

**MITES OF THE FAMILY MYOBIIDAE (ACARIFORMES)
— ECTOPARASITES OF BATS OF ARMENIA**

**КЛЕЩИ СЕМЕЙСТВА MYOBIIDAE (ACARIFORMES) —
ЭКТОПАРАЗИТЫ РУКОКРЫЛЫХ АРМЕНИИ**

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ABSTRACT

Bats of the families Vespertilionidae and Rhinolophidae (5 genera, 10 species, 209 specimens) of Armenia were examined. Eight mite species of the family Myobiidae new for Armenia were found on these bats. The difference in localization of different stages of Myobiidae on the host's body was observed for the first time.

РЕЗЮМЕ

Обследовано 209 экземпляров летучих мышей 10 видов 5 родов семейств Vespertilionidae и Rhinolophidae. Список клещей семейства Myobiidae, эктопаразитов летучих мышей Армении, дополнен 8 новыми для фауны этой страны видами. Впервые для клещей сем. Myobiidae отмечено наличие на теле хозяина специфичной локализации различных фаз развития в пределах микроареала вида.

The mites fauna of the family Myobiidae, ectoparasites of bats of Armenia, has been poorly investigated. Only two species of bat mites from

Armenia were described by F. Dusbabek & E. Arutunian [1976] prior to our study: *Acanthopthirius kolenatii* Dusbabek et Arutunian, 1976 and *Pteracarus pipistrellius pipistrellius* (Radford, 1938) from *Pipistrellus* (*P.*) *khuli* (Kuhl, 1817). We collected our material in Azizbeck, Oktemberijan, Echmiadzin and Ekhegnadzor Regions of Armenia during October 1986 and May-July 1987-1989. We studied 149 specimens of bats belonging to 6 species and 4 genera of Vespertilionidae and 60 specimens of bats belonging to 4 species of the genus *Rhinolophus* (Table). Eight species were discovered of myobiid mites new for the Armenian fauna.

Table
Description of the investigated material

Bat species	No of bats*		No of Myobiidae mite species
	No of investigated	No of species with Myobiidae	
	Fem. Vespertilionidae		
Barbastellaleucomelas	4 (1/3)	—	—
B.barbastellus	1 (1/0)	1 (1/0)	2
Pipistrellus kuhli	6 (1/5)	—	—
P.(P.) pipistrellus	73 (5/68)	10 (0/10)	1
Myotis (M.) blythi	57 (32/25)	18 (10/8)	3
Miniopterus schreibersi	9 (2/7)	5 (0/5)	1
	Fem. Rhinolophidae		
Rhinolophus (R.) ferrumequinum	38 (18/20)	6 (1/5)	1
R.mehelyi	2 (1/1)	—	—
R.hipposideros	10 (4/6)	4 (1/3)	?
R.(R.)euryale	24 (11/13)	4 (1/3)	1

* Total No of bats, in brackets—No of males / No of females

1. *Calcarmyobia dusbabeki* Uchikawa, 1985

Material: 4 females and 1 male from four females of *Miniopterus schreibersi* (Kuhl, 1817). Echmiadzin District.

Localization: Back of the body. Eggs and larvae of mites were noted also on the back near the interfemoral membrane.

Myobiidae mites

Distribution: East Europe, Near and Middle East, North Africa [Uchikawa, 1985].

Host: *M. schreibersi*. Uchikawa [1985] separated this species from the composite species *Calcaromyobia rhinolophia* (Radford, 1940). This mite occurs on *M. schreibersi* and is probably its specific parasite. Other species registered earlier on *M. schreibersi*, *C. miniopteris* Womersley, 1941 in Azerbaijan [Dubovchenko, 1966] and *C. rhinolophia* (Radford, 1940) in Moldavia [Andrejko et al., 1968], which are typical parasites of African, Indomalayan and Australian *Miniopterus* [Uchikawa, 1985], are in fact *C. dusbabeki* as well.

2. *Acanthopthirus (Acanthopthirus) etheldredae* Perkins, 1925

Material: 4 females, 3 males and 3 nymphs from seven males of *Pipistrellus (P.) pipistrellus* (Schreber, 1774). Ekhegnadzor District.

Localization: Back of bat body.

Distribution: East Europe, Asia (Kyrgyzstan).

Host: *P. (P.) pipistrellus*, *P. (P.) nathusii* (Keyserling et Blasius, 1839) [Perkins, 1925; Beron, 1968, 1973; Dusbabek, 1969a, 1969b; Fain, 1976; Fain, Aellen, 1979; Haitlinger, 1979, 1988; Rybin et al., 1989].

This species was first described as a parasite of *P. pipistrellus* from England [Perkins, 1925]. It is a specific ectoparasite of the bat genus *Pipistrellus*.

3. *Acanthopthirus (Myotimyobia) myoti* (Dusbabek, 1963)

Material: 4 females, 6 males from three males and two females of *Myotis (M.) blythi* (Tomes, 1857). Echmiadzin District.

Localization: Back of body and head of bats. Individual eggs were found over the entire host's body.

Distribution: East Europe, Asia (Kyrgyzstan).

Host: *Myotis (M.) myotis* (Borkhausen, 1797), *Myotis (S.) mystacinus* (Kuhl, 1817), *M. (M.) blythi*, *Myotis (L.) capaccinii* (Bonaparte, 1837) [Dusbabek, 1963, 1972; Beron, 1965, 1968, 1970, 1973; Kolebinova, 1967; Fain, 1976; Haitlinger, 1979, 1988; Rybin et al., 1989].

This species was first described as a parasite of *M. myotis* in former Czechoslovakia [Dusbabek, 1963]. It is very specific of bats of the genus *Myotis*. The unique case of detection of *A. (M.) myoti* on the *Miniopterus schreibersi* in Hungary [Beron, 1965] is most probably due to an accidental contamination.

4. *Acanthopthirus (Myotimyobia) klapaleki* (Dusbabek, 1963)

Material: 1 female and 1 male from the female and male of *M. blythi*. Echmiadzin district.

Localization: Back of the bat body.

Distribution: East Europe.

Host: *M. (M.) myotis*, *M. (M.) blythi* [Dusbabek, 1963; Beron, 1970, 1973; Haitlinger, 1988]. This species was first described as a parasite of *M. (M.) myotis* in former Czechoslovakia [Dusbabek, 1963].

5. *Acanthopthirius (Myotimyobia) pantopus* (Poppe et Trouessart, 1895)

Material: 17 females, 18 males, 5 nymphs, 2 larvae and eggs from a male *Barbastella barbastellus* (Schreber, 1774). Azizbek District.

Localization: Back of the bat body.

Distribution: East Europe, Asia (Kyrgyzstan).

Host: *B. barbastellus*, *B. leucomelas* (Cretzschmar, 1826) [Trouessart, 1895; Radford, 1952; Dusbabek, 1963; Fain, 1976; Fain, Aellen, 1979; Haitlinger, 1979, 1988; Rybin et al., 1989].

This species was first described as a parasite of *B. barbastellus* in France [Trouessart, 1895]. It is a specific parasite of the bat genus *Barbastella*.

6. *Pteracarus tibialis* Dusbabek, 1970

Material: 19 females, 1 male, 26 nymphs-III, 9 nymphs-II, 3 nymphs-I from 9 males and 5 females of *M. (M.) blythi*. Oktemberijan and Echmiadzin Districts.

Localization: This was the first case for the Myobiidae mite family when it was stated that there was some specific localization of the different stages of mites on the host's body. Adults were found in the fur everywhere but mainly on the back of the host's body. When adults are abundant, it is possible to find mites on the inner side of femora and around the anal hole. Nymphs are localizing in the armpit area of the wing membrane within the triangle formed by humerus and a big blood vessel. Along this vessel and its branches on the lower side of the wing there are branches of short colorless hairs; mites settle down near their bases. Individual nymphs were found on the lower side of the wing membrane's intermediate area, along the posterior third of the body. Eggs were met only here, they were fixed as bunches near the bases of the hairs (similarly to how nymphs fix themselves); each bunch had five eggs.

Distribution: Europe, Malaysia.

Host: *M. (M.) myotis*, *M. (S.) mystacinus*, *Myotis (L.) dasycneme* (Boie, 1825) [Dusbabek, 1970, 1973; Haitlinger, 1979, 1988]. This is the first record of this species on *M. (M.) blythi*.

This species was first described as a parasite of *M. (M.) myotis* in former Czechoslovakia [Dusbabek, 1970].

7. *Neomyobia slovenica* Dusbabek, 1968

Material: 3 females, 4 males, 4 nymphs from one male and two females of *Rhinolophus (R.) euryale* Blasius, 1853. Ekhegnadzor District.

Localization: Back and fur covering the lateral area of wing membrane.

Distribution: Europe, Corsica.

Myobiidae mites

Host: *R. (R.) euryale* [Dusbabek, 1968; Beron, 1973]. This species was first described as a parasite of *R. (R.) euryale* in former Czechoslovakia [Dusbabek, 1968].

8. *Neomyobia rollinati* (Poppe, 1909)

Material: 17 females, 17 males, 28 nymphs and eggs from male and five females of *Rhinolophus (R.) ferrumequinum* (Schreber, 1774). Ekhegnadzor District.

Localization: over the entire body of bat including wings.

Distribution: Europe, Asia (Kyrgyzstan, Japan).

Hosts: *R. (R.) ferrumequinum*, *R. (R.) blasii* Peters, 1866 [Fahrenholz, 1909; Radford, 1954; Kolebinova, 1967; Beron, 1968, 1970, 1973; Dusbabek, 1969b; Fain, 1976; Fain, Aellen, 1979; Rybin et al., 1989].

This species was first described as a parasite of *R. (R.) ferrumequinum* in Germany [Fahrenholz, 1909].

It is not strange that representatives of the two different genus — *Acanthophthirus* and *Pteracarus* — were met on the same host: their localisation on the host body is quite different. This phenomenon caused most probably by their different adaptation mechanisms was also checked by Uchikawa [1988].

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