

THE FIRST OCCURRENCE OF CHABERTIA OVINA IN WILD SWINE

OLGA LEPOJEV*, Z. KULIŠIĆ*, G. MATIĆ*, I. PAVLOVIĆ** and V. ČEŠLJEVIĆ***

Faculty of Veterinary Medicine, Belgrade **Veterinary Institute, Belgrade ***Serbia forest *Sombor

(Received, 25. March 1997.)

Wild swine hunted in the forest near Bački Monoštor were examined by pathoanatomical section.

The following nematode species were found in the large intestine: Chabertia ovina, Trichostrongylus suis, Globocephalus urosubulatus, Oesophagostomum dentatum and Oesophagostomum longicaudatum.

Chabertia ovina was found in 3 wild swine in numbers of 2, 10 and 152 parasites per animal respectively.

This is the first recorded occurrence of Chabertia ovina in wild swine in this country.

Key words: Chabertia ovina, wild swine

INTRODUCTION

Examination of the etiology of parasitic infection in wild swine is widespread in Europe. Many parasite species are located in the digestive tract of wild swine: Arduenna strongylina, Physocephalus sexualatus, Simondsia paradoxa, Hyostrongylus rubidus, Ascaris suum, Trichostrongylus suis, Trichostrongylus colubriformis, Globocephalus urosubulatus, Globocephalus longemucronatus, Strongyloides ransomi, Eimeria species, Trichuris suis, Oesophagostomum quadrispiculatum and Oesophagostomum dentatum. The respiratory organs are found to be infected with: Metastrongylus apri, Metastrongylus salmi, Metastrongylus confusus and Choerostongylus pudendotectus. Fasciola hepatica has been detected in the bile canals. Moreover, the larval stage of Echinococcus granulosus and Taenia hydatigena and larvae of Trichinella spiralis are not of rare occurrence in these animals (Arru et al., 1982; Barutzki and Richter, 1990; Chmarzynski, 1983; Cotteler and Fameree, 1982; Dittus, 1983; Henne et al., 1978; Henne, 1979; Kutzer, 1988; Pen'kevich V. A. and Pen'kevich A. A., 1983; Schoierer, 1990. and Tscherner and Moller, 1979.).

Reports of the occurrence of other parasite species are unusual or unique.

Gallego et al. (1979) found Capillaria garfai in the tongue of 37 of 45 examined wild pigs originating from several areas in the Iberian peninsula.

Streljnik et al. (1976) reported the occurrence of Bourgelatia deducta and Raillietostongylus samoensis in wild boars in the Primorsk territory in Russia.

Some wild boars were found to be a new host for *Ancylostoma caninum* and *Uncinaria stenocephala*.

In Yugoslavia Milić (1951), Petrović et al. (1966) and Lepojev et al. (1992) examined intestinal parasites in wild swine. They found the following parasite species: *Eimeria* spp., *Balantidium coli*, *Echinochasmus perfoliatus*, *Euparyphium suinum*, *Arduenna strongylina*, *Ascaris suum*, *Metastrongylus elongatus*, *Choerostongylus pudendotectus*, *Physocephalus sexalatus*, *Gnathostoma hispidum*, *Globocephalus longemucronatus*, *Oesophagostomum dentatum*, *Strongyloides ransomi*, *Trichuris suis* and *Capillaria* spp.

MATERIAL AND METHODS

Five wild swine which originated from the forest near Bački Monoštor were caught. Their organs were examined by a standard post mortem parasitological procedure. The collected parasites were identified according their morphological characteristics (Boch and Supperer, 1983).

RESULTS AND DISCUSSION

Chabertia ovina was found in the large intestine of 3 wild swine (Table 1).

Table 1. Number of *Chabertia ovina* found in wild swine

| Animal No. | Number of <i>Chabertia ovina</i> | | |
|------------|----------------------------------|--------|-------|
| | Male | Female | Total |
| 1 | 6 | 4 | 10 |
| 2 | — | 2 | 2 |
| 3 | 67 | 85 | 152 |

The males were 12-18 mm and the females were 14-25 mm long. The buccal capsule was large and bell like (Figures 1,2, 3). Around the rim of the buccal capsule was a double row of teeth (lamellae). At the anterior part of the body cuticle were tracks. Spiculae were tawny coloured, thick at the proximal part, covered in a membrane which was transversely tracked and 1.3-1.8 mm long. All of the other body measurements were morphometric and morphological characteristics of *Chabertia ovina* as given by Dunn (1963) and Soulsby (1977).

Besides *Chabertia ovina*, the following nematode species were found in the large intestine of the same animals: *Trichostrongylus suis*, *Globocephalus urosulatus*, *Oesophagostomum dentatum* and *Oesophagostomum longicaudatum*. These nematode species are well known common intestinal parasites in wild swine, with a wide range of distribution (Brglez, 1966; Arru et al., 1982; Kutzer, 1988; Lepojev et al., 1992).

Chabertia ovina is a well known parasite of the large intestine of small domestic ruminants and numerous wild ruminants such as chamois, fallow deer and roe deer (Bidovec, 1984., Kopitar, 1984., Boch and Schwidawind, 1988.). It

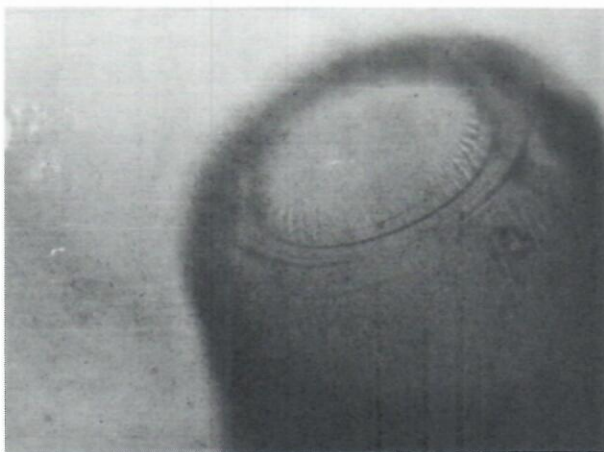


Figure 1. Anterior part of the body – buccal capsule

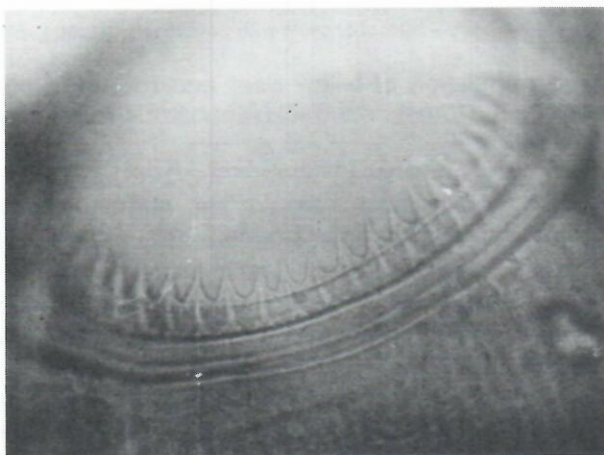


Figure 2. Anterior part of the body – buccal capsule with double row of tecti (lamellae)

was found in many hunting grounds where cohabitation between domestic and wild ruminants exists. In several hunting grounds in Slovenia, Bidovec and Kopitar (1991) indicated the important role of cohabitation of sheep, chamois, fallow deer and roe deer in cross transmission of gastro-intestinal nematode species. In all examined populations they found *Chabertia ovina*. Infection of the host occurs

per os and 48-54 days afterwards parasite eggs appear in the faeces of infected animals. In this way permanent soil contamination of pasture with *Chabertia* eggs occurs.

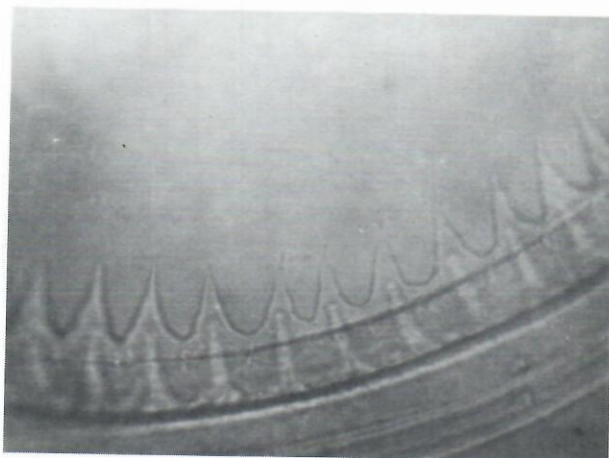


Figure 3. Anterior part of the body – buccal capsule with double row of teeth (lamellae)

Since a large population of fallow deer and roe deer, natural hosts of *Chabertia ovina*, live in the forest near Bački Monoštor, they represent a route of infection to the wild swine.

No data about the occurrence of *Chabertia ovina* in wild swine or domestic swine were found in the available literature. The number of parasites found indicates that the infection was not an accidental case, and opens the possibility of adaptation of *Chabertia ovina* to parasitism in a new host - wild swine. This is not unique, because Streljnik et al. (1976) found *Ancylostoma caninum* and *Uncinaria stenocephala* in wild swine in the Primorsk territory in Russia.

The occurrence of *Chabertia ovina* in wild swine is of extreme epizootiological importance, if we know the role of this parasite species in the pathology of its usual hosts - sheep and goats (Dunn, 1963., Soulsby, 1977). Infection of the host occurs per os and 90 hours after infection the larvae have performed the third ecdysis and have become attached to the mucosa of the upper colon. Then they enter its wall. The adult worm attaches firmly to the mucosa of the colon by means of buccal capsules and draws in a plug of the mucosa, chiefly to the glandular layer, which is digested by the secretions of the oesophageal glands of the worm. The worms suck blood by accident only, when a blood vessel is ruptured. In severe infection sheep lose condition and may become anemic and die. A low rate of *Chabertia* infection may be responsible for a specific reduction of wool growth in sheep.

At necropsy of the wild swine the worms were found attached to the mucosa of the colon, which was congested, swollen and covered with a transparent mucus with punctiform haemorrhagiae present. This occurrence indicates the pathological effect of *Chabertia ovina* in its new host - wild swine and its full adaptation to it.

The first occurrence of *Chabertia ovina* in wild swine in Serbia is of epizootiological importance and indicates the necessity for continuous parasitological examination of this animal species. If we find *Chabertia ovina* frequently, artificial infection of swine with infective larvae of *Chabertia ovina* should be used to gain more knowledge about it.

REFERENCES

1. Arru, A., Leoni, A., Guarda, F., Pau, S., Sapino, S. 1982. Pathology of parasites of the stomach of free-living Sardinian wild boars. *Atti del IX Convegno della Societa Italiana di Patologia ed Allevamento dei Suini, Reggio Emilia, Italy*, 61-72.
2. Barutzki, D. and Richter, R. 1990. Untersuchungen zum Endoparasitenbefall bei Wildschweinen aus freier Wildbahn. *Zeitschrift fur Jagdwissenschaft*, 36, 4, 244-251.
3. Bidovec, A. 1984. Preučevanje endohelmintov iz prebavil divljih prežakovalcev v Slovenia. *Doktorska disertacija, Univerzitet u Ljubljani*.
4. Bidovec, A., Kopitar, M. 1991. Nekateri zdravstveni problemi kohabitacije domačih in divljih prežakovalcev v Slovenii. *Zbornik radova 4. svetovanja "Divlja - i priroda", Brioni*, 107-116.
5. Boch, J. and Schwidawind, H. 1988. Krankheiten des jagdbaren Wildes. *Verlagsbuchhandlung Paul Parey, Hamburg*.
6. Boch, J. and Supperer, R. 1983. *Veterinar-Medizinische Parasitologie*. P. Parey, Berlin, Hamburg.
7. Brglez, J. 1968. Prilog poznavanju parazitske faune divlje svinje (*Sus scrofa* L.) u Sloveniji. *Acta veterinaria*, 18, 6, 373-378.
8. Chmarzynski, W. 1983. Trichinelliasis in wild pig in Poland. *Medycina Weterynaryjna*, 39, 7, 428-431.
9. Cotteler, C., Fameree, L. 1982. Eimeriidae and helminths of pigs and wild boar in Belgium. Frequency of anti-toxoplasma antibodies. *Schweizer Archiv fur Tierheilkunde*, 124, 1, 37-47.
10. Dittus, T. 1983. Investigations on wild boar. Clinical and parasitological studies: sedation and necrosis; anatomical, pathological and histological examinations. Inaugural - *Disertation, Ludwig - Maximillians - Universitat. Munich*, 99.
11. Dunn, A. 1963. *Veterinary Helminthology*. Heinemann ed. London.
12. Gallego, J., Rocamora, J. M., Mas-Coma, S. 1977. Nuevos datos sobre *Capillaria garfiai* Gallego et Mas-Coma, 1975 (Nematoda: Trichuridae), parásito común del jabali en la península Ibérica. *Revista Iberica de Parasitologia*, 37, 3/4, 243-250.
13. Henne, E. 1979. Infections with endoparasites in wild boars in several hunting reserves of the GDR. Symp. 18-20 Apl., Serrahn bei Gustrow, *Parasit. Gesell. DDR. Abstract No. 12*.
14. Henne, E., Nickel, S., Hiepe, T. 1978. Beiträge zur Parasitenfauna der DDR. I. Mitteilung. Untersuchungen zum Helminthen vorkommen beim europäischen Wildschwein (*Sus scrofa*). *Angewandte Parasitologie*, 19, 1, 52-57.
15. Kopitar, M. 1984. Preučevanje endohelmintov iz prebavil drobnic v Slovenia. *Doktorska disertacija, Univerzitet u Ljubljani*.
16. Kutzer, E. 1988. The most important parasitic infections of wild boars in animal reserves and the possibilities of their control. In *Verhandlungsbericht des XXII Internationalen Symposiums des Österreichischen Wildgehegeverbandes*, juni, 1988, Vienna, Austria, 47-49.

17. Lepojev, O., Kulišić, Z., Aleksić, N., Dimitrijević S., 1992. Parazitske infekcije divljih svinja u Sremu. *Veterinarski glasnik*, 46, 11-12, 687-690.
18. Millić, D. 1951. Slučaj ehinohazmoze svinja. *Veterinarski glasnik*, 5, 12, 776-778.
19. Pen'kevich, V. A., Pen'kevich, A. A. 1983. Epizootology situation of helminthiasis of wild boar in the Belorussian forest. *Zapovedniki Belorussii*, 7, 91-95.
20. Petrović, Z., Borčoški, A., Popović, S. 1966. Prilog poznavanju faune helminata u divlje svinje. *Posebno izdanje šumskog i poljoprivrednog gazdinstva "Jelen"*, 65-67.
21. Schoierer, R. 1990. Zur artlichen Zusammensetzung der Helminthenfauna der Wildschweine aus Gatterhaltungen in Suddeutschland einschliesslich Extensitatund Intensitat des Befalles. *Inaugural-Dissertation, Tierarztliche Fakultät, Ludwig-Maximilians-Universität, München, Germany*, 291 p.
22. Soulsby, E. J. L. 1977. Helminths, Arthropods and Protozoa of Domesticated Animals. *Bailiers Tindall Co, London*.
23. Strel'chik, V. A., Shnaidmiller, A. P., Gapon, N. M. 1976. The helminth fauna of wild boars in the Primorsk territory. *Sbornik Nauchnykh Trudov, Sibirskogo Nauchno-Issledovatel'skogo Veterinarnogo Instituta*, 26, 123-128.
24. Tscherner, W., Moller, D. 1979. Über Parasiten beim Schwarzwild. *Symp. 18-20 Apl 1979*. Über Parasiten beim Schwarzwild. *Symp. 18-20 Apl 1979.*, Serrahn bei Gustrow, Parasit. Gesell. DDR. Abstract No. 11.

PRVI NALAZ CHABERTIA OVINA KOD DIVLJIH SVINJA

OLGA LEPOJEV, Z. KULIŠIĆ, G. MATIĆ, I. PAVLOVIĆ I V. ČEŠLJEVIĆ

SADRŽAJ

Chabertia ovina je veoma često nalažena nematoda kod velikih i malih, domaćih i divljih preživara.

Pregledom pet divljih svinja, odstreljenih u lovištima u okolini Bačkog Monoštora, kod tri smo ustanovili u debelom crevu infekciju sa *Chabertia ovina*. Broj primeraka parazita se kretao kod životinja od 2 do 152.

Sem *Chabertia ovina* u debelom crevu su bile prisutne i sledeće vrste parazita: *Trichostrongylus suis*, *Globocephalus urosubulatus*, *Oesophagostomum dentatum* i *Oesophagostomum longicaudatum*.

U domaćoj i inostranoj literaturi nismo našli podatke o nalazu *Chabertia ovina* kod divljih svinja. Ovo ukazuje na neophodnost daljih istraživanja faune parazita divljih svinja i druge divljači koja obitava na zajedničkim prostorima.