

The new locality of *Ixodes apronophorus* Schulze, 1924 in Biebrza National Park, Poland

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ABSTRACT. The new locality of *Ixodes apronophorus* Schulze, 1924 in Biebrza National Park, Poland is recorded. The study was conducted in open wet-meadow habitat (*Caricetum appropinquatae*), in April 2007. The small mammals were caught in live-traps placed at permanent trap stations. The ectoparasites were collected from the fur using combing out method. The adult female, nymphs and larva of *Ixodes apronophorus* were found, feeding on the common shrew *Sorex araneus*.

Key words: Biebrza National Park, *Ixodes apronophorus*, *Sorex araneus*.

Introduction

Ixodes apronophorus Schulze, 1924, occur in the Northern Part of the temperature forest zone. The known range of this tick includes regions such as the south of Great Britain and through the Middle European countries to Western Siberia [1]. There are five localities in Poland recorded: Gdańsk Province [2], Iława [3], Popielno in Mazurian District [4], Tomaszów District (east-southern Poland) [5], Białowieża Primeval Forest [1]. This tick is considered to be a rare species.

Ixodes apronophorus inhabits wet biotopes, as swamps, marshland and boggy meadows [1]. Thus, their hosts are the mammals connected with the wet habitats — root vole *Microtus oeconomus*, muskrat *Ondatra zibethicus* and water vole *Arvicola terrestris*. Moreover, it is able to parasite on other Microtidae rodents and shrews [1]. Rarely it attacks birds and reptiles [6, 7]. The ability of this tick to feed on humans is not clear. Some authors report the cases of feeding females and nymphs on humans [8], however others exclude such possibility [9]. All active developmental stages are able to feed on small mammals [9].

The seasonal dynamic activity of *I. apronophorus* is not well known. These ticks are active for the whole season, however, the number peak occurs in the spring months [1].

Material and methods

The study of the infestation of the small mammals with ectoparasites was conducted in April 2007, near Gugny village, Biebrza National Park (ca. 53°N, 23°E). The trapping area was part of the typical open wet-meadow *Caricetum appropinquatae* Matuszkiewicz 1982 habitat [10] (Fig.1), spread out over a 1000 ha area. The major plant species in this association is the fibrous tussock sedge *Carex appropinquata*, which covers 85% of the area and forms the typical hummock-hollow structure. Two common shrews *Sorex araneus* and single root vole *Microtus oeconomus* were caught. The ectoparasites were collected by a combing method.

Fig. 1. *Caricetum appropinquatae*, the habitat of *Ixodes apronophorus*

Results

The adult female, two nymphs and the single larva of *I. apronophorus* were found on one shrew (Figs 2 a, b). The young ticks were attached to the ears, female adults were found on the corps of the animal. No other tick species and no tick infestation of other animals were present.

Fig. 2 a. *Ixodes apronophorus*, female

Fig. 2 b. *Ixodes apronophorus*, nymph

Discussion

The habitat, host and the time of finding of the *I. apronophorus* specimens near Gugny village are typical for environmental demands of this species. The results of our studies show new locality of tick *Ixodes apronophorus* in Poland, in Biebrza National Park, and confirm the supposition of Siuda [1], that this tick is more common in Poland that it is presently documented.

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References

[1] Siuda K. 1993. Kleszcze Polski (Acari: Ixodida). II. Systematyka i rozmieszczenie. Polskie Towarzystwo Parazytologiczne, Warszawa.

[2] Lachmajer J., Wegner Z. 1959. Characteristics of the natural focus of encephalitis viruses in the neighbourhood of Kartuzy (Gdańsk Province) 1957. II. Small mammals and their ectoparasites in the neighbourhood of Kartuzy (Gdańsk Province). *Bulletin of the Institute of Maritime and Tropical Medicine* 7: 189–195.

[3] Siuda K., Szczęśniak-Zarzycka N., Dutkiewicz J., Deryło A. 1982. Materiały do znajomości fauny kleszczy (Ixodides) niektórych ssaków Polski. *Wiadomości Parazytologiczne* 28: 63–67.

[4] Kadulski S. 1989. Pasożyty zewnętrzne bobra *Castor fiber* z Popielna. *VI Sympozjum Akaroentomologii Medycznej i Weterynaryjnej*, *Gdańsk*, 18–20.09: 20.

[5] Zwolski W. 1960. Badania nad ektoparazytofauną drobnych ssaków w ogniskach naturalnych gorączki błotnej. *Wiadomości Parazytologiczne* 6: 519–527.

[6] Fedorov V.G. 1970. Bloodsucking ticks on amphibians and reptiles in western Siberia. *Abstracts of 2nd Acarological Meeting*: 185–186 (in Russian).

[7] Fedorov V.G. 1972. Ticks of the superfamily Ixodoidea of birds and their nests in Western Siberia. In: *Transcontinental associations of migratory birds and their role in distribution of arbovirus* (Ed. A.I. Cherepanov). 5th symposium on the study of the role of migrating birds in distribution of arbo-viruses, Novosibirsk: 384–388 (in Russian).

[8] Fedorov V.G. 1968. Ixodoidea ticks on humans in Western Siberia. *Meditsinskaia Parazitologiia i Parazitarnye Bolezni* (*Moskwa*) 37: 615–616 (in Russian).

[9] Ravdonikas O.V., Solovey E.A., Chumakov M.P., Korsh I.V., Ivanov D.I. 1968. Omsk hemorrhagic fever natural foci in the light of landscape distribution area properties of this disease. *Materials of 3th Scientific Meeting about Problems of Medical Geography*, Leningrad: 152–154.

[10] Matuszkiewicz W. 1981. The key of identification the plant association in Poland. PWN, Warszawa.

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