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53	ENTOMOLOGIE	25

A NEW FUR MITE (ACARINA : PROSTIGMATA : MYOBIIDAE) FROM THE SOUTH AFRICAN ROCK MOUSE *PETROMYSCUS COLLINUS* (*)

Results of the Namaqualand-Namibia Expedition of the King Léopold III Foundation for the Exploration and Protection of Nature (1980)

BY

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(With 8 figures in the text)

ABSTRACT

Radfordia (Radfordia) petromyscus sp. n. is described, figured and compared to related species.

INTRODUCTION

During the 1980 Namaqualand-Namibia Expedition of the King Léopold III Foundation, a Rock Mouse *(Petromyscus collinus)* was found to be parasitized by a new species of myobiid mite, genus *Radfordia*, subgenus *Radfordia* EWING, 1938. The idiosomal setal nomenclature of FAIN (1973) is used. All measurements are in micrometers (μm).

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TABLE 1

Comparison of setation in females of *Radfordia* (*Radfordia*) species.

Expression of symbols : —) small short seta, 1) long setiform, m) medium length, n) normal long lateral 1, B) broader than 10, mB) flattened, but smaller than 10, ?).

Radfordia (*Radfordia*)	Shape of ic 1-ic 4	No. setae on coxae	Shape 11	Shape 12	Host	Family
ensifera (POPPE, 1896)	— — — m	3 2 1 1	n	B	*Rattus norvegicus*	Muridae, Murinae
hornerae DOMROW, 1963	— — — —	3 2 1 1	n	B	*Rattus assimilis*	Muridae, Murinae
expansa JAMESON & WHITAKER, 1975	— — — —	3 2 1 1	n	B	*Rattus losea*	Muridae, Murinae
australiana FAIN & LUKOSCHUS, 1979 ...	— — — —	3 2 1 1	n	B	*Rattus tunneyi*	Muridae, Murinae
pogonomys FAIN & LUKOSCHUS, 1976 ...	— — — —	3 2 1 1	B	B	*Pogonomys loriae*	Muridae, Murinae
eburneensis FAIN, 1972	— — — —	3 2 1 1	—	—	*Malacomys* spec.	Muridae, Murinae
praomys ZUMPT & COFFEE, 1971	— — — —	3 2 0 0	n	mB	*Praomys* spp.	Muridae, Murinae
angolensis FAIN, 1972	— 1 1 1	3 2 1 1	n	—	*Aethomys* spp.	Muridae, Murinae
thamnomys FAIN, 1972	— 1 1 1	3 2 1 1	n	—	*Thamnomys rutilans*	Muridae, Murinae

lancearia (POPPE, 1909)	— — 1 1	3 2 0 1	n	B	*Apodemus sylvaticus*	Muridae, Murinae
affinis (POPPE, 1896)	— — — 1	3 2 0 1	n	—	*Mus musculus*	Muridae, Murinae
elegantula ZUMPT & COFFEE, 1971	— — — 1	3 2 0 1	n	B	*Mus minutoides*	Muridae, Murinae
acomys FAIN & LUKOSCHUS, 1976 ...	— 1 — 1	3 1 0 0	n	—	*Acomys* spp.	Muridae, Murinae
hamiltoni JAMESON & WHITAKER, 1975	— 1 1 —	3 2 0 0	n	—	*Baiomys taylori*	Cricetidae, Hesperomyinae
siemodontis RADFORD, 1951	— 1 1 —	3 2 0 0	n	—	*Sigmodon hispidus*	Cricetidae, Hesperomyinae
palustris FAIN & LUKOSCHUS, 1977 ...	— 1 1 —	3 2 0 0	n	—	*Oryzomys palustris*	Cricetidae, Hesperomyinae
oryzomys FAIN & LUKOSCHUS, 1976 ...	— 1 1 —	3 2 0 0	—	B	*Oryzomys subflavus*	Cricetidae, Hesperomyinae
holochilus LUKOSCHUS & DE COCK ...	— 1 1 —	3 2 0 0	n	B	*Holochilus brasiliensis*	Cricetidae, Hesperomyinae
paraguayensis FAIN & LUKOSCHUS, 1977 ...	— 1 1 —	3 2 0 0	m	—	Cricetidae spec.	
vandenberghi FAIN & LUKOSCHUS, 1977 ...	— 1 1 —	3 2 0 0	m	—	*Oryzomys* spec.	Cricetidae, Hesperomyinae
neotomae JAMESON & WHITAKER, 1975	— — — —	3 2 0 0	n	—	*Neotoma fuscipes*	Cricetidae, Hesperomyinae
petromyscus sp. nov.	— 1 1 —	3 2 0 0	n	—	*Petromyscus collinus*	Muridae, Petromyscinae

Radfordia (Radfordia) petromyscus spec. nov.

Radfordia petromyscus is a relatively slender species, genus *Radfordia* EWING, 1938, subgenus *Radfordia*, sensu FAIN, 1974. It differs from all Old World species by its elongate *ic 2* and *ic 3*.

Female holotype. — Length including gnathosoma 432, in one paratype 432, width 321, (324). Dorsum (Fig. 2) with herringbone-striated, barbed *v e*, *sc e*, *sc i*, *d 1*, *d 2*, *l 1*, *l 2*; setiform *v i*, relatively short for subgenus; *d 3*, *d 4* and *l 4* all setiform. Genital region (Fig. 5) dorso-terminal, similar to related species. Venter (Fig. 1) without lateral retrorse hooks of coxal fields I. Setae *ic 1*, *ic 2*, *ic 3* and *ic 4* present, longer than coxal setae (relatively long for subgenus); three pairs of coxal setae I, and two pairs in coxal field II. Gnathosoma without gnathosomal hooks or ventral spurs. Legs with claw formula, chaetotaxy and solenidiotaxy

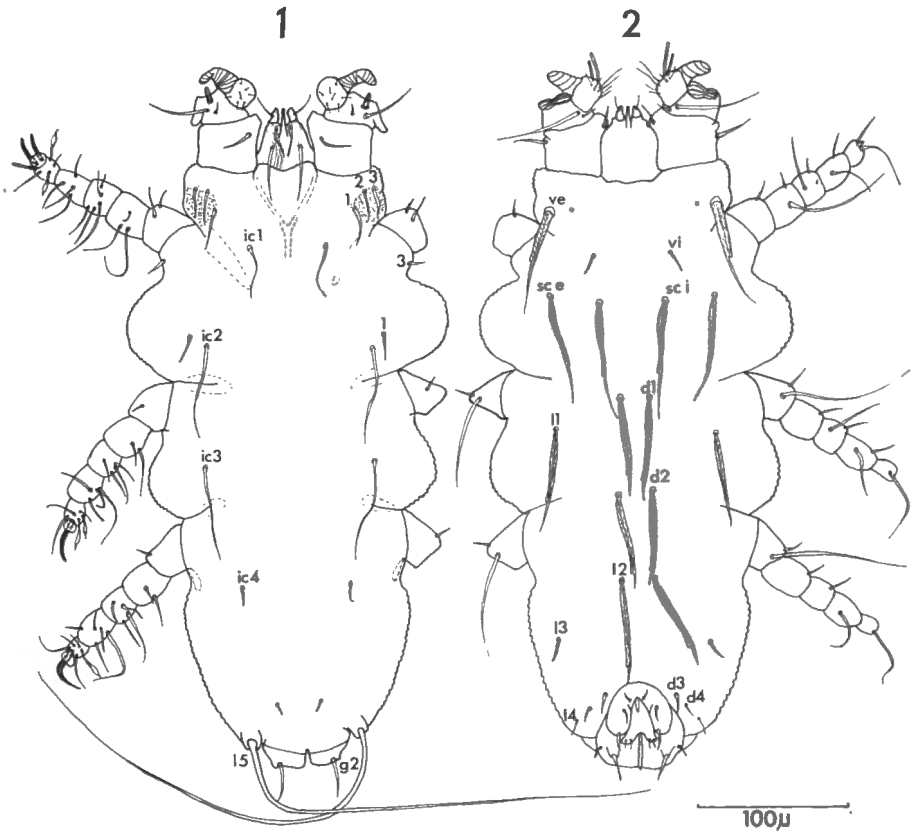

Fig. 1-2. — *Radfordia* (*Radfordia*) *petromyscus* sp. nov., female
1) holotype venter; 2) holotype dorsum.

typical for the subgenus. Trochanter I without trochanter hooks and ventral spurs. Dorsal trochanter setae III and IV and femur seta II relatively short and weak. Measurements in table 2.

TABLE 2

Measurements of adults of *Radfordia* (*Radfordia*) *petromyscus* sp. nov.

	Holotype and one female	Allotype and one male
v e	72-81	51-63
v i	12-15	12-18
sc e	66-75	66-75
sc i	75-90	18-21
d 1	60-72	15-21
d 2	63-66	54-63
d 3	12-15	—
d 4	12-18	—
l 1	63-72	60-66
l 2	60-66	—
l 3	15-18	—
l 4	9	—
l 5	276-315	273-279
cx I 1	24	21-24
cx I 2	24	21
cx I 3	24	21
cx II 1	18-21	18-24
cx II 3	18	21-27
ic 1	30-39	24-36
ic 2	66-72	54-60
ic 3	60-66	66-75
ic 4	15	12-15

Male allotype. — Length 321, in one paratype 324, width 162 (174). Venter (Fig. 3) gnathosoma and legs similar to female, with exception of stout, blunt dorso-median setae on tarsi I and II. Dorsum (Fig. 4) with genital region between *sc e*. Aedaegus 125 long, slender, and directed fowards with a median file of four setiform setae over its posterior portion. Genital region directed backwards (Fig. 6) with seven pair of setae, with some of them surely belonging to the files of dorsals and laterals.

Tritonymph (Fig. 8). — Length including legs I 443, width 262. In contrast to most species of the subgenus, vertical and scapular setae are distinctly different in length, and only *d 1* and *d 2* in the file of paramedian setae are long, while *l 2* is much shorter. Claw formula II-IV 1-1-1. Chaetotaxy : tarsi 7-6-6, tibiae 5-4-3, genua-femora 3-1-1, trochanters 1-1-1. Setae *ic 1*, *ic 2*, *ic 3*, *ic 4* and coxals are present on venter.

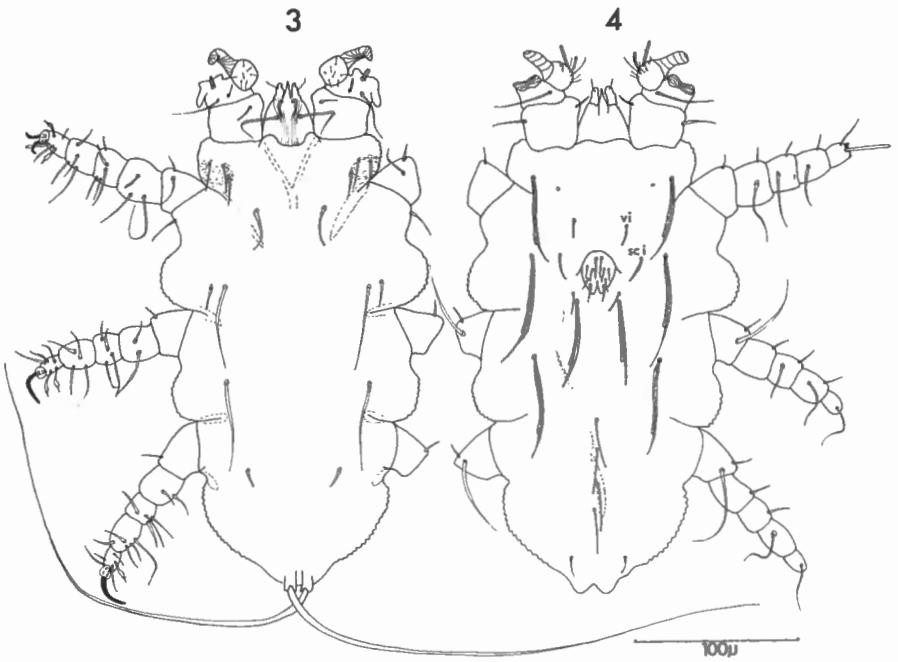

Fig. 3-4. — *Radfordia* (*Radfordia*) *petromyscus* sp. nov., male
3) allotype venter; 4) allotype dorsum.

D e u t o n y m p h (Fig. 7). — Similar to tritonymph, length including legs I 292, width 175. Missing on dorsum are *d 4*, on venter *cx I 2* and *cx II 1*. Legs IV in shape of 4-segmented stump, without pretarsus and claw. Chaetotaxy of legs : tarsi 7-6-3, tibiae 4-3-0, genua-femora 3-1-0, trochanters 0-0-0.

Comparison to related species

The new species shares the characteristics *ic 2*, *ic 3* and absence of coxals III and IV with the American species *R. (R.) hamiltoni* JAMESON & WHITAKER, 1975, *R. (R.) sigmodontis* RADFORD, 1951, *R. (R.) palustris* FAIN & LUKOSCHUS, 1977, *R. (R.) oryzomys* FAIN & LUKOSCHUS, 1976, *paraguayensis*, *vandenberghi* FAIN & LUKOSCHUS, 1977, and *holochilus* LUKOSCHUS & DE COCK (in press), all from hesperomyid hosts.

R. (R.) oryzomys and *holochilus* differ by having broadened *d 1*, *d 2*, and *l 2* in females and by having an anteriorly directed genital region on a long conical tube and stout strong penis in males. *Radfordia (R.) palustris* has longer *l 3* and dorsal trochanter setae III and IV, and a broader body shape in females, and the genital region on an anteriorly directed cone and only two median-dorsal setae in males. *R. vandenberghi* has the characteristics of *palustris* and in addition longer barbed *v i*.

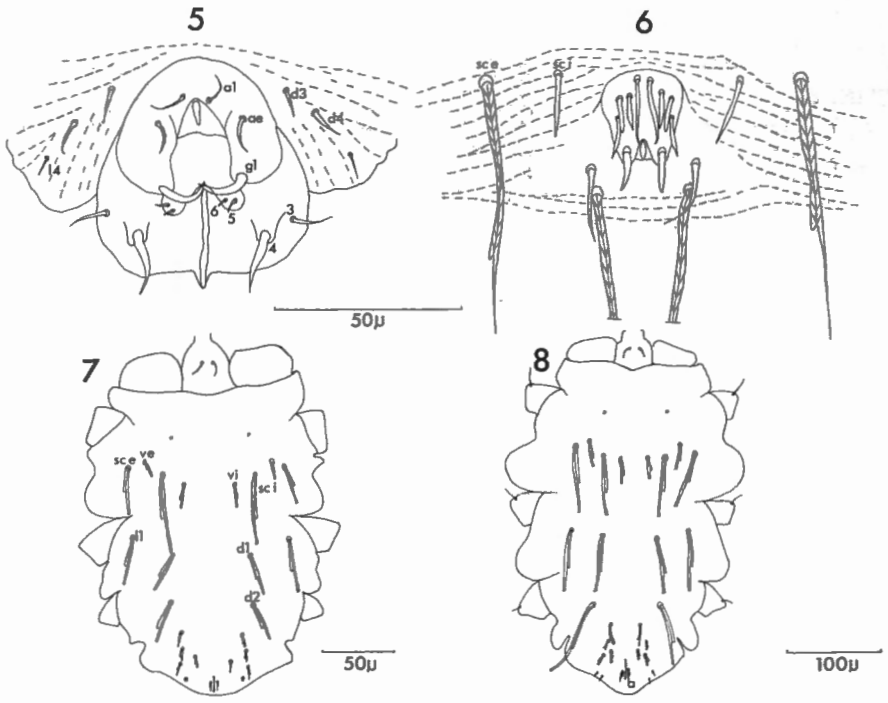

Fig. 5-6. — *Radfordia* (*Radfordia*) *petromyscus* sp. nov., genital regions
5) female holotype; 6) male allotype.
Fig. 7-8. — *Radfordia* (*Radfordia*) *petromyscus* sp. nov., nymphs
7) deutonymph, dorsum; 8) tritonymph, dorsum.

In *paraguayensis l 1* are shorter than *d 1*. *Sigmodontis* has longer trochanter setae III and IV, a strong aedaegus and *sc i* in front of *sc e* in males.

In the genus *Radfordia*, the number and shape of intercoxal and coxal setae is of systematic importance. These data and the shape of laterals 1 and 2 of females of *Radfordia (Radfordia)* species are given for comparison (Table 1).

Host and locality. — *Petromyscus collinus* (THOMAS & HINTON, 1925), 10 km N Rosh Pinah, Namibia (27° 55′ S; 16° 38′ E), 17-X-1980, X. MISONNE leg. Host in collection of Institut royal des Sciences naturelles de Belgique, Bruxelles.

Deposition of types. — Holotype, allotype, and figured nymphs in collection of Institut royal des Sciences naturelles de Belgique, Bruxelles; one paratype female, two males (one of them within tritonymphal skin), two tritonymphs and one deutonymph in collections of authors.

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