

Isospora sylvianthina (Protozoa: Coccidiida), parasite of Blackcap, does not infect Reed Warbler

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Sporulated oocysts of *Isospora sylvianthina* were extracted from faeces of Blackcaps. Reed Warblers and control group of Blackcaps (both species belong to the family Sylviidae) received a similar dose of the oocysts. *Isospora sylvianthina* did not infect Reed Warblers. This experiment provides one more evidence that at least some *Isospora* coccidia are narrow host specific.

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Most of intestinal coccidian species that infect passerine birds belong to the genus *Isospora* (Pellerdy, 1974). Many authors studied isosporans from over 100 bird species and called them all *Isospora lacazei* (see Levine, 1982 for a review). However, this is not based on cross-transmission studies, which have very rarely been carried out, but on a structural resemblance between the oocysts of the forms from the various hosts, and on tradition (Levine, 1982). To orientate oneself in the descriptions that already exist in literature and to describe new *Isospora* species from passerine birds, the question of specificity of these parasites is very important.

Levine (1982) assumed that "a coccidian species may be transmissible from one species to another in the same genus, but not from one genus to another in the same family until otherwise demonstrated". Unfortunately, up to now there are only three cross-transmission experiments that are published (Černá, 1973; Barré & Troncy, 1974; Box, 1980). Therefore it is clear that other experiments that will support or disprove this suggestion are necessary.

Young Blackcaps (*Sylvia atricapilla*) and Reed Warblers (*Acrocephalus scirpaceus*) were kept in the Institute of Bird Research, Wilhelmshaven (Germany) under controlled laboratory conditions. Seven Blackcaps and seven Reed Warblers were chosen for the experiment. The Blackcaps were naturally chronically infected by *Isospora sylvianthina* Schwalbach, 1959. The Reed Warblers were naturally infected by another *Isospora* species. There is no described *Isospora* species from Reed Warblers but the oocysts observed fit the *Isospora* sp. type 14 mentioned by Svobodová (1994).

To prepare oocysts for infection, we used one highly infected Blackcap that was infected with *Isospora sylvianthina* only. We extracted the oocysts from the faeces and concentrated them in tap water. The birds were orally infected by a standard dose of ca. 1×10^4 oocysts per bird. Faeces were sampled daily at the same time (3 hours before the light was off) because this time is the peak of

Isospora oocyst output (Dolnik, 1999). Oocysts in samples were counted by the improved method (Dolnik & Bairlein, in prep.).

Oocyst output in Reed Warblers did not show any changes. On the contrary, in all the Blackcaps the oocyst output increased more than 1000 times on the third post-infection day, and this peak continued for two days.

Blackcap and Reed Warbler belong to the same family Sylviidae but to different genera. We showed that *Isospora sylvianthina*, parasite of Blackcap, does not infect Reed Warbler. This experiment provides one more evidence that at least some *Isospora* coccidia are stringent host specific. This fact is important for describing new species of these parasites.

References

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