Ectoparasites of carnivores in north-eastern Poland

Grzegorz Karbowiak, Tomasz Szewczyk, Joanna Werszko

W. Stefanski Institute of Parasitology of Polish Academy of Sciences, Twarda 51/55, 00-818 Warsaw, Poland

Corresponding Author: Grzegorz Karbowiak; e-mail: grzgrz@twarda.pan.pl

Domestic animals were considered as a potential sources of zoonoses. However, recent years have shown that free-ranging animals are also a source of emerging human pathogens. Wild carnivores, in particular, harbor a variety of pathogens that could be transmitted to both domestic animals and humans. The parasitic fauna of carnivores is poorly described. At present, only groups of parasites are characterized, including cestodes and nematodes, and there is little information concerning the species of parasitic protozoan present in carnivores and their vectors.

The study was conducted in the years 2014–2015. The animals originate from Augustowska Puszcza Forest and were shot during selective hunting expeditions. Ectoparasites were collected from animal skin and fur by combing. In total, 167 red foxes (Vulpes vulpes), 88 raccoon dogs (Nyctereutes procyonoides), 76 badgers (Meles meles) and 38 martens (Martes martes, Martes foina) were sampled.

The dominant ectoparasites were hard ticks, Ixodes ricinus were found in red foxes (37.7%), raccoon dogs (53.4%) badgers (30.3%) and martens (9%); with Dermacentor reticulatus in red foxes (24.5%), raccoon dogs (25.0%), badgers (9.2%) and martens (3.0%). Subdominant among hard ticks were Ixodes hexagonus in red foxes (1.8%), raccoon dogs (4.5%), badgers (7.9%) and martens (7.9%); and Ixodes crenulatus in red foxes (2.9%), raccoon dogs (3.4%), and badgers (14.4%). All active developmental stages of Ixodes ticks were found, and only adults of D. reticulatus. The dominant fleas were Chaetopsylla globiceps in red foxes (60.0%), raccoon dogs (6.8%), badgers (15.8%) and martens (2.6%); and Ch. trichosa in red foxes (6.0%), badgers (2.6%) and martens (2.6%). Subdominant was Paraceras melis, found on red foxes (0.6%), raccoon dogs (2.3%) and badgers (10.5%). Single specimens of Ctenocephalides canis were found on red foxes and raccoon dogs, Ceratophyllus sp. and Malareus penicilliger on martens. More than 20.0% of red foxes and 50.0% of raccoon dogs were infected with Sarcoptes scabiei. The fauna of chewing-lice was typical for species: Linognathus vulpis on badgers, Trichodectes canis on raccoon dogs.

The findings reveal the presence of oligoxenic parasites and species associated with Carnivora. The identified Paraceras melis and chewing-lice are host specific. Only martens were infested by single fleas, whose origin was probably from the rodents and birds which had been their victims.