

# Description of *Tylenchus magnus* n. sp. (Nemata : Tylenchidae)

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## SUMMARY

*Tylenchus magnus* n. sp. is distinguished by having a robust, slightly arcuate to C-shaped body, a broad and distinct lip region, an S-shaped excretory duct and an almost straight tail with rounded tip, 5.0 to 6.8 times the anal body diameter.

## RÉSUMÉ

*Description de Tylenchus magnus* n. sp. (Nematoda : Tylenchidae)

*Tylenchus magnus* n. sp. est caractérisé par un corps robuste, un habitus légèrement courbé ou en forme de C, une région labiale large et distincte, un conduit excréteur en forme de S, et une queue presque droite à extrémité arrondie, de longueur équivalant à 5-6,8 diamètres du corps au niveau de l'anus.

*Tylenchus magnus* n. sp. was collected in the month of October, 1980 from soil around roots of grass (*Cynodon dactylon*) from Mashobra (altitude : 2 340 m), Himachal Pradesh, India. The nematodes were fixed in 4 % formalin and then processed to glycerin by slow method.

## *Tylenchus magnus* n. sp. (Fig. 1)

### MEASUREMENTS

*Females* (paratypes; n = 10) : L = 0.82 (0.73-0.92) mm; a = 28.0 (25.0-29.6); b = 6.0 (5.6-6.5); c = 8.0 (7.4-8.7); c' = 5.8 (5.0-6.8); V = 69.5 (68.6-70.8); stylet = 16.0 (16.0-16.5)  $\mu$ m.

*Males* (paratypes; n = 10) : L = 0.82 (0.77-0.90) mm; a = 32.0 (29.6-35.8); b = 5.8 (5.3-6.6); c = 7.6 (6.9-8.0); c' = 5.7 (4.9-6.6); stylet = 15.5 (14.5-16.0)  $\mu$ m; spicules = 24 (23-26)  $\mu$ m; gubernaculum = 7 (6-9)  $\mu$ m.

*Holotype* (female) : L = 0.935 mm, a = 29; b = 6.7; c = 8.4; c' = 5.6; V = 69.8; stylet = 16  $\mu$ m.

### DESCRIPTION

*Female* : Body robust, usually only slightly arcuate ventrally or forming a "C". Cuticle about 1.6  $\mu$ m thick. Annuli 1.7-2.4  $\mu$ m and 1.6-1.8  $\mu$ m wide near oesophageal base and mid body respectively. Lateral field marked with four equally spaced incisures (inner lines inconspicuous), occupying 1/5 corresponding body width. Lip region broad, squarish (top of which as wide as its base or even slightly wider), continuous but

distinct of body, 7-8  $\mu$ m wide  $\times$  4.3-4.7  $\mu$ m high. Oral field not convex, lateral lips seen protruding in some. Four or five lip annuli; top ones not very distinct. Cephalic framework weak. Stylet moderately developed, conus 47.5-50 % of stylet length. Stylet knobs laterally or posteriorly rounded, 2.4-3.0  $\mu$ m across. Dorsal oesophageal gland orifice 1.2-1.6  $\mu$ m behind stylet base. Cephalids six and thirteen annuli from anterior end. Oesophagus 137 (128-146)  $\mu$ m long, its anterior portion equal to or slightly longer than the posterior one, 52 (50-54) % of total oesophageal length. Median bulb oval, 13.5  $\times$  9.8 (12.6-15.0  $\times$  9.5-11.0)  $\mu$ m. Basal bulb pyriform, half as long as isthmus or slightly shorter, 20  $\times$  11 (17.4-23.0  $\times$  9.5-12.6)  $\mu$ m. Cardia distinct. Nerve ring posterior to middle of isthmus. Excretory duct well sclerotized, S-shaped; excretory pore 124 (117-132)  $\mu$ m from anterior end, opening in region opposite basal bulb. Hemizonid 2-3 annuli long, immediately anterior to excretory pore. Deirids distinct, one to four annuli (exceptionally at level with or six annuli behind) behind excretory pore, 123-137  $\mu$ m from anterior end. Phasmids not seen. Rectum as long as or shorter than anal body width. Vulval lips usually flat (occasionally slightly protruding). Spermatheca usually longer than broad, filled with sperms. Post vulval uterine sac 16-20  $\mu$ m long, shorter than vulval body width. Vulva-anus distance 154 (133-176)  $\mu$ m, 1.5 (1.3-1.6) times the tail length. Tail 104 (96-112)  $\mu$ m long, straight or very slightly bent at its tip, never hooked or conspicuously curved, robust, gradually tapering to a rounded tip; last annuli of tail fine.

*Male* : Similar to female. Body open "C" to C-shaped, more slender than that of females. Oesophagus 141.5 (136-148)  $\mu$ m long, its anterior portion 51

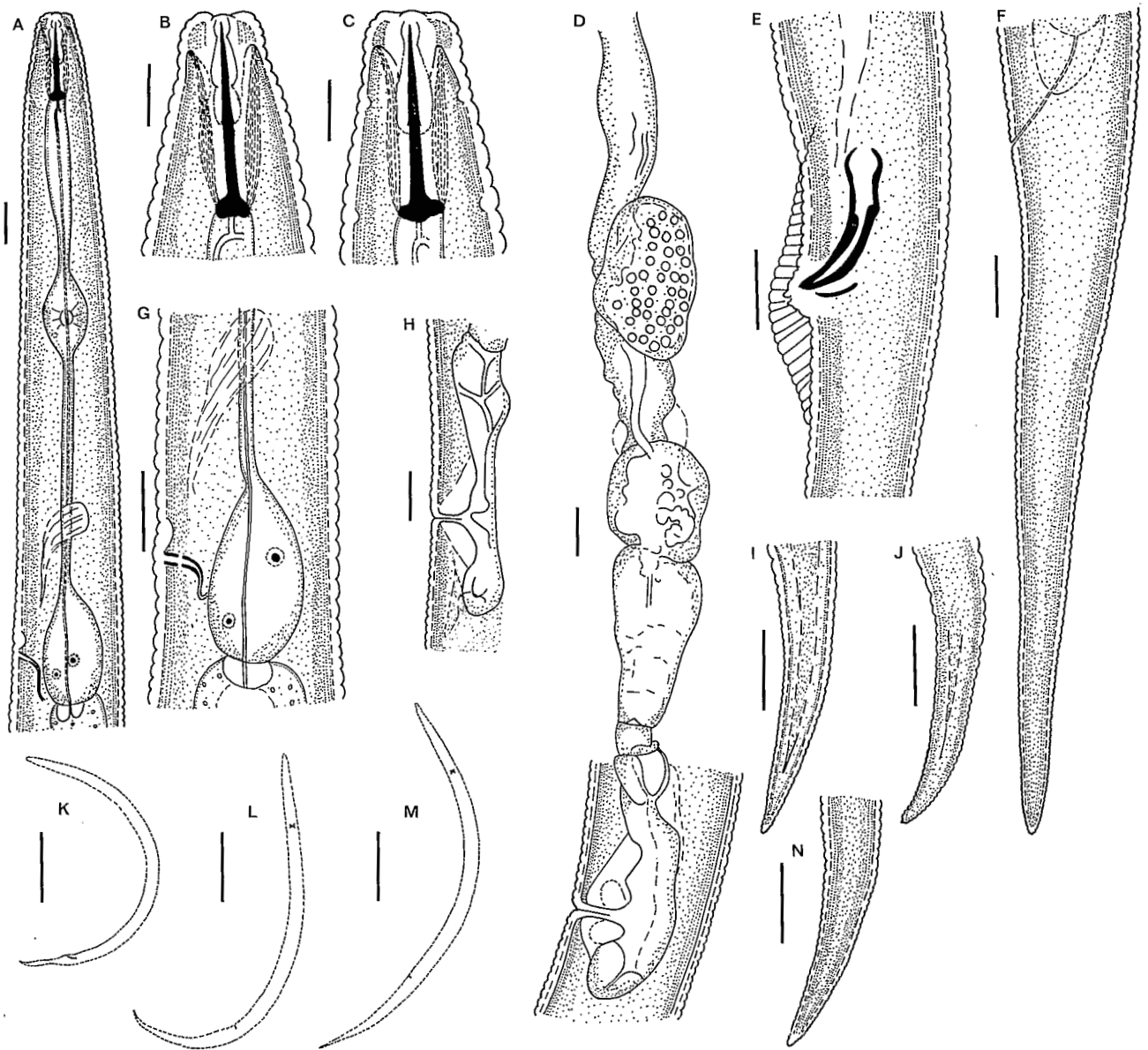


Fig. 1. *Tylenchus magnus* n. sp. — Female. A : Œsophageal region; B, C : Anterior ends; D : Gonadal région; G : Posterior œsophageal region; H : Vulval region; F, I, J : Tail ends; L, M : Entire animals. — Male. E : Cloacal region; K : Entire animal; N : Tail end. (Bars represent : B, C : 5  $\mu$ m; K, L, M : 200  $\mu$ m; others : 10  $\mu$ m.)

(50-53) % of total œsophageal length. Excretory duct sclerotized, S-shaped. Excretory pore 122 (117-129)  $\mu$ m from anterior end, opposite basal bulb or slightly anterior. Deirids distinct, 122-134  $\mu$ m from anterior end. Gonad well developed. Tail 108 (98-125)  $\mu$ m, straight or tip very slightly bent, annulated to end, with a finely rounded tip. Spicules ventrally arcuate; gubernaculum simple. Bursa coarsely crenate. Cloacal lips protruding, anterior one more conspicuously.

TYPE HABITAT AND LOCALITY

Soil around roots of grass (*Cynodon dactylon*), Mas-hobra, Himachal Pradesh, India (altitude : 2 340 m).

TYPE MATERIAL

Holotype female and four female and five male paratypes at Muséum national d'Histoire naturelle, Laboratoire des vers, Paris, France; six female and five

male paratypes at Indian Agricultural Research Institute, New Delhi, India.

#### DIAGNOSIS

*Tylenchus magnus* n. sp. can be distinguished by having a slightly arcuate to C-shaped body, a broad and distinct lip region, an S-shaped excretory duct, an almost straight tail, 5.0-6.8 times the anal body width, with a rounded tip.

*T. magnus* n. sp. comes close to *T. capitatus* Andrassy, 1979 and *T. elegans* de Man, 1876 but differs from both in tail shape, a posteriorly placed vulva, longer stylet and spicules and a lesser  $c'$ -value (hooked tail tip;  $V = 66$ ; stylet  $14 \mu\text{m}$ ; spicules  $21-23 \mu\text{m}$ ;  $c' = 8.5$  in *T. capitatus*).

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Curved tail end,  $V = 60-66.5$ , stylet  $14-15 \mu\text{m}$ , spicules  $21-22 \mu\text{m}$  and  $c' = 7-8$  in *T. elegans*). It further differs from *T. capitatus* which has a more slender body ( $a = 41$ ) and vulva-anus distance 1.7 times the tail length and from *T. elegans* in having a broad and differently shaped lip region.

#### REFERENCES

- ANDRÁSSY, I. (1979). The genera and species of the family Tylenchidae Örley, 1880 (Nematoda). I. The genus *Tylenchus* Bastian, 1865. *Acta zool. hung.*, 25 : 1-33.
- DE MAN, J. G. (1876). Onderzoekingen over vrij in de aarde levende Nematoden. *Tijdschr. nederl. Dierk. Ver.*, 2 : 1-119.