Miconchus kansasensis n. sp. (Mononchidae: Nematoda) from Kansas, United States

R. H. MULVEY AND O. J. DICKERSON[1]
Entomology Research Institute, Canada Department of Agriculture, Ottawa, Canada
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A new species of predaceous nematode, *Miconchus kansasensis* is named and described. It differs from *M. exilis* (Cobb) in tail length and position of the vulva. Dimorphism in tail shape within the genus *Miconchus* is discussed. A taxonomic key to the species is provided.

GENUS *Miconchus* Andrássy, 1958

Miconchus kansasensis n. sp.

(Figs. 1–3)

(7 females)—L = 1.5 mm (1.4–1.6); a = 27 (25–31); b = 3.7 (3.6–3.9); c = 16 (15–18); V = 71 (70–72); buccal cavity = 34–35 × 22–25 μ; tail length = 95 μ (85–100).

(5 males)—L = 1.54 mm (1.50–1.64); a = 30 (29–31); b = 3.8 (3.4–4.0); c = 19 (18–20); spicule length = 62–64 μ; buccal cavity = 32–35 × 20–23 μ; tail length = 80 μ; supplements = 14–15 μ.

Female (*holotype*)—L = 1.56 mm; a = 31; b = 3.8; c = 17; V = 71; buccal cavity = 35 × 22 μ; tail length = 90 μ. Collection No. Manhattan, K.S. 69, Kansas State University Collection of Nematodes, Manhattan, Kansas. Type collection No. 194, deposited in the Canadian National Collection of Nematodes (CNCN), Ottawa, Canada.

Male (*allotype*)—L = 1.5 mm; a = 29; b = 3.4; c = 18; spicule length = 63 μ; buccal cavity = 35 × 23 μ; supplements = 15. Collection No. Manhattan K.S. 74 KSU Collection of Nematodes, Manhattan, Kansas. Type collection No. 194*a*, deposited in the CNCN, Ottawa, Canada.

The collection consists of 15 males, 17 females, and 7 juveniles. Lip region slightly expanded, buccal cavity barrel-shaped with thick walls. Dorsal tooth large, apex situated midway in buccal cavity, subventral teeth slightly smaller than dorsal and at same level. Amphid aperture wide, about 8 μ in diameter. Esophagointestinal valve tuberculate. Female didelphic, amphidelphic, anterior and posterior reproductive tracts of equal length, ovaries reflexed. Spermatheca oblong, filled with small sperms. Ventral vulval papillae absent. Tail conoid, about 6% of body length, with rounded terminus and without caudal glands and terminal opening.

Male with buccal cavity structures and shape similar to those of female. Supplements well developed, spicules bulky, ventrally arcuate. Lateral accessory pieces large with bifurcated distal ends. Ejaculatory and rectal glands present. Tail conoid, without terminal opening.

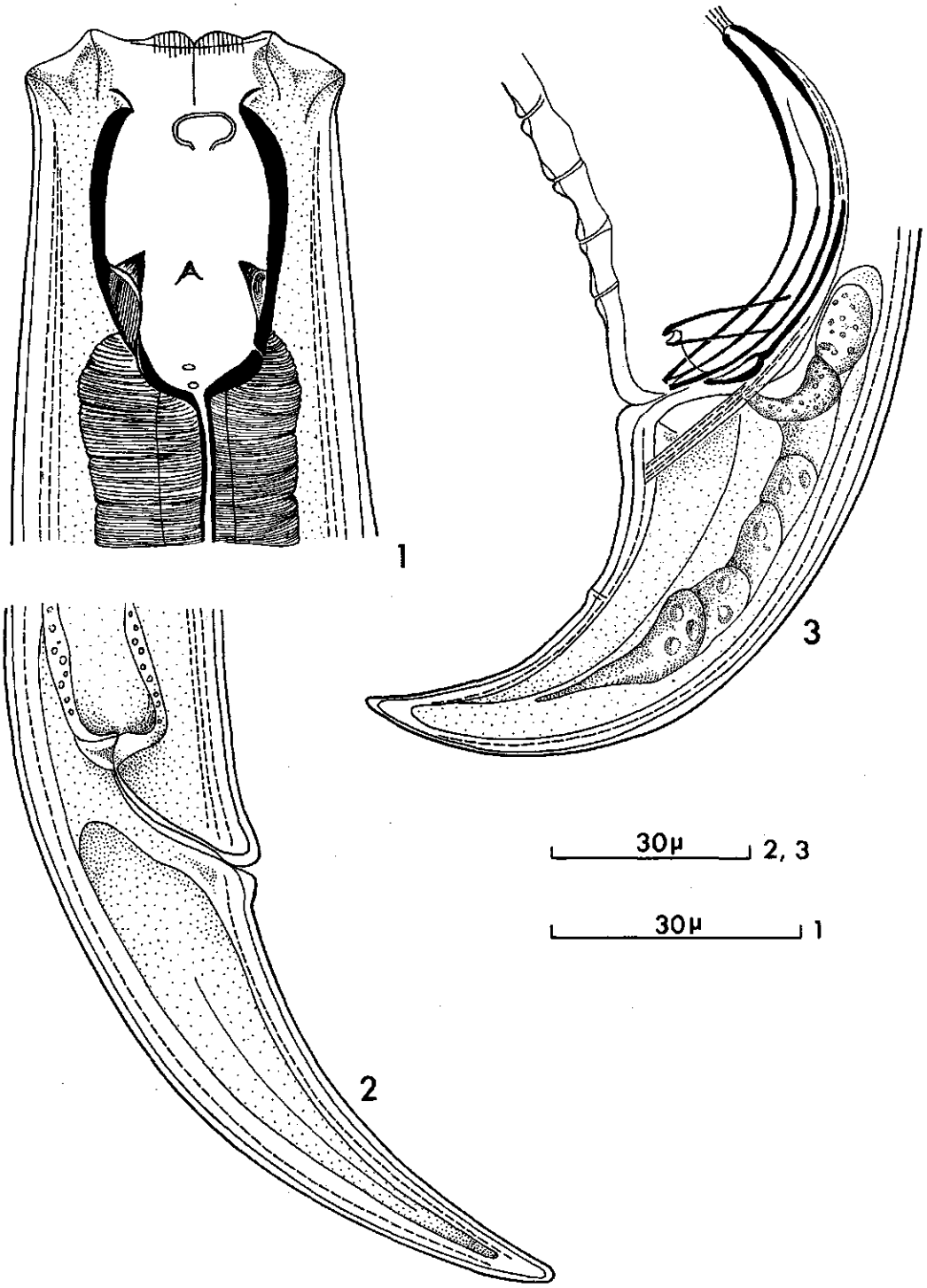
Differential Diagnosis

Miconchus kansasensis n. sp. resembles *M. exilis* (Cobb, 1917) Andrássy, 1958 but differs in tail length and vulva position (c = 50 and V = 78% for *M. exilis*).

Paratypes—Fourteen males and 14 females distributed as follows: five males and six females in the CNCN, Ottawa, Canada; one male and three females in the USDA Nematode Collection, Nematology Investigations, Beltsville, Maryland; seven males and six females KSU Nematode Collection, Manhattan, Kansas.

Type locality and habitat—All specimens were collected from true prairie pasture in Range 8 east, Township 8 south, Section 19, Pottawatomie County, about 15 mi north of Manhattan, Kansas, U.S.A. Specimens of *M. kansasensis* n. sp. were associated with many of the native and introduced plants and a variety of soil types. The holotype was associated with big bluestem (*Andropogon gerardi* Vitman) and the allotype with little bluestem (*A. scaparium* Michx.). Soil type ranged from heavy clay to fine loam. The topsoil was interspersed with fragments of limestone and contained 5% organic matter. The pH was estimated at 6.5.

[1]Present address: Kansas State University, Manhattan, Kansas, U.S.A.



FIGS. 1–3. *Miconchus kansasensis* n. sp. 1. Female head. 2. Female tail. 3. Male tail, spicules, and gubernaculum.

Dimorphism in Mononchidae

Dimorphism between sexes in tail shape occurs frequently in species in the genera *Dorylaimus* Dujardin, 1845 and *Mesodorylaimus* Andrássy, 1959. In such species, the female tail is filiform, while the male tail is shorter and thicker, and the tail terminus is bluntly rounded. Yeates (1967) reported dimorphism in tail shape for the first time in the family Mononchidae in *Miconchus reflexus* and *M. kirikiri*. The female tail in both species is at first conoid, becoming cylindroid throughout most of its length, and the tail terminus is acutely rounded. The tail length is 260 and 480 μ, respectively. The male tail is only 80 and 110 μ long, respectively, and is broadly conoid in shape with a bluntly rounded terminus. The discovery of dimorphism in the genus *Miconchus* adds support for Clark's (1961) placement of the Mononchoidea in the suborder Dorylaimina.

KEY TO SPECIES

Genus *Miconchus*: Females

1. Female monodelphic 2
   Female didelphic 3
2. Dorsal tooth apex midway in buccal cavity, posterior rudimentary branch twice width of vulval body diameter ..... *triodontus* Buangsuwon and Jensen
   Dorsal tooth apex at level of posterior third of buccal cavity, posterior rudimentary branch equal to vulval body diameter ..... *digiturus* (Cobb)
3. Vulva anterior (V = 35–36%) or posterior (70–78%) to midbody 4
   Vulva about midway in body 6
4. Vulva well forward of midbody (V = 35–36%), spinneret and caudal glands present ..... *soutoi* (Carvalho)
   Vulva well behind midbody (V = 70–78%), caudal glands and spinneret absent 5
5. Tail very short (c = 55), V = 78% ..... *exilis* (Cobb)
   Tail longer (c = 15–17), V = 70–72% ..... *kansasensis* n. sp.
6. Terminal opening in tail present 7
   Terminal opening in tail absent 12
7. Teeth basal, body very slender (a = 59) ..... *schneideri* (Meyl)
   Teeth suprabasal, body thick (c = 45 or less) 8
8. Subventral teeth smaller than dorsal tooth, body length 6.5–7.0 mm ..... *rex* (Cobb)
   Subventral teeth about equal in size to dorsal tooth, body length 4 mm or less 9
9. Tail relatively short (c = 14–15), subventral teeth flanked by three pairs of smaller teeth ..... *studeri* (Steiner)
   Tail relatively long (c = 10.8 or less), no teeth behind subventral teeth 10
10. Tail conoid, terminus set off ..... *thornei* Mulvey and Jensen
    Tail conoid then cylindroid, terminus not set off 11
11. Body length 3.7 mm or more, buccal cavity large ..... *rapax* (Cobb)
    Body length 2.9 mm or less, buccal cavity medium-sized ..... *pararapax* Mulvey and Jensen
12. Labia striated longitudinally, tail terminus blunt ..... *regius* (Cobb)
    Labia not striated longitudinally, tail terminus acutely rounded 13
13. Teeth apexes situated midway in buccal cavity, tuberculate valve absent ..... *trionchus* (Thorne)
    Teeth apexes situated in posterior third of buccal cavity, tuberculate valve present 14
14. Tail short (c = 21), conoid ..... *oregensis* Jensen and Mulvey
    Tail longer (c = 13 or less), conoid then cylindroid 15
15. Dorsal tooth much larger than subventral teeth, near base of buccal cavity 16
    Dorsal tooth and subventral teeth about equal size, at level of posterior third of buccal cavity 17
16. Body length 3.2–3.6 mm, buccal cavity 54–57 × 33–36 μ ..... *kirikiri* Yeates
    Body length 2.2–2.5 mm, buccal cavity 40–43 × 24–28 μ ..... *reflexus* Yeates
17. Dorsal and subventral teeth very small, eggs 160–190 μ long by 50 μ wide ..... *fasciatus* (Cobb)
    Dorsal and subventral teeth fairly large, eggs 130–140 μ long by 50–70 μ wide 18
18. Labia set off by deep constriction, tail length 340–360 μ (c = 9.2–9.7), buccal cavity elongated ..... *hopperi* Mulvey
    Labia set off by shallow constriction, tail length 190–260 μ (c = 11–14), buccal cavity barrel-shaped ..... *californicus* Mulvey

KEY TO SPECIES

Genus *Miconchus*: Males

1. Spinneret present 2
   Spinneret absent or inconspicuous 5

2. Subventral teeth much smaller than dorsal tooth, body length 6.6–7.0 mm ..... *rex* (Cobb)
   Subventral teeth about equal in size to dorsal tooth, body less than 4 mm in length 3

3. Tail bulky, short ($c = 16$) subventral teeth flanked by three pairs of smaller teeth ..... *studeri* (Steiner)
   Tail conoid then cylindroid, longer ($c = 8.4$ or less), no teeth behind subventral teeth 4

4. Tail relatively long ($c = 4.8$), teeth near base of buccal cavity ..... *effilatus* (Schuurmans Stekhoven and Teunissen)
   Tail relatively short ($c = 6.7$–8.4), teeth at level of posterior third of buccal cavity ..... *pararapax* Mulvey and Jensen

5. Spinneret inconspicuous, tail terminus digitate ..... *digiturus* (Cobb)
   Spinneret absent, tail terminus not digitate 6

6. Dorsal and subventral teeth apexes situated midway in buccal cavity 7
   Dorsal and subventral teeth apexes situated at level of posterior third of buccal cavity 8

7. Tail very short ($c = 50$), body thin ($a = 45$) ..... *exilis* (Cobb)
   Tail longer ($c = 18$–20), body thick ($a = 29$–31) ..... *kansasensis* n. sp.

8. Tail conoid then cylindroid, dorsal tooth apex at level of posterior third of buccal cavity 9
   Tail conoid, dorsal tooth apex nearly basal in buccal cavity 10

9. Labia set off by a deep constriction, tail long ($c = 12$–15) ..... *hopperi* Mulvey
   Labia set off by a shallow constriction, tail shorter ($c = 21$) ..... *californicus* Mulvey

10. Dorsal tooth and subventral teeth equal in size ..... *oregensis* Jensen and Mulvey
    Dorsal tooth much larger than subventral teeth 11

11. Tail sharply bent near middle, lateral guiding piece without posterior flexure ..... *kirikiri* Yeates
    Tail not bent near middle, lateral guiding piece with posterior flexure ..... *reflexus* Yeates

CLARK, W. C. 1961. A revised classification of the order Enoplida (Nematoda). N.Z. J. Sci. 4: 123–150.

YEATES, G. W. 1967. Studies on nematodes from dune sands. 3. Oncholaimidae, Ironidae, Alaimidae and Mononchidae. N.Z. J. Sci. 10: 300–321.