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NEMATODES OF LEGUMINOUS CROPS IN INDIA
IV. TWO NEW SPECIES OF *ROTYLENCHUS* FILIPJEV, 1936
(HOPLOLAIMIDAE)

BY

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Rotylenchus siddiqii sp. n., 0.61-0.78 mm long ; lip region with indistinct annulations ; spear 22-24 μ m long ; spear knobs rounded ; tail hemispherical ; and phasmids 10-13 striae anterior to anus. *Rotylenchus secundus* sp. n., 0.63-0.77 mm long ; lip region faintly striated ; spear 24-25 μ m ; spear knobs anteriorly pointed ; tail cylindroid and phasmids at anal level.

During the investigations on the nematodes attacking leguminous crops in India the authors encountered two new species of the genus *Rotylenchus* Filipjev, 1936 from the soil samples collected by the senior author in the district Mirzapur of Uttar Pradesh.

Observations and measurements were made on specimens fixed in hot 4% formalin and processed to glycerine by slow method. Type specimens are in the Nematode collection of the Department of Zoology, Aligarh Muslim University, Aligarh, India.

*ROTYLENCHUS SIDDIQII** sp. n.

(Fig. 1)

10 ♀♀ (*paratypes*) : L=0.61-0.78 mm ; a=27-33 ; b=6.2-7.3 ; b'=5.2-6.0 ; c=48-63 ; V=60-62 ; O=44-50.

Female (Holotype) : L=0.76 mm ; a=28 ; b=6.8 ; b'=5.5 ; c=54 ; V=61.

*The new species is named after Dr. M. Rafiq Siddiqi, Commonwealth Institute of Helminthology, St. Albans, Hertfordshire, England.

Female: Body forming loose spiral or closed 'C' shape upon fixation, tapering gradually towards extremities (tapering more pronounced anterior to oesophago-intestinal junction). Transverse striae about $1\ \mu\text{m}$ apart near middle of body. Lateral fields marked with 4 incisures, about $1/5$ th of body-width near middle, areolated only anteriorly in the oesophageal region.

Lip region conoid to high hemispherical, continuous with body or marked off by a slight depression, annulations indistinct. Spear $23\ \mu\text{m}$ ($22-24\ \mu\text{m}$), anterior part (metenchium) $11-12\ \mu\text{m}$ or 47-50% of spear length. Spear knobs rounded, $4-5\ \mu\text{m}$ across. Anterior and posterior cephalids 4-7 and 15-18 striae behind lip region respectively. Excretory pore in front of the level of oesophago-intestinal junction, $88-106\ \mu\text{m}$ from anterior extremity, Hemizonid 2-3 striae wide, 0-2 striae in front of excretory pore. Hemizonion 11-15 striae posterior to hemizonid. Orifice of dorsal oesophageal gland $10-11\ \mu\text{m}$ from base of spear. Median oesophageal bulb rounded to distinctly oval, distance from anterior end to its refractive inner thickening $67-74\ \mu\text{m}$. Nerve ring $80-88\ \mu\text{m}$ from anterior end.

Vulva transverse, Epiptygma not seen. Spermatheca axial, occasionally slightly offset dorsally, without sperms. Tail terminus hemispherical or broadly rounded, 0.7-0.9 anal body-width long, with 9-14 annules ventrally. Phasmids minute pore-like, 10-13 striae anterior to anus, $22-27\ \mu\text{m}$ from tail terminus.

Males: Not found.

Type habitat and locality: Soil around roots of *Pisum sativum* L. from Dudhi, Mirzapur, U. P.

Other host: Soil around roots of *Dolichos lablab* L. from Dudhi, Mirzapur, U. P.

Type specimens: Collected in April, 1972; holotype and two paratypes mounted on slide MSJ 61/*Rotylenchus siddiqii* sp. n./1; paratypes mounted on slides MSJ 60/*Rotylenchus siddiqii* sp. n./2-4.

Differential diagnosis: *Rotylenchus siddiqii* sp. n. comes close to *R. calvus* Sher, 1965 but differs from it in the shape of the head, in having head annules indistinct or absent, in the posterior position of the orifice of dorsal oesophageal gland, and in the absence of males.

ROTYLENCHUS SECONDUS sp. n.

(Fig. 2)

10 ♀♀ (*paratypes*): $L=0.63-0.77\ \text{mm}$; $a=30-39$; $b=5.6-6.7$; $b'=5.0-5.5$; $c=40-58$; $V=61-65$; $O=50-60$.

Female (Holotype): $L=0.74\ \text{mm}$; $a=33$; $b=6.2$; $b'=5.3$; $c=58$; $V=61$.

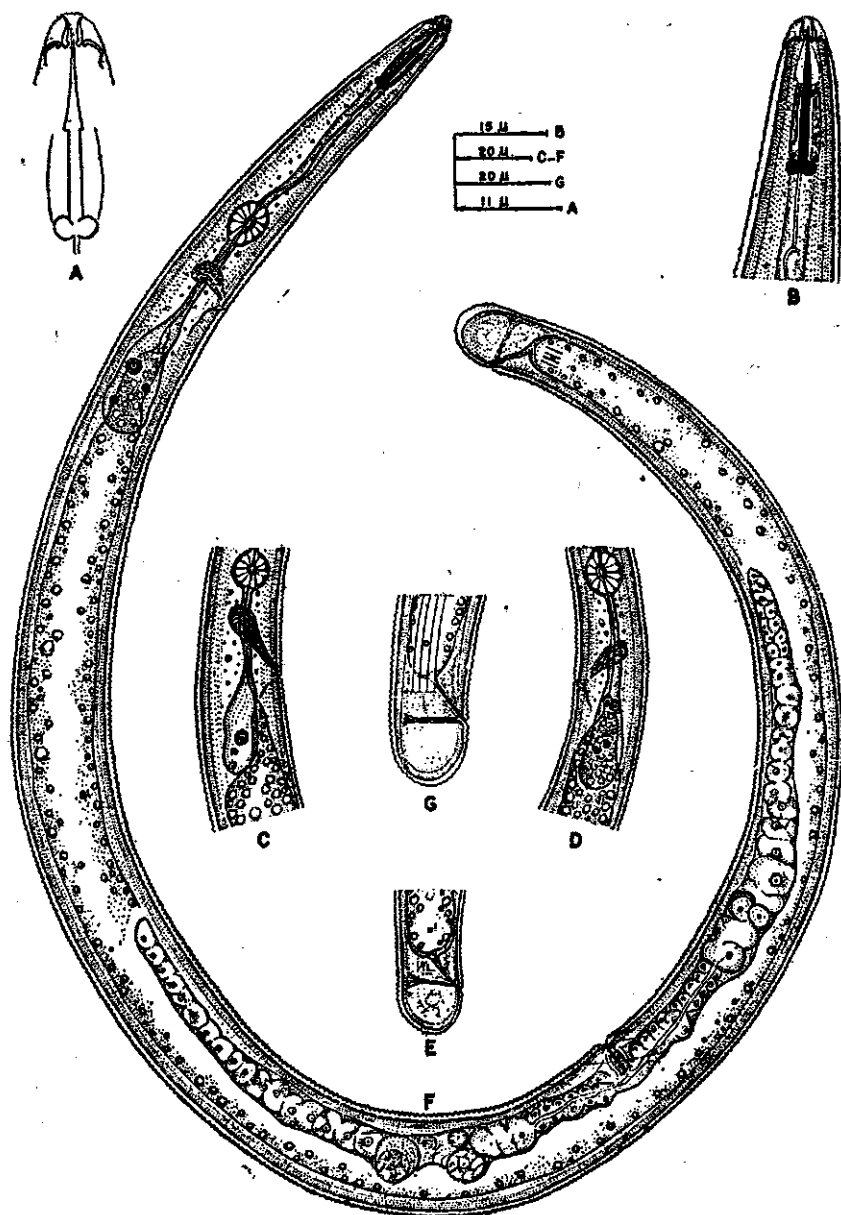


Fig. 1. *Rotylenchus siddiqii* sp. n. Female: A—Head with spear; B—Head end; C & D—Oesophageal region below procarpus; E & G—Tails; F—Female entire

Female : Body spirally curved upon fixation, tapering gradually anterior to oesophago-intestinal junction. Transverse striae on body cuticle distinct, 1-2 μm apart near mid-body. Lateral fields marked with 4 incisures, occupy about 1/4th of body-width near middle, completely interrupting transverse striae except at the anterior end of body.

Lip region conical to high hemispherical, flat at apex, marked with a slight depression, annulations if present, very faint. Spear 24-25 μm long, anterior part (metenchium) 11-15 μm or 46-50% of spear length. Spear knobs anteriorly pointed or with flattened to slightly concave anterior surfaces, 5-6 μm across. Orifice of dorsal oesophageal gland 12-15 μm behind spear base. Median oesophageal bulb spherical, distance from anterior end to its refractive inner thickening 75-78 μm . Excretory pore slightly anterior to oesophago-intestinal junction, 100-107 μm from anterior extremity. Hemizonid 1-3 striae wide, adjacent to excretory pore or 1 stria above. Nerve ring 90-100 μm from anterior extremity.

Vulva transverse. Spermatheca axial or slightly offset dorsally, empty or filled with immature cells. Oocytes arranged in single or double rows. Epiptygma not seen. Tail cylindrical, with broadly rounded striated terminus of coarser annules or sometimes provided with a slight depression or a distinct notch on dorsal side, 12-15 μm or about 0.9-1.3 anal body-width long, marked with 7-11 annules ventrally. Phasmids minute pore-like, near anal level (1 stria anterior to 3 striae posterior to anal level), 13-15 μm from tail terminus.

Males : Not found.

Type habitat and locality : Several females from soil around roots of *Cajanus cajan* from Morhiyawn, Mirzapur, U. P.

Type specimens : Collected in April, 1972 ; holotype and two paratype females on slide MSJ 64/*Rotylenchus secundus* sp. n./1 ; paratypes mounted on slides MSJ 62B/*Rotylenchus secundus* sp. n./2-3.

Differential diagnosis : *Rotylenchus secundus* sp. n., comes close to *R. pumilus* (Perry, 1959) Sher, 1961 but differs due to its head shape, absence of distinct head annulations, indented spear knobs (rounded in *R. pumilus*) and absence of functional spermatheca and males. It may also be differentiated from *R. siddiqii* sp. n. by indented spear knobs (rounded in *R. siddiqii* sp. n.), shape of tail and in having posteriorly placed phasmids.

We thank the Head, Department of Zoology, Aligarh Muslim University for his encouragement and keen interest in the present research work.

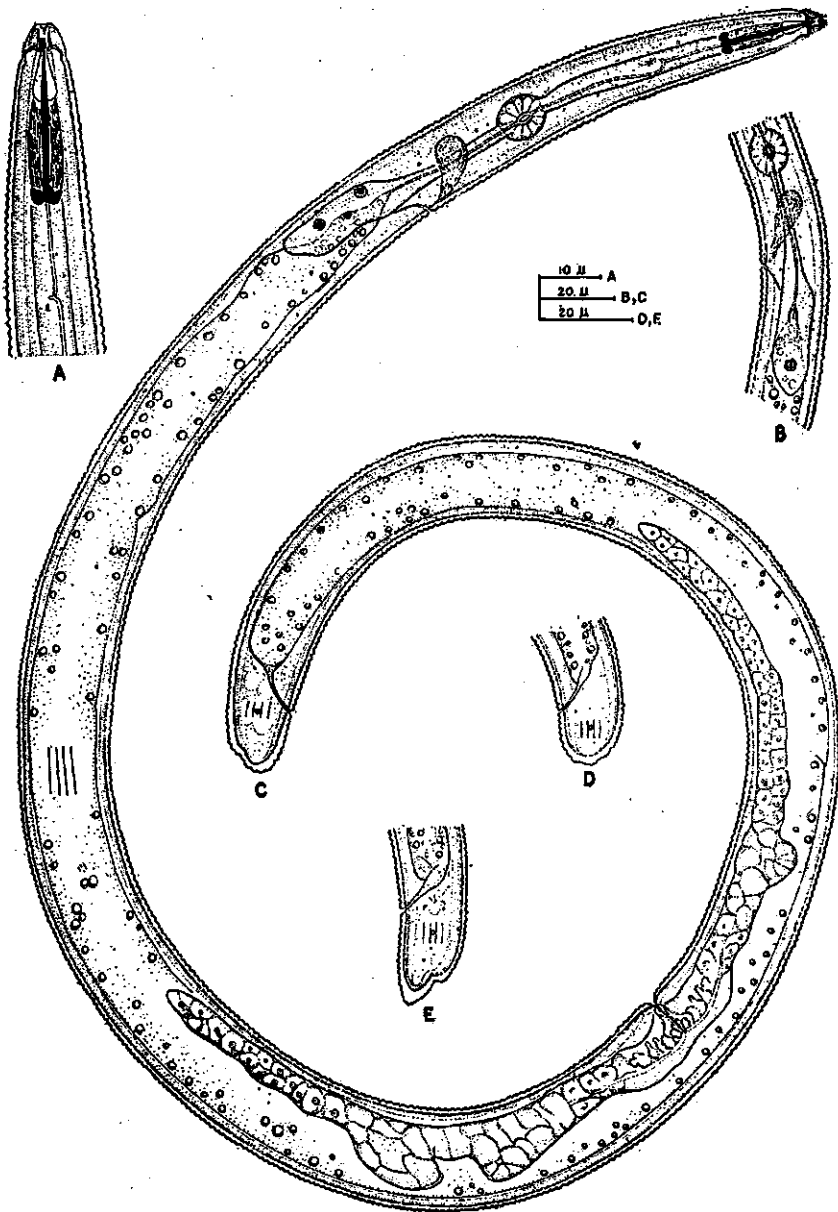


Fig. 2. *Rotylenchus secundus* sp. n. Female: A—Head end; B—Oesophageal region below procorpus; C—Entire female; D & E—Tails.

REFERENCES

- SHER, S. A. (1961). Revision of the Hoplolaiminae (Nematoda) I. Classification of nominal genera and nominal species. *Nematologica* 6: 155-169.
- (1965). Revision of the Hoplolaiminae (Nematoda) V. *Rotylenchus* Filipjev, 1936. *Nematologica* 11: 173-198.