



# Bermuda Botanical Society

## FEBRUARY NEWSLETTER 2013 FROM THE PRESIDENT:

More than anything, this Society's function is to promote knowledge, protection and culture of our unique botanical heritage. So Robin Marirea's presentation to us last week, on our Native and Endemic plants, got right to the very heart of this interest.



*Robin Marirea Presentation*

I have never seen such a selection of our Native and Endemic plants in one place, at one time. At least two dozen species were represented, together with the fruit and seeds of many of them. Robin's knowledge of, and enthusiasm for, the subject were evident. He is very much a hands-on botanist, his researches directed to the practical propagation and culture of these species, particularly the rarer ones.

Some species, such as Rhacoma, *Crossopetalum rhacoma* and Yellow wood, *Zanthoxylum flavum* are known to exist in only a single, or very few, locations in the wild. Robin's aim has been to build his own populations of these plants, for their protection and to provide the resource for further propagation.

The influx of introduced invasive species into almost all types of natural habitats, together with progressive urbanisation, are well known primary causes of the much diminished state of our indigenous flora. Less well known, and more insidious, is hybridization between

indigenous species and closely related introduced species. This is a problem only brought to light with the advent of DNA analysis. The most notable instance to date is that of the Bermuda cedar *Juniperus bermudiana* having crossed with Darrell's cedar *Juniperus silicola* and possibly other junipers. This hybridization is very hard to prevent, still less reverse, and it may be that *J. bermudiana* is doomed as a pure bred species. The upside is that hybridization may well have contributed to resistance to scale insects in present day "Bermuda" cedars.

Robin reports that the Department of Conservation Services is about to publish a manual on the *Indigenous & Invasive Plants of Bermuda* or *Bermuda Plant Finder*. This will be an essential resource for both teaching and reference. Robin is among the contributors to the manual, as are David Wingate, Jeremy Madeiros and Lucy Hollis, a former recipient of a BBS scholarship. The manual, replete with colour photographs throughout, is likely to sell for around \$35.00. All who are interested in Bermuda's plant life will want a copy. For a preview of a draft version go to the Department's website: <http://www.conservation.bm> Then, on the left hand side of the home page, under Quick Links, click on Plant Finder & then download a PDF copy.

Unfortunately, detailed specifics of propagation and culture techniques for the various indigenous species are beyond the scope of the Plant Finder manual. Robin did say in his presentation that, for most indigenous species, it is best to harvest the fruit/seeds as soon as they are ripe. The seed should then be sown right away rather than stored. Many of these species have a very low germination rate - five per cent or less. So he likes to sow in large quantities. And patience is required - germination may take months.

***Nigel Chudleigh***

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# CYCADS

## BY GEORGE PETERICH

A recent visit to South Africa has brought cycads to my attention. We saw an amazing variety of them in the botanic gardens of Pretoria and Cape Town. I bought a book on African cycads there and found out that there are a few dozen species in the southern parts of Africa alone. I took a few photos of what I saw – also some name tags so that I could later look them up in the book. At this time I have only started to get the most out of this. . . .

In our own Botanical Garden we have quite a nice collection, some 10 different species. I went to see the Curator Neville Richardson, and he supplied me with a copy of a plan of the collection, so I could see what was where. There are no labels yet on the spot, but that problem will be addressed soon. The plan was dated 1975, and the only thing that has changed basically, is the size of the plants. We can still see much of what was here that long ago!

Cycads are plants that look a bit like palms, but are not at all related to them. The most common one here in Bermuda, *Cycas revoluta*, is actually called Sago Palm. But the Sago Palm, *Metroxylon Sagu*, is a real palm that is native to the eastern part of the Indonesian Archipelago. It is the source of sago, a starchy substance that is a staple food in that area. A fully-grown tree contains an enormous quantity of it – enough to supply a family for a few months. More about this another time.

The cycads were already abundant in carboniferous times, and they have survived more than 300 million years. They were actually there before the dinosaurs! And they were there after the dinosaurs became extinct. Ferns are the only plants that can boast such a record. And then there is of course the Ginkgo, but that is just one singular species. Apart from a couple of *Cycas revoluta* the plants in the Botanical Garden are all of the genus *Encephalartos* ( you will find a list of species at the end of this article) These are all natives of Africa.

En-cephal-artos is derived from the Greek *en* = in, *kephalos*= head , *artos*= bread. So “bread in the head”:: this refers to the fact that a bread-like starchy food can be obtained from the centre or the top of the stem.

I end with a question: Why did the Cycads survive the dinosaurs? On the guided tours of the gardens I like to say: it is because the leaves are so leathery, that they were unpalatable for the great saurian herbivores. People believe me, but I am not sure that it is true.

### Some of the Cycads in the Bermuda Botanical Gardens

#### From Africa:

*Encephalartos lebomboensis*:



*E. natalensis*:



*E. Eugene Maraisii*

*E. transvenosus*

*E. paucidentatus*

*E. lanatus*

*E. longifolius*

#### From Japan:

*Cycas revoluta*

#### From Sri Lanka:

*Cycas circinalis*

# IN SEARCH OF THE BEAUTY LEAF TREE CALOPHYLLUM INOPHYLLUM, =(KUMANI, ALEXANDRIAN LAUREL)

BY NIALL AITKEN

I got interested in Bermuda plants using Christine Phillips's *The Bermuda Botanical Wonderland*. (<http://www.amazon.co.uk/Bermudas-Botanical-Wonderland-Field-Guide/dp/0333606523>). Excellent drawings with just enough information to make identification easy. I tried to get my children interested in nature by offering rewards for the first correct identification. (Curiously now as adults they have no memory of this but the evidence is there written in the index of the book I still peruse.)

The "Kumani" tree is on plate 34 and was located at the bottom of our garden and was identified by my daughter Ashley. The romantic name and the features described as "very hardy....protection from high wind", made it very attractive and I've been growing seedlings of it to provide protection from storms. Thus far they've all been destroyed by hurricanes, but I have some more ready to plant out.

The tree is hardy and fast growing, the leaves are leathery with widely spaced veins that do not reach the edge of the leaf; the flower is utilitarian.



Noronhia leaves



Noronhia flowers

The nuts are not spherical. I have become very good at identifying it. It has distinctive appearance that made it easily identifiable in gardens and it is planted in many public places.



Noronhia fruit

A couple of years ago I'd considered buying what I thought to be a "Calophyllum" tree at Aberfeldy Nursery after Hurricane Igor destroyed my plants. The assistant pointed out the hedge enclosing the nursery on Pomander Road as an example of it, which I now don't believe is correct. An article in the *Bermuda Sun* 2008 calls this hedge Calophyllum.

(<http://bermudasun.bm/main.asp?SectionID=60&SubSectionID=386&ArticleID=38916>).

Again I don't believe this to be correct. It is my contention that the Botanical Wonderland has

perpetuated an erroneous myth and we've all gone along with it.

I'm not sure when my misgivings started but with the publication in July 2012 of the excellent '*Bermuda Plant Finder indigenous and invasive species*', (<http://www.conservation.bm>), my suspicions were confirmed. Calophyllum is described as hardy and wind (and salt) tolerant. Yet this time it's a DIFFERENT plant. Look at the beautiful flowers (on the website: I have to wait for summer to view flowers), and the leaves have fine parallel lines that reach to the leaf edge and spherical nuts. They are not the same tree.



Calophyllum fruit



## Calophyllum

By my assessment, the plant *The Botanical Wonderland* calls *Calophyllum inophyllum* is really *Noronhia emarginata*. I asked an authority from Conservation Services for locations of Calophyllum, and was directed to Horseshoe Bay. There I found a forest of what is surely *Noronhia*. It is highly invasive; take a visit to the east of Horseshoe and see how an invasive species is running rampant when not controlled.

I find no depiction or description prior to *The Botanical Wonderland* of the Madagascar Olive in Bermuda, (web search only) prior to 1995. I wonder when it arrived, and suspect recently? On the other hand Calophyllum is documented in 1918 by Nathaniel Lord Britton in *The Flora Of Bermuda*. Yet I've been having difficulty finding it. None in coastal areas, maybe it's hiding in private gardens? It's certainly made me engross myself in the taxonomy of trees.

Well, last week I was walking in the Botanical Gardens by the hedge to the east of the main gate on the South Shore Road. I spotted two: the delicate leaves, a bit sad and not very distinguishable from the trees dwarfing it and coated with some film of traffic dirt or disease; below them seedlings were growing from the nuts. I'm sure it is the beauty leaf (*Calophyllum* derives from Greek: Calo=beautiful, phylum=leaf). Hours later a memory came back that months ago Lisa Greene had mentioned there was a Calophyllum in this vicinity. Then I'd walked around but couldn't see the wood for the trees and forgotten ever having talked about it.

Well, I was back there today for some seedlings, and found another up towards the buildings in the west side of the Gardens : lots of nuts, though the leaves still had a dirty coating, which rubbed off easily. And more in the hedges at the entrance to Lagoon Drive; must have walked across the road. They're jumping up everywhere! Hopefully now I've got their number I'll be seeing them all over the place. I've yet to see one in the wild, but maybe that's a good thing. Any location information appreciated.

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## FROM LISA GREENE

An addition to the list of plants in Bermuda that have interesting flowers: Bay grape flowers are unisexual, meaning they are either male or female. The question is, though, are both the male and female flowers on *one* tree (monoecious) or are they on *separate* trees (dioecious)? According to Wikipedia, bay grape is dioecious but *The Flora of North America* says that the “Flowers are functionally unisexual, some plants having only staminate flowers, others with only pistillate flowers.” Note that it say “*some* plants”. Bay grape flower in the summer, so we’ll have to wait until then for the opportunity to determine for ourselves whether male and female flowers appear on the same or separate trees. *Hortus III* says that the “male flowers are apparently held in clusters on the spikes while the female flowers are solitary at the nodes.” Have your magnifying glasses at the ready to look for anthers and pollen!

Bay grape is a member of the buckwheat family, Polygonaceae. For more information on bay grape, look for the February Green pages in the Royal Gazette.

**Science News Dec 29, 2012:**

### **Climate threatens bamboo:**

Using simulations, scientists have predicted that all species of bamboo will have reduced areas in which they grow. “The results suggest that conditions suited to bamboo growth would shift to higher elevations and become more isolated from the surrounding areas. If the

plants manage to spread well and temperature increases stay small, then panda habitats will largely remain intact. But more likely are a fragmenting of panda habitat and overall bamboo shortages” which will threaten the survival of the pandas that depend on the bamboo for food.

### **Ancient trees:**

“An Antarctic beech has been living in Queensland, Australia, for about 12,000 years. It can reproduce clonally, which helps account for its multiple trunks and longevity. These beeches once covered Antarctica, spreading north when the climate began to cool.”

For more ancients: [www.smithsonian.com/beeceh](http://www.smithsonian.com/beeceh)

Excerpted from *Smithsonian Magazine*, January 2013.

### **Experiments with propagation:**

It wasn’t particularly daring, but I decided to try to get our little native passionflower, *Passiflora suberosa*, to root from a cutting since I didn’t have easy access to a plant to look on a regular basis for fruit. I cut a piece from the end about 6 – 8” long and put it in a jar with water and placed it in a sunny window. Periodically, I topped up the water and, months later, after a close look, I saw roots. Eureka! I have since then added soil to the jar and have had the pleasure of watching the cutting put out more leaves and thrive.

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## FORTHCOMING EVENT

**Saturday 23 March 2013 4.00pm. Plant Identification and Seed & Cutting Exchange. Venue : Somers Cove, Somers Hill Road, Hamilton Parish, home of Nigel & Diana Chudleigh.**

**Facilitator: Peter Lee. Admission : \$5 for members, \$10 for non-members. For directions call 293-0128.**

Each person can bring **one** plant, or part thereof, which they would like identified by the group. Or show an interesting or unusual known plant for the benefit of others attending. Also, bring **seeds, seedlings or cuttings** for sharing. And, time and weather permitting, as a follow up to Robin Marirea's recent talk, take a tour of the Somers Cove garden to see **How Natives & Endemics may be utilized in the home garden setting.**

*Note from the President.* It is sometimes necessary to make changes to scheduled events, or new events arranged, at short notice. These are normally communicated to the membership by email. Any member not on email, who would like to be telephoned instead, please call me at 293-0128 to be put on a list for such notification.