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 accommodate 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.» 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. saopauloense 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: Xiphinemaidae (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;


Xiphinemaidae (Dalmasso, 1969) n. rank.

Diagnosis: Longidoroidea: Cfr. diagnosis of the subfamily Xiphinema 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 \( \mu \); Spear extension = 56-61 \( \mu \).

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

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 8 1/2 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 x 2 neck-widths long (basal portion of oesophagus x 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.

SUMMARY

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. saopaoloense).

RIASSUNTO

Longidoridea (Thorne, 1935) n. range (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. saopaoloense) per la specie descritta da Carvalho (1956) in Brasile come X. americanum Cobb, 1913.

RÉSUMÉ

Longidoridea (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 du superfamille et les deux sousfamilles, par conséquent, sont devenues familles. Xiphinema neoamericanum n. sp. est décrit en Inde et un nouveau nom (X. saopaoloense) a été proposé pour l'espèce décrite par Carvalho (1956) au Brésil comme X. americanum Cobb, 1913.
LITERATURE CITED


HOOPER D. J. and SOUTHIEY 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.


Accepted for publication on 5 January 1975.