

STATUS OF *MYLONCHULUS CAVENSIS* W. SCHNEIDER, 1940
(NEMATODA: MONONCHINA)

BY

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Mylonchulus cavensis apud Andrásy, 1959 and 1962 is considered a different species from *M. cavensis* Schneider, 1940 and renamed *M. andrassyi*. The real *M. cavensis* is insufficiently known.

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In 1940 W. Schneider described a new species *Mononchus* (*Mylonchulus*, misspelt *Myonchulus*) *cavensis* from a freshwater pond, temporarily flooded by the cave brook of Krska jama, near Ljubljana, Yugoslavia, from one male, four females and an unknown number of juveniles. The description was scanty, the only illustration that of a female tail (Fig. 1, A). The most important characters are: L (female) = 1.33 mm; V = 66; gonads paired, symmetrical; body on the ventral side suddenly contracted at the anus; tail tapering, at the base bent ventrad almost 90°, then long, straight; opening of caudal glands terminal. The male was conspicuously small (L = 0.81 mm); spicule length = 32 µm, number of ventromedian supplements 10. The specimens could not be found in Schneider's collection.

Andrásy (1959a) redescribed the species from the Baradla cave in Hungary, from water emanating from rock cracks. His description differs in two important respects from Schneider's: V = 74-76, and the distal part of the tail is bent dorsad, resulting in a S-shaped tail. The ventral contraction at the anus is also present here (Fig. 1, B and C). Female gonads paired, short. The single male found had spicules 40 µm long and 8 ventromedian supplements. In the same year (Andrásy, 1959b) he reported the species from groundwater near the Adige river in Northern Italy, but he found only juveniles. In 1962 he reported more specimens from this locality; the males had spicules 52-60 µm long, and 9-10 supplements. The illustration (Fig. 1, D) shows a juvenile tail not so strongly curved but even here a distinct dorsal emargination is present. In 1971 he again reported the species from the same region, but did not give a description or illustrations.

A further difference between Andrásy's specimens and those of Schneider concerns the index *c'*. From Schneider's illustration *c'* can be computed as 3.6/2.7 (ABW being measured at the posterior resp. the anterior anal lip); from

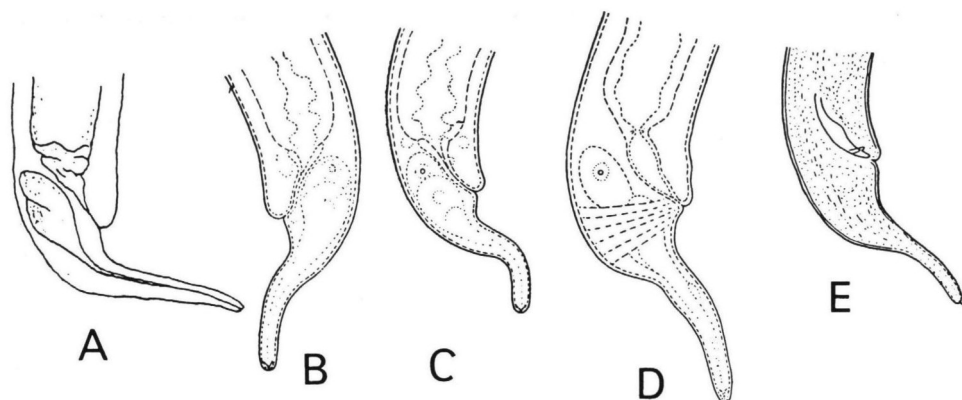


Fig. 1. A, Female tail of *M. cavensis* after Schneider, 1940; B and C, female tail of *M. cavensis* after Andrassy, 1959a = *M. andrassyi*; D, juvenile tail of *M. cavensis* after Andrassy, 1959b = *M. andrassyi*; E, male tail of *M. cavensis* after Zullini, 1982 = *M. andrassyi*.

Andrassy's (1959a): 2.6/2.0 and 2.6/1.9; from Andrassy's (1959b): 2.1/1.8 (juvenile).

Baqri & Jairajpuri (1974) reported *M. cavensis* from El Salvador, but they gave no description or illustrations, and the dimensions make it doubtful whether their identification was correct: L = 0.91 mm; a = 22; b = 2.2; c = 22; V = 53; buccal cavity = 24 × 17 μm. Zullini (1982) reported one male (*in litt.* March 4, 1992) from a cave near Bergamo, Italy; tail shape agrees with the illustrations of Andrassy (Fig. 1, E). This specimen was made available: L = 1.08 mm; a = 42; b = 3.8; c = 21; c' = 2.1; VD = 1742¹⁶; buccal cavity = 18 × 8 μm; lip region width = 13 μm; neck = 286 μm; tail = 51 μm; spicules = 33 μm; number of supplements not determinable (the specimen had been mounted in jelly).

All *Mylonchulus* species with didelph, amphidelph females have vulva position ranging from 56 to 70. All species with the vulva more posterior are monoprodelph: the posterior gonad is reduced to a longer or shorter uterine sac. Jairajpuri & Khan (1982) placed these species in a separate genus *Paramylonchulus*, but I synonymize this with *Mylonchulus* (Loof, 1993). It must be mentioned that two of these species were reported to have a more anterior vulva (*P. caespitosus* (Razzhivin, 1971): 66-70; *P. silvaticus* (Razzhivin, 1971): 67-69).

The far posterior position of the vulva in Andrassy's females suggests that the posterior gonad might be reduced. Unfortunately, the specimens have disappeared since (Andrassy, *in litt.* October 22, 1991). It is not certain whether he really had seen a posterior ovary (Andrassy, *in litt.* February 3, 1992). A parallel case is *M. incurvus* Cobb, 1917 apud Jensen & Mulvey, 1968; vulva position was

given as 70-85 and on examination I found that indeed the posterior ovary is lacking.

In the Oberseebach, near Lake Lunz, Austria, I found one male and one female agreeing well with Andrassy's description. The posterior gonad of the female is reduced and has no ovary. I conclude that *M. cavensis* as redescribed by Andrassy is not identical with Schneider's species. The latter remains insufficiently known (no data on shape and structure of lip region and buccal cavity, size and location of amphid apertures and shape of vaginal sclerotization), and I consider it *species inquirenda*. The species described by Andrassy, to which the Austrian specimens also belong, is herewith named *Mylonchulus andrassyi*, in honour of the first collector. The female from Austria, being the only one extant at present, is herewith designated holotype (slide WT 2818), the male paratype (slide WT 2819). Both sides are in the nematode collection of the Department of Nematology, Agricultural University, Wageningen.

DESCRIPTION

(Fig. 2)

Female: L = 1.27 mm; a = 39; b = 4.0; c = 25; c' = 2.2; V = 73; G = 17; lip region width = 15 μ m; buccal cavity = 21 \times 8.5 μ m; neck = 320 μ m; tail = 52 μ m.

Male: L = 1.35 mm; a = 35; b = 4.0; c = 27; c' = 1.8; VD = 39; lip region width = 16 μ m; buccal cavity = 21 \times 9 μ m; neck = 338 μ m; tail = 50 μ m; spicules = 45 μ m.

Body slender, of equal thickness from pharynx base to near anus. Cuticle thin, about 1 μ m, without visible layers or transverse striae. Lateral chord one-third of body diameter. Amphid apertures conspicuous, relatively large (5.5 μ m in female, 6.5 μ m in male), located opposite base of dorsal tooth. Head with large, strongly protruding sensillae. Buccal cavity tapers slightly posteriorly, base funnel-shaped. A large dorsal tooth is present, apex located at 83%. There are 4-5 transverse rows of denticles; behind them is a refractive band. Nerve ring at 27-30% of neck length. Excretory pore inconspicuous, at level of nerve ring.

Female: Vulva transverse. Vagina shallow, with sclerotization appearing as two small triangular pieces. Anterior genital branch fully developed and functional; posterior branch reduced, apparently (the specimen is not in too good a condition) to a sac 32 μ m long. Tail S-shaped, tapering first, especially dorsally, then suddenly narrowing, terminal part cylindrical, terminus rounded. Caudal glands three, arranged in tandem, opening through a terminal pore. A pair of subventral papillae near beginning of slender tail part. The anterior anal lip does not appear swollen, but the ventral outline of the body suggests this may be due to fixation.

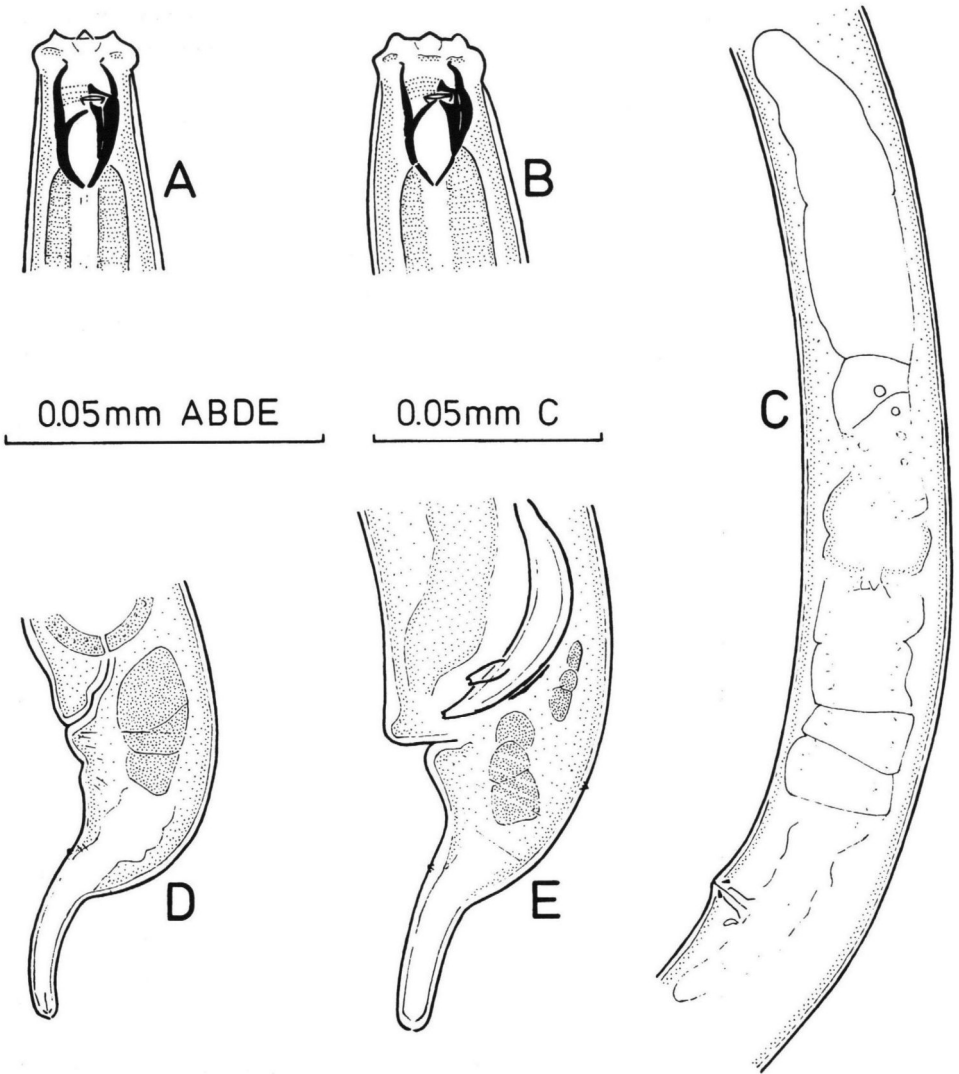


Fig. 2. *Mylonchulus andrassyi*, specimens from Austria. A, anterior end of female; B, anterior end of male; C, genital apparatus of female; D, female tail; E, male tail.

Male: Testes two, dorylaimid. Sperm well-developed, 2-3 μm long. Number of copulatory muscles about 28. A constricting muscle around mid-intestine and vas deferens is present at the anterior end of the copulatory muscle region. Three pairs of rectal glands; ejaculatory glands not visible. Spicules dorylaimid, curved. Gubernaculum narrow, linear, 12 μm long. Lateral guiding pieces 9 μm long with bifid tip. Tail as in the female but the ventral contraction is much stronger; the difference may be due to fixation. Caudal papillae: one

subdorsal pair proximally, one subventral pair near beginning of slender distal tail part. The supplements were difficult to see because the ventral cuticle is irregularly inflated in the precloacal region; judging from the nerves there are supplements at 40, 55, 73, 95 and 106 μm anterior to the cloacal aperture. The total number is, judging from these positions, probably 7 or 8.

Type habitat and locality: The female was found in a meadow about 5 m from the bank of the Oberseebach, 50 cm deep, about 20 cm below ground water level, on May 31, 1978; the male in the bottom of the brook, 80 cm below the sediment surface, on November 16, 1981. Locality: about 600 m above the orifice of the brook into the Lunzer Untersee. The water in this region is wholly unpolluted. These data were furnished by Dr. G. Bretschko, Lunz (*in litt.* March 20, 1990).

Diagnosis: Andrásy's observations ("female gonads paired") suggest that the posterior uterine sac was longer than 32 μm . However, the specimens from the Oberseebach agree in every other respect with his description. Popovici (1990) found in a population which she considered *M. californicus* Jairajpuri, 1970 from Romania a range of 32-108 μm . Tail shape in this population agrees with *M. andrassyi* and it might rather belong to this species, though body length is less (females 0.97-1.16 mm, males 0.96-1.14 mm). So this difference does not seem decisive.

M. andrassyi differs from the other monoprodelpic *Mylonchulus* species (former genus *Paramylonchulus* Jairajpuri & Khan, 1982) as follows:

- From *M. caespitosus* Razzhivin, 1971 by vulva position (*vs* 66-70), size of buccal cavity (*vs* 32 \times 16 μm) and tail shape (*vs* regularly conoid).
- From *M. californicus* Jairajpuri, 1970 by tail shape (*vs* curved ventrad).
- From *M. index* (Cobb, 1906) by body length (*vs* 0.6-0.9 mm), presence of a posterior uterine sac and tail shape (*vs* fingershaped).
- From *M. lapidus* (Lal & Khan, 1988) by body length (*vs* 0.9-1.0 mm), slenderer body (*vs* $a = 22-30$), longer buccal cavity (*vs* 16-18 μm), wider amphid apertures ($>5 \mu\text{m}$ *vs* 3-4 μm), and the thinner, more distinctly offset distal part of the tail.
- From *M. longisacculus* (Popovici, 1990) by shorter buccal cavity (*vs* 30-33 μm), tail length (*vs* $>75 \mu\text{m}$) and tail shape (*vs* no dorsal concavity).
- From *M. mashhoodi* Khan & Jairajpuri, 1979 by body length (*vs* 0.8-1.2 mm) and tail shape (*vs* tail plump, distal part conoid and hardly offset).
- From *M. mulveyi* Jairajpuri, 1970 by body length (*vs* 0.9-1.0 mm), presence off PUS, and tail shape (*vs* distal part not sharply offset, without dorsal concavity).
- From *M. noreasus* (Rahman & Jairajpuri, 1984) by vulva position (*vs* 79), much stouter spicules and tail shape (*vs* distal part not sharply offset, without dorsal concavity).
- From *M. silvaticus* Razzhivin, 1971 by size of buccal cavity (*vs* 50 \times 25 μm) and tail shape (*vs* regularly conoid-arcuate).

M. subterraneus Schneider, 1940 is in my opinion an aberrant specimen of *M. brachyuris* (Bütschli, 1873): tail shape identical, V = 60.

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ZUSAMMENFASSUNG

Die Identität von Mylonchulus cavensis W. Schneider, 1940 (Nematoda: Mononchina)

Die von Andrásy als *Mylonchulus cavensis* beschriebene Art wird als verschieden von der echten *M. cavensis* betrachtet und mit dem Namen *M. andrassyi* belegt. An Hand von zwei Stücken aus Oesterreich wird diese Art neubeschrieben. *M. cavensis* wird zu Spezies inquirenda erklärt.

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