13th EUROPEAN MULTICOLLOQUIUM OF PARASITOLOGY

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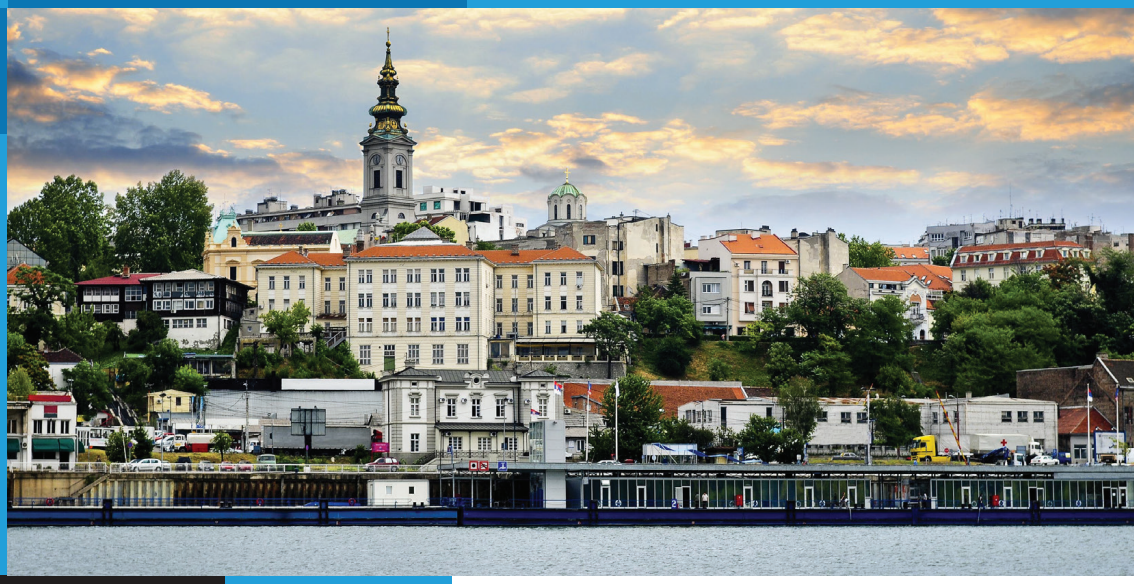
changing climate
changing parasites

Programme & Abstract Book



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DRUŠTVO PARAZITOLOGA SRBIJE

Objectives. Solving the puzzle of the plasmodium origin requires clarifying the plasmodium structure and determining if any orthonectid genes are expressed in the plasmodium.
Material and Methods. We worked with two orthonectids from the Barents Sea, *Intoshia linei* and *Intoshia variabili*. They parasitise ribbon worms *Lineus ruber* and flatworms *Graffiellus croceus*, respectively. Hosts infected by orthonectids` plasmodia were processed for TEM and confocal microscopy examination. We detected and annotated plasmodium-specific genes by analysing stage-specific RNA-seq data.
Results. The orthonectids` plasmodium is a multinucleated parasitic body separated from host tissues by two plasma membranes. Its cytoplasm is visually distinguished from the surrounding host cells and contains organelles and numerous nuclei typical for other orthonectids` stages. Hundreds of orthonectids` proteins are expressed only at the parasitic stage. Plasmodium-specific proteins are involved in the defence against host immunity, host-parasite communication, host nutrients uptake, development and growth inside the host. Most of the revealed proteins are known effectors of other endoparasites.
Conclusion. Obtained results indicate orthonectids` plasmodium is an independent organism of a parasitic origin.

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WILDP10

EFFECT OF *Strigea robusta* (DIGENEA: STRIGEIDAE) METACERCARIAE ON DEVELOPMENT OF BROWN FROG TADPOLES

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Background. Anomaly P is a polymorphic syndrome affecting some populations of European water frogs of the genus *Pelophylax*. It was discovered by French writer and biologist Jean Rostand in the late 1940s and studied by him during next 20 years. Novel records of the anomaly P "hotspots" with heavy forms had led to discovery of the cause. We have shown in experiments that anomaly P developed in water frog tadpoles after infestation of trematode *Strigea robusta*. This effect turned out to be stage- and dose-dependent. However, syntopic brown frogs (genus *Rana*) had no anomalies. This possible specificity of the action is of great interest, and the aim of this work was to test the effect of *S. robusta* on tadpoles of brown frogs in the laboratory experiments.
Material and Methods. We used tadpoles of two brown frog species: *Rana arvalis* and *R. temporaria*. The tadpoles were exposed to five doses of *Strigea robusta* cercariae: 0 (control), 8 (low), 16 (low), 32 (medium) and 48 (high). Fourteen tadpoles in each group were tested. In an additional experiment, 14 tadpoles of *R. arvalis* were exposed to 8 cercariae on early and late stages of limb development. In total, 182 tadpoles were involved in the experiments. After exposure, the tadpoles were kept in 60 L aquariums.
Results. The survival rate of tadpoles varied from 36 to 93%; 57% on average for *R. arvalis* and 77% for *R. temporaria*. Despite the presence of cysts in developing tadpoles, none of the experimental specimens showed anomalies. Thus, the specificity of the effect, previously assumed on the observations in nature, was confirmed in experiments.

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WILDP11

PHYLOGEOGRAPHY OF GENUS *Paranoplocephala* (CESTODA) FROM RODENTS OF BOREAL ZONE OF EURASIA

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Background. Cestodes from genus *Paranoplocephala* (Anoplocephalidae) are widespread over the area of Holarctic in different species of rodent. To-date, three valid species of the genus *Paranoplocephala* were