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BIVULVAL FEMALES OF *LONGIDORUS EUONYMUS*, *XIPHINEMA DIVERSICAUDATUM* AND *X. VUITTENEZI* (NEMATODA: DORYLAIMIDA)

by
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Summary. A bivulval female is reported from Yugoslavia for *Xiphinema diversicaudatum*, *X. vuittenezi* and, for the first time, for *Longidorus euonymus*.

Bivulval specimens among the Longidoridae have been reported for *Xiphinema diversicaudatum* (Brown and Coiro, 1984), *X. index* (Catalano, 1991), *X. turcicum* s.l. (Radivojević, 1991), *X. vuittenezi* (Coiro and Lamberti, 1980), *Longidorus laevicapitatus* (Lamberti *et al.*, 1987) and *Longidorus* sp. (Jairajpuri and Ahmad, 1969).

A bivulval female was found in one population each of the species *Longidorus euonymus* Mali *et* Hooper, *Xiphinema diversicaudatum* (Micoletzky) Thorne and *X. vuittenezi* Luc, Lima, Weischer *et* Flegg in the rhizosphere of poplar (Bački Monoštor, UTM grid square CR37), *Amorpha fruticosa* L. (Novi Sad, DR00) and grapevine (Senta, DR29), respectively.

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.

Longidorus euonymus

The morphometrics of the normal female are: L = 7 mm; a = 178; b = 18.8; c = 175; c' = 1.25; V = 51; odontostyle = 85 μ m; odontophore = 54 μ m; oral aperture to guiding ring = 23 μ m; tail = 40 μ m; body diameter at guiding ring = 17 μ m; body diameter at base of oesophagus = 33 μ m; body diameter at V = 39.5 μ m; body diameter at anus = 32 μ m.

The morphometrics of the bivulval female are: L = 7.4 mm; a = 171; b = 16.8; c = 168.5; c' = 1.4; V₁ = 53; V₂ = 56.5; odontostyle = 88 μ m; odontophore = 58 μ m; oral aperture to guiding ring = 27 μ m; tail = 44 μ m; body diameter at guiding ring = 18 μ m; body diameter at base of oesophagus = 35 μ m; body diameter at V₁ = 43 μ m; body di-

ameter at V₂ = 43 μ m; distance from V₁ to V₂ = 278 μ m; body diameter at anus = 33 μ m.

The two vaginas are each with an accompanying ovijector and they are interconnected and fused with the adjacent uteri (Fig. 1A). The distal gonads are normally developed, measuring 488 μ m for the anterior and 422 μ m for the posterior; both are functional, oocytes are clearly visible in the ovaries.

Xiphinema diversicaudatum

The morphometrics of the normal females are (n = 10): L = 4.1 (3.4-4.8) mm; a = 77 (70-90); b = 8.5 (7.5-9.6); c = 85 (75-99); c' = 1.15 (1-1.25); V = 43 (39-46); odontostyle = 127 (118-130.5) μ m; odontophore = 75 (71.5-76.5) μ m; oral aperture to guiding ring = 119 (115-123) μ m; tail = 48 (43-54) μ m; body diameter at guiding ring = 37 (35-39) μ m; body diameter at base of oesophagus = 47.5 (43-50.5) μ m; body diameter at V = 53 (46.5-56.5) μ m; body diameter at anus = 41.5 (36.5-43.5) μ m.

The morphometrics of the bivulval female are: L = 4.1 mm; a = 75; b = 8.8; c = 94; c' = 1.2; V₁ = 42; V₂ = 48; odontostyle = 136 μ m; odontophore = 74 μ m; oral aperture to guiding ring = 125.5 μ m; tail = 44 μ m; body diameter at guiding ring = 38 μ m; body diameter at base of oesophagus = 48 μ m; body diameter at V₁ = 55 μ m; body diameter at V₂ = 55 μ m; distance from V₁ to V₂ = 239 μ m; body diameter at anus = 36.5 μ m.

The specimen is morphologically similar to other females from the population, except for having two discrete vulvae (Fig. 1B). The vulvae are apparently functional, each with an accompanying ovijector. The distal genital

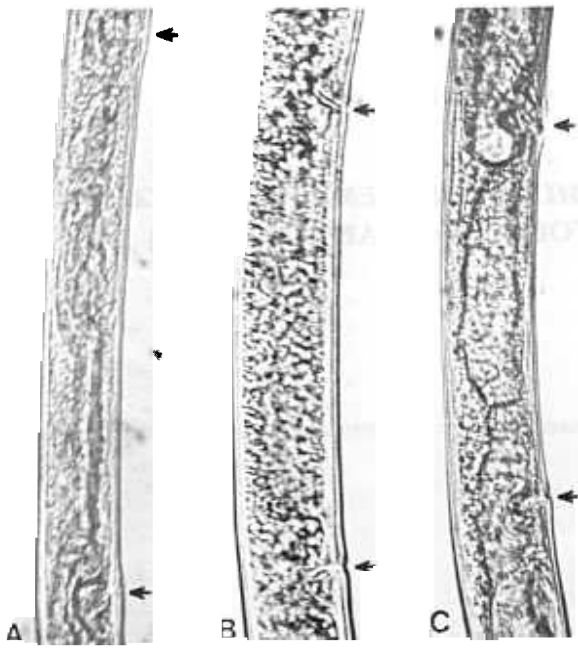


Fig. 1- A bivalval female of: A, *Longidorus euonymus*, B, *Xiphinema diversicaudatum*; C, *X. vuittenezi*.

tracts are fully developed, ovaries with oocytes, uteri full of sperm. Two adjacent but disconnected uteri separate the two vaginae.

Xiphinema vuittenezi

The morphometrics of the normal females are (n = 10): L = 3.3 (3.1-3.7) mm; a = 66 (61.5-70); b = 6.9 (6.1-7.8); c = 84 (69-94); c' = 1.1 (0.9-1.2); V = 50 (49.5-51); odontostyle

= 127 (123-134) μ m; odontophore = 76 (69-79) μ m; oral aperture to guiding ring = 122 (114-127) μ m; tail = 40 (34-44.5) μ m; body diameter at guiding ring = 38 (37-40) μ m; body diameter at base of oesophagus = 45 (43-47) μ m; body diameter at V = 50.5 (46-53) μ m; body diameter at anus = 38 (36-39) μ m.

The morphometrics of the bivalval female are: L = 3.1 mm; a = 59; b = 7.2; c = 81; c' = 1; V₁ = 54.5; V₂ = 61; odontostyle = 127 μ m; odontophore = 74 μ m; oral aperture to guiding ring = 119 μ m; tail = 39 μ m; body diameter at guiding ring = 37 μ m; body diameter at base of oesophagus = 43 μ m; body diameter at V₁ = 53 μ m; body diameter at V₂ = 53 μ m; distance from V₁ to V₂ = 193 μ m; body diameter at anus = 37 μ m.

It is morphologically similar to other females from the population except for the presence of the two vulvae (Fig. 1C). The distal reproductive tracts are not fully developed; only uteri are present. Ovjectors are poorly developed and the adjacent uteri are disconnected.

Literature cited

- ANDRÁSSY I., 1984. Präparierung. In: Andrásy I., Klasse nematoda (Ordnungen Monhysterida, Desmoscolecida, Araeolaimida, Chromadorida, Rhabditida). Gustav Fischer Verlag, Stuttgart, 27 p.
- BROWN D. J. F. and COIRO M. I., 1984. A description of a bivalval, didelphic, prodelphic gravid *Xiphinema diversicaudatum* (Nematoda: Dorylaimida). *Nematol. medit.*, 12: 151-154.
- CATALANO L., 1991. A bivalval female of *Xiphinema index* (Nematoda, Dorylaimida). *Nematol. medit.*, 19: 223.
- COIRO M. I. and LAMBERTI F., 1980. A female of *Xiphinema vuittenezi* with two vulvae. *Nematol. medit.*, 8: 87-89.
- JAIRAJURI M. S. and AHMAD S., 1969. Record of bivalval specimens of *Longidorus* sp. and *Nyngolaimus* sp. *Sci. Cult.*, 35: 492.
- LAMBERTI F., AGOSTINELLI A. and NETO E. S. S., 1987. A bivalval *Longidorus laevicapitatus* from Sao Tomé. *Nematol. medit.*, 15: 379-381.
- RADIVOJEVIĆ M., 1991. *Xiphinema turcicum* Luc & Dalmaso, 1964 first stage juvenile with double spear, and female with two vulvae. *Revue Nematol.*, 14: 321-322.