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HESPEROMYOBIA (ACARI: MYOBIIDAE: *RADFORDIA*), A NEW SUBGENUS OF MYOBIID MITES FROM RODENTS OF THE FAMILY HESPEROMYIDAE (RODENTIA)

НОВЫЙ ПОДРОД МИОБИИДНЫХ КЛЕЩЕЙ — *HESPEROMYOBIA* (ACARI: MYOBIIDAE: *RADFORDIA*) С ГРЫЗУНОВ СЕМЕЙСТВА HESPEROMYIDAE (RODENTIA)

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ABSTRACT

A new subgenus *Hesperomyobia* **subgen.nov.** of the myobiid mites of the genus *Radfordia* (Acari: Myobiidae) is established. The type species *Radfordia* (*Hesperomyobia*) *sigmodontis* Radford, 1951 **n.comb.** is redescribed. The subgenus includes 8 species which are associated exclusively with the rodent family Hesperomyidae from the New World. A key to all species is provided.

РЕЗЮМЕ

Выделен новый подрод *Hesperomyobia* **subgen.nov.** миобиидных клещей рода *Radfordia* (Acari: Myobiidae). Переописан типовой вид *Radfordia* (*Hesperomyobia*) *sigmodontis* Radford, 1951 **n.comb.** Подрод включает 8 видов, связанных исключительно с хомяками Нового Света. Приведен ключ для определения всех видов подрода.

The myobiid mites of the genus *Radfordia* (Acarina: Myobiidae) include about 90 species, which are associated with Rodentia [Fain, Lukoschus, 1977]. Species of the genus are arranged into 11 subgenera [Fain, Lukoschus, 1977; Fain et.al., 1980]. The nominal subgenus *Radfordia* s.str. includes 27 species and 2 subspecies [Lukoschus et. al., 1981; Bochkov, 1997]. These mites are known to be the parasites of rodents of the families Muridae and Hesperomyidae. In the latter family of hosts only the 8 species were recorded. Our study of all *Radfordia* species associated with the Hesperomyidae has shown, that these mites have clear morphological difference from typical species of the *Radfordia* s.str. by having a long conical genital plates in male and cuticular folds in the anal region in tritonymph. Therefore, we establish the species group of these mites as a new subgenus *Hesperomyobia* subgen.nov.

The present paper gives the diagnosis of new subgenus, *Hesperomyobia* subgen.n., main differences from closely related subgenera, redescription of the type species *Radfordia* (*Hesperomyobia*) *sigmodontis* Radford, 1951 new comb., and a key to all species of the new subgenus. Setal nomenclature follows thats of Fain [1973]. All measurements are given in micrometers (mkm).

Subgenus *Hesperomyobia* Bochkov **subgen. nov.**
Type species: *Radfordia sigmodontis* Radford, 1951

Setae *vi* short and thin, ic_4 in adults minute. Gnathosomal setae *ra* setiform. Chaetotaxy of legs II–IV (including solenidia ω_1 and σ): II coxa 2 – trochanter 3 – femora 5 – genua 8 – tibia 6 – tarsi 8, III 0–3–3–6–6–6, IV 0–3–3–5–6–6. Dorsal setae on trochanters III–IV long and strong. Claw on legs II is subequal.

Female. Chaetotaxy of idiosoma: *el*, *vi*, *ve*, *sci*, *sce*, $d_{1\text{-}5}$, $l_{1\text{-}5}$, $ic_{1\text{-}4}$, *ai*, *ae*, $g_{1\text{-}3}$, $pg_{1\text{-}3}$.

Male. Chaetotaxy of idiosoma: *el*, *vi*, *ve*, *sci*, *sce*, d_2, $l_{1\text{-}3,5}$, $ic_{1\text{-}4}$. Genital plate symmetrical, long conical, with 4 pairs of setae — 3 pairs laterally, 1 pair of strong setae, positioned medially. Setae d_1 are situated on plate.

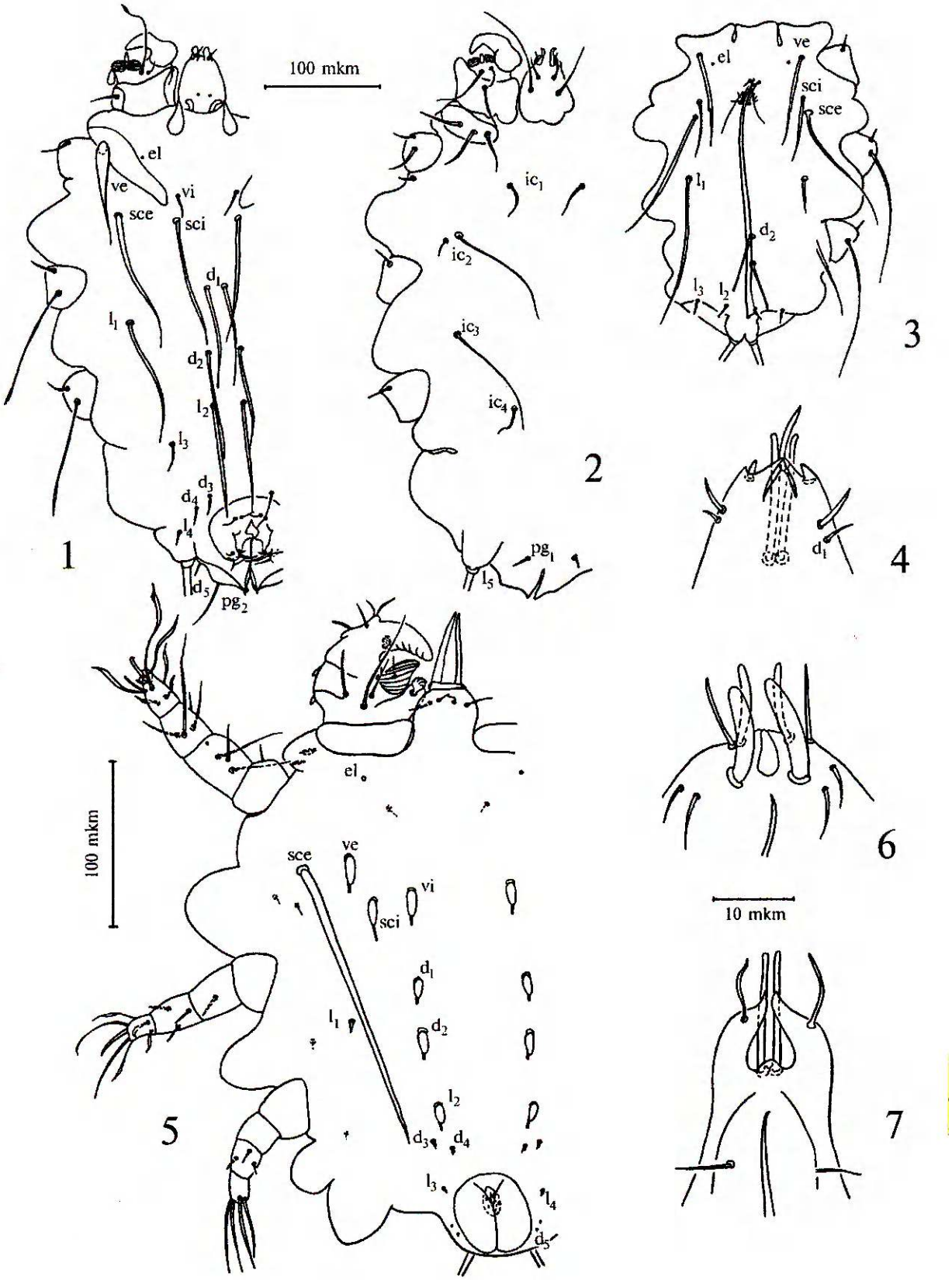
Tritonymph. Chaetotaxy of idiosoma: *el*, *vi*, *ve*, *sci*, *sce*, $d_{1\text{-}5}$, $l_{1\text{-}5}$, $ic_{1\text{-}4}$, *ai*, *ae*. Anal split is sheltered under the cuticular folds. Legs I are symmetrical. Claw formula 0–1–1–0.

Subgenus includes 8 species, parasites of rodents of the family Hesperomyidae.

DIFFERENTIAL DIAGNOSIS

The new subgenus is closely related to subgenera *Radfordia* s.str. and *Microtimyobia* (*Radfordia*).

Hesperomyobia subgen. nov. Genital plate in male long conical (Fig. 4), with 4 pairs of setae,



Figs. 1–5. *Radfordia* (*Hesperomyobia*) *sigmodontis*: 1 — female, dorsal view, 2 — female, ventral view, 3 — male, dorsal view, 4 — genital plate of male, 5 — tritonymph, dorsal view.
Figs. 6–7. Genital plate of males: 6 — *Radfordia* (s.str.) *affinis*, 7 — *Radfordia* (*Microtimyobia*) *lemnina*.

Рис. 1–5. *Radfordia* (*Hesperomyobia*) *sigmodontis*: 1 — самка дорсально, 2 — самка вентрально, 3 — самец дорсально, 4 — генитальный щиток самца, 5 — тритонимфа дорсально.
Рис. 6–7. Генитальные щитки самцов: 6 — *Radfordia* (s.str.) *affinis*, 7 — *Radfordia* (*Microtimyobia*) *lemnina*.

setae d_1 are situated on plate; coxal chaetotaxy 3–2–0–0; anal region in immature instars sheltered under the cuticular folds. Parasites of Hesperomyidae.

Radfordia s.str. Genital plate in male short conical (Fig. 6), with 3 pairs of setae or relatively round (2 species) with 6–7 pairs of setae, setae d_1 are situated behind genital plate; coxal chaetotaxy 3–2(1)–1(0)–1(0); anal region of immature instars normal. Parasites of Muridae.

Microtimyobia. Genital plate in males long conical (Fig. 7), with 3 pairs of setae, setae d_1 are situated on plate; coxal chaetotaxy 3–2–0–0; anal region of immature instars normal. Parasites of Arvicolinae (Cricetidae).

Radfordia (*Hesperomyobia*) *sigmodontis* Radford, 1951 **comb. nov**.

Female (Figs. 1–2). Length including gnathosoma 416–516, width between legs II–III 270–326. All dorsal idiosomal setae relatively narrow, except *ve* (width 11–13). Lengths of setae *vi* 11–12, *ve* 90–94, *sci* 112–123, *sce* 128–135, d_1 78–79, d_2 90–92, d_3 20–22, d_4 21–22, d_5 10, l_1 99, l_2 92–96, l_3 20–22, l_4 10–11, ic_1 24–24, ic_2 101–112, ic_3 112–125, ic_4 16–18, pg_1 12–13, pg_2 33–45, pg_3 8–9. Genital hooks g3 14–15 strong, vulvar lobes well developed. Anal setae *ai* and *ae* in front of uroporus. Distance between bases of setae: d_1–d_1 19–22, l_2–l_3 40–54, d_3–d_4 11–15, d_3–l_3 36–45, d_4–l_4 33–36, ic_1–ic_1 50–65, ic_2–ic_2 135–157, ic_4–ic_4 101–119.

Male (Figs. 3–4). Length 333, width 202. All dorsal idiosomal setae relatively narrow, including *ve* (width 4). Lengths of setae *vi* 90, *ve* 83, *sci* 46, *sce* 141, d_2 36, l_1 137, l_2 11, l_3 11, ic_1 13, ic_2 78, ic_3 92, ic_4 11. Distance between bases of setae: d_2–d_2 22, l_2–l_2 24, l_3–l_3 78, d_2–l_2 33, l_2–l_3 31. Genital plate see on Fig.4. Penis long, 224. Medial seta on tarsi I–II stout and blunt.

Tritonymph (Fig. 5). Length including legs I 337–450, width between legs II–III 256–348. Lengths of setae *vi* 15–20, *ve* 14–18, *sci* 30–40, *sce* 146–177, d_1 15–17, d_2 15–17, d_3 4–6, d_4 4–6, d_5 microsetae, l_1 10–11, l_2 15–17, l_3 3–6, l_4 microsetae. All ventral setae minute. Chaetotaxy of legs II–IV (including solenidia ω_1 and σ): II cx 2 – tr 1 – fe+ge 4 – ti 4 – ta 8, III 1–0–1–3–6, IV 0–0–0–3–4. Setae on coxa I keel-shaped.

Host and locality. 2 females, male, 4 tritonymphs from *Sigmodon hispidus*, USA, Miss. Huds. Co., 2 mi, 30. 12. 1967, coll. N.Jackson. Host in collection of Zoological Institute, Russian Academy of Sciences (ZIN), St. Petersburg.

A key to species of the subgenus *Hesperomyobia* subgen. nov.

Females*

1(2) l_1 short (6–10) ..... *oryzomys* Fain et Lukoschus

2(1) l_1 long (>40)

3(4) d_{1-2}, l_2 lanceolate ..... *holochilus* Lukoschus et Cock

4(3) d_{1-2}, l_2 relatively narrow

5(6) l_3 longer than d_{3-4} ..... *palustris* Fain et Lukoschus

6(5) Lengths of setae l_3 and d_{3-4} equal

7(12) Apices of l_2 not reaching the level of bases of l_3

8(9) Apices of *sce* not reaching the level of bases of l_1 ..... *paraquayensis* Fain et Lukoschus

9(8) Apices of *sce* reaching the level of bases of l_1

10(11) Lengths of *sci* and *sce* similar ..... *vanderberghi* Fain et Lukoschus

11(10) *sce* longer than d_{3-4} ..... *hamiltoni* Jameson et Whitaker

12(7) Apices of *sce* reaching the level of bases of l_3 ..... *sigmodontis* Radford

*Female of *R.neotomae* Jameson et Whitaker has deficient description.

Males*

1(2) l_1 short (7–10) ..... *oryzomys* Fain et Lukoschus

2(1) l_1 long (>30)

3(4) d_2 lanceolate ..... *holochilus* Lukoschus et Cock

4(3) d_2 relatively narrow

5(8) ic_3 minute

6(7) Lengths of setae *sci* 24, l_1 75 ..... *palustris* Fain et Lukoschus

7(6) Lengths of setae *sci* 70, l_1 100 ..... *vanderberghi* Fain et Lukoschus

8(5) ic_3 long

9(10) d_2 as long as l_2 ..... *hamiltoni* Jameson et Whitaker

10(9) d_2 longer than l_2 ..... *sigmodontis* Radford

*Males *R.neotomae* Jameson et Whitaker and *R.paraquayensis* Fain et Lukoschus unknown.

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