Ind. J. Zool. (1974) Vol. 2, No. 1 : 15-18

Proposal of a new genus *Dolichorhynchus* and a new species *Dolichorhynchus nigericus* (Nematoda : Dolichodoridae)

M. Muddassirual Mulk and M. Shamim Jairajpuri

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

Mulk and Jairajpuri (1972) gave detailed description of *Tylenchorhynchus phaseoli* Sethi and Swarup, 1968, which is quite unique among the species of *Tylenchorhynchus* Cobb, 1913 in having its bursa notched at the tail tip. A population of nematodes collected at Ibadan, Nigeria was obtained through the courtesy of Dr. M. Rafiq Siddiqi of the Commonwealth Institute of Helminthology, England. A study of this species showed its close resemblance to *T. phaseoli* in the character of notched bursa. It, however, represents a new species because of some differences with *T. phaseoli* in the nature of spear, excretory duct, gubernaculum, tail etc.

As far as the systematic position of these two species, viz., *T. phaseoli* and the Nigerian new species is concerned, we are of the opinion that they cannot be placed under the genus *Tylenchorhynchus* because of the distinct differences in the nature of the bursa. The nominal species of the genus *Tylenchorhynchus* have bursa enveloping the tail terminus completely without interruption. This feature of *T. phaseoli* and the new species from Nigeria is reminiscent of the genera *Dolichodorus* Cobb, 1914 and *Brachydorus*. Guiran and Germani, 1968, both of which possess notched (trilobed) bursa. Consequently, we feel justified in proposing a new genus, *Dolichorhynchus* for these two species. This new genus stands as a connecting link between *Tylenchorhynchus* and *Dolichodorus*/*Brachydorus*. We are also of the opinion that there is no justification for having separate families, e. g., Dolichodoridae (Chitwood and Chitwood, 1950) Skarbilovich, 1959 and Tylenchorhynchidae (Eliava, 1964) Golden, 1971, now that intermediate genus like *Dolichorhynchus* has been discovered. As the former has priority, the family Tylenchorhynchidae be considered its synonym.

Genus *Dolichorhynchus* n. gen.

Diagnosis : Dolichodoridae, Dolichodorinae. Head bilobed. Labial frame-work moderately developed. Body cuticle marked with prominent longitudinal and transverse striae. Deirids absent. Female tail elongate-conoid with lobate terminus. Male tail enveloped with bursa which is notched at the tip.

Type species : *Dolichorhynchus phaseoli* (Sethi & Swarup, 1968) n. comb.
Syn. Tylenchorhynchus phaseoli Sethi & Swarup, 1968

Other species : *Dolichorhynchus nigericus* n. sp.

Relationships : The new genus differs from *Tylenchorhynchus* mainly in the character of bursa. In this feature it shows affinities with *Dolichodorus* and *Brachydorus*, though in these genera the notch of bursa is more pronounced. *Dolichorhynchus* further differs from *Dolichodorus* in having bilobed head, smaller body and smaller spear and from *Brachydorus* in having comparatively weakly sclerotized labial frame-work, bilobed head and tail shape of female.

Dolichorhynchus nigericus **n. sp.**

(Fig. 1)

Dimensions :

Paratype Females (5) : L=0.64-0.76 mm; a=25-30; b=5.4-6.3; c=13-18; V=52-56.

Paratype Males (7) : L=0.59-0.71 mm; a=26-30; b=5.5-6.2 ; c=16-18; T=39-49.

Holotype Female : L=0.65 mm; a=27; b=5.4; c=19; V=55.

Description :

Female : Body slightly arcuate upon fixation, regularly tapering towards extremities. Cuticle marked with fine transverse and longitudinal striations which cross each other to form small squares. Body cuticle bulges out to form longitudinal bands. Midlateral bands originate in the region of spear, the others arise at base of lip region, but all continue to posterior extremity disappearing a little above the tail tip. Lateral fields marked with four distinct incisures, completely areolated, occupying about 2.4-3.6 of body-width near middle.

Lip region bilobed, rounded, set off from the adjoining body, 6-7 μ wide, 3-4 μ high, marked with 6-7 annules and longitudinal lines. Labial frame-work moderately sclerotized. Spear 15-17 μ ; spear knobs 3-4 μ wide, posteriorly directed with angular margins. The metenchium and the telenchium parts of spear almost equal. Orifice of the dorsal oesophageal gland 1-3 μ behind spear base. Oesophagus typical tylenchoid. Cardia conoid, sometimes bilobed. Nerve ring anterior to middle of isthmus, 76-90 μ from anterior end of body. Excretory pore near middle of basal oesophageal bulb, 91-111 μ from anterior end of body. Excretory duct runs at right angle to the body axis for about half the corresponding body-width and then bends downwards. The terminal part of the excretory duct is protrusible, sometimes it may emerge out to form differently shaped structures, e. g., finger-like or sac-like. Hemizonid 3-4 annule long, 0-2 annule above the excretory pore.

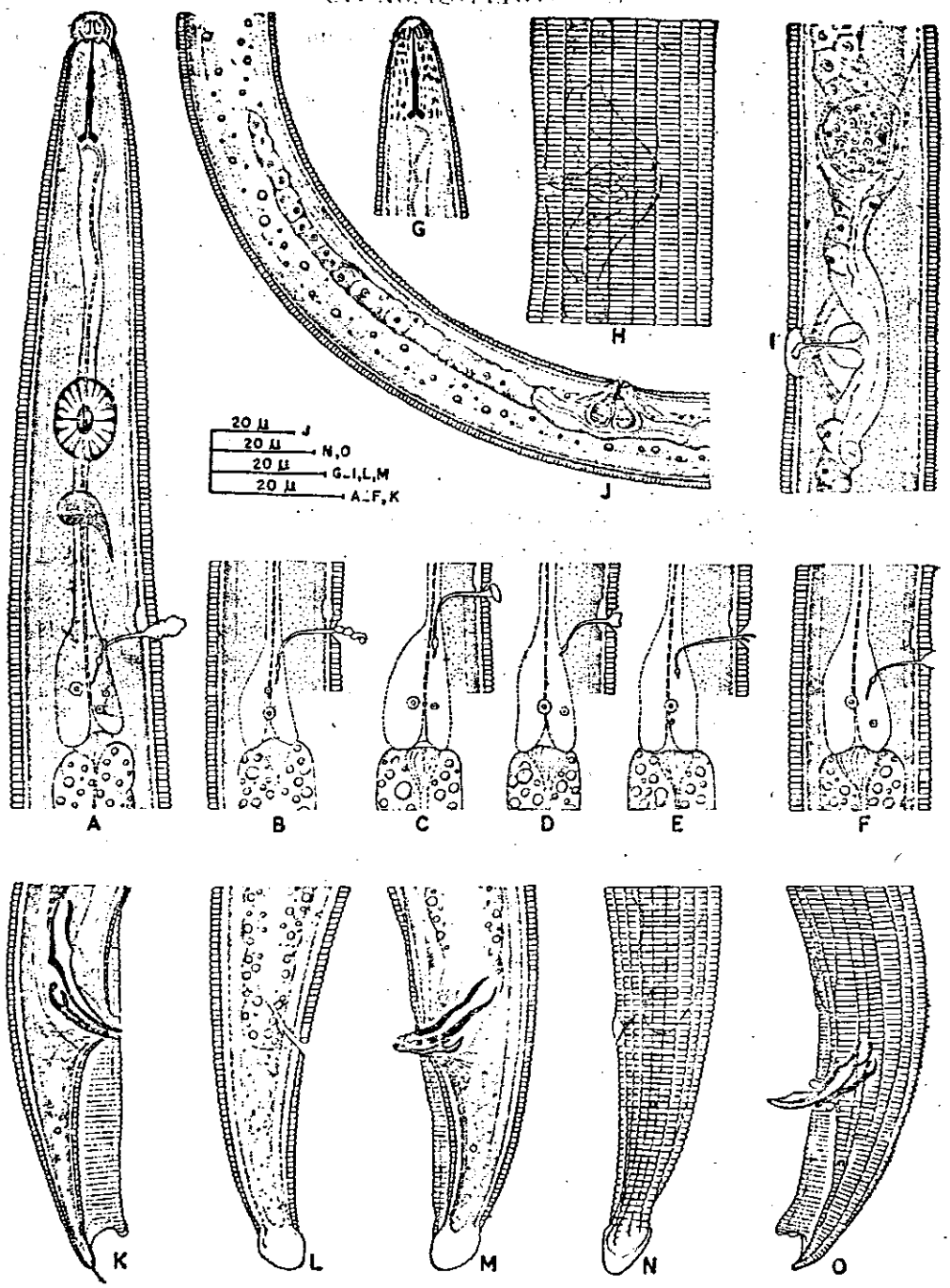
Vulva transverse, slit-like, appearing to possess lateral cuticular flaps. Gonads amphidelphic. Spermatheca rounded, filled with sperms. Vagina about one-half of body-width wide. Oocytes arranged in a single row. Rectum 10-14 μ, less than one anal body-width long. Tail elongate-conoid, regularly tapering 39-49 μ long, marked with 33-42 annules, 2.6-3.5 anal body-widths long. The tail terminus is blunt, marked with 9-13 fine striae and provided with a characteristic lobe measuring 7-10x6-8 μ. Post-intestinal sac present reaching up to the level of anus. Phasmids located near middle, 10-18 annule posterior to anus.

Male : Spicules 22-25 μ along medial axis. Gubernaculum 14-15 μ long with a small distal flange and a biforked proximal end. Bursa with characteristic notch leaving the hinder part of the tail uncovered. Tail 34-39 μ, provided with 5-6 μ long mucro. Phasmids above the middle of tail, 15-19 μ posterior to anus.

Type habitat : Soil from Ibadan, Nigeria.

Type specimens : Holotype and the paratypes mounted on slide. *Dolichorhynchus nigericus*-1.

Differential diagnosis : *Dolichorhynchus nigericus* n. sp., differs from the type, *D. phaseoli* in the shape of the spear knobs, in having a biforked gubernaculum, protrusible excretory duct, post-intestinal sac, and male tail usually shorter than female tail, provided with a mucro.


20 µ
J
20 µ
N,O
20 µ
G,I,L,M
20 µ
A,F,K
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O

ACKNOWLEDGEMENTS

We are thankful to Dr. M. Rafiq Siddiqi of the Commonwealth Institute of Helminthology, St. Albans, England, for supplying us the specimens of *Dolichorhynchus nigericus* and to the Head, Department of Zoology, Aligarh Muslim University for the necessary laboratory facilities.

SUMMARY

The species, *Tylenchorhynchus phaseoli* Sethi and Swarup, 1968 and a very similar new species from Ibadan, Nigeria, are unique in having their bursa notched at tail tip. This feature is reminiscent of the genera *Dolichodorus* Cobb, 1914 and *Brachydorus* de Guiran and Germani, 1968, both of which possess notched bursa. *T. phaseoli* and the Nigerian species stand as a connecting link between *Tylenchorhynchus* and the genera *Dolichodorus*/*Brachydorus*. Consequently, we propose a new genus for these two species.

REFERENCES

Mulk, M. M. and Jairajpuri, M. S. 1972 : A redescription of *Tylenchorhynchus phaseoli* Sethi & Swarup, 1968. *Indian J. Nematol.*, *2* : 54-58

Sethi, C. L. and Swarup, G. 1968 : Plant parasitic nematodes of North-western India I. The genus *Tylenchorhynchus*. *Nematologica 14* : 77-88.