A NEW SPECIES OF MICULENCHUS ANDRÁSSY, 1959
AND FURTHER NOTES ON M. SALVUS
(NEMATODA: TYLENCHIDAE)

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Miculenchus elegans sp. n. is differentiated from M. salvus Andrassy, 1959 by its greater length (0.71-0.72 mm vs 0.40-0.47 mm) and longer tail (164-169 µm vs 60-95 µm). M. salvus has been found in California, U.S.A., Chile, Belgium and The Netherlands. SEM studies revealed the zigzag structure of the body cuticle, the lateral ridge without additional lines and the elongate amphidial apertures oriented dorso-ventrally.

Keywords: description, taxonomy, soil nematodes.

The genus Miculenchus was proposed by Andrássy (1959) for its type and only species, M. salvus. The principal differentiation was total lack of caudal alae in the male. In 1980 he added significantly to our knowledge of this interesting and unique species. He described the zigzag transverse markings of the cuticle and the lateral field as a single band sharply bordered presenting two longitudinal lines. He also added two new records to its distribution besides the type locality of Romania: Rhodope Mountains, Bulgaria and Essex, New Jersey, U.S.A. In the meantime the species has been reported from Belgium (Geraert, 1967) and Denmark (Yeates, 1972).

The present report adds a new species from forest soil in Colorado, U.S.A., and several new localities for M. salvus. A total of seven specimens of M. salvus were collected from soil about redwood trees in California one of which was prepared for examination by the scanning electron microscope. Only two females of the new species were found in the Colorado forest soil, one of which was measured and then sacrificed for study by SEM.

MATERIALS AND METHODS

The specimens were relaxed and killed in hot water then preserved in formalin, 2½% for the California and Colorado collections and 4% for the Chilean collections. The higher percentage for the latter was chosen because of
the high organic matter content remaining after sieving. The Chilean collections were also subject to the sugar flotation/centrifugation technique after storage. All specimens were handpicked into 2½% formalin then replaced with FAA for at least 48 h before passing into glycerin following Cobb’s slow method: 2½% glycerin in 30% ethanol (ETOH) for at least 24 h then 5% glycerin in 30% ETOH until complete evaporation of the ETOH and water under room conditions. Finally the specimens were stored in a desiccator over CaCl₂ to complete the dehydration. The nematodes were mounted in glycerin.

Specimens for scanning electron microscopy were transferred from FAA into a graded series of ETOH beginning at 30% ETOH and terminating in absolute ETOH. Specimens were then taken through a graded series of amyl acetate—absolute alcohol, beginning with 30% amyl acetate and ending with absolute amyl acetate. Other specimens from permanent glycerin slides, whose method of preservation was unknown, were first placed in a mixture of glycerin—alcohol—water, 80:6:14. Through a series of gradual changes the glycerin was removed until the specimens were in 30% ETOH. These specimens were then transferred to FAA then to 2½% formalin for a minimum of 24 h. They were then processed through a graded series of ETOH and amyl acetate as described above. A 15 sec sonication was applied to specimens in absolute amyl acetate. After critical point drying with CO₂, the specimens were mounted on stubs and coated with 200 Å of gold sputtered on in several layers. Examination and photography was done on an ISI (International Scientific Instruments) Model 35-130DS scanning electron microscope (SEM) at 5,000-13,300 × and 10 KV.

DESCRIPTIONS

Miculenchus elegans sp. n.
(Fig. 1, A-E; Fig. 3, A-D)

Dimensions:

Female (Holotype): L = 0.713 mm; a = 40; b = 4.8; c = 4.3; c’ = 15.6; V = 14560.5; V’ = 72; stylet = 9 μm; excretory pore = 112 μm; tail = 164 μm.

Female (to SEM): L = 0.723 mm; a = 41; b = 4.7; c = 4.3; c’ = 15.9; V = 1561.0; V’ = 73; stylet = 9 μm; tail = 169 μm.

Female: Body assumes ventral curvature after killing, fixation, mounting in glycerin; almost straight from anterior end to near vulva, there it bends markedly ventrad and straight again almost to tip which curves gently. Anterior end rounded, bears fine annules becoming even finer almost to oral aperture. SEM photographs unfortunately obscured by contamination, amphids not seen clearly but seem to be narrow slits dorso-ventrally oriented near outer margin of labial plate; no sensilla detected. Internal sclerotization