

Nematodes of high altitudes in India

VIII. *Pungentus clavatus* n. sp. with a key to species of the genus *Pungentus* (Nematoda : Dorylaimida)

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SUMMARY

Pungentus clavatus n. sp. from the Simla hills (India) is distinct from all other species of the genus in the possession of an oesophago-intestinal disc and a short, clavate tail. This new species is close to *P. silvestris* (De Man, 1912) Coomans & Geraert, 1962 but differs in having narrower amphidial apertures, smaller odontophore and different tail shape. A key to the valid species and a list of *species inquirendae* of the genus *Pungentus* are provided. Two nomenclatorial rearrangements are proposed : *P. silvestris* Eroshenko, 1976 becomes a junior synonym of *P. granosus* Eroshenko, 1976 (note that the specific name *silvestris* was preoccupied by *P. silvestris* (De Man, 1912) Coomans & Geraert, 1962) ; *P. medianus* Eroshenko, 1976 is considered a junior synonym of *P. pumilus* Andrassy, 1963.

RÉSUMÉ

Nématodes des hautes altitudes en Inde. VIII. Pungentus clavatus n. sp. et clé des espèces du genre Pungentus (Nematoda : Dorylaimida)

Les auteurs décrivent et figurent *Pungentus clavatus* n. sp., provenant des collines de Simla (Inde), qui se distingue de toutes les autres espèces du genre par une queue courte et légèrement claviforme. Proche de *P. silvestris* (De Man, 1912) Coomans & Geraert, 1962, *P. clavatus* n. sp. en diffère par des ouvertures amphidiales plus étroites, un odontophore plus petit et la forme de la queue. Une clé des espèces valides est donnée ainsi qu'une liste des *species inquirendae* du genre *Pungentus*. Deux modifications à la nomenclature sont proposées : *P. silvestris* Eroshenko, 1976 devient un synonyme mineur de *P. granosus* Eroshenko, 1976 (noter que le nom d'espèce *silvestris* était déjà occupé par *P. silvestris* (De Man, 1912) Coomans & Geraert, 1962) ; *P. medianus* Eroshenko, 1976 devient un synonyme mineur de *P. pumilus* Andrassy, 1963.

A survey of plant-parasitic and soil-inhabiting nematodes of the Simla hills yielded a new species of *Pungentus* Thorne & Swanger, 1936, *P. clavatus* n. sp., which is described and illustrated.

Measurements were taken and observation made on specimens mounted in glycerine after being killed in hot 4% formalin and dehydrated by the slow method.

Pungentus clavatus n. sp.

(Fig. 1)

DIMENSIONS

Paratypes, females (9) : L = 1.58-1.73 mm ; a = 33-35 ; b = 3.7-4.2 ; c = 68-75 ; c' = 0.56-0.63 ; V = 41-44 ; G₁ = 1-2 ; G₂ = 13-17 ; odon-

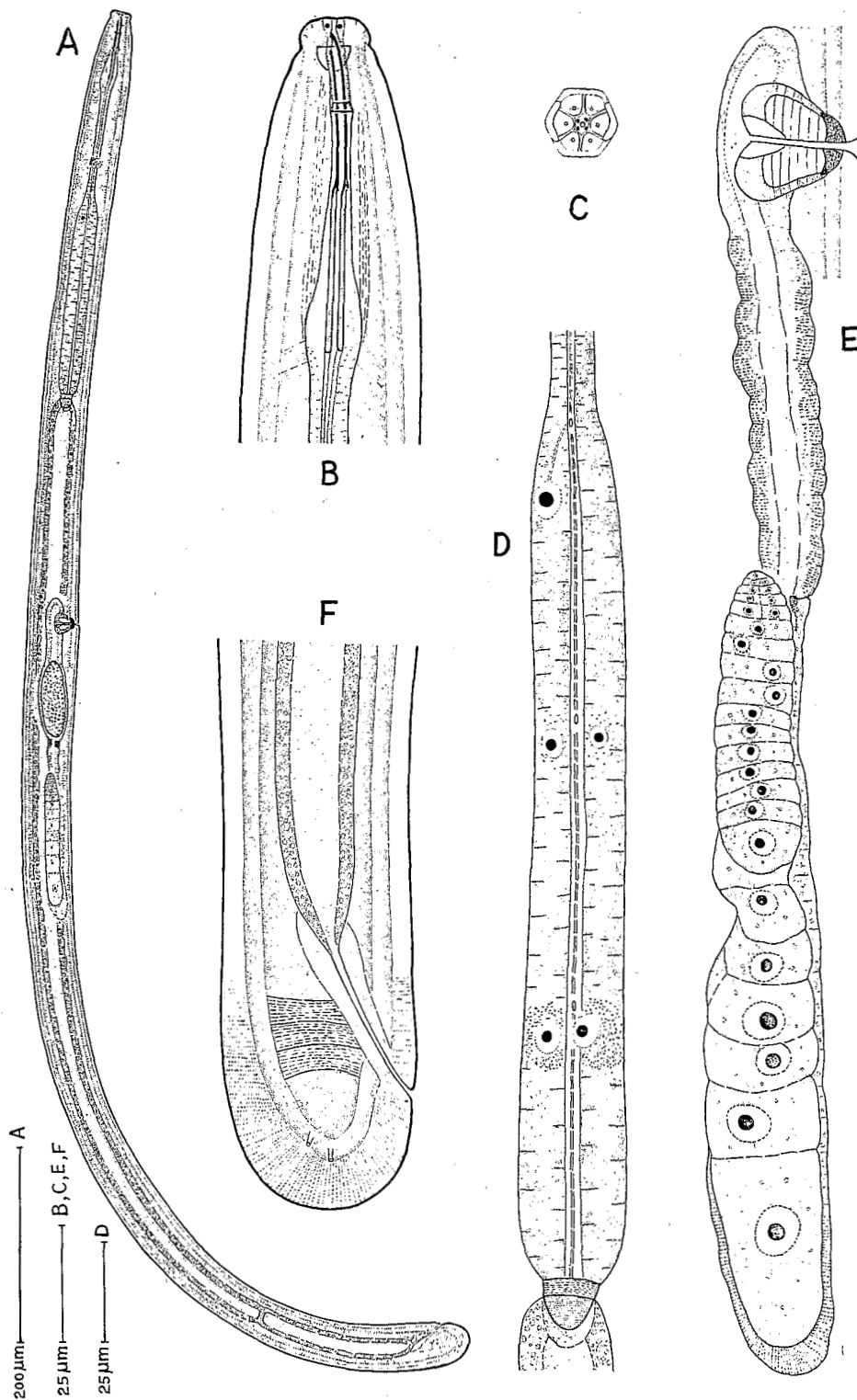


Fig. 1. *Pungentus clavatus* n. sp. A : Entire female ; B : Anterior end ; C : En face view ; D : Expanded part of oesophagus ; E : Gonad ; F : Tail.

tostyle = 32-35 μm ; odontophore = 31-32 μm ; oesophagus = 380-430 μm .

Holotype, female : L = 1.67 mm; a = 34; b = 4.1; c = 70; c' = 0.60; V = 41; G₁ = 1.7; G₂ = 16; odontostyle = 34 μm ; odontophore = 32 μm ; oesophagus = 405 μm .

DESCRIPTION

Female

Body slightly curved ventrally upon fixation, tapering gradually anterior to base of oesophagus. Cuticle finely striated, 3-4 μm thick at mid-body and 7-8 μm on tail. Lateral chords about 1/5-1/4 of body-width near midbody. Dorsal, ventral and lateral body pores indistinct.

Lip region distinctly set off from body contour. Lips rounded and labial papillae not elevated. Four cuticularized platelets surround the stoma entrance. Amphidial apertures slit-like, occupying about half of corresponding body-width. Odontostyle slightly arcuate, 32-35 μm or about 2.5 head-widths long, aperture about 1/9-1/8 of its length. Guiding ring double, 1.3-1.5 head-widths from anterior end. Odontophore rod-like, 31-32 μm or about as long as odontostyle. Nerve ring surrounding anterior slender part of oesophagus, 135-160 μm from anterior end. Basal expanded part of oesophagus occupying about 50-55% of oesophageal length. A well developed oesophago-intestinal disc present, cardia rounded. Oesophageal gland nuclei and their orifices are located as follows : DO = 53-57; DN = 57-60; DO-DN = 3.3-5.0; S₁N₁ = 69-77; S₁N₂ = 67-78; S₂N = 88-90; S₂O = 88-91.

Vulva a transverse slit; vagina about half vulval body-width long, encircled proximally by cuticularized plates and distally by sphincter. Female reproductive system mono-opisthodelphic. Pre-vulval uterine sac small, ovary reflexed, oocytes arranged in a single row except at tip. Uterine egg 85 \times 33 μm . Prerectum 150-180 μm or about 3.8-4.5 anal body-widths long. Rectum 29-32 μm or about 0.7-0.8 anal body-width long. Tail short, hemispherical and clavate, 23-24 μm or about 0.5-0.6 anal body-width long with two caudal pores on each side.

Male

Not found.

Type habitat and locality : Soil around roots of unidentified mosses and grasses near Jakoo temple, Simla, Himachal Pradesh, India.

Type specimens : Collected in April 1978; holotype on slide *Pungentus clavatus* n. sp. /1; paratypes on slides *Pungentus clavatus* n. sp. /2-3; deposited in the Department of Zoology, Aligarh Muslim University; one paratype female deposited at Muséum national d'Histoire naturelle, Laboratoire des Vers, Paris, France.

DIAGNOSIS

P. clavatus n. sp. can be differentiated from all other known species of the genus by the presence of a well developed oesophago-intestinal disc and the tail shape. However, it is close to *P. silvestris* (De Man, 1912) Coomans & Geraert, 1962 and *P. maorium* Clark, 1963. From the former it differs in having narrower amphidial apertures, smaller odontophore and a short, clavate tail (amphidial apertures three-fourth head-width wide, odontophore = 43-48 μm , c' = 0.7-1.0 in *P. silvestris*). It can be differentiated from *P. maorium* by wider amphidial apertures, presence of oesophago-intestinal disc, longer pre-rectum and different shape of cardia and tail.

Remarks on *P. silvestris*, *P. granosus* and *P. medianus*

Eroshenko (1976) described eight new species of *Pungentus*. Of these, *P. silvestris* Eroshenko, 1976 is a junior homonym of *P. silvestris* (De Man, 1912) Coomans & Geraert, 1962. However, *P. granosus* Eroshenko, 1976 is almost indistinguishable from *P. silvestris* Eroshenko, 1976 in its morphological characters as well as in measurements and hence it is regarded as a junior synonym of this species. Since *P. silvestris* Eroshenko, 1976 has become invalid because of homonymy, the name *P. granosus* which is the junior synonym will become the valid name of

this species, as per Article 60 of the International Code of Zoological Nomenclature.

P. medianus Eroshenko, 1976 agrees closely with the description and measurements of *P. pumilus* Andrassy, 1963. Hence, we regard *P. medianus* as a junior synonym of *P. pumilus*.

Key to species of Pungentus
(Modified after Jairajpuri & Baqri, 1966)

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| <p>1. Odontostyle about two or more head-widths long ; slightly arcuate 2
 Odontostyle less than two head-widths long ; straight 14</p> <p>2. Body length 3.5 mm or more
 <i>textilis</i> (Thorne & Swanger, 1936)
 Thorne, 1939
 Body length 2.0 mm or less 3</p> <p>3. Ovaries two 4
 Ovary one 7</p> <p>4. Body length approximately 2.0 mm ; lips angular 5
 Body length 1.7 mm or less ; lips rounded 6</p> <p>5. Body slender (a = 40-43) ; tail 30 µm long
 <i>angulosus</i> Thorne, 1939
 Body wider (a = 31-33) ; tail 40-44 µm long
 <i>crassus</i> Thorne, 1974</p> <p>6. Amphids with a slight constriction in the middle ; amphidial apertures about two-thirds of head-width
 <i>pungens</i> Thorne & Swanger, 1936
 Amphids wine glass-shaped, amphidial apertures about half head-width
 <i>marietani</i> Altherr, 1950</p> <p>7. Prevalval sac one body-width long or more ; males known 8
 Prevalval sac about half body-width long ; males unknown 9</p> <p>8. Prevalval sac one body-width long, tail hemispherical
 <i>monohystera</i> Thorne & Swanger, 1936
 Prevalval sac three body-widths long, tail conoid
 <i>sparsus</i> Thorne, 1939</p> | <p>9. Body length 1.0 mm or less 10
 Body length 1.5 mm or more 12</p> <p>10. Body stout, lips rounded
 <i>engadinensis</i> (Altherr, 1950)
 Altherr, 1952
 Body slender ; lips angular 11</p> <p>11. Tail 11-16 µm long ; post-anal intestinal sac absent
 <i>angulatus</i> Jairajpuri & Baqri, 1966
 Tail 16-23 µm long ; post-anal intestinal sac present
 <i>juglensi</i> Mahajan, 1972</p> <p>12. Oesophago-intestinal disc present ; tail clavate
 <i>clavatus</i> n. sp.
 Oesophago-intestinal disc absent ; tail not clavate 13</p> <p>13. Lips angular ; amphidial apertures three-fourth of head-width
 <i>silvestris</i> (De Man, 1912)
 Coomans & Geraert, 1962
 Lips rounded ; amphidial apertures less than half head-width
 <i>maorium</i> Clark, 1963</p> <p>14. Ovary one 15
 Ovaries two 18</p> <p>15. Prevalval sac absent
 <i>parvus</i> Thorne, 1939
 Prevalval sac present 16</p> <p>16. Body length 1.4 mm ; lips prominent, angular
 <i>obscurus</i> Thorne, 1939
 Body length less than 1.0 mm ; lips amalgamated, low 17</p> <p>17. Body length 0.9 mm
 <i>microdentatus</i> Thorne, 1939
 Body length 0.5 mm
 <i>mahunkai</i> Andrassy, 1968</p> <p>18. Body length 2.2 mm
 <i>brevidentatus</i> Thorne, 1939
 Body length generally less than 2.0 mm 19</p> <p>19. Tail elongate-conoid 21
 Tail bluntly-conoid 20</p> <p>20. Body length 0.6-0.7 mm ; odontostyle 9 µm
 <i>pumilus</i> Andrassy, 1963
 Body length 1.2-1.4 mm ; odontostyle 16-17 µm
 <i>gracilis</i> Eroshenko, 1976</p> <p>21. Body length 0.67-0.70 mm
 <i>drepanoideus</i> Eroshenko, 1976
 Body length 1.0 mm or more 22</p> |
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22. Vulva equatorial (V = 48-51) ; tail 80 μ m long *granosus* Eroshenko, 1976
 Vulva post-equatorial (V = 50-59) ; tail less than 65 μ m 23
23. Odontostyle 15-16 μ m ; males unknown , ..
 *orthocephalus* Eroshenko, 1976
 Odontostyle 22-25 μ m ; males known ... 24
24. Body length 1.3-1.6 mm ; spicules 53-57 μ m
 *vesiculosus* Eroshenko, 1976
 Body length 1.7-2.1 mm ; spicules 73-91 μ m
 *sublatum* Eroshenko, 1976

NOT INCLUDED IN THE KEY

Species inquirendae (as in Jairajpuri & Baqri, 1966).

Pungentus ichthyuris (Cobb, 1906) Thorne & Swanger, 1936.

P. intertextus (Thorne & Swanger, 1936) Thorne, 1939.

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P. minnsi (van der Linde, 1938) Andrassy, 1960.

P. stylidens (Schuermans Stekhoven, 1951) Andrassy, 1960.

P. fuorni (Altherr, 1950) Goodey, 1963.

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