

Travel report from Eleanor Dormontt, 2010 recipient of the CAWS ECR travel award

In August 2010 I left Adelaide to head to the University of St Andrews in Scotland. My primary goal was to work with the famous botanist Professor Richard Abbott, who was retiring that year. Professor Abbott was the supervisor of my PhD primary supervisor Professor Andrew Lowe, and has been on the forefront of research into *Senecio* for decades. My PhD is focussed on an invasive *Senecio* in Australia *S. madagascariensis* (better known as fireweed). Professor Abbott's team and I had planned a small research project looking at the origins of the invasive fireweed across the world. We wanted to answer the following question:

“Is Australia the source of global fireweed invasions, or do they originate independently from the native range in South Africa?”

Over the next two weeks I worked tirelessly with Mr Charles Coyle, a PhD student of Professor Abbott's who is also working on fireweed, in particular where the species boundaries lie between *S. madagascariensis* and *S. inequidens*. The laboratory we were working in was very well equipped, giving me access to machines and techniques that are unavailable at Adelaide University; this was invaluable experience for me. We used chloroplast microsatellites to analyse fireweed material from Australia, Hawaii, Argentina, Japan and South Africa. We found that South Africa housed the most diverse material, as is to be expected. We also found that all of the diversity present in Hawaii, Argentina and Japan could also be found in Australia, in support of the theory that Australia is the source of global fireweed invasions. Although it is impossible to rule out that South Africa seeded these invasions as well, the lack of unique diversity in these areas suggests this is not the case. I am currently writing my PhD thesis which will include these results, in the future they will be combined with some cytological and sequence data, to produce a scientific paper on the origin of global fireweed invasions.

In addition to working on the above research project, there was also an international scientific symposium on *Senecio* held whilst I was at St. Andrews. Approximately 20 world renowned researchers were in attendance, talking about their current research. I also presented some of my PhD work, looking at reconstructing the invasion history of fireweed in Australia. Of particular interest to weed biology, was a talk given on studying enemy release and the evolution of increased competitive ability in *Jacobaea vulgaris*. Joshi and her team found good evidence for rapid evolution in invasive populations of this weed including those in Australia and New Zealand.

The research trip and associated symposium were a fantastic opportunity for me. I experienced a different research environment; met new people and networked with future collaborators in my area; whilst learning something new about an important Australian weed. My PhD (including this work) has brought many insights into fireweed in Australia, but raised even more questions which will form the basis of much interesting and fruitful further research. I would like to thank CAWS and all of the constituent weed associations throughout Australia for helping me to gain this valuable experience.