

LONGIDOROIDEA (THORNE, 1935) N. RANK. (NEMATODA:
DORYLAIMINA) WITH THE DESCRIPTION OF *XIPHINEMA*
NEOAMERICANUM N. SP. FROM INDIA AND PROPOSAL OF A
NEW NAME FOR *X. AMERICANUM* SENSU CARVALHO (1956)
NON COBB, 1913

by

S. H. KHAN and S. AHMAD

Longidorid nematodes are characterized by having a long and attenuated spear (odontostyle) and a long spear-extension (odontophore) which may have plain or flanged base. This type of feeding apparatus makes them a distinct group in the suborder Dorylaimina (de Man, 1876) Pears, 1936, but also makes it difficult readily to accomodate them in the superfamily Dorylaimoidea (de Man, 1876) Thorne, 1934. We, therefore, consider them to represent a distinct superfamily group and hence, the family Longidoridae (Thorne, 1935) Meyl, 1960, is upgraded to superfamilial rank, and its two subfamilies become families. Diagnosis of Longidoroidea and its two families are appended below.

Fifteen females of a hitherto undescribed species of *Xiphinema* Cobb, 1913, were collected from soil around roots of *Juglans regia* in Ranikhet, District Almora, U.P., in 1964.

The species is named here as *X. neoamericanum* n. sp., and is described below.

Carvalho (1956) collected from soil of the garden of 'Faculdade de Medicina de Sao Paulo', Sao Paulo, Brazil, ten females of a *Xiphinema* species which he described as *X. americanum* Cobb, 1913. Lordello and Da Costa (1961) stated that « the form described from Sao Paulo by Carvalho (1956) as *X. americanum* may belong to *X. brevicolle*. But, Carvalho's form has a much shorter spear (108: 156-168 μ), all other features agreeing fairly well with those of *X. brevicolle*. » A study of Carvalho's (1956) measurements and description of this species reveals that it further differs from *X. brevicolle*

in having a smaller 'c' value and a more posteriorly located vulva. It differs from *X. americanum* in having a smaller spear and a smaller and differently shaped tail. The details of this species are, therefore, suggestive of a new species which is named here as *X. saopaoloense* n. n.: syn: *X. americanum* sensu Carvalho (1956) non Cobb, 1913.

Longidoroidea (Thorne, 1935) n. rank.

Diagnosis: Dorylaimina: Cfr. diagnosis of the family Longidoridae by Hooper and Southey (1973, p. 8);

Type family: Longidoridae Thorne, 1935;

Other family: Xiphinemidae (Dalmasso, 1969) n. rank.

Longidoridae Thorne, 1935

Diagnosis: Longidoroidea: Cfr. diagnosis of the subfamily Longidorinae by Hooper and Southey (1973, p. 8);

Type genus: *Longidorus* (Micoletzky, 1922) Filipjev, 1934;

Other genus: *Paralongidorus* Siddiqi, Hooper and Khan, 1963.

Xiphinemidae (Dalmasso, 1969) n. rank.

Diagnosis: Longidoroidea: Cfr. diagnosis of the subfamily Xiphinemininae by Hooper and Southey (1973, p. 9);

Type genus: *Xiphinema* Cobb, 1913.

Xiphinema neoamericanum n. sp. (Fig. 1, A-D).

Measurements:

Paratypes: females (15): L = 1.7-1.95 mm; a = 33-45; b = 5.0-7.5; c = 49-68.8; V = 50-54%; Spear = 98-105 μ ; Spear extension = 56-61 μ .

Holotype: female: L = 1.78 mm; a = 43.4; b = 5.2; c = 68.4; V = 52%; Spear = 104 μ ; Spear extension = 60 μ . Total spear = 164 μ .

Description: female: body elongate, ventrally arcuated, forming a spiral when relaxed in hot water. Cuticle with two distinct layers; inner layer marked with fine transverse striae.

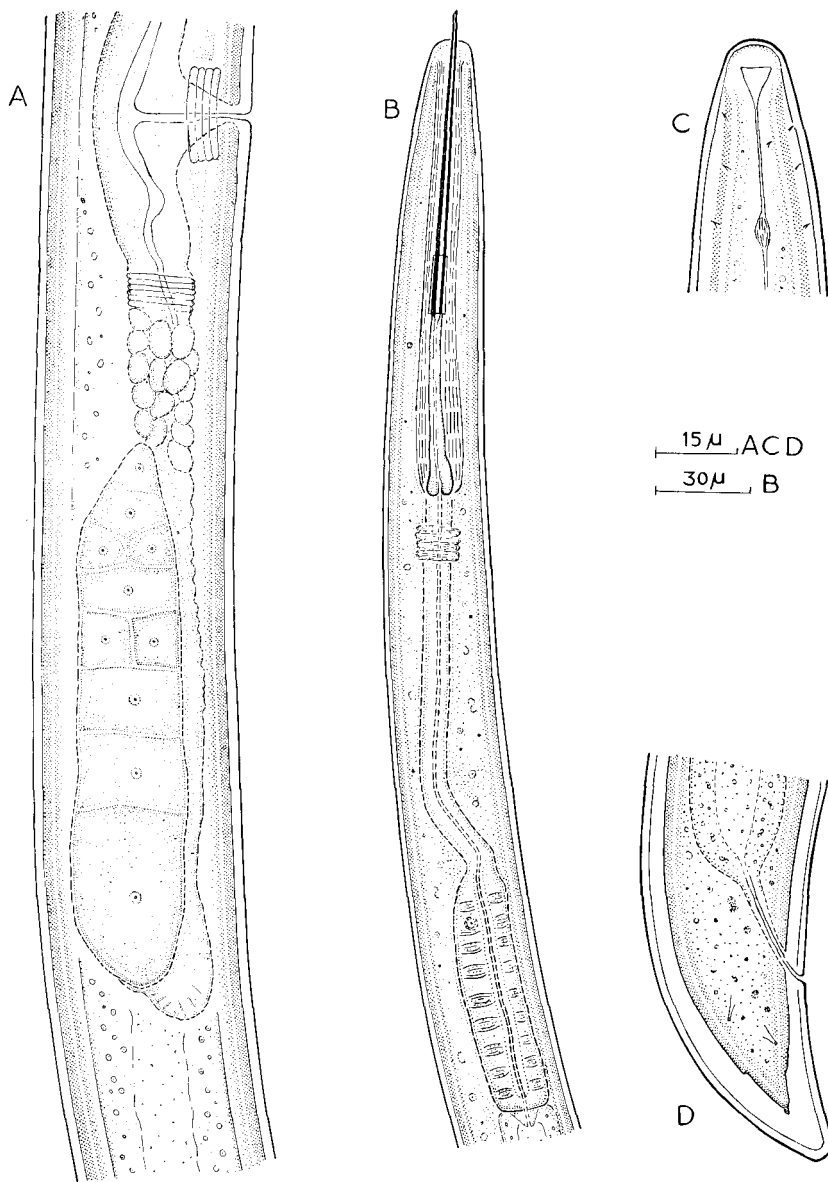


Fig. 1 - *Xiphinema neoamericanum* n. sp.: A, Reproductive region of female; B, oesophageal region of female; C, anterior end of female; D, tail end of female.

Lip region amalgamated, 10 μ wide, continuous with the rest of the body. Amphids stirrup-shaped; amphid apertures slit-like, about 1/2 as wide as lip region; sensillary pouches 23 μ long. Knobs of the spear extension prominent, 10 μ across. Guiding sheath, 4 μ long, with a double guide ring: the basal ring, 5 μ wide, located at a distance of 8½ lip-region widths from anterior end.

Oesophagus with a tubular anterior and a bulbar basal portion encircled by nerve ring 18 μ behind base of spear extension. Basal oesophagus bulb measuring 82 x 21 μ . The oesophageal lumen gets markedly cuticularized in the bulbar portion. Junction of the oesophagus with intestine a bluntly conical valve, 6 x 8 μ .

Vulva a depressed transverse slit. Gonads paired, opposed, reflexed, extending 160 μ anteriorly and 130 μ posteriorly. Oocytes arranged in single file except for a few in double file in the mid region. Ovary continues into the muscular dilated end of the oviduct at the point of flexure. Oviduct a thin tube, leading into another dilated chamber with muscular walls. The muscular chamber seemingly leads into a duct having four rows of globular cells, passing through sphincter in the uterus. Vagina supported by a tough sphincter. « Zed » organ not observed.

Pre-rectum 180 μ long, of lighter texture, leading into a thin, tubular rectum opening to the outside through anus. Tail bluntly conoid, 1.6 anal-body-width long, slightly convex dorsally. Two pairs of caudal pores are present in the tail region.

Male: Not found.

Type host: Walnut tree (*Juglans regia* L.).

Type locality: Ranikhet hills (Altitude 6000 ft.), U.P. India.

Type material: Holotype and paratypes (14 females), deposited with the Museum, Zoology Department, Aligarh Muslim University, Aligarh, India.

Diagnosis: *Xiphinema neoamericanum* n. sp. comes close to *X. americanum* Cobb, 1913 and *X. brevicolle* Lordello and Da Costa, 1961. This species differs from *X. americanum* in having a continuous lip region; longer total length (total spear length 120-140 μ in *X. americanum* after Thorne, 1961), and basal guide ring being more posteriorly located (basal guide ring located at a distance of 6 lip-region widths from anterior end in *X. ame-*

ricanum). It differs from *X. brevicolle* in having a longer tail ($c = 62.5-93.0$; tail less than one anal-body-width long in *X. brevicolle*), and basal portion of oesophagus being $\times 2$ neck-widths long (basal portion of oesophagus $\times 1.5$ neck-widths long in *X. brevicolle*).

Acknowledgements

The authors are thankful to Mr. Azizur-Rahman Khan for bringing the soil sample from Ranikhet.

S U M M A R Y

The family Longidoridae (Thorne, 1935) is upgraded to superfamilial rank, and its two subfamilies become families. *Xiphinema neoamericanum* n. sp. is described from India. The species reported by Carvalho (1956) from Brazil as *Xiphinema americanum* Cobb, 1913, is given a new name (*X. saopaloense*).

R I A S S U N T O

Longidoroidea (Thorne, 1935) n. rango (Nematoda: Dorylaimina) con descrizione di *Xiphinema neoamericanum* n. sp. raccolta in India e proposta di un nuovo nome per *X. americanum sensu Carvalho (1956) non Cobb, 1913*.

La famiglia Longidoridae (Thorne, 1935) è stata portata al rango di superfamiglia, mentre le due sottofamiglie in essa presenti vengono considerate come famiglie. È descritto *Xiphinema neoamericanum* n. sp., raccolta in India, e viene proposto un nome nuovo (*X. saopaloense*) per la specie descritta da Carvalho (1956) in Brasile come *X. americanum* Cobb, 1913.

R E S U M É

Longidoroidea (Thorne, 1935) n. rang (Nematoda: Dorylaimina) avec la description de *Xiphinema neoamericanum* n. sp. en Inde et proposition d'un nouveau nom pour *X. americanum sensu Carvalho (1956) non Cobb, 1913*.

La famille des Longidoridae (Thorne, 1935) a été élevée au rang de superfamille et les deux sousfamilles, par conséquent, sont devenues familles. *Xiphinema neoamericanum* n. sp. est décrit en Inde et un nouveau nom (*X. saopaloense*) a été proposé pour l'espèce décrite par Carvalho (1956) au Brésil comme *X. americanum* Cobb, 1913.

L I T E R A T U R E C I T E D

- CARVALHO J. C., 1955 - Plantas Ornamentais Parasitadas por Espécies do Genero *Xiphinema*. *Rev. Inst. A. Lutz.*, 15: 180-185.
- HOOPER D. J. and SOUTHEY J. E., 1973 - «The Longidoridae. The identification and Biology of *Longidorus*, *Paralongidorus* and *Xiphinema* species found in the British Isles with observations on the oesophageal ultrastructure of some species». In AAB, Nematology group Harpenden, U.K., Rothamsted Experimental Station. 3-10, 59-63.
- LORDELLO L. G. E. and DA COSTA C. P., 1961 - A new nematode parasite of Coffee roots in Brazil. *Rev. Brasil Biol.*, 21: 363-366.
- THORNE G., 1961 - Principles of Nematology. McGraw Hill, Book Co., New York, 553 pp.

Accepted for publication on 5 January 1975.