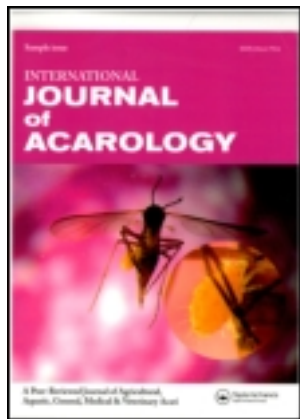


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SHORT COMMUNICATION

Epimyodex microti Fain et al., 1982 (Prostigmata: Epimyodidae) – rarely recorded mites from the common vole *Microtus arvalis* (Rodentia: Cricetidae)

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The present study provides new data on the spread of subcutaneous mites *Epimyodex microti* Fain, Lukoschus et Rosmalen, 1982 (Acariformes: Epimyodidae) observed in the common vole *Microtus arvalis* (Pallas, 1778) (Rodentia: Cricetidae). It is one of few findings of the mites of this family in the world. The family name Epimyodidae is changed to Epimyodidae emend. nov.

Keywords: Epimyodidae; Epimyodidae; *Epimyodex microti*; *Microtus arvalis*; parasites

The monogeneric family Epimyodidae (=Epimyodidae) emend. nov. (Acari: Prostigmata) includes specific parasitic mites of small mammals with one genus *Epimyodex*, previously counted among Demodecidae (Fain and Orts 1969) and then transferred to Cloacaridae (Fain et al. 1982). At present, these mites are classified into a separate family (Bochkov and OConnor 2008; Bochkov 2009).

Currently known species of Epimyodidae are subcutaneous endoparasites found in the moles, shrews, voles and mice. However, it is hard to determine the range of their host specificity, which is related to a small number of reports on the occurrence of this group. Sometimes, they are described as monoxenous parasites, similarly as Cloacaridae and Demodecidae (Walter et al. 2009). Nevertheless, individual species can inhabit different, yet closely related host species (Fain and Bochkov 2001), which makes them the oligoxenous parasites. So far, four species have been identified within the genus *Epimyodex*: (1) *Epimyodex talpae* Fain et Orts, 1969 known from the European mole *Talpa europaea* Linnaeus, 1758 (Soricomorpha, Talpidae) in Belgium and from the Roman mole *T. romana* Thomas, 1902 in Italy (Fain and Orts 1969; Fain and Bochkov 2001); (2) *Epimyodex crocidurae* Fain et al., 1982 described from the greater white-toothed shrew *Crocidura russula* (Hermann, 1780) (Soricomorpha, Soricidae) (Fain et al., 1982); (3) *Epimyodex microti* Fain et al., 1982 recorded from the common vole *Microtus arvalis* (Pallas, 1778) (Rodentia, Cricetidae), the wood mouse *Apodemus sylvaticus* (Linnaeus, 1758) (Rodentia, Muridae) in Holland (Fain et al. 1982), the white-footed mouse *Peromyscus leucopus* (Rafinesque, 1818) (Rodentia, Cricetidae) and from the deer mice *Peromyscus maniculatus* (Wagner, 1845) in the USA (Fain and Bochkov 2001); (4) *Epimyodex soricis* Fain et Bochkov, 2001 from the Trowbridge's shrew *Sorex trowbridgii* Baird, 1857 (Soricomorpha, Soricidae) and the vagrant shrew *Sorex vagrans* Baird, 1857 in the USA (Fain and Bochkov 2001).

The present study provides a new record of the mites of this family.

Fourteen common vole *M. arvalis*, acquired in 2009 (September – 1♀) and 2010 (March – 1♂, April – 1♂, June – 1♀, August – 1♀ and 3♂, September – 1♀ and 3♂, October – 2♂♂), were examined for skin mites. The biotope studied was the border of sugar beet crop and pasture in Northern Poland (53°59'N; 18°05'E). The material (rodents and mites) was collected by L. Rolbiecki. The following skin slices were analysed in the presence of the epimyodid mites: area of eyelids, ears, vibrissae, lips, cheeks, chin, abdomen, back, limbs and genital-anal part,

Table 1. Measurements of females *Epimyodex microti* Fain et al., 1982 collected from *Microtus arvalis* (Pallas, 1778) in Poland in comparison to the original description (measurements in µm).

Morphologic features	Current research (n = 6)	Fain et al. (1982) (1 holotype and 20 paratypes)
Length of gnathosoma	26 (24–28), SD 1.5	24*
Width of gnathosoma	24 (23–25), SD 0.6	27*
Length of podosoma	94 (89–97), SD 2.7	102*
Width of podosoma	89 (85–92), SD 2.3	91*
Length of opisthosoma	86 (84–88), SD 1.4	89*
Width of opisthosoma	90 (88–93), SD 1.9	86*
Length of prodontal plate	94 (92–95), SD 1.0	90 and 87–94
Width of prodontal plate	58 (57–59), SD 0.8	61 and 59–62
Length of vulva	16 (15–17), SD 0.8	15*
Length of vulva papillae	2 (1–2), SD 0.4	2*
Total length of body	205 (197–210), SD 4.3	200 and 196–213
Total width of body	90 (88–93), SD 2.0	92 and 83–101

Note: *Measurements were taken using the original figure (Fain et al. 1982).

using the method of digesting skin fragments proposed by Izdebska (2004).

The mite specimens were recovered and then mounted on slides in Faure's solution. Mite material was examined and measured using a light microscope with phase-contrast.

In the present study, only five and one females of *E. microti* were found in the genital area of one female and one male of *M. arvalis* collected in September 2009 and in April 2010, respectively (Table 1, Figure 1). It is a first record of the family Epimyodidae in Poland and one of several observations in the world.

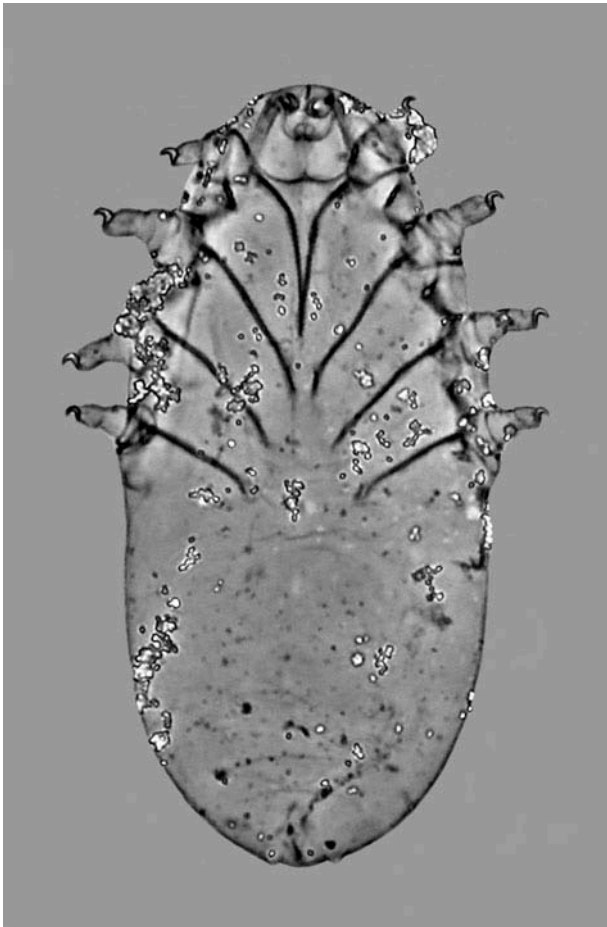


Figure 1. *Epimyodex microti*, female in ventral view.

It should be noted that since the name of the family Epimyodidae was derived from the name of the genus *Epimyodex* (Greek) – it should be changed to Epimyodidae emend. nov.

Subcutaneous tissues are considered as a typical location of the mites of the genus *Epimyodex*, e.g. *E. talpae* has been found under skin in the area from the neck to the tail of the mole (Fain and Orts 1969), while *E. soricis* has been observed in deep subcutaneous tissue of loose connective tissue in the dorsal part of the thorax of the shrew (Fain and Bochkov 2001). However, probably females can migrate to the reproductive system of their host, which facilitates transmission of the mites between the hosts (Walter et al. 2009).

So far no pathological changes caused by Epimyodidae have been observed. According to Fain and Orts (1969), the mites seem to be very well tolerated by the hosts. Perhaps the intensity of infestation of the hosts observed so far is very low, hence little harmfulness of the parasites.

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