

## CONTRIBUTION TO THE STUDY OF NASAL MITES (FAM. CYTODITIDAE, HALARACHNIDAE AND RHINONYSSIDAE) IN BULGARIA

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**Abstract.** It is the first paper dealing with nasal mites in Bulgaria. Members of 3 families are concerned: Cytoditidae (*Cytodites faini* sp. n.), Rhinonyssidae (4 species) and Halarachnidae (1 species representing first record of Zumptiellinae in Europe).

The advancement of the knowledge on the nasal mites, achieved in the last years thanks to the effort of some prominent scientists of several countries, has not yet reached Bulgaria. As a matter of fact, not a single nasal species has been reported till the present day from the Bulgarian fauna. This paper brings the first results of our studies on these particular mites.

### Family Cytoditidae

This small family comprises only 11 species which belong to two genera: *Cytodites* Mégnin, 1977 and *Cytonyssus* Fain, 1960. In Europe two species have been found till present: *Cytodites nudus* (Vizioli, 1870) and *Cytonyssus fulicae* Fain et Bafort, 1964. The author discovered a new species which is the subject of this paper.

### *Cytodites faini* sp. n.

Fig. 1.

**Material:** 4 ♀♀, 1 larva in the nostrils of *Lanius collurio* L., Pazardjik, Bulgaria, 10. 6. 1968, lgt. P. Beron. Holotype and 2 paratypes are deposited in the collection of the Institute of Zoology, Bulgarian Academy of Sciences in Sofia, one paratype in the collection of the Institute of Parasitology in Prague, another one in the collection of Prof. Dr. Alex Fain in Antwerp.

**Derivatio nominis:** the new species was dedicated to the prominent Belgian acarologist, Prof. Dr. Alex Fain.

**Female (holotype)** (Fig. 1): General appearance of the genus *Cytodites*. Length of the body (including gnathosoma) 345  $\mu$ , maximum width 227  $\mu$ . Sporadically irregularly striated. Epimera III attached to epimera IV in an arch-like way. Tarsal ambulacra small, attached to the legs I and II by means of a very short and broad peduncles, to the legs III and IV by conic peduncles. Sternum 25  $\mu$  long, situated in front of the epigynium. Chaetotaxy of the idiosoma hardly visible, but clearly resembling the chaetotaxy of *C. amandavae* Fain et Bafort.

In the key to the family Cytoditidae (Fain and Bafort 1964, p. 524) this species should be placed immediately next to *Cytodites amandavae* Fain et Bafort, which is

the only species with the epimera III and IV forming a continuous arch. *C. faini* has, as well as *C. amandavae*, posterior legs relatively long. The main differences between the two species are: 1. Cylindrical peduncles, bearing the ambulacra of the legs, well developed in *C. amandavae*, of different form in *C. faini*. 2. Sternum of different form. 3. In *C. faini* chitinous formations well developed in coxae III and IV. 4. Gnathosoma a little more elongated in *C. faini*. It should be considered that *C. amandavae* was disco-

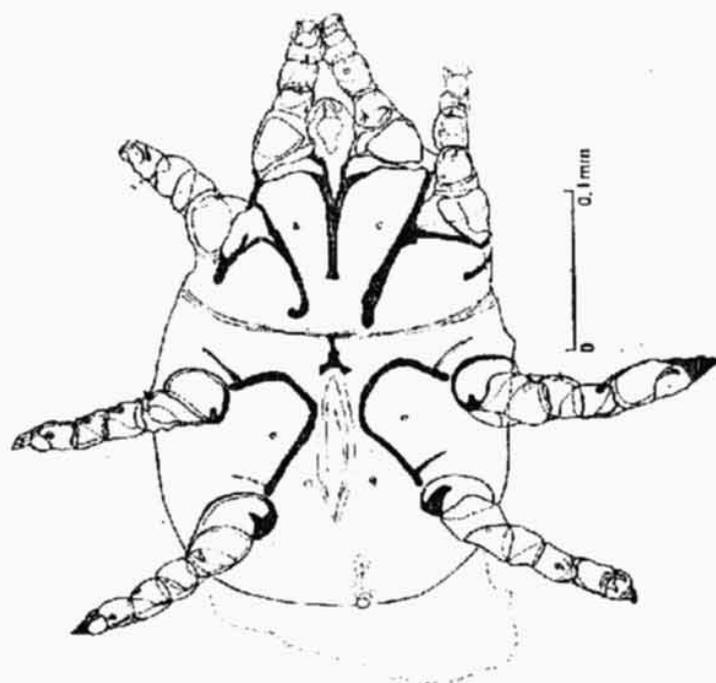


Fig. 1. *Cytodites faini* sp. n., ♀ — ventral view.

vered in the air sacs of two passeriform birds of the family Ploceidae (*Amandava amandava* (L.) and *Sporopipes frontalis* Daudin), originating from India and Ethiopia respectively, that died in Antwerp.

In the meantime, Hyland (1969) described a second species of the genus, *C. therae*, a parasite of *Coccyzus erythrophthalmus* (Cuculidae) from the United States, whose epimera III and IV are fused in an arch-shaped way. Our species differs from *C. therae* in smaller tarsal ambulacra, in shorter coxal hairs, in the absence of medial projections of coxae III and IV and in some other features. Several common features in *C. amandavae*, *C. therae* and *C. faini* make us presume that they constitute a natural group if not a subgenus.

## Family Rhinonyssidae

### 1. *Ptilonyssus prunellae* Fain et Bafort, 1963

Host: *Prunella modularis* L. Locality: Vitosha near the cottage Aleko, 1830 m above sea level, 5. 5. 1968 (2 ♂♂, 5 ♀♀).

Described from the same host in Belgium. The chaetotaxy of our specimens agrees with the descriptions of Fain and Bafort (1963).

### 2. *Ptilonyssus echinatus* Berlese et Trouessart, 1889

Host: *Hirundo rustica* L. Locality: Moskovec (distr. Plovdiv), 24. 4. 1968, 1 ♂, 4 ♀♀.

Known from the swallows of several countries.

### 3. *Neonyssus (Frigilonyssus) carduelis* (Fain, 1962)

Host: *Carduelis cannabina* L. Locality: Cerovo (distr. Pazardjik), 5. 10. 1969, 2 ♀♀.

Known from Belgium, as well as from the U.S.S.R. from the same host (Shumilo and Lunkashu 1970) and from 4 other species of birds (Bregotova 1967).

### 4. *Sternostoma bruxellarum* Fain, 1961

Host: *Sturnus vulgaris* L. Locality: Moskovce (distr. Plovdiv), 24. 4. 1968.

Known from Belgium from the same host and from the U.S.S.R. (Shumilo and Lunkashu 1970).

## Family Halarachnidae

### Subfamily Zumptiellinae

At present the family Halarachnidae Oudemans, 1906 comprises about 50 species, located in respiratory organs of mammals. Fain (1962) divided this family into two subfamilies, namely Halarachninae (with 5 genera) and Zumptiellinae (with 1 genus). The first species of Zumptiellinae was described in 1954 from *Tamiasciurus douglasi mollipilosus* from North America as *Pneumonyssus bakeri* Furman. Later 4 other species were found: *Zumptiella furmani* Fain, 1962 (from *Pedetes cafer* from South Africa), *Z. cynictis* Fain, 1962 (from *Cynictis penicillata* from Transvaal), *Z. citelli* Clark et Clifford, 1964 (from *Citellus columbianus* from the United States) and *Z. coreaensis* Hyong-Sun Ah, 1964 (from *Sciurus vulgaris coreae* from the South Korea). The analysis of the hosts of the two subfamilies shows that Zumptiellinae appear to be specialized to rodents of a middle size and to small carnivores, which are closely related by their biology. In contrast, the known hosts of Halarachninae all belong to large mammals, the smallest of them being the dassies.

### *Zumptiella coreaensis* Hyong-Sun Ah, 1964

Material: 3 ♀♀ from the nostrils of *Sciurus vulgaris lilaeus*, Govedareci, Rila, Bulgaria, 30. 10. 1968, lgt. P. Beron.

Our specimens agree with the description of the Korean species. The length of body of the two Bulgarian specimens (without gnathosoma) is 544—560  $\mu$  (specimens of Corea 440—610  $\mu$ ); length of the dorsal shield is 357 and 340  $\mu$  (specimens of Corea 330—345  $\mu$ ). The Bulgarian specimens have the posterior margin of the sternal shield more concave, the genital structures differ a little in the form, the anal shield is less developed, but in our opinion these differences are not very significant.

*Z. coreaensis* Ah is the first representative of the subfamily Zumptiellinae in the western Palaearctic Region. This parasite with its host, the squirrel, is undoubtedly spread throughout the whole Eurasia.

К ИЗУЧЕНИЮ КЛЕЩЕЙ (СЕМ. CYTODITIDAE, HALARACHNIDAE И RHINONYSSIDAE) ИЗ НОСОВОЙ ПОЛОСТИ ЖИВОТНЫХ БОЛГАРИИ

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Резюме. Это первая работа по полостным клещам Болгарии. Найдены представители 3 семейств: Cytoditidae (*Cytodites faini* sp. n.), Rhinonyssidae (4 вида) и Halarachnidae (1 вид являющийся первой находкой в Европе подсемейства Zumptiellinae.)

## REFERENCES

- AH HYONG-SUN, *Zumptiella coreaensis*, a new species of nasal mite from the Korean squirrel *Sciurus vulgaris coreae* Sowerby, 1921. *Parasitology* 54: 403—408, 1964.
- BREGETOVA N. G., The generic groups of Rhinonyssid mites—parasites of birds. III. Genera *Neonyssus* Hirst, 1921 and *Neonyssoides* Hirst, 1923. *Parazitol. sbornik* 23: 124—137, 1967. (In Russian.)
- FAIN A., Un nouvel Halarachnide du genre *Zumptiella* parasite des fosses nasales d'une Mangouste—Remaniement de la famille Halarachnidac. *Rev. Zool. Bot. Afr.* 66: 272—275, 1962.
- , BAFORT J., Les acariens parasites nasicoles des Oiseaux de Belgique. III. Nouvelles observations sur les Rhinonyssidae avec description de cinq espèces nouvelles. *Bull. Ann. Soc. roy. Ent. Belgique* 33: 471—485, 1963.
- , —, Les acariens de la famille Cytoditidae (Sarcoptiformes), description de sept espèces nouvelles. *Acarologia* 6: 504—528, 1964.
- HYLAND K. E., *Cytodites therae* sp. n. from the respiratory passages of the Black-billed Cuckoo in North America (Sarcoptiformes: Cytoditidae). *Acarologia* 11: 597—601, 1969.
- SHUMILO R. P., LUNKASHU M. I., Nasocavital mites of the family Rhinonyssidae (Parasitiformes: Mesostigmata) of terrestrial birds from the south-western U.S.S.R. *Kishinev*, 127pp., 1970. (In Russian.)

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