

ON THE SPECIES OF *APORCELAIMELLUS* HEYNS, 1965 FROM WEST BENGAL  
(APORCELAIMIDAE : NEMATODA)

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ABSTRACT

A new species of the genus *Aporcelaimellus* Heyns, 1965, *A. tropicus*, is described from Burdwan district, West Bengal (India) and the male of *Aporcelaimellus chauhani* Baqri & Khera, 1975 is reported for the first time.

INTRODUCTION

The species of the genus *Aporcelaimellus* Heyns, 1965 are widely distributed in West Bengal. During the present course of investigations, the following species have been recorded: *Aporcelaimellus adoxus* Tjepkema *et al.*, 1975; *A. chauhani* Baqri & Khera, 1975; *A. coomansi* Baqri & Khera, 1975 and *A. heynsi* Baqri & Jairajpuri, 1968. Three populations collected from soil around roots of paddy at Burdwan district in West Bengal represent a new species of *Aporcelaimellus* which is described hereunder as *A. tropicus*. Besides, the male of *A. chauhani* is also reported for the first time.

MATERIAL

The type specimens have been registered and deposited with the National Zoological Collection, Zoological Survey of India, Calcutta. *A. tropicus*: Holotype female along with 3 paratype females and 2 paratype males on slide No. WN-385. Specimens of Kantapur and Maghlampur populations on slide No. WN-386 and WN-387 respectively.

*Aporcelaimellus tropicus* n. sp.

(Fig. 1, A—H)

Measurements :

Saldah Population (Type)

Holotype female ; L=1.51 mm ; a=46 ; b=4.1 ;  
c=76 ;  
14 12  
V = 57

Paratype females (3) ; L=1.55–1.76 mm ; a=43–  
50 ; b=4.1–4.9 ; c=74–82 ;  
7-14 12-16  
V = 55-57

Paratype males (2) ; L=1.60–1.63 mm ; a=47–  
49 ; b=4.8 ; c=64–71 ; T=  
54–56 ;

Kantapur population ;

Females (3) L=1.44–1.66 mm ; a=39–45 ; b=3.8  
–4.9 ; c=63–72 ; V = 11-13 11-15  
56-62

Males (5) ; L=1.67–1.80 ; a=44.0–53.6 ; b=4.7  
–4.9 ; c=64–77 ; T=51–59 ;

Maghlampur populations ;

Females (2) ; L=1.68–1.70 mm ; a=48–50 ; b=  
4.5 ; c=67–78 ; V = 13-14 11-12;  
56-57

Males (2) ; L=1.61–1.64 ; a=49–51 ; b=4.2–4.6 ;  
c=60–75 ; T=54,

*Description :*

*Female* : Body ventrally curved in the posterior half of its length, tapering gradually 2-5  $\mu\text{m}$  (thickest on tail). Lateral chords 1/5th to 1/4th of the body-width near middle. Lateral body pores irregularly arranged along

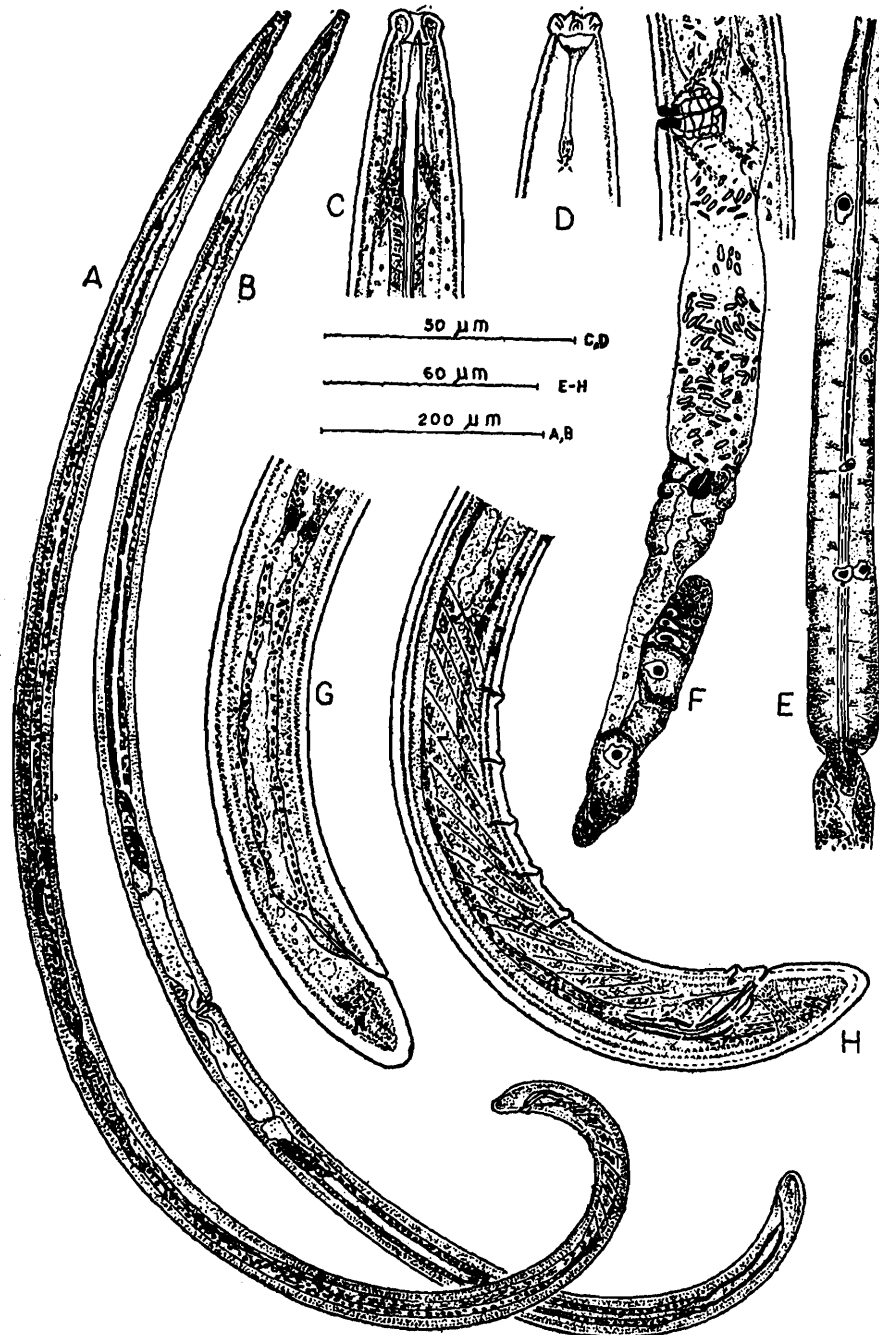


Fig. 1. (A-H) *Aporcelaimellus tropicus* n. sp. A : Entire male ; B : Entire female ; C : Anterior end of female ; D : Surface view of female showing Amphid ; E : Basal expanded portion of oesophagus ; F : Posterior female reproductive system ; G : Female tail ; H : Male tail.

anterior to slender part of oesophagus. Cuticle distinctly striated transversely ; its thickness

both sides of lateral chords, 32-38 in number of which 6 to 8 in oesophageal region, 20 to 24

in the intestine region, 4 to 5 in prerectum and rectum and 2 in caudal region.

Lip region off-set, wider than adjoining body, its width about 1/3rd of body-width at base of oesophagus. Amphid 6-8  $\mu\text{m}$  wide, stirrupshaped and apparently divided by a thin partition wall; apertures occupying 60-70% of the corresponding body-width. Sensillar pouches 21-23  $\mu\text{m}$  from amphidial aperture.

Odontostyle 12-14  $\mu\text{m}$  or 1.0-1.4 lip-region-width long; apertures 7-8  $\mu\text{m}$  or 58-62% of odontostyle length. Guiding ring 6-7  $\mu\text{m}$  or 0.5-0.6 lip region-width from anterior end. Odontophore 20-22  $\mu\text{m}$  or 1.4-1.8 times the odontostyle length. Nerve ring 106-118  $\mu\text{m}$  or 30-34% of neck region from anterior extremity. Basal expanded part of oesophagus 46-54% of the total oesophageal length. Locations of oesophageal gland nuclei and their orifices as follows :

|               |                                          |                            |
|---------------|------------------------------------------|----------------------------|
| DO—53.8-57.3  | S <sub>1</sub> N <sub>1</sub> —69.7-72.7 | S <sub>2</sub> N—86.9-87.3 |
| DN—59.3-62.4  | S <sub>1</sub> N <sub>2</sub> —78.7-80.0 | S <sub>2</sub> O—88.0-88.7 |
| DO-DN—5.1-5.6 | K—48-58                                  | K'—60-68.                  |

Cardia tongue-shaped enveloped by intestinal tissue. Oesophago-intestinal disc absent. Prerectum 83-113  $\mu\text{m}$  or 4-5 times the anal body-width, in one paratype female 171  $\mu\text{m}$  or 7 times the anal body-width. Rectum 25-33  $\mu\text{m}$  long or 1.0-1.3 times the anal body-width.

Vulva a transverse slit. Vagina 17-23  $\mu\text{m}$ , about half of the corresponding body-width; surrounded by sphincter muscles; moderately sclerotized at vulva-vagina junction. Female reproductive system amphidelphic, typical. Uterus and oviduct separated by sphincter muscles. Uteri filled with sperms.

Tail bluntly conoid, 22-24  $\mu\text{m}$  or 0.8-1.0 anal body-width long, with two caudal pores on each side.

*Male* : Similar to female in general shape and morphology. Male genital system typical, dorylaimid. Spicules 42-47  $\mu\text{m}$  or 1.6-2.0 anal body-width long when measured along the median line. Lateral guiding pieces well developed, 9-12  $\mu\text{m}$  long. In addition to adanal pair, 3-5 regularly spaced ventro-median supplements. Copulatory muscles 19-23 and reaching up to the last supplement. Prerectum 98-167  $\mu\text{m}$  or 4.8 to 5.2 anal body-widths long. Tail similar to female in shape, 22-27  $\mu\text{m}$  or about one anal body-width long.

*Type locality and habitat* : From soil around roots of paddy, *Oryza sativa* L., at Saldah, Block Memari, District Burdwan, West Bengal, collected by Dr. Q. H. Baqri & party during December, 1977.

*Kantapur and Maghlampur populations* were collected from soil around roots of paddy at Kantapur and Maghlampur respectively, Block Memari, District Burdwan, West Bengal.

*Differential diagnosis* : *Aporcelaimellus tropicus* n. sp. comes close to *A. heynsi* Baqri & Jairajpuri 1968 and *A. paraconicaudatus* (Meyl, 1956) Heyns, 1965. From the former it differs in having longer body (L=0.98-1.22 mm in *A. heynsi*), larger odontophore (Odontophore 17-19  $\mu\text{m}$  in *A. heynsi*), differently shaped amphids and vagina, no oesophago-intestinal disc, shorter and bluntly conoid tail (tail 29-41  $\mu\text{m}$  long and conoid in *A. heynsi*). From *A. paraconicaudatus* the present new species differs in shorter odontostyle (odontostyle 16  $\mu\text{m}$  in *A. paraconicaudatus*), longer and differently shaped tail (c=25, and conoid tail in *A. paraconicaudatus*); shorter spicules and 3 to 5 ventromedian supplements in males (spicules more than 50  $\mu\text{m}$  and 14 to 16 ventromedian supplements in *A. paraconicaudatus*).

**Aporcelaimellus chauhani** Baqri & Khera, 1975  
(Fig. 2. A, B)

**Measurement :**

Females (3) ; L=1.51-1.90 mm ; a=26-34 ; b=3.9  
8-11 8-12.  
-4.3 ; c=31-38 V= 50-54

Male : (1) ; L=1.88 mm ; a=34 ; b=4.01 ; c=38,  
T=57.

Baqri and Khera (1975) described *A. chauhani* on the basis of females. The present

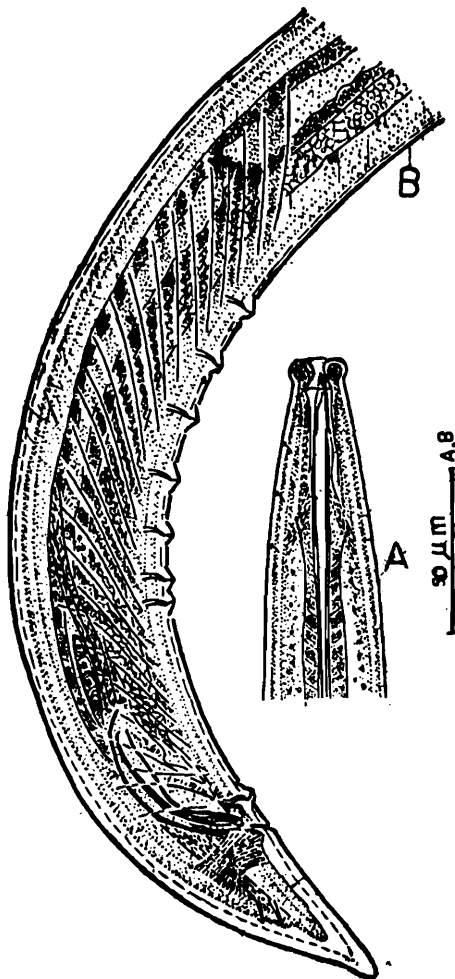


Fig. 2. A & B. *Aporcelaimellus chauhani* Baqri and Khera, 1975.

A : Anterior end of male ; B : Posterior region of male tail.

population which included a single male resembles in every respect with the type

specimens of *A. chauhani* except in having longer body. (L=0.96-1.42 mm).

**Male :** Similar to female in general shape and morphology except the male genital system. Spicules 55  $\mu\text{m}$  or near about 1.6 anal body-width long when measured along the curved median line. Lateral guiding pieces 14  $\mu\text{m}$  long, In addition to an adanal pair, seven regularly well-spaced ventromedian supplements present. Copulatory muscles 24, reaching up to the last supplement. Prerectum 179  $\mu\text{m}$  or about 5 anal body-widths long.

Tail dorsally convex-conoid with subacute terminus, 56  $\mu\text{m}$  or 1.6 anal body-widths long.

**Habitat and locality :** From soil around roots of Ladies finger, *Hibiscus esculentus* L. at Beledanga, District Hooghly, collected by A. Jana in March, 1977.

**Aporcelaimellus adoxus** Tjepkema, Ferris,  
and Ferris, 1971

Two females from soil around roots of unidentified grass at Memari, District Burdwan.

**Aporcelaimellus heynsi** Baqri & Jairajpuri,  
1968

**Autpara population :** Five females from soil around roots of paddy, *Oryza sativa* L., at Autpara, Block Jamalpur District Burdwan.

**Masagram population :** Thirteen females from soil around roots of paddy, *Oryza sativa* L., at Masagram, Block Jamalpur, District Burdwan.

**Aporcelaimellus coomansi** Baqri & Khera,  
1975

Four females from soil around roots of banana, *Musa* sp., at Reang, District Darjeeling.

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