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Evaluation of PhD thesis of Sneha Patra by her supervisor

The PhD thesis of Sneha Patra focusses on the myxozoan groups that are at present of main interest in the Laboratory of Fish Protistology and for which the laboratory receives extensive funding from different sources (EC, GACR, TACR, MSMT). The aim of Sneha's PhD project was to obtain an idea of the biodiversity and phylogeny of two scarcely documented myxozoan clades, Malacosporea and *Sphaerospora* sensu stricto, from different aquatic environments (including description of new species), as well as to study the life cycles and different biological features, such as motility, in parasites belonging to these groups.

Based on her previous theses (BSc, MSc) being literature research based, Sneha was completely unexperienced in laboratory techniques when she joined the Laboratory of Fish Protistology, in May 2012. During the course of her PhD she learned a substantial number of techniques, from experimental setup and sampling of aquatic vertebrates and invertebrates to DNA and RNA extraction methods, PCR, qPCR and *in situ* hybridisation, techniques which she now masters perfectly. Sneha processed an impressive number of samples/workload by herself. She also used the required computational techniques successfully (morphometrics, sequence alignments, phylogeny, image processing) and studied the literature related to her research topics. Her lab work contributed substantially to a number of papers, and finally, she produced two papers as lead author. A single aspect of Sneha's thesis was not successful, i.e. the identification of the invertebrate host of *Sphaerospora molnari* or *S. dykova*. The outcome of the related experiments could potentially have been improved by checking the infections status of fish more often and by screening water samples at the same time, however, Sneha lacked time for these activities as she was working on other materials at the same time. Similar to learning new laboratory techniques, the process of writing the two first-authored papers and her thesis took Sneha a very long time (more than a year, despite full time dedication, resulting in maximum PhD completion time of 5 years). It is difficult for her to write in a good level scientific English, to use the relevant terms correctly or to formulate connecting lines of thought. Scientific writing is a complex process that requires a lot of reading and training, definitively the most challenging part for Sneha. However, she finally produced a PhD thesis that is formally correct and really quite comprehensive. I am, overall, satisfied with her thesis and can only recommend it for defense. I would be happy to keep Sneha in the lab in the near future, as she is now familiar with all techniques and does not hesitate to take on large workloads.

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