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MONONCHIDAE OF IVORY COAST SAVANNAHS:
GENERA *IOTONCHUS* (COBB 1916)
AND *MICONCHUS* ANDRASSY 1958

by

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Soil samples were collected in 1976 and 1979 in savannahs of the Ivory Coast at Lamto, Dabou and Foroforo. The species which according to Mulvey's definitions (1978) belong to the genera *Iotonchus* (Cobb, 1916) Altherr, 1950 and *Miconchus* Andrassy, 1958 are here reported and briefly described.

Nematodes were extracted from the soil by means of a modification of Dalmasso's method (1964). The specimens were killed and fixed in F.A.4:10; processed to 100% glycerine and mounted in permanent slides.

The type material of the new species has been deposited in the Nematode Collection of Plantenziektenkundige, Wageningen, The Netherlands.

IOTONCHUS ZULLINII sp. n. (Figs. 1 a-e and 2 a-b)

Female paratypes (N = 19): L = 1.6 (1.3-2.0) mm; a = 32 (27-36); b = 4.3 (3.8-4.7); c = 11.0 (9.6-13.3); V = 73 (69-76); buccal cavity = 33-41 x 22-27 μ m; tail length = 148 (121-175) μ m.

Male paratypes (N = 7): L = 1.6 (1.3-2.0) mm; a = 34 (29-37); b = 4.3 (3.9-4.6); c = 11.6 (10.3-13.0); spicule length = 71 (68-73) μ m; buccal cavity = 32-37 x 20-24 μ m; tail length = 142 (122-167) μ m.

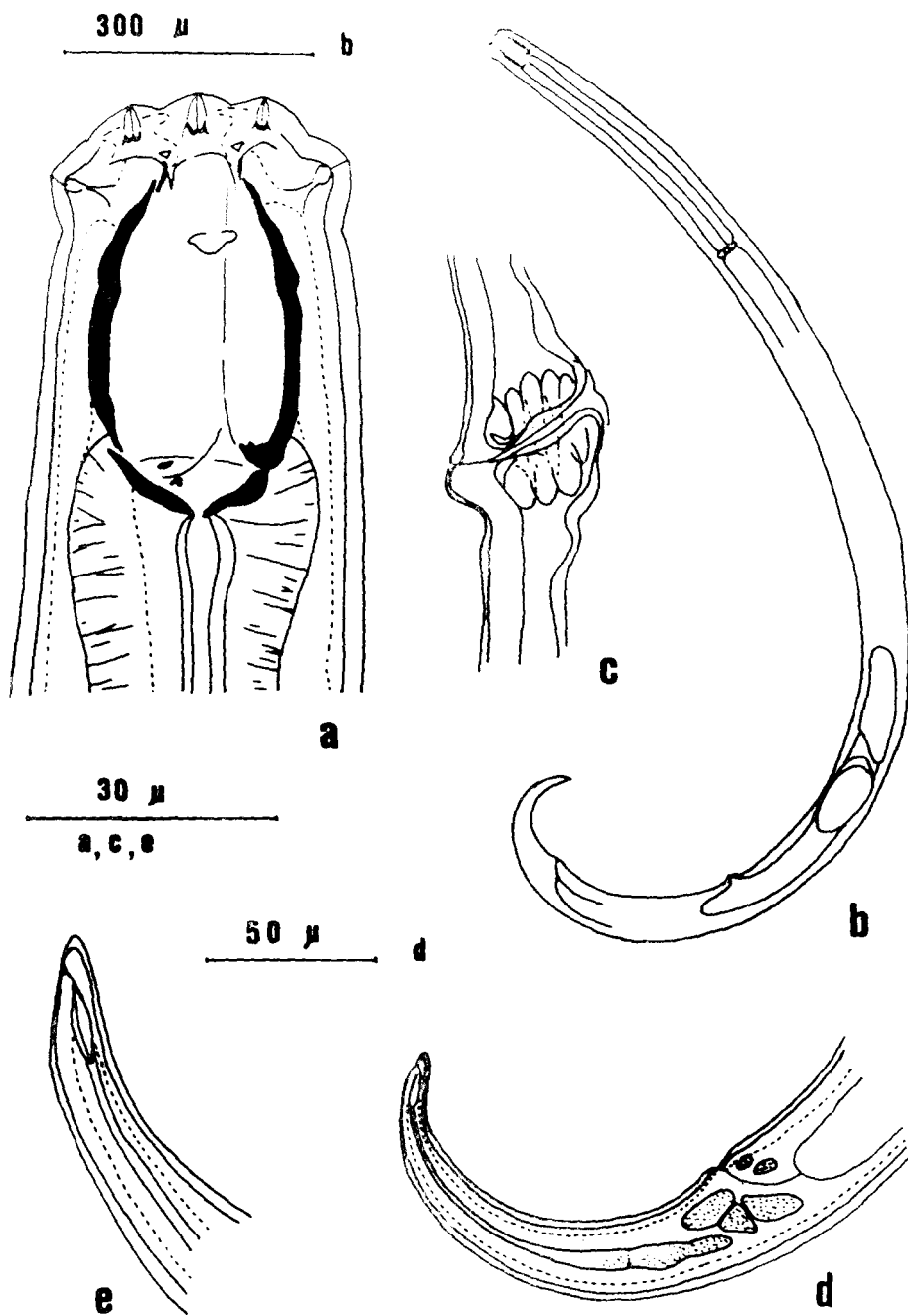


Fig. 1 - *Iotonchus zullinii* sp. n. - a: head of female; b: whole female; c: vagina; d: tail of female; e: tail terminus of female.

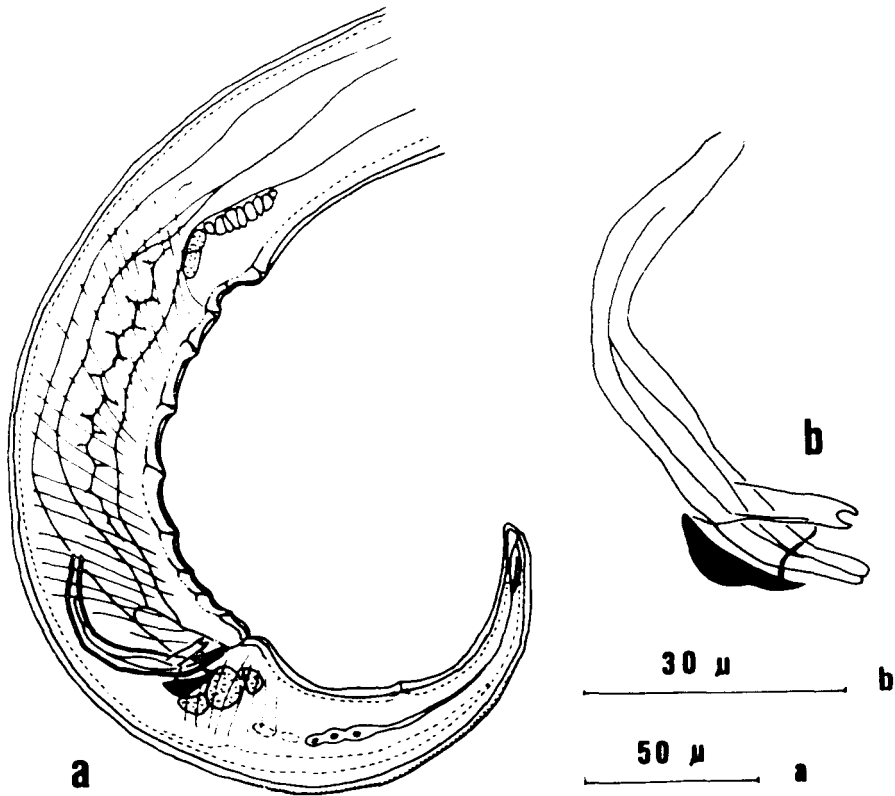


Fig. 2 - *Iotonchus zullinii* sp. n. - a: tail of male; b: spicule.

Holotype (female): L = 1.6 mm; a = 32; b = 4.7; c = 9.8; V = 73; buccal cavity = 35 x 24 μ m; tail length = 166 μ m; egg = 42 x 88 μ m.

Allotype (male): L = 1.6 mm; a = 33; b = 4.7; c = 13.5; buccal cavity = 35 x 22 μ m; tail length = 123 μ m; spicule length = 68 μ m.

Description

Body ventrally arcuate in fixed specimens. Labial region slightly offset. Lips distinct. Amphids cup-shaped with aperture 6 μ m wide. Stoma rectangular in lateral view, approximately 1.5 as long as wide. Dorsal tooth suprabasal; anterior edge with minute projection. Two pairs of foramina in subventral plates. Nerve ring at about a quarter of the length of the oesophagus. Oesophageo-intestinal valve tuberculate.

Female monodelphic, prodelfhic, gonad reflexed; sphincter muscle between oviduct and uterus distinct; eggs measuring about 40 x 80 μm . Postuterine sac about one body diameter in length, and can function as receptaculum seminis. Vulval lips prominently elevated, vulval papillae absent. Vagina a muscular structure extending across nearly one third of body width; no evident sclerotization. Tail ventrally arcuate; conoid with an acutely rounded terminus. Caudal glands three, frequently obscure. Ampulla clearly visible; terminal opening dorsal.

Male: body morphology and morphometry similar to females. Testes two; one shorter and reflexed, 7-10 supplements with papillae developed. Vas deferens enlarges to become ejaculatory duct opposite the second supplement. Lateral accessory piece bifurcated, about 15 μm long. Spicules paired, very arcuate, slender, with evident median line. Gubernaculum short, with evident ala between the spicules. Tail conoid, with thin striae in the dorsal subterminal part. Caudal glands, ampulla and terminal opening as in female. Ventrally in tail, one cuticular pore observed.

Type habitat and locality: soil around the roots of *Hyparrhenia diplandra* in sloped savannah at « Chez Tournier », Lamto.

Differential diagnosis

Iotonchus zullinii sp. n. differs from *I. acuticaudus* Mulvey et Jensen 1967 in its smaller size, different shape of the suprabasal tooth, more distal terminal opening, different shape of the gubernaculum and higher number of supplements in the male. It differs from *I. nigriensis* Mulvey et Jensen 1967 in the presence of a terminal opening and in having more slender spicules which are not bifurcated.

IOTONCHUS LAMOTTEI sp. n. (Figs. 3 a-b and 4 a-d)

Females paratypes (N = 3); L = 1.6 mm; a = 34 (32-35); b = 4.2 (4.1-4.4); c = 7.5 (7.2-7.9); V = 65 (65-66); buccal cavity = 33-41 x 25-27 μm ; tail length = 215 (201-226) μm .

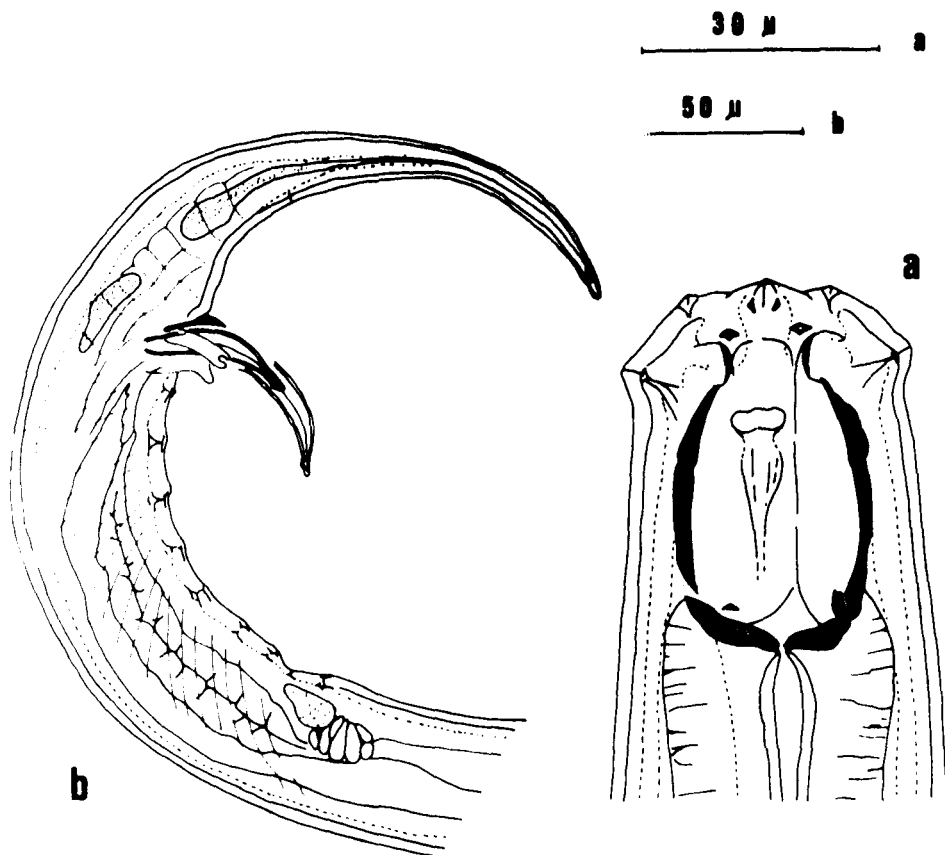


Fig. 3 - *Iotonchus lamottei* sp. n. - a: head of female; b: tail of male.

Holotype (female): L = 1.6 mm; a = 32; b = 4.1; c = 7.4; V = 66; buccal cavity = 35 x 25 μm; tail length = 211 μm.

Allotype (male): L = 1.6 mm; a = 31; b = 4.0; c = 8.3; buccal cavity = 35 x 22 μm; tail length = 189 μm; spicule length = 50 μm.

Description

Body arcuate in fixed specimens. Labial region slightly offset. Lips distinct. Amphide aperture rounded, 7 μm wide, with posterior pocket elongated. Stoma rectangular, in lateral view approximately

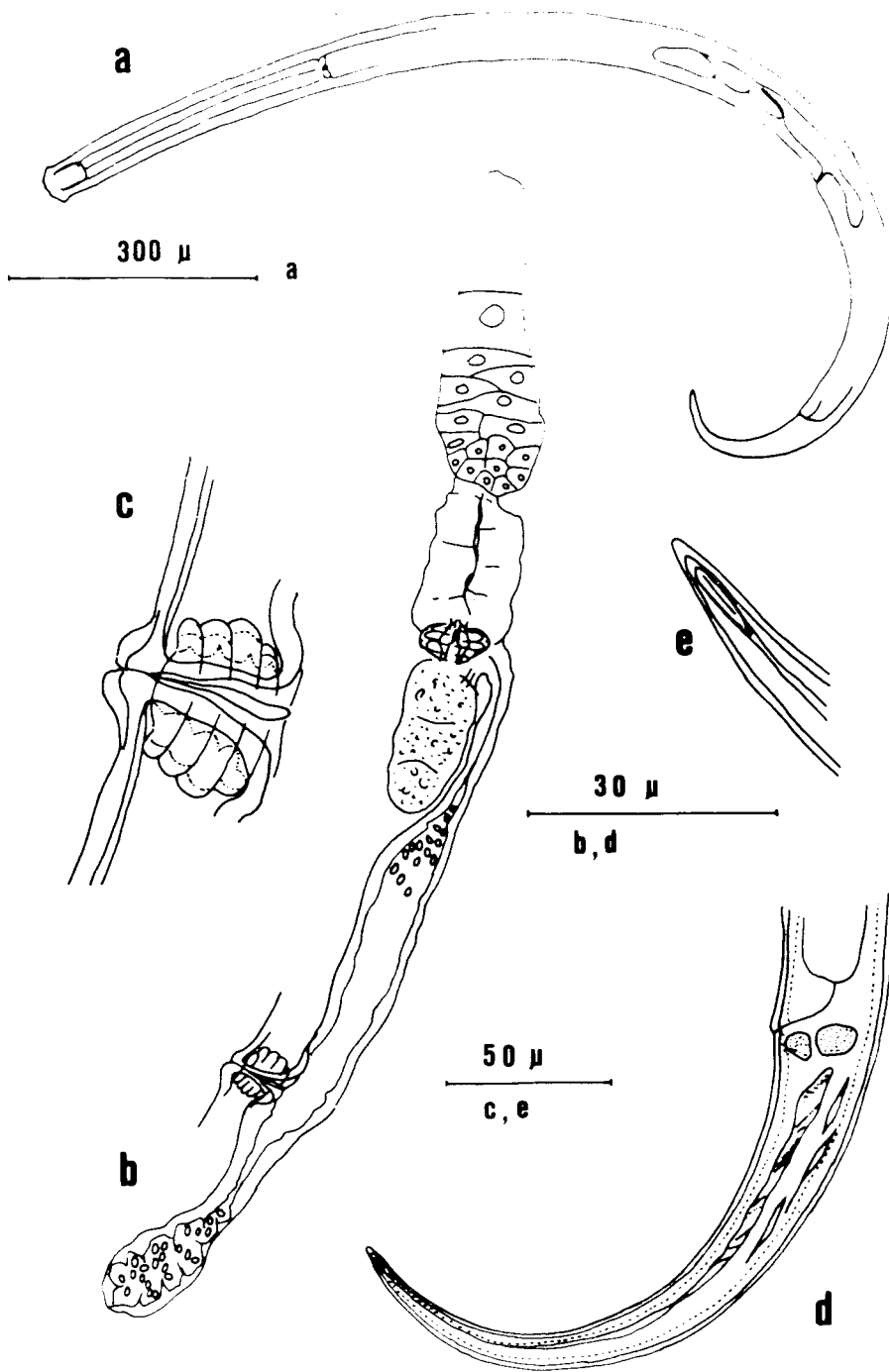


Fig. 4 - *Iotonchus lamottei* sp. n. - a: whole female; b: female reproductive tract; c: vagina; d: tail of female.

1.3 as long as wide. Dorsal tooth suprabasal, small and massive, with apex projecting forward. Two pair of foramina in the subventral plates. Nerve ring at about a quarter of the length of the oesophagus. Oesophageo-intestinal valve tuberculate.

Female monodelphic, prodelphic, ovary reflexed; sphincter muscle between oviduct and uterus distinct; evident glandular protrusion under the sphincter muscle; postuterine sac about twice the body diameter, functioning as receptaculum seminis. Vulval lips prominently elevated, vulval papillae absent. Vagina, a muscular structure extending across nearly one third of the body width; no evident sclerotization. Tail conoid, ventrally arcuate, with rounded terminus. Terminal opening not visible; an ampulla-like structure is recognizable; in the specimens observed, caudal glands are not recognizable.

Male: tail shorter than in female. Testes two, one shorter and reflexed; 9 supplements with papillae slightly developed. Vas deferens enlarges to become ejaculatory duct opposite the second supplement. Lateral accessory pieces bifurcated, 20 μm long. Gubernaculum slender, more massive in the distal part, with ala between the spicules. Caudal gland, ampulla and terminal opening as in female. A single small ventral cuticular pore.

Type habitat and locality: soil 20 cm deep in sloping savannah, at « Chez Tournier », Lamto.

Differential diagnosis

Iotonchus lamottei sp. n. is similar to *I. zullinii*, but differs from it in having the tail comparatively longer in relation to its body, different shape of suprabasal tooth and of amphids, no terminal opening, and different shape of the reproductive apparatus in the female (vulva in more forward position, postuterine sac longer); in the male the spicules are shorter and more massive, and the gubernaculum has a different shape.

IOTONCHUS JAIRI (Lordello 1958) Clark 1960 (Fig. 5 a-c)

Females (N = 19): L = 1.2 (1.0-1.3); a = 26 (23-30); b = 4.0 (3.6-4.3); c = 13 (11.6-15.4); V = 74 (72-76); buccal cavity = 22-42 x 13-24 μm ; tail length = 93 (79-109) μm .

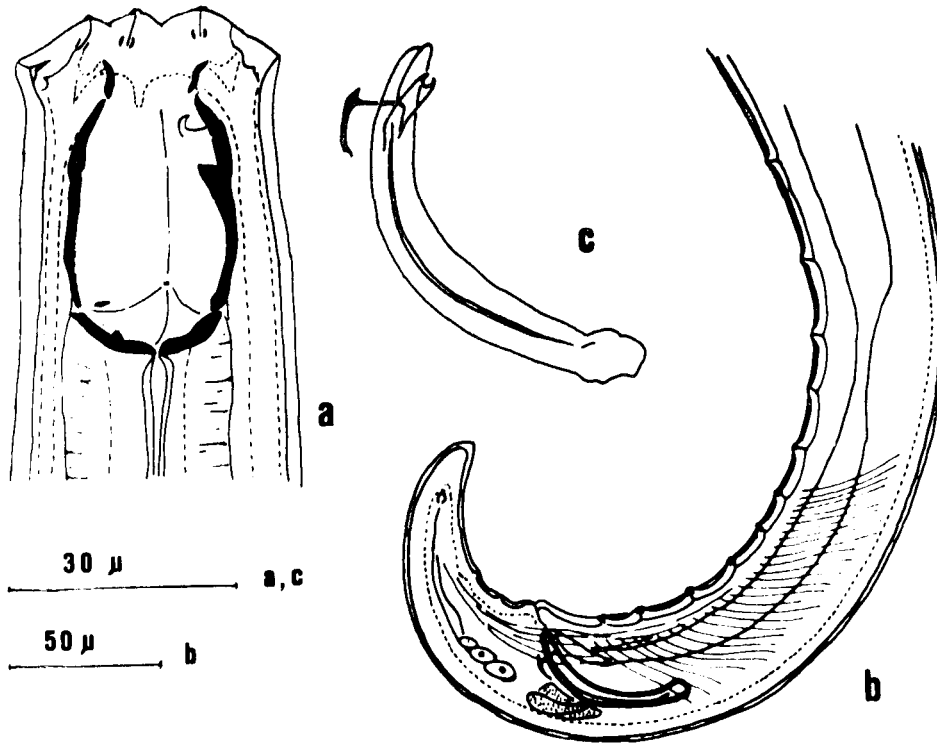


Fig. 5 - *Iotonchus jairi* - a: head of male; b: tail of male; c: spicule.

Males (N = 2): L = 1.1-1.2; a = 31-35; b = 3.6-4.0; c = 13.4-13.9; buccal cavity = 29-35 x 17-22 μm ; tail length = 83-92 μm ; spicule length = 63-64 μm .

Morphometrics of these females generally agree with Lordello's (1958) and Mulvey *et* Jensen's (1967) descriptions. However the body length of the population from Ivory Coast is intermediate between that of the American (L = 0.8-0.9 mm) and the Nigerian (L = 1.2-1.6 mm) populations, and on these specimens are clearly visible a small cup-like amphid (4 μm wide), two pairs of foramina on the subventral plates, and a little ampulla without terminal opening on the tail.

The male described here for the first time is morphometrically similar to the female except for the body more slender.

Only one testis observed; 11 supplements, the first four less evident. Vas deferens enlarges to become ejaculatory duct opposite to the third supplement. Lateral accessory pieces bifurcate, about 9 μm long. Spicules free, slender, arcuate, with evident median line. Gubernaculum essentially formed by a massive ala between the spicules.

Habitat: Upper soil layers in non-hydromorphic savannahs, forest gallery and semi-deciduous forest.

IOTONCHUS sp. prope *PARABASIDONTUS* Mulvey et Jensen (1967)
(Fig. 6 a-d)

Male: L = 2.6; a = 40; b = 4.1; c = 9.2; buccal cavity = 59 x 39 μm ; tail length = 278 μm ; spicule length = 105 μm .

Body slender, arcuate in fixed specimen. Lips distinct; amphid cup-like with aperture 9 μm wide. Stoma rectangular in lateral view, approximately 1.5 as long as wide. Dorsal tooth suprabaasal, massive, with a ridge of points in its anterior edge. Oesophageo-intestinal valve tuberculate.

Testes two, one shorter and reflexed, 9 supplements with little developed papillae. Vas deferens enlarges to become ejaculatory duct opposite to the second supplement. Spicules arcuate; paired, free, 105 μm long, with ending rounded and undivided. Gubernaculum long, slender in its proximal part, with evident ala. Lateral accessory pieces bifurcated, 15 μm long, with a sclerotized guide. Tail conoid in the proximal part and cylindroid in the distal. Caudal glands three, with a large ampulla and a dorsal terminal opening. Three ventral cuticular pores.

Two juvenile specimens found in the sample are different (c = 8.3 against c = 4.4) from those of the sympatric species *I. tenuidentatus* (Kreis 1924) Mulvey 1963. This would exclude the possibility that the above described male is the still unknown male of *I. tenuidentatus*. Therefore seems to be a new species which however is not named, because of insufficient material.

Habitat and locality: deep soil layers in semi-deciduous forest at Lamto, « Chez Tournier ».

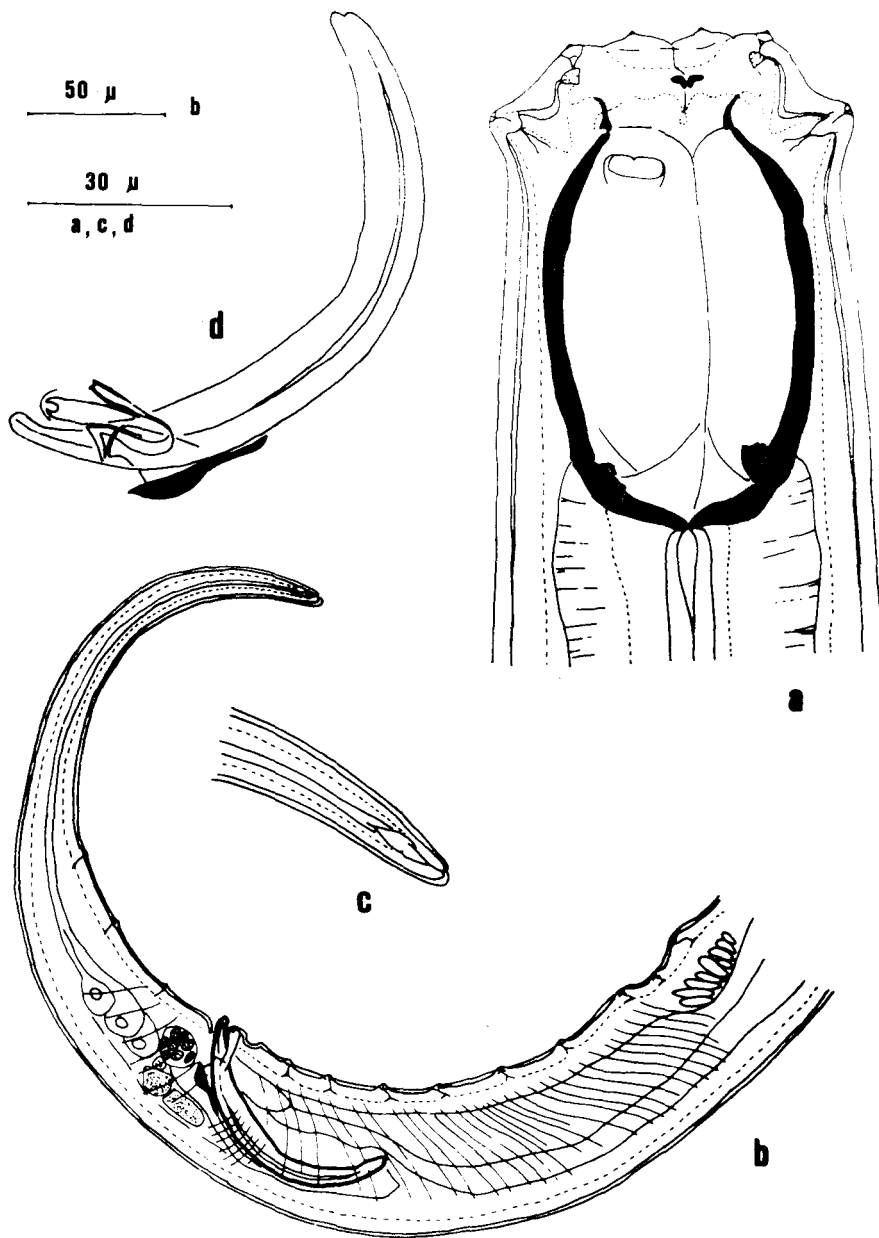


Fig. 6 - *Iotonchus* sp. prope *parabasidontus* - a: head of male; b: tail of male; c: tail terminus of male; d: spicule.

IOTONCHUS BASIDONTUS Clark 1960

Female (the only specimen found): L = 1.8 mm; a = 30; b = 4.2; c = 7.1; V = 60; buccal cavity = 42 x 25 μ m; tail length = 250 μ m.

Clark (1960) described this species from New Zealand, and it subsequently was found by Buangsuwon *et* Jensen (1966) in Thailand. Compared to the population described by Clark, the specimen from Lamto does not have an evident terminal opening on the tail, as do the specimen from Thailand.

IOTONCHUS TENUIDENTATUS (Kreis 1924) Mulvey 1963

Females (N = 6): L = 2.3 (2.2-2.5) mm; a = 40 (36-43); b = 4.8 (4.7-5.0); c = 4.4 (3.8-4.9); V = 53 (51-57); buccal cavity = 45-50 x 25-31 μ m; tail length = 534 (469-625) μ m.

Ten females and 84 juveniles were found. They are morphometrically very similar to the Nigerian population described by Mulvey *et* Jensen (1967); the only difference is a longer tail (c = 4.9-5.6) in the Nigerian population.

Habitat: hydromorphic savannahs.

MICONCHUS THORNEI Mulvey *et* Jensen 1967

Females (N = 6): L = 2.3 (2.1-2.4) mm; a = 35 (33-38); b = 3.6 (3.4-3.8); c = 10.3 (9.8-10.7); V = 68 (67-69); buccal cavity = 56-63 x 34-39 μ m; tail length = 220 (193-245) μ m.

Habitat: moderately hydromorphic soils in savannah and forest-gallery.

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S U M M A R Y

Species of *Iotonchus* (Cobb 1916) Altherr 1950 and *Miconchus* Andrassy 1958 (Nematoda, Mononchidae) are described from three Ivory Coast savannahs. Two new species are described, *I. zullinii* and *I. lamottei*, and the previously unknown male of *I. jairi* (Lordello 1958) Clark, 1960. An unnamed male specimen of *Iotonchus*, related to *I. parabasidontus* Mulvey et Jensen 1967 is also described. Morphometrics of *I. basidontus* Clark 1960, *I. tenuidentatus* (Kreis 1924) Mulvey, 1963 and *Miconchus thornei* Mulvey et Jensen 1967 are given.

R I A S S U N T O

Mononchidae delle savane della Costa d'Avorio: generi Iotonchus (Cobb, 1916) e Miconchus Andrassy, 1958.

Sono riportate le specie appartenenti ai generi *Iotonchus* (Cobb 1916) Altherr 1950 e *Miconchus* Andrassy 1958 (Nematoda, Mononchidae) trovate in tre savane della Costa d'Avorio. Vengono descritte due nuove specie: *I. zullinii* e *I. lamottei* ed il maschio finora sconosciuto di *I. jairi* (Lordello 1958) Clark, 1960. Viene anche descritto un maschio appartenente ad una specie vicina a *I. parabasidontus*, che non viene però denominata per carenza di materiale. Sono riportati anche i caratteri morfometrici di *I. basidontus* Clark 1960, *I. tenuidentatus* (Kreis 1924) Mulvey, 1963 e *Miconchus thornei* Mulvey et Jensen 1967.

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