

NEMATODES FROM RAJASTHAN. II. SIX NEW RECORDS OF ORDER DORYLAIMIDA FROM INDIA

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INTRODUCTION

During the years 1993-1998, a number of faunistic surveys were conducted by the scientists of Desert Regional Station, Zoological Survey of India, Jodhpur in districts of Rajasthan State. These scientists have brought many soil samples from around roots of economically important agricultural crops for the study of phytophagous, predaceous and saprophagous nematodes. These soil samples have yielded a wide variety of nematodes and thus a series of paper entitled "Nematodes from Rajasthan" has been initiated by Baqri and Bohra (in press).

This is the second paper of the series which records the following six species of order Dorylaimida for the first time from India : *Laimydorus thornei* Andrassy, 1969; *Mesodorylaimus litoralis* Loof, 1969; *Mesodorylaimus margaritus* Basson & Heyns, 1974; *Tubixaba parva* Pretorius, Kruger & Heyns, 1987; *Labronema virgo* Monteiro, 1970; and *Tylencholaimus gertii* Kruger, 1965. Of these, the genus *Tubixaba* Monterio & Lordello, 1980 is being reported for the first time from India.

Material and Methods : The nematodes were fixed in hot 4% formalin, and mounted in anhydrous glycerine.

Laimydorus thornei Andrassy, 1969

(Fig. 1. A & B)

Dorylaimus filicaudatus nec Daday, 1905 apud Thorne & Swanger, 1936.

Measurements : Female (1) : L = 1.90 mm, a = 32, b = 4.9, c = 5.5 V = 947^{10} .

Diagnostic characters : Body almost straight upon fixation. Lip region continuous with body; lips amalgamated. Odontostyle 20 μ m; its aperture 7 μ m or 35% of odontostyle length. Odonophore 22 μ m long. Guiding ring double, 8 μ m from anterior extremity. Basal expanded part of oesophagus occupies 44% of total oesophageal length. Vulva a transverse slit. Vagina distally sclerotised. Female reproductive system amphidelphic. Prerectum 70 μ m or 2.5 anal body-width long. Tail 345 μ m or 12 anal body-width long, first concave then setaceous.

Male : Not found.

Remark The present specimen fits well with the original description provided by Daday, 1905 (Throne & Swanger, 1936).

Material : Single female mounted on slide no. IV/1156.

Habitat and locality : Collected from soil around roots of wheat (*Triticum aestivum*) at Darrah, district Kota.

Elsewhere Paraguay, Paramaribo, Surinam and Brazil.

***Mesodorylaimus litoralis* Loof, 1969**

(Fig. 1, C & D)

Measurements : Females (2) L = 1.20-1.43 mm, a = 29-31, b = 4.5-4.7, c = 15-17, V = ¹⁵47-50¹⁶

Diagnostic characters : Body almost straight upon fixation. Lip region marked by slight depression. Odontostyle 13-15 μm long; aperture 4-5 μm or 30-33% of odontostyle length. Odontophore 24-26 μm long. Guiding ring 7-8 μm or about 3/4th of head-width from anterior end. Basal expanded part of oesophagus occupies 45-46% of total oesophageal length. Prerectum 110-112 μm or 4 times anal body-width long. Female reproductive system amphidelphic. Female tail elongate, 80-82 μm or 2.8 anal body-width long.

Male : Not found.

Material : Two females mounted on slide no. IV/1152.

Habitat and Locality : Collected from soil around roots of rice (*Oryza sativa*) at Gogunda, district Udaipur.

Elsewhere : Holland, South Dakota (United States of America).

***Mesodorylaimus margaritus* Basson & Heyns, 1974**

(Fig. 1, E & F)

Measurements : Females (2) : L = 1.54-1.56 mm, a = 48-49, b = 4.8-5.0, c = 19.0-19.5, V = ⁷⁻⁸58-59⁸⁻⁹.

Diagnostic characters : Body slightly ventrally bent upon fixation. Lip region distinctly set off. Odontostyle 12-13 μm long; aperture 4-5 μm or 33-38% of odontostyle length. Odontophore 18-19 μm long. Guiding ring 8-9 μm from anterior end. Basal expanded part of oesophagus occupies 45-47% of total oesophageal length. Female reproductive system amphidelphic. Female tail 78-80 μm or 3 anal body-width long, elongate conoid dorsally bent in its posterior third.

Male : Not found.

Remarks The present population agrees with the original description of *M. margaritus* Basson & Heyns, 1974, except more posteriorly situated vulva (V = 58-59 against 41-46 in type population).

Material : Two females mounted on slide no. IV/1154.

Habitat and locality : Collected from soil around roots of wheat (*Triticum aestivum*) at Peeh, district Nagaur.

Tubixaba parva Pretorius, Kruger & Heyns, 1987

(Fig. 1, G & H)

Measurements : Females (4) : L = 3.12-3.78 mm, a = 45-52, b = 4.0-6.0, c = 89-96, V = $7.854-557.8$.

Diagnostic characters : Body ventrally curved in its posterior third upon fixation. Lip region distinctly set off by deep constriction. Lips twice as wide as high, separated. Odontostyle 15-17 μm or about one lip region-width long; aperture 5-6 μm or 33-35% of odontostyle length. Odontophore rod-like, 26-30 μm or 1.6-1.7 times the odontostyle length. Guiding ring thin, situated 9-10 μm or 0.5-0.6 lip region-width from anterior end. The basal expanded part of oesophagus occupies 51-54% of total oesophageal length. Vulva a transverse slit. Vagina encircled by sphincter, sclerotized distally. Female reproductive system amphidelphic. Prerectum 240-264 μm or 4.8-6.8 anal body-width long, with four caudal pores on each side.

Male : Not found.

Material : Females of Nagaur population mounted on slide no. IV/1173-1175 and Pali population mounted on slide no. IV/1176.

Habitats and localities : Collected from soil around roots of guar (*Cyamopsis tetragonoloba*) and millet (*Pennisetum typhoides*) at Nagaur, district Nagaur and Bijapur, district Pali.

Elsewhere : South Africa.

Labronema virgo Monteiro, 1970

Mesurements : Female (1) : L = 1.98 mm, a = 36, b = 7.35, c = 65, V = 1251^{12} .

Diagnostic characters : Body more or less straight upon fixation. Lip region set off by constriction. Odonostyle 15 μm long. Guiding ring double, 6 μm from anterior extremity. Odontophore 27 μm long. Basal expanded part of oesophagus occupies about more than half of oesophageal length. Female reproductive system amphidelphic. Vulva longitudinal. Prerectum 4 times the anal body-width long. Tail 30 μm long, rounded conoid.

Male : Not found.

Remarks : The lone specimen has become dorsoventrally flattened during the study and thus it was difficult to draw the camera lucida diagram. Fortunately the identification of the specimen had been confirmed before it was slightly damaged.

The present specimen fits well with the original description provided by Monterio, (1970).

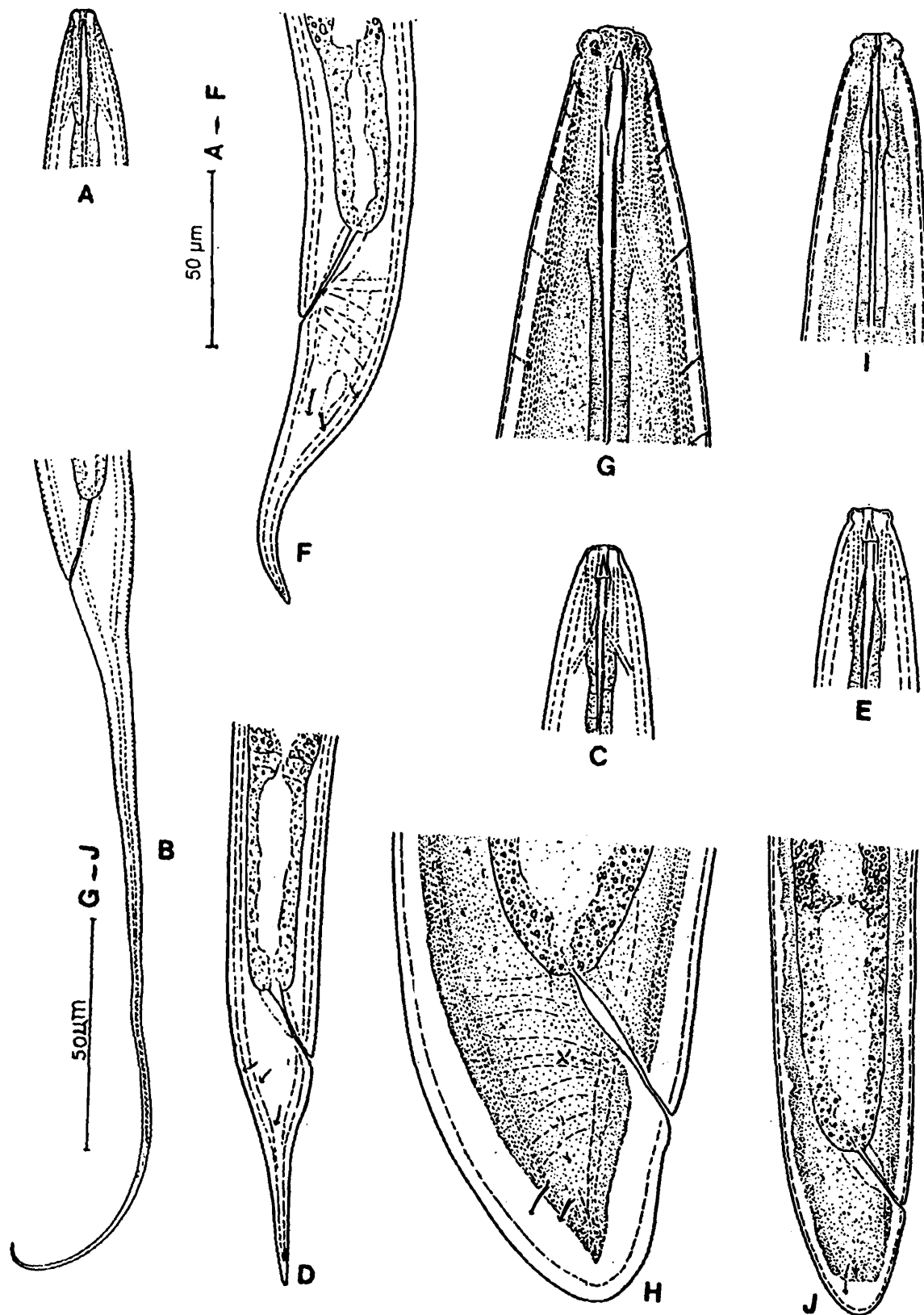


Fig. 1. A-B : *Laimydorus thornei* Andrassy, 1969 : A-Female anterior end; B-Female tail.

C-D : *Mesodorylaimus litoralis* Loof, 1969. C-Female anterior end; D-Female tail.

E-F : *Mesodorylaimus margaritus* Basson & Heyns, 1974. E-Female anterior end; F-Female tail.

G-H : *Tubixaba parva* Pretorius, Kruger & Heyns, 1987. G-Female anterior end; H-Female anterior end; H-Female tail.

I-J : *Tylencholaimus gertii* Kruger, 1965. I-Female anterior end; J-Female tail.

Material : Single female mounted on slide no. IV/1203.

Habitat and localitiy : Collected from soil around roots of unidentified grasses around Sam area, district Jaisalmer.

Elsewhere : Spain and Brazil.

***Tylencholaimus gertii* Kruger, 1965**

(Fig. 1, I & J)

Measurements : Females (5) : L = 0.68-0.75 mm, a = 21-23, b = 3.7-4.2, c = 30-37, V = 44-46¹⁶⁻²³.

Diagnostic character : Body almost straight upon fixation. Lip region cap-like, marked off from body by constriction. Lips amalgamated, with their inner parts forming an offset perioral disc. Odontostyle 8-9 μm or 0.8 lip region-width long; aperture 3-4 μm or 37-40% of odontostyle length. Odontophore with small basal thickenings, 11-12 μm or about 1.3 times the odontostyle length. Guiding ring single, 6 μm or about 0.54-0.56 lip region-width from anterior end. Basal expanded portion of oesophagus occupies 43-45% of oesophageal length. Vulva a tranverse slit. Female reproductive system mono-opisthodelphic. Prerectum 52-55 μm or about 2.5 anal body-width long. Tail rounded conoid, 22-25 μm or 1.0-1.1 anal body-width long.

Male : Not found.

Material : Five females mounted on slide no. IV/1183-1184, IV/1192-1193 and IV/1195.

Habitat and locality : Collected from soil around roots of sorghum (*Sorghum vulgare*) at Sumerpur Road, district Pali.

Elsewhere : Pertoria (South Africa), Australia.

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SUMMARY

The following six species of the Order Dorylaimida have been recorded for the first time from India : *Laimydorus thornei* Andrassy, 1969; *Mesodorylaimus litoralis* Loof, 1969; *Mesodorylaimus margaritus* Basson & Heyns, 1974; *Tubixaba parva* Pretorius, *et. al.*, 1987; *Labronema virgo* Monteiro, 1970; and *Tylencholaimus gertii* Kruger, 1965.

The genus *Tubixaba* Monteiro & Lordello, 1980 has been reported for the first time from India.

REFERENCES

- Andrassy, I. (1969). Taxonomische Übersicht der Familien Prodorylaimidae n. fam. and Dorylaimidae de Man, 1876. *Opuscula Zoologica Budapest* **9** : 187-233.
- Baqri, Q. H. and Bohra, P. 2000. Nematodes from Rajasthan, India. I. Six new Species of Dorylaimida. *Nematology* (in press).
- Basson, J. B. E. and Heyns, J. (1974). The genus *Mesodorylaimus* in south Africa. (Nematoda : Dorylaimoidea). *Phytophylactica* **6** : 261-287.
- Daday, E. Von. 1905. Untersuchungen über die Susswasser-Mikrofauna Paraguays. Mit einem Anhang von W. Michaelsen. *Zoologica Stuttg* **18** : 1-349 & 362-374.
- Kruger, S. P. (1965). New species of the genera *Tylencholaimus* and *Dorylaimellus* from South Africa. *Proceedings of Helminthological Society of Washington* **32** : 1-7.
- Loof, P. A. A. (1969). Taxonomy of some species of the genus *Mesodorylaimus* Andrassy, 1959 (Dorylaimoidea). *Nematologica* **15** : 253-274.
- Monteiro, A. R. (1970). Dorylaimoidea des Cafezais paulistas (Nemata : Dorylaimida). Thesis Escola superior de Agriculture "Luizde Querioz" Sao Paulo, 137 pp.
- Monteiro, A. R. and Lordello, L. G. E. (1980). *Tubixaba tuxaua* n.g., n. sp., a suspected parasitic nematode of Soyabean roots (Aporcelaimidae). *Revista Agric., Piracicaba Brazil* **55** : 301-304.
- Pretorius, E. M. J., Kruger, C. de W., Heyns, J. 1987. A new species of *Tubixaba* Monterio & Lordello, 1980 (Dorylaimida : Aporcelaimidae) with an emendation of the genus. *Koedoe* **30** : 41-47.