



# Operculum

Southern Highlands Botanic Gardens Inc

Newsletter No. 14

April 2013

## The Town and Country Gardens Weekend 27 – 28 April



There is a change to the list of gardens open for the Town and Country Weekend. Due to the serious illness of the owner, **Bellagio** will not be open. Fortunately Simon and Mariese Grant have very kindly agreed to open their garden, **Coombe Wood** at 226 Range Road, Mittagong. It's a beautiful 8½-acre garden with splendid autumn colours—deciduous trees and shrubs are set against a backdrop (and under the canopy) of huge indigenous eucalypts. The Grants are plant collectors and propagators *par excellence* so there are many rare and unusual maples, conifers, rhododendrons and camellias to be found.

The two Bowral gardens are: **Retford Park** (Old South Road) and **Quindalup** (180 Sproules Lane). The latter will also be the venue for the plant stall. In Burradoo there are two gardens: **Wilderwood** (45b Sunninghill Avenue) and **Windrush** (37 Phillip Street).

The country gardens are: **Birchbeck** (Clearys Lane, off Wildes Meadow Road, Wildes Meadow) and **Prittlewell** (Bodycotts Lane, off Sheepwash Road, Fitzroy Falls).

All seven gardens will delight keen gardeners from the Southern Highlands and further afield—the rain in February followed by sunshine in March has ensured that all the plants are looking particularly vibrant and luscious. It should be a wonderful weekend.

## The Plant Stall

For those people growing or tending plants for the stall: please deliver your plants to Quindalup on Saturday 20 April. The plant stall will be open between 10 am to 4 pm Saturday and Sunday (27 - 28 April).

If you would like to join the band of volunteers to help on the two days, please contact Di Grant

Telephone: 0417 494 705

or Email: [dirollo@optusnet.com.au](mailto:dirollo@optusnet.com.au).

## The First Building on the Site

It was a cold and rainy day when the Hon. Pru Goward, Member for Goulburn and Minister for Community Services and Women, officially opened the 'Shed' on Friday 5 April 2013 with a rousing address. The mizzle, however, didn't dampen the cheerful band of Friends who came to support the event.



Hon. Pru Goward

The Mayor, Councillor Juliet Arkwright, gave an equally encouraging and supportive address. Both the State Government and Wingecarribee Shire Council have played an important role in the development of the SHBG and their continuing financial and moral support is vital to the success of the Gardens. We thank them for their support, participation and friendship.

The shed is not only functional, it is very pretty, with a verandah and pitched roof. Congratulations are due to Steve Pinczi (the builder) and his team who erected it in record time. As neither the water nor electricity was connected, the guests were served with cold drinks and an abundant supply of scones organised by Judy Keast.

## The Buxus Collection

Anthony and Pat di Francesco have donated to the Southern Highlands Botanic Gardens a remarkable collection of Buxus—a collection that they started in 1998 after visiting Langley Boxwood Nursery in Hampshire, England, where the British National Collection of Buxus is housed. Anthony has always been fascinated by Buxus—a plant that has been part of history. It's a malleable wood, denser than water and well-suited to carving, and has been used for a range of products from decorative boxes, musical instruments to spinning wheels. There are fossilized remains of buxus plants dating back to over 22 million years ago. The Egyptians in 4000 B.C. were using clipped box hedges in their gardens, as did Emperor Augustus during his reign over the Roman empire from 27 BC-14 AD.



*Dr Anthony and Mrs Pat di Francesco*

Unfortunately for Tony and Pat, the order they made for the plants in England was cancelled because Box blight (*Cylindrocladium buxicola*) was located in the nursery—and in many parts of the UK. Recorded in New Zealand in 1998, Belgium in 1998, Ireland in 2001, Germany in 2005 and Holland in 2005, there were unconfirmed reports in Italy and France about the same time. Infection by the fungus produces leaf spots on the leaves that can be either dark brown or lighter brown surrounded by a dark border. Eventually severe defoliation and dieback occur.<sup>1</sup>

Tony was advised to contact Lynn Batdorf, the curator of the National Boxwood (Buxus) Collection at the United States National Arboretum, Washington D.C. Batdorf is also the Registrar of the American Boxwood Society and the author of the most comprehensive book on Buxus, *Boxwood: An Illustrated Encyclopedia*. Lynn Batdorf assisted Tony in locating plants he could import to Australia, and so began the collection.

Tony and Pat both have medical backgrounds: she was a nurse when they met in the 1960s and he still practises as an obstetrician (though very much

part-time since 2002). Their collection includes the following:

*Buxus sempervirens* 'Pyramidalis'  
*B. sempervirens* 'Prostrata'  
*B. sempervirens* 'Handsworthiensis'  
*B. sempervirens* 'Rotundifolia'  
*B. sempervirens* 'Latifolia Maculata'  
*B. sempervirens* 'Elegantissima'  
*B. sempervirens* 'Memorial'  
*B. microphylla* var. *japonica* 'National'  
*B. sinica* var. *insularis* 'Green Velvet'  
*B. sinica* var. *insularis* 'Green Mountain'  
*B. sinica* var. *insularis* 'Green Gem'

In addition to the di Francesco's collection, Charlotte Webb has been busy propagating and her range of Buxus includes:

*Buxus sempervirens*; *B. sinica*; *B. microphylla* var. *japonica* 'Faulkner'; *B. microphylla* var. *Japonica*; *B. semp.* 'Suffruticosa'; *B. microphylla microphylla*; *B. balearica*; *B. sempervirens* 'Variegata'; *B. harlandii*.

If anyone has a Buxus plant that they would like to have identified (with the possibility of cuttings being produced for the Botanic Gardens), please contact Charlotte Webb. We are immensely grateful to Anthony and Pat for giving us their plants and delighted that they will continue to be involved with this special collection.

## The Final Plan for the Gardens

The final design has been completed by Kate Cullity for Council's approval, which hopefully should not take long. The plan was on display at the opening of the shed on 5 April 2013.

## Site Induction Course

On Tuesday 19 March 2013 thirty Friends turned out for the short site induction course organised by Wingecarribee Shire Council. If you would like to be involved in any landscape work on the site you will be required to undertake the course—basically it's a checklist of things to be aware of on the site. Please contact Chris Webb if you haven't already been inducted as he will be running the next course. (Tel: 4861 4899 or email [chris@cwebb.com.au](mailto:chris@cwebb.com.au))

## Simon Grant on The Explorers Part 2: The Naming of Plants

By the end of the 17<sup>th</sup> century, explorers were travelling around the world with plant collectors not far behind. Increasing numbers of new plants, (over 300,000 species of plants are now recognised), and animals were being seen in Europe and inadequacies in systems used then for their identification and referencing soon became evident. The following discusses the lead up to formal names and the influence on future plant hunting.

<sup>1</sup> Béatrice Henricot, 'Box blight rampages onwards', *The Plantsman*, September 2006, p.153.

The old systems had largely developed from renewed interest during the Renaissance on all things “classical” covering a range of subjects such as philosophy, art, mathematics and the sciences. Foremost amongst the ideas on classifying “life” were those espoused by Aristotle and his follower, Theophrastus, around 300 BC. In essence, although general in context, concepts of animal and plant groupings began with terms such as “species” and “genus” having meaning though further relationships such as phylum were not considered. Aristotle in his study of animals, classified them according to method of reproduction as Linnaeus later did with plants. Theophrastus, is often considered the father of botany, writing two large treatises, *Enquiry into Plants* and *On the Causes of Plants*. The first, of which nine of the original ten books survive, is arranged in a system where plants are classified according to their modes of generation, localities, size and utilities.

From the fall of Rome until the Renaissance, the limited number of productive plants growing in Europe did not require a sophisticated classification. At the beginning of the Age of Enlightenment, plants were largely grouped according to size and use. With a large number of species coming from around the world, a new systematic approach was urgently needed and a number of individuals provided ideas for a simple but universally applicable system.

Andrea Caesalpino (1524-1603), at one time the director of the Orto botanico di Pisa, put together *De plantis libri* in 1583. He used Aristotle as a guide and laid down a foundation for the morphology and physiology of plants as well as a classification of flowering plants. He recorded a number of observations on the flowers, seeds and fruits of plants using the organs of fructification as the foundation of his botanical system. He retained their traditional names however which at times meant names derived from utility were at odds with their new taxonomic position. He also put together in about 1560 a Herbarium (collection of pressed plants), now one of the oldest extant and covering some 7600 plants.

Next in influence was the Swiss botanist Gaspard Bauhin (1560-1624). The son of a French physician, he also studied medicine and was admitted to the degree of doctor in 1580. He lectured on botany—which seemed to be the only prerequisite for medicine in those days. In 1623 he published *Pinax Theatri Botanici* describing and classifying some 6000 species. His classification system was not very innovative—he retained groupings such as trees, shrubs and herbs—but he introduced many genera names subsequently used by Linnaeus, and most importantly he reduced many names down to a two-part name, thus anticipating the binomial system. He and his brother are remembered by the genus *Bauhinia*.



*Bauhinia* by Linnaeus named after the Bauhin brothers. Gaspard Bauhin (1560-1624) is credited with being the first to use a ‘binomial nomenclature’.

The next three important individuals: John Ray (1627-1705) from England, Augustus Rivinus (1652-1723) from Germany and Joseph Pitton de Tournefort (1656-1708) from France all added aspects that were refined in Linnaeus’s definitive works. Between them they expanded the groups beyond species and genus to class, order and section. The term species was defined. They also developed the concept that all similar plants should have the same first name (Genus) followed by a species descriptor when more than one species existed. The problem with their descriptor (*differentia specificia*), however, was that it was often many words in length. It is Linnaeus who is really considered the father of modern taxonomy.



Carolus Linnaeus by Hendrik Hollander (1853) wearing The traditional dress of the Sami people of Lapland holding *Linnaea borealis* named after him.

Carl Linnaeus was born in southern Sweden in 1707. His father, a peasant priest, was the first of his ancestry to take on a permanent surname, taking on the Latinate name of a giant linden tree that grew on the family homestead. From an early

age he was taught Latin, religion and history and enrolled at a nearby Grammar school with the hope that he would also become a priest. But things conspired against that expectation from the beginning: his father's interest in gardening, poor tuition at school and the encouragement of others to pursue his interests in botany and medicine, two disciplines that at that time were intimately related. By the end of his school years, he was already familiar with Tournefort's classification system and essays on the sexuality of plants and so instead of a career in the priesthood, his well-known path into the study of nature and medicine began.

Following a year at Lund University in the south of Sweden, Linnaeus transferred to Uppsala 60 kilometres to the north of Stockholm in the hope of better tuition. Again the teaching standards were dismal and he continued to struggle financially. Despite those problems, Linnaeus landed on his feet with the assistance of others who recognised his skills. They made their own libraries and gardens available to him, allowing Linnaeus to read widely in major botanic publications as well as at times feeding and supporting him. However, two things in 1729 were perhaps of most help in formulating his later views. Firstly he met Peter Artedi, a talented fellow student: a friendly rivalry spurred both of them on to the study of plants and animals.

At that time comparative anatomy of animals was more advanced than the equivalent in plants. Artedi wanted to work out a system of classifying certain animals, so by mutual agreement they would allow each other to study different areas. Linnaeus was allocated birds, insects and most botany. That pleased him as he had recently come across a review on the structure of flowers reinforcing their central role in differentiating species. The two also made a pact that if one died the other would "regard it as his sacred duty to give to the world what observations might be left behind" by the other. After Artedi tragically drowned in Holland eight years later, Linnaeus published Artedi's work on fish, (one of his allocations), in which a fully developed form of the Linnaean method was in the untouched first chapter. If he had lived maybe an equal share of the renown that followed would have gone Artedi's way.

The second important thing was support and encouragement from Olof Celsius (uncle of the deviser of the centigrade scale). Not only did he take Linnaeus in and feed him, but he also had him assist in botanic projects. In gratitude Linnaeus dedicated a thesis, *Praeludia Sponsalium Plantarum*, that year to Celsius in which he describes pollination based on then little known work as well as his own observations. Although controversial and provocative in Sweden at the

time, equating the sex life of plants with that of animals, it impressed his professors and he soon found himself lecturing crowds of 300-400 as a 2<sup>nd</sup> year student. He continued to work with his usual energy. Finding the old systems of classification inadequate, he began to develop his own, which he used for the first time after a trip to the wilds of Lapland in 1732. *Systema Naturae* was first published in 1735, but his finished system was refined over the next two decades, by which time he had reduced the many-worded scientific descriptor to a single unique word leaving a binomial name. It was used consistently in *Species Plantarum* (1753) and the 10<sup>th</sup> edition of *Systema Naturae*, now considered the starting point of modern nomenclature for plants and animals respectively.

Of course, no system stands still, and Darwin's theory of evolution changed the emphasis to groupings based on "common descent", later helped by sophisticated modern techniques such as protein and DNA analysis. Even so the ground rules were set and continue to this day.

In the next article we will return to the plant-hunters, starting with those directly affected by Linnaeus and his ideas, his "apostles" including Daniel Solander who accompanied Joseph Banks around the world with James Cook.

*Simon Grant*

#### References and Further Reading:

Wilfred Blunt, *The Compleat Naturalist: A Life of Linnaeus* (Princeton University Press, 1971).

Wikipedia articles on Carl Linnaeus and Biological Classification.

---

#### *Friends of SHBG Committee*

Ted Duncan (Chair) 4862 3163

Ian and Carolyn Dwyer 4871 2667;  
Shandra Egan 4871 3609; Judy Keast  
4862 5444; Meg Probyn 4871 3134; Noel  
and Elizabeth Symonds 4862 5173;  
Rosemary Willis 4861 3732.

---

#### *Executive Committee of SHBG*

President:	Charlotte Webb
Vice-President:	Ross Stone
Secretary:	Jacqui Page
Treasurer:	Jan Edwards
Members:	David Cummins Chris Webb

---

#### *Contact details for the SHBG Secretary:*

PO Box 707, Moss Vale NSW 2577

Tel: (02) 4861 4899

info@shbg.com.au

www.shbg.com.au

---

#### *Contact details for Newsletter*

Editor: Meg Probyn

Tel: (02) 4871 3134

probyn44@bigpond.com

---