

Two new species of the genus *Orientylus* Jairajpuri & Siddiqi, 1977 (Tylenchida: Rotylenchoidinae)

M. Sarwat SULTAN

Section of Nematology, Department of Zoology, Aligarh Muslim University, Aligarh - 202001, India.

SUMMARY

Two new species of *Orientylus* Jairajpuri & Siddiqi, 1977 from the Chamba district of Himachal Pradesh, India, are described and figured. *O. himprus* n. sp. is characterised in having a body 0.55-0.68 mm long, head marked with 3-4 annules, spear 24-27 μm long, orifice of dorsal oesophageal gland 12-14 μm from spear base and phasmids preanal. This new species is close to *O. orientalis* (Siddiqi & Husain, 1964) Jairajpuri & Siddiqi, 1979 and *O. citri* (Rashid & Khan, 1973) Jairajpuri & Siddiqi, 1979. *O. symmetricus* n. sp. is characterised in having a body 0.54-0.64 mm long, head marked with 4-5 annules, spear 25-27 μm long, orifice of dorsal oesophageal gland 12-15 μm from spear base and phasmids adanal. The new species is close to *O. orientalis* (Siddiqi & Husain, 1964) Jairajpuri & Siddiqi, 1979 and *O. secundus* (Mulk & Jairajpuri, 1975) Jairajpuri & Siddiqi, 1979. In both cases only females have been found.

RÉSUMÉ

Deux nouvelles espèces du genre *Orientylus* Jairajpuri & Siddiqi, 1977
(Tylenchida: Rotylenchoidinae)

Deux espèces nouvelles d'*Orientylus* Jairajpuri & Siddiqi, 1977, originaires du district de Chamba, Himachal Pradesh, Inde, sont décrites et figurées. *O. himprus* n. sp. est caractérisé par son corps long de 0,55-0,68 mm, sa tête marquée de 3-4 anneaux, son stylet de 24-27 μm de long, le débouché de la glande oesophagienne dorsale à 12-14 μm de la base du stylet et la position pré-anale des phasmides. Cette nouvelle espèce est proche d'*O. orientalis* (Siddiqi & Husain, 1964) Jairajpuri & Siddiqi, 1979 et d'*O. citri* (Rashid & Khan, 1973) Jairajpuri & Siddiqi, 1979. *O. symmetricus* n. sp. est caractérisé par son corps long de 0,54 à 0,64 mm, sa tête marquée de 4-5 anneaux, son stylet long de 25-27 μm le débouché de la glande oesophagienne dorsale à 12-15 μm de la base du stylet et la position adanale des phasmides. Cette nouvelle espèce est voisine d'*O. orientalis* (Siddiqi & Husain, 1964) Jairajpuri & Siddiqi, 1979 et d'*O. secundus* (Mulk & Jairajpuri, 1975) Jairajpuri & Siddiqi, 1979. Dans les deux cas seules les femelles ont été trouvées.

During the survey of high altitudes in India carried out in the years 1970-77 many species of different nematode genera were recorded. Of this material two new species of *Orientylus* Jairajpuri & Siddiqi, 1977 are described here.

Observations were made and measurements taken on specimens fixed in hot 4% formalin and processed to glycerine by slow method.

Orientylus himprus n. sp.

(Fig. 1)

DIMENSIONS

Paratype females (10) : L = 0.63 mm (0.55-0.68 mm); a = 28 (27-32); b = 6.3 (5.1-6.9); b' = 4.3 (3.8-4.6); c = 44 (35-47); c' = 1.2

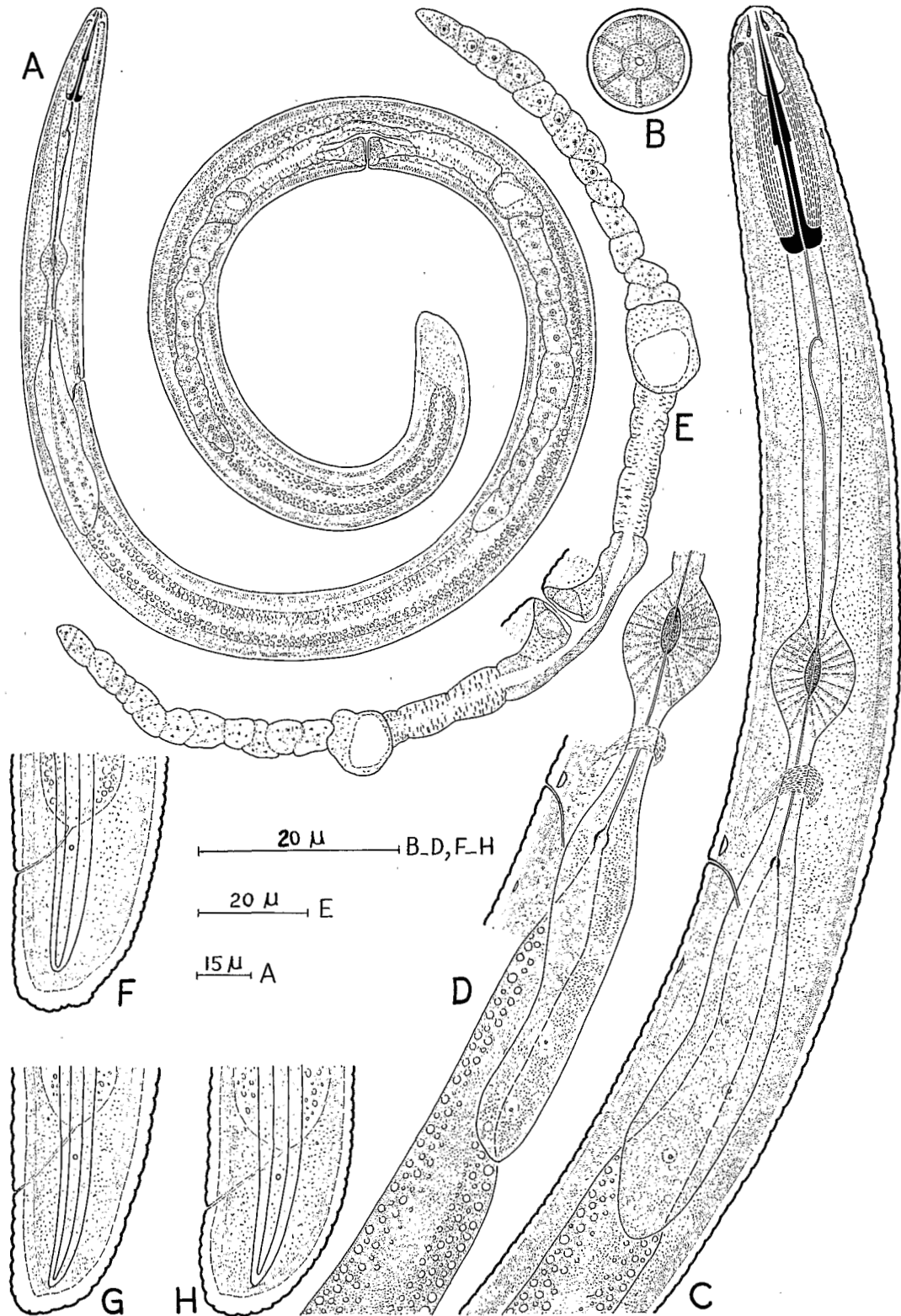


Fig. 1. *Orientylus himprus* n. sp. Female. A : Entire female ; B : En face view ; C : Oesophageal region ; D : Posterior oesophageal region ; E : Genital tracts ; F-H : Tails.

(0.8-1.8); $V = 23\ 68\ 17$ (20-28 64-72 14-21); $m = 52$ (50-54); $O = 51$ (45-54).

Holotype female: $L = 0.64$ mm; $a = 28$; $b = 6.9$; $b' = 4.6$; $c = 47$; $c' = 1.1$; $V = 24\ 72\ 16$; $m = 53$; $O = 53$.

DESCRIPTION

Female

Body a loose spiral when relaxed, tapering gradually towards extremities. Cuticle striations almost $1\ \mu\text{m}$ wide near midbody. Lateral fields non-areolated, about $1/4$ of body-width, marked with four incisures in middle. Lip region broadly hemispherical, marked with three to four annules; basal annule smooth. Cephalic framework sclerotized. Spear $24\text{-}27\ \mu\text{m}$ long, metenchium slightly longer than telenchium; basal knobs slightly indented anteriorly. Orifice of dorsal oesophageal gland $12\text{-}14\ \mu\text{m}$, almost $1/2$ of spear length, from spear base. Oesophagus elongate with procorpus measuring $32\text{-}36\ \mu\text{m}$, isthmus $12\text{-}16\ \mu\text{m}$ and basal gland lobe $30\text{-}40\ \mu\text{m}$. Basal lobe overlapping intestine dorsally. Oesophago-intestinal junction at the level of isthmus base. Excretory pore $86\text{-}98\ \mu\text{m}$ from anterior extremity, almost at level of oesophago-intestinal junction. Hemizonid one to two annules wide, $83\text{-}95\ \mu\text{m}$ from anterior extremity, one to two annules anterior to excretory pore. Hemizonion one annule wide, six to eight annules posterior to hemizonid. Nerve ring $78\text{-}86\ \mu\text{m}$ from anterior extremity near middle of isthmus. Posterior cephalids at level of middle spear. Vulva a depressed transverse slit. Vagina almost $1/2$ body-width long. Reproductive system amphidelphic, posterior sexual branch slightly less developed. Spermatheca empty. Ovary with a single row of oocytes. Phasmids dot-like, two to four annules anterior to level of anus. Tail roughly hemispherical, marked with nine to eleven annules and almost one anal body-diameter long.

Male

Not observed.

TYPE HABITAT AND LOCALITY

Soil around roots of apple (*Malus pumila*), Khajjiar, Chamba (Himachal Pradesh), India.

TYPE SPECIMENS

Holotype on slide H.A. 106/*Orientylus himprus* n. sp./1; paratypes on slides H.A. 106/*Orientylus himprus* n. sp./2 & 3 deposited in the Department of Zoology, Aligarh Muslim University and two paratypes on slide H.A.106/*Orientylus himprus* n. sp./4 deposited in Muséum national d'Histoire naturelle, Laboratoire des Vers, Paris, France.

DIAGNOSIS

The new species *Orientylus himprus* comes close to *O. orientalis* (Siddiqi & Husain, 1964) Jairajpuri & Siddiqi, 1979 and *O. citri* (Rashid & Khan, 1973) Jairajpuri & Siddiqi, 1979. It differs from both these species in having finer body annules, differently shaped lip region and basal glandular lobe of oesophagus almost three times the size of isthmus (body annules coarse, $2\ \mu\text{m}$ wide near midbody; lip region conoid; basal glandular lobe equal to the size of isthmus in *O. orientalis* and *O. citri*). In addition the new species differs from *O. orientalis* in having its posterior reproductive branch comparatively more developed. From *O. citri* it differs in having a comparatively smaller body and spear, and metenchium longer than telenchium ($L = 0.62\text{-}0.82$ mm; spear = $26\text{-}29\ \mu\text{m}$; metenchium shorter than telenchium in *O. citri*).

Orientylus symmetricus n. sp.

(Fig. 2)

DIMENSIONS

Paratype females (9): $L = 0.59$ mm (0.54-0.64 mm); $a = 31$ (29-34); $b = 5.5$ (5.4-5.8); $b' = 4.4$ (4.1-4.7); $c = 48$ (37-59); $c' = 0.9$ (0.7-1.0); $V = 23\ 73\ 15$ (20-29 71-77 15-17); $m = 50$ (50-51); $O = 51$ (45-53).

Holotype female: $L = 0.58$ mm; $a = 31$; $b = 5.8$; $b' = 4.5$; $c = 44$; $c' = 1.0$; $V = 23\ 72\ 15$; $m = 50$; $O = 50$.

DESCRIPTION

Female

Body forming a loose spiral when relaxed, tapering gradually towards anterior extremity.

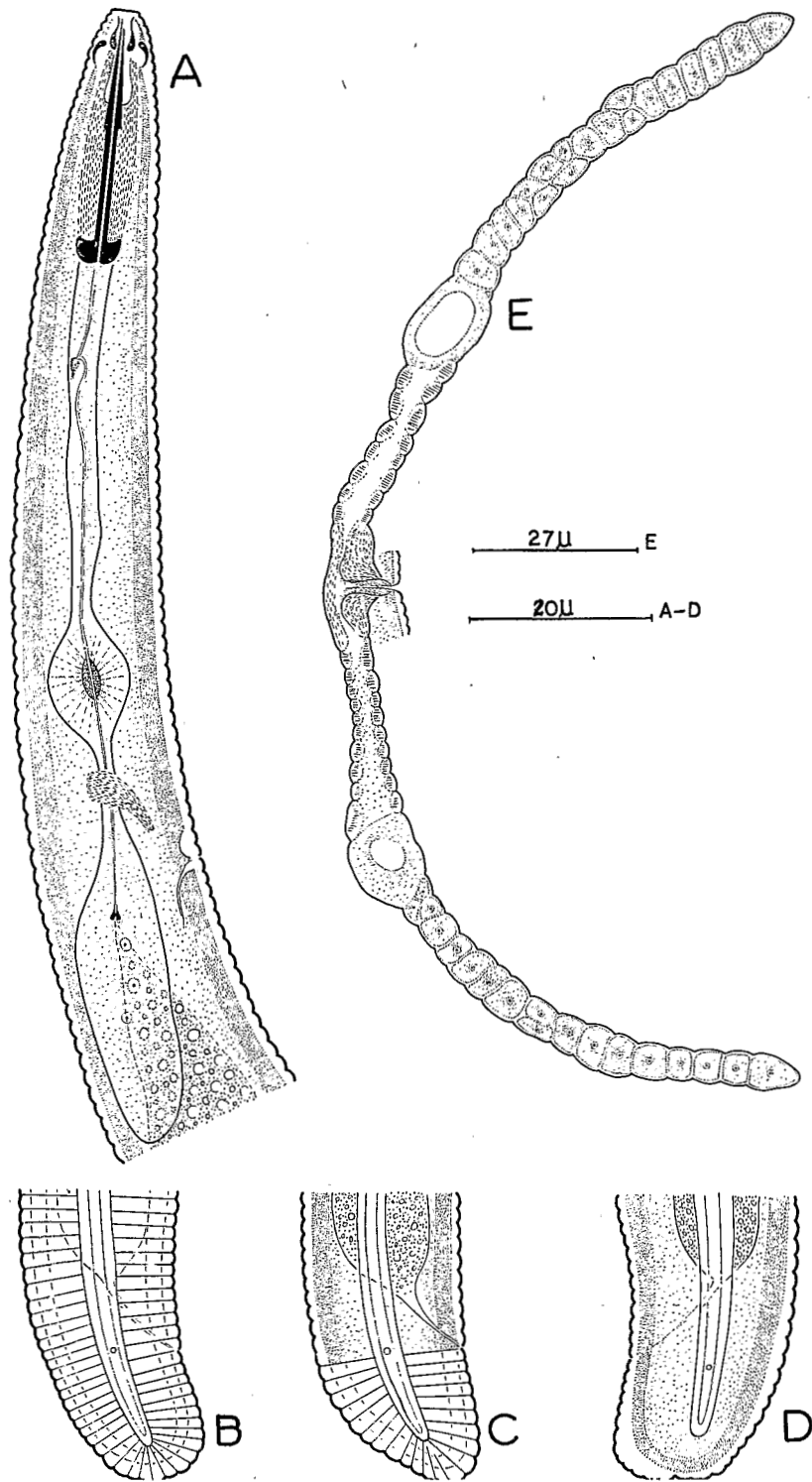


Fig. 2. *Orientylus symmetricus* n. sp. Female. A : Oesophageal region ;
B-D : Tails ; E : Genital tracts.

Cuticle striations distinct, 1-2 μm wide near midbody. Lateral fields non-areolated, 1/5-1/4 of body-width with four straight incisures in middle. Lip region high, truncate, marked with four to five annules; basal annule smooth. Cephalic framework sclerotized. Spear 24-27 μm long, metenchium almost equal to telenchium, basal knobs indented anteriorly. Orifice of dorsal oesophageal gland 12-15 μm , almost 1/2 of spear length from spear base. Oesophagus with procorpus measuring 38-42 μm , isthmus 14-18 μm and basal gland lobe 30-34 μm . Basal lobe overlapping intestine dorso-laterally. Oesophago-intestinal junction at about 1/3 of basal gland lobe anteriorly. Excretory pore 94-97 μm from anterior extremity, 0-2 annules anterior to oesophago-intestinal junction. Hemizonid two annules wide, 92-96 μm from anterior extremity and 0-1 annule anterior to excretory pore. Hemizonion not seen. Nerve ring almost in the middle of isthmus. Vulva a depressed, transverse slit. Vagina nearly 1/2 body-width long. Gonads amphidelphic, symmetrical, uterus with a proximal muscular and a distal part ending into an empty spermatheca; ovary with a single row of oocytes. Phasmids dot-like, almost at level of anus. Tail rounded, marked with nine to twelve annules and almost one anal body-diameter long.

Male

Not observed.

TYPE HABITAT AND LOCALITY

Soil around roots of unidentified grasses from Banikhet, Chamba (Himachal Pradesh), India.

TYPE SPECIMENS

Holotype on slide H.A.65/*Orientylus symmetricus* n. sp./1, paratypes on slides H.A. 65/*Orientylus symmetricus* n. sp./2 & 3 deposited in the Department of Zoology, Aligarh Muslim University and one paratype on slide H.A./65 *Orientylus symmetricus* n. sp./4 deposited in Muséum national d'Histoire naturelle, Laboratoire des Vers, Paris, France.

Accepté pour publication le 22 février 1980.

Revue Nématol. 3 (2) : 227-231 (1980)

DIAGNOSIS

Orientylus symmetricus n. sp. comes close to *O. orientalis* (Siddiqi & Husain, 1964) Jairajpuri & Siddiqi, 1979 and *O. secundus* (Mulk & Jairajpuri, 1975) Jairajpuri & Siddiqi, 1979. From the former it differs in having shorter body, lesser value of 'O', shorter oesophagus with basal lobe almost double the size of isthmus, posterior reproductive branch fully developed and phasmids adanal ($L = 0.68-0.76$ mm; $O = 62$; $b = 6.2-6.7$; basal lobe of the size of isthmus; posterior reproductive branch reduced and phasmids preanal in *O. orientalis*). From *O. secundus* the new species differs in having shorter body, distinct lip annules, basal lobe of oesophagus almost double the size of isthmus, vulva away from centre of body and tail shorter or equal to one anal body-diameter ($L = 0.63-0.77$ mm; annulations at lip region absent or faint; basal lobe of oesophagus almost equal to isthmus; $V = 61-65$; $c' = 0.9-1.3$ in *O. secundus*).

ACKNOWLEDGEMENTS

The author is thankful to Prof. Shah Mashhood Alam, Head of the Department, for providing laboratory facilities and to Dr. M. Shamim Jairajpuri for supervising the research work and going through this manuscript.

REFERENCES

- JAIRAJPURI, M. S. & SIDDIQI, M. R. (1977). Taxonomic studies on *Hoplolaimidae* (Nematoda : Tylenchida) with proposal of *Orientylus* n. gen. and *Calvatylus* n. gen. under *Rotylenchoidinae*. *All India Sym. Helminthol., Srinagar*, 1977 : 16-17 (Abstract).
- JAIRAJPURI, M. S. & SIDDIQI, M. R. (1979). Observations on the nematode genera *Orientylus* and *Calvatylus* (*Rotylenchoidinae* : *Hoplolaimidae*) with descriptions of three new species. *Indian J. Nematol.*, 7 (1977). 101-111.
- MULK, M. M. & JAIRAJPURI, M. S. (1975). Nematodes of leguminous crops in India. IV. Two new species of *Rotylenchus* Filipjev, 1936 (*Hoplolaiminae*). *Indian J. Nematol.*, 5 : 9-14.
- RASHID, A. & KHAN, A. M. (1973). Two new species in the subfamily *Hoplolaiminae* Filipjev, 1934 from North India. *Indian J. Nematol.*, 3 : 50-53.
- SIDDIQI, M. R. & HUSAIN, Z. (1964). Three new species of nematodes in the family *Hoplolaimidae* found attacking citrus trees in India. *Proc. helminth. Soc. Wash.*, 31 : 211-215.