

LONGIDORUS EDMUNDSI N.SP. (DORYLAIMIDA:LONGIDORIDAE) FROM SEAGRAPE IN WINDWARD ISLANDS [*LONGIDORUS EDMUNDSI* N.SP. (DORYLAIMIDA:LONGIDORIDAE) EN COCCOLOBA EN LAS ISLAS DEBARLOVENTO]. D.J. Hunt and M.R. Siddiqi, Windward Islands Banana Research Centre (WINBAN), P.O. Box 115, Castries, St. Lucia, W. Indies and Commonwealth Institute of Helminthology, 103, St. Peter's Street, St. Albans, U. K.

Accepted:

6. VI.1977

Aceptado:

ABSTRACT

Longidorus edmundsi n.sp. is described from about the roots of *Coccoloba uvifera* growing on the beach near Vieux Fort, St. Lucia. *L. edmundsi* is recognized by a less tapering anterior end with a broad, truncate lip region, short amphidial pouches extending almost completely around the head, odontostylet guide ring located at less than one lip region width from the anterior end, short rounded tail in adults and the length of the body and odontostyle. Its closest relatives are *L. tarjani* and *L. saginus*. It differs from *L. tarjani* by shorter body length and much shorter odontostyle and from *L. saginus* by a more anteriorly placed odontostylet guide ring, shorter odontostyle and more posterior vulva.

INTRODUCTION

A soil sample taken on January 6, 1977 from around the roots of seagrass (*Coccoloba uvifera*) revealed a male and female of a new species of *Longidorus*. The seagrass was growing on the beach some 20 m from the sea at Anse de Sables, Vieux Fort, St. Lucia.

Further soil samples were collected and after processing over 20 l of soil, 32 adult nematodes and a larger number of juveniles were recovered. Very few nematodes were found in the top 10 cm of soil, the majority being found below 20 cm. A second population was later obtained from Dominica, again from seagrass growing along the shore.

Longidorus edmundsi n.sp. is named in honour of Dr. J.E. Edmunds, Nematologist and Director of the Windward Islands Banana Research Centre. Specimens were heat relaxed (60°C), fixed for 48 hours in TAF and processed to, and mounted in anhydrous glycerine.

LONGIDORUS EDMUNDSI N.SP.

(Fig. 1)

Dimensions

Type population:

Female (n = 11): L = 5.46 (4.62 - 6.27) mm; a = 119 (101 - 138); b = 13.1 (10.9 - 16.7); c = 202 (154 - 238); c' = 0.8 (0.7 - 0.9); V = 49.1 (46-51); odontostyle = 104 (97 - 116) μm; odontophore = 56 (54 - 58) μm; odontostylet guide ring = 24 (23-25) μm from anterior end. Holotype female: L = 4.62 mm; a = 110; b = 11; c = 154. c' = 0.8; V = 49.9; odontostyle = 97 μm; odontophore = 58 μm; odontostylet guide ring = 24 μm.

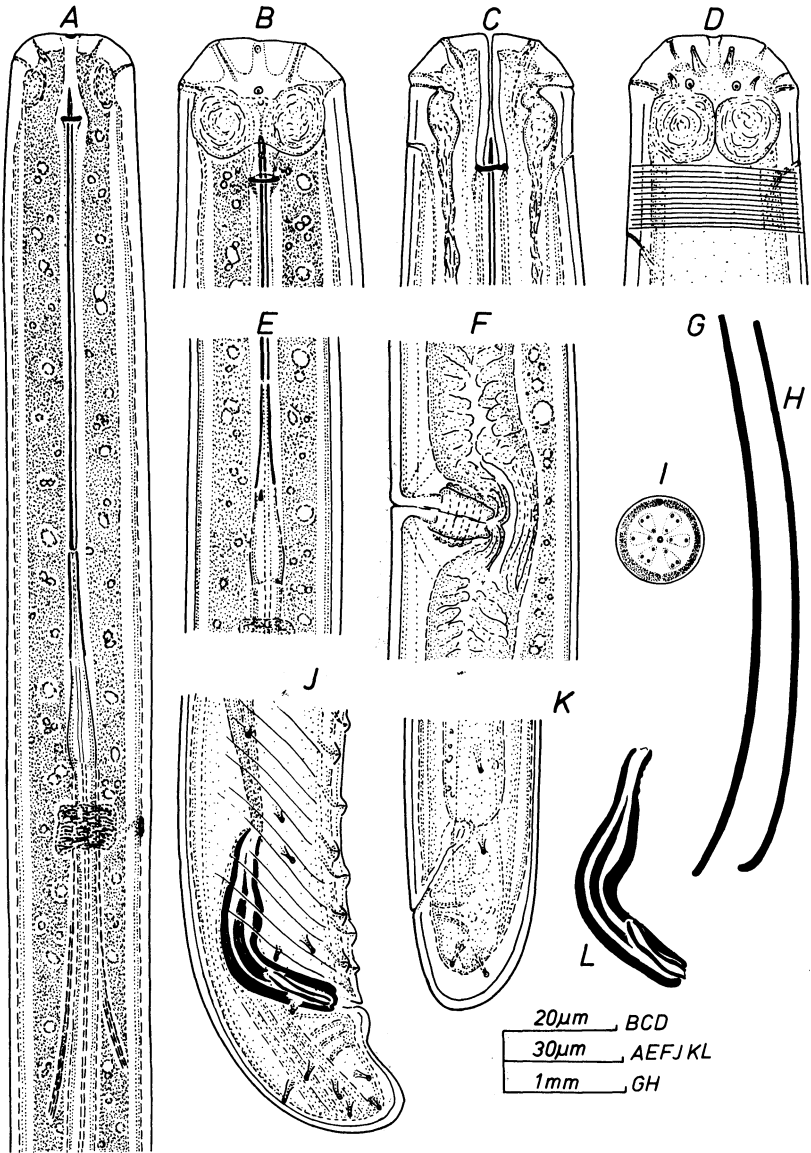


Fig. 1: *Longidorus edmundsi* n.sp. A: female anterior end; B: female head; C, D: ventral views of male head; E: odontophore region of female; F: vulval region; G: entire female; H: entire male; I: *en face* view of juvenile; J: male tail region; K: female tail; L: spicule and guiding piece.

Male (n = 21): L = 5.29 (4.01 - 6.48) mm; a = 126 (108 - 143); b = 13.6 (9.4 - 18.2); c = 156 (134 - 186); c' = 0.9 (0.8 - 1.1); odontostyle (n = 20) = 105 (100 - 112) um; odontophore = 55.8 (48 - 58) um; odontostylet guide ring = 24 (22 - 27) um; spicules (curved median line) = 65 (60 - 70) um.

J2 (n = 4): L = 1.62 (1.47 - 1.82) mm; a = 46 (45 - 49); b = 6.1 (5.0 - 7.2); c = (59 - 74); c' = 0.9 (0.9 - 1.0); odontostyle = 72 (70 - 74) um; replacement odontostyle = 84 (78 - 89) um; odontostylet guide ring = 18 um.

J3 (n = 10): L = 2.64 (2.44 - 2.93) mm; a = 63 (59 - 69); b = 8.4 (7.2 - 9.7); c = 98 (77 - 111); c' = 0.8 (0.8 - 0.9); odontostyle = 88 (82 - 92) um; replacement odontostyle = 97 (90 - 103) um; odontostylet guide ring = 21 (20 - 22) um.

J4 (n = 10): L = 3.89 (3.49 - 4.43) mm; a = 93 (87 - 105); b = 10.2 (8.9 - 11.5); c = 144 (119 - 161); c' = 0.9 (0.7 - 0.9); odontostyle = 94 (86 - 100) um; replacement odontostyle = 106 (97 - 112) um; odontostylet guide ring = 22 (21 - 23) um.

Juveniles grouped primarily on the basis of 'L' and 'c'.

Dominica populations:

Female (n = 6): L = 6.12 (5.31 - 6.7) mm; a = 107 (102 - 115); b = 13.6 (12.6 - 14.5); c = 191 (176 - 214); c' = 0.74 (0.7 - 0.8); V = 49.0 (48.1 - 50.5); odontostyle = 113 (110 - 118) um; odontophore = 63 um (60 - 67); odontostylet guide ring = 24 (23 - 25) um.

Male (n = 2): L = 5.50 (4.99 - 6.01) mm; a = 115 (98 - 136); b = 12.0 (11.4 - 12.6); c = 141 (119 - 167); c' = 1.0 (0.9 - 1.1); odontostyle = 106 (100 - 112) um; odontophore = 62.5 (62 - 63) um; odontostylet guide ring = 23.5 (22 - 23) um; spicule (median line) = 68 (67 - 69) um.

Description

Body long and slender; heat relaxed form more or less straight or slightly ventrally arcuate with the tail region of the male more sharply curved; slightly tapering anteriorly to a 27-33 um wide, truncate head which is not offset. Six lip areas around circular mouth bearing the usual 6 + 10 arrangement of papillae. Amphid pouches short but very large, extending almost completely around the head. (Fig. 1D). The amphidial aperture is a small, inconspicuous pore just behind outer labial papilla of lateral lip.

Cuticle with fine transverse striae. Series of lateral pores beginning just behind lip region and ending on tail. Dorsal and ventral body pores also present. Lateral chord one fifth as wide as body.

Oesophagus as for the genus. Odontostylet guide ring 0.83 (0.71 - 0.92) times lip region-width from front end. Odontostyle 97 - 118 um long as with an unmodified base. Odontophore usually 55 - 60 um long, in two parts: anterior cuticularized part and posterior bulboid part providing attachment for protractor and retractor muscles of odontostylet. A minute triangular micro resembling odontostyle tip present within the odontophore of holotype and some of the paratypes. Nerve ring situated just posterior to the base of the odontophore. Hemizonid about 7.5 um long and at same level as nerve ring. Hemizonion 1.4 um long and about 7 um posterior to the hemizonid. Enlarged part of oesophagus very muscular, about 4.5 times as long as wide, with one dorsal and two pairs of subventral glands. Cardia rounded.

Female gonads, didelphic, amphidelphic, reflexed. Vulva a transverse slit, the lips not protuberant. Vagina extends about halfway or more into the body. Uterus very long, usually packed with sperm and separated from the oviduct by a prominent sphincter. Z-organ absent. Developing oocytes conoid and with two pairs of caudal pores.

Testes paired, one anteriorly outstretched, the other reflexed. Spicules about 65 μm long and as illustrated in Fig. 1L. Lateral guiding piece 17-18 μm long. Supplements consist of a pre-anal pair, 3 or 4 in two lines, and then a series of 7 or 8 papillae. Tail short conoid, bluntly rounded, with 5-6 pairs of caudal pores arranged as illustrated. (Fig. 1J).

Juveniles resemble adults in general form. The stages can be most easily differentiated on the basis of body length and the ratio 'c'.

Diagnosis and relationships: *Longidorus edmundsi* n.sp. is recognized by a less tapering anterior end with a broad truncate lip region, short amphidial pouches extending almost completely around the head, odontostylet guiding ring located at less than one lip region width from anterior end, short rounded tails in adults and the lengths of the body and odontostyle. The anterior position of the odontostylet guiding ring brings it close to *L. tarjani*, Siddiqi, 1962 (2), but this species has a longer body (6.0 - 6.8 mm) and odontostyle (178 - 182 μm). In some other details it resembles *L. saginus* Khan *et al.*, 1971 (1), but differs from it in having a more anteriorly placed odontostylet guiding ring (27 - 35 μm or 1.2 - 1.6 times lip region width from anterior end in *L. saginus*), a shorter odontostyle (135 - 155 μm in *L. saginus*) a slightly more posterior vulva ($V = 40 - 45$ in *L. saginus*) and less tapering tails in adults.

Type host and locality: Seagrass (*Coccoloba uvifera*) growing along the beach at Anse de Sables, Vieux Fort, St. Lucia, West Indies. Also found associated with *C. uvifera* growing on the beach at the mouth of the Layou River in Dominica, West Indies.

Type material: Holotype ♀, 4 ♀♀, 11 ♂♂, 7 juvenile paratypes at Rothamsted Experimental Station, Harpenden, England; 1 ♀, 2 ♂♂ paratypes at Commonwealth Institute of Helminthology, St. Albans, England; 1 ♀, 2 ♂♂, 6 juvenile paratypes at the Department of Nematology, Landbouwhogeschool, Wageningen, The Netherlands; 2 ♀♀, 3 ♂♂, 9 juvenile paratypes at the Department of Nematology, University of California, Riverside, USA.

RESUMEN

El artículo describe *Longidorus edmundsi* n.sp. hallado entre las raíces de *Coccoloba uvifera* en una playa cerca de Vieux-Fort en Sta. Lucia. *L. edmundsi* se reconoce por su región anterior que es atenuada, una región labial ancha y truncada, la bolsa del anfidio corta y extendiéndose casi completamente alrededor de la cabeza, el anillo orientador del odontoestilo localizado a menos de una región labial de ancho desde la extremidad anterior, la cola corta y redondeada en los adultos, y por la longitud del cuerpo y del odontoestilo. Las especies que más se le asemejan son *L. tarjani* y *L. saginus*. Difiere de *L. tarjani* por tener el cuerpo y el punzón más cortos y de *L. saginus* porque el anillo orientador ocupa una posición más anterior, el odontoestilo es más corto y la vulva está emplazada más posteriormente.

REFERENCES

1. B. Weischer and K. Mathen. 1971. Indian J. Nematol. 1: 116 - 127; 2. Siddiqi, M. R. 1962. Nematologica 8 : 152 - 156.