

Seinura informis sp. n. from European Russia and a key to species of the genus *Seinura* Fuchs, 1931 (Nematoda: Aphelenchoididae)

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Gagarin, V.G. 2001. *Seinura informis* sp. n. from European Russia and a key to species of the genus *Seinura* Fuchs, 1931 (Nematoda: Aphelenchoididae). *Zoosystematica Rossica*, 9(1), 2000: 19-23.

Seinura informis sp. n. from goat manure in Borok settlement (Yaroslavl' Province, Russia) is described and illustrated. It differs from *S. variobulbosa* Haque, 1966 in the shorter tail, longer spicules and absence of stylet knobs. Brief morphological characteristic of 29 valid species of the genus *Seinura* and a key to these species are given.

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Introduction

A new species of the genus *Seinura* Fuchs, 1931, *S. informis* sp. n., was found in samples collected from a small heap of goat manure in Borok settlement, Yaroslavl' Province, Russia. Nematodes were extracted from manure by funnel method of Bermann and heat killed, fixed in 4% formalin and processed and mounted in glycerin. The description and drawings were made from permanent slides.

Seinura informis sp. n. (Figs 1-6)

Holotype. ♂, Russia, Yaroslavl' Prov., settlement Borok, heap of goat manure, 29.VII.1997, slide No. 71/15, Institute of Parasitology, Russian Academy of Sciences, Moscow.

Paratypes. 13 ♀, 3 ♂ collected with the holotype.

Measurements. See Table 1.

Description. Female. Body ventrally arcuate when heat relaxed. Cuticle very finely annulated; annuli 0.4-0.5 μm wide near mid-body region. Lateral field with three incisures. Head rounded, distinctly offset from body contour, 7-8 μm wide, smooth. Stylet without knobs or swellings. Procorpus cylindrical, slightly widened in its posterior part. Metacarpus (median bulb) spherical-oval, 17-20 μm long, slightly longer than wide, its width about 3/4 body diameter. Metacarpus with distinct constriction dividing the bulb into two unequal parts. Ante-

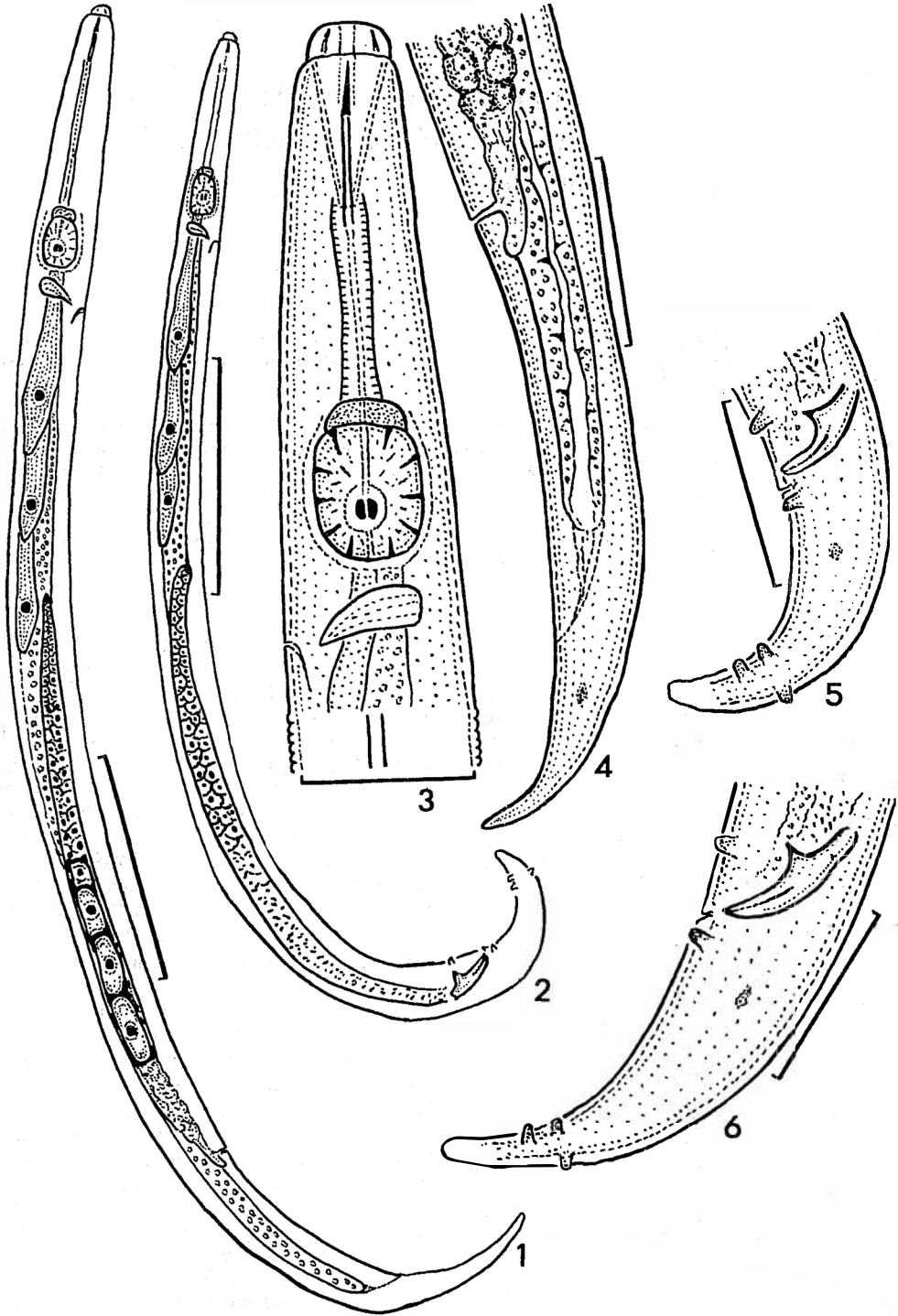
rior part of bulb small, in form of a little "cap" covering the posterior, main part of the bulb, where valvular apparatus is located. Tissue of "cap" delicate, homogenous, differing sharply from muscular tissue of the main part of bulb. Excretory pore slightly behind posterior edge of metacarpus. Nerve ring adjacent to excretory pore. Rectum and anus generally obscure. Ovary outstretched, long; oocytes in a single row. Vulva a transverse slit. Vagina slightly obliquely directed anteriorly and occupying about 1/4 body diameter. Spermatheca sac-like, elongate-oval, 26-33 μm long, frequently filled with rounded sperms. Postvulvar sac about half corresponding body diameter. Mature egg not seen. Tail elongate-conical, slightly curved ventrally; terminus blunt and rounded.

Male. General body form, head and stylet construction, metacarpus form as in females. Testis outstretched. Spicules aphelenchoid, as long as cloacal diameter. Tail elongate-conical, strongly bent ventrally. Four pairs of caudal papillae and one pair of precloacal papillae.

Comparison. The new species is distinguished from the close species *S. variobulbosa* Haque, 1966 by the shorter tail (in *S. variobulbosa*, $c = 7.0-8.7$ in females and $7.3-8.1$ in males), longer spicules (in *S. variobulbosa*, 10.4 μm long) and absence of stylet knobs.

Etymology. The species name means "formless, unformed".

The genus *Seinura* was established by Fuchs (1931) for the species *Seinura mali*, which



Figs 1-6. *Seinura informis* sp. n. 1, general view of female; 2, general view of male; 3, anterior end of male; 4, tail of female; 5, 6, tail of male. Scales: 100 μ m (1, 2), 40 μ m (4), 15 μ m (3, 5, 6).

Table 1. Measurements of *Seinura informis* sp. n.

Characteristics	Males			Females	
	Holotype	Paratypes (n=3)		Paratypes (n=13)	
		Range	Mean	Range	Mean
L, µm	424	389-476	427	430-536	480
a	20	20-23	22	19-25	22
b	6.8	6.6-7.7	7.0	6.9-8.5	7.7
c	16.3	15.1-21.6	18.1	8.8-13.3	10.7
c'	2.2	2.0-2.2	2.1	3.5-5.0	4.4
V	—	—	—	74.6-78.5	76.0
Oesophagus length, µm	62	56-62	60	57-63	62
Posterior end of oesophagus-vulva, µm	—	—	—	266-358	303
Posterior end of oesophagus-cloaca, µm	336	308-392	340	—	—
Vulva-anus, µm	—	—	—	59-77	70
Tail length, µm	26	22-27	24	35-56	45
Vulva-anus : tail	—	—	—	1.3-2.0	1.6
Head width, µm	8	7-8	7	7-8	7
Stylet length, µm	20	20-21	20	20-21	20
Spicula length, µm	14	14-15	14	—	—

parasitizes insects. 35 species are described in the genus to date (Table 2). Six species: *S. hyderabadensis* (Das, 1960), *S. mucronata* (Paesles, 1946), *S. speciosa* (Andrássy, 1958), *S. elmiraensis* (Van der Linde, 1938), *S. fuchsi* Edward & Misra, 1969, *S. paraoxyura* Mavljjanov, 1976, are regarded *species inquirendae* (Hechler & Taylor, 1965; Baranovskaja, 1981); 29 species are valid.

Key to species of *Seinura*

- 1(16). Stylet with knobs.
- 2(7). Postvulvar sac absent.
- 3(4). Tail longer than distance between vulva and anus **S. demani**
- 4(3). Tail shorter than distance between vulva and anus.
- 5(6). Lateral field absent **S. oliveirae**
- 6(5). Lateral field present, with 3 incisures . . **S. celeris**
- 7(2). Postvulvar sac present.
- 8(9). Median bulb with cap **S. variobulbosa**
- 9(8). Median bulb without cap.
- 10(11). Postvulvar sac shorter than body diameter **S. linfordi**
- 11(10). Postvulvar sac longer than body diameter.
- 12(13). Postvulvar sac 4 times as long as body diameter **S. chertkovi**
- 13(12). Postvulvar sac 2.0-2.3 times as long as body diameter.
- 14(15). Body length 0.3-0.4 mm; lateral field present, with 4 incisures **S. nagini**
- 15(14). Body length 0.51-0.86 mm; lateral field absent **S. oahuensis**
- 16(1). Stylet without knobs.
- 17(26). Postvulvar sac absent.
- 18(23). Median bulb with cap.

- 19(20). Lateral field present, with 3 incisures **S. oxura**
- 20(19). Lateral field absent.
- 21(22). Stylet length 21.0-22.5 µm **S. diversa**
- 22(21). Stylet length 24-27 µm **S. winchesi**
- 23(18). Median bulb without cap.
- 24(25). Lateral field present, with 3 incisures; body length 0.66-0.69 mm **S. proposita**
- 25(24). Lateral field absent; body length 0.55-0.65 mm **S. aurangabadensis**
- 26(17). Postvulvar sac present.
- 27(28). Median bulb with cap **S. informis** sp. n.
- 28(27). Median bulb without cap.
- 29(40). Postvulvar sac shorter than body diameter.
- 30(37). Lateral field absent.
- 31(32). Body length 0.39-0.40 mm; stylet length 12-13 µm **S. nodosa**
- 32(31). Body length 0.5 mm or more; stylet length 15 µm or more.
- 33(34). Stylet length 15-16 µm; c = 3.3-3.5 **S. longicaudata**
- 34(33). Stylet length 16 µm or more; c = 8.
- 35(36). c = 9-12; stylet length 19-22 µm **S. oostenbrinki**
- 36(35). c = 12-14; stylet length 16-18 µm . . . **S. tritici**
- 37(30). Lateral field present.
- 38(39). Lateral field with 3 incisures; body length 0.62-0.88 mm **S. filicaudata**
- 39(38). Lateral field with 5 incisures; body length 0.46-0.52 mm **S. indica**
- 40(29). Postvulvar sac as long as or longer than body diameter.
- 41(48). Postvulvar sac as long as body diameter.
- 42(47). Lateral field absent or obscure.
- 43(44). Body length 0.43-0.48 mm; c = 4.0-4.2 **S. citri**
- 44(43). Body length 0.5 mm or more.

Table 2. Characters of species of the genus *Seimura*

Species	Females								Males			
	L, mm	c	c'	Stylet length, μ m	Stylet knobs	Bulbar cap	Lateral field incisures	Postvulvar sac : body diameter	L, mm	c	Stylet length, μ m	Spicula length, μ m
<i>aurangabadensis</i> Suryawanshi, 1971	0.55-0.65			19.0-20.5	-	-	-	-				
<i>celeris</i> Hechler & Taylor, 1965	0.49-0.79	7.5-11.7		14.0-17.5	+	-	3	-	0.38-0.43	7.2-11.9	11.0-15.5	11-13
<i>chertkovi</i> Dmitrienko, 1966	0.6-0.7	8.2-10.0		20	+	-	-	4	0.48-0.55	10.6-15.4	20	
<i>citri</i> (Andrássy, 1957)	0.43-0.48	4.0-4.2	12-13	12.9-14.0	-	-	-	1				
<i>clavata</i> Bajaj & Rhatti, 1982	0.59-0.62	13-19	3-5	12-15	-	-	-	1				
<i>demani</i> (Goodey, 1982)	0.64-0.76	5.3-5.8		16-29	+	-	-	-	0.58	6.6		16
<i>diversa</i> (Paesler, 1957)	0.62-1.03	8.5-11.0		21-22.5	-	+	-	-	0.56-0.66	13-15	21.0-22.5	
<i>filicaudata</i> (Christie, 1939)	0.62-0.88	4.5-6.0		18-21	-	-	3	<1	0.54-0.55	7.4-7.5	17	14
<i>indica</i> Suryawanshi, 1971	0.46-0.52	?-7.5		17-19	-	-	5	<1				
<i>informis</i> sp. n.	0.43-0.54	8.8-13.3	3.5-5.0	20-21	-	+	2	0.5	0.39-0.48	15.1-21.6	20-21	14-15
<i>linfordi</i> (Christie, 1939)	0.47-0.62	7.0-10.0		15-18	+	-	5	<1				
<i>longicaudata</i> (Cobb, 1893)	0.8-1.7	3.3-3.5		15-16	-	-	-	<1	0.57		15-16	7-8
<i>mali</i> Fuchs, 1931	0.68	6.6			-	-	3	4	0.47	17.2		
<i>nagini</i> Husain & Khan, 1965	0.32-0.40	6.0-8.0	6-7	12-15	+	-	4	2	0.35	10	13	18
<i>nodosa</i> Andrássy, 1966	0.39-0.40	6.4-6.5	7-8	12-13	-	-	-	<1				
<i>oahuensis</i> (Christie, 1939)	0.51-0.86	11-15		14-17	+	-	-	2.3				
<i>obscura</i> Grewal, Siddiqi & Atkey, 1991	0.65-0.75	11.0-16.7	4.3-6.4	20-26	-	-	-	1				
<i>oliveirae</i> (Christie, 1939)	0.52-0.76	5.6-9.7		15-16	+	-	-	-	0.38-0.50	7.0-8.7	14-15	12-14
<i>oostenbrinki</i> Husain & Khan, 1967	0.51-0.70	9-12		19-22	-	-	-	<1				
<i>oswegoensis</i> (Van der Linde, 1938)	0.48-0.79	8-12	3.6-6.5	18-23	-	-	-	2.1-2.3				
<i>oxura</i> (Paesler, 1957)	0.5-0.9	9.4-21.3		17-21	-	+	3	-	0.5-0.8	7.6-22.7		15-16
<i>paratenuicaudata</i> Geraet, 1962	0.46-0.61	8.4-11.5	6	16-22	-	-	4	1	0.45	10.1	15	15
<i>paynei</i> Grewal, Siddiqi & Atkey, 1991	0.64-0.88	15-20	2.6-4.4	18-25	-	-	3	2.8	0.42-0.44	8.4-8.5	7.6-7.8	17.3-17.6
<i>proposa</i> Siddiqi, Husain & Khan, 1967	0.66-0.69	10-12	5	17	-	-	3	-				
<i>steineri</i> Hechler & Taylor, 1965	0.68-0.96	5.6-9.6		20-23	-	-	3	2.1	0.51-0.75	8.7-13.1		15-17
<i>tenuicaudata</i> (de Man, 1895)	0.5-0.94	6.6-11.3		17-20	-	-	3	3	0.61-0.75	12-14		15-16
<i>tritica</i> Bajaj & Rhatti, 1982	0.57-0.70	12-14	4-5	16-18	-	-	-	0.75	0.63	21	16	15
<i>variobulbosa</i> Haque, 1966	0.45-0.55	7.0-8.8		14.4-16.8	+	+	2	0.5	0.32-0.41	7.3-8.1	14-15	10.4
<i>winchesi</i> (Goodey, 1921)	0.68-0.93	6.2-9.9		24-27	-	+	-	-	0.54-0.68	12.7-16.3	24-27	17

- 45(46). Body length 0.59-0.62 mm; stylet length 12-15 μ m **S. clavata**
- 46(45). Body length 0.65-0.75 mm; stylet length 20-26 μ m **S. obscura**
- 47(42). Lateral field present, with 4 incisures **S. paratenuicaudata**
- 48(41). Postvulvar sac at least twice as long as body diameter.
- 49(52). Postvulvar sac 2.1-2.3 times as long as body diameter.
- 50(51). Lateral field present, with 3 incisures; c = 5.6-9.6 **S. steineri**
- 51(50). Lateral field absent; c = 8-12 . . . **S. oswegoensis**
- 52(49). Postvulvar sac 2.8 or more times as long as body diameter.
- 53(54). Postvulvar sac 2.8 times as long as body diameter; c = 15-20 **S. paynei**
- 54(53). Postvulvar sac 3-4 times as long as body diameter; c = 15.
- 55(56). Postvulvar sac 3 times as long as body diameter **S. tenuicaudata**
- 56(55). Postvulvar sac 4 times as long as body diameter **S. mali**

Acknowledgements

The author thanks the Russian Foundation for Basic Research for financial support (grant No. 98-04-48029).

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Received 26 May 1999