

NEW AND KNOWN SPECIES OF MONONCHIDA (NEMATODA) FROM MBALMAYO RESERVE FOREST, CAMEROON

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Abstract.— A new and four known species of mononchs are described from Cameroon. *Mylonchulus vulvalatus* sp. nov. has 1.24–1.48 mm long body; a = 30–33; b = 3.5–4.0; c = 25.5–27.8; V = 59–60; buccal cavity 27–29 × 16–17 µm and is characterized by its blister-like vulval region. It is closely related to *M. brachyuris* (Bütschli, 1873) Altherr, 1953, *M. parabrachyuris* (Thorne, 1924) Andrassy, 1958 and *M. minor* (Cobb, 1893) Andrassy, 1958. *Margaronchulus mulveyi* Andrassy, 1972; *Mylonchulus orbitus* Jensen et Mulvey, 1968; *Crassibuca penicula* Mulvey et Jensen, 1967 and *Miconchus pararapax* Mulvey et Jensen, 1967 are reported.

Single specimen of a *Jensenonchus* sp. is also described which could not be accommodated in any of the known species of the genus.



Key words.— *Mylonchulus vulvalatus* sp. nov., *Mylonchulus orbitus*, *Margaronchulus mulveyi*, *Crassibuca penicula*, *Miconchus pararapax*, *Jensenonchus* sp., Mononchida, Nematoda, Cameroon.

INTRODUCTION

In recent years large number of taxa belonging to the Order Dorylaimida (Hodda et al. 1994; Siddiqi 1995a; Bloemers et al. 1995; Ahmad et al. 1996; Bloemers and Wanless 1996; Ahmad and Siddiqi 1997; Siddiqi 1998a), Tylenchida (Siddiqi 1994a, b, 1995b, 1998b; Bloemers and Wanless 1997), Cephalobida (Siddiqi 1993a) and Alaimida (Siddiqi 1993b) have been described from tropical rain forests in Cameroon. Altherr (1960) reported *Cobbonchus abrupticaudatus* and *Miconchus rapax* (Cobb, 1917) from Cameroon while Chavez and Geraert (1977) recorded *Sporonchulus ibitensis* (Carvalho, 1951); single specimen of a *Margaronchulus* sp. and two female and a juvenile specimen of a *Mylonchulus* sp. which was considered as *minor/obligus* with a question mark. Price and Siddiqi (1994) gave only generic identification of some mononchs (*Cobbonchus*, *Granonchulus*, *Itonchus*, *Mononchus*, *Mylonchulus*, *Polygonchulus* and *Bathydontus*).

The author had an opportunity to study some permanent slides of nematodes made available to him with courtesy from the Head, Department of Zoology, The Natural History Museum, London. These nematodes were collected as part of TIGER (Terrestrial Initiative for Global Environmental Research) Project of the Natural History Museum. The examination of this material revealed the presence of new and known species of Mononchida. Though the number of specimens were very limited, it was thought worthwhile to go ahead with its publication

because very little data on this group of nematodes is available from Cameroon.

MATERIALS AND METHODS

The nematodes were collected during 1992–1993, killed and fixed in soil by 4% hot and cold formaldehyd and later extracted from fixed soil by centrifugal flotation using Ludox-TM and mounted in glycerine on glass slides.

Mylonchulus vulvalatus sp. nov.

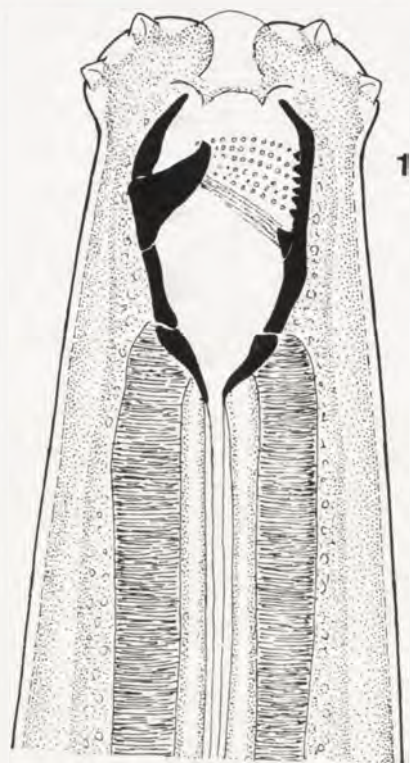
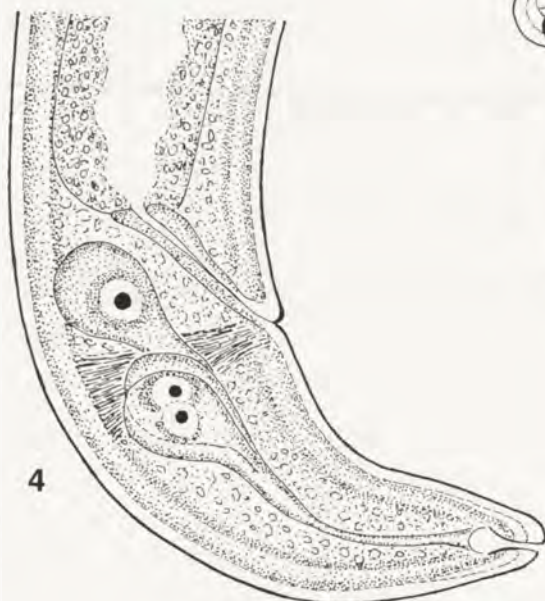
(Figs 1–4)

Measurements. Holotype female. L = 1.32 mm; a = 31; b = 3.6; c = 25.2; c' = 1.84; V = 59; G1 = 10; G2 = 11.

Paratype females (n=2): L = 1.24, 1.48 mm; a = 30, 33; b = 3.5, 4.0; c = 25.5, 27.8; c' = 1.70, 1.72; V = 59, 60; G1 = 11, 13; G2 = 10, 11.

Description. Female. Body slightly curved ventrad upon fixation, tapering gradually in the posterior region. Cuticle smooth, 1.5–2.0 µm thick at midbody and 2–3 µm at tail. Lateral hypodermal chords about half of the corresponding body width at midbody with distinct glandular bodies in two rows.

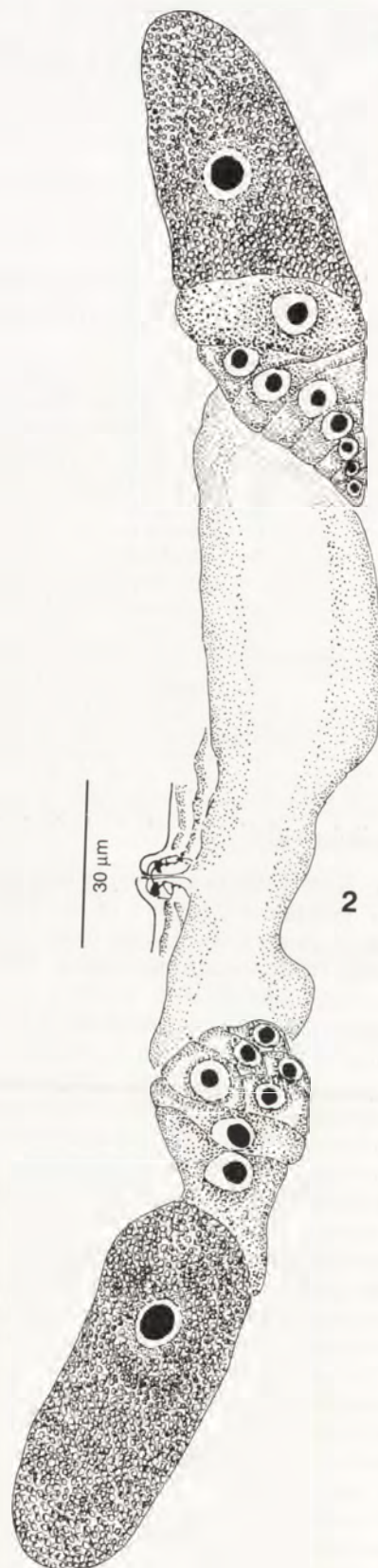
Lip region offset, 26–27 µm wide and 10–11 µm high, distinctly wider than the adjoining body. Labial papillae protruding above lip contour. Amphidial aperture 4 µm wide at 10–11 µm from anterior end. Buccal cavity 27–29 × 16–17 µm with a large dorsal tooth. Apex of dorsal tooth 22–23 µm

20 μ m15 μ m

4



3

10 μ m

2

30 μ m

Figures 1–4. *Mylonchulus vulvalatus* sp. nov. (1) anterior region; (2) female gonad; (3) vulval region; (4) female posterior region.

from base of stoma. Transverse rows of denticles six. Submedian teeth present.

Nerve ring at 119–123 μm from anterior end. Oesophago-intestinal junction non-tuberculate. Vulva distinctly protruding like a blister on the body surface; cuticularized pieces present at vulva-vagina junction. Gonad amphidelphic; both sexual branches equally developed. Ovary reflexed having 8–10 oocytes. Rectum 21–23 μm or 0.72–0.76 anal body width long. Tail 49–53 μm or 1.7–1.8 anal body widths long, conoid, ventrally arcuate; terminus blunt. Caudal glands large, grouped, Spinneret subterminal.

Male. Not found.

Type habitat and locality. Soil around roots of forest trees (unidentified) from Mbalmayo forest reserve, Cameroon.

Type specimens. Holotype female on slide *Mylonchulus vulvalatus* sp. nov. /1; two paratype females on slide *Mylonchulus vulvalatus* sp. nov. /2 in the nematode collection of the Natural History Museum, Cromwell road, London.

Differential diagnosis. *Mylonchulus vulvalatus* sp. nov. differs from all known species of *Mylonchulus* Cobb, 1916 in the characteristic shape of its vulval region. However, it comes close to *M. brachyuris* (Bütschli, 1873) Altherr, 1953 and *M. parabrachyuris* (Thorne, 1924) Andrassy, 1958 but differs from the former in having large sized buccal cavity and longer tail (buccal cavity 21–23 \times 12–16 μm and tail 35–45 μm in *M. brachyuris*). From *M. parabrachyuris*, the new species differs in having bigger buccal cavity, shorter tail and in having grouped caudal glands (buccal cavity 24 \times 14 μm ; tail 61 μm and caudal glands in tandem in *M. parabrachyuris*). The new species also resembles *M. minor* (Cobb, 1993) Andrassy, 1958 but differs in having comparatively longer body, longer tail and in having grouped caudal glands and subterminal spinneret (caudal glands in tandem and spinneret terminal in *M. minor*).

Mylonchulus orbitus Jensen et Mulvey, 1968

Measurements. Female. L = 1.28 mm; a = 22; b = 3.2; c = 44; c' = 0.86; V = 65; G1 = 16; G2 = 13; lip region width 32 μm ; lip region height 5.4 μm ; buccal cavity 28 \times 18 μm ; dorsal tooth apex from stoma base 23 μm ; oesophageal length 400 μm ; rectum 29 μm ; anal body diameter 34 μm ; tail length 29 μm .

Remarks. The present specimens fits the description provided by Jensen and Mulvey (1968).

Margaronchulus mulveyi Andrassy, 1972

(Figs 9–11)

Measurements. Females (n = 5): L = 0.94 (0.80–1.00) mm; a = 36 (31–43); b = 3.6 (3.5–3.8); c = 4.1 (3.8–4.3); c' = 12.6 (11.5–13.9); V = 59 (57–60); G1 = 13 (13–14).

Description. Female. Body strongly curved ventrad upon fixation, tapering gradually in the posterior region to form a long filiform, whip-like tail. Cuticle finely transversely striated, 1–2 μm thick at different places on body. Lateral chords about one-third of body width at midbody.

Lip region distinctly offset, wider than the adjoining body, 15–19 μm wide and 7–8 μm high. Amphidial aperture slit-like, 3 μm wide at 9–10 μm from anterior end of body. Buccal cavity 15–16 \times 10–11 μm . Apex of dorsal tooth at 13–14 μm from base of buccal cavity, opposed by a single row of denticles. Nerve ring at 73–82 μm from anterior end. Oesophago-intestinal junction non-tuberculate. Rectum 12–13 μm long. Vulva transverse; vagina 7–8 μm deep; vaginal sclerotization present. Gonad monoprodelfic; ovary reflexed having 10–12 oocytes; pars dilatata part of oviduct glandular, consisting of four rows of four cells each (quadricollumela). Sphincter present at oviduct-uterus junction. Tail long, filiform, whip-like, 214–235 μm or 11.5–14.0 anal body widths long. Caudal glands in tandem. Spinneret terminal.

Male. Not found.

Habitat and locality. Collected from soil around roots of forest trees in Mbalmayo forest reserve, Cameroon.

Remarks. Andrassy (1972) described this species from Congo. The present population though closely fits the Congo population in measurements and descriptions, however, it has a comparatively smaller buccal cavity and longer oesophagus and tail (buccal cavity 18–19 μm long; b = 4.2 and tail 200 μm in type population). This could be because of geographical variations.

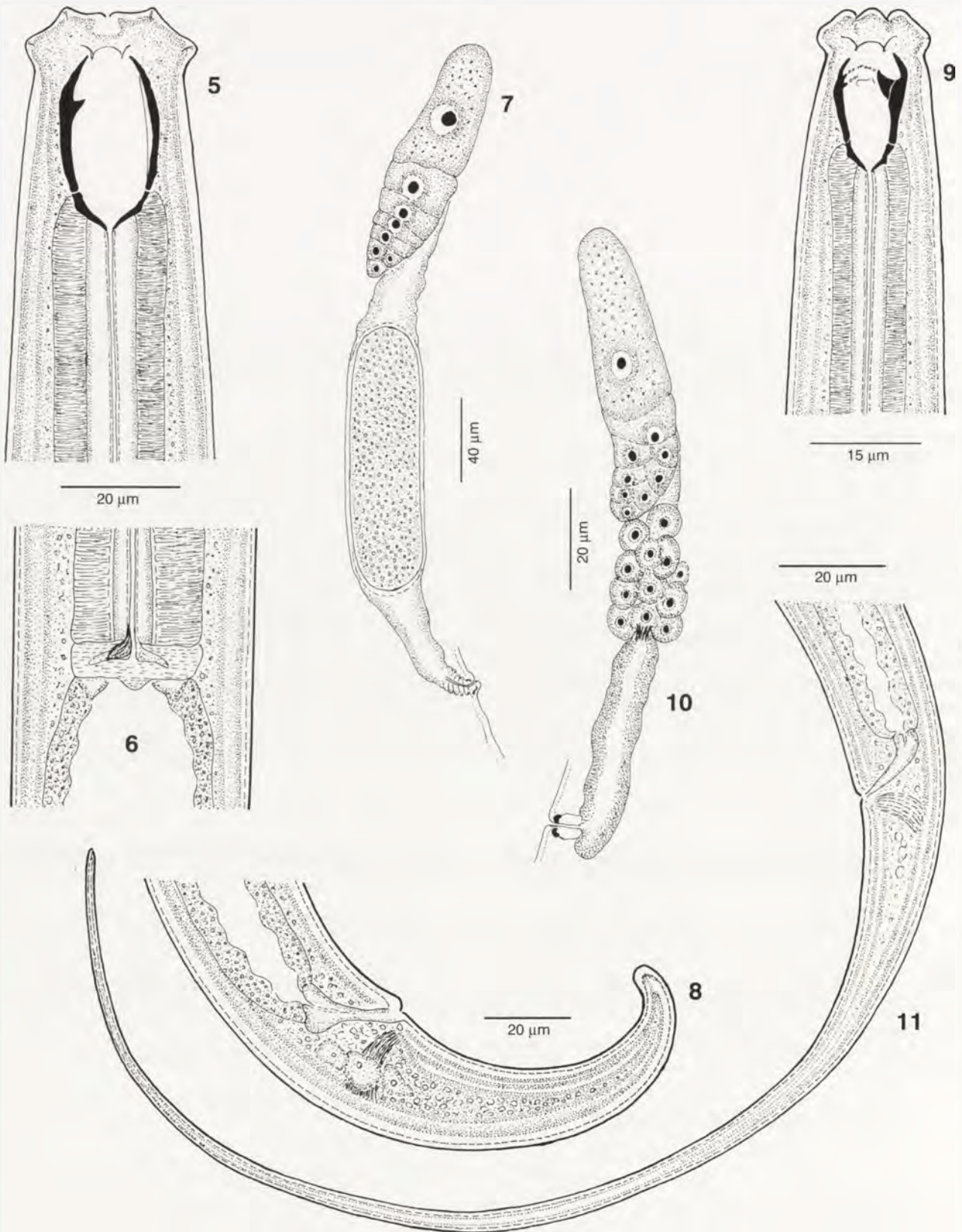
Crassibucca penicula Mulvey et Jensen, 1967

Measurements. Female. L = 0.92 mm; a = 27; b = 4.1; c = 18; c' = 2.3; V = 70; G1 = 16; lip region width 23 μm ; lip region height 10 μm ; buccal cavity 25 \times 15 μm ; dorsal tooth apex from stoma base 20 μm ; 1st subventral teeth from base of stoma 10 μm ; 2nd subventral teeth at level of dorsal tooth; oesophageal length 225 μm ; anal body diameter 23 μm ; tail length 52 μm .

Remarks. Mulvey and Jensen (1967) described this species from Nigeria. The present specimens completely fits the description provided by the original authors. However, in the Nigerian specimens the caudal glands and spinneret is reported to be absent but in the present female specimen from Cameroon, three distinct caudal glands arranged in groups and a faint terminal connection of the caudal glands with the tail tip was recorded.

Miconchus pararapax Mulvey et Jensen, 1967

Measurements. Female. L = 2.01 mm; a = 25; b = 3.5; c = 6.2; c' = 7.2; V = 63; G1 = 9; G2 = 10; lip region width 53 μm ; lip region height 14 μm ; buccal cavity 58 \times 43 μm ; dorsal tooth apex from stoma base 21 μm ; oesophageal length 568 μm ; rectum 32 μm ; anal body diameter 45 μm ; tail length 325 μm .



Figures 5–11. (5–8) *Jensenonchus* sp. (5) anterior region; (6) oesophago-intestinal junction; (7) female gonad; (8) female posterior region (9–11) *Margaronchulus mulveyi* Andrassy, 1972. (9) anterior region; (10) female gonad; (11) female posterior region.

Remarks. The present specimens completely fits the original description of *M. pararapax* Mulvey et Jensen, 1967 from Nigeria.

Jensenonchus sp.
(Figs 5–8)

Measurements. Female. L = 2.03 mm; a = 37; b = 5.2; c = 23; c' = 2.5; V = 77; G1 = 15.

Description. Female. Body slightly curved ventrad upon fixation, tapering gradually in the posterior region. Cuticle smooth, 2–3 µm thick at midbody and 3–4 µm at tail. Lateral chords about one-third of body width at midbody.

Lip region distinctly offset, 30 µm wide and 11 µm high; slightly wider than the adjoining body. Amphids small, cup-shaped; aperture 4 µm wide at 8 µm from anterior end of body. Buccal cavity 32 × 18 µm. Dorsal tooth small, in the anterior half of stoma; its apex at 24 µm or 74% from base of stoma. Facing the tooth, a longitudinal ridge present on each subventral wall. Posterior quarter of stoma embedded in anterior end of oesophagus. Nerve ring at 127 µm from anterior end. Oesophago-intestinal junction with weakly developed tubercles. Vulva posterior; vagina extending anteriorly, about one-third of body width, surrounded by well developed musculature; vaginal sclerotization weak. Gonad monoprodelfic; ovary reflexed; uterus with single egg measuring 142 × 39 µm. Rectum 26 µm or 0.77 anal body width long. Tail conoid, ventrally arcuate, 89 µm or 2.5 anal body widths long with bluntly rounded terminus. Caudal glands rudimentary; spinneret absent.

Habitat and locality. Collected from around roots of trees (unidentified) from Mbalmayo forest reserve, Cameroon.

Remarks. The single specimen could not be accommodated in any of the known species and probably represents a new species but because of the paucity of specimens a new name has not been given to this specimen. The single female specimen closely resembles *J. antedontooides* (Coetzee, 1967) Andrassy, 1994 in the presence of a prodelfic gonad but differs in having longer body; larger buccal cavity with more anterior position of dorsal tooth; in the absence of tooth-like projection on subventral wall at the level of dorsal tooth; more posterior vulva and longer tail with bluntly rounded tip (L = 1.2–1.5 mm; c = 10–15; V = 72–76 and buccal cavity 27 × 13 µm as per fig. b of Coetzee in *J. antedontooides*). The size of the egg is also much bigger compared to one reported for *J. antedontooides* egg 110 × 44 µm in *J. antedontooides*).

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