

STUDIES OF PLANT AND SOIL NEMATODES

4. *TYLENCHULUS OBSCURUS* N.SP. (NEMATODA : TYLENCHULIDAE)

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SUMMARY

Tylenchulus obscurus is described from the roots of *Hodgkinsonia frutescens* C. T. White. This species is closely related to *T. mangenoti* Luc but can be distinguished by the pre-equatorial position of the excretory pore.

I. INTRODUCTION

Two species of the genus *Tylenchulus* have been described previously. *T. semi-penetrans* Cobb (the citrus nematode) is an important pest in most countries where citrus is grown; *T. mangenoti* Luc is a root parasite of *Dorstenia embergeri* G. Mangenot in Ivory Coast.

Recently larvae of a new species of *Tylenchulus* were obtained from soil associated with the roots of *Hodgkinsonia frutescens* C. T. White, a shrub common on rain-forest margins in North Queensland. The swollen, tightly coiled females of the species were subsequently found in young roots in which they were partially embedded under the cover of small, dark, brittle scales. Usually one female, sometimes two, occurred under a scale, together with numerous eggs and larvae and an occasional male. Females were obtained by staining small pieces of infested root in cotton blue lactophenol and pressing them between glass slides.

II. DESCRIPTION

Tylenchulus obscurus n.sp.

(Figures 1 and 2)

Females.—L = 264-333 μ ; a = 4.5-5.8; b = 2.5-3.9; c = 11.0-13.3; V = 77-78%; P.E. = 46%.

Holotype.—L = 280 μ ; a = 5.8; b = 3.9; c = 11.2; V = 77%; P.E. = 46%.

Body short, tightly coiled, middle greatly enlarged, tapering towards both ends. Head hemispherical; internal sclerotization weak. Cuticle with fine transverse striae 3.5 μ apart in mid-body region on dorsal side. Stylet 12 μ long; basal

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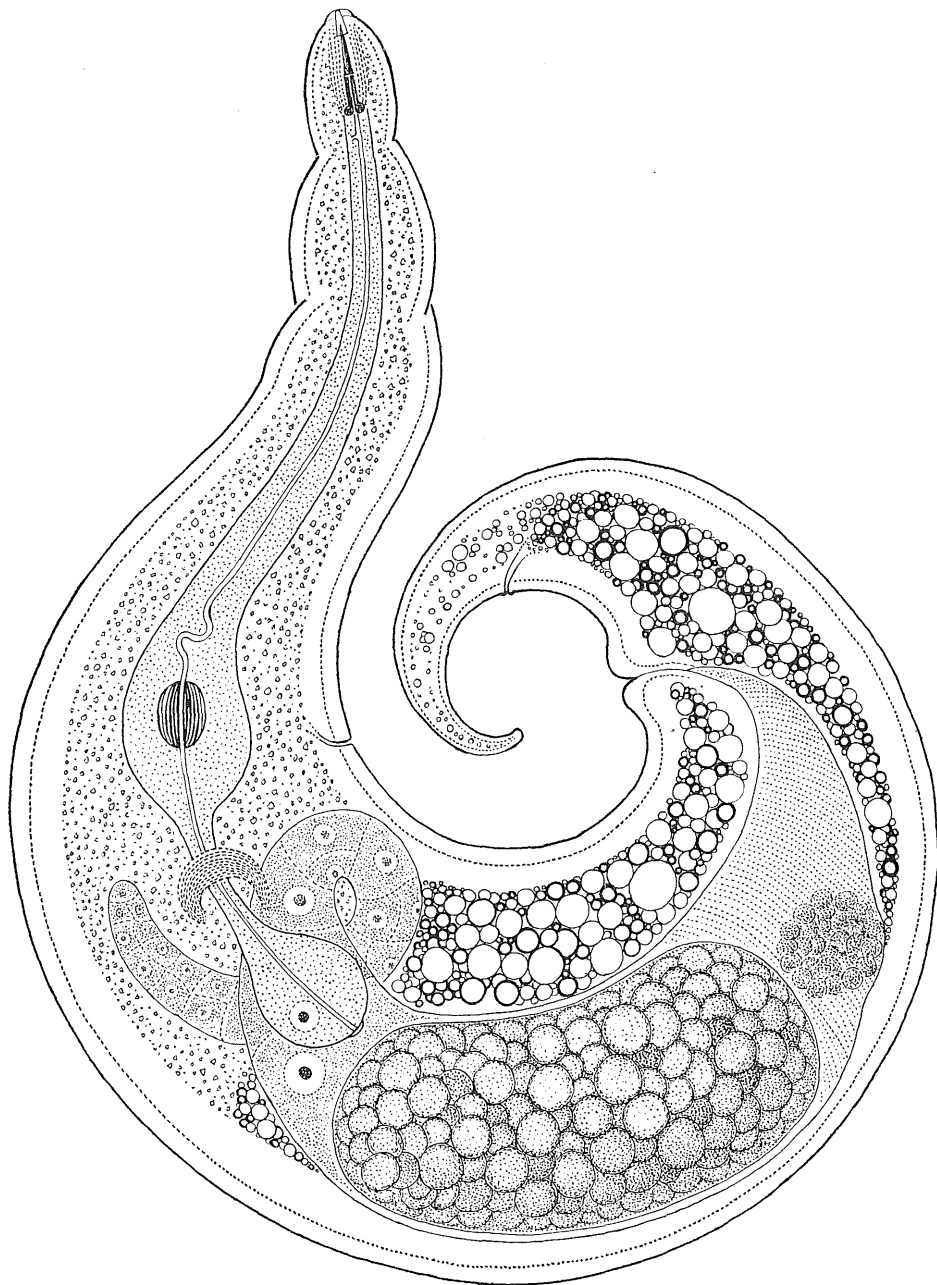


Fig. 1.—*Tylenchulus obscurus* n.sp. Mature female ($\times 1000$).

knobs small, rounded, 2μ across. Dorsal oesophageal gland orifice 5μ behind stylet. Prorhabdion half stylet length. Oesophagus with large, ovate metacarpus 16.7μ wide containing sclerotized crescentic valve 7μ long; isthmus slender,

22 μ long; terminal bulb pyriform, smaller than metacarpus. Nerve ring crossing isthmus immediately behind metacarpus. Excretory pore pre-equatorial; canal directed anteriorly. Vulval lips enlarged. Ovary single, prodelphic, coiled. One egg at a time in uterus. Post-vulval uterine sac absent. Tail short, conoid-arcuate; terminus bluntly rounded.

Males.—L = 319-417 μ ; a = 26-31; b = 3.6-3.8; c = 7.1-7.7; T = 36-42%; P.E. = 38%.

Allotype.—L = 389 μ ; a = 30.4; b = 3.6; c = 7.4; T = 38%; P.E. = 38%.

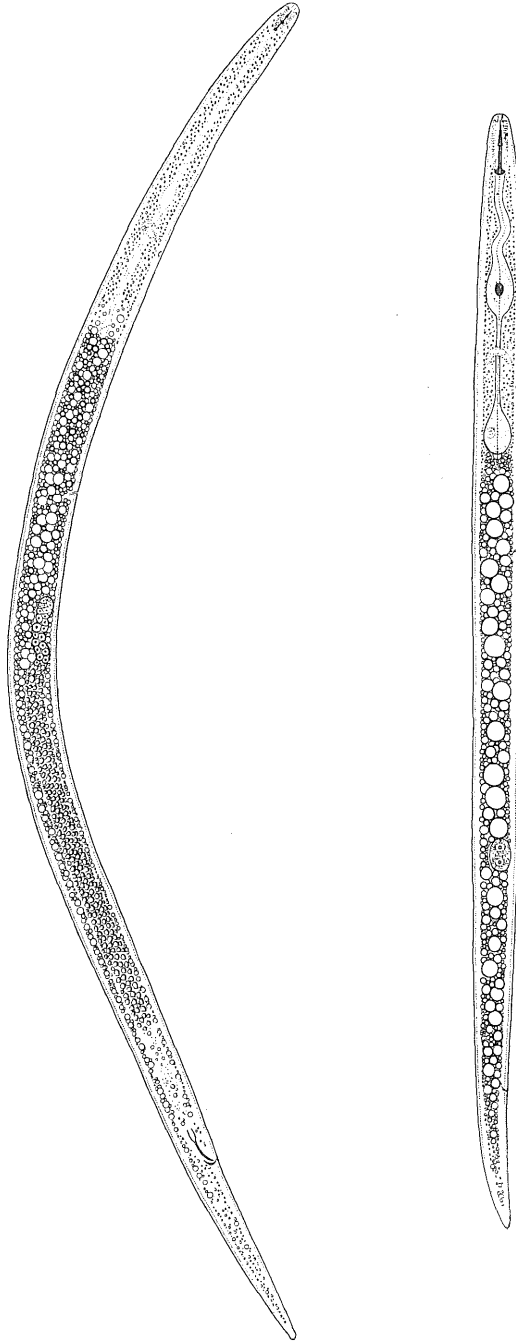
Body slender, vermiform. Cuticle with fine transverse striae 0.6 μ apart in mid-body region. Head hemispherical, not offset; internal sclerotization weak. Stylet 9 μ long, apparently non-functional; small median and terminal swellings present. Oesophagus partially degenerate. Procorpus long, slender; metacarpus ovate, one-third as wide as body, valve absent; isthmus long, subequal in width with procorpus; terminal bulb rudimentary. Hemizonid one mid-body diameter behind metacarpus. Nerve ring crossing isthmus midway between metacarpus and hemizonid. Excretory pore pre-equatorial, 2.8 mid-body diameters behind oesophagus; canal directed posteriorly. Anus surrounded by slight body elevation. Caudal alae absent. Spicules slightly arcuate, 11 μ long. Gubernaculum narrow, arcuate, 3.5 μ long. Tail conoid, 5 anal body diameters long; terminus bluntly rounded.

Larvae (second stage).—L = 250-300 μ ; a = 24-27; b = 2.8-3.4; c = 9.0-9.4; P.E. = 42-45%.

Body slender, vermiform, straight when relaxed. Cuticle with fine transverse striae 0.6 μ apart in mid-body region. Lateral fields with 4 incisures. Head hemispherical, not offset. Stylet 14-15 μ long; knobs 1.6 μ across, rounded. Prorhabdion about half stylet length. Dorsal oesophageal gland orifice 4-5 μ behind stylet. Procorpus gradually widening to ovate metacarpus with sclerotized valve 4 μ long; isthmus about half as wide as procorpus, 2.5 mid-body widths in length; terminal bulb pyriform, twice as long as wide. Conoid oesophago-intestinal valve present. Nerve ring crossing middle of isthmus. Hemizonid slightly posterior to nerve ring. Excretory pore 2-3 mid-body widths behind oesophagus; canal directed posteriorly. Tail conoid, 5-6 times as long as anal body width; terminus bluntly rounded.

Eggs.—62-70 μ x 25-30 μ .

Types.—Holotype (female) slide Reg. No. G2517 and allotype (male) slide Reg. No. G2518 in the Queensland Museum; labelled paratypes preserved in F.A.A. in the Queensland Department of Agriculture and Stock Nematology Collection.



— Fig. 2.—*Tylenchulus obscurus* n.sp. Left, male ($\times 500$); right, larva (second stage) ($\times 500$).

Type host.—*Hodgkinsonia frutescens* C. T. White.

Type locality.—Rain-forest near Tolga, North Queensland.

Diagnosis.—In *T. obscurus* as in *T. mangenoti* (Luc 1957) an exudate from the mature female hardens to form a protective scale-like cover; in *T. semi-penetrans* the exudate remains soft and sand grains readily adhere to it. Larvae of *T. obscurus* and *T. mangenoti* have shorter, more robust tails than larvae of *T. semi-penetrans*. In females, males and larvae of *T. obscurus* the excretory pore is pre-equatorial in position; in *T. mangenoti* the pore is equatorial or post-equatorial.

REFERENCE

- Luc, M. (1957).—*Tylenchulus mangenoti* n.sp. (Nematoda-Tylenchulidae). *Nematologica* 2:329-34.

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