

**Cambridge University Botanic Garden**  
**Flowering Plant Taxonomy & Systematics**

17-21 June, 2019



**Classroom teaching, Rosales**

Report for the Trustees of the Professional Gardeners' Guild Trust

**Alice Riches**

21 July, 2019

In June 2019, an award funded from a donation by the Worshipful Company of Gardeners enabled me to attend a five day course on Flowering Plant Taxonomy and Systematic Botany at Cambridge University Botanic Garden (CUBG). The course gives an overview of flowering plant families, covering a number in detail including some of the most common and important ones, together with major groups such as the Monocotyledons. The money granted was used to pay course fees and other essential costs.

I am currently employed as a weekend Horticultural Assistant at CUBG. The garden's living collections comprise a wide variety of plant families, over 8000 species from all over the world, so a familiarity with vegetative and reproductive family traits is of great benefit and interest to me in my role. Attending the course was a fantastic opportunity to gain insight into and an understanding of the plants in my care at weekends.

Teaching took place in the classroom, using hand lens, microscopes and dissecting tools, and outside in the garden utilizing living material to understand key family features; there were a combination of talks and practical sessions. Looking at flower parts under the microscope for the first time fascinated me. We learnt how to write floral formulae; these are a concise and disciplined way of summarizing the essential details of floral structure. The discipline of writing a formula when examining a flower, to ensure that nothing is overlooked, is one that I hope to apply when encountering new and unusual plants in future.

Practical sessions outside in the garden were another highlight of the course for me. It was wonderful to spend time with our tutor, Ros Bennet, in the Systematic Beds; these are a showcase for plant classification and were first laid out in the garden in 1846, so they have significant heritage value. Modern scientific understanding of the classification of flowering plants has prompted renovation work in this area recently, ensuring curatorial and taxonomic rigour. CUBG Curator Sam Brockington talked to our group about the renovation project and the new Rising Path, a feature designed to complement the newly renovated Systematic Beds, with interpretation explaining how plants adapted to live on land and how they evolved into the 400, 000 species known today.

The phylogeny of flowering plants based on molecular data was another topic covered in this course. As a result of participating in this training, I have gained a much better understanding of the evolutionary relationships of the flowering plants; this has already proved useful in work with Basal Angiosperms in CUBG's collection, notably *Victoria cruziana*. I recently had the opportunity to hand pollinate the giant Santa Cruz waterlily in the Tropical Wetland display; an improved understanding of its floral biology helped me to complete the task successfully. The flowers of this plant are fascinating, lasting only two nights, and initially opening as female but after pollination becoming male.

Overall, the course content and delivery of the training suited my training needs ideally and I would recommend the course to any horticulturist seeking a better understanding of plant systematics.



***Victoria cruziana* flowers are pollinated with a brush and then sealed in a bag. This enables easy collection of the resulting seed.**

### **Breakdown of Costs**

Course Fee (after 10% staff discount)	<b>£324</b>
Essential childcare costs	<b>£166</b>
<b>Total Cost</b>	<b>£490</b>

