore it is not reported in the Atlas of Plant Parasitic Nematodes of Italy (Roca and Lamberti, 1985).

Individuals of the same species were recently collected by Prof. M. T. Vinciguerra at Monte Minardo (Sicily) from the rhizosphere of *Quercus ilex* L., on the slope of Mount Etna. The species is described here as *Longidorus aetnaeus* sp. n.

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.

LONGIDORUS AETNAEUS sp. n. (Fig. 1 - Table I)

Holotype female: L=3 mm; a=84; b=10; c=62; c'=2; V=45; odontostyle=75 μ m; odontophore=36 μ m; oral aperture to guiding ring=24 μ m; tail=49 μ m; J=12 μ m; body diam at lip region=9 μ m; body diam at guiding ring=16 μ m; body diam at base of oesophagus=31 μ m; body diam at vulva=36 μ m; body diam at anus=24 μ m; body diam at beginning of J=11 μ m.

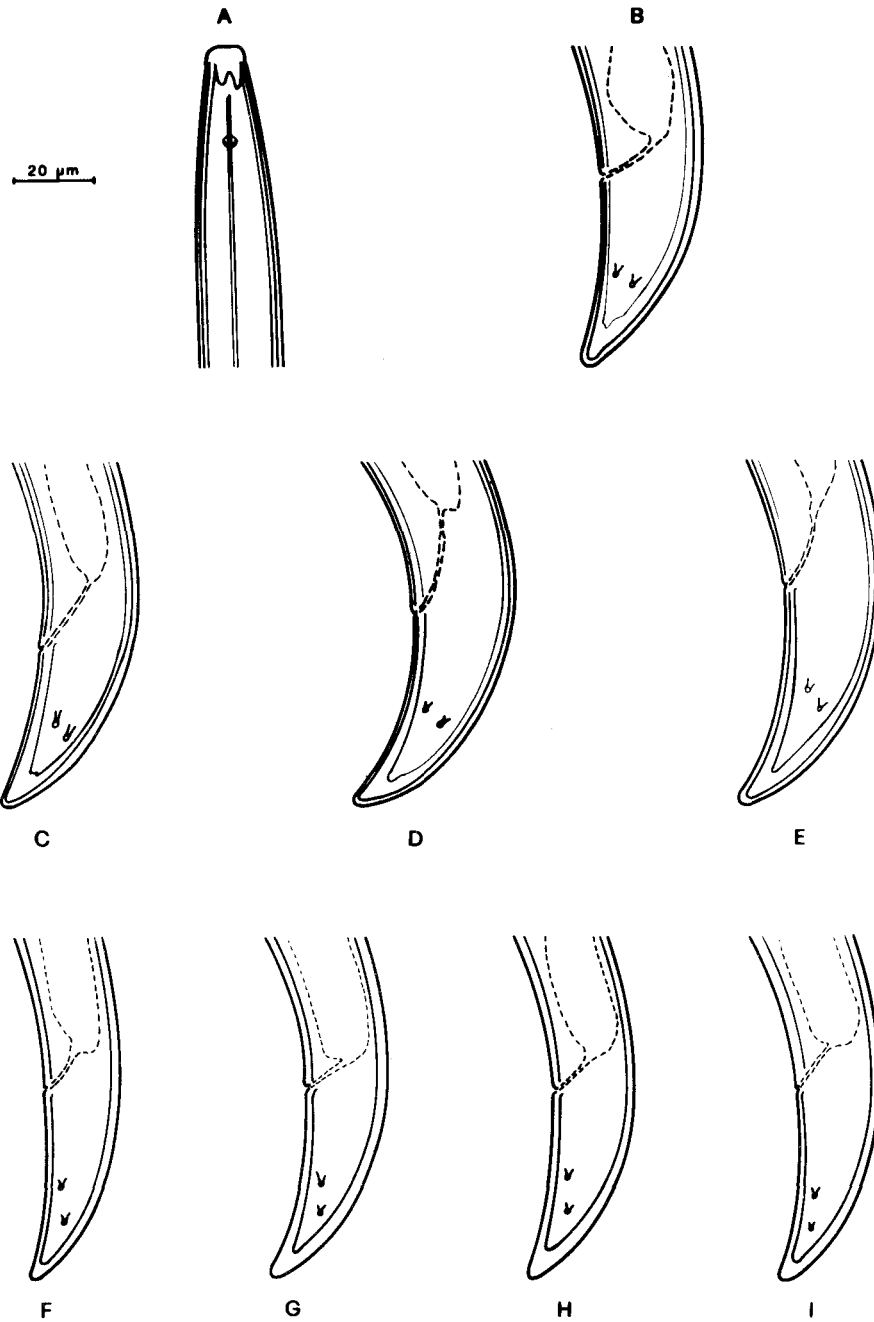


Fig. 1 - *Longidorus aetnaeus* sp. n.: A and B, anterior and posterior regions of female; C, D and E, different tails of female; F, G, H, and I, tail of first, second, third and fourth juvenile stages, respectively.

Table I - *Morphometrics of Longidorus aetnaeus sp. n. (paratypes).*

S t a g e s	Range (Means \pm Standard Deviation)				
	L ₁	L ₂	L ₃	L ₄	♀
n	8	6	6	4	20
L mm	1.64 — 2.11 (1.8 \pm 1.171)	1.64 — 2.50 (2.23 \pm 0.327)	2.05 — 2.40 (2.27 \pm 0.121)	2.35 — 2.47 (2.39 \pm 0.055)	2.69 — 3.68 (3.25 \pm 0.25)
a	61 — 80 (67 \pm 5.851)	66 — 77 (72 \pm 4.955)	67 — 75 (72 \pm 2.90)	73 — 76 (75 \pm 1.662)	77 — 91 (85 \pm 3.60)
b	6.3 — 9.3 (8.3 \pm 1.086)	8.0 — 11.2 (9.2 \pm 1.366)	7 — 10 (9 \pm 1.154)	9 — 10 (9.4 \pm 0.435)	9.3 — 12.8 (11.4 \pm 1.03)
c	35 — 45 (38 \pm 3.296)	37 — 52 (47 \pm 5.407)	43 — 51 (47 \pm 3.294)	45 — 48 (47 \pm 1.855)	57 — 77 (67 \pm 6.19)
c'	2.4 — 2.9 (2.7 \pm 0.194)	2.2 — 2.7 (2.4 \pm 0.217)	2.0 — 2.4 (2.3 \pm 0.131)	2.2 — 2.5 (2.4 \pm 0.118)	1.7 — 2.3 (1.98 \pm 0.154)
V	—	—	—	—	44 — 47 (46 \pm 0.918)
Odontostyle μ m	57 — 60 (58 \pm 1.30)	60 — 68 (64 \pm 2.882)	64 — 69 (66 \pm 1.711)	61 — 68 (66 \pm 3.238)	72 — 80 (76 \pm 2.47)
Odontophore μ m	25 — 30 (28.5 \pm 1.66)	26 — 34 (31 \pm 2.658)	27 — 35 (32 \pm 2.811)	30 — 33 (32 \pm 1.464)	32 — 38 (35 \pm 1.432)
Replacement odontostyle μ m	65 — 69 (67 \pm 1.463)	73 — 76 (75 \pm 0.913)	77 — 78 (77.5 \pm 0.62)	79 — 82 (80 \pm 1.193)	—
Oral aperture to guiding ring μ m	19 — 21 (20 \pm 0.555)	21 — 24 (23 \pm 1.180)	21 — 24 (22 \pm 1.009)	21 — 22 (22 \pm 0.802)	23 — 28 (25 \pm 1.27)
Tail μ m	43 — 50 (49 \pm 2.779)	44 — 55 (49 \pm 3.786)	44 — 53 (49 \pm 3.318)	49 — 55 (51 \pm 3.136)	42 — 60 (49 \pm 4.12)
J μ m	4.7 — 6 (5 \pm 0.51)	5 — 8 (6.5 \pm 1.132)	6 — 10 (8 \pm 1.55)	8 — 10 (9 \pm 0.775)	9 — 13 (11.5 \pm 1.099)
Body diam at lip region μ m	7 — 9 (8 \pm 0.55)	8 — 9 (8 \pm 0.273)	8 — 9 (8 \pm 0.310)	8 — 9 (9 \pm 0.300)	9 — 10 (9 \pm 0.444)
Body diam at guiding ring μ m	13 — 15 (14 \pm 0.513)	13 — 15 (14 \pm 0.727)	15 — 16 (15 \pm 0.422)	15 — 15 (15 \pm 0.346)	15 — 20 (17 \pm 1.118)
Body diam at base of oesophagus μ m	22 — 25 (24 \pm 1.042)	23 — 29 (27 \pm 3.046)	26 — 28 (27 \pm 0.620)	26 — 29 (27 \pm 1.039)	28 — 35 (32 \pm 1.976)
Body diam at mid body μ m	25 — 30 (27 \pm 1.516)	25 — 36 (31 \pm 4.268)	30 — 33 (31 \pm 1.451)	31 — 32 (32 \pm 0.600)	33 — 42 (38 \pm 2.758)
Body diam at anus μ m	16 — 19 (17 \pm 1.061)	16 — 22 (20 \pm 2.125)	19 — 22 (21 \pm 0.885)	20 — 22 (21 \pm 0.981)	22 — 26 (24 \pm 1.234)
Body diam at beginning of J μ m	5 — 6 (5 \pm 0.694)	5 — 8 (7 \pm 0.948)	6 — 8 (7 \pm 0.827)	7 — 8 (7 \pm 0.600)	10 — 11 (10.8 \pm 0.523)

Description: female *habitus* a more or less open C when killed; body almost cylindrical, tapering very gradually toward the extremities; glandular structures are well evident in the lateral cords; a range of lateral pores is present along the body; cuticle very finely transversely striated, 2.5-3 μm thick along body, more thickened just behind the lip region, 3-3.5 μm , and in the caudal region where it is 4-4.5 μm in the post-anal portion; labial region 4 μm high, continuous with the rest of the body, rounded laterally and flattened frontally; amphidial pouches more or less asymmetrically bilobed with a sinus of variable depth between lobes; odontostyle slender, with odontophore and guiding sheath typical of the genus; oesophagus dorylaimoid with the basal bulb occupying 1/4 of the total length of oesophagus; muscular bulb 70-75 μm long and 14-15 μm wide; oesophagus-intestinal valve large, plate shaped; vulva almost equatorial, slit-like; vagina occupying more or less 2/3 of the corresponding body diameter; gonads amphidelphic, reflexed, with uteri separated from the oviduct by a small sphincter; prerectum 180 μm long, rectum extending almost equal to the body width at anus; tail conoid, variable in length, dorsally convex, with pointed terminus, bearing two pairs of caudal pores.

Male: not found.

Juveniles: morphologically similar to adult females but smaller; tail of juvenile stages almost equal in length.

Type habitat and locality: rhizosphere of *Quercus ilex* L. at Monte Minardo (Sicily).

Type material: holotype and 16 paratype females, in the collection of the Istituto di Nematologia Agraria del Consiglio Nazionale delle Ricerche, Bari, Italy; 2 paratype females, Nematology Department, Rothamsted Experimental Station, Harpenden, Herts, U.K.; 2 paratype females, Plant Nematology Laboratory Collection, United States Department of Agriculture, Beltsville, Maryland, U.S.A.

Differential diagnosis: *Longidorus aetnaeus* sp. n. is similar to *L. reneyii* Raina, 1966. *L. longicaudatus* Siddiqi, 1962, *L. laevicapitatus* Williams, 1959 and *L. sylphus* Thorne, 1939. It differs from *L. reneyii* in having a

longer odontostyle (50-58 μm in *L. reneyii*) and different shape of tail and amphidial pouches; from *L. longicaudatus* in having a shorter odontostyle (95 μm in *L. longicaudatus*), shorter tail («c» value 44.6 in *L. longicaudatus*) and bilobed amphidial pouches; from *L. laevicapitatus* in having a longer odontostyle (60 μm in *L. laevicapitatus*) and different shape of lip region and tail; from *L. sylphus* in having shorter body and odontostyle (86 μm in *L. sylphus*) and shorter tail («c» value 88 versus 60 in *L. aetnaeus*).

S U M M A R Y

Longidorus aetnaeus sp. n., found in the rhizosphere of *Quercus ilex* L. and *Juniperus* sp. in Italy, is described. It is similar to *L. reneyii* Raina, 1966, *L. longicaudatus* Siddiqi, 1962, *L. laevicapitatus* Williams, 1959 and *L. sylphus* Thorne, 1939. It differs from *L. reneyii* and *L. laevicapitatus* in having a longer odontostyle and different shape of tail, lip region and amphidial pouches, from *L. longicaudatus* and *L. sylphus* in having a shorter odontostyle, shorter tail and different shape of amphidial pouches.

LITERATURE CITED

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