

## **Ivan Frolov, PhD defence (21 May 2021)**

### **Introduction of the applicant**

Ivan Frolov, born in 1982 in Russia is now one of the few Russian lichenologists, who are known in the world. He comes from the land of steppes east of the Ural Mountains, the land of gorgeous rocks colourful by lichens. Such environment certainly inspired Ivan in his enthusiasm for lichens. His scientific interest in lichens started in 2000 at the university in Ekaterinburg where he successfully defended his diploma thesis about the lichen flora of the Bashkir Natural Reserve (Russia, Ural Mts). Since 2011, Ivan worked and studied at the university in České Budějovice (Czech Republic) with a focus on taxonomical problems in Teloschistaceae. In 2019, Ivan returned to Russia where he continues in lichenology at the Russian Academy of Sciences.

### **Supervisor's assessment of the PhD thesis**

Ivan is one of the students who are genuinely keen on working with in “green” biology. He likes field trips, touching lichens, collecting them and studying their morphology. However, he does not avoid working in the lab and generating sequences. Indeed he is excited by receiving each set of new sequences which may shed light on his taxonomic research. Nevertheless, additional sequences often caused rather confusions and invoked new questions.

The original topic of Ivan's thesis was a taxonomical revision of black-fruiting Teloschistaceae. After few years of hard working on hundreds of specimens collected throughout the Northern Hemisphere, he concluded that he cannot delimit species in the evolutionary centres (the Mediterranean, the Near East and especially in Central Asia) which are rich in geno- and morpho-types. Observed morphological characters were not congruent with DNA data and the DNA data from different loci were substantially incongruent too. It appeared that species, as biologically delimited units, do not exist for these lichens in their diversity hot-spots. It would be perhaps revolutionary study, if Ivan was

able to defend our belief in the absence of species limits. However, he lacked clear evidences about unlimited hybridization among the lineages and his dataset (of hundreds of sequences from several loci) was overly complicated and hardly understood. Messy results finally forced Ivan to change his scientific topic to something “publishable”.

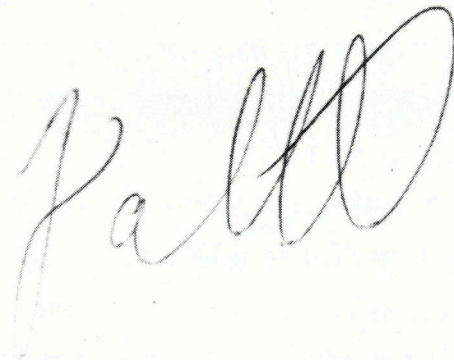
His changed topic was generic delimitation in black-fruited Teloschistaceae and adjacent species. It was an uneasy task, but with the use of eight DNA loci, Ivan proposed a reasonable scenario, which was also supported by morphology and which roughly corresponded with our assumptions. In my opinion it was an excellent job, valuable enough to be a basis for the PhD thesis.

I wish Ivan a good luck in his defence and in the future professional life.

In České Budějovice,

18 May 2021

Honza Vondrák

A handwritten signature in black ink, appearing to read 'Honza Vondrák', written in a cursive style.