

Discocriconemella repleta n.sp., and the male of Criconemoides inusitatus Hoffmann, 1974 (Criconematidae: Nematoda)

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Abstract: *Discocriconemella repleta* n.sp. from Brazil is described. The male of *Criconemoides inusitatus* Hoffmann, 1974, is described here for the first time. *Key Word:* Taxonomy.

A recent, extensive review of the genera of Criconematidae by Loof and de Grisse (3) leaves the genus *Discocriconemella* with 10 valid species. An additional species is presented in this taxonomic study. *Criconemoides inusitatus* Hoffmann, 1974 (2) was described from Iowa woodlands. Paratype specimens from that collection were compared with a population from Minnesota and were found to be the same, except that the latter contained seven males, which were previously unknown for this species. They are described herein.

MATERIALS AND METHODS

Specimens stored in 5% formalin in a mass collection obtained from the University of California Nematode Survey Collection (Davis, UCNSC) were assembled for this study. Extraction and killing procedures are not known. Thereafter, specimens were passed through FAA, 2.5% glycerin in 30% alcohol and then to 5% glycerin in 30% alcohol. The last solution was allowed to evaporate (to glycerin) in BPI dishes before the specimens were mounted in dehydrated glycerin.

Discocriconemella repleta n.sp. (Fig. 1)

Paratypes (10 females): L = .27 mm (.25-.29); a = 8 (7-8); b = 2.9 (2.6-3.1); c = 21 (20-26); V = 93 (92-95); stylet = 62 μ m (59-66); prorhabdion = 51 μ m (48-56); R = 110 (107-116); R_v = 11 (10-12); R_{an} = 7-8; R_{van} = 3-4; R_{ex} = 39 (37-42).

Holotype (female): L = .27 mm; a = 8; b = 3.1; c = 21; V = 94; stylet = 66

μ m; prorhabdion = 56 μ m; R = 107; R_v = 10; R_{an} = 7; R_{van} = 3.

Female body plump; curved ventrally after fixation. Head set off, with single annule nonretrose. Body annules retrorse except for the 7th to 17th on ventral side. Anastomoses present. Annules with crenated margins, 4-5 μ m wide. Head in *en face* view of paratype disc-shaped. Stylet robust; knobs anchor-shaped, 7-9 μ m across. Esophago-intestinal valve lobate. Spermatheca ovoid. Sperm cells 1-2 μ m in diameter. Body diameter distinctly narrows immediately posterior to vulva. Tail blunt with rounded terminus.

Allotype (male): L = .32 mm; a = 17; c = 21; T = 42; spicules = 25 μ m; gubernaculum = 5 μ m.

Body cylindrical. Cephalic region with round protrusion at oral aperture which appears to be an artifact. Stylet absent. Esophagus poorly developed. Lateral field with two faint lines. Excretory pore 99 μ m from head region; hemizonid four annules anterior to excretory pore. Testis outstretched; sperm cells about 1.0-1.5 μ m in diameter. Cloacal sheath distinct. Spicules curved ventrad. Caudal alae rudimentary. Tail short, blunt with rounded terminus.

Juveniles (3 fourth-stage ?): L = .21 mm (.20-.22); a = 6; b = 2.5 (2.3-2.8); stylet = 46 μ m (42-48); prorhabdion = 37 μ m (33-39); R = 116 (113-120).

Body plump; curved ventrally after fixation. Head similar to adult female. Body annules retrorse except for 5th to approximately 15th on ventral side. Anastomoses present. Annules smooth throughout body. Stylet robust with anchor-shaped knobs, 7-8 μ m across. Developing ovary 72-80 μ m long. Tail bluntly conoid.

Holotype (female): Slide number 1486 UCNSC, Davis, California. Collected by R. D. Sharma in 1973.

Allotype (male): Slide number 1487 UCNSC, Davis, California. Same data as holotype.

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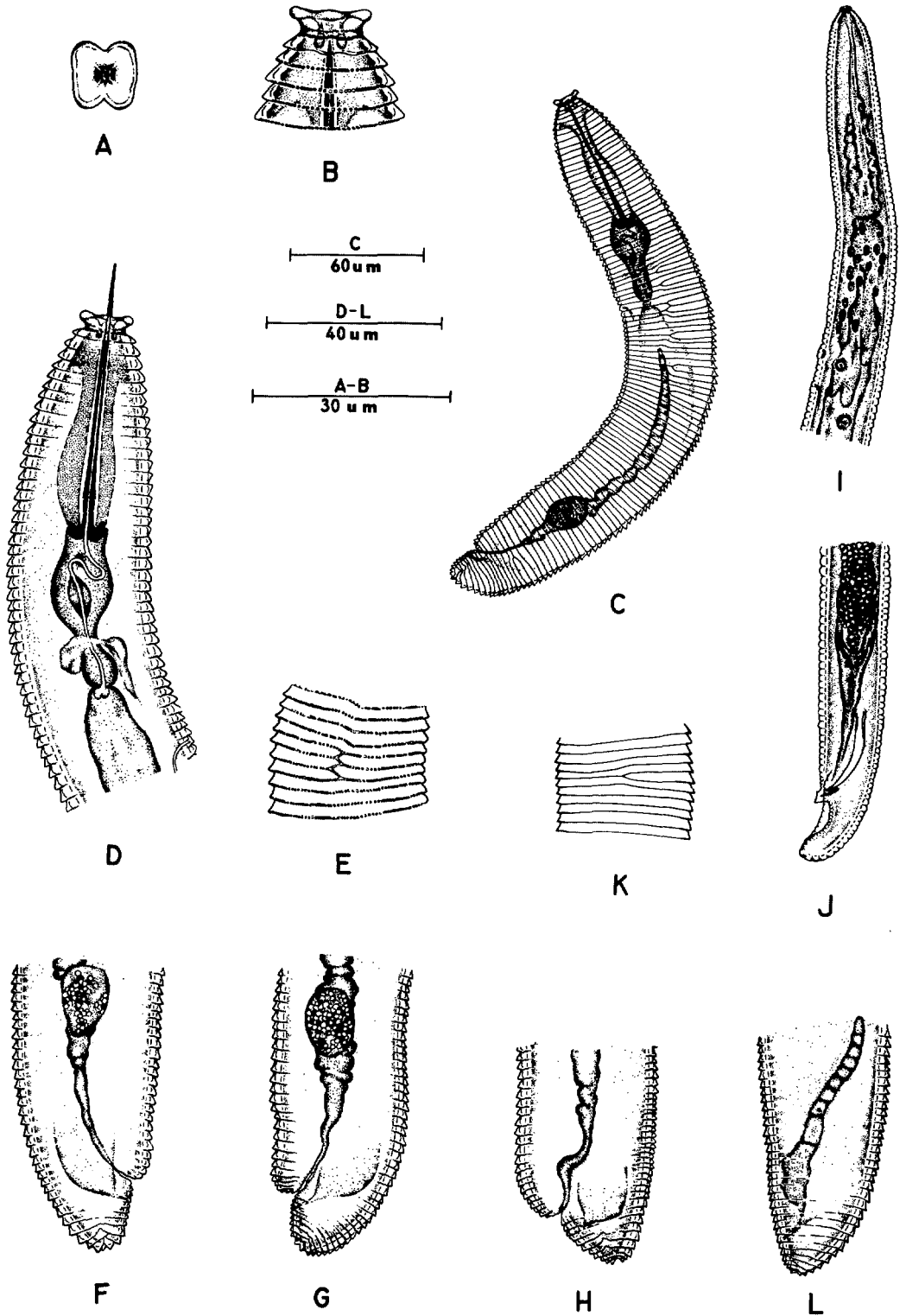


FIG. 1-(A-L). *Discocriconemella repleta* n.sp. A) Female, face view. B) Female, head. C) Female, full length. D) Female, anterior region. E) Female, annulation. F-H) Female, posterior region. I) Male, anterior region. J) Male, posterior region. K) Juvenile, annulation. L) Juvenile, posterior region (fourth-stage?).

Paratypes: 9 females, 1 male (in deteriorated condition), 3 juveniles, 1 *en face* section of female, and 1 cross-section of male. Distributed as follows: 5 females, 1 male, 1 *en face* section of female, and a cross-section of male at UCNSC, Davis, California; one female each at Plantenziektenkundige Dienst (PD), Wageningen, The Netherlands, at the United States Department of Agriculture Nematode Collection, (USDANC), Beltsville, Maryland, at the National Nematode Collection, Indian Agricultural Research Institute, New Delhi, India, and at the Nematology Department, Rothamsted Experimental Station, Harpenden, England.

Type habitat and locality: Soil about the roots of cacao, *Theobroma cacao* L., at Pauso Alegre, Porto Seguro, Brazil.

Diagnosis: *Discocriconemella replea* is closely related to *D. colbrani* Luc, 1970 (5) and *D. limitanea* (Luc, 1959) De Grisse & Loof, 1965 (1, 4, 5). It can be differentiated from *D. colbrani* by its larger number of body annules, 110 (107-116) vs. 79 (76-82); greater R_x , 11 (10-12) vs 6-8; and the location of excretory pore, (R_{ex}), 39 (37-42) vs 27-28 for *D. colbrani*.

D. replea differs from *D. limitanea* by its larger stylet, 62 μm (59-66) vs. 48-55 μm . Another population of 20 females measured by M. Luc (1) showed a stylet length of 43 μm (38-50). Males of these two species also differ. *D. replea* has a shorter tail and a rudimentary bursa vs. longer tail and absence of bursa in *D. limitanea*.

An additional collection of 33 females has been identified from cacao near Espirito Santo, Brazil. However, these specimens were somewhat flattened.

Discussion: Sauer and Winoto (6) described specimens of *D. limitanea* from Malaysia that show body diameter narrowing immediately posterior to vulva, in comparison with several African populations. *D. replea* has a tail shape similar to the Malaysian population, but differs in the more prominently rounded anterior vulvar lip and shorter tail.

Criconemoides inusitatus Hoffmann, 1974

(Fig. 2)

Sixty-nine females and seven males of this species were collected from elm in the locality of Brooklyn Park, Minneapolis,

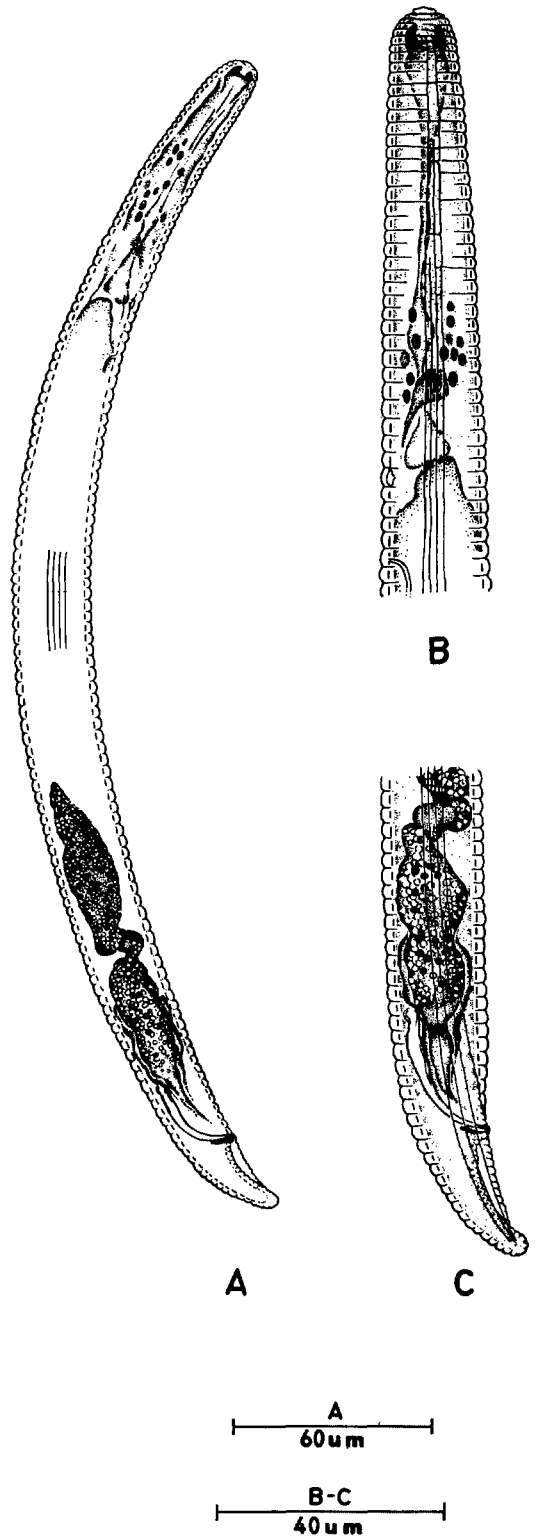


FIG. 2-(A-C). *Criconemoides inusitatus*. A) Male, full length. B) anterior region. C) posterior region.

Minnesota by S. A. Sher, 10 September 1973. The females of this population conform closely to the characteristics and dimensions given by Hoffmann. The description of the males is as follows:

Males (seven): L = .38 mm (.36-.40); a = 19 (18-20); b = 4.5 (4.2-4.8); c = 14 (14-15); T = 26 (22-31); spicules = 29 μm (27-30); gubernaculum = 4 μm (4-5).

Body with open "C" shape to straight after fixation. Stylet absent. Head region round with annulation distinct. Small lip present at tip. Esophagus degenerate but with distinct outline. Excretory pore 87 to 96 μm from anterior region; hemizonid four annules anterior to excretory pore. Lateral field begins at fifth annule from anterior end as two lines, becomes three at fourteenth annule, four at twenty-third annule, and continues as four to end of caudal alae. Body annules distinct, about 2 μm wide. Testis outstretched; sperm cells about 1.5 μm in diameter. Spicules curved ventrally. Cloacal sheath lacking. Rudimentary caudal alae present. Tail narrows gradually, slender conoid with rounded terminus.

This collection is deposited as follows: 44 females and 4 males at UCNSC, Davis,

California; 9 females and 1 male at USDANC, Beltsville, Maryland; 8 females and 1 male at PD, Wageningen, The Netherlands; 2 females and 1 male at Department of Botany and Plant Pathology, Iowa State University, Ames, Iowa.

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