

**FIRST FINDING OF DICTYOCAULUS (MICROCAULUS) ECKERTI (Skrjabin, 1930)  
IN RED DEER (CERVUS ELAPHUS L.) IN HUNTING GROUNDS OF VOJVODINA**

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*Coprological examination in red deer (Cervus elaphus, L.) from the hunting ground in the north are of Bačka, showed a significant prevalence of infection with dictyocaulus. Methods of parasitology section and determination of collected parasites from the respiratory tubes showed that 59.4% of the examined animals were infected with dictyocaulus. Among these animals, 85.7% were infected with Dictyocaulus eckerti, and 15,8% were also infected with Dictyocaulus viviparus.*

*Animals older than five years of age were examined. Considering the prevalence of dictyocaulus, and high intensity of infection in some animals, as well as the favourable epizootological conditions not only for dictyocaulus, but also for some parasitic infections of the digestive system, parasitic infection in young animals may appear as a problem. This leads to the necessity for undertaking measures for eradication.*

*Key words. Dictyocalus eckerty, red deer, infection.*

#### INTRODUCTION

Great attention has been paid to the raising of red in the hunting grounds of Vojvodina, primarily because of the possibility of achieving big economic effects. Raising red deer requires the solution of elements among which is health protection. This can be conducted successfully on the basis of knowledge and a study of the aetiology, appearance and diffusion of animal illness in the determined region.

Keeping animals of different age categories in a group and favourable climatic conditions for the development of the preparasitic stadium both enable the spread of infection and maintenance of parasitosis. Therefore, this type of illness takes a leading role in the health problems.

This was the reason for further investigation on the aetiology and prevalence of parasitosis in red deer.

Our previous analyses by coprological diagnostics pointed to a considerable incidence of infection with dictyocaulus and protostrongylus, causes of varminous bronchopneumonia.

In this article, some results connected with the aetiology of verminous bronchopneumonia of red deer will be presented.

Studies of the aetiology and spread of verminous bronchopneumonia in large game in the hunting grounds of this country and its neighbours have not been numerous. Petrović et al. (1966) detected infections with *Dictyocaulus viviparus* in deer and roe deer originating from game parks in the vicinity of the Danube and in Baranja. Among the species causing this nematodiasis in roe deer from the majority of hunting grounds in Bosnia and Herzegovina, Čanković, et al. (1962) include the following: *D. viviparus*, *D. eckerti*, *D. filaria* and *Caprecaulus capreoli*.

On the basis of their investigations, and referring to the results of many foreign authors Skrjabin et al., (1954), point out that *D. viviparus* and *D. filaria* parasitise such game animals in all parts of the world. As for *D. eckerti*, they state that it has been found in animals from South America, Asia and the Soviet Union. Later results, obtained by a large number of authors (Bieniosciek et al. 1966; Jansen et al. 1990; Jorgensen et al. 1986; Romano et al. 1980; Zaji et al. 1976), show that *D. eckerti* is a species that has been found among large hunting game of many European countries.

It is necessary to add that it has been considered for many years that *D. viviparus* and *D. eckerti* represent a parasitic species. However, this was refuted by Tahirov, B. A. (Miskevič, R. Yu. 1967.) on the basis of many morphological, biological and numerous experimental investigations.

#### MATERIAL AND METHODS

**Investigated animals.** Studies were conducted on 32 red deer, older than 5 years, killed in the forest in the Bački Monoštor area. The method of parasitology section was used for the examinations. Parasites, collected from the bronchial tubes of the animals, were determined in preparations with glycerin alcohol under the microscope, on the basis of the morphological characteristics of males and females.

#### RESULTS AND DISCUSSION

Infection with dictyocaulus was present in 19, or 59.4% of the examined animals.

Among them, 85.7% were infected with *Dictyocaulus eckerti* (Figure 1 and 2) The intensity of infection was within the limits of 4 to 252 samples of parasites. The ratio of males to females was 1:1.95.

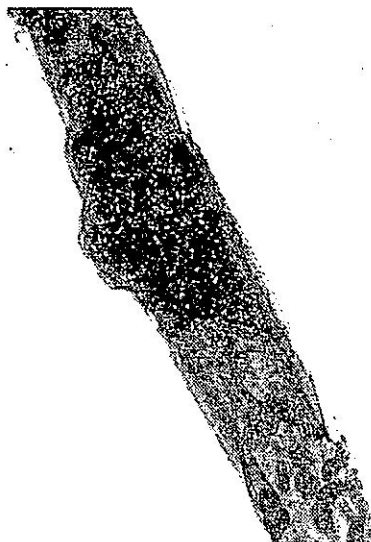
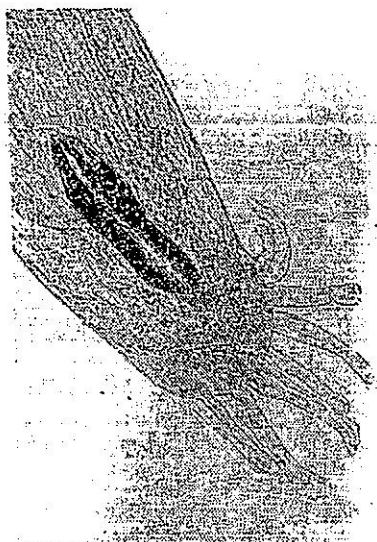


Figure 1. *D. eckerti* - end of male

Figure 2. *D. eckerti* - female, region of vulva

Infection with *Dictyocaulus viviparus* was also detected in the respiratory organs of three animals. (Figure No3 and 4)

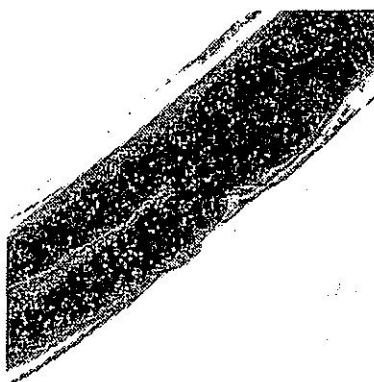


Figure 3. *D. viviparus* end of male

Figure 4. *D. viviparus* - female, region of vulva

The investigations performed so far in our country suggest that *D. viviparus* is the only species that participates in the aetiology of verminous bronchopneumonia (Petrović et al. 1966).

Many data exist about the finding of *Dictyocaulus eckerti* in deer and roe deer in the hunting grounds of Bosnia and Herzegovina (Čanković et al. 1962.), European and Asian countries, as well as in U.S.A. (Bienioschek et al. 1966; Jansen et al. 1990; Jorgensen et al. 1986; Miskevič R. Yu. 1967; Romano et al. 1980; Skrjabin et al. 1954; Zaji et al. 1976.)

The results presented here show that the prevalence of *dictyocaulus* in red deer in the hunting ground of Bački Monoštor and the surrounding area is not small.

It is necessary to point that in some cases, although the animals were old, the intensity of infection was very high.

If we take into consideration that, animals of different age categories group together that a certain number of infected animals that spread the infection is always, present, and that environmentally favourable conditions exist for development of the infected stages and their ability to survive it may be concluded that under certain circumstances, infection with *dictyocaulus* in youngsters may be a problem. It can be added that the epizootiology of some parasitic infections of the digestive system is very similar to that of *dictyocaulus*, which also necessitates the undertaking of some measures of eradication.

#### CONCLUSION

Analyses of the lungs of 32 red deer, killed in the hunting ground of Bački Monoštor showed that 50,4% of the animals were infected with *Dictyocaulus eckerti*, which represents the first finding of this nature in our country. At the same time 15.8% of the examined animals were infected also with *Dictyocaulus viviparus*.

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**PRVI NALAZ DICTYOCAULUS (MICROCAULUS) ECKERTI (Skrjabin, 1930) KOD RITSKOG JELENA (CERVUS ELAPHUS L.) U LOVIŠTIMA VOJVODINE**

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**SADRŽAJ**

Preliminarna istraživanja, sprovedena kod ritskog jelena (*Cervus elaphus*, L.) koji žive u šumama u okolini Bačkog Monoštora u Vojvodini, ukazala su na izuzetnu rasprostranjenost infekcije diktiokaulinama i protostrongilinama, što je autore navelo na detaljnija istraživanja.

U ovome radu prikazani su rezultati ispitivanja u vezi etiologije i rasprostranjenosti diktiokauloze, koja su metodama parazitološke sekcije izvršena kod 32 odstreljene životinje, stare preko 5 godina.

Infekcija diktiokaulinama prisutna je bila kod 59.4% među pregledanima. Među njima, 85.7% inficirano je bilo sa *D. eckerti*, a 15.8% sa *D. viviparus*.

Ovo predstavlja prvi nalaz *D. eckerti* kod jelena u lovištima naše zemlje.

Obzirom na visok ekstenzitet infekcije diktiokaulinama, a u pojedinim slučajevima i na veoma visok intenzitet infekcije, kao i povoljne epizootološke faktore koji mogu doprinositi održavanju i širenju diktiokauloze, autori su mišljenja da se sistematskom suzbijanju ovoga oboljenja mora pokloniti pažnja.

