

SOME ECOLOGICAL AND ZOOGEOGRAPHICAL ASPECTS
OF THE FLEA *NOSOPSYLLUS CONSIMILIS* (WAGNER)
OCCURRING IN ROMANIA

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In approaching the aspects discussed in the present paper, we took into account the fact that literature contains relatively few references on the ecology and distribution of this flea.

It is a Eurasiatic species, well known in the U.S.S.R.: the Ukraine, Crimea, Caucasus, Saratov, the Ural, Turkmenia, Kazackstan, Armenia, Azerbaidjan, Moldavian S.R. (Ioff and Tiflov, 1930; 1954; Kiršenblat, 1938; Bašenina, 1962; Andreiko, 1963; Andreiko and Šumilo, 1970). *Nosopsyllus consimilis* is also found in Romania, being recorded by Taskayeva and Hamar (1962) and, subsequently, by Suciú (1971, 1973).

Our collection comprises 235 specimens of *N. consimilis* 82 ♂♂ and 153 ♀♀. Specimens were collected between 1959 and 1971 in different regions of the country * from *Crocidura suaveolens*, *C. leucodon*, *Apodemus sylvaticus*, *A. flavicollis*, *A. agrarius*, *Rattus norvegicus*, *Mus musculus*, *Mesocricetus newtoni* and *Mustela nivalis*. For further details see Table 1. Besides, the flea had been recorded in Romania on *Sicista subtilis* and *Microtus arvalis* (Taskayeva and Hamar, 1962). In the U.S.S.R., the hosts' list comprises *Cricetus cricetus*, *Cricetulus migratorius*, *Mesocricetus brandti*, *M. arvalis*, *Clethrionomys glareolus*, *Chionomys nivalis*, *Arvicola amphibius* (nest), as well as *Mus*, *Apodemus* and *Microtus*.

N. consimilis prefers hosts from biotopes of steppe and meadow and can be encountered both on *Muridae* and on *Microtidae*. It is also accidentally parasiting on other small mammals (insectivorous, carnivorous — fam. *Mustelidae*) which live in the same biocenosis together with the most frequent hosts, *A. sylvaticus* and *M. arvalis*.

The analysis of our material shows that the sternum VII in the female shows a great structure variability, presenting a wide range of aspects

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TABLE I

Nosopsyllus consimilis (Wagner)-material, hosts, collecting places

Collecting places	Hosts										Total specimens	
	<i>Crocidura suaveolens</i> Pallas	<i>Crocidura leucodon</i> Hermann	<i>Apodemus flavicollis</i> Melchior	<i>Apodemus sylvaticus</i> L.	<i>Apodemus agrarius</i> Pallas	<i>Rattus norvegicus</i> Berk.	<i>Mus musculus</i> L.	<i>Mesocricetus newtoni</i> Neh.	<i>Microtus arvalis</i> Pallas	<i>Mustela nivalis</i> L.		
Agigea-Dobrogea				2♂♂								2
Botoșani-Moldova												2
Bugeac-Dobrogea				4♀♀	1♀							6
Caracal-Oltenia												1
Erghevița-Oltenia												4
Hagieni-Dobrogea				2♂♂, 2♀♀								11
Iazurile-Dobrogea				6♂♂, 13♀♀								19
Ieselnita-Banat												1
Isaccea-Dobrogea												2
Jijila-Dobrogea	1♂, 1♀	2♂♂, 1♀	1♂, 1♀	17♂♂, 53♀♀	3♂♂, 8♀♀	1♂						95
Jurilovca-Dobrogea				22♂♂, 22♀♀								51
Măcin-Dobrogea				2♀♀								6
Marculești-Muntenia				1♂, 2♀♀								4
Perieni-Moldova				1♂, 1♀							1♀	7
Smîrdanul Nou-Dobrogea												4
Valu lui Traian-Dobrogea				1♂, 7♀♀								19
Zebil-Dobrogea											1♀	1
Total specimens	3	2	2	158	12	2	7	4	43	2		235

in the different populations of *N. consimilis*: from an almost straight margin, only slightly undulated similar to that of the species *N. fasciatus*, to the deeply — hollowed one, prolonged and tongue — like of the typical form of *N. consimilis*. Another variable character noticed with the same populations concerns the spermatheca.

N. consimilis forms associations with other species of *Siphonaptera* on the body of hosts as well as in their nests. In most cases it was met together with *Ctenophthalmus assimilis* (Table 2).

TABLE 2

Associations between *Nosopsyllus consimilis* and other flea species

Hosts	Biotores	Parasites									
		<i>Nosopsyllus consimilis</i>	<i>Stenoponia t. tripectinata</i>	<i>Ctenophthalmus orientalis</i>	<i>C. assimilis</i>	<i>C. congener vicarius</i>	<i>C. rettigi</i>	<i>Peromyscopsylla bidentata</i>	<i>Nosopsyllus fasciatus</i>	<i>N. londi mokrzecky</i>	<i>Citellophillus simplex</i>
<i>Apodemus sylvaticus</i>	Fallow and cultivated steppe	×		×	×	×	×				×
	Plantation of oak and willow	×				×				×	
	Cultivated meadow	×				×					
<i>Apodemus agrarius</i>	Cultivated steppe	×	×		×		×				
<i>Rattus norvegicus</i>	Dammed grounds	×			×				×		
<i>Microtus arvalis</i>	Cultivated steppe	×			×						
	Forest belt	×			×	×					
	Deciduous forest Dobrogea	×			×			×			
	Heaps of corn	×			×				×		

N. consimilis, a species widely distributed in the steppes of the Asiatic part and south of the Soviet Union, has followed a dispersion line through the east and south of Romania, reaching its westernmost limit in the Banat (Ieşelniţa). In Romania it has been identified so far from the north of Moldova (Botoşani) to its centre (Perieni), in Muntenia, Oltenia and the Banat. It is frequently met in Dobrogea, where the steppe biotopes provide favourable conditions for its life and development. The fact that *N. consimilis* is a steppe species is proved by its absence in the Danube delta, though it is met both north and south of it (Moldavian S.R. and northern Dobrogea, respectively). In Dobrogea, its area extends from north to south (Hagieni). It is possible that this flea might also occur in Bul-

garia, in the region of the Pontic steppe, in the vicinity of Romania. In Muntenia and Oltenia, it is found in the zone of the Danube Plain, on a narrow strip of land. The Carpathians are a barrier in the distribution of this species to the centre of Europe.

Conclusions. *N. consimilis* (Wagner) prefers the biotopes of steppe (Dobrogea) and meadow (Danube Plain). It is encountered on different *Muridae* and *Microtidae*, mainly on *A. sylvaticus* and *M. arvalis*. The flea is a Eurasiatic species, whose range in Romania extends from the east to the south-west of the country, the Carpathians forming the barrier.

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LITERATURE

1. Andreiko, O. F.: Parazity živ. Mold. i voprosy kraev. parazit. 16-13, 1963.
2. Andreiko, O. F., Šumilo, R. P.: Parazity voronovykh ptic, gryzunov i zai-ceobraznykh Moldavii. — Kartya Mold., Kišinev 1970, 113 pp.
3. Bašenina, N. V.: Zoologiya obyknovennoi polevki. — Izdat. mosk. un-ta, 1962.
4. Ioff, I., Tiflov, V.: Parazit. sbornik zool. muz. Akad. Nauk, 1930.
5. Kiršenblat, Ya. D.: Zakonomernosti dinamiki parazitofauny myševidnykh gryzunov. — Thesis. Leningrad 1938.
6. Suci u, M.: *Studii și Cerc. Biol. Zoologie*, 23, 173-184, 1971.
7. Suci u, M.: *Rev. Roum. Biol. Zool., București*, 18, 111-118, 1973.
8. Taskeeva, E. Z., Hamar, M.: *Nauč. dokl. vys. škol.*, 1: 12-16, 1962.

EKOLOGICZNE I ZOOLOGICZNE ASPEKTY ROZMIESZCZENIA PCHŁY NOSOPSYLLUS CONSIMILIS (WAGNER) W RUMUNII

M. SUCIU

Material zebrany przez autorkę obejmuje 235 egzemplarzy pcheł zdjętych w latach 1959-1971 z 9 drobnych ssaków.

N. consimilis występuje w Rumunii w strefie stepów (Dobrudża) i łąk (Mołdawia, Muntenia, Oltenia). Brak go w Transylwanii i w delcie Dunaju, gdyż zachodnią granicę zasięgu stanowią tu Karpaty, a obszar delty jest zbyt wilgotny dla gatunku stepowego.

Żywicielami omawianej pchły są różne *Muridae* i *Microtidae* zwłaszcza *A. sylvaticus* i *M. arvalis*, a przygodnie również inne drobne ssaki żyjące w tych samych biocenozach.

N. consimilis tworzy zespoły z innymi przedstawicielami *Siphonaptera* zwłaszcza z *Ctenophthalmus assimilis* i to w gniazdach oraz na ciele żywicieli.

Zaobserwowano też pewną zmienność morfologiczną w zakresie VII sternum i spermateki.