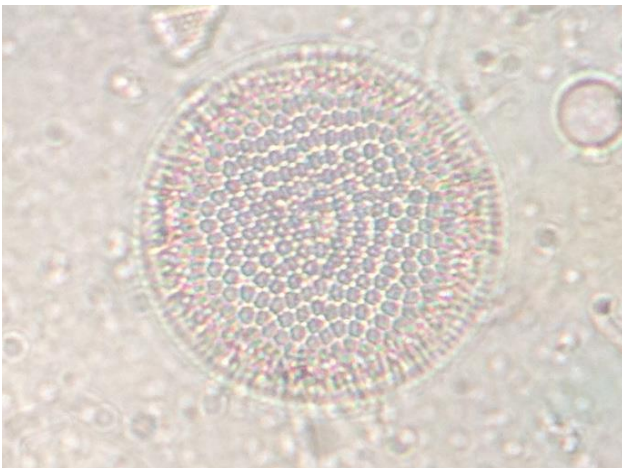


Philippa Rickard BSc Environmental Science

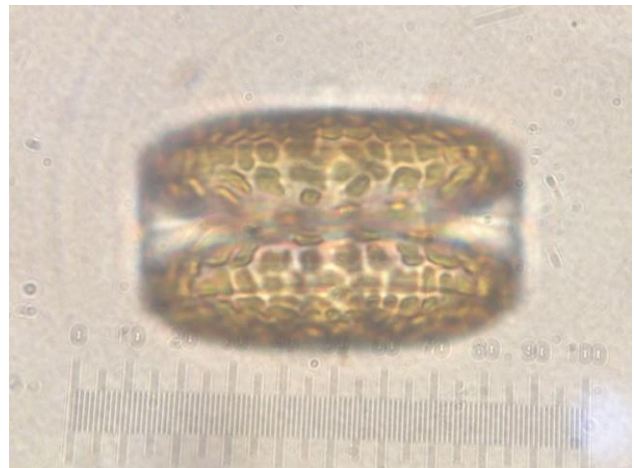
I spent the summer of 2013 working as a Research Associate within the Environment Department, and in conjunction with the Biology Department, on the project *Using DNA markers to reconstruct past climate changes*. The project aimed to develop a technique to enable higher resolution diatom speciation data to be obtained from sediment cores; the distribution of diatoms in sediment cores is used to reconstruct past climate changes and to help predict future climate variability.

The tasks I undertook were varied and primarily laboratory based, they included sediment core analyses: Loss on Ignition and Particle Size Analysis as well as preparation and examination of diatom slides; preparing synthetic seawater for the maintenance of living diatom batch cultures and the growth and monitoring of subcultures; cell isolation; microscopy and species identification. I also undertook all respective data input and analysis. All subcultures that were grown were passed onto the Biology Department for DNA extraction.

In addition, I was given the opportunity to carry out two days work as a Field Assistant, where I helped to collect sediment cores from a field site. I was also trusted to develop a Standard Operating Procedure for particle size analysis to be used in the future. I worked independently, with regular meetings with my supervisors and liaised with the Biology department to ensure progression of the project.



Valve view of a centric diatom from a sediment core.



Girdle view of a living centric diatom from a subculture.