

## *MESOCESTOIDES LITTERATUS* (BATSCH, 1786) (CESTODA), PARASITE OF *VULPES VULPES* (L., 1758) (CARNIVORA) IN THE CZECH REPUBLIC

F. Tenora

Received: April 30, 2005

### Abstract

TENORA, F.: *Mesocestoides litteratus* (Batsch, 1786) (Cestoda), parasite of *Vulpes vulpes* (L., 1758) (Carnivora) in the Czech Republic. Acta univ. agric. et silvic. Mendel. Brun., 2005, LIII, No. 4, pp. 185-188

Presented is the priority finding of the tapeworm species *Mesocestoides litteratus* (Batsch, 1786) in *Vulpes vulpes* (L., 1758) in the Czech Republic.

*Mesocestoides litteratus*, Cestoda, *Vulpes vulpes*, Carnivora, Czech Republic

### INTRODUCTION

Findings of the cestodes from the genus *Mesocestoides* Vaillant, 1863 in *Vulpes vulpes* in the Czech Republic are not numerous. Staněk (1963) and Svatoš (1963) and Later Prokopič (1965) report that in the named host, they found the species *Mesocestoides lineatus* (Goeze, 1782). The species *M. litteratus* found by us in *Vulpes vulpes* is thus of priority for the territory of the Czech Republic.

As to the Czech Republic, Lýsek and Bičík (1970) studied active movement of the *M. litteratus*. They found this cestode in the house cat. In their short communication, they did not present the locality of finding, kind cestode determination or material description. Svobodová and Svoboda (1995) in their textbook only assume the occurrence of the cestode *M. litteratus*, namely in *Canis familiaris*. Below, we present details on our material.

### MATERIAL AND METHODS

At dissection of *Vulpes vulpes* in the village Bačov, South-Moravian Region, cestodes *M. litteratus* were found. They parasitized in the small intestine. In the material, 10 complete strobilae and large amount of

fragments were counted. The material was fixed with 70% alcohol and stained with borax-carmin. After differentiated in acid alcohol and transferred through alcohol series, cestodes were clarified with xylol and mounted into Canada balsam. Further examinations were performed on the light microscope Opton.

### RESULTS

*Mesocestoides litteratus* (Batsch, 1786)

The description is based on 10 total strobilae (all measurements in mm): Strobila 62–194, anterior width 0.160–0.222, posterior width maximum 1.235. Mature segments 0.800–850 in width, 1.350–1.550 in length, gravid segments 0.920–1.235 in width, 1.543–1.890 in length. Scolex 0.380–0.620 by 0.475–0.680. Sucker arranged in two pairs, 0.171–0.220 by 0.285–0.320. Neck very long, 2.450–2.500 and thin 0.131–0.152, sometimes absent. Testes 72–94 in number measure on average 0.033–0.042, connected or also slightly separated in lower segment part, other testes surrounding genital organs. Cirrus pouch, sacking, elongated, 0.270–0.320 in length and 0.046–0.098 in width. Ovaries consisting of two lobes, situated posteriorly, measure 0.150–0.210 by 0.080–0.220. Vitel-

line gland 0.080–0.130 by 0.040–0.114. Paruterine organ 0.380–0.420 by 0.220–0.470. Eggs spherical, in capsule 0.028–0.035 in diameter.

### DISCUSSION

The species *M. litteratus* went through a very diverse development at its systematic, taxonomic but also nomenclatorial assessments. Summary of these opinions is presented first of all by Tschertkova and Kosupko (1978), Loos-Frank (1980) and Priemer (1983). We add to the data reported there:

Sprehn (1932) as late as in 1932 considers the species *M. litteratus* to be a synonym of the species *M. lineatus*.

Joyeux and Baer (1936) do not present the species *M. litteratus* in their determinative key. In spite of that, they state that *M. litteratus* parasitizes *Vulpes vulpes* in France, and that a rare species is concerned.

Neveu-Lemaire (1936), present *M. litteratus* as bona species in a textbook with illustrations according to Markovski (l.c.). According to the illustrations, especially according to the shape of cirrus pouch, it is questionable whether here the species *M. litteratus* is concerned at all.

Sadychow (1971) describes from *Vulpes vulpes* the species *M. petrowi* n. sp. The species described by him is similar to the material, which are determined by Müller (1928) as *M. litteratus*.

Tschertkova and Kosupko (1978), establishing the key for determination of species from the genus *Mesocestoides*, placed near to *M. litteratus* only *M. petrowi*. In the case of *M. litteratus* they present the number of testes higher than 130, in the case of *M. petrowi*

only 48–86 testes. In *M. litteratus*, the latter authors are contiguous to the description by Zschokke (1889), who counted only 50–60, or 100–120 testes.

Loos-Frank (1980) declared the name *M. litteratus* (Batsch, 1782) to be nomen dubium, and the material from *Vulpes vulpes* from the territory of Germany was described by her as *Mesocestoides leptothylacus* n. sp.

Priemer (1983) in his historical review came to the conclusion similar to that by Loos-Frank (1980). In contrast to her opinion, he considers the species *M. litteratus* to be bona species and the species *M. leptothylacus* as its synonym. Moreover, Priemer (1983) in his characterization of *M. litteratus* states, that this species has 52–134 testes. He also considers the species *M. petrowi* Sadychow, 1971 to be a synonym of *M. litteratus*. The similar opinion is presented by Jantschew (1986).

Gubanyi and Eszterbauer (1998) state that the species of *M. litteratus* is differentiated from *M. lineatus* by the maximum diameter of testes. With that, they complete the modern conception for determination of cestodes from the genus *Mesocestoides* as established by Tschertkova and Kosupko (1978). Gubanyi and Eszterbauer (1998), in contrast to Priemer (1983), include the species *M. leptothylacus* Loos-Frank, 1980 in synonyms of the species *M. lineatus* (Goeze, 1782).

The author of present study is consistent with the opinions of Priemer (1983) and Jantschew (1986). On the basis of the cited literature resources, he considers the species *M. litteratus* to be the typical parasite of *Vulpes vulpes* in the European region.

### SUMMARY

#### Nález tasemnice *Mesocestoides litteratus* (Batsch, 1786) u lišek v České republice

Je prezentován originální nález tasemnice druhu *Mesocestoides litteratus* (Batsch, 1786) u lišky obecné v České republice. Z rodu *Mesocestoides* autoři z České republiky dosud jako parazita lišky obecné uvádějí jen druh *M. lineatus* (Goeze, 1782) (Prokopič, 1965; Staněk, 1963; Svatoš, 1963). Studie doplňuje obšírně názory na systematické postavení zjištěného druhu parazita a souhlasí s názory Priemer (1965) a Jantschew (1986). Konstatuje také, že *M. litteratus* je pravděpodobně obvyklým cizopasníkem lišky obecné v evropských podmínkách.

tasemnice, *Mesocestoides litteratus*, liška obecná

### REFERENCES

- GUBANYI, A., ESZTERBAUER, E.: Morphological investigation of *Mesocestoides* (Cestoda, Mesocestoididae) species parasitizing *Vulpes vulpes* in Hungary. Misc. Zool. Hung., 1998, 12: 11–19
- JANTSCHEW, J. A.: Morphology, Taxonomy and Distribution of the Species of Genus *Mesocestoides* Vaillant, 1863 in Bulgaria. Helminthology, 1986, 21: 45–65 (in Bulgarian)
- JOYEUX, CH., BAER, J. G.: Fauna de France 30. Cestodes. Paris

- LOOS-FRANK, B.: *Mesocestoides leptothylacus* n. sp. und das nomenklatorische Problem in der Gattung *Mesocestoides* Vaillant, 1863 (Cestoda, Mesocestoididae). Tropenmedizin und Parasitologie, 1980, 31: 1-14
- LÝSEK, H., BIČÍK, V.: On the active movement of the cestode *Mesocestoides litteratus*. Folia Parasitologica, 1970, 17: 152
- MÜLLER, J. F.: The genus *Mesocestoides* in mammals. Zoologische Jahrbücher, Abteilung für Systematik, Ökologie und Geographie der Tiere, Jena, 1928, 55: 403-418
- NEVEU-LEMAIRE, M.: Traité de helminthologie médicale et vétérinaire. Vigot Frères Paris, 1936
- PRIEMER, J.: On the problem of european *Mesocestoides* species (Cestoda) from mammals Helminthologia, 1983, 20: 89-95
- PROKOPIČ, J.: Helminthofauna u šelem Československa. Československá parasitologie, 1965, 12: 207-225
- SADYCHOW, I. A.: New species of tapeworm *Mesocestoides petrowi* n. sp. from *Vulpes vulpes* L. Raboty po gelmintologii, Kolos, 1971: 351 – 353 (in Russian)
- SPREHN, C.: Lehrbuch der Helminthologie. Berlin, 1932
- STANĚK, M.: Další nálezy cizopasných červů u šelem na území ČSSR. Zoologické listy, 1963, 12: 359-362
- SVATOŠ, I.: Příspěvek ke znalostem helmintofauny některých volně žijících šelem. Sborník Vysoké školy zemědělské, Brno, řada B, 1963, 11: 307-314
- SVOBODOVÁ, V., SVOBODA, M.: Klinická parazitologie psa a kočky. Česká asociace veterinárních lékařů malých zvířat, Brno, 1995
- TSCHERTKOWA, A. N., KOSUPKO, G. A.: Pododrjat Mesocestoidata Skrjabin, 1940. Osnovy Cestodologii 9. Nauka, Moskva, 1978
- ZSCHOKKE, F.: Recherches sur la structure anatomique des cestodes. Memoires Institut Nat., Genève, 1889, 17: 131-153

#### Address

Prof. RNDr. František Tenora, DrSc., Ústav zoologie, rybářství, hydrobiologie a včelařství, Mendelova zemědělská a lesnická univerzita v Brně, 613 00 Brno, Česká republika

