

A NEW SUBGENUS AND SPECIES OF THE CHIGGER MITE GENUS *NEOTROMBICULA* (ACARI: TROMBICULIDAE)

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SUMMARY: A new subgenus, *Iranotrombicula* n. subgen., is established within the chigger mite genus *Neotrombicula*. One new species, *Neotrombicula (Iranotrombicula) lazistanica* n. sp., is described from rodents collected in NE Turkey.

RÉSUMÉ : Un nouveau sous-genre, *Iranotrombicula* n. subgen., est créé au sein du trombiculidés genre *Neotrombicula*. Une espèce nouvelle, *Neotrombicula (Iranotrombicula) lazistanica* n. sp., trouvée sur des rongeurs de Turquie nord-orientale, est décrite.

The genus *Neotrombicula* Hirst, 1925 has a rather complicated taxonomy. In the last revision of the “*Neotrombicula* complex” (VERCAMPEN-GRANDJEAN & KOLEBINOVA, 1985) it included 11 subgenera and about 200 species. These authors regard as subgenera some taxa previously described as genera, for instance *Hirsutiella* Schluger & Vysotskaya, 1970 and *Hoffmannina* Brennan & Jones, 1959. Several subgenera were based on only one character: thus, *Arctrombicula* Vercammen-Grandjean & Kolebinova, 1985 is characterized by branched galeala and *Anamasticula* Vercammen-Grandjean & Kolebinova, 1985 is characterized by the absence of mastitarsala III. Such taxonomic decisions increased the artificial nature of the genus (KUDRYASHOVA, 1998). Obviously, a classification based on the study of relatively small, but natural species groups would be more suitable in the taxonomy of *Neotrombicula*. The description of the genus

Eutonella Kudryashova, 1988 is an example of this method.

The present paper is another step in this direction. It gives the description of a new subgenus in *Neotrombicula*, with 5 chigger mites species, parasitizing rodents in Iran and neighbouring countries. The new subgenus is distinguished by having 2 setae on coxae III, 2 genualae I, the characteristic form of the scutum, and the densely barbed dorsal idiosomal setae. I follow the terminology generally accepted in systematics of chiggers (GOFF *et al.*, 1982), with some modifications and additions: “ventral setae” (V) — setae on the ventral surface of idiosoma, excluding coxal and sternal setae; VS — number of ventral setae; D — dorsal idiosomal setae; D_m — mean length of D; DS — number of D; TaIII — length of leg III tarsus; TaW — width of leg III tarsus. All measurements are in micrometres (μm).

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Genus *Neotrombicula* Hirst, 1925

Subgenus *Iranotrombicula* n. subgen.

Diagnosis: SIF=7BS-B/N-3-(2-3)111.(1-0)000; fPp=B/B/BBB, B/B/NBB; fSt=2.2; fCx=1.1.2 (in *N. mofidi* 1.1.1); PL>AL>AM (in *N. lazistanica* n. sp. AL<AM). Larvae of medium size, Ip=778–945. Scutum relatively small, subpentagonal or with rounded posterior margin, sparsely or moderately punctate. SB clearly anterior to level of PL bases. Sensillae flagelliform with branches on distal 1/2-2/3. Scutal and idiosomal setae of medium length (PL=43–64, H=40–67), densely covered with long barbs. One pair of humeral setae. Dorsal idiosomal setae arranged (6-8)-(6-8)-(6-9)... Galeala branched or forked (nude in *N. faghihi*). 2 genualae I (3 in *N. lazistanica* n. sp.). Mastitarsala III present or replaced with barbed seta.

Type species: *Neotrombicula sabzavari* Kudryashova, 1977.

Hosts: Rodents.

Distribution: Turkey, Iran, Tadjikistan.

***Neotrombicula (Iranotrombicula) lazistanica* n. sp.**
(Figs 1–9)

Diagnosis: SIF=7BS-B-3-3111.0000; fPp=B/B/NBB; fCx=1.1.2; fSt=2.2; fSc: PL>AM>AL; Ip=879; fD=2H-6-6-6-4-6-2; DS=33; VS=35; NDV=68.

Description. *Larvae*. Idiosoma. Eyes 2 + 2, on ocular plate, anterior larger. One pair of humeral setae; 32–34 dorsal idiosomal setae, densely covering with rather thick and long barbs, arranged 6(7)-6-6(7)-4(6)-6(7)-2; 2 pairs of sternal setae and 31–41 ventral setae; total idiosomal setae 63–73. Gnathosoma. Cheliceral blade with tricuspid cap, gnathobase moderately punctate, bearing a pair of branched setae; galeala forked; palpal claw 3-pronged; setae on palpal femur and genu branched; palpal tibial setae: ventral seta branched, lateral seta forked, dorsal seta nude. Scutum. Moderately punctate, subpentagonal, with shallowly biconcave anterior margin; AM base posterior to level of AL bases; SB anterior to level of PL bases; PL>AM>AL; sensillae flagelliform with branches on distal 2/3, nude basally. Legs. All 7-segmented, terminating in a pair of claws and a clawlike empodium. Onychotriches absent. Leg I. Coxa with 1 branched seta (1B); trochanter 1B; basifemur 1B; telofemur 5B; genu 4B, 3 genuala, microgenuala; tibia 7B, 2 tibialae, microtibiala; tarsus 22B, tarsala, microtarsala, subterminala, parasubterminala, pretarsala. Leg II. Coxa 1B; trochanter 1B; basifemur 2B; telofemur 4B; genu 3B, genuala; tibia 6B, 2 tibialae; tarsus 16B, tarsala, microtarsala, pretarsala. Leg III. Coxa 2B; trochanter 1B; basifemur 2B; telofemur 3B; genu 3B, genuala; tibia 6B, tibiala; tarsus 15B, mastitarsala absent.

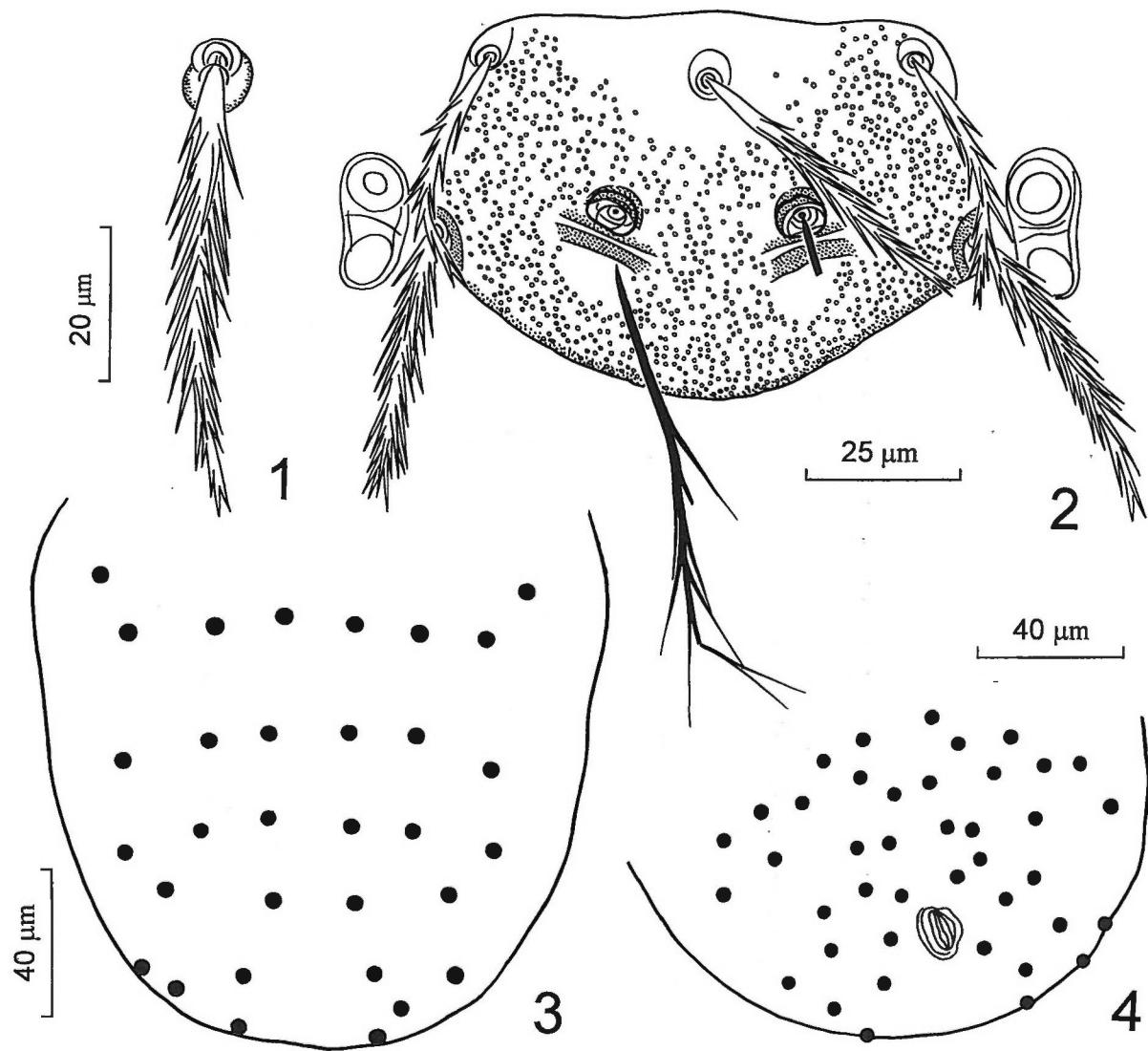
Standard measurements (N=6)

	AW	PW	SB	ASB	PSB	SD	P-PL	AP	AM	AL	PL	S	H	D _m
Min	68	87	30	29	29	59	23	24	48	38	50	76	55	48
Max	73	95	32	32	32	62	30	32	59	52	64	86	67	54
m	70	91	31	31	30	61	27	29	53	43	55	82	61	51

D	V	pa	pm	pp	Ip	DS	VS	NDV	TaIII	TaW
41-54	27-44	288	265	302	859	32	31	63	72	18
50-65	38-63	308	284	322	905	34	41	73	79	19
46-58	32-51	298	270	311	879	33	35	68	75	18

Differential diagnosis: The new species is similar to *N. mofidi* and differs from it by the presence of 2 setae on coxae III (fCx=1.1.2 against 1.1.1 in *N. mofidi*), longer scutal and idiosomal setae (AM=48–59

against 23–26, PL=50–64 against 43–47, H=55–67 against 40–45 in *N. mofidi*), slightly shorter tarsus III (TaIII=72–79 against 85–88 in *N. mofidi*) and slightly broader scutum (AW=68–73, PW=87–95, SB=30–32



FIGS 1–4: *Neotrombicula lazistanica* n. sp., holotype larva.

1.—Dorsal idiosomal seta of first row. 2.—Scutum. 3.—Arrangement of dorsal idiosomal setae. 4.—Arrangement of ventral idiosomal setae.

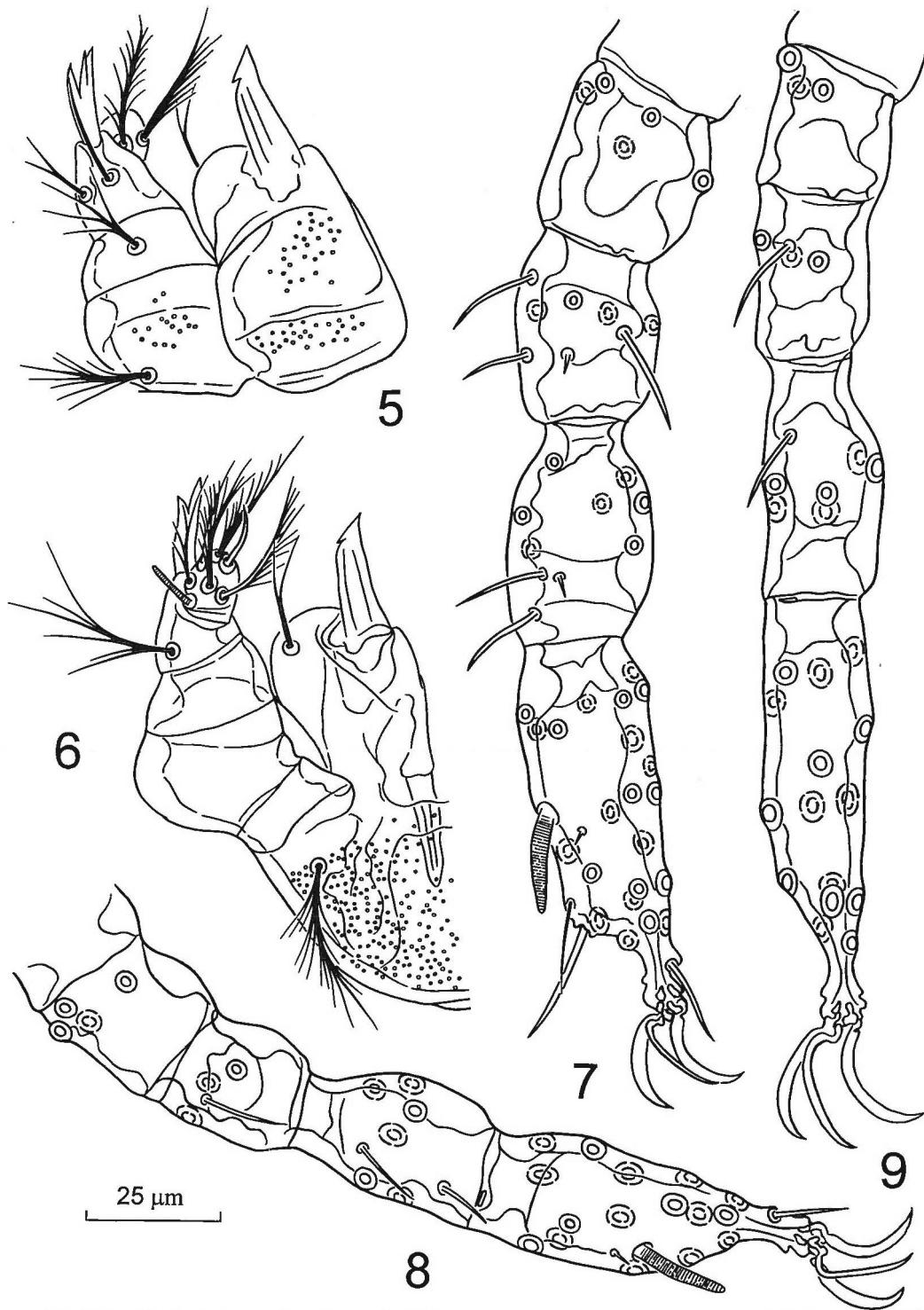
against 62–66, 82–85 and 27–28 respectively). The new species differs from all other *Iranotrombicula* by the presence of 3 genualae on leg I and by AM longer than AL.

Hosts: *Microtus majori* Thomas, *Apodemus fulvipectus* Ognev.

Type data and additional material: Holotype (4654, T-Tr.-12) and 3 paratypes, NE Turkey, Artvin Province, East Ponticus Chain (Dogu Karadeniz Daglari), Gul Mt. (East of Kaçkar Mt.), 2400 m,

24 June 1998, from *Microtus majori*, A. A. STEKOL'NIKOV coll.; 1 specimen, 25 June 1998, from *Apodemus fulvipectus*, 2750 m, other data same; 2 specimens, NE Turkey, Trabzon Province, Zigana Range (Kalkanli Daglari), 2050 m, 10 June 1998, from *M. majori*, A. A. STEKOL'NIKOV coll.

The holotype and paratypes of the new species are deposited in the Zoological Institute of the Russian Academy of Science, Saint Petersburg (ZIN).



FIGS 5–9: *Neotrombicula lazistanica* n. sp., larva.

5.—Dorsal aspect of gnathosoma. 6.—Ventral aspect of gnathosoma. 7.—Leg I. 8.—Leg II. 9.—Leg III.

Neotrombicula (Iranotrombicula) faghihi
Kudryashova, 1973

KUDRYASHOVA, NERONOV & FAHRANG-AZAD, 1973: 130, fig. 1 (holotype and paratypes in Zoological Museum of Moscow University — ZMMU).

Diagnosis: SIF=7BS-N-3-2111.1000; fPp=B/B/NBB; fCx=1.1.2; fSt=2.2; fSc: PL>AL>AM; Ip=914; fD=2H-8-8-6-4-6(4)-2; DS=34-36; VS=38-41; NDV=72-77.

Hosts: *Cricetus migratorius* (Pallas), *Tatera indica* Hardwicke.

Material examined: Holotype and 1 paratype, Iran, Fars Province, 48 km S of Fasa, 28 Nov. 1969, from *Tatera indica*, V. M. NERONOV coll.

Neotrombicula (Iranotrombicula) mofidi
Kudryashova, 1973

KUDRYASHOVA, NERONOV & FAHRANG-AZAD, 1973: 132, fig. 2 (holotype and paratypes in ZMMU); 1978: 134; KUDRYASHOVA, 1998: 210, fig. 169.

Diagnosis: SIF=7BS-B-3-2111.0000; fPp=B/B/BBB; fCx=1.1.1; fSt=2.2; fSc: PL>AL>AM; Ip=899; fD=2H-6-6-6-4-(4-6)-(2-3); DS=32; VS=37; NDV=69. Mastitarsala absent.

Material examined: Holotype and 3 paratypes, Iran, Markazi Province, 16 km N of Delijan, 1600 m, 14 October 1969, from *Meriones persicus* (Blanford), V. M. NERONOV coll.

Neotrombicula (Iranotrombicula) sabzavari
Kudryashova, 1977

KUDRYASHOVA, 1977: 50, fig. 3 (holotype and 2 paratypes in ZMMU).

Diagnosis: SIF=7BS-B-3-2111.1000; fPp=B/B/BBB; fCx=1.1.2; fSt=2.2; fSc: PL>AL>AM; Ip=929; fD=2H-(7-8)-8-(7-9)-(6-7)-6(4)-...; DS=42; VS=52; NDV=94.

Material examined: Holotype and 2 paratypes, Iran, Khorasan Province, 137 km SE of Sabzevar, 1200 m, 9-14 Oct. 1970, from *Meriones lybicus* (Lichtenstein), V. M. NERONOV coll.

Neotrombicula (Iranotrombicula) subtilis
Schluger & Kudryashova, 1969

SCHLUGER & KUDRYASHOVA, 1969: 117, fig. 8-14, table 1 (holotype and paratypes in ZMMU).

Diagnosis: SIF=7BS-B-3-2111.1000; fPp=B/B/BBB; fCx=1.1.2; fSt=2.2; fSc: PL>AL>AM; Ip=783; fD=2H-8-7-6-4-4-2-2, 2H-8-8-7-5-4-1; DS=35; VS=39; NDV=74. Scutum small, posterior margin rounded. Sensillae flagelliform with branches on distal 2/3 and several small barbs on proximal part.

Material examined: 2 paratypes, Tadzhikistan, Gissarskij Range, Romit Reserve, 27 April 1967, from *Apodemus sylvaticus* (L.), N. I. KUDRYASHOVA coll.

KEY TO LARVAE OF *Iranotrombicula* n. subgen.

- 1(4) Mastitarsala absent; fD=2H-6-6-6-...
 - 2(3) fCx=1.1.1; AL>AM; 2 genualae I *N. mofidi*
 - 3(2) fCx=1.1.2; AL<AM; 3 genualae I ... *N. lazistanica*
- 4(1) Mastitarsala present; at least in anterior 2 rows of D number of setae is 7-8.
 - 5(6) Galeala nude; fPp=B/B/NBB *N. faghihi*
 - 6(5) Galeala branched; fPp=B/B/BBB
 - 7(8) Scutum with rounded posterior margin; AW=58-59, PW=77-80, SD=49, NDV=70-78, TaIII=70-72..... *N. subtilis*
 - 8(7) Scutum subpentagonal; AW=63-68, PW=81-85, SD=53-56, NDV=84-106, TaIII=86-89..... *N. sabzavari*

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