

“FAUNA OF THE SIBERIAN EPITHELIAL DUCT”
DR.RIADIA MURPHY; DR. KAZAMANT PONGUS

ABSTRACT

A helminthological study of six adult Siberian deer (*Capreolus pygargus*) individuals from Primorsky Krai was performed. The abomasa and tiny intestine contents were assessed. All animals were infected with nematodes, and also the intensity of infection ranged from tens to many specimens. *Spiculopteragia spiculoptera* was the dominant species, and *Mazamastrongylus dagestanica* and *Nematodirus filicollis* were also detected. *Ostertagia antipini* and a minor morph of *S. spiculoptera*, “*Rinadia mathevossiani*”, were observed for the primary time in Primorsky Krai. Besides, the Spirurida nematode *Pygarginema skryabini* was detected in one roe, and also the trematode *Dicrocoelium dendriticum* was found within the small intestines of two roes.

KEYWORDS

Capreolus pygargus Primorsky Krai Helminths *Spiculopteragia spiculoptera* *Rinadia mathevossiani* *Mazamastrongylus dagestanica* *Ostertagia antipini* *Nematodirus filicollis* *Pygarginema skryabini* *Dicrocoelium dendriticum*

Introduction

Among Russian zoologists, the Siberian *Capreolus capreolus* *Capreolus pygargus* Pallas, 1771 has been considered a subspecies of the eu deer *Capreolus capreolus* Linnaeus, 1758 — deer *pygargus* for the most important a part of the 20th century (Flerov, 1952, Geptner et al., 1961). This fact affected the info presentation of the helminth fauna of the roe. Extensive information about the roe helminth fauna, which was collected during the 20th century, failed to distinguish between the 2 roe species (*C. pygargus* and *C. Capreolus*) (Pryadko, 1976).

The Siberian roe could be a widespread species, and there are mixed populations of *C.*

pygargus and *C. Capreolus*. consistent with the results of molecular-genetic studies, 80% of the roes within the Moscow and adjacent regions have “Siberian” mitochondrial genomes (Zvychaynaya et al., 2011). In reference to that, a helminthological study of the Siberian roe is sort of important.

There is poor helminthological information about the Siberian *Capreolus capreolus* that inhabits the Russian Far East. A study by Oshmarin and Parukhin (1963) will be considered because the only report. The authors presented the results of a roe helminthological study in Primorsky Krai, but there was no data on the quantitative rate of infection.

Our objective was to achieve information about the *C. pygargus* helminth fauna. Our research focused on the helminth species composition and uppermost nematodes that parasitize the abomasum and tiny intestine. Interest in these helminths is predicated on the high rates of infection and species diversity. A high degree of community for the nematode species composition of various ruminant species is typical. Therefore, a study of Siberian deer helminth fauna is vital to spot the helminth exchange process between different species of untamed and domestic ruminants.

Materials and Methods

Helminthological autopsy of the abomasum and little intestine of six *C. pygargus* adult individuals was allotted per conventional methodology (Ivashkin et al., 1971). Data collection occurred within the Terneysky District of Primorsky Krai (Russian Far East) during the snow period (November–February) from 2010 to 2013.

We collected the contents from the abomasum and therefore the first 50 cm of the tiny intestine connected with the abomasum. The samples were placed in a very container and covered with water in a very 1:1 ratio. We also scraped off the mucous tunic of the abomasum and tiny intestine and placed it in a very container with the contents. After 10–15 min, we decanted the supernatant and recovered the sediment

with water. We repeated this procedure 3–5 times until the supernatant became transparent. Then, we fixed the sediment with 96% ethanol at a 1:1 ratio.

In the laboratory, we picked out the nematodes from the sediment employing a binocular loupe. Species identification of the nematodes was made using males only due to the unreliability of precise diagnostics supported females. Male species were cleared with a tenth solution of glycerin in temporary whole mounts. Species identification was supported morphology, specifically on the genital system in keeping with Skryabin et al., 1954, Pryadko, 1976, Govorka et al., 1988, and Kusnetsov, 2006. thanks to the scarcity of information on the morphology of *Nematodirus* spp., we used our own keys for this genus (unpublished).

RESULTS AND DISCUSSION

All studied individuals of *C. pygargus* had the nematode species *Spiculoptera guschanskaja*, 1931, starting from 26 to 392 males per animal, with a median of 173 specimens per animal. one in every of the *Capreolus capreolus* had two males of the minor morph *S. spiculoptera* species, “*Rinadia mathevossiani*” (Ruchliadev, 1948). Morph *R. mathevossiani* was found in Primorsky Krai for the primary time. We also found males of *Mazamastrongylus dagestanica* (Altaev, 1952), starting from one to 25 specimens in three cervid, with a median of nine specimens per animal. Two deer had one and 12 specimens of *Nematodirus filicollis* (Rudolphi, 1802) males. One roe had 10 specimens of *Ostertagia antipini* Matschulsky, 1950, and this species was observed for the primary time in Primorsky Krai.

The total number of nematode females found within the abomasum and tiny intestine contents of *C. pygargus* ranged from 32 to 476 specimens, with a median of 238 nematode females per deer.

In addition to the nematodes listed above, which are similar in size and morphology, we found 112 nematodes of the species *Pygarginema skrjabini* Kadenazii, 1948 within

the abomasum of 1 deer. These nematodes belong to the order Spirurida. they're relatively large at 2–2.5 cm long. In contrast to any or all mentioned nematodes, which have a right away life cycle, the *P. skrjabini* cycle includes an host, dung beetles.

In addition to nematodes, the trematode *Dicrocoelium dendriticum* (Rudolphi, 1819) was found within the intestine contents of two *Capreolus capreolus*, with two and 20 specimens per animal.

Information about the taxonomical composition of the cervid helminths was collected from the identical area over a half-century ago (Oshmarin and Parukhin, 1963). Those results include our results for under one species, *D. dendriticum* (= *Dicrocoelium lanceatum*). additionally to the present species, Oshmarin and Parukhin (1963) reported five species of *Capreolus capreolus* helminths within the Sikhote-Alin Reserve, *Skrjabinotrema Ovis*, *Oesophagostomum venules*, *Spiculopteragia shulzi*, *Dictyocaulus Eckert*, and *Setaria altaica*.

References

K.K. Flerov

Fauna of USSR. Mammals

Musk Deer and Deer, Vol. 1, Pub. House of Academy of Sciences USSR, Moscow–Leningrad (1952),(Issue 2),Google Scholar

Geptner et al., 1961

V.G. Geptner, A.A. Nasimovich, A.G. Bannikov

Mammals of land,Cloven-hoofed and Odd-toed Animals, vol. 1, highschool, Moscow (1961).Google Scholar.

Govorka et al., 1988

Ya Govorka, L.P. Maklakova, Ya Mitukh, A.N. Pelgunov, A.S. Rykovskyi, M.K. Semeno-

va, M.D. Sonin, B. Erkhardova-Kotrla, V. Yurashek
Helminths of untamed Ungulates in Eastern Europe
Nauka, Moscow (1988),Google Scholar

Ivashkin et al., 1971

V.M. Ivashkin, V.I. Kontrimavichus, N.S. Nazarova
Methods of Collection and Study of Helminthes of Terrestrial Mammals
Nauka, Moscow (1971),Google Scholar

Kusnetsov, 2006

D.N. Kusnetsov,A method for differentiation of nematodes of subfamily Ostertagiinae
Transactions of All-Russian K. I., 43, Skryabin Institute of Helminthology (2006), pp.
271-278,Google Scholar

Oshmarin and Parukhin, 1963,P.G. Oshmarin, A.M. Parukhin

Trematodes and nematodes of birds and mammals of the Sikhote-Alin Reserve
G.F. Bromley, G.E. Kurentsova (Eds.), Proceedings of Sikhote-Alin Reserve, Vol. 3, Far
Eastern branch of Academy of Sciences of the USSR, Vladivostok, Russia (1963), pp.
121-181,View Record in ScopusGoogle Scholar

Pryadko, 1976;E.I. Pryadko;Helminths of Deer

Nauka KazSSR, Alma-Ata (1976)

Google Scholar

Skryabin et al., 1954;K.I. Skryabin, N.P. Shikhobalova, R.S. Shults

Essentials of nematology III. Trichostrongyloids of Animals and Man

Pub. House of Academy of Sciences USSR, Moscow (1954)

Google Scholar

Zvychaynaya et al., 2011

E.Y. Zvychaynaya, V.M. Kiryakulov, M.V. Kholodova, A.A. Danilkin

Roe deer (*Capreolus*) from Moscow Area: analysis of mitochondrial control region polymorphism Bull. Hunting, 8 (2) (2011), pp. 168-172View Record in Scopus Google Scholar.

AUTHOR AFFILIATION

DR.RIADIA MURPHY

DR.KAZAMANT PONGUS