

**A new species of the chigger mite genus *Leptotrombidium*  
Nagayoi et al. (Acariformes, Trombiculidae)  
from Inner Tien Shan Mts.**

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Material used in the present study was collected from a tolai hare, *Lepus (Proeulagus) tolai* (Pallas, 1775). Types are deposited in the collection of Institute for Biology & Pedology, National Academy of Sciences (Bishkek). All measurements are given in micrometres (mcm).

***Leptotrombidium tolaicum* sp. n. (Figs. 1, 2)**

**Diagnosis.** SIF = 7B-B-3-2.1.1.1-0.0.0.0; fPp = N-N-B.N.N; fPp = 7.7.7; Cxf = 1.1.1; fst = 2.2; (ST, pST, PT', PT'') = N; fSc = PL > AM > AL; fD = 2H.10-12.8-9.7-8.4-6.2-4.2 = 39 (37-41); fV = 38 (36-42); NDV = 77 (70-79).

**Idiosoma.** Long-oval in shape in full specimens, with distinct anterior-lateral shoulder corners. Length 352 (233-471), width 284 (193-376). Dorsal setae form regular rows, ventral ones irregularly located. Length of I pair of sternal setae - 53, length of II pair - 42. Distance between single setae forming a pair: 40 and 60, respectively. Dimensions of anus: 29 × 17.

**Gnathosoma.** Length of distal cheliceral segment 35, width 9. Length of gnathocoxal setae 30, ditto for filament-covered galeal setae 32.

**Dorsal scutum.** Nearly rectangular, lower margin arched, lateral margins concave. Anterior margin with flexures directed inward scutum at level of sensillae. Scutum with moderately dense pitlike punctures absent on anterior and lower margins. SB located slightly over PL. Sensillae covered with 13-15 thin filaments. Diameter of bothridia 9. Paired oculi located on ocular plate, diameters of upper and lower oculi 13 and 11, respectively.

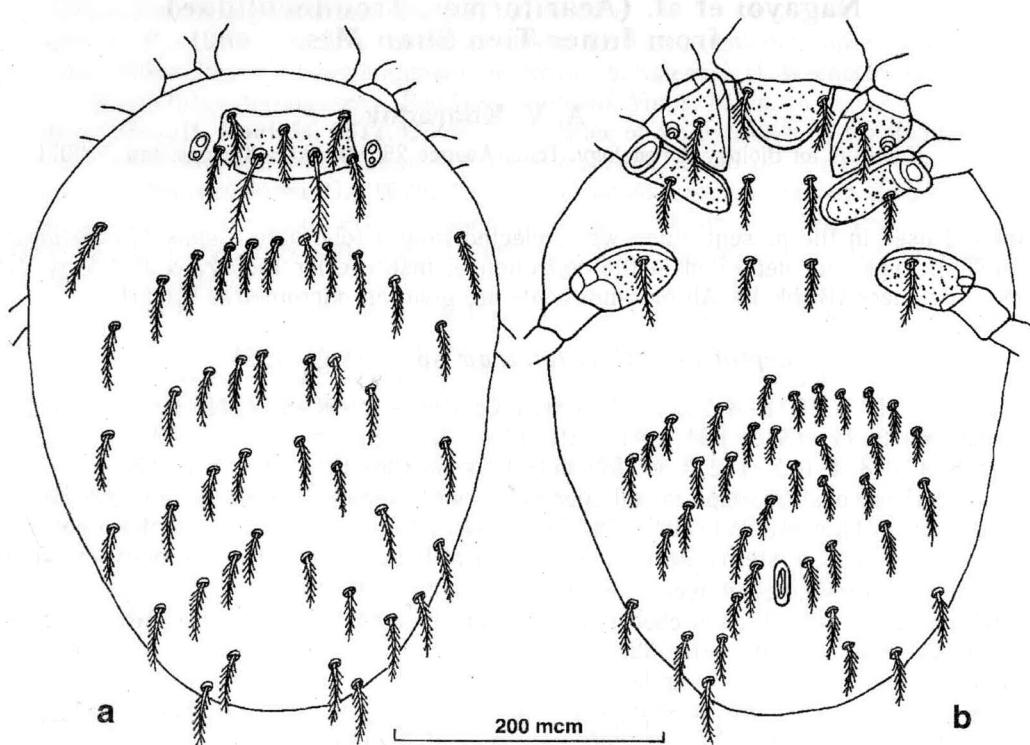
**Legs.** Length of setae on coxae I, II, III = 56, 44, 59, respectively. Length of specialized setae: S<sub>1</sub> = 18; S<sub>2</sub> = 17; ga, gm = 13; gp = 14; tp = 12. Dimensions of tarsus III: 82 × 17.

**Table 1.** Standardized measurements of *L. tolaicum*.

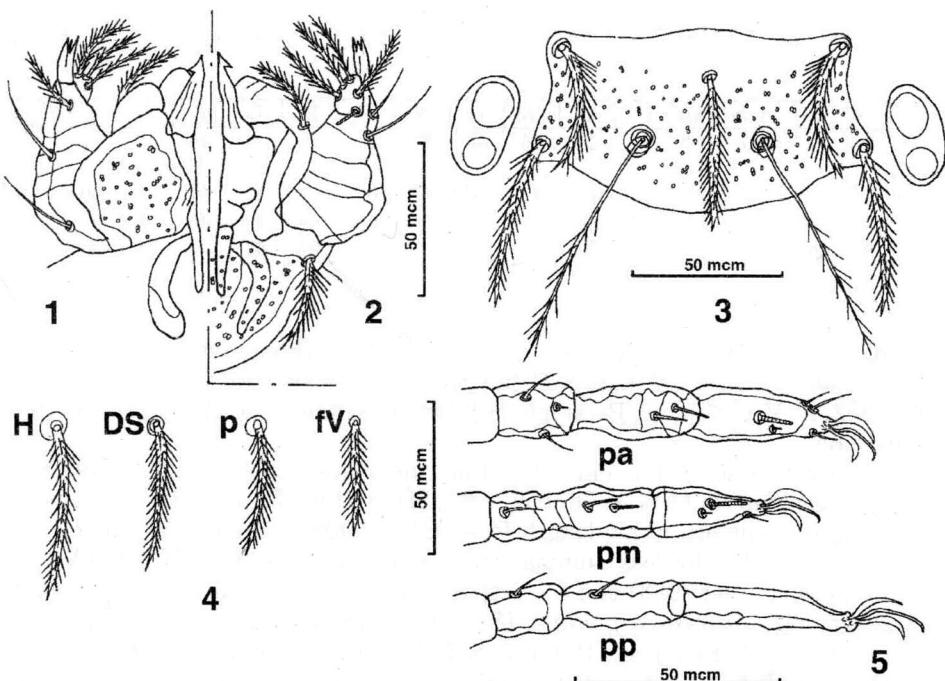
	AW	PW	SB	ASB	PSB	SD	AP	AM	AL	PL	S	H	D	P	V	pa	pm	pp	Ip
Holotype	80	90	37	33	19	52	29	44	44	51	71	58	44	46	37	305	277	325	907
Paratypes (n = 9)																			
Minimal	73	88	34	29	17	50	29	41	42	48	68	51	37	41	31	304	275	316	901
Maximal	80	80	39	33	23	59	33	49	48	56	76	59	49	46	46	313	287	325	926
Average	78	92	37	32	20	52	30	44	44	52	71	54	43	43	38	309	283	323	921

**Types.** Holotype - immature specimen, sample no. 220 (15); loc. typ. - Kyrgyzstan: Inner Tien Shan, Kotchkor Valley, Zhar-Tash, Kara-Kudzhur riverside, rocky screes at 2300 m., on *Lepus tolai* Pallas, 17.09. 1992, A. V. Kharadov. Paratypes - 9 larvae; samples no. 220 (1, 8, 13, 16, 18) with the same collecting data.

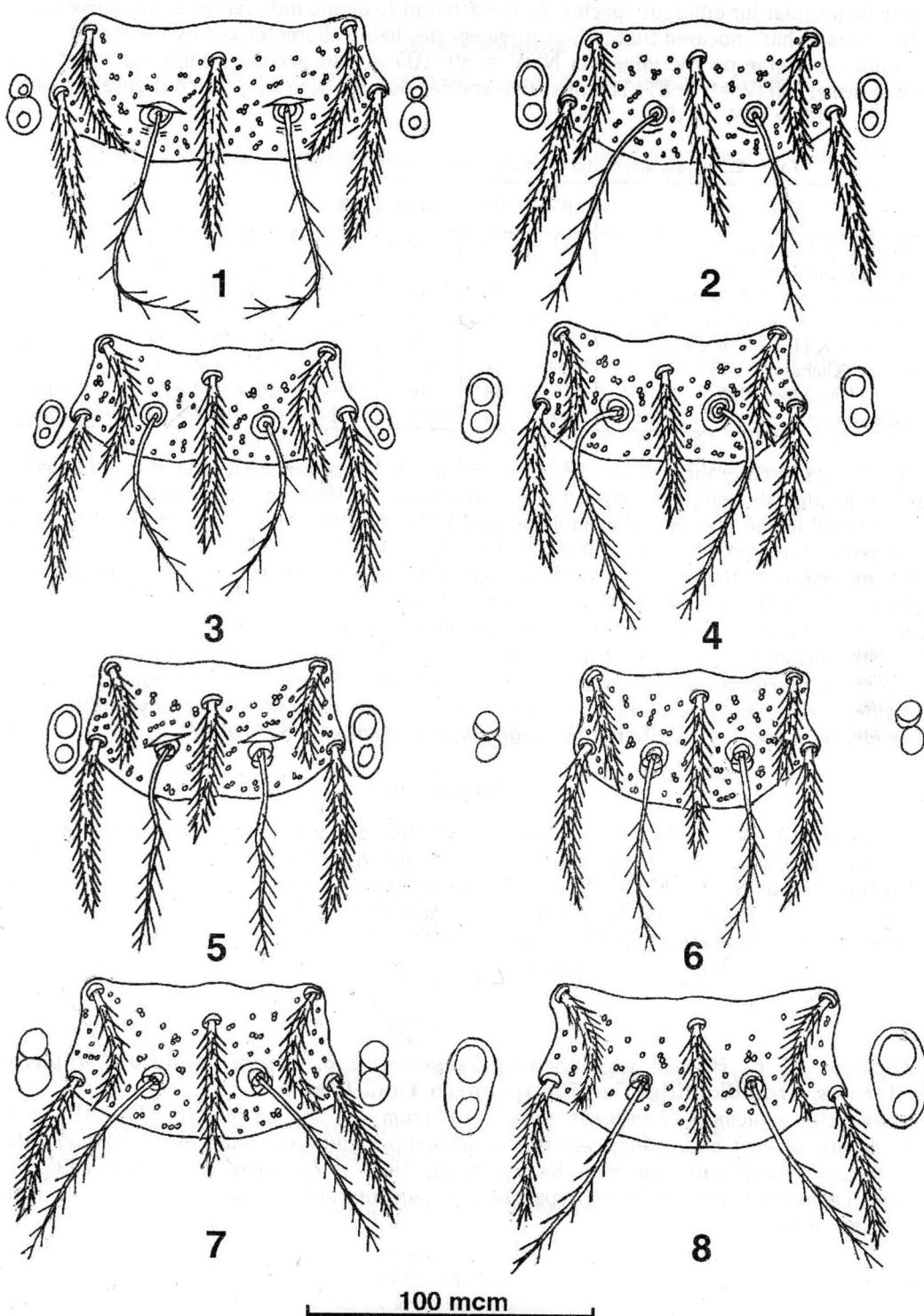
**Notes.** The species described herein differs from the nearest congener, *L. sorosi* Kharadov, 1995 by the distinctly larger scutum (AW = 78, PW = 92, SD = 52 vs. 73, 87, 48, respectively, and also by the larger meaning of summarized leg length Ip = 921 vs. 902 in the last species. It differs from *L. apertum* Kudryashova, 1979 by less summarized leg length Ip = 921 (901-926) and more short sensillae S = 71 vs. 953 (918-988) and 81, respectively. *L. sorosi* was occurred in Inner Tien-Shan feeding on a silver vole, *Alticola argentata* (Severtzov, 1879) and on a grey hamster, *Cricetus migratorius* (Pallas, 1775) (Kharadov, 1995). *L. apertum* was found in Western Pamirs on the same hosts (Kudryashova, 1979). A shape of the dorsal scutum in *L. tolaicum* by configuration of the area around setae PL resembles that in the representatives of the genus *Montivagum*. However, formula of palpal tarsus, fPp = N-N-B.N.N, appears to be a more important diagnostic character confirming a correct placement of this species in the genus *Leptotrombidium*.



**Fig. 1.** *Leptotrombidium tolaicum* Kharadov, sp.n.: a – idiosoma, dorsal view; b – ditto, ventral view.



**Fig. 2.** *Leptotrombidium tolaicum* Kharadov, sp.n.: 1 – gnathosoma, dorsal view; 2 – ditto, ventral view; 3 – dorsal scutum; 4 – setae; 5 – legs.



**Fig. 3.** Dorsal scutum of *Leptotrombidium* spp.: 1 - *L. bicoxalis*; 2 - *L. volandi*; 3 - *L. Schlugerae*; 4 - *L. smirnovi*; 5 - *L. derlatkoi*; 6 - *L. auritus*; 7 - *L. sorosi*; 8 - *L. tolaicum*.

Certain diagnostic features of *Leptotrombidium* spp. distributed in Kyrgyzstan are shown in Table 2. The length of setae on the dorsal scutum and also number of setae located on the idiosoma are known to be peculiar for different species. At the attempt to define mite larvae using these characters as definitive ones, it has appeared that in first three species being characterized by fSc = AM > PL > AL, a large number of setae on the idiosoma NDV = 89–105 is also peculiar, while for other species this number is lesser: NDV = 74–81. The next five species possess also another configuration of the dorsal scutum fSc = PL > AM > AL.

**Table 2.** Certain diagnostic characters of *Leptotrombidium* spp. registered in Kyrgyzstan.

Species	fD	fV	NDV	fCx	fSc	Lower margin of dorsal scutum
<i>L. bicoxalis</i> Kharadov, 1995	55	50	105	1.1.2	AM > PL > AL	concave
<i>L. volandi</i> Kudryashova, 1979	52	47	99	1.1.1	AM > PL > AL	concave
<i>L. schlugerae</i> (Emel. & Gorb., 1960)	47	42	89	1.1.1	AM > PL > AL	concave
<i>L. smirnovi</i> Kudr. & Rybin, 1974	38	41	79	1.1.1	PL > AM > AL	concave
<i>L. derlatkoi</i> Kudryashova, 1979	38	36	74	1.1.1	PL > AM > AL	concave
<i>L. auritus</i> Kharadov, 1995	40	41	81	1.1.1	PL > AM > AL	convex
<i>L. sorosi</i> Kharadov, 1995	38	38	76	1.1.1	PL > AM > AL	convex
<i>L. tolaicum</i> , sp. n.	39	38	77	1.1.1	PL > AM > AL	convex

To delimit correctly the species of *Leptotrombidium*, Vercammen-Grandjean and Langston (1976) prepared drawings showing a shape of the dorsal scutum in different congeners. The similar original figures included in the present paper indicate that in the first five species the lower edge of scutum is concave and in the next three ones this structure is convex.

By the results of the character analysis, the mite species reviewed are provisionally divided into two groups. The first one includes the species in which the lower margin of dorsal scutum is concave, namely – *L. bicoxalis*, *L. volandi* and *L. schlugerae*. The species *L. auritus*, *L. sorosi* and *L. tolaicum* in which the lower margin of scutum is convex form the second group. The last two species, *L. smirnovi* and *L. derlatkoi* occupy an intermediate position between first and second groups. The study of characters surveyed has allowed to use them for the compilation of key table proposed for *Leptotrombidium* species distributed in Kyrgyzstan (see: Kharadov, 1995).

### References

- Kharadov A. V., 1995.** New occurrence of the chigger mite genus *Leptotrombidium* in Tadzhikistan (Trombiculidae). *Parasitol.*, v. 13, n. 5, pp. 488–496 (in Russian).
- Kudryashova N. I., 1979.** New species and new occurrence of the chigger mite genus *Leptotrombidium* in Tadzhikistan (Trombiculidae). *Parasitol.*, v. 13, n. 5, pp. 488–496 (in Russian).
- Vercammen-Grandjean P. H. & Langston R., 1976.** The chigger mites of the world. Vol. III. *Leptotrombidium* complex. San Francisco: G. V. Hooper Foundation, Univ. California, 1061 p.

### Резюме

**Харадов А. В. Новый вид клеща-краснотелки р. *Leptotrombidium Nagayoi* et al. (Acariformes, Trombiculidae) из Внутреннего Тянь-Шаня.**

Приведено описание *Leptotrombidium tolaicum* sp. n. из Внутр. Тянь-Шаня (дол. р. Кара-Куджур). Новый вид, обнаруженный паразитирующим на зайце-толае (*Lepus tolai* Pall.), близок к *Leptotrombidium apertum* Kudryashova, 1979 и *L. sorosi* Kharadov, 1995. В работе помещена сравнительная таблица, отражающая ряд диагностических признаков 8 видов рода фауны Киргизстана.