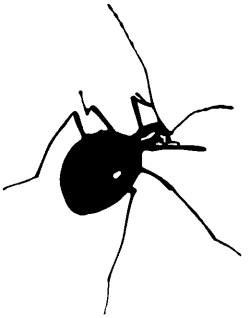

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CERATOPHYLLUS (MONOPSYLLUS) CARNIOLICUS, NEW FLEA SPECIES FROM THE FAMILY CERATOPHYLLIDAE (SIPHONAPTERA)

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Abstract – We describe a new species of flea from the subgenus *Monopsyllus* found in the nests of *Glis glis* in Mt. Snežnik (Slovenia). *Ceratophyllus* (*Monopsyllus*) *carniolicus* sp. n. is a very rare species whose ecology and major host are as yet unknown.

KEY WORDS: Siphonaptera, new species, *Glis glis*, Slovenia.

Izvleček – *CERATOPHYLLUS* (*MONOPSYLLUS*) *CARNIOLICUS*, NOVA VRSTA BOLHE IZ DRUŽINE CERATOPHYLLIDAE (SIPHONAPTERA)

Opisujeva novo vrsto iz podrodu *Monopsyllus*, ki je bila najdena v gnezdih navadnega polha (*Glis glis*) na Snežniku. *Ceratophyllus* (*Monopsyllus*) *carniolicus* sp. n. je zelo redka vrsta, katere ekologije in glavnega gostitelja še ne poznamo.

KLJUČNE BESEDE: bolhe (Siphonaptera), nova vrsta, navadni polh (*Glis glis*), Slovenija.

Introduction

In the catalogue of the family Ceratophyllidae Lewis (1990) lists 10 species (only one of which is polytypic) for the subgenus *Monopsyllus*. *Ceratophyllus* (*Monopsyllus*) *vison* Baker, 1904 is the only species distributed in North America (USA, Canada). The majority of the species occupy eastern and northern Asia, from

Japan and Taiwan through eastern and northern China and Mongolia to the mid-Asian part of Russia. *Ceratophyllus* (*M.*) *indages* Rothschild, 1908 is further distributed in southern Finland. Areas west and southwest of these are occupied by *C.* (*M.*) *sciurorum* (Schrank, 1781), which is polytypic, containing two subspecies. The nominate subspecies is distributed throughout Europe, Asia Minor, Palestine and the Asian part of Russia as far as the Yenisei and the Angara. The subspecies *C.* (*M.*) *asiaticus* Ioff, 1936 is distributed from Afghanistan to Lake Balkhash. In Slovenia the nominate subspecies is one of the most common sylvatic fleas. In the present paper we describe a new species from the subgenus *Monopsyllus,* found in fat dormouse (*Glis glis* (Linnaeus, 1766)) nests in Mt. Snežnik and compare it with the nominate subspecies of *C.* (*M.*) *sciurorum.*

This is the fifth contribution from the series »Ectoparasitical Entomofauna of Yugoslav (=Western and Central Balkans) Mammals« (Brelih & Petrov, 1978; Brelih, 1986; Brelih & Trilar, 2000a, 2000b).

Ceratophyllus (Monopsyllus) carniolicus sp. n.

Ceratophyllus (*Monopsyllus*) sp., Brelih & Trilar (2000b), Acta entomologica slovenica, 8(2): 175.

Material:

Slovenia:

1♀ Snežnik: Sviščaki, 1250 m, UTM: VL45, 22. 7. 1997, from 1 nest of *Glis glis*, leg. T. Trilar

2♂ same data, 3. 9. 1999

2♂ same data, 30. 10. 1999, from 2 nests of *Glis glis*

The holotype male (PMSL-IA-P-9479), a paratype female (PMSL-IA-P-9480) and 3 paratype males (PMSL-IA-P-9476-9478) are all from Sviščaki in Mt. Snežnik (Slovenia). All other data are given above. The type material resides in the Slovenian Museum of Natural History in Ljubljana (PMSL - Prirodoslovni muzej Slovenije v Ljubljani, coll. T. Trilar).

Diagnosis: Male *Ceratophyllus* (*Monopsyllus*) *carniolicus* sp. n. differ from *C.* (*M.*) *sciurorum* in possessing a slender, elongate well developed sternum VIII ending with a single long bristle. Females are characterized by the outline cf sternum VII and the smaller number of long bristles on sterna IV VII.

Description: Male and female are similar in most characters to *C.* (*M.*) *sciurorum* but differ in the following ways:

Male: In *C.* (*M.*) *carniolicus* sternum VIII is long and slender. The plate length approaches or exceeds three times the maximum width of the base and terminates in a single, long bristle (Fig. 3a, b). While the maximum width of sternum VIII in *C.* (*M.*) *sciurorum* is similar to that of the new species the length is much shorter so that

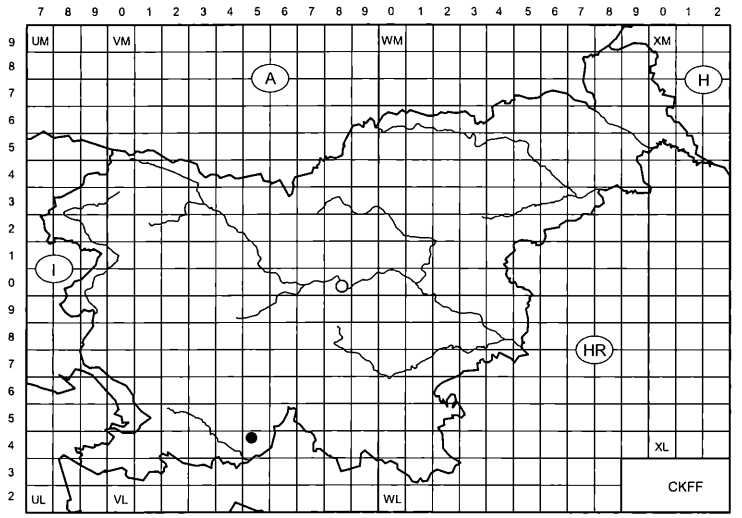

Fig. 1: Locus typicus of *Ceratophyllus* (*Monopsyllus*) *carniolicus* sp. n.: Sviščaki, Mt. Snežnik, Slovenia (black circle) and the survey site of *Ceratophyllus* (*Monopsyllus*) sp.: Litija, Slovenia (white circle).

length only approaches twice the maximum width of the base. In the nominate species sternum VIII also varies considerably in shape and in a few specimens a short bristle is developed near the terminus of the elongate portion of the plate (Fig. 4c).
Female: The single female specimen of the new species from Mt. Snežnik differs in the outline shape of sternum VII (Fig. 5a) and in bristle number and placement. Specimen posses two long bristles on each side of sternum VII posterior to 2 or 3 short bristles. Sterna VII of *C.* (*M.*) *sciurorum* posses 4 or 5 (and occasionally 3) long bristles and from 5 to 14 short bristles arranged in 1 or 2 irregular rows (Fig. 5b). In the females from Mt. Snežnik the average number is 9.2. In the paratype female of the new species there are 3 long bristles on sterna IV VI. Specimens of *C.* (*M.*) *sciurorum* usually possess 4, sometimes 5, and a few specimens have only 3, but in all cases they are restricted to the same region on the sternum. The paratype female spermatheca (Fig. 7a) differs in bulga and hylla from the spermatheca of *C.* (*M.*) *sciurorum* (Fig. 7c, d). The spermatheca of specimens of *C.* (*M.*) *sciurorum* show considerable intrapopulation variation. As only one female specimen of the new species is available, we do not presently know how variable this trait may be.

Among 38 localities in the territory of the Western and Central Balkans (= former Yugoslavia) we examined over 11.000 flea specimens from the subgenus *Monopsyllus* (Trilar 1997; Brelih & Trilar, 2000b). Only five specimens from four of different nests from Mt. Snežnik belong to the new species of flea from Slovenia. We are not able to confirm the taxonomic status of a single female specimen from

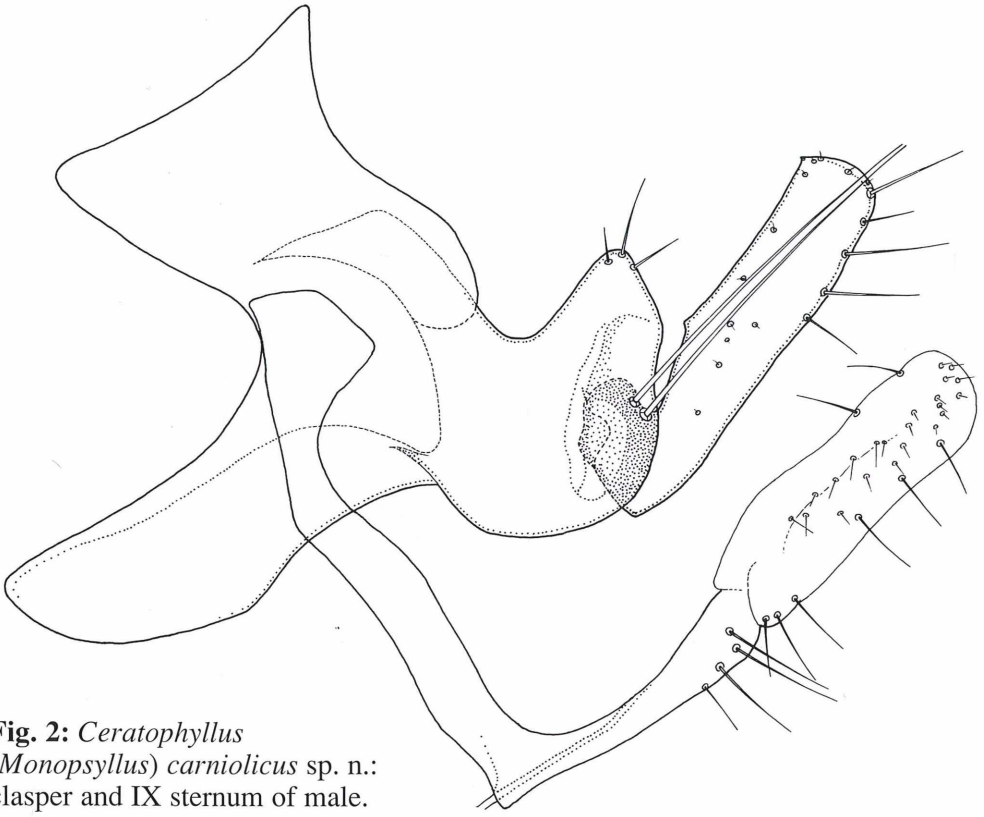

Fig. 2: *Ceratophyllus* (*Monopsyllus*) *carniolicus* sp. n.: clasper and IX sternum of male.

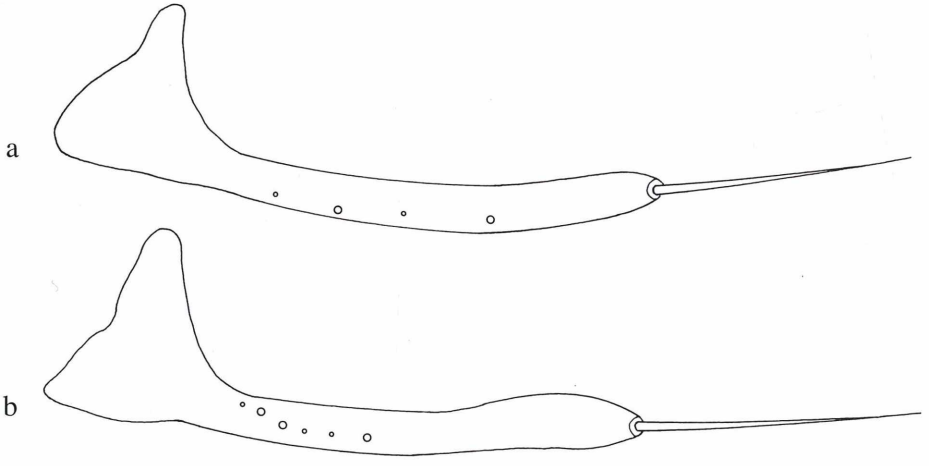

Fig. 3: *Ceratophyllus* (*Monopsyllus*) *carniolicus* sp. n.: sternum VIII of male: a. holotype; b. paratype.

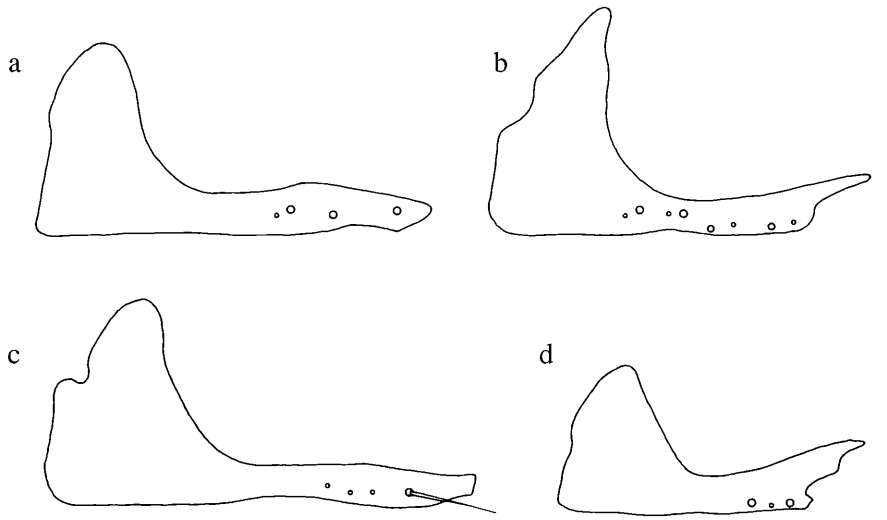

Fig. 4: *Ceratophyllus* (*Monopsyllus*) *sciurorum sciurorum* (Schrank): sternum VIII of male: a, b. Novi Svet, Hotedršica, Slovenia; c, d. Sviščaki, Mt. Snežnik, Slovenia.

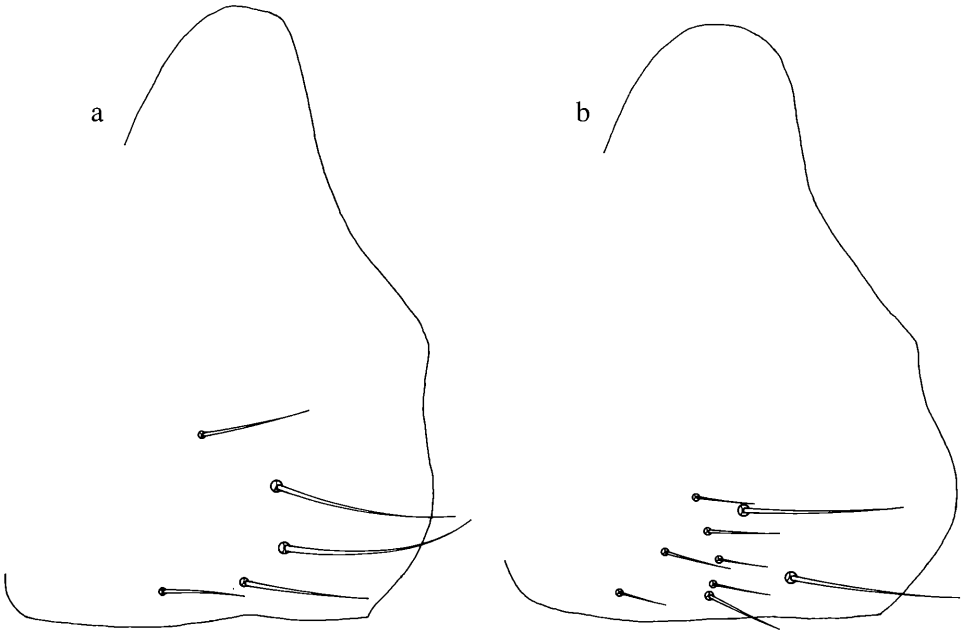

Fig. 5: Sternum VII of female: a. *Ceratophyllus* (*Monopsyllus*) *carniolicus* sp. n., paratype; b. *Ceratophyllus* (*Monopsyllus*) sp., Litija, Slovenia.

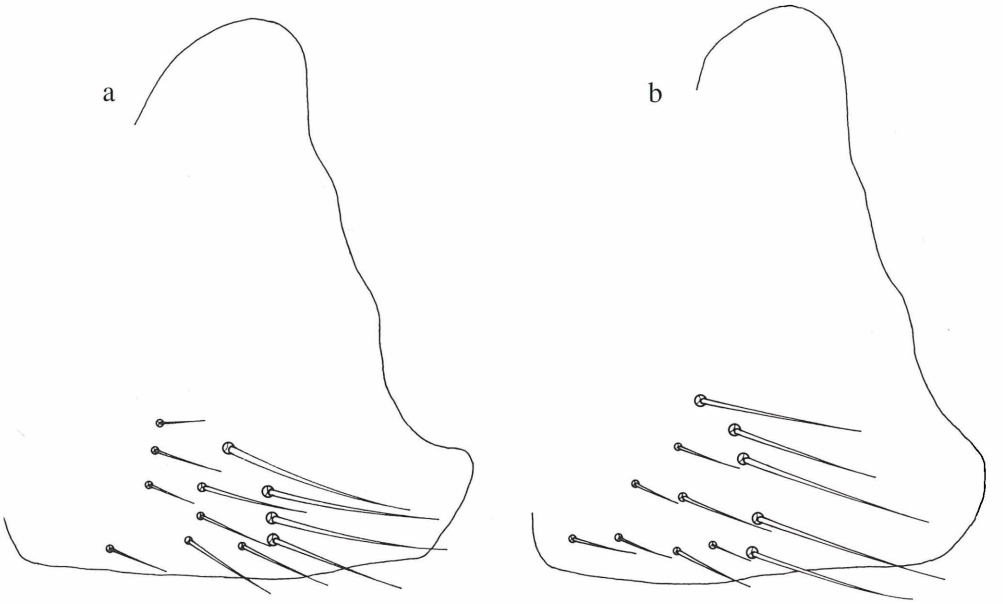

Fig. 6: *Ceratophyllus* (*Monopsyllus*) *sciurorum sciurorum* sternum VII of female: a b. Sviščaki, Mt. Snežnik, Slovenia.

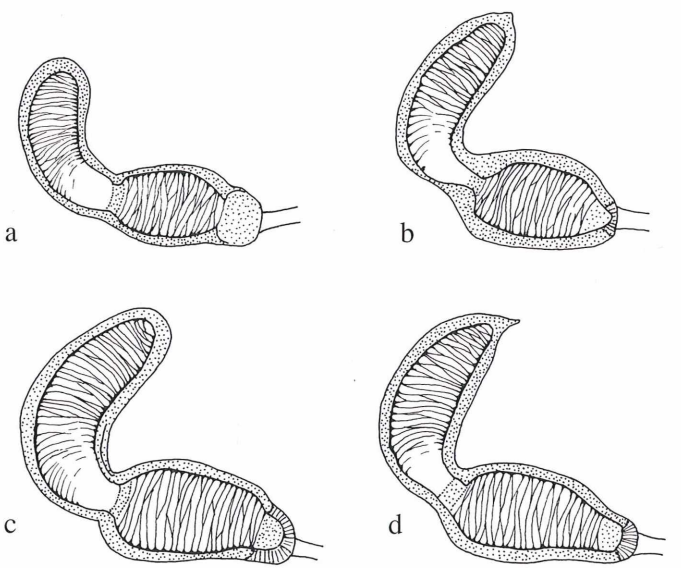

Fig. 7: Spermatheca of female: a. *Ceratophyllus* (*Monopsyllus*) *carniolicus* sp. n., paratype; b. *Ceratophyllus* (*Monopsyllus*) sp., Litija, Slovenia; c, d. *Ceratophyllus* (*Monopsyllus*) *sciurorum sciurorum* (Schrank): Sviščaki, Mt. Snežnik, Slovenia.

Litija (central Slovenia) whose sternum VII (Fig. 5b) does not clearly differ from that of the new species *C. (M.) carniolicus*, but is, with respect to the spermatheca (Fig. 7b) and the number of bristles on sterna IV VI, more like *C. (M.) sciurorum*.

All specimens of the new species were collected from the nests of *Glis glis* built in the wooden nest boxes in the Sviščaki area (Mt. Snežnik, Slovenia) 1250 m above sea level. They are very rare representing less than 0.1% of the *Monopsyllus* specimens we examined. The ecology and the major host of *Ceratophyllus (Monopsyllus) carniolicus* sp. n. are unknown at this time.

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