

To the Knowledge of Siphonaptera and Anoplura Fauna of the Small Mammals in Hungary

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From 154 small mammals of the Insectivora and Rodentia classes collected in 22 different localities of Hungary 11 Siphonaptera species (214 specimens), and 3 Anoplura species (34 specimens) were identified. Of these species Ctenophthalmus obtusus and Polyplax reclinata were so far unknown in the fauna of Hungary.

The fauna of ectoparasites of small mammals (rodents and insectivora) in Hungary is not fully known. Present information on the Siphonapteran and Anopluran faunas is based on SZABÓ's (1969) and PIOTROWSKI's (1970) papers.

However, in the territory of Hungary one may expect the occurrence of some flea and louse species which inhabit the adjoining countries (Czechoslovakia, Rumania). The presence of one flea species (Ctenophthalmus obtusus Jordan et Rotschild), and one louse species (Polyplax reclinata /Nitzsch/), new for the fauna of Hungary, has been established during our sporadic and short observations.

Captures of small mammals were made from the end of July till the beginning of August, 1972, in the whole country to wit, at Alsóörs (26. VII.); Zsófiapuszta (28. VII.); Porva (29.VII.); near Gönyű (30.VII.); Dobogókő (31.VII.); at Polgárdi (1.VIII.); Szigliget (2. VIII.); Sümeg (3.VIII.); Iharosberény (4. VIII.);

Zengővárkony (6. VIII.); Foktő (8. VIII.); Dunaszentbenedek (9. VIII.); Harta(10.VIII.); Mindszent(11.VIII.); Doboz (12.VIII.); Tiszabura (13.VIII.); in the region Tiszafüred - Hortobágy (14. VIII.); Miskolc - Ómassa (18.VIII.); Kékestető(19.VIII.); Sződliget (20. VIII.); and at Kisinóc (21. VIII.). 154 specimens of insectivores and rodents were gathered, representing 12 species; 214 fleas relegable to 11 species and 34 lice belonging to 3 species (Table 1) were collected.

Siphonaptera

Malareus arvicolae Ioff.

Locality: Kékestető (Mts. Mátra), 19. VIII. 1 ♀. Host: *Pitymys subterraneus*.

A very rare species in Europe, known hitherto from Poland, Czechoslovakia, Bulgaria, Greece and the USSR. It occurs mainly in the upper parts of mountains (900 m and higher). It is a specific parasite of common pine voles, but it appears sporadically on other species of small mammals (HAITLINGER, 1970). The species was found in typical surroundings on *Pitymys subterraneus* in the region of Kékestető (900 m).

Ctenophthalmus obtusus Jordan et Rothschild

Locality: Kékestető (Mts. Mátra, 19. VIII. 2 ♂.) Host: *P. subterraneus*.

A mountain species, rarely found in Europe; known only from the Carpathians and Norway. New for the fauna of Hungary.

Ctenophthalmus agyrtes (Heller)

The commonest species in Hungary, represented by 5 different subspecies. Their distribution was analysed by SMIT and SZABÓ (1967).

C. a. agyrtes (Heller)

Locality: the environs of Gönyű (30. VII.) 7 ♀, 3 ♂. Hosts: *C. glareolus*, *A. flavicollis*.

There is only one date of this subspecies in Rajka, given by SMIT and SZABÓ (1967). They presume its presence in the whole northern part of Hungary, between Sopron and Győr.

C. a. bosnicus (Wagner)

Localities: Zsófiapuszta (28. VII.), Harta (10. VIII.) from *A. sylvaticus*; Dobogókő (700 m)(31. VII.), Sümeg (3.VIII.), Zengővárkony (6. VIII.) from *A. flavicollis*; Porva (29. VII.) from *A. flavicollis* and *A. sylvaticus*; Iharosberény (4. VIII.) from *C. glareolus* and *A. flavicollis*; Foktő (8.VIII.) from *P. subterraneus*; Dunaszentbenedek (9. VIII.) from *M. musculus*, *C. glareolus* and *A. sylvaticus*.

Collected: 48 ♀, 19 ♂. According to SMIT and SZABÓ (1967), C.a. bosnicus appears only in the region of Baja east of the Danube. The specimens from that area show characters similar to C. a. serbicus (Wagner, 1930). C. a. bosnicus has now been found in 3 localities of the river, considerably further to the north from Baja, at Foktő, Dunaszentbenedek and Harta.

The shape of the male aedeagus from Foktő is not typical (on the whole) for the subspecies. It concerns also some specimens from Dobogókő. The aedeagus narrows and a small cavity appears at the top part of the digitoid.

C. a. peusianus (Rosicky)

Locality: Kisinóc (21.VIII.)(700 m alt.) (Mts. Börzsöny). Host: *A. flavicollis*.

Typical exemplars of this subspecies were found only in the region of Kisinóc. 11 ♀ and 3 ♂ fleas, with characters intermediate between C. a. peusianus Ros. and C. a. eurous Jordan et

Rothschild, were caught in the Mts. Mátra (region of Kékestető). Specimen with such characters from the Mts. Bükk have been described by SMIT and SZABÓ (1967).

C. a. eurous Jordan et Rothschild

Locality: Tiszabura (13. VIII.) 2 ♀, 2 ♂.

Sarkadremete was pointed out by SMIT and SZABÓ (1967) and SZABÓ (1969) as the only place where this subspecies could be found. Owing to the lack of material no estimation of the populations living in the central part of Hungary, east of the Danube, was possible. However, the above authors hold the view that there are populations of mixed characters.

2 ♀ and 2 ♂ specimens with characters corresponding to C. a. eurous Jordan et Rothschild, were caught on *M. musculus* and *A. sylvaticus* at Tiszabura.

Ctenophthalmus assimilis (Taschenberg)

Localities: Porva (29.VII.), the region of Dobogókő (700 m alt.) (31. VII.), Sümeg (3. VIII.), Kisinóc (700 m alt.) (21. VIII.), from *A. flavicollis*; the region of Gönyű (30. VII.) from *C. glareolus* and *A. flavicollis*; Szigliget (2. VIII.) from *M. arvalis*, *A. microps* and *A. sylvaticus*; Dunaszentbenedek (9.VIII.), from *M. musculus*; Tiszabura (13. VIII.) on *M. arvalis*; the region of Tiszafüred - Hortobágy (14.VIII.) on *A. microps* and *M. arvalis*; Szódliget (20.VIII.) on *C. glareolus*, *M. musculus* and *A. sylvaticus*.

Collected: 23 ♂, 21 ♀.

The montane localities of Ctenophthalmus assimilis (Taschenberg) are worthy of attention, because this species rarely appears above 500 m alt. (HAITLINGER, 1970).

Ctenophthalmus solutus Jordan et Rothschild

Localities: Zsófiapuszta (28.VII.), Porva (29.VII.) on *A. sylvaticus* the region of Gönyű (30.VII.) on *S. araneus*; Zengővárkony (6.VIII.), Sződliget (20.VIII.), Kisinóc (21.VIII.) on *A. flavicollis*.

Collected: 7 ♂, 4 ♀.

Ctenophthalmus congener congener Rothschild

Locality: Zsófiapuszta (28. VII.) from *A. sylvaticus*; Dobogókő (31. VII.) from *C. glareolus*; Sümeg (3. VIII.) from *A. flavicollis*.

Collected: 3 ♀.

Megabothris turbidus (Rothschild)

Localities: the region of Gönyű (30. VII.), Iharosberény (4. VIII.) from *C. glareolus*.

Collected: 2 ♂, 2 ♀.

Nosopsyllus fasciatus (Bosc)

Localities: the region of Gönyű (30. VII.), Doboz (12. VIII.), from *A. flavicollis*; Szigliget (2.VIII.), Foktő (8.VIII.), Mindszent (11.VII.) from *A. sylvaticus*; Tiszabura (13.VIII.) from *M. arvalis* and *M. musculus*; the region of Tiszafüred (Hortobágy steppe) (14. VIII.) from *A. microps*.

Collected: 10 ♀, 12 ♂.

Hystrichopsylla talpae orientalis Smit

Locality: Sümeg (3. VIII.) from *A. flavicollis*, 1 ♂.

Palaeopsylla soricis rosickyi Smit

Localities: Dobogókő (31. VII.), Tiszabura (13.VIII.), Miskolc-Ómassa (18.VIII.), Sződliget (20.VIII.) from *S. araneus*.

Collected: 5 ♀, 7 ♂.

Table 1

List of the fleas and lice collected from
small mammals

Host species	Number of hosts collected	Siphonaptera										Ano-plura			
		Ctenophthalmus agyrtes	C. congener		C. solutus	C. obtusus	C. assimilis	Nosopsyllus fasciatus	Megabothris turbidus	Malareus arvicolae	Hystrichopsylla talpae	Palaeopsylla soricis	Doratopsylla dasyncnema	Hoplopleura acanthopus	Polyplax serrata
Apodemus flavicollis	41	56	1	7		11	2	1		1				11	
" sylvaticus	22	17	1	3		5	11							7	
" microps	15					7	6							1	
" agrarius	3													1	
Clethrionomys glareolus	23	19	1			6		3					1	2	
Microtus arvalis	8					12	2						5		
Pitymys subterraneus	4	10			2				1						
Micromys minutus	1														
Mus musculus	9	4				2	1								
Muscardinus avelanarius	1														
Sorex araneus	22		1			1					12	8	1	1	
Crocidura suaveolens	5														4
Total	154	106	3	11	2	44	22	4	1	1	12	8	7	23	4

Doratopsylla dasyncnema dasyncnema (Rothschild)

Localities: the region of Gönyű (30. VII.), Dobogókő (31.VII.), Miskolc-Ómassa (18.VIII.) from *S. araneus*.

Collected: 2 ♀, 6 ♂.

Anoplura

Hoplopleura acanthopus (Burmeister)

Localities: Tiszabura (13.VIII.), Sződliget (20.VIII.), the region of Gönyű (30. VII.).

2 ♀ and 5 ♂ were collected from *M. arvalis* at Tiszabura, on *C. glareolus* near Gönyű and from *S. araneus* at Sződliget. The commonest species of lice on small mammals in Hungary (PIOTROWSKI, 1970). It is known from different hosts.

Polyplax serrata (Burmeister)

Localities: the region of Gönyű (30. VII.), Iharosberény (4. VIII.) from *C. glareolus*; Zsófiapuszta (28.VII.), near Polgárdi (1.VIII.), Sződliget (20.VIII.) from *A. sylvaticus*; Dobogókő (31.VII.) from *A. flavicollis*; Szigliget (2.VIII.) from *A. sylvaticus* and *A. microps*; Sümeg from *S. araneus*; Zengővárkony (6.VIII.) from *A. agrarius*.

P. serrata (Burm.) is more common in Hungary than shown by the present data. 14 ♀, 7 ♂ and 2 nymphs were collected.

Polyplax reclinata (Nitzsch)

Locality: near Alsóörs (26. VII.).

This species is widely spread, eastwards from Europe to Japan and southwards to the shores of Africa. Despite the wide range,

it is rarely collected. It appears on specimens of *Crocidura* and on other *Soricidae*.

4 ♀ were collected from *C. suaveolens*. New for the fauna of Hungary.

Several new hosts of fleas and lice have been found for Hungary, namely:

Apodemus microps Krat. et Ros.: *Ctenophthalmus assimilis*, (Tasch.), *Nosopsyllus fasciatus* (Bosc), *Polyplax serrata* (Burm.); *Apodemus sylvaticus* (L.): *Ctenophthalmus congener* Rotsch., *Polyplax serrata* (Burm.); *Clethrionomys glareolus* (Schreb.): *Polyplax serrata* (Burm.); *Pitymys subterraneus* (de Sel. Long): *Ctenophthalmus obtusus* Jord. et Rotsch.; *Sorex araneus* L.: *Hoplopleura acanthopus* (Burm.), *Polyplax serrata* (Burm.); and for *Crocidura suaveolens* (Pall.): *Polyplax reclinata* (Nitzsch).

HAITLINGER, R.: Adatok a magyarországi kisemlősök bolha- és tetű-faunájának ismeretéhez

A szerző 1972. július 26 és augusztus 21 között Magyarországon gyűjtött 12 fajhoz tartozó 154 kisemlős (rágcsálók és rovarrevők) külső parazitáit vizsgálta. 11 bolhafajt (214 példányban) és 3 tetűfajt (34 példány) talált, melyek közül a *Ctenophthalmus obtusus* Jordan et Rothschild (gazdája: *Pitymys subterraneus*) és a *Polyplax reclinata* (Nitzsch) (gazdája: *Crocidura suaveolens*) újak a magyar faunában.

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