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NEW RECORD OF *LONGIDORUS DISTINCTUS* LAMBERTI ET AL., 1983 (NEMATODA: LONGIDORIDAE) FROM EASTERN SERBIA

by

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Summary. Females, males, juvenile stages and a bisexual specimen of *Longidorus distinctus* Lambert, Choleva et Agostinelli, 1983 found in Eastern Serbia are briefly described. The variability of the species is discussed and illustrated with microphotographs. Juveniles were present at four development stages.

A population of *Longidorus distinctus* Lambert, Choleva et Agostinelli 1983, was collected in Eastern Serbia (Knjazevac) during a survey of nematodes in plant nurseries. The material, collected in May and June 1996 and April and May 1997 comprised all four juvenile stages, females, two males and a bisexual specimen.

Materials and methods

Soil was collected from a quince (*Cydonia oblonga* L.) root stock nursery at the Agroindustrial Combine "Dzervin", Knjazevac in eastern Serbia (UTH FP 02 32). Nematodes were extracted by Oostenbrink's elutriation method (Oostenbrink, 1960), fixed in hot FA 4:1 and processed to glycerine by the slow method. Measurements were taken with the aid of a camera lucida.

LONGIDORUS DISTINCTUS

(Table I; Figs 1 and 2)

Female body medium sized (3.6-4.7 mm) and slender, almost cylindrical, tapering towards both extremities; about 80% of mid-body width

at oesophago-intestinal junction, 70% at odontophore base, 25% at lip base, 65% at anus and 25% at beginning of hyaline portion. Body ventrally curved in an open C to a single spiral, when dead. Cuticle (inner+outer) 2-2.5 μm thick, except immediately behind neck where it is 1.5-2 μm thick and in the vulval and anal region where it is 2.5-4 μm thick. Lateral hypodermal cords begin at odontostyle level, widening to reach about 1/3 of body diameter; containing glandular bodies throughout their length. Between 175 and 210 lateral pores on each side of body. Cuticle finely striated, posteriorly with fasciations. Lip region slightly expanded, laterally rounded and offset from the rest of the body by a slight depression. Oral aperture, labial and cephalic papillae conspicuous. Neck contour about 1 μm narrower than the lip region which is 11.3 μm wide and about 5 μm high. Amphidial pouches asymmetrically bilobed, reaching to half of anterior end to guide ring distance; amphid aperture a small pore. Odontostyle long and thin, odontophore less refractive and with slight expansion at base. Oesophageal bulb measuring 87x15 μm long, refractive and with slight expansion at base. Cardia small and co-

TABLE I - *Morfometrics of Longidorus distinctus from Knjazevac, eastern Serbia.*

n	14 ♀	2 ♂	14 J1	12 J2	15 J3	15 J4	Intersex
L (mm)	4.1±0.34 3.6-4.7	3.3-4.1	1±0.12 0.9-1.4	1.5±0.18 1.3-1.9	2.1±0.25 1.6-2.7	3±0.34 2.5-3.5	4.3
a	98.9±7.95 84.6-111.7	93.2-96.4	57.2±4.37 50.9-63.1	64.8±7.33 54.3-78.6	75.4±5.82 66.7-90.6	92.4±7.85 80.1-106.4	104.3
b	11.2±0.70 10.2-12.5	11.7-13.9	5±0.52 4.1-6	6.3±0.61 5.2-7.1	7.8±0.55 6.9-8.8	9.6±0.84 8.6-11.1	9.8
c	84.3±5.66 67.6-86.0	59.4-72.8	23.6±2.82 21.2-31.2	32±5.19 26.7-41.9	39.3±6.33 30.5-58.1	49.9±5.93 40.3-58.5	76.6
c'	1.9±0.14 1.7-2.2	1.6-1.9	3.8±0.56 2.9-5	3.1±0.33 2.7-3.6	4.2±5.11 2.2-3.4	2.6±0.33 1.6-3.1	1.9
V	45.7±1.96 42.8-49.8	-	-	-	-	-	47.2
Odontostyle µm	74.8±2.92 70-81.4	75.3-75.3	46.3±2.75 40.3-50.8	50.2±3.49 45.5-57.8	57.4±3.44 51.6-63	68.2±2.05 64.8-71.8	74
Odontophore µm	46.8±4.69 36.1-55.1	49.9-56.9	31.3±2.93 24.5-35.9	34.8±4.14 28-42	42.7±2.28 37.6-46.4	45.1±5.31 35-54.5	53.4
Replacement odontostyle µm	-	-	51.6±2.51 47.3-56	58.1±4.17 52.5-64.8	65.3±4.83 56.6-72.3	75.5±3.36 70-80.5	-
Oral aperture to guide ring µm	27.8±1.43 25.4-31.5	26.3-28	15.9±0.82 14-17.5	18.9±1.39 17.5-21	21±1.28 19.3-23.6	23.8±1.46 21-26.3	29.8
Tail µm	52.9±4.11 47.3-64.8	56-56	43.2±1.37 41.1-45.5	48.2±4.19 37.6-54.3	54.4±4.41 46.4-62.1	61.3±4.22 52.3-67.4	56
J (hyaline portion of tail) µm	13.5±2.25 10.5-17.5	14.9-17.5	6.2±1.54 4.4-8.8	6.9±2.00 4.4-10.5	8.2±1.39 5.3-10.5	11.8±1.60 7.9-14	14.4
Body diam. at lip region µm	11.3±0.82 9.7-12.8	10.5-10.5	7±0.35 6.1-7.9	8.1±0.98 7-9.6	9±0.72 7-10.2	9.4±0.49 8.8-10.5	11.8
Body diam. at guide ring µm	18.5±0.89 17.5-20.2	18.4-20.2	11.5±0.78 10.5-12.3	12.9±0.84 11.4-14	14.5±1.17 13.1-15.8	15.7±0.98 13.1-16.6	18.8
Body diam. at base of oesophagus µm	35.3±2.21 32.4-40.2	29.8-35	16.5±1.67 14-21	21.3±1.41 19.3-23.6	25±3.13 16.3-29.8	29.6±2.29 26.3-33.3	37.2
Body diam. at mid-body or vulva µm	42±2.47 38.3-46.6	34.5-43.8	17.9±1.90 15.8-22.8	23.6±1.56 21.9-26.3	28±2.03 22.8-31.5	33.7±3.08 28-40.3	41.1
Body diam. at anus µm	27.7±1.99 24.5-32.4	28-29.8	11.5±1.60 8.6-14.9	15.6±1.50 14-18.4	18.8±1.59 16.6-21	23.3±1.73 21-26.3	28.9
Body diam. at beginning of J µm	11.1±1.89 8.8-14.9	6.9-12.3	4.6±0.69 3.5-5.3	5.9±1.56 4.4-8.8	6±1.13 4.3-8.8	7.4±0.98 5.3-9.6	11.8
Spicules µm	-	40.3-43.8	-	-	-	-	-
Mucro µm	-	-	3±0.14 2-3.5	-	-	-	-

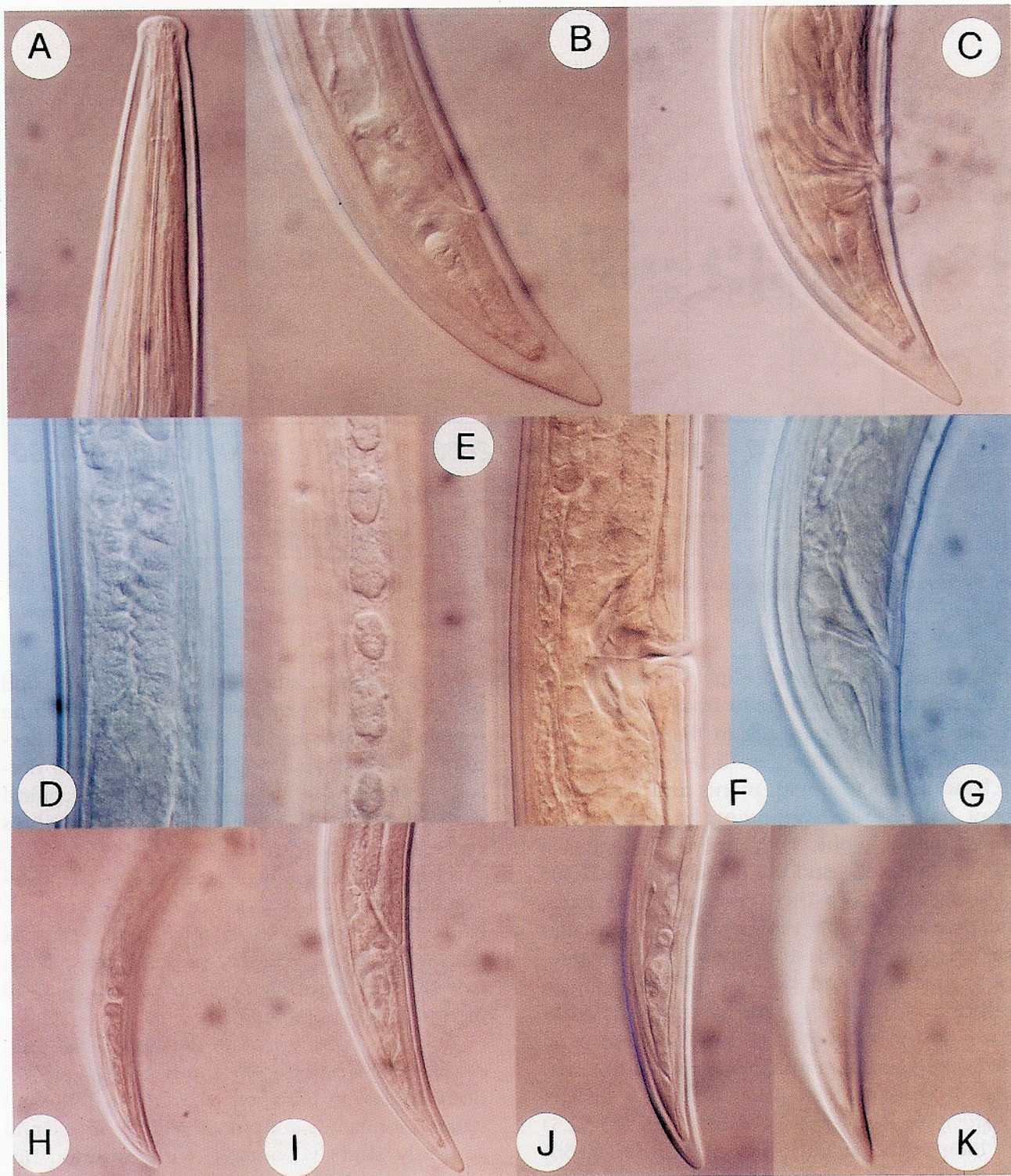


Fig. 1 - Photomicrographs of *Longidorus distinctus* from eastern Serbia: A, female anterior region; B, female tail; C, male tail; D, spermatheca; E, glandular bodies in the hypodermal cords; F, vulva region in the intersex; G, spicules region in the intersex; H-K, J1, J2, J3 and J4 tail respectively.

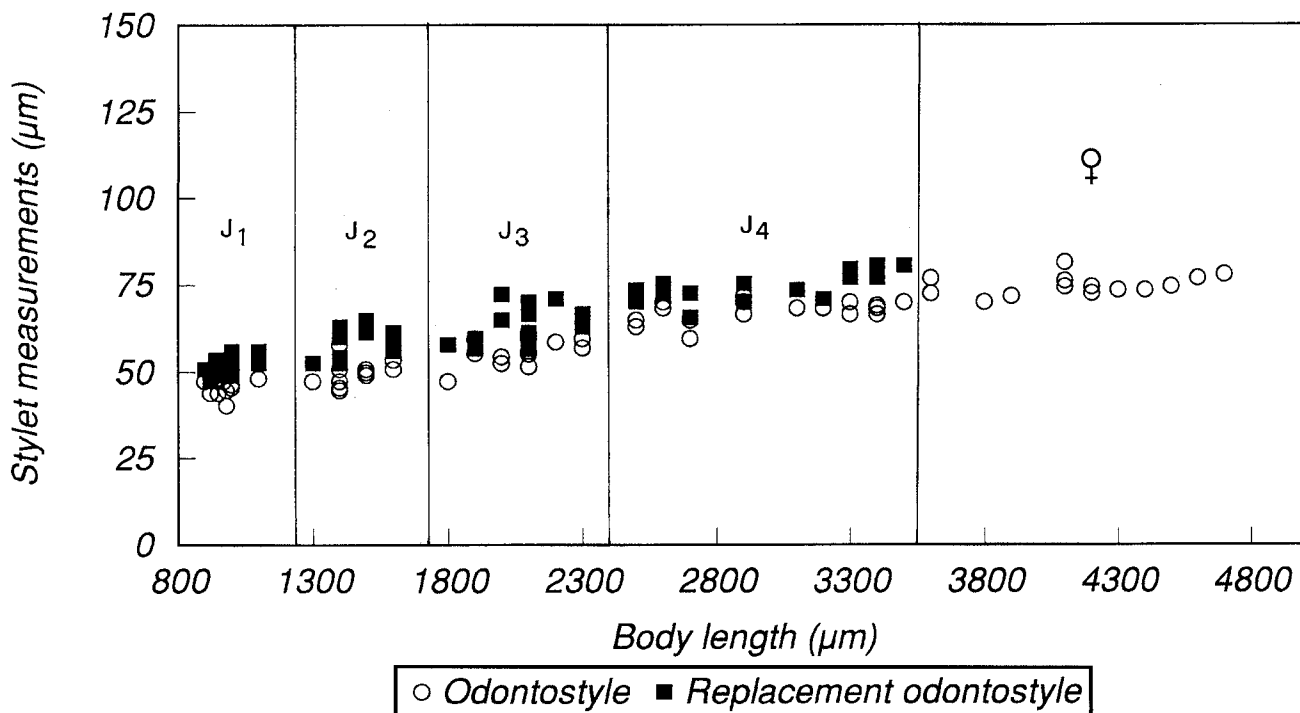


Fig. 2 - Scatter diagram separating juveniles and females of *L. distinctus* from eastern Serbia.

noid. Vulva pre-equatorial, slightly elevated, slit-like; vagina perpendicular to body axis, except in one female with an egg in the uterus, with thickened cuticular lining, encircled by a muscular band at juncture with uterus and occupying about half the corresponding body diameter. Gonad amphidelphic with anterior branch 346 (283-537) μm long and the posterior branch 305 (259-382) μm long. Uteri consist of two parts, one proximal to the vagina without particular characteristics 118 (84-163) μm long in the anterior genital tract and 102 (84-145) μm long in the posterior tract; the other distally situated of denser structure, as indicated by Lamberti *et al.* (1983), containing granular and crystal-like material. Both parts often separated by a distinct constriction. Distal part of uterus 48.5 (45-52.5) μm long in the anterior branch and 50 (40-58) μm long in the posterior branch. Spermatheca large, with prominent sphincter on each side, situated between the uterus and the oviduct.

Ovaries reflexed, anterior 157 (91-226) μm and posterior 162 (93-206.5) μm long. Egg in one female 179.5x30 μm . Prerectum indistinct. Rectum about one anal body width long. Tail dorsally convex, ventrally slightly concave, conical with rounded tip, two pairs of caudal pores present.

Male similar to female, except for the posterior region which is much more coiled ventrally. Testes inconspicuous; spicules faint, about 42 μm long. Lateral accessory pieces inconspicuous. Pair of adanal supplements preceded by 9-10 medioventral supplements.

Juveniles present as four developmental stages (Fig. 2), as reported by Lamberti *et al.* (1997). Body arcuate to J shaped when dead. Tail of all stages elongated, conoid, dorsally convex and ventrally slightly concave with rounded tip, which in the first stage is often strongly curved ventrally to form a 2-3 μm long subdigitate tip (mucro).

Morphometrics of females and males from Knjazevac are in general agreement with the original description by Lamberti *et al.*, (1983) and with the data for females given by Barsi (1989). However, they are generally smaller compared to those previously described from Bulgaria (Lamberti *et al.*, 1983; 1997) and Yugoslavia and males have fewer supplements (11 medioventral in the type population).

The bisexual specimen with a single spiral habitus and 184 pores in the lateral chord. Lip region 5.8 μm high and neck 10.4 μm wide. Oesophageal bulb 96.6 μm long and 16 μm wide. Anterior genital branch 233 μm long, proximal part of uterus 79 μm long, and distal granulated part 24.5 μm long, oviduct 129.5 μm long and ovary 112 μm long. Posterior genital branch 327.3 μm long, proximal part of uterus 101.5 μm , granulated distal part 52.5 μm , and oviduct 173.3 μm long. Uteri followed by spermathecae before the oviduct. Rectum 30 μm long with two parallel bodies, 14 μm long and

2.4 μm wide, which probably correspond to unformed spicules. Tail conical, dorsally convex, ventrally slightly concave, with subdigitate tip, measuring 4-6 μm , and rounded terminus, bearing two pairs of caudal pores.

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