

A new species of *Meiodorus* Siddiqi, 1976 (Nematoda : Tylenchida) from Córdoba, Argentina ⁽¹⁾

Marcelo E. DOUCET*

Centro de Zoología Aplicada, Laboratorio de Nematología,
Universidad Nacional de Córdoba, Casilla de Correo 122, 5000 Córdoba. Argentina.

SUMMARY

A new species of *Meiodorus* is described. *M. festonatus* n. sp. differs from the type species *M. hollisi* Siddiqi, 1976 by body length, length of hyaline region tail and ratios b, c, and c'. The most important difference is observed in lateral lobes of male bursa which are striated with crenated edge in most of the specimens.

RÉSUMÉ

Une nouvelle espèce du genre *Meiodorus* Siddiqi, 1976 (Nematoda : Tylenchida) provenant de Córdoba, Argentine

Description est donnée de *M. festonatus* n. sp. provenant de la rhizosphère de graminées à Córdoba, Argentine. *M. festonatus* n. sp. qui comporte femelles et mâles, se différencie de la seule autre espèce du genre par un certain nombre de mensurations, notamment la plus grande longueur du corps chez les deux sexes, et par la présence d'une bursa délicatement striée et à bord crénelé.

During a survey of plant-parasitic nematodes in the central region of Córdoba, Argentina, an undescribed species of Meiodorinae Siddiqi, 1976 was recovered from soil around gramineous roots. This species, belonging to genus *Meiodorus* Siddiqi, 1976 is described and illustrated below.

Material and methods

Nematodes were extracted from soil by use of a centrifugal-flotation method (Jenkins, 1964). Adults specimens were killed and fixed in hot fixative (Netscher & Seinhorst, 1969), then processed to glycerin by a rapid method (Seinhorst, 1959). Measurements were made on specimens mounted in glycerin; range, arithmetic mean and standard deviation are given. Drawings were made with a camera lucida. Nematodes used for a scanning electron microscopy (SEM) were infiltrated with Spurr's low-viscosity resins and processed according rapid method (Baujard, 1978) modified (Doucet, 1982). They were mounted on specimens stubs, coated with gold (200 Å) and examined and photographed in a Philips

501 B electron microscope at 15 KV of accelerating voltage.

*Meiodorus festonatus*** n. sp. (Fig. 1 & 2)

DIMENSIONS

Females (n = 38) : L = 0.92-1.31 mm (1.11 ± 0.08); a = 34.20-47.76 (41.48 ± 2.26); b = 6.42-9.20 (7.88 ± 0.68); c = 7.67-12.13 (10.47 ± 0.84); c' = 5.58-8.0 (6.5 ± 0.77); stylet = 20-25 µm (22 ± 0.91); V = 47-55 (50 ± 1.49); m = 40.9-55 (48.81 ± 4.28); MB = 51.9-61.9 (55.38 ± 2.07); tail = 87-123 µm (105 ± 8.17).

Males (n = 18) : L = 0.81-1.01 mm (0.92 ± 0.04); a = 34.11-46.5 (38.78 ± 2.96); b = 5.94-7.77 (6.80 ± 0.51); c = 25-37.2 (31.28 ± 3.48); c' = 1.38-1.88 (1.6 ± 0.15); stylet = 21-22 µm (21.5 ± 0.42); m = 42.8-50 (47.15 ± 2.79); MB = 52.4-60 (55.9 ± 1.82); tail = 24-39 µm (30 ± 3.69); spicule = 30-36 µm (33 ± 1.30); gubernaculum = 17-20 µm (18 ± 0.94); T = 50.7-66.2 (57.5 ± 4.43).

Holotype (female) : L = 1.1 mm; a = 40; b = 7.88; c = 10.80; c' = 5.88; stylet = 22 µm; V = 51; m = 50; MB = 54.50; tail = 100 µm; hyaline region of tail = 40 µm.

* Carrera del Investigador, Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina.

(1) This research was supported by a grant received from the CONICOR (Consejo de Investigaciones Científicas y Tecnológicas de la Provincia de Córdoba, Argentina).

** *festonatus* : from Greek φεστόνι = festooned (edges of lateral lobes of bursa).

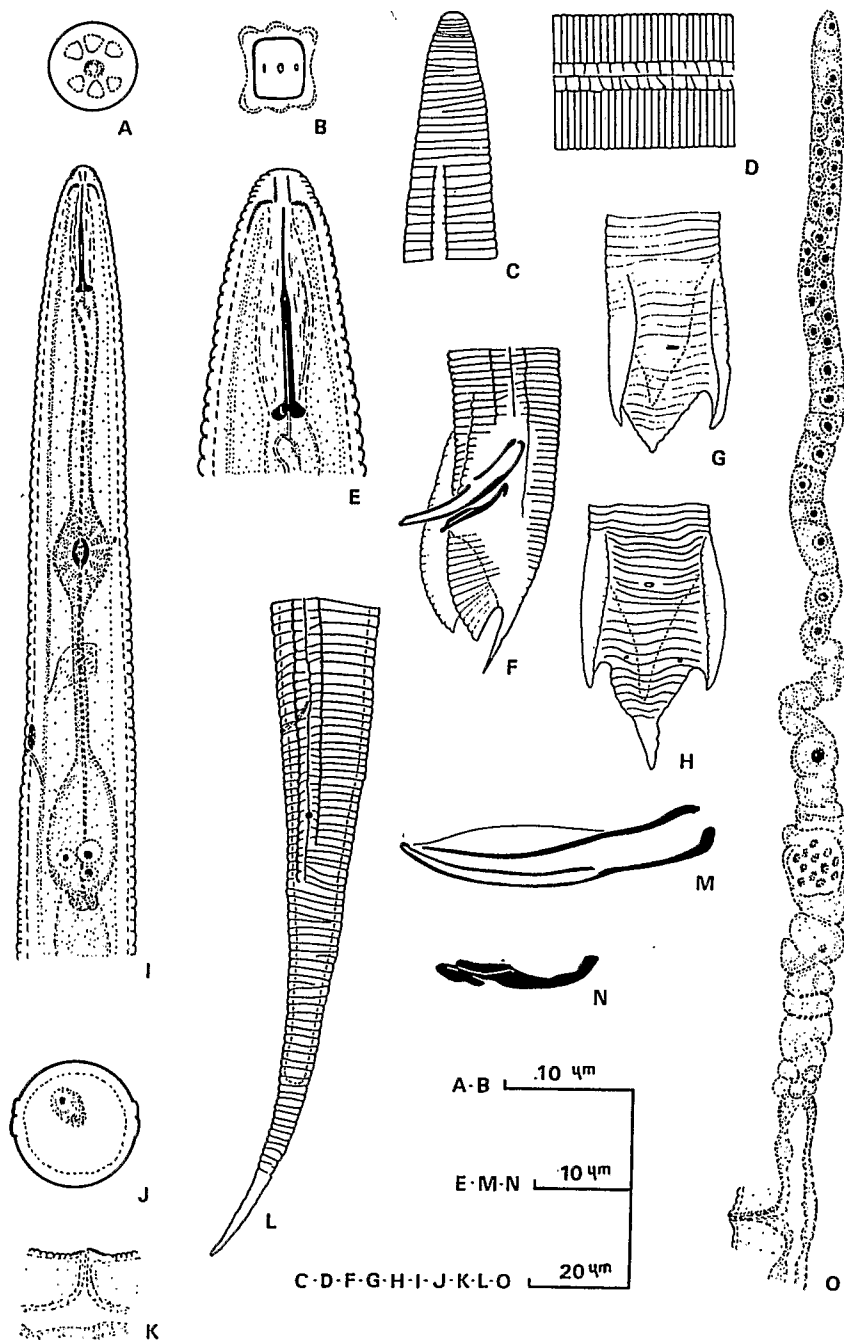


Fig. 1. *Meiodorus festonatus* n. sp. Female. A : cross section throught to the basal plate; B : lip region (en face view); C : anterior region (lateral view); D : cuticule (lateral fields); E : anterior region; I : oesophageal region; J : cross section throught to the middle body; K : vulvar region; L : tail (lateral view); O : anterior genital branch. Male. F : posterior region (lateral view); G-H : posterior region (ventral view); M : spicule; N : gubernaculum. (B : dessin basé sur observations au microscope électronique à balayage).

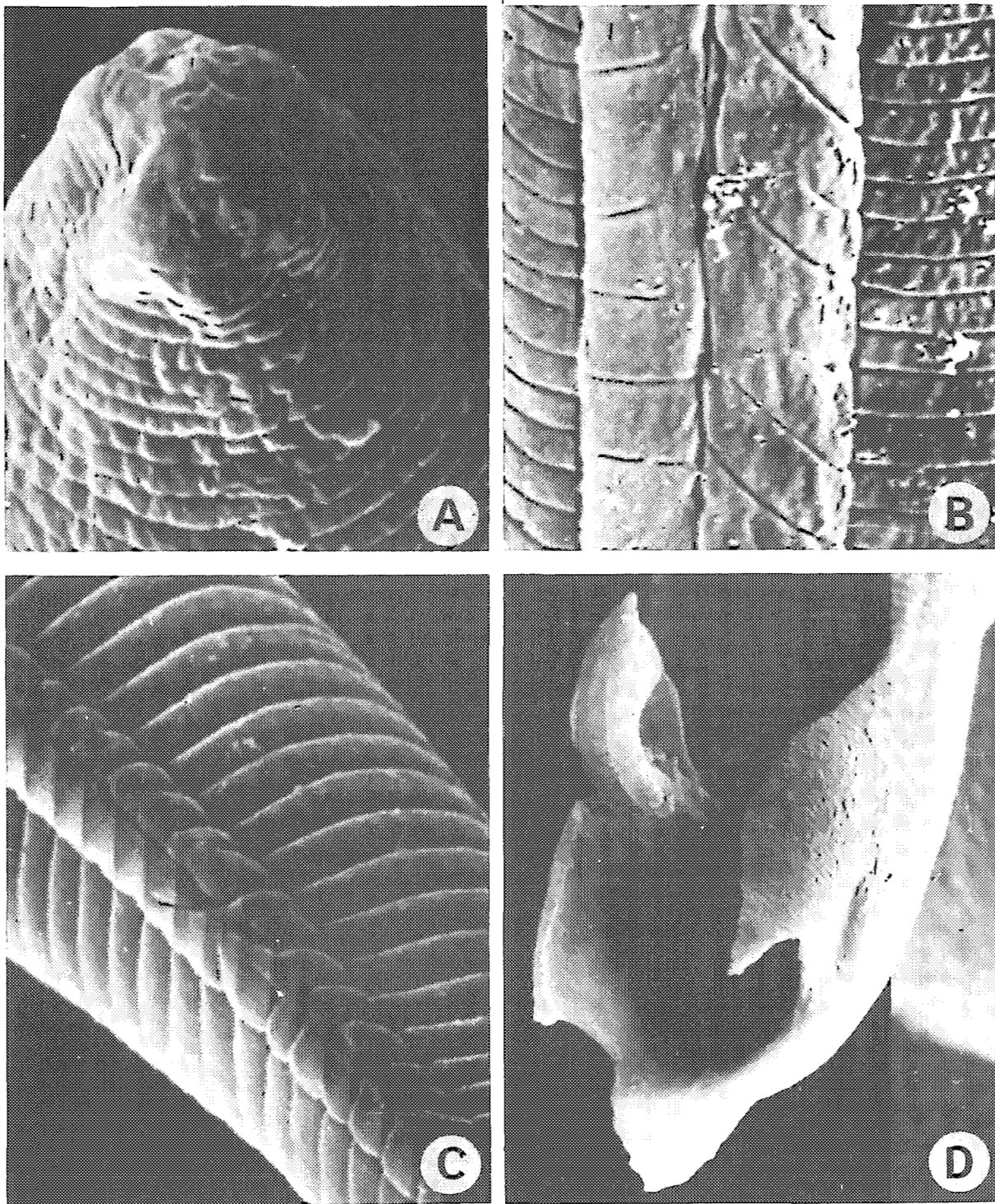


Fig. 2. *Meiodorus festonatus* n. sp. (SEM pictures). Female. A : anterior region (en face view, $\times 16\,000$); B : cuticle (lateral fields, at middle body, $\times 15\,700$); C : cuticle (lateral fields, at middle tail, $\times 12\,600$). Malte. D : posterior region (ventral view, $\times 5\,400$).

DESCRIPTION

Female : Body cylindrical, straight to slightly arcuate when fixed, tapering at both ends. Distinct body annulation unmarked by longitudinal striae. Annules 1.5 μm wide on mid-body. Lateral field areolated, about 1/4 as wide as body, with three incisures (outer ones crenate). Two incisures start posterior to level of median esophageal bulb and disappears a little behind plasmid. Lip region hemispherical (with SEM it appears six lobed), continuous (sometime slightly offset) with five-six annules, without longitudinal striae. No oral disc; amphid difficult to see with light microscope : with SEM it appears as semicircular opening. Cephalic sclerotization light, hexaradiate; its outer margins extending posteriorly from basal plate over three to four body annules. Stylet slender, conical portion attenuated, needle like; basal knobs posteriorly sloping, rounded; DGO 3-4 μm behind knobs. Median esophageal bulb oval (smaller diameter 9-12 μm); isthmus elongated, surrounded by nerve ring near middle; basal bulb saccate, well offset from the intestine; nucleus of dorsal gland near middle, those of subventrals are smaller and close behind. Cardia well developed. Hemizonid occupying 2-3 body annules, just anterior to the excretory pore (sometimes at the same level) which is located at 108-141 μm (124 ± 8.5) from anterior end. Vulva on raised projection (depressed in one specimen), vulval lips thick. Reproductive system double, opposed; ovary with oocytes in one or two rows, oviduct short and usually contorted, spherical spermatheca in line with ovary, usually with rounded sperms, tricolumella with three rows of four cells each, followed by a short zone of two rows of three cells each; uterus muscular. Vagina extending about 2/5 into body, not sclerotized. Fasciculi (serpentine canal) conspicuous along the intestine in most specimens; anus distinct. Tail elongate-conoid, straight or arcuate, with 40-60 annules ventrally (counted from anus to beginning of hyaline region), terminal zone without distinct annules, hyaline region 25-51 μm (40 ± 7) long. Phasmids pore-like, located on tail, at 15%-40% of the tail length (10-28 annules from anus).

Males : Body straight in anterior half and curved posteriorly; annules 1 μm wide at mid-body. Lip region, stylet and esophagus as in female. Testis simple with several rows of spermatocytes. Spicules arcuate, cephalated, flanged and with velum (which is visible when spicules are protruded). Gubernaculum protrusible, straight to slightly curved, with postmedian alate region; incurved proximal end in most specimens; distal end sometimes with crenated edge, posteriorly tapering to a rounded tip; terminal lobe also striated and crenated, conoid in ventral view. Phasmids located at the angle formed by the lateral and terminal lobes of the bursa, usually at level of mid-tail.

TYPE HOSTS AND LOCALITY

Soil from around roots of *Panicum* sp. and *Setaria* sp. Wet sandy soil (pH = 4.17; N % = 0.35; C/N = 11.7). Locality : Villa Giardino, Punilla Department, Province of Córdoba, Argentina.

DIFFERENTIAL DIAGNOSIS

Only one species, *Meiodorus hollisi* Siddiqi, 1976 was known up to now. *M. festonatus* n. sp. can be identified by : Females : body length (0.85-1.04 mm vs 0.91-1.31 mm), stylet length (23-26 μm vs 20-25 μm), tail length (77 μm vs 87-123 μm) length of hyaline region tail (12-26 μm vs 24-51 μm) and the following ratios values : b (5.9-6.9 vs 6.4-9.2), c (11-14 vs 9.2-12.1), c' (4.4-5.2 vs 5.5-8.7). Males : body length (0.68-0.95 mm vs 0.81-1.01 mm) and stylet length (23-26 μm vs 21-22 μm); lateral lobes of bursa not striated and smooth edged vs striated with crenated edge.

TYPE INFORMATION

Holotype (female), slide RAC 67 deposited in the Centro de Zoología Aplicada, Universidad Nacional de Córdoba, Casilla de correo 122, 5000 Córdoba, Argentina. Paratypes distributed as follows : fifteen females and five males in the Centro de Zoología Aplicada; five females and five males in Laboratoire des Vers, Muséum national d'Histoire naturelle, Paris, France and Department of Nematology, University of California, Riverside, U.S.A.; five females and one male in Instituut voor Dierkunde, Rijksuniversiteit Gent, Belgium and Landbouwhogeschool Wageningen, The Netherlands; two females and one male in Rothamsted Experimental Station, Harpenden, Herts, England.

REMARKS

M. festonatus n. sp. has a lobed labial region that can be observed only with SEM. This characteristic would exclude it from the subfamily Meiodorinae; but the rest of its characters are exactly the same ones that define that subfamily. Until studies with the SEM of *M. hollisi* Siddiqi, 1976 are done (and other species of this genus that could eventually be described) the author prefers to include the species described here in the genus *Meiodorus* Siddiqi, 1976. Bursa with lateral lobes striated and crenated edges in *M. festonatus* n. sp. suggests that his character should be considered at specific level and not at generic level as proposed by Siddiqi (1976).

Both known species of *Meiodorus* were found in the American continent (U.S.A. and Argentina). Although the geographical distribution appears wide both species have been found in association with graminaceous roots.

ACKNOWLEDGEMENTS

Thanks are due to A. H. Bell (University of California, Riverside) for the loan of specimens of *Meiodorus hollisi* Siddiqi, 1976 and to Lic. José Indovino (C.I.M., Universidad Nacional de Córdoba) for making SEM photographs.

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Accepté pour publication le 22 novembre 1984.