

**Tubixaba tuxaua N.G. N. SP.,**  
**A SUSPECTED PARASITIC NEMATODE OF SOYBEAN**  
**ROOTS (APORCELAIMIDAE)**

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**TUBIXABA N. GEN.**

Aporcelaimidae. Large nematodes (length about 9-10 mm). Cuticle thick, with criss-cross lines in the cortical layer. Innermost layer with rows of closely fine punctations, resulting in zig-zag transverse striae. Lips distinctly separate one another. Amphids without sclerotized median support; amphidial chambers undivided, with biconvex outline in face view. Oral aperture hexagonal. Anterior part of pharynx appearing hexagonal in face view.

Axial spear with the aperture occupying one third of its length. Oesophago-intestinal disc absent. Vulva a transverse slit without cuticularized lips. Male with a ventromedian series and an adanal pair of spaced supplements.

**Type species:** *Tubixaba tuxaua* n.sp.

**Diagnosis:** *Tubixaba* n.gen. differs from all other genera of Aporcelaimidae Heyns, 1966, in having axial spear with short aperture (HEYNS, 1966; THORNE & SWANGER, 1936).

It shows many characters in common with *Aporcelaimellus* Heyns, 1966, differing in having: a) longer and slenderer body; and, b) cuticle with criss-cross lines and no transverse striae in the cortical layer.

*Tubixaba* g.n. also resembles *Aporcelaimus* Thorne & Swanger, 1936, from which it differs in having: a) oral aperture and anterior part of pharynx hexagonal; b) lips of vulva not cuticularized; and, c) amphids undivided, without sclerotized median support.

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DESCRIPTION OF **TUBIXABA TUXAUA** N.SP.

Females (holotype and 2 paratypes, respectively): L = 11.60 - 11.66 - 9.44mm; a = 63.68 - 61.38 - 57.51; b = 7.60 - 6.90 - 6.36; c = 179.29 - 170.33 - 146.97; c' = 0.53 - 0.66 - 0.64; V% = 51.28 - 51.28 - 51.69; spear = 32.90 - 31.42 - 31.42  $\mu$ m. Males (allotype and 2 paratypes, respectively): L = 11.04 - 10.75 - 10.75 mm; a = 70.60 - 70.67 - 67.06; b = 6.40 - 6.58 - 6.20; c = 157.70 - 179.67 - 149.21; c' = 0.62 - 0.60 - 0.66; spear = 32.10 - 31.43 - 30.00  $\mu$ m.

**Females.** Cuticle 13  $\mu$ m thick on front part of neck, 14  $\mu$ m towards middle region and 20  $\mu$ m on tail; it is a multilayered structure (the exact correspondence with the three main layers, namely outer or cortical, middle or matrix and inner or basal, and its subdivisions, could not be determined). The innermost layer presents rows of closely fine punctations, resulting in transverse striae, sometimes assuming a zig-zag pattern.

There are radial striae in a middle (matrix?) layer. The outer or cortical layer has criss-cross lines but no transversal striae. Lateral, ventral and dorsal cuticular pores present. Lateral pores arranged in two rows along dorsal and ventral edges of the lateral field; ventromedian pores occur over the entire length, but the dorsal median ones were observed only in the oesophageal region. Lateral fields about one fifth as wide as body.

Polymiarian; somatic muscle layer well developed, at least as cuticle. Hypodermic layer very thin. Lip region set off by a constriction; narrower than adjoining body, three times as wide as high and less than one fifth as wide as base of neck; lips distinct and well separated one another, somewhat roundish, with the usual papillae not interfering on their contours.

Amphids without sclerotized median support; amphidial chamber undivided, stirrup-shaped in lateral view and with bi-convex outline in face view; their aperture is about half as wide as lip region.

Oral aperture hexagonal, with the subdorsal sides near to each other. Anterior part of pharynx appearing hexagonal in face view. Guiding-apparatus with the fixed ring represented by applied fold of the sheath. Axial spear with the aperture occupying about one third of its length.

Oesophagus expanding gradually from about 30% of its length. Details of oesophagus obscure. Oesophago-intestinal disc not observed. Nerve ring surrounding the anterior part of oesophagus at one fifth of its length.

Intestinal cells packed with dark granules, about 10  $\mu\text{m}$  in diameter.

Tail conoid, bluntly rounded, its length being about three fifth the anal body diameter, showing two pairs of subdorsal papillae, as figured. Vulva a transverse slit, 29  $\mu\text{m}$  wide, situated at the middle of body. Vagina penetrating one third across the body diameter. Didelphic; ovaries reflexed. Details of reproductive organs obscured by the thick body diameter. Uteri without eggs, filled with spermatozoa.

Male with spicules measuring 200-204  $\mu\text{m}$  along the curved median line. Lateral guiding pieces 43-47  $\mu\text{m}$  long; supplements consisting of an adanal pair, and a ventromedian series of 12-13 irregularly spaced from each other, situated anteriorly to the spicules.

Type specimens: holotype (female), allotype (male), 1 paratype female and 1 paratype male on slide 604c/01. Other paratypes on slides 604c/02-10 and 636/01-10.

**Type locality:** holotype, allotype and paratypes from soil around roots of soybean, *Glycine max* (L.) Merrill, cv. Bragg, in Marechal Cândido Rondon, Paraná, Brazil. Material collected by Eng. Agr. Helenita Antônio, on March 3, 1977. A further collection made by Eng. Agr. Regina Gomes Carneiro, in 1979.

Food habits: *Tubixaba tuxaua* is strongly regarded as a suspected parasitic nematode of soybean roots. The writers hope to clear up this very interesting point in the near future.

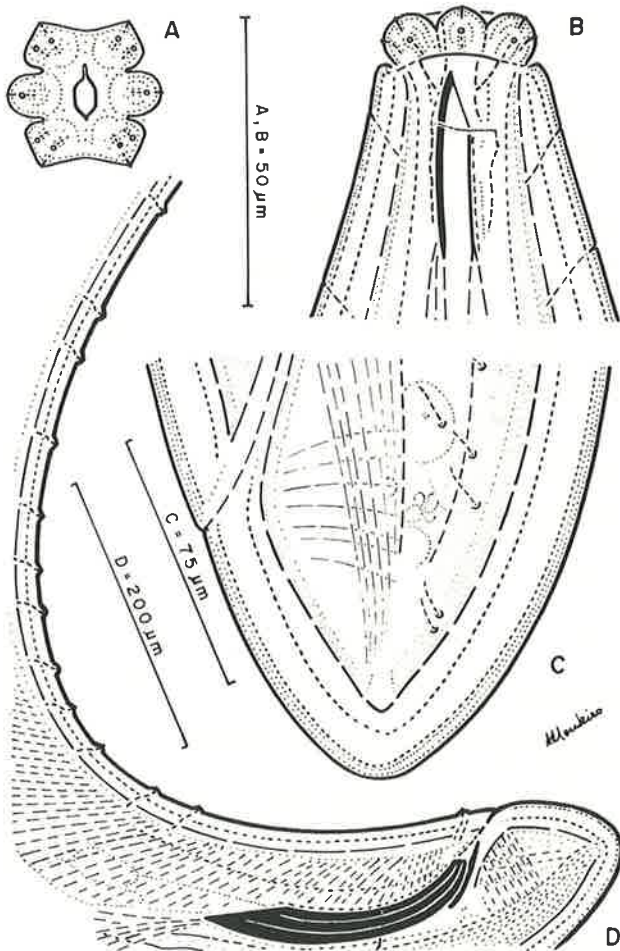
GREEN & NORWOOD (1976) carried out pot testes with carrot seedlings and various nematode species, showing that an *Aporcelaimellus* sp. interfered with root growth. Actually, this form caused damage similar to that of *Longidorus*, the roots being fewer, shorter and often stained. This was the first record of damage to plant roots by nematodes of this genus. *T. tuxaua* may prove to be a second record by a species closely resembling an *Aporcelaimellus* sp.

The words *Tubixaba* and *tuxaua* were drawn from the tupy language, both having about the same meaning, that is, **the greatest** or **the largest** or **the chief** (CUNHA, 1978; DRUMOND, 1953).

#### LITERATURE CITED

- CUNHA, A.G. DO, 1978. **Dicionário histórico das palavras portuguesas de origem tupi**, Ed. Melhoramentos e Edit. da USP, S.Paulo, 357pp.

- DRUMOND, C., 1953. Vocabulário na língua brasileira, 2.º vol, (1-2). **Bol. Fac. Fil. Ci. Letras USP** 164: 1-149.
- GREEN, C.D. & J.M. NORWOOD, 1976. Nematodes around carrot crops. **Rep. Natn. Veg. Res. Stn. for 1975**: 95.
- HEYNS, J., 1966. On the morphology and taxonomy of the Aporcelaimidae, a new family of Dorylaimoid nematodes. **Entomol. Mem. S. Africa** 10: 1-151.
- THORNE, G. & H.H. SWANGER, 1936. A monograph of the nematode genera *Dorylaimus* Dujardin, *Aporcelaimus* n.g., *Dorylaimoides* n.g. and *Pungen-tus* n.g. **Capita Zool.** 6(4): 1-223, 31 ests.



*Tubixaba tuxaua* g.n. sp.n. A - En face view; B - anterior region; C - tail region of female; D - posterior region of male, showing distribution of supplements.