

Description of an Unknown Species, *Rotylenchus arsenjevi* and Additional Information on *Geocenamus adakensis* (Tylenchida : Nematoda) from Korea

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한국 미기록종 *Rotylenchus arsenjevi* 기재 및 *Geocenamus adakensis*에 관한 추가 정보

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ABSTRACT: *Rotylenchus arsenjevi* are reported for the first time in Korea. The Korean species differs slightly by having a hemispherical lip region and a slightly shorter tail than the original description ($c=38.2-68.7$ vs $36-41$). Male was founded firstly from Korea and described. *Geocenamus adakensis* were collected a second time from Korea at a different locality and habitat. The measurements were compared with original description and the firstly collected specimen in Korea.

Key words: Taxonomy, *Geocenamus adakensis*, *Rotylenchus arsenjevi*.

초 록: 나선선충과의 한국 미기록종 *Rotylenchus arsenjevi*를 기재하였다. 한국 종은 구순부가 반원형이고 미장이 약간 짧고, 수컷은 처음으로 채집되었다. *Geocenamus adakensis*는 한국에서 두번째로 채집되었다. 이번에 채집된 종의 측정치를 원 기재 종 및 지난번 채집한 종과 비교하였다.

검색어: 분류, *Geocenamus adakensis*, *Rotylenchus arsenjevi* 기재

Materials and Methods

Soil samples were collected from soil around roots of mulberry tree (*Morus bombycis* Koidz) at Odae mountain and *Allium vitorialis* var. *platphyllum* Makino at Ulreung Island. Nematodes were extracted by modified sieving method. Fixed with 70°C F:G 4-1 fixative, then transferred to anhydrous glycerine by Seinhorst's rapid glycerine method (Seinhorst, 1959). Nematodes were mounted using paraffin ring double cover glass method. Measurements and drawings were made using a drawing tube attached to an Olympus BX 50 microscope. Photographs was taken

using differential interference contrast attachments.

Description

Rotylenchus arsenjevi (Eroshenko, 1984) Maggenti et al, 1988(울릉나선선충)(신칭)

(Figs. 1, 2)

Measurements:

Female (n=5): L=765 μ m(695-962) μ m; a=30.2(25.7-34.9); b'=5.9(5.4-7.3); c=55.1(38.2-68.7); c'=0.7(0.5-1.0); V=59.1(55.3-66.4); Stylet=27.6 μ m (20.5-30.5); Body width=25.3 μ m (22.5-28.0); Oesophagus length=127.3 μ m(121.2-131.2); Anterior end to excretory pore=114.9 μ m(112.5-117.5); DGO=5.9 μ m(3.5-8.5); Tail length=14.4 μ m(11-19).

Male (n=3): L=680 μ m(655-707); a=30.7(29.1-33.6); b'=5.7

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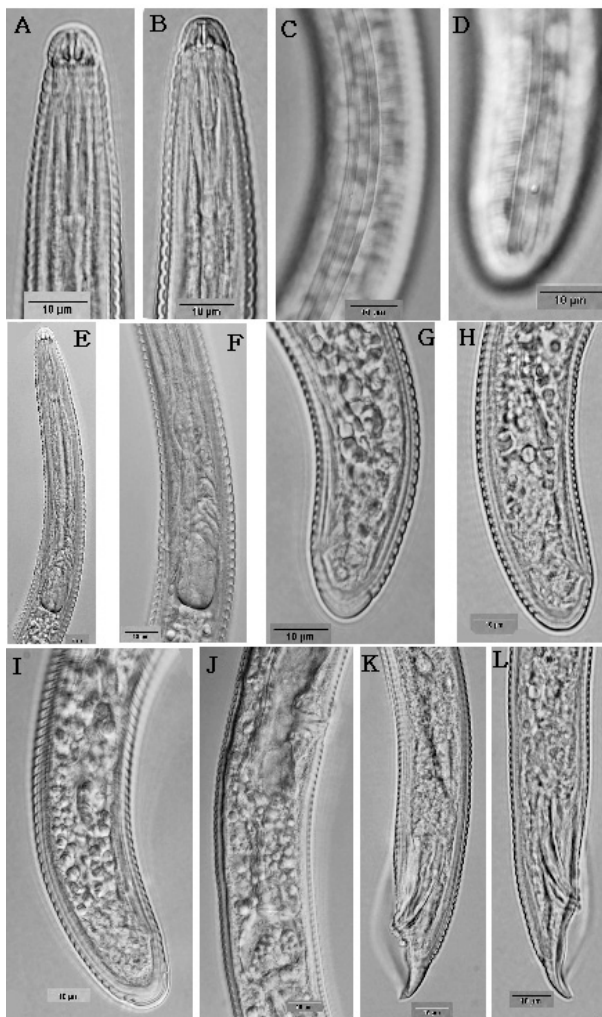


Fig. 1. *Rotylenchus arsenjevi*: A: Female head; B: Male head; C: Lateral field at middle of body; D: Lateral field at tail, showing phasmid; E: Oesophageal region; F: Enlargement of posterior part of oesophagus; G-I: Female posterior part; J: Posterior female gonad, showing sperm in the spermatheca; K and L: Male posterior part.

(5.6-5.8); $c=32.6(28.3-36.2)$; $c'=1.2(1.1-1.4)$; Stylet= $27.7\mu\text{m}$ (27.5-28.0); DGO= $5.9\mu\text{m}$ (3.5-8.5); Anterior end to excretory pore= $101\mu\text{m}$ (98.5-103.5); Tail length= $21\mu\text{m}$ (19.5-24.0); Spicule= $27.3\mu\text{m}$ (25-30); Gubernaculum= $9.5\mu\text{m}$ (9-10).

Female: Body spiral when fixed. Labial region setoff, hemispherical with 6 annules. Labial framework strongly sclerotized. Stylet knobs rounded. DGO 3.5-8.5 μm from stylet base. Excretory pore located at 113-118 μm from anterior end. Terminal oesophageal bulb slightly overlap intestine dorsally. Lateral field with 6 incisures, out line areolated at oesophageal region. Female reproductive

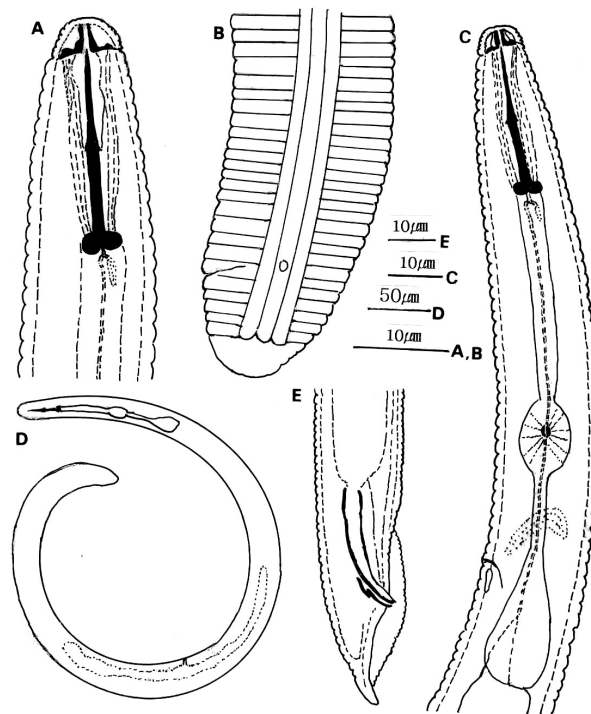


Fig. 2. *Rotylenchus arsenjevi*: A: Head; B: Surface view of female posterior region; C: Female anterior region; D: Entire female; E: Male posterior region.

system didelphic. Spermatheca rounded without spermatozoa. Vulva lip with epyptigma. Tail short with 4-6 annules in ventral side. Tail terminus smooth rounded or conical. Phasmids at anus level.

Male: Male similar to female in general shape. Body ventrally curved when fixed. Bursa crenate, envelop tail. Spicule 25-30 μm long, gubernaculum 9-10 μm long(Castillo *et al.*, 1993).

Locality and host plant: Soil around the roots of *Allium vitorialis* var. *platphyllum* Makino at Ulreung island.

Discussion: Korean specimen well correspond to the description of *R. arsenjevi* (Eroshenko, 1984) Maggenti *et al.*, 1988 except lower number of annules on tail(4-6 vs 7-9 in *R. arsenjevi*). Male firstly founded in Korea.

Gecenamus adakensis (Bernard, 1984) Brzeski, 1991, (Fig. 3)

Measurements: See table 1, 2.

Geocenamus adakensis (Bernard, 1984) Brzeski, 1991 were found for the second time since Choi & Geaert reported

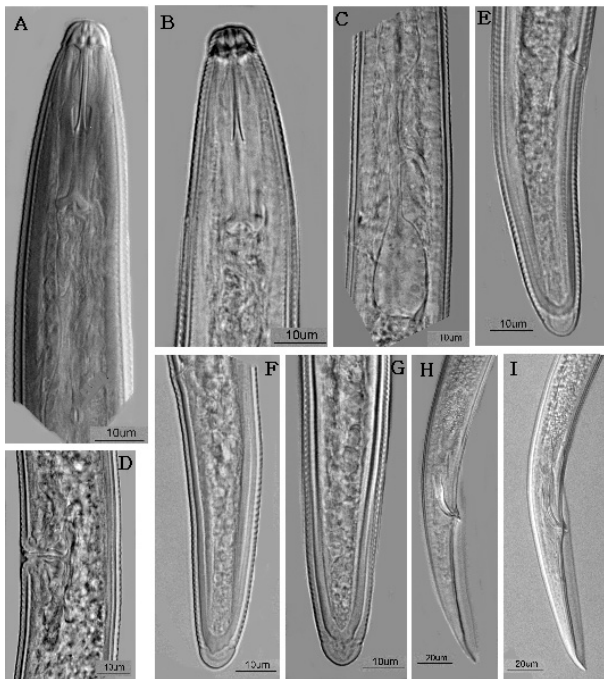


Fig. 3. *Geocenamus adakensis*: A, B: Head region; C: Oesophageal region; D: Vulva region; E-G: Various shape of female tail; H and I: Male tail.

Table 1. Comparative measurements of female *Geocenamus adakensis* at different localities

	Paratype* n=22	Specimens 1 n=11	Specimens 2 n=12
L(μm)	959-1284	1025-1405	773-915
Stylet(μm)	32-36	33-37	34.0-39.0
D.G.O.(μm)	1.4-3.3	2-4	1.4-3.1
a	27-37	27-37	25.1-32.1
b	5.5-6.8	5.8-7.5	4.9-6.8
c	10.6-14.2	12-16.2	11.1-13.7
c'	3.1-4.1	2.6-3.7	2.8-3.7
V(%)	51-58	51.2-55.0	51.7-56.0
m(%)	50-55	50.0-61.4	
Tail length(μm)	71-108	64.0-80.5	
No. of tail ann.	35-65	49-57	
Lip annuli	6-8	6	6-7

*Paratype (Bernard, 1984); Specimens 1: Collected at Bugwi-myeon, Jeollabuk-do(Latitude N 35°, Longitude E 127°), Korea (Choi & Geraert, 1993); Specimens 2: Collected at Mt. Odae Kangweon-do (Latitude N 37°, Longitude E 128°) Korea (in 2008).

in 1993 from Korea. Measurements of the populations from the different localities were compared. All the measurements of both sex are correspond to the original description except body length much shorter in population 2; 773-915 μm vs

Table 2. Comparative measurements of male *Geocenamus adakensis* at different localities

	Paratype n=4	Specimens 1 n=10	Specimens 2 n=12
L(μm)	997-1172	1005-1330	738.5-910.0
Stylet(μm)	33-35	32-34	30.0-37.1
D.G.O.(μm)	1.6-2.0	2.4-4.5	
a	31.1-41.3	28.7-35.8	27.3-35.4
b	5.9-7.5	5.2-6.4	4.9-5.7
c	10.0-10.8	10.8-14.7	8.6-11.4
c'	4.1-5.1	3.4-4.8	3.3-6.6
T(%)	46-61	31-38	
m(%)	53-57	49.1-57.3	
Spicule(μm)	30-35	31-35	23.0-33.6
Gubernaculum(μm)	7-10	9-12	9.0-12.6

959-1,284 μm . The body length and tail length of the population 2 were shorter than the populaion 1; 773-915 μm vs 1025-1405 μm and (64.0-80.5 μm . vs 71-108 μm respectively.

Locality and habitat: Soil around roots of mulberry tree(*Morus bombycis* Koidz) at Odae Mountain.

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