

Green Space of the Month - January 2003

Chinese Hillside, Royal Botanic Gardens, Edinburgh

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Botanic gardens are green spaces for everyone's pleasure, but they have special meaning for ethnic communities because they hold examples of plants from all over the world with which they have cultural associations. It is a place to see "old friends" (plants) from one's country of origin, or for those who are born here to make some discoveries.



Edinburgh's Royal Botanic Gardens has the largest collection of Chinese plants in the world outside China. It is therefore a special resource for interested groups from the Chinese community. But, plants do not have "nationalities". Many of these plants will be familiar to people from the same geographical region. There are many Chinese plants throughout this botanic garden, but here we are highlighting a special project - the Chinese Hillside.

A brave experiment is underway at the Royal Botanic Gardens Edinburgh. A Living Collection of plants from Yulong Xue Shan, the Jade Dragon Snow Mountains in South Western China, is growing on a 'Chinese Hillside'. Because the plants are allowed to grow together in a natural way, you can experience what it must be like to wander on a wild mountainside in China, and see how these plants interact in the wild to create ecological zones at different altitudes. Everyone is welcome to explore, and Scotland's Chinese communities may enjoy recognising some well-known medicinal plants, or identifying familiar trees and shrubs remembered from back home. And with a new grant from the Heritage Lottery Fund, there will soon be opportunities to volunteer on an environmental interpretation project, to improve public information about the gardens.

Scotland and China linked through history

The original purpose of establishing the Royal Botanic Gardens of Scotland, in 1670, was for the cultivation and study of medicinal plants (just like Chelsea Physic Garden – see relevant Green Space article). Intrepid European plant hunters like George Forrest collected thousands of plants from all around the world.

The Royal Botanic Garden Edinburgh (RBGE) has strong links with as many as twenty countries going back over a great many years. By far the strongest relationship is with China. RBGE is twinned with Kunming Institute of Botany in Yunnan Province, South Western China. Links between China and the Botanic Garden date back to 1904, and there are plans to celebrate a century of co-operation in 2004. Throughout the gardens you can see a wide variety of plants from China, many of which are now familiar in British gardens, such as rhododendrons, cotoneaster and berberis. RBGE has more Chinese plants than any other collection outside of China! Up to 40,000 species are kept in four botanic gardens across southern Scotland, where the climate is broadly similar to parts of China.

Some plants grow better in Argyle where it's wetter, Logan in South West Scotland where the gulf stream provides a more temperate climate, or within the shelter of a wooded hillside at Dawyck. The Inverleith site in Edinburgh is less ideal for growing plants, in terms of the underlying geology and soil type; but it has been improved by years of cultivation, and is well situated for city dwellers to visit.



Welcome to the Chinese Hillside

One really exciting reason to visit RBGE is the Chinese Hillside. A single hectare, overlooking splendid Edinburgh scenery, this is not a garden in the formal sense. It is more like a mini ecosystem. Around 16,000 different plants have been collected from Yulong Xue Shan, the Jade Dragon Snow Mountains in Yunnan province of South Western China, near the border with Tibet, and here they allowed to drift, with minimal intervention, creating an environment very like their original habitat. On the day I visited, I was greeted by David Paterson, Deputy Director of Horticulture, in Chinese. David has been collecting plants in Yunnan province for 15 years, and his passion for botany has inspired him to learn the language. This has helped him to engage better with local people on his visits. It also means that whenever he meets Chinese people in Edinburgh, he is able to welcome them to the Botanic Gardens and talk with them about the Chinese Hillside

Plant Diversity in context

I am told that there are 800 species of 'native' plants in Scotland ie plants thought to have reached Britain unaided since the last Ice Age 10,000 years ago. (With 220 staff at RBGE, that would be 4 plants each to conserve!) In China there are about 32-34,000 species of plants, representing about 12% of the world's plant biodiversity.

Since 1959 hundreds of Chinese botanists have been working to record this richness in a vast book called *Flora Reipublicae Popularis Sinicae* which should be published within the next 5 years. And since the 1980s a Sino-American project has been working to create an English language version.

Lijiang Botanic Garden and Field Station opened 25th Sept 2002 in the Jade Dragon Snow Mountains of Yunnan Province, near the Tibetan border. Ian Edwards of RBGE visited for the opening. He described the beautiful, traditional style building, which serves as base camp for expeditions into the mountains.

The mountains comprise four ecological bands, in ascending order:

- Deciduous (oak) with dense herbaceous undergrowth
- Coniferous (pine) with diverse trees including rare metasequoia
- Shrub (rhododendron, cotoneaster, berberis etc)
- Sub-alpine (meadow) including rare snow lotus etc

David Paterson described climbing the hillside and seeing the flowering rhododendrons coming into view "like a white brush stroke across the hillside".

Cultural Diversity, Conservation and Sustainability

Western science has for a long time been interested in obtaining plant knowledge for its own sake, and hence the need to protect species threatened in wild. The focus of RBGE's interests over the years has been on what David Paterson would call the 3 Cs: classification; cultivation; and conservation. Since the relative decline of medical herbalism in the west, there has been less research into the practical uses of plants.

But in the Jade Dragon Snow Mountains people know of many medicinal uses for wild plants and for centuries they have nurtured the rich flora as a sustainable source of timber, human and animal food, medicine, as well as spiritual and artistic inspiration. However, development in the region threatens to undermine these age-old traditions. That is why the emphasis of modern field research is on sustainability through collaboration between Scottish and Chinese botanists working together with ordinary people on the ground.

Declared a World Heritage site by UNESCO, this ethnically diverse province is populated mainly by Naxi (pronounced Nashee) and Yi peoples, each with their own distinctive local culture, language and customs. Local people in rural Yunnan have no electricity or piped water, yet they participate in conservation work by sharing knowledge of plant identification and usage.

For example, Martyn Dickson, Senior Horticulturist at RBGE, described being taught a great many unusual local recipes, including one for bracken shoots, ordinarily considered poisonous, but apparently edible if carefully boiled and strained a number of times. It makes sense when you think that bracken is, after all, the most common plant in the world.

As we explored the Chinese Hillside in Edinburgh, I could really imagine I was in the Jade Dragon Snow Mountains. I wandered among wild-looking Chinese brambles by the lakeside, past swathes of schisandra, which I know as a tasty herbal tonic, and noticed many plants I had never seen before.

David Paterson is clearly passionate about studying and conserving the rich diversity of plant life in Yunnan, both for its own sake and for the uses it can offer to humans. He told me, "People rely on the mountain for everything." And we have so much to learn from them.

Chinese medicine, for instance, has a 2500 year history. But as habitats give way to industrialisation, so rare plants become endangered. David explained that while it's OK for local people to take part of a plant home to Granny if she's not feeling well, international trade in herbs which means threatened species turning up in Chinese apothecaries in Europe, is just not sustainable.

There were existing laws in place preventing people from cutting down trees for timber. David was able to convince each household to sign with a thumb print to agree not to take any plants from the hillside. Instead, plants are preserved in a Living Collection at Lijiang botanical gardens, where the growing conditions are ideal. Samples are also removed to Edinburgh to be studied, recorded and conserved.

Collecting, identifying and cultivating plants

The same system of classification is used in China as in Europe, but using the Chinese names for plants, rather than Latin. Plants gathered by the Lijiang project will be labeled in English, Mandarin, Latin and Naxie or Yi languages.

Naxi common names, which are shown in pictograms rather than characters, might typically describe the plant family, something about its appearance and also its uses.

David evoked the rich ecology of Yunnan Province vividly when he described taking a compass bearing on a tree then hacking his way through dense undergrowth, including vicious barbed brambles, to reach the tree and collect some seed.

In the past, when plant collectors returned from abroad with specimens of plant material or seeds, horticulturists like Martyn would have to go on hearsay about the best growing conditions. Now, Martyn is able to visit and observe plants in their original habitat, he can far more easily reproduce those conditions in Scotland. That is what the Chinese Hillside is about - reflecting the spectacular beauty of the region.

Martyn Dickson, said that in a way it's a bit like a zoo: species of plants threatened with extinction in their natural habitat can be reintroduced into the wild. In 1996, RBGE returned 200 species of rhododendron China, to form the nucleus of conservation collections.

He pointed out some of the plants, and how they are adapting as ecological relationships are established on the Chinese Hillside. One plant I recognised, known commonly in English as elephants' ear, is currently purple to protect itself from the light, but once the hillside ecology is better established and a tree canopy has grown up to shade it, the plant will revert to its normal colour, green.

Another purpose to the Hillside is for exchange training programmes. RBGE plays host to many Chinese students of botany, as well official visitors including the Vice President, no less.

RBGE have made some efforts to connect with the Chinese communities living in Scotland, and there is much scope to develop these relationships. Ian Edwards told me about his walk with a group of Chinese elders on the Hillside, and the pleasure he experienced seeing people recognise plants they knew from back home many years ago, and hearing stories about their uses and their meaning in people's lives. There have also been projects in the past involving school Chinese children.

Ian mentioned some of the barriers to engaging with the Chinese communities: there is not one but many distinct cultural groups, from Tai Wan, Hong Kong and Vietnam, who may speak Cantonese or Mandarin, and with no direct link to the specific region of South Western China where this plant collection originates.

However, it is hoped that there will be opportunities to make connections through a new heritage interpretation project. Two new posts have been created, with the aim of bringing understanding about the meaning of plants in the Living Collection closer to the public. Perhaps Chinese people living in Scotland will be interested to come and share their insights, to bring the Chinese Hillside alive for the benefit of their own communities and the wider population? For more information, check their website on:

www.rbge.org.uk/rbge/web/news/jsp?item=24&year=2003

Information sheets are available in Chinese and English, covering Scotland's national botanic garden, the flora of China, the Chinese Hillside, and rhododendron conservation.

You can read more about the Lijiang research station in China Review Autumn/Winter 2001