

Two new species of *Paramphidelus* Andrassy, 1977 (Nematoda: Alaimidae) from Manipur, India

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SUMMARY

Two new species of *Paramphidelus* from India are described. *Paramphidelus saccus* n. sp. is 0.8-0.9 mm long, has small tennis-racket shaped amphids at 18-20 μm from the anterior extremity and an anterior uterine sac. *Paramphidelus samii* n. sp. is 1.2-1.3 mm long, has funnel-shaped amphids at 10-12 μm from the anterior extremity, amphidelphic asymmetrical gonads and heavily sclerotized vagina.

RÉSUMÉ

Deux nouvelles espèces de *Paramphidelus* Andrassy, 1977 (Nematoda : Alaimidae) découvertes à Manipur, Inde.

Deux nouvelles espèces de *Paramphidelus* découvertes en Inde sont décrites. *Paramphidelus saccus* n. sp. a une longueur de 0,8 à 0,9 mm et de petites amphides en forme de raquette situées à 18-20 μm de l'extrémité antérieure et un sac utérin antérieur. *Paramphidelus samii* n. sp. a une longueur de 1,2 à 1,3 mm, des amphides en forme d'entonnoir situées à 10-12 μm de l'extrémité antérieure ainsi que des gonades amphidelphiques asymétriques et un vagin fortement sclérotisé.

Soil samples collected from Manipur, India yielded two new species belonging to the genus *Paramphidelus* Andrassy, 1977 of the superfamily Alaimoidea, named *Paramphidelus saccus* n. sp. and *Paramphidelus samii* n. sp. Measurements were taken and observations made on specimens mounted in glycerine after being killed in hot 4% formalin and dehydrated by the slow method.

***Paramphidelus saccus* n. sp.**
(Fig. 1)

DIMENSIONS

Female (paratypes; n = 3) L = 0.8-0.9 mm ;
a = 42-51 ; b = 3.8-4.0 ; c = 13-14 ; c' = 6-10 ;
V = 41-42 ;

Holotype (female). L = 0.8 mm ; a = 43 ; b = 4.0 ;
c = 12 ; c' = 6 ; V = 41.

DESCRIPTION

Body arcuate, tapering towards extremities. Cuticle finely striated presumably only in the inner layers. Lip region offset, 3-4 μm wide or 1/6-1/5 of midbody width. Amphids small, tennis-racket shaped, at 18-20 μm or 5-6 lip widths from anterior extremity, amphidial apertures 1.5-2.0 μm wide. Oesophagus 190-233 μm long, expanded part occupying 19-24% of its length. Dorsal and three ventrosublateral oesophageal gland nuclei present. Nerve ring 105-120 μm from anterior extremity. Cardia conoid, 4-5 μm long. Reproductive system opistho-monodelphic 165-203 μm long. Vulva transverse ; vagina 4-6 μm long. Genital tube reflexed, oocytes 14-18 arranged in a single row except at tip. Anterior uterine sac 28-32 μm or 1.3-1.5 vulval body width long. Rectum about one anal body width long.

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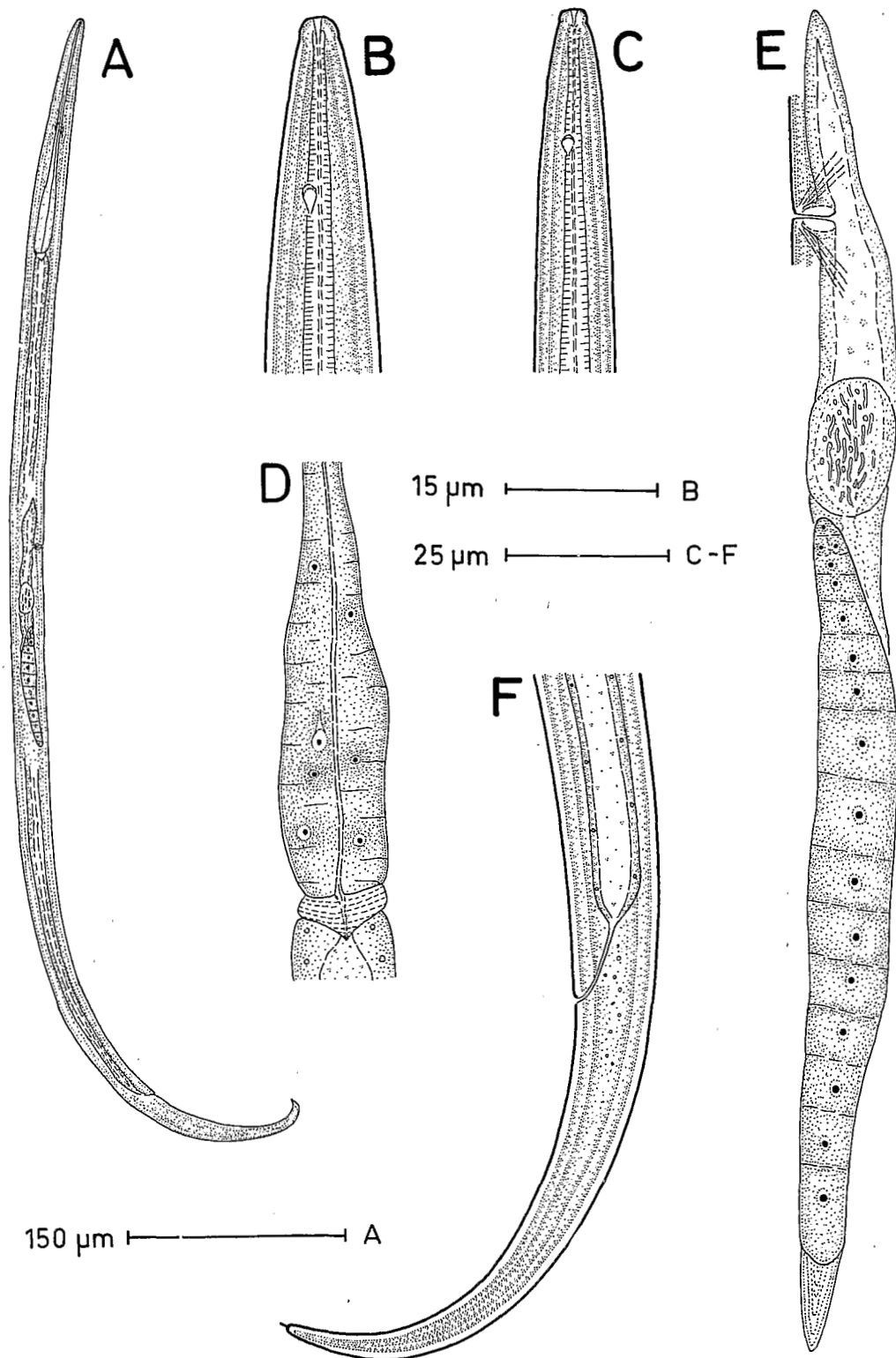


Fig. 1. *Paramphidelus saccus* n. sp. A : Entire female ; B & C : Anterior region ;
D : Basal region of oesophagus ; E : Female genital tract ; F : Female tail.

Tail elongate-conoid, 75-98 μm or 6-10 anal body widths long.

Male: Not found.

TYPE HABITAT AND LOCALITY

Soil around roots of rose, *Rosa sinensis* L., Imphal Hill, Imphal, Manipur.

TYPE SPECIMENS

Collected in August 1977.

Holotype: on slide *Paramphidelus saccus* n. sp./1 deposited in the Nematode Collection of the Zoology Department, Aligarh Muslim University Aligarh.

Paratypes: on slide *Paramphidelus saccus* n. sp./2-3 deposited in the same Collection. One paratype female deposited at Muséum national d'Histoire naturelle, Laboratoire des Vers, Paris, France.

DIFFERENTIAL DIAGNOSIS

With Andrásy's (1977) key, *P. saccus* n. sp. keys with *P. candidus* (Siddiqi & Basir, 1965) Andrásy, 1977 from which it differs in having a wider body and longer oesophagus; in size and shape of tails, shorter anterior uterine sac and slightly more posterior vulva ($a = 57-62$; $b = 4.6-4.7$; $c = 4.3-4.4$; tail elongate-attenuated; anterior uterine sac 2.33 body widths long; $V = 39-40$ in *P. candidus*). From *P. sylvaticus* (Siddiqi & Basir, 1965) Andrásy, 1977, *P. lemani* (Stefanski, 1914) Andrásy, 1977 and *P. paramonovi* (Eliashvilli, 1971) Andrásy, 1977, which also have an anterior uterine sac, it differs as follows: From *P. sylvaticus* it differs in having a smaller and wider body, in shape of amphids and position of amphidial apertures, and in shorter tail ($L = 1.12-1.29$ mm; $a = 70-80$; amphids cup-shaped with kidney-shaped apertures at 2.5 lip-widths from anterior extremity; $c = 6.7-8.0$ in *P. sylvaticus*). From *P. lemani* it differs in having a shorter body, more posteriorly located amphidial apertures, shorter tail and more posteriorly located vulva ($L = 1.23-1.39$ mm; amphidial apertures situated at 3.0-3.5 lip-widths from anterior extremity; $c = 4.7-6.2$; $V = 35-38$ in *P. lemani*). From *P. paramonovi* it differs in having a shorter and wider body; more anteriorly located amphidial apertures, shorter tail and more anteriorly located vulva ($L = 1.14-1.20$ mm; $a = 104-110$; amphidial apertures situated at 3-4 lip-widths from anterior extremity; $c = 19-20$; $V = 47-49$ in *P. paramonovi*).

From *P. pseudobulbosus*, which also has amphids 5-6 head widths from the head-end, it differs in having a wider body and longer tail and in presence of an anterior uterine sac and more posteriorly located vulva ($a = 77-100$; $c = 22-28$; anterior uterine sac absent; $V = 49-53$ in *P. pseudobulbosus*).

Paramphidelus samii n. sp.

(Fig. 2)

DIMENSIONS

Female (paratypes; $n = 4$) $L = 1.2-1.3$ mm; $a = 65-68$; $b = 4.8-6.5$; $c = 12-13$; $c' = 8-10$; $V = 41-43$.

Holotype (female). $L = 1.3$ mm; $a = 67$; $b = 4.8$; $c = 12$; $c' = 8$; $V = 41$.

DESCRIPTION

Female: Body regularly tapering towards both extremities, more curved posteriorly. Cuticle finely striated presumably only in the inner layers. Lip region continuous with body, 5-6 μm wide or 1/4-1/3 of midbody width. Amphids elongate funnel-shaped, at 10-12 μm or about two lip-widths from anterior extremity, amphidial apertures 3-4 μm wide. Oesophagus 230-270 μm long, expanded part occupying 25-29% of its length. Dorsal and three pairs of ventrosublateral oesophageal gland nuclei present. Nerve ring at 105-112 μm from anterior extremity. Cardia conoid, 2-3 μm long. Reproductive system amphidelphic but asymmetrical, occupying 195-210 μm of body length; anterior gonad shorter and poorly developed as compared to posterior gonad. Vulva transverse; vagina inclined posteriad, heavily cuticularized, 10-11 μm or more than half of vulval body width long. Genital tube reflexed, anterior ovary with 3-4 small oocytes, posterior ovary with 15-20 large ones. Rectum about one anal body-width long. Tail filiform, 102-105 μm or 8-10 anal body-widths long.

Male: Not found.

TYPE HABITAT AND LOCALITY

Soil around roots of papaya (*Carica papaya* L.), Singjamei, Imphal, Manipur.

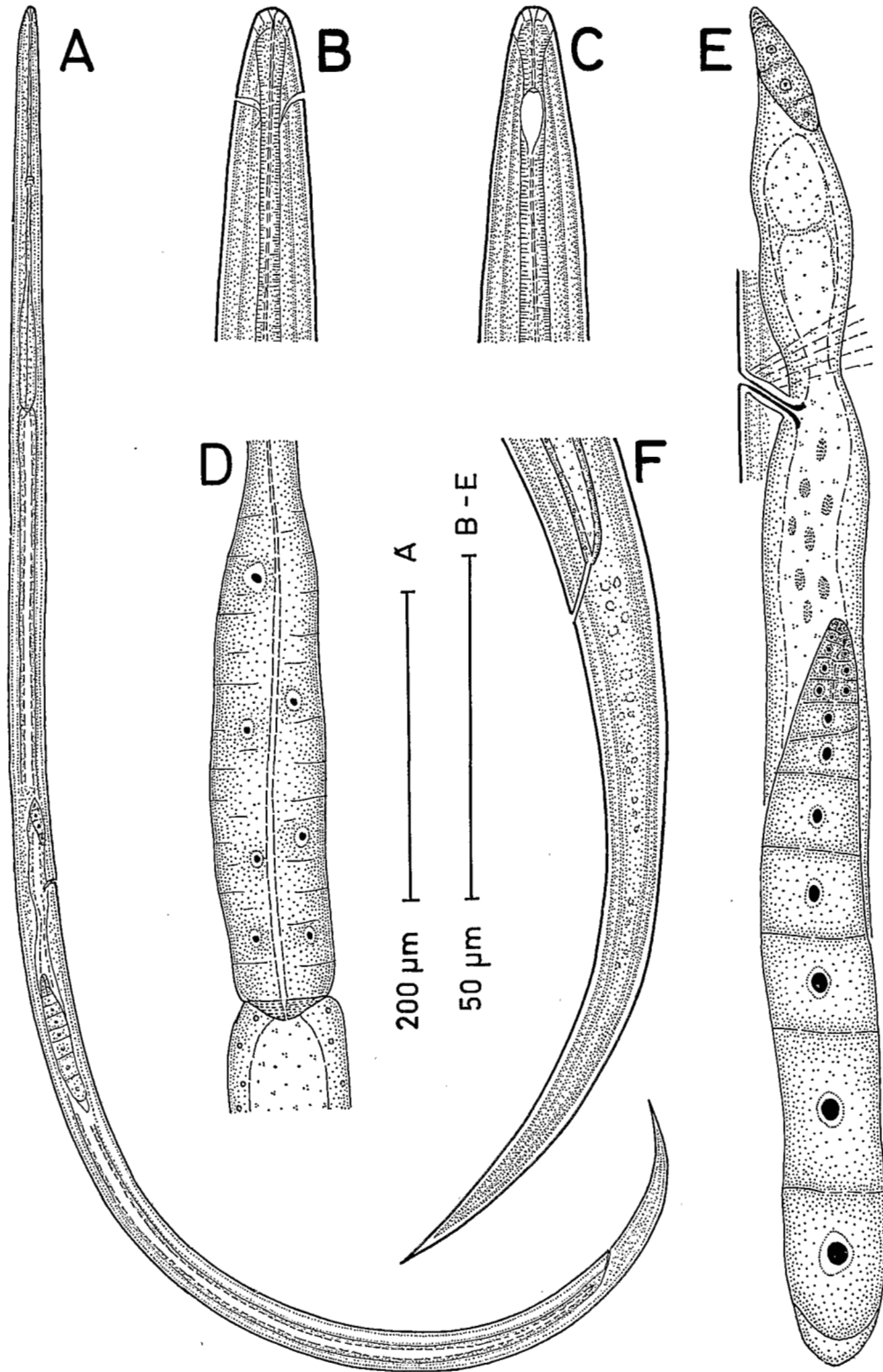


Fig. 2. *Paramphidelus samii* n. sp. A : Entire female ; B : Anterior region, dorsal view ; C : Anterior region, lateral view ; D : Basal region of oesophagus ; E : Female genital tract ; F : Female tail.

TYPE SPECIMENS

Collected in December 1980.

Holotype: on slide *Paramphidelus samii* n. sp./1 deposited in the Nematode Collection of Zoology Department, Aligarh Muslim University, Aligarh, India.

Paratypes: on slide *Paramphidelus samii* n. sp./2-4, deposited in the same Collection. One paratype female deposited at Muséum national d'Histoire naturelle, Laboratoire des Vers, Paris, France.

DIFFERENTIAL DIAGNOSIS

With Andrassy's (1977) key *P. samii* n. sp. keys with *P. uniformis* (Thorne, 1939) Andrassy, 1977 from which it differs in having a wider body, more anteriorly located vulva and a much larger tail ($a = 83$; $V = 46$; $c = 22.5$ in *P. uniformis*). From *P. sylphus* (Thorne, 1939) Andrassy, 1977 and *P. hyans* (Thorne, 1939) Andrassy, 1977, it differs by having a shorter body, more anteriorly located vulva, unequally developed sexual branches and a slightly longer tail ($L = 2.0$ mm; $V = 55$; sexual branches equally developed, $c = 10.6$ in *P. hyans*). From *P. sylphus* it differs in having a much shorter but wider body, in shape of lip region, shape of amphids and position of amphidial apertures, in having a more anteriorly located vulva, unequally developed sexual branches and a longer tail ($L = 2.4$ mm; $a = 111$; lip region conical, amphids elongate-conoid with their amphidial apertures at a distance of four lip-widths from anterior extremity, sexual branches equally developed, $V = 57$; $c = 18$ in *P. sylphus*).

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The new species has been named after the late Mr. Samiuddin Choudhary.

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