

## INTRODUCTION

EuroGard V, the fifth European Botanic Garden Conference, held in Helsinki during June, was both a triumph of organisation and a showcase of what botanic gardens can, and are, doing for plant conservation. I remember very well attending my first botanic garden conference, the second Botanic Gardens Conservation International (BGCI) Congress, held in Réunion in 1989. At that meeting botanic gardens certainly recognised the problem of plant and habitat loss and understood the main causes. However, botanic gardens were not well networked amongst themselves and seldom worked in partnership with other organisations. The *in situ* and *ex situ* approaches to conservation were seen as poles apart, integrated approaches to conservation were in their infancy and botanic gardens seldom became involved in government policy and legislation.

It was most encouraging then to hear speaker after speaker in Helsinki describing what was being done rather than what might possibly be done, how *ex situ* and *in situ* conservation were working in tandem to the benefit of both, how gardens were contributing actively to policy formulation and legislation, how working in partnership with others on integrated conservation projects was the norm and how conservation research, particularly population genetics and molecular research were underpinning conservation projects. I'm not suggesting that the battle is won and that every botanic garden is contributing positively to plant conservation. What I am saying, however, is that it has been interesting to observe real change and progress over the last twenty five years from uncoordinated sporadic activity by a minority of gardens to many botanic gardens working locally, nationally and internationally in partnership with conservation agencies, NGOs, scientists and governments.

The Sibbaldia Guest Essay has been written by someone who can claim to have had a direct influence on the changes described above. Professor Vernon Heywood is a highly respected academic who has written and edited numerous authoritative books and papers. In his working life he has been an inspirational Professor of Botany, founder director of Botanic Gardens Conservation International (at that time called Botanic Gardens Conservation Secretariat), Chief Scientist to IUCN and advisor on conservation issues to numerous governments and agencies. The biography accompanying the Guest Essay provides more detail about Professor Heywood's career and achievements. His botanical and conservation interests are wide ranging and include medicinal plants, exotic invasive species, crop wild relatives, the Mediterranean (especially Spanish) flora, seed banking, modern approaches to floristics and legislation and policy making. Throughout his life he has had a deep affection for, and interest in, botanic gardens and his Guest Essay reflects this interest. Professor Heywood has chosen to reflect in particular upon the needs and benefits of an international mechanism to establish a global network of gene banks for wild plants.

The University of Bristol Botanic Garden has a history going back to 1882 and has been selected as the Garden Profile in this issue of *Sibbaldia* because of the remarkable transition it has made in recent years. For a long time it was a well-managed and well-maintained garden where plants were chosen with care and used for teaching, research

and public education. It was an enormous shock then when the University announced that the house around which the Garden was designed was to be sold and that the Garden would have to move or close. After much debate and consultation the University decided to relocate the Garden rather than close it. The paper by Curator Nicholas Wray provides a detailed account of the thinking that went into the new design and how the move was accomplished. Despite the trauma of the initial decision and huge upheaval of the move, the account describes the stages of decision making, analysis of options and reason for eventual design. In describing these stages the paper provides a model template for anyone wishing to start a new botanic garden or even redesign an area of an existing garden.

The Student Project feature was introduced in the last edition because the many excellent student projects produced each year seldom find their way into a published journal. Many are of a standard that deserve wider appreciation and the editors are delighted to feature Chris Flynn's project from the Royal Botanic Gardens, Kew. *Sibbaldia* was founded partly to encourage horticulturists to record their knowledge and it is hoped that, in a very small way, providing the opportunity for students to see their work published will encourage them, and others, to publish more frequently. In his paper Chris reviews the value of ecological plantings in public gardens.

David Burney is an enthusiastic conservation scientist and practitioner as well as being an accomplished and dedicated paleobotanist. Having recently been appointed to the Board of the National Tropical Botanical Garden, Hawaii, I was extremely impressed to observe their excellent conservation work on critically endangered species and also their work on habitat restoration, involving tracts of land completely overtaken by exotic invading species. Being familiar with both *in situ* and *ex situ* conservation techniques, both of which are practiced at NTBG, I was particularly interested to learn about David's *inter situ* work, an approach that I had heard about but had never seen at close hand. In his paper he explains the rationale to this approach and also ponders the wider issues and philosophy of plant conservation.

Wild origin plants in botanic gardens represent a big investment in terms of the time, money and commitment to collect them. However, due to the investment in gathering field data they also offer the potential for research in a number of ways. If the plant dies before it has been 'used' then that potential has been lost. At the Royal Botanic Garden Edinburgh (RBGE) a pilot project, known simply as the 'Data Capture Project' has been investigating ways of 'capturing' as much data as possible while plants are alive so that, if they subsequently die, then at least some information has been 'extracted' from them and stored. While simple in principle, the process raised all sorts of plant records and logistics issues. Natacha Frachon and Martin Gardner explain the background to the project and describe the procedures they followed in establishing the protocols necessary to make the process work.

Apart from the Garden Profile already mentioned, this issue of *Sibbaldia* highlights three other botanic gardens, each with a different story to tell. Annette Patzelt and colleagues continue the description of the foundation of the Oman Botanic Garden, started in *Sibbaldia* No. 6 (Patzelt *et al.*, 2008). This paper focuses on the establishment of the nursery. Kevin Frediani, describes the new approaches being adopted by one of

the world's oldest botanic gardens, de Hortus Botanicus Amsterdam. In the paper he describes how, following the release of the formal link with the University of Amsterdam to a foundation with a close alignment to the needs of Amsterdam City Council, new approaches to the garden's displays and use are being explored, with great effect. The Wadi Jawrah Mimusops Garden is a new, small botanic garden in Saudi Arabia, founded to help protect a stand of fourteen *Mimusops laurifolia* trees, recreate the rare valley forest habitat of which they are characteristic, establish a nursery in which to propagate rare native species with a view to restoration and provide a resource for conservation education in the region.

Kate Hughes, now Sub Editor of *Sibbaldia*, was previously a member of the horticulture staff at RBGE where one of her main tasks was to manage the research collection of *Pelargonium*. The nucleus of this collection was originally held at the Chelsea Physic Garden where it was used by Professor Mary Gibby for her work into the evolution and phylogeny of the genus. When Professor Gibby moved north to become Director of Science at RBGE the collection was transferred to Edinburgh. In her account Kate describes the cultivation of this diverse and interesting genus. The other paper with a strong plant focus has been submitted by Alan Elliot. In it Alan describes the effects of short-term storage on the germination of *Meconopsis*.

Under the direction of Geoffrey Harper, phenology work at RBGE goes from strength to strength. Many gardens record first flowering or onset of fruit development but then store the information and seldom use it to test any ideas or investigate what factors of climate trigger plant development. All the phenological projects underway at Edinburgh, all of which have been described in *Sibbaldia*, are being used by Geoffrey and his colleagues not as an end in themselves but as the basis for investigating the effect of climate patterns on plant development. In this latest paper he reviews the developmental stages leading up to flowering and then shows how correlation and regression methods of analysis can be used to identify the influence of air temperature at different developmental stages.

*Sibbaldia* No. 7 closes with two Short Notes, one by Steve Scott and Sadie Barber on the fabrication and use of botanical envelopes, one of which is included in this copy, and the other on Garden Guides by Tony Garn. Both are short, factual, interesting accounts. The editors would be pleased to consider similar short accounts from staff in botanic gardens who have a topic, technique or piece of information they would like to convey but which might not make a full paper.

#### REFERENCE

- PATZELT, A., MORRIS, L., AL HARTHI, L., AL RASHDI, I. & SPALTON, A. (2008). The Oman Botanic Garden (1): The vision, early plant collections and propagation. *Sibbaldia* 6: 41–78.

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