4th Symposium of the IRGC

Scientific Report
Ranelagh House, Robertson
25 - 27 September, 2004

This was my first conference with IRGC. I was introduced to IRGC by Chris Garvey from ANSTO. My background is in physics with specialization in electrophysiology. I have worked on charophytes all my professional life and so coming to IRGC conference was "coming home"! I have read papers by Ingeborg Soulié-Märsche and Ursula Winter and it was so rewarding to meet them in person. The conference introduced me to aspects of charophytes, which are new to me and which will give new dimensions to my research.
The program addressed a huge range of topics: classification of present and ancient charophytes; geography of charophyte communities in Australia, Balkans, Pyrenees, Morocco, Taiwan, England and USA; charophytes as markers of climate, composition and salinity of ancient lakes; the response of charophyte morphology to a range of environmental conditions; the use of charophytes for phycoremediation; charophytes as food for black swans, black bream and habitat for ostracods and amphipods; charophytes as electrophysiological models for higher plants; charophyte cell walls as models for higher plant cell walls and charophyte chirality.

Due to my background, some of the fine points of charophyte classification were lost on me, but I am learning! I enjoyed the ecological studies of the Myall Lakes, as I have visited the region before and was not aware of the intricacy of the lake plant community. I was interested to find out that *Lamprothamnium* is eaten by black swans and black bream and that ponds can be cleaned up by planting charophytes. The connection with paleobotany and geology is also very important for the central question of my research: Why is *Lamprothamnium* (and few other charophytes) so successful at being salt tolerant?

I am interested in using physics-type techniques in biological research. This prompted my new collaboration with Chris Garvey to probe cell walls with neutrons. We have all gasped with delight at the beautiful x-ray synchrotron imaging of charophyte oospores presented by Monique Feist.

All the talks were excellently presented and easy to follow. There were many slides of picturesque locations and stunning charophytes. It was a joy to see young people speaking confidently and enthusiastically about their Ph.D. and Bachelor Honours projects. After the lectures, there were lively discussions and practical tips by Vernon Proctor on how to grow charophytes. We could identify and admire charophyte samples, brought by participants.

Ranelagh House was perfect for a conference of this size (about 50 people, some driving in from Wollongong). One day of the conference was cold and foggy and it was so pleasant to have our coffee in front of the large fireplaces. The rooms were plain but comfortable and the garden and views were great. The food was lovely, almost too good!! The lecture room facilities were modern and easy to work and there was plenty of space to set up posters and microscopes to view charophytes.

To conclude, this was one of the best conferences I have taken part in. Many thanks to Adriana Garcia, Allan Chivas and the students from the School of Earth and Environmental Sciences, University of Wollongong, for a great time!

Mary Beilby (Australia)