

# A New Species of Chigger Mites, *Aboriginesia akimovi* sp. n. (Acariformes: Trombiculidae) from Kyrgyzstan

Alexander V. Kharadov, Tolgonay T. Mamutbekova, Burulsun K. Akyshova

Biology and Soil Institute, National Academy of Sciences of the Kyrgyz Republic, 265 Chui Avenue, Bishkek 720071, Kyrgyz Republic; E-mail: alex-kh53@mail.ru

**Abstract:** The chigger mite *Aboriginesia akimovi* sp. n. is described. It was found in samples from Silver Mountain Vole *Alticola argentata* (Severtzov, 1879) captured in Ala-Archa Ravine (Alexander Mt. R., Northern Tien Shan). A species diagnosis, standard measurements, taxonomic remarks and drawings of the new species are included. A key to the five species of *Aboriginesia* from the Kyrgyz fauna is presented.

**Key words:** chigger mite, new species, *Aboriginesia*, *A. akimovi* sp. n., Northern Tien Shan

## Introduction

Four species of the genus *Aboriginesia* Kudryashova, 1993 were reported from Kyrgyzstan: *Aboriginesia armata* (Schluger, Bibikova, 1959), *A. rais-sae* (Hushcha, Kharadov, 1987), *A. tshatkalica* (Hushcha, Kharadov, 1985) and *A. tokobaevi* (Hushcha, Kharadov, 1987) (see KHARADOV, CHIROV 2006). All they were described from the same region (SHLUGER, BIBIKOVA 1959; HUSHCHA, KHARADOV 1985, 1987). In the fauna of the Eastern Palaearctic, the genus *Aboriginesia* is represented by 14 species (KUDRYASHOVA 1998). A characteristic feature of *Aboriginesia* is the presence of two or four setae PPL. Some authors have supposed that its species are members of the genus *Heaslippia* Ewing, 1944 (see THOR, WILLMANN, 1947) or the genus *Neotrombicula* Hirst, 1915 (see KOLEBINOVA, 1970). However, these taxa are clearly differing at the generic level and they should be considered as distinct genera.

In this article, we provide the description and the differential diagnosis of a newly-discovered species of the genus *Aboriginesia* from Kyrgyzstan.

## Material and Methods

Larva was fed inside the conch of the ear of a silver mountain vole, *Alticola (A.) argentatus* (Severtzov, 1879). The rodent was trapped in Kyrgyz Ridge,

Ala-Archa Gorge, Besh-Sala Mountain Area, on rocky ground overgrown with bushes, located at altitude of 1932 m a. s. l., slide № 201 (43), November 28, 2012. The slide is deposited in the collection of the Laboratory of Ecology and Systematics of Invertebrates, Biology and Soil Institute, National Academy of Sciences of the Kyrgyz Republic (Bishkek).

All measurements in the descriptions are given in micrometres.

## Results

### *Aboriginesia akimovi* sp. n.

Diagnosis: SIF = 7BS-B-3-3.1.1.1-1.0.0.0; Scutum; fPp = B – B – B. B.N; fsp = 7.7.7; fCx = 1.1.1; fSt = 2.2 (ST, Pst, PT<sup>1</sup>; PT<sup>2</sup>) = N; fSc = PPL > PL > AL > AM; fD = 4H.10.15.11.10.6.4 = 60; fV = 46; NDV = 106 (Fig. 1, 2).

Standard measurements: AW = 71, PW = 93, Sb = 32, ASB = 29, PSB = 32, SD = 61, AP = 31, P-PL = 32, AM = 46, AL = 51, PL = 65, PPL = 68, S = 83, H = 82, D = 51 (48-54), P = 49, V = 34 (32-37), pa = 276, pm = 243, pp = 290, lp = 809.

Idiosoma: Body of semi-fed larva with oval-oblong shape. On dorsal side, setae in rows are almost not mixed and it is easy to count them. On ven-

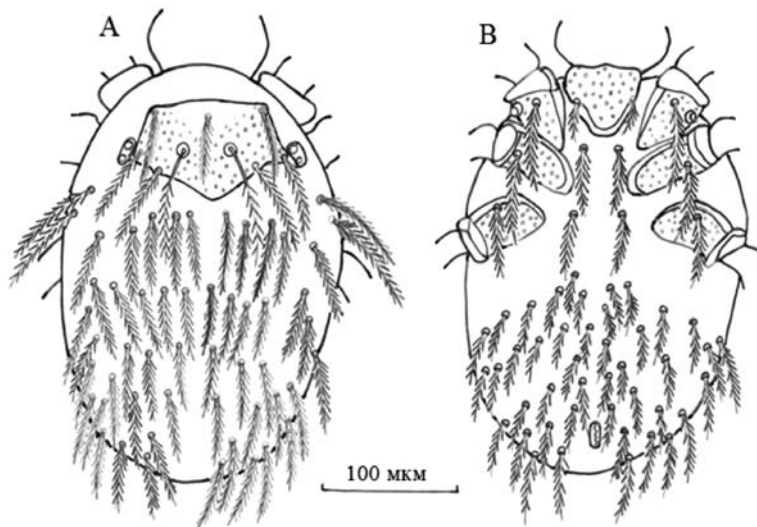


Fig. 1. *Aboriginesia akimovi* sp. n.: Idiosoma: A – dorsal view; B – ventral view

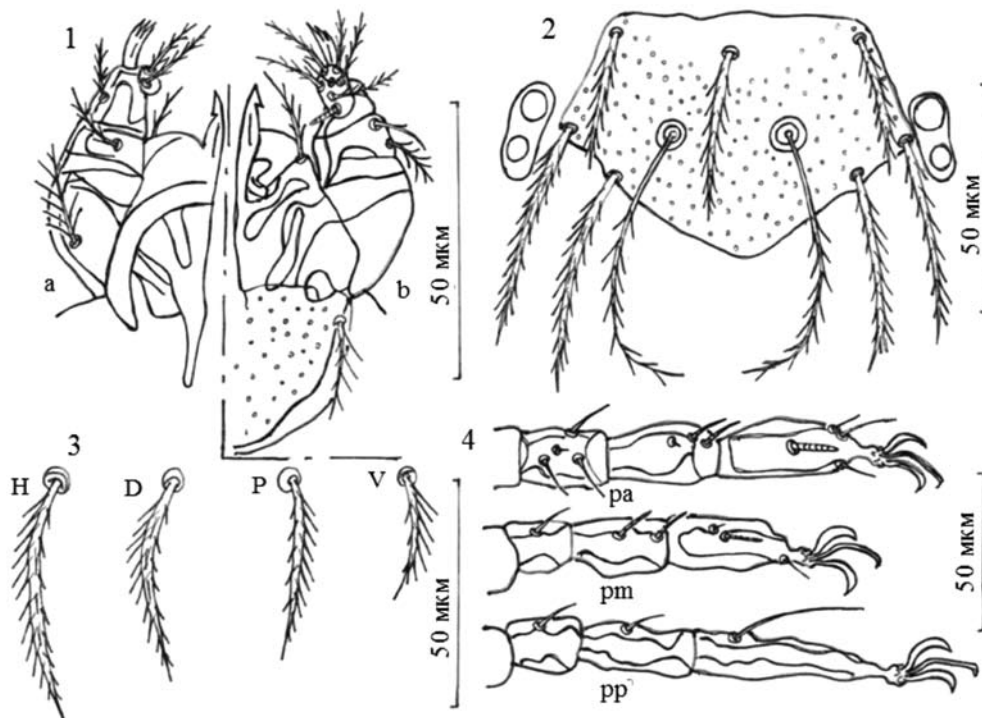


Fig. 2. *Aboriginesia akimovi* sp. n.: 1. – gnathosoma: a) dorsal, b) ventral; 2 – dorsal scutum; 3 – setae; 4 – legs

tral side, it is difficult to count setae in rows since rows are overlapping. Length of idiosoma 225, width 188, ratio 1.0:1.2. Incisure of idiosoma at the level of III coxa, poorly expressed. Length of the first pair of sternal setae 49, second pair 42; distance between them 22 and 34, respectively. Distance between first pair and second pair of sternal setae 42. Size of anus 19 x 6.

Dorsal scutum. Its shape almost pentagonal, with elongate lower edge. Top edge with two deflections between setae AM and AL. Distance between

PL = 93, between PPL = 68, between PL and PPL = 7. Setae AL slightly extended beyond bottom edge of cuirass; setae AM not touching it. SB located at level of PL. Sensilla pubescent, with 15-17 thin cilia. Bothridia with round-elongated shape, with diameter of 10 x 8. Diameter of upper eye 12, of bottom one 8. Length of ocular plate 25.

Gnathosoma. Length of gnathosoma 114, width 85. Dimensions of gnathosoma 59 x 70. Setae of gnathocoxa 34 long. Length of cheliceral claw 37, width 8. Pubescent galeal setae 27 long.

**Table.** Main distinguishing measurements of morphological structures of *A. akimovi* sp. n. from the closely related species (micrometres)

No.	Taxon	PSB	SD	P-PL	AL	PL	PPL	S	H	D	ip
1.	<i>A. akimovi</i> sp.n.	32	61	32	51	65	68	83	82	51	809
2.	<i>A. iberica</i>	19	49	-	45	49	47	63	56	45	892
3.	<i>A. theodori</i>	25	52	22	36	38	38	67	42	32	877
4.	<i>A. tarda</i>	28	52	-	48	57	50	80	60	47	869

Legs. Setae of I coxa 59 long, second 53 long, third 56 long. Length of specialized setae:  $S_1 = 19$ ,  $S_2 = 21$ ,  $ga = 19$ ,  $gm = 13$ ,  $gp = 12$ ,  $tp = 15$ ,  $MT = 57$ . Size of tarsus III 71-20. Ratio of leg length =  $pp > pa > pm$ .

Dorsal scutum, gnathocoxa and coxae (I, II, III) have shallow spot puncture. On dorsal scutum, no puncture around setae AM.

## Discussion

Differential diagnosis. According to its morphological characteristics, *A. akimovi* sp. n. is included into the group “ibericai” named after *A. iberica* (Schluger, 1957). It includes two further species, *A. tarda* (Schluger, 1957) and *A. theodori* (Hushcha, 1986) (SCHLUGER 1957; HUSHCHA 1986). The following characters distinguish *A. akimovi* sp. n. from these two species: smooth (N) setae on tibiotarsus of palps vs. pubescent (B);  $PPL > PL$  vs.  $PL > PPL$ ;  $NDV = 106$  vs. 88, 92 and 122 in *A. iberica*, *A. theodori* and *A. tarda*, respectively. In addition, there are significant differences in measurements of standard morphological structures (Table 1).

The following key to the species of the genus *Aboriginesia* from Kyrgyzstan may be represented:

1 (4). Setae PL arranged outside of dorsal scu-

tum (peniscutum),  $fCx=1.1.2$ ,  $fSt=2.4$ ,  $NDV=132$ .

2 (3). Two humeral setae,  $Ip=1093$  .....

..... ***A. armata***

3 (2). Four humeral setae,  $Ip=1103$  .....

..... ***A. tokobajevi***

4 (1). Setae PPL on dorsal scutum (scutum),  $fCx = 1.1.1$ ,  $fSt = 2.2$ ,  $NDV < 110$ .

5 (6). Two humeral setae,  $Ga=N$ ,  $NDV=62$ ,  $Ip=900$ , .....

..... ***A. raissae***

6 (5). Ventricul setae on tibiotarsus of palps is smooth (N), four humeral setae,  $ga=3$ ,  $Ip=809$ , .....

..... ***A. akimovi* sp. n.**

7 (6). Ventricul setae on tibiotarsus of palps is pubescent (B), two humeral bristles,  $ga=3$ ,  $Ip=1074$

..... ***A. tshatkatica***

Ecology. The larva of *A. akimovi* sp. n. in November was fed inside the conch of silver mountain vole (at the age of more than 7 months), together with other five species belonging to two genera: *Leptotrombidium schlugerae* (2 LL), *L. wolandi* (8 LL), *Neotrombicula georyi* (5 LL), *N. monticola* (153 LL) and *N. sympatrica* (1L). Altogether, 324 mites have been removed from this rodent: 145 in the frill, 170 inside the ear and 9 on the edge of the ear.

Etymology. The new species is named after Igor Andreevich Akimov (Ukraine), in recognition of his contributions in acarology.

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