

## Redescription of *Tobrilus aberrans* (Filipjev, 1928) (Nematoda, Enoplida: Tobrilidae)

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The lectotype of *Tobrilus aberrans* is designated from the Gulf of Finland, Russia. Descriptions of populations of *T. aberrans* from Grand Ploener Lake (Germany) and Tiberias Lake (Israel) are given.

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The status of some species of the genus *Tobrilus* is problematical. The reason is the incompleteness of the original descriptions and the lack of type material. This problem concerns species described in the 19th and early 20th century. The necessity appears to designate a lectotype (or a neotype) in the interests of stability of nomenclature. The species *Tobrilus aberrans* demands in such an action. Originally, this taxon was described as "*Trilobus gracilis* f. *typica* var. *aberrans* n. var." (Schneider, 1925). The description was very short and poorly illustrated. Subsequently, the variety was raised to species rank (Filipjev, 1928). Its description was supplemented with new data and illustrations (Filipjev, 1929). After 1929, the species was repeatedly mentioned in faunistic articles, however without detailed illustrations and descriptions. Altherr (1968) only published new data on the structure of the supplementary apparatus, and Riemann (1978) described the amphid of the species.

In accordance with Articles 23.3.4 and 45.5.1 of the "International Code of Zoological Nomenclature", the author of the species *Tobrilus aberrans* is Filipjev. The collection of the Zoological Institute, St.Petersburg contains a single specimen (male) of *T. aberrans* from the collection of I.N. Filipjev. This specimen is designated here as the lectotype of *T. aberrans*.

Further, I give descriptions of the lectotype of *T. aberrans* and populations of *T. aberrans* from Grand Ploener Lake (Germany) and Tiberias Lake (Israel).

### **Tobrilus aberrans** (Filipjev, 1928)

*Lectotype* (present designation): ♂, **Russia**, Gulf of Finland, littoral, 30.VII.1924 (I.N. Filipjev), microscope slide no. A-5091, Zoological Institute, St.Petersburg.

### Lectotype (Figs 7, 8)

*Description.* ♂:  $L = 1658 \mu\text{m}$ ,  $a = 43.6$ ,  $b = 5.7$ ,  $c = 16.9$ , spic.  $35 \mu\text{m}$ , suppl. 6. Cuticle smooth; head  $21 \mu\text{m}$  wide; longer cephalic seta  $8 \mu\text{m}$  long. Width of buccal cavity  $8 \mu\text{m}$ ; depth of buccal cavity  $12 \mu\text{m}$ ; total depth of stoma  $21 \mu\text{m}$ . Amphid aperture situated on the level of border of buccal cavity and pockets. Oesophagus  $320 \mu\text{m}$  long; oesophageal glands elliptical, large. Testes and ductus ejaculatorius not distinguishable. Structure of supplementary row presented in Table 1. Ampulles of supplements flattened; bottom of ampulle pressed; capitulum of supplement small, submerged. Spicules wide; gubernaculum spoon-like,  $17 \mu\text{m}$  long. Tail  $98 \mu\text{m}$  long, with pronounced terminus; subterminal seta absent; tail/anal diameter = 3.

### Specimens from Grand Ploener Lake (Figs 1-6)

*Material.* **Germany**, Grand Ploener Lake, littoral, 4.VII.2001 (V.R. Alekseev).

*Description.* ♂:  $L = 1885 \mu\text{m}$ ,  $a = 46$ ,  $b = 5.7$ ,  $c = 15.1$ , spic.  $39 \mu\text{m}$ , suppl. 6. Cuticle smooth; head  $24 \mu\text{m}$  wide; longer cephalic seta  $7 \mu\text{m}$ . Width of buccal cavity  $7 \mu\text{m}$ ; depth of buccal cavity  $10 \mu\text{m}$ ; total depth of stoma  $19 \mu\text{m}$ . Amphid aperture situated  $8 \mu\text{m}$  from front of head. Oesophagus  $330 \mu\text{m}$  long; oesophageal glands elliptical, large. NR = 33%. Two testes; ductus ejaculatorius slightly exceeding the length of supplementary row. Structure of supplementary row presented in Table 1. Ampulles of supplements flattened; bottom of ampulle pressed; capitulum of supplement small, submerged. Spicules wide; gubernaculum spoon-like,  $17 \mu\text{m}$  long. Tail  $125 \mu\text{m}$  long, with pronounced terminus; subterminal seta present; tail/anal diameter = 4.

**Table 1.** Structure of supplement row in *Tobrilus aberrans*

Locality	Distance between supplements*												Average length of supplement row	Spicula**	
	CI-I		I-II		II-III		III-IV		IV-V		V-VI			μm	%
	μm	%	μm	%	μm	%	μm	%	μm	%	μm	%			
Gulf of Finland (lectotype)	46	<b>25</b>	23	13	30	16	33	18	23	<b>13</b>	29	15	184	35	19
Grand Ploener Lake (my data)	55	<b>21</b>	48	19	44	17	34	13	27	<b>11</b>	48	19	256	39	15
Stechlinsee Lake (Altherr, 1968)	32	<b>21</b>	25	16	24	15	25	16	24	<b>15</b>	25	16	155	35	23
Tiberias Lake (my data)	39	<b>22</b>	35	20	26	15	25	14	20	<b>12</b>	28	16	179	33	19

Notes. Bold print: max. & min. distance between supplements. \* First column: average distance between supplements; second column: distance between supplements in % to length of supplement row. \*\* First column: average length of spicula; second column: length of spicula to length of supplement row in %.

**Table 2.** Average characteristics of de Man indices for various populations of *Tobrilus aberrans*

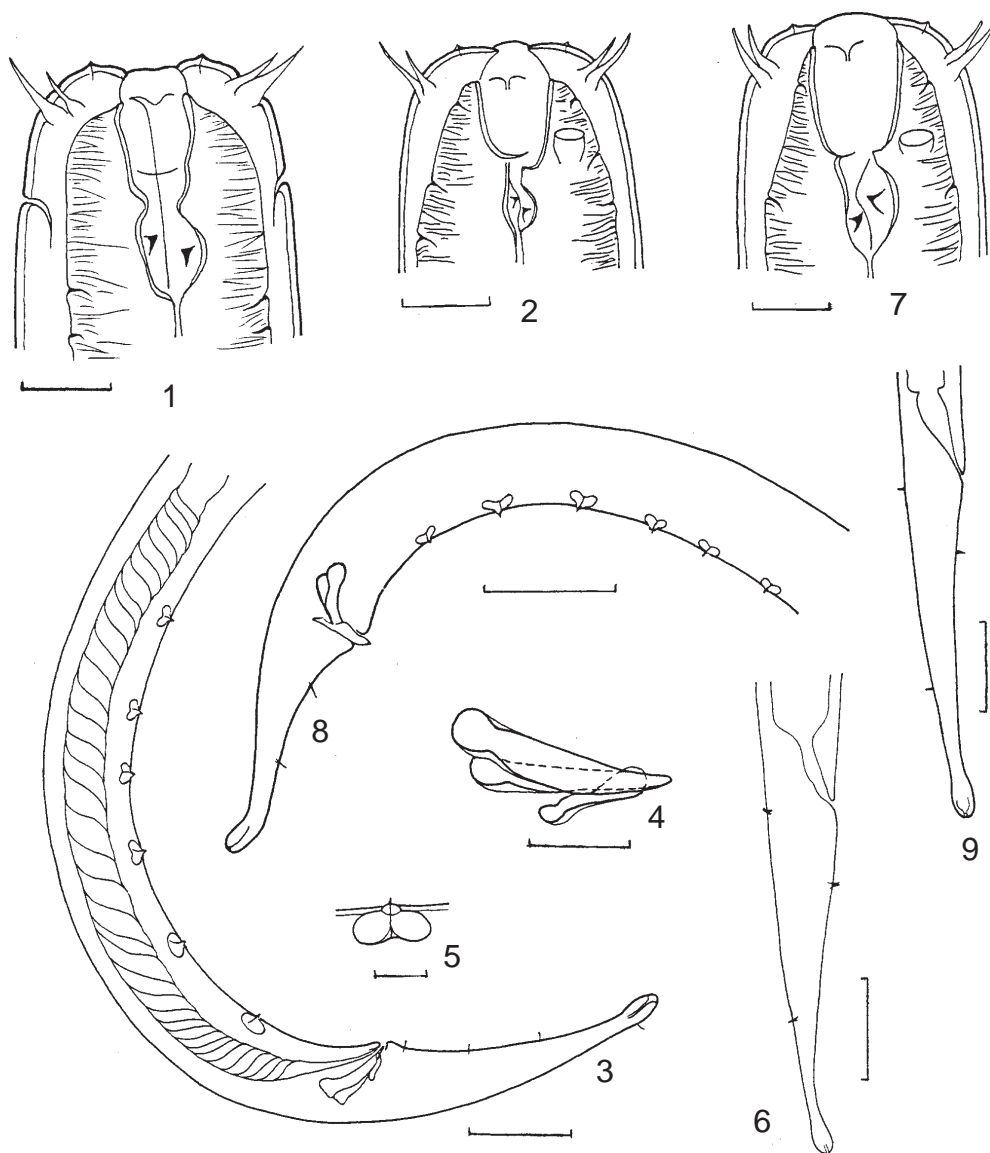
Locality	Male					Female					
	n	L, μm	a	B	c	n	L, μm	a	b	c	V, %
Kirchensee Lake (Schneider, 1925)	1	1426	25.2	5.7	11.3	1	1626	26	5.4	7.9	40
Grand Ploener Lake	1	1885	46	5.7	15.1	5	2348	28	6	10.4	43
Gulf of Finland (Filipjev, 1929)	2	1658	43.6	5.2	16.9	2	1835	36	5.2	12.2	50
Oka River (Filipjev, 1928)	-	-	-	-	-	2	1740	28.5	5.5	11.2	47
Stechlinsee Lake (Altherr, 1968)	2	1760	51	5.4	22.5	-	-	-	-	-	-
Tiberias Lake	9	1603	32.7	5.4	14.2	9	1746	24.9	5.3	9.2	43
Mackenzie River (Ebsary, 1982)	-	-	-	-	-	4	1800	27	4.3	11	50

♀ (n = 5): L = 1988-2774 (2348 ± 133) μm, a = 24.5-37 (28 ± 2.5), b = 5.5-6.8 (6 ± 0.2), c = 9.2-12 (10.4 ± 0.4), V = 39-46 (43 ± 1)%. Head 29-36 (31 ± 2) μm wide; longer cephalic seta 9-10 μm long. Width of buccal cavity 8-12 (10) μm, depth of buccal cavity 12-13 μm; total depth of stoma 25-26 μm. Teeth situated almost at the same level. Amphid aperture situated 6-9 μm from front of head. Oesophagus 364-413 (393 ±

9) μm long. NR = 32-41 (34 ± 2)%. Reproductive system with eggs: Q<sub>1</sub> = 286-390 (330 ± 11) μm, Q<sub>2</sub> = 330-460 (368 ± 15) μm. Rectum 43-50 (45 ± 2) μm long. Tail 194-299 (227 ± 19) μm long; tail/anal diameter = 4-6.

Specimens from Tiberias Lake (Figs 10-16)

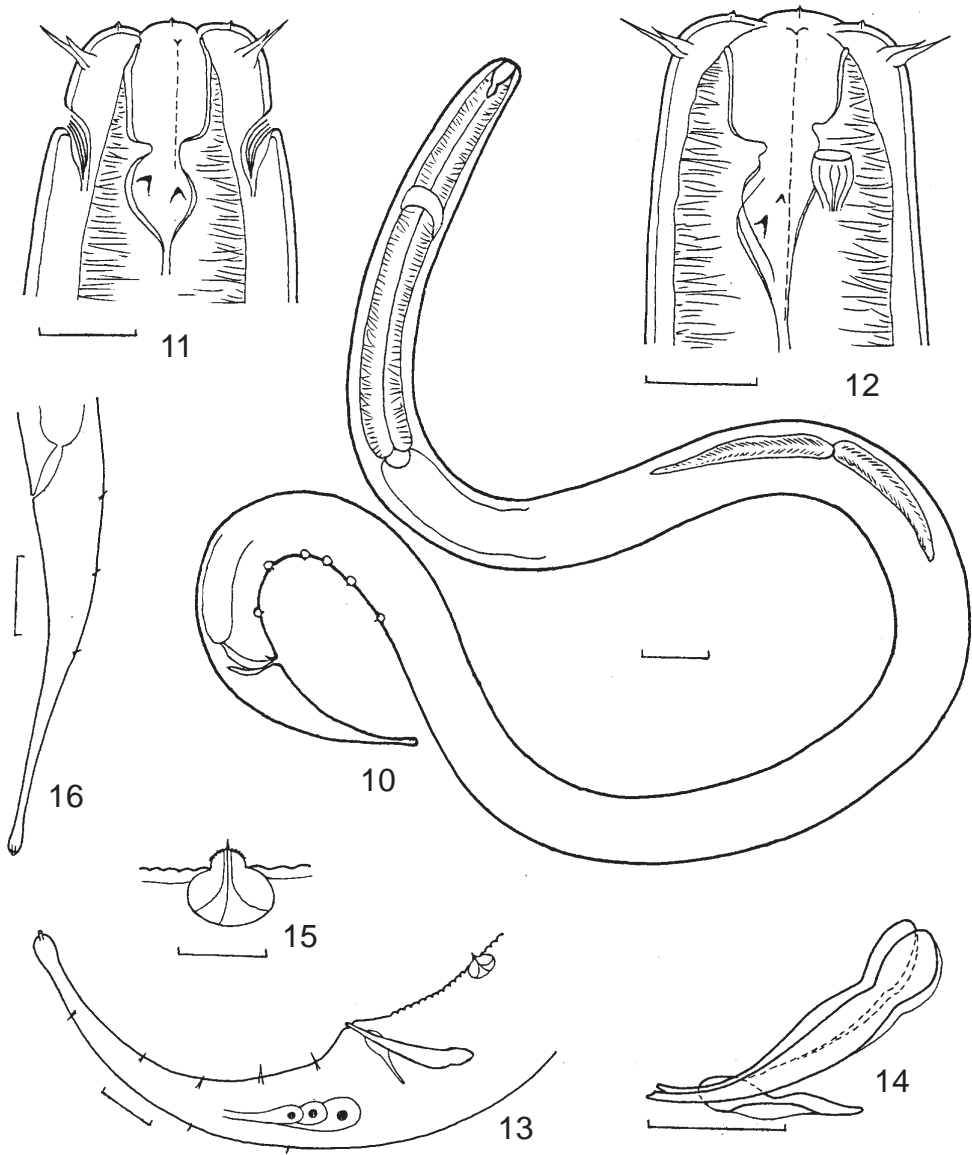
*Material.* Israel, Tiberias Lake, 40 m, March 1997 (Y. Ostrovsky).



**Figs 1-9.** *Tobrilus aberrans* (1-6, specimens from Grand Ploener Lake; 7-8, lectotype from Gulf of Finland, microscope slide by I.N. Filipjev, 1924; 9, specimen from Oka River). **1, 2, 7,** head (1, ventral view); **3, 8,** posterior end of male; **4,** spicule; **5,** supplement; **6, 9,** tail of female. Scales: 1, 2, 5, 7: 10  $\mu\text{m}$ ; 4: 20  $\mu\text{m}$ ; 3, 6, 8, 9: 50  $\mu\text{m}$ .

$\sigma$  (n = 9):  $L = 1524-1723$  ( $1603 \pm 20$ )  $\mu\text{m}$ ,  $a = 28-40.6$  ( $33 \pm 1.3$ ),  $b = 5.2-5.8$  ( $5.4 \pm 0.1$ ),  $c = 12.4-16.6$  ( $14.3 \pm 0.5$ ), spic. 30-39 ( $33 \pm 1$ )  $\mu\text{m}$ , suppl. 6. Head 19-22 ( $20 \pm 0.5$ )  $\mu\text{m}$  wide; longer cephalic seta 5-8  $\mu\text{m}$ . Width of buccal cavity 7-10 (8)  $\mu\text{m}$ ; depth of buccal cavity 8-11 (10)  $\mu\text{m}$ ; total depth of stoma 23-26 ( $24 \pm 0.5$ )  $\mu\text{m}$ . Amphid aperture situated on the level of border of buccal cavity and pockets or slightly higher. Oesophagus 290-319 ( $299 \pm 3$ )  $\mu\text{m}$  long. NR =

33-36 ( $35 \pm 1$ )%. Structure of supplementary row presented in Table 1. Ampullae of supplements flattened, bottom of ampulle strongly convex. Capitulum of supplement usually submerged, but some males have supplements with protuberant capitulum with microthorns (Fig. 15). Spicules wide; gubernaculum spoon-like, 15-19 ( $16 \pm 0.5$ )  $\mu\text{m}$  long. Tail with extended terminus, 97-135 ( $113 \pm 4$ )  $\mu\text{m}$  long; tail/anal diameter = 3-4. Subterminal seta absent.



**Figs 10-16.** *Tobrilus aberrans*, specimens from Tiberias Lake. **10**, entire body of male; **11, 12**, head (11, ventral view); **13**, tail of male; **14**, spicule; **15**, supplement; **16**, tail of female. Scales: 11, 12, 15: 10  $\mu\text{m}$ ; 13, 14: 15  $\mu\text{m}$ ; 10, 16: 50  $\mu\text{m}$ .

♀ (n = 9):  $L = 1577-1807$  ( $1746 \pm 28$ )  $\mu\text{m}$ ,  $a = 20.7-28.6$  ( $25 \pm 0.8$ ),  $b = 4.6-5.6$  ( $5.3 \pm 0.1$ ),  $c = 8.1-10.5$  ( $9.3 \pm 0.2$ ),  $V = 41-46$  ( $43 \pm 0.5$ )%. Head 22-26 ( $24 \pm 0.5$ )  $\mu\text{m}$  wide; longer cephalic seta 6-8  $\mu\text{m}$  long. Width of buccal cavity 10-11  $\mu\text{m}$ , depth of buccal cavity 11-12  $\mu\text{m}$ ; total depth of stoma 24-29 ( $26 \pm 1$ )  $\mu\text{m}$ . Diameter of amphid aperture about 5  $\mu\text{m}$ . Oesophagus 315-340 ( $331 \pm 3$ )  $\mu\text{m}$  long. NR = 33-40 ( $35 \pm 1$ )%. Reproductive system weakly developed:  $Q_1 = 190-$

253 ( $209 \pm 8$ )  $\mu\text{m}$ ,  $Q_2 = 190-258$  ( $209 \pm 6$ )  $\mu\text{m}$ . Rectum 38-47 ( $41 \pm 3$ )  $\mu\text{m}$  long. Tail 162-230 ( $189 \pm 6$ )  $\mu\text{m}$ ; tail/anal diameter = 5-6. Subterminal seta absent.

#### Distribution

The review is based on published data and material from the collection of the Zoological Institute, St.Petersburg. Germany: Kirchensee

Lake (Schneider, 1925) and Grand Ploener Lake (loc. nov.), both in the system of Ploener lakes; Stechlinsee Lake in Saale River basin (Altherr, 1968); estuary of Elba River (Riemann, 1966); Wollengster Lake, env. Bremerhaven (Riemann, 1978). Russia: Oka River (Filipjev, 1928); Gulf of Finland – estuary of Neva River (Filipjev, 1928, 1929); Onega Lake (Gerd, 1946); Volga River (Gagarin, 1978). Lithuania: estuary of Neman River (loc. nov.). Canada: Mackenzie River, Yukon River (Ebsary, 1982). Israel: Tiberias Lake (loc. nov.). Data from other publications need verification.

*T. aberrans* prefers mud-sandy grounds on littoral of freshwater lakes and rivers, but the species was discovered in Tiberias Lake at a depth of 40 m. It is tolerant to low salinity.

#### Discussion

*T. aberrans* can be easily identified by the following characters: short and rounded tail, wide buccal cavity, short cephalic setae, amphids with expressed filaments. De Man indices show good agreement in all populations (Table 2). There are exceptions only for index “c” in the population from Stechlinsee Lake and for index “V” in the populations from Grand Ploener Lake and Tiberias Lake. However, these distinctions, as well as the absence or presence of the subterminal seta, have no taxonomic significance and are the result of individual variability.

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