

Notes on composition of the genus *Brevitobrilus* Tsalolikhin, 1981 (Nematoda, Enoplida: Tobrilidae)

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B. consimiloides (Altherr, 1965), *B. confusus* (Khera, 1975) and *B. sexsetiferous* (Khera, 1975) are considered species inquirendae. The following new synonymies are established: *B. findeneggi* (Schiemer, 1971) = *B. sardus* (Vinciguerra & Zullini, 1991), *B. stefanskii* (Micoletzky, 1925) = *B. malayanus* (Schneider, 1937) = *B. vibratus* (Sukul, 1967) = *B. montanus* Ocaña et al., 1996. The genus is divided into two groups based on the distance from the cloaca to the first supplement. A key to species of *Brevitobrilus* is given. Specimens of *B. stefanskii* from Japan are described.

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The difficulty of species differentiation in the genus, which increases with the description of each new species, requires a revision of species and improvement of diagnoses, which are based almost exclusively on the structure of the genital system of males. Females are practically indistinguishable. Emphasis is placed on metric evidence: absolute sizes of the body and its parts and some dimensional ratios.

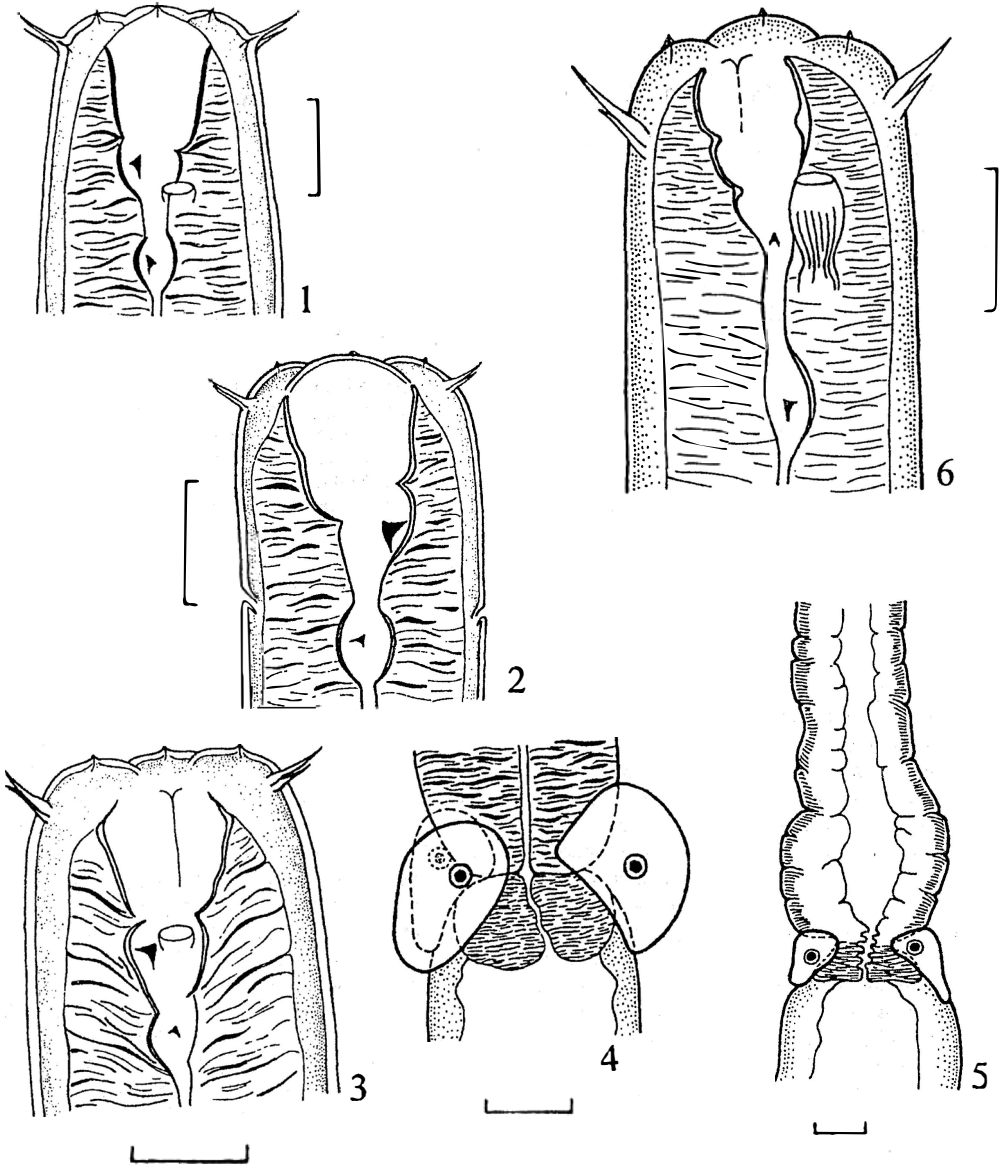
The following characters are normally used in the diagnoses: (1) absence or presence and position of the subterminal seta; (2) length of cephalic setae; (3) position of amphid; (4) position of sphincter between vas deferens and ductus ejaculatorius; (5) sizes and arrangement of supplements; (6) number and shape of inter-supplementary micropapillae.

Comparative analysis of published works and examination of specimens from the collection of Zoological Institute, Russian Academy of Sciences (St.Petersburg) demonstrates considerable variability of these characters and unavailability of many of them for differentiation of species: (1) the position of the subterminal seta is variable (Figs 7, 8, 11-19) as indicated earlier by Andrassy (1971) and Eyualem & Coomans (1997); (2) the length of cephalic setae is practically equal in all species, and insignificant distinctions are within the limits of statistical error; (3) amphids are always situated within the limits of anterior pocket (right and left amphid may be situated on different levels) (Figs 1-3, 6); Schneider (1937: Fig. 3a) has

shown the amphid in *Trilobus malayanus* very high, but this is a mistake, and a similar mistake was made by Tsalolikhin (1995: Fig. 1) for *Brevitobrilus graciloides* (see Fig. 6); (4) position of sphincter between vas deferens and ductus ejaculatorius is similar in all species; (5) absolute dimensions of supplements are almost equal in all species, but supplements may look different relative to the body width; (6) supplementary micropapillae may look different or may be absent (Figs 26-35), sometimes even within one population.

At present, the following species are included in the genus *Brevitobrilus*: *B. graciloides* (Daday, 1908), *B. stefanskii* (Micoletzky, 1925), *B. malayanus* (Schneider, 1937), *B. consimiloides* (Altherr, 1965), *B. vibratus* (Sukul, 1967), *B. findeneggi* (Schiemer, 1971), *B. confusus* (Khera, 1975), *B. sexsetiferous* (Khera, 1975), *B. granatensis* (Ocaña & Zullini, 1988), *B. sardus* (Vinciguerra & Zullini, 1991), *B. keniensis* Tsalolikhin, 1992, *B. montanus* Ocaña, Hernandez & Martin, 1996, *B. fesehai* Eyualem & Coomans, 1997, *B. tsalolikhini* Eyualem & Coomans, 1997.

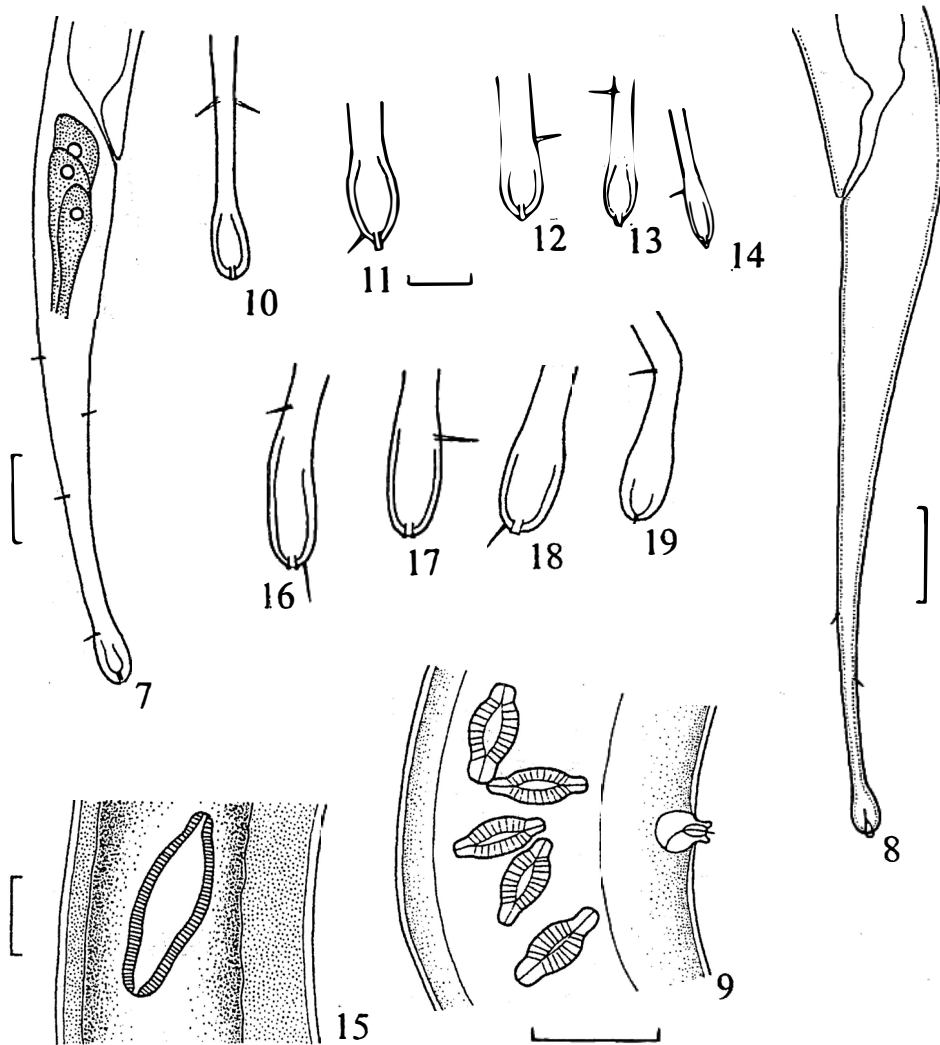
B. consimiloides, *B. confusus* and *B. sexsetiferous* are species inquirendae. *B. consimiloides* was described from one male and one female (named "Type male" and "Type female"), the morphological differences of which are beyond the limits of sexual dimorphism in the genus *Brevitobrilus*. The drawing of the vagina (Altherr, 1965) (bulb-like with multilayer musculature) definitely shows that the female be-



Figs 1-6. 1-5, *Brevitobilus stefanskii* from Biwa Lake (Japan): 1-3, head (2, ventral view); 4, 5, oesophago-intestinal junction. 6, *B. graciloides* from Chamo Lake (Ethiopia), head. Scales: 10 μ m.

longs to the genus *Neotobilus*, whereas the drawing of hindbody of the male shows that it belongs to the genus *Brevitobilus*, in all probability to *B. stefanskii* to judge from the structure of ductus ejaculatorius. As concerns *B. confusus* (Khera, 1975) and *B. sexsetiferous* (Khera, 1975), the drawings of forebodies of these "species" (Khera, 1975) are inconsistent with the structure of forebody of species of the

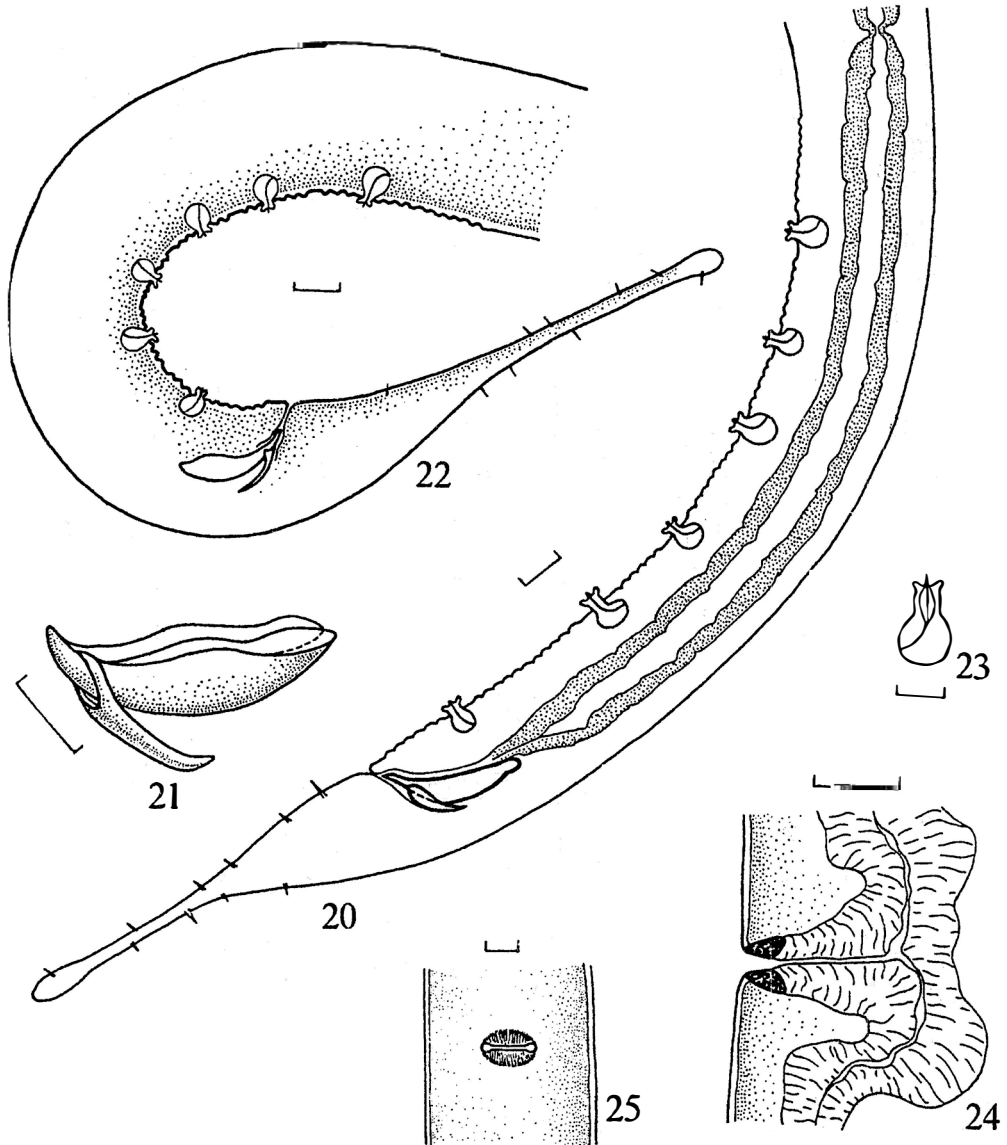
family Tobrilidae, in particular this concerns dimensions and position of amphid, which cannot be situated near the basis of cephalic setae and cannot be as tiny as in Figs 4 and 5 by Khera (1975). The structure of the supplementary apparatus, spicules, vulva, vagina, oesophagus and tail is also hardly fitting the genus *Brevitobilus*. Unfortunately, the type material of these species is inaccessible for examination.



Figs 7-19. 7-14, *Brevitobilus stefanskii*; 15-19, *B. graciloides*. 7, 8, tail of female; 9, 15, diatoms in intestine; 10-14, 16-19, variability of position of subterminal setae. Specimens from Biwa Lake, Japan (7), Singapore (8), Oka River (9), Balkhash Lake, Kazakhstan (10), Kama River (11), Viatka River (12), Khrami River, Georgia (13), Azerbaijan (moist soil) (14), Bishoftu Lake, Ethiopia (after the slide of I.N. Filipjev, 1929) (15), Chamo Lake, Ethiopia (16, 19), Zwai Lake, Ethiopia (17, 18). Scales: 20 μ m.

Brevitobilus stefanskii is a widespread polymorphic species. *B. malayanus*, *B. vibratus* and *B. montanus* are synonyms of *B. stefanskii*. Simultaneously with the new species *Trilobus stefanskii*, a variety (subsequently subspecies) *T. s. paludicola* was described (Micoletzky, 1925). This variety was collected in a marsh, whereas the typical form was collected in a lake. *T. s. paludicola* differs from the typical form (according to the original description) mainly in the length of body: σ (n = 4) L =

1680-1860 (1780) μ m vs σ (n = 10) L = 1520-1660 (1570) μ m. Besides, *T. s. paludicola* has no subterminal seta. Subsequently, Filipjev (1928) raised this subspecies to a species; he discovered in Oka River together with the typical form two longer males: σ (n = 2) L = 1700-1900 μ m vs. σ (n = 7) L = 1520-1650 μ m. After examination of the type material, Andrassy (1971) indicated that *T. stefanskii* and *T. paludicola* are synonyms. *B. montanus* (Ocaña

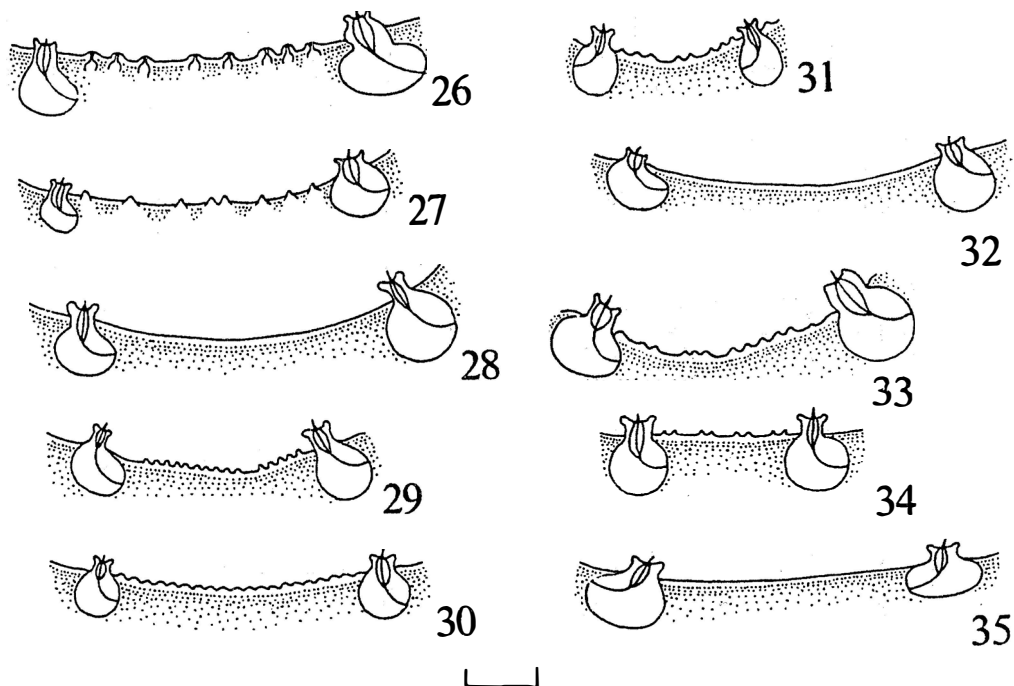


Figs 20-25. *Brevitobilus stefanskii*: 20, 22, caudal-genital section of male; 21, spicules and gubernaculum; 23, supplement; 24, vagina; 25, vulva. Specimens from Biwa Lake, Japan (20, 21), Singapore (22-24), Kama River (25). Scales: 10 μ m.

et al., 1996) is also not different from *B. stefanskii*, though distinguished in the original description by the body length: σ ($n = 18$) $L = 1300-1900$ (1600 ± 200) μ m (the indicated standard error ± 200 μ m is in fact the standard deviation, (SD); the actual standard error (mM), calculated by the formula $mM = SD/\sqrt{n}$, equals $200/\sqrt{18} = 47$ μ m). For all the other synonyms, no comments is needed. These comments have

been partly published (Tsalolikhin, 1983, 1992). Probably, the body length depends on environmental conditions of development. Favourable conditions may accelerate the early growth of nematodes.

All species of the genus *Brevitobilus* can be subdivided into two groups: (A) the distance from the first supplement to the cloaca equal or exceeding the length of spicule, and (B) the first supplement located close to the cloaca, the



Figs 26-35. Variability of micropapillae (transverse cuticular incisures by Eyualem & Coomans, 1997) between supplements I and II. **26-32**, *Brevitobrilus stefanskii*; **33-35**, *B. graciloides*. Specimens from Viatka River (26), Krasnodar Terr. (moist soil) (27), Khrami River, Georgia (28), Azerbaijan (moist soil) (29), Kama River (30), Singapore (31), Oka River (32), Zwai Lake, Ethiopia (33), Chamo Lake, Ethiopia (34, 35). Scale: 10 μ m.

distance between them being markedly less than the length of the spicule. In addition, the distance between 3rd and 4th supplements is greater in species of the group B. The group A (*stefanskii*-group) includes *B. stefanskii* and *B. graciloides*, the group B (*findeneggi*-group) includes *B. findeneggi*, *B. granatensis*, *B. keniensis*, *B. fesehai*, *B. tsalolikhini*.

Below are given an updated diagnosis of the genus *Brevitobrilus*, a key to species and a short description of a population of *B. stefanskii* from Biwa Lake, Japan, statistical tables (Tables 1-3) and comparative drawings of species of the genus *Brevitobrilus* (Figs 1-35).

***Brevitobrilus* Tsalolikhin, 1981**

Type species: Trilobus stefanskii Micoletzky, 1925.

Diagnosis. Small Tobilidae, average length of body about 1.5 mm. Cuticle smooth, or finely annulated, or with longitudinal ridges. Head width about one-third of maximum body width. Cephalic setae short, not more than 25% of head width. Stoma with two pockets situated one behind the other; buccal cavity goblet-shaped, distinctly separated from anterior

pocket; posterior pocket separated from anterior pocket by narrow duct; each pocket with one fairly massive onchus. Amphids opening at the level of the anterior pocket. Female genital system weakly differentiated; vulva transverse, slightly pre-equatorial; vagina narrow, weakly muscular. Male genital system: two testes with small spermia; vas deferens wide and long, ductus ejaculatorius muscular; spicules short (usually 2.5% of body length of male) and rather wide. Supplements well developed, with stretched neck and central thorn; microthorns absent. Supplements 6; all supplements equal or almost equal, sometimes 1st supplement smaller than the others; in some species, distances between supplements subequal; some species have marked "0-supplement".

Biology. Species of this genus occur in muddy and mud-sandy grounds of freshwater lakes, rivers and brooks, more rarely in brackish waters and moist soils. Intestine of some specimens contains diatoms (Figs 9, 10).

Distribution: the Palearctic, Afrotropical and Indomalayan biogeographic regions.

Comments. The genus *Brevitobrilus* belongs to the higher tobrilids. The division of the ge-

Table 1. Some characteristics of males of *Brevitobilus stefanskii*

Locality, number of specimens	Statistical index	Body length, μm	De Man's formula			Body sizes, μm				
			a	b	c	oesophagus	trophico- genital part	tail	cephalic diameter	distance between onchia
Kama River (n=19)	lim	1103-1640	25-37	4.6-6.6	8.4-14.2	195-268	733-1254	98-145	17-24	7-11
	M \pm m	1301 \pm 32	30 \pm 1	5.5 \pm 0.1	11.1 \pm 0.4	237 \pm 5	945 \pm 31	118 \pm 3	21 \pm 1	9 \pm 0.5
	SD	142	3	0.6	1.8	21	135	13	2.5	1.5
	CV%	11	11	11	16	9	14	11	12	15
Oka River (n=9)	lim	1437-1668	28-35	5.9-6.8	12-16.8	230-265	1073-1317	95-120	17-20	8-11
	M \pm m	1563 \pm 27	32 \pm 1	6.4 \pm 0.2	13.8 \pm 0.5	245 \pm 4	1219 \pm 27	115 \pm 3	19	9
	SD	82	2	0.3	1.7	11	80	9	—	—
	CV%	5	7	5	14	5	7	8	—	—
Mongolia (n=18)	lim	1041-1652	28.1-43.5	4.4-6.1	8.3-15	197-284	719-1250	93-134	22-26	9-10
	M \pm m	1350 \pm 37	33.1 \pm 1	5.4 \pm 0.1	11.8 \pm 0.1	254 \pm 5	980 \pm 33	115 \pm 3	24 \pm 1	9.5 \pm 0.5
	SD	155	4.3	0.6	1.6	23	142	12	2	0.5
	CV%	12	13	11	14	9	14	11	7	5
Biwa Lake, Japan (n=6)	lim	1243-1492	33-46	5-5.8	12.8-14.6	240-280	902-1110	97-103	15-17	9-10
	M \pm m	1374 \pm 36	40.3 \pm 3	5.4 \pm 0.1	13.8 \pm 0.3	253 \pm 6	1021 \pm 33	99 \pm 1	16	9.5
	SD	89	6	0.4	0.7	15	82	3	—	—
	CV%	6	16	7	5	6	8	3	—	—
Indonesia (n=3), after Schneider 1938	lim	1000-1140	24.6-36.5	4.9-7.6	9.3-13.9	—	—	—	—	—
	M	—	—	—	—	~170	~810	~90	—	—
Singapore		1123	21.1	5.4	11.1	207	815	101	19	9
Chukotka		1136	23.7	5	9.2	227	785	124	19	10
Caucasus (n=4)	lim	1109-1491	23.3-42.6	5.2-6.6	11.2-15.4	207-224	805-1170	97-105	15-18	8-13
	M	1247	34.5	5.8	12.5	215	933	100	17	10
Viatka River, Kama basin		1926	30.6	7.2	13.2	268	1512	146	22	11
Spain (n=18), after Ocaña & al., 1996*	lim	1300-1900	24.7-41.1	4.8-6.6	10-17.9	262-341	—	—	24-30	9-11
	M \pm m	1600 \pm 47	33 \pm 1.5	5.7 \pm 0.1	13.5 \pm 0.5	290 \pm 7	1191	119 \pm 2	—	—
	SD	200	6.2	0.5	2.1	29	—	10	—	—
	CV%	12.5	19	9	16	10	—	8	—	—
Denmark (n=10), after Micoletzky, 1925*	lim	1060-1380	25-33.5	4.8-6	9.2-10.4	—	—	—	—	—
	M \pm m	1270 \pm 34	30.1 \pm 1	5.4 \pm 0.1	9.7 \pm 0.1	~235	~905	~130	—	—
	SD	107	2.2	0.4	0.4	—	—	—	—	—
	CV%	3	7	7	4	—	—	—	—	—

* Statistical indices are recount.

Table 2. Some characteristics of females of *Brevitobilus stefanskii*

Locality, number of specimens	Statistical index	Body length, μm	De Man's formula				Body sizes, μm			
			a	b	c	V, %	oesophagus	trophico-genital part		tail
								to vulva	over vulva	
Kama River (n=18)	lim	1233-1675	22.8-34.6	4.6-6	7-9.8	41-54	230-320	315-539	490-780	156-195
	M \pm m	1447 \pm 31	29.2 \pm 0.9	5.4 \pm 0.1	8.3 \pm 0.2	46 \pm 0.7	267 \pm 6	403 \pm 15	604 \pm 17	173 \pm 2
	SD	133	3.7	0.4	0.7	3	25	65	73	10
	CV%	9	13	7	9	7	9	16	12	6
Oka River (n=6)	lim	1490-2025	24-32.1	4.8-7.2	8.4-10.4	43-48	250-310	414-536	733-1015	155-195
	M \pm m	1716 \pm 77	29 \pm 1.5	6.4 \pm 0.3	9.6 \pm 0.3	44 \pm 1	269 \pm 9	478 \pm 19	790 \pm 60	180 \pm 7
	SD	190	3.6	0.8	0.8	2	23	47	139	18
	CV%	11	12	13	9	6	8	10	18	10
Mongolia (n=12)	lim	1253-1493	21.4-27.6	4.8-6.1	6.7-8.8	40-45	221-271	287-375	530-656	145-222
	M \pm m	1327 \pm 20	25.6 \pm 1	5.5 \pm 0.1	8 \pm 0.2	43 \pm 0.5	240 \pm 4	327 \pm 7	595 \pm 12	166 \pm 6
	SD	71	3	0.4	0.6	2	14	25	42	21
	CV%	5	13	7	7	4	6	8	7	13
Biwa Lake, Japan (n=4)	lim	1310-1665	23.8-36	4.8-6	9.8-10.9	42-44	268-278	290-385	630-690	120 \pm 170
	M	1474	30	5.4	10.3	43	273	340	667	143
Indonesia (n=3), after Schneider, 1938	lim	1250-1560	22.2-31	4.3-7.5	6.1-11.9	39-49	—	—	—	—
	M	—	—	—	—	—	~237	—	—	~155
Singapore (n=2)	lim	1086-1342	20.6-22.6	4.9-5.8	7.2	41-46	220-230	277-317	440-610	149-185
Chukotka (n=3)	lim	1449-1533	25.5-28.2	5.6-5.7	7.4-8.8	39-45	254-270	317-414	654-684	167-195
	M	1483	26.5	—	8	42	263	361	670	186
Caucasus (n=2)	lim	1400-1454	35-39.3	5.7-6	9.6-9.7	44	232-254	390	632-660	146-150
Spain (n=17), after Ocaña & al., 1996*	lim	1300-1800	23.2-33.5	4.6-5.8	7.9-10.4	39-48	—	—	—	148-205
	M \pm m	1600 \pm 48	28.5 \pm 0.7	5.2 \pm 0.1	9.1 \pm 0.2	43 \pm 0.5	~308	~390	~720	180 \pm 5
	SD	200	2.9	0.4	0.7	2.3	—	—	—	19
	CV%	12.5	10	8	8	5	—	—	—	10
Denmark (n=5) (n=10)**, after Micoletzky, 1925*	lim	1520-1660	25-29	5.6-6.1	6.9-8.4	43-48	—	—	—	—
	M	1570	27	5.5	7.9	46	~285	~480	~600	~200
	lim	1580-1800	24.5-29.5	5.2-6.2	8.5-12.7	39-46	—	—	—	—
	M	1680	26.7	6	9.8	43	~280	~440	~790	~170

* Statistical indices are recount, ** *Trilobus stefanskii* var. *pahudicola*.

Table 3. Characteristics of the male genital apparatus in species of the genus *Brevitobrius*

Locality, number of specimens	Statistical index	Length of supplement row, μm	Length of spicula, μm	Length of spicula/length of body, % (Sp/L)	Length of spicula/length of supplement row, %	Distance between supplements/length of supplement row, %					
						cloaca-I	I-II	II-III	III-IV	IV-V	V-VI
<i>B. stefanskii</i>											
Kama River (n=19)	lim	157-254	30-40								
	M \pm m, M	191 \pm 8	34	2.5	18	16	19	15	15	15	20
	min*	157	34	3	22	18	17	17	14	14	20
	max**	254	35	3	14	13	20	16	16	16	19
Oka River (n=9)	lim	179-234	30-34								
	M \pm m, M	196 \pm 7	32	2	16	17	19	16	16	14	18
	min	179	34	2	19	16	19	19	16	13	17
	max	234	32	2	14	16	20	15	17	15	17
Mongolia (n=18)	lim	130-209	31-36								
	M \pm m, M	164 \pm 6	32	2.5	19	19	18	15	15	15	18
	min	130	32	2.5	25	18	18	16	14	14	20
	max	209	34	2	16	16	14	14	20	18	18
Biwa Lake, Japan (n=6)	lim	172-199	26-30								
	M \pm m, M	186 \pm 5	28	2	15	15	24	14	17	13	17
Indonesia (n=3), after Schneider, 1938	lim	112-178	28-32	3	22	18	23	13	13	14	19
Singapore		117	26	2	22	20	16	14	16	14	20
Chukotka		234	35	3	15	17	17	17	15	18	16
Caucasus (n=4)	lim	165-192	27-29								
	M \pm m, M	186	28	2	15	15	19	19	15	15	17
Viatka River, Kama basin	M	238	35	2	13	19	18	16	16	14	16
Spain (n=16), after Ocaña & al., 1996	lim	28-38	28-38								
	M \pm m, M	216	34	2	16	15	22	15	16	13	19
Denmark (n=3), after Micoletzky, 1925	M	220	35	3	16	18	20	15	15	15	16
<i>B. graciloides</i>											
Chamo Lake, Africa (n=12), after Tsalolikhin, 1995	lim	130-199	32-39								
	M \pm m, M	164 \pm 6	34	2.5	21	19	19	16	16	12	18
	min	130	33	2	25	20	20	15	15	11	18
	max	199	36	3	18	17	23	14	17	12	17

Table 3. Continued

Locality, number of specimens	Statistical index	Length of supplements row, μm	Length of spicula, μm	Length of spicula/length of body, % (Sp/L)	Length of spicula/length of supplement row, %	Distance between supplements/length of supplement row, %					
						cloaca-I	I-II	II-III	III-IV	IV-V	V-VI
<i>B. keniensis</i>											
East Africa, after Tsalolikhin, 1992		194	48	3	25	10	26	15	17	15	17
<i>B. granatensis</i>											
Spain (n=18), after Ocaña & Zullini, 1988	lim M	251	32-46 39	2	16	6	14	14	28	19	19
Sicily (n=12), after Vinciguerra & Zullini, 1991	lim M	263	40-46 43	2	16	6	17	14	28	17	18
<i>B. findeneggi</i>											
Austria, after Schiemer, 1971		231	26	2	11	6	22	15	23	15	19
Sardinia (n=5), after Vinciguerra & Zullini, 1991	lim M	183	23-31 27	2	15	6	16	16	22	20	20
<i>B. fesehai</i>											
Tana Lake, Africa (n=8), after Eyualet & Coomans, 1997	M	188	44	4	23	16	22	14	15	16	16
<i>B. tsalolikhini</i>											
Tana Lake, Africa (n=4), after Eyualet & Coomans, 1997	M	200	34	3	17	7	19	14	24	18	17

* min – in specimen with shortest supplement row, ** max – in specimen with longest supplement row.

nus into two groups of species demonstrates one of the principal evolutionary trends in tobrilids, that is perfection of the male supplementary apparatus. In the *findeneggi*-group, reduction and displacement of the 1st supplement to cloaca is observed. Probably, this is correlated with low functional activity of the 1st supplement. Besides, the distance between 3rd and 4th supplements is increasing. So, formation of characters of the genus *Neotobilus*, the most advanced among tobrilids, takes place. The absence of the genus *Brevitobilus* in the New World is attributed to its relatively young phylogenetic age. The genus was spreading throughout all Eurasia from the center of origin which, most probably, was situated in East Africa (Tsalolikhin, 1983), but the absence of land ("freshwater") bridges impeded its spreading to the American continent.

Key to species of the genus *Brevitobilus* (males)

- 1(10). Spicule much longer than distance between cloaca and 1st supplement.
- 2(5). Distance between cloaca and 1st supplement more than 9% of total length of supplementary row.
- 3(4). No more than 10 micropapillae outside of supplementary row **B. keniensis** Tsalolikhin, 1992 (syn.: *Trilobus graciloides* sensu Allgen, 1952: 143; *Tobilus graciloides* sensu Andr ssy, 1964: 13). East Africa (Tsalolikhin, 1992).
- 4(3). No less than 40 micropapillae outside of supplementary row **B. fesehai** Eyualem & Coomans, 1997 East Africa (Eyualem & Coomans, 1997).
- 5(2). Distance between cloaca and 1st supplement less than 8% of total length of supplementary row.
- 6(7). Sphincter between vas deferens and ductus ejaculatorius situated within the supplementary row (between 4th and 5th supplement) **B. granatensis** (Ocaña & Zullini, 1988) (syn.: *Tobilus siculus* Vinciguerra & Zullini, 1991: 269; *Tobilus stefanskii* sensu Joubert & Heyns, 1979: 20; *Tobilus graciloides* sensu Vinciguerra, 1972a: 21). Spain (Ocaña & Zullini, 1988); Sicily (Vinciguerra & Zullini, 1991); South Africa (Joubert & Heyns, 1979).
- 7(6). Sphincter between vas deferens and ductus ejaculatorius situated outside the supplementary row.
- 8(9). Length of spicule 26 μm ; length of cephalic setae 3 μm **B. findeneggi** (Schiemer, 1971) (syn.: *Tobilus sardus* Vinciguerra & Zullini, 1991: 270, syn. n.). Austria (Schiemer, 1971); Sardinia (Vinciguerra & Zullini, 1991).
- 9(8). Length of spicule 30-35 μm ; length of cephalic setae 5-7 μm **B. tsalolikhini** Eyualem & Coomans, 1997 East Africa (Eyualem & Coomans, 1997).
- 10(1). Length of spicule subequal to distance between cloaca and 1st supplement.
- 11(12). Ductus ejaculatorius approximately 1.5 times as long as supplementary row **B. graciloides** (Daday, 1908) (syn.: *Tobilus africanus* Zullini, 1988: 283). East Africa (Tsalolikhin, 1992).
- 12(11). Ductus ejaculatorius slightly longer than supplementary row . . . **B. stefanskii** (Micoletzky, 1925) (syn.: *Trilobus stefanskii* Micoletzky, 1925: 142; *Trilobus stefanskii* var. *paludicola* Micoletzky, 1925: 143; *Trilobus paludicola* Filipjev, 1928: 97; *Trilobus stefanskii stenurus* Filipjev, 1929: 690; *Trilobus grandipapillatus* sensu Ditlevsen, 1921: 65; *Trilobus malayanus* Schneider, 1937: 43, syn. n.; *Trilobus gracilis consimilis* Schneider, 1939: 66; *Tobilus vibratus* Sukul, 1967: 113, syn. n.; *Tobilus allophysis* sensu Vinciguerra, 1972b: 5; *Brevitobilus montanus* Ocaña, Hernandez & Martin, 1996: 190, syn. n.). Europe: from Scandinavia (Allgen, 1925; Micoletzky, 1925) to Spain (Ocaña et al., 1996), Italy (Zullini, 1982), the Caucasus (new record), east to the Urals (Presnova, 1995). Asia: from Taimyr peninsula (Gagarin, 1990) to Mongolia (Tsalolikhin, 1985), India (Sukul, 1967), Indonesia (Schneider, 1937), Singapore (new record), east to Chukotka Peninsula (new record), Khanka Lake (Alekseev & Dizendorf, 1981) and Japan (new record).

Brevitobilus stefanskii (Micoletzky, 1925)

(Figs 1-5, 7, 20, 21)

Material. Japan: 6 σ , 4 φ , 4 juv., Biwa Lake, sand, depth 0.2-3 m, June-August 1996 (O.A. Timoshkin).

Description. For measurements see Tables 1-3.

Cuticle with longitudinal ridges and numerous somatic setae on the level of oesophagus. Head 15-20 μm wide; length of cephalic setae 3-4 in females and 5 μm in males. Total depth of stoma (buccal cavity + pockets) 22-26 μm ; width of buccal cavity 8-10 μm ; distance between tops of onchia 8-10 μm . Amphids poorly visible, situated on the level of basis of anterior pocket; diameter of amphid aperture about 5 μm . Musculature of oesophagus on the stoma level very powerful. Cardial glands large; cardium hemispherical. NR = 38-41%.

Female reproductive system poorly developed; eggs absent. Vulva transverse, 12 μm wide; depth of vagina 14 μm . Testes contain small spermia; $T_1 = 107-130 \mu\text{m}$, $T_2 = 140 \mu\text{m}$. Ductus ejaculatorius muscular, 190-200 μm long. Supplements 6, subequal: diameter of ampulla 8-10 μm , height 8-10 μm . Two males have intersupplementary micropapillae, the other males have smooth cuticle between supplements. Spicules massive; gubernaculum 15-18 μm long.

Tail of male with numerous setae; regular subterminal setae absent. Tail of female longer, with shorter, delicate, less numerous setae.

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