

The first record of *Aelurostrongylus abstrusus* (Angistrongylidae: Nematoda) in Eurasian lynx (*Lynx lynx* L.) from Poland based on fecal analysis

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ABSTRACT. Material. Thirty eight fecal samples of Eurasian Lynx (*Lynx lynx* L.) collected in Białowieża Primeval Forest (E Poland) in years 2001-2004 were analysed. **Results.** The presence of *Aelurostrongylus abstrusus* (L1) larvae was evidenced by use of decantation and flotation methods. The general prevalence of the infection recorded during the study was 21.1%, whereas mean intensity was 11,5 (1-33 larvae per sample). To our knowledge, this is the first case of *Aelurostrongylus abstrusus* recorded in Euroasian lynx from Poland.

Key words: *Aelurostrongylus abstrusus*, Eurasian lynx, lungworm.

Introduction

The occurrence of a nematode *Aelurostrongylus abstrusus* is limited to the domestic cat *Felis catus* and wild felids of North America, South Africa and Europe. This parasite inhabits the respiratory system, mainly the lungs and bronchial ramifications. It contributes to development of granuloma and serious inflammatory reactions. This nematode was not recorded in Poland until 2005, when it was found in a domestic cat that was hospitalised in a veterinary clinic of Agricultural University of Wrocław (Lower Silesia) [1]. In that case this nematode infection was probably the cause of the cat's death. Records of *A. abstrusus* was reported by many authors from other countries, e.g. recently by Tüzer et al. [2] from Turkey or by Barutzki and Schaper [3] from Germany. In contrary to domestic cat, information on occurrence of *A. abstrusus* in wild felids is quite rare. Among nearly ten papers reporting results of research of parasitic fauna of genus *Lynx* in Europe, this nematode was recorded only twice: in Iberian lynx *Lynx pardinus* from Spain [4] and Eurasian lynx *Lynx lynx* from Switzerland [5].

Material and methods

During research on Eurasian lynx ecology in Białowieża Primeval Forest (Poland), in 2001-2004, 38 scat samples were collected and analyzed for presence of parasites. Samples were stored in a freezer (-20°C) until 2006, and then analysed by standard methods. Two techniques were used: (1) decantation by using tap water and (2) flotation by using of saturated solution of zinc sulphate, as a floating reagent.

Results and discussion

With the two methods combined we discovered nematodes identified as I-stage larvae of *Aelurostrongylus abstrusus*. Prevalence of infection was 21.05%, whereas intensity of invasion ranged from 1 to 33 larvae per sample (average 11.6). Out of the two methods used, decantation appeared definitely more effective than flotation (21.05% and 11.5 vs. 5.26% and 0.25 of prevalence and intensity of infection, respectively). It may have probably resulted from the relatively high body mass of larvae, as well as from the method of sample preservation.

The body of the larvae is elongated and tapering at both ends with a granule-like content. Length of the body was 371-395 μm , and width was 18-25 μm ($n=15$). Frontal part of the body was conically rounded. The tail was sinuously bended with a bluntly-ended process — a key character of this species (Figs 1, 2). The morphology as well as the biometric parameters of the nematode are consistent with data given by Furmaga [6] and Thienpont et al. [7].



Fig 1. The first stage larva of *Aelurostrongylus abstrusus* — general view

Development of *A. abstrusus* is heteroxenic. Its intermediate hosts belong to 17 species of land slugs and snails of *Angiolumax*, *Limax*, *Helix*, *Chondrula*, *Helicella*, *Minocha*, *Lavantina*, *Retinella*, *Thelba* and *Helminthoglypta* genera [6, 8, 9], in which the infective larvae (L3) are formed after three moults. The carnivores may become infected by eating molluscs or a wide spectrum of parathenic hosts e.g. small rodents, sparrows *Passer domesticus*, poultry chicks (hens and ducks), as well as amphibians and reptiles.

Conclusion

Due to the fact that the only paper on helminth fauna in wild felids in Poland [10] does not report the occurrence of *A. abstrusus*, one can admit that this study is the first record of this parasite in Eurasian lynx in Poland.

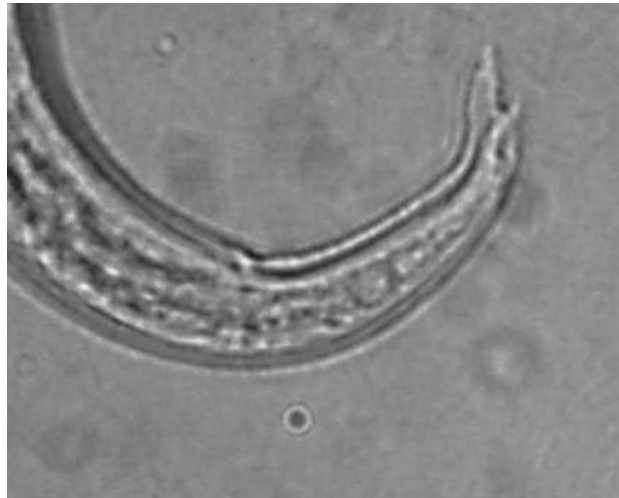


Fig 2. The first stage larva of *Aelurostrongylus abstrusus* — details of tail

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