



Bermuda Botanical Society

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February NEWSLETTER 2022

FROM THE PRESIDENT:

Endemic/Native Area at The Botanical Gardens

This area is really thriving, thanks to the team that tend it on a regular basis. Well worth a visit. At the moment the brilliant white fruits that give *Chiococca alba* it's colloquial name, snowberry, are appearing, as is the fruit of *Eugenia axillaris* (white stopper); new leaves of the *Sisyrinchium bermudiana* are emerging. The *Stachytarpheta jamaicensis*, Jamaica Vervain has been amazing and never stopped flowering! When you visit, see if you can spot the *Passiflora suberosa*, ink berry, the *Peperomia septentrionalis* and the new growth of the Larger Marsh Shield Fern, *Thelypteris kunthii*. The Bermuda Sedge, *Carex bermudiana*, was quite badly damaged when a large palm frond fell on top – if anyone has a sedge plant to spare, please let me know.

Volunteers to help with this area would be greatly appreciated. Meeting schedule below, if you can only make an hour or so that's fine too.

February Saturday 5th & 19th 9 am to 11 am

March Saturday 5th & 19th 9 am to 11 am

Senior Schools Award for the Botanical Sciences

The BBS committee is pleased to announce that a new award to encourage students to investigate aspects of botany has been instituted and information sent to Government and Private Senior School Principals and Heads of Science.

70 for 70 Project

The planting project will continue in 2022 with plantings at Walsingham and Eve's Pond. Possible other plantings will include the Bermuda Botanical Gardens and Bermuda College.

Dates to be announced.

Government House School Gardens

Can you help keep this project going? Volunteers needed to work with teachers and children once a week during the school terms. Please email the society if you think you would be able to assist.

cont.

"To encourage and support the study and promotion of the botanical sciences within Bermuda"

Citizen Science

In this project members, friends and anyone else is invited to look for the first flowering of the following common plants:

Bermudiana	<i>Sisyrinchium bermudiana</i>
Surinam Cherry	<i>Eugenia uniflora</i>
Allspice	<i>Pimenta dioica</i>
Bay Grape	<i>Coccoloba uvifera</i>
Loquat	<i>Eriobotrya japonica</i>

Report of sightings should include day, parish & if possible a photo. Send to bdabotanicalsociety@gmail.com, subject: Citizen Science.

Tree Tales Series II

The Tree Tales team has launched the second in the Tree Tales series, with a much improved display format. If you haven't already seen them, check out the southern end of Camden Lawn west, (Kapok tree area). Many thanks to Marlie Powell, Felicity Holmes and Jocelyn Morrison.

Jennifer Flood



Remembering

Danny Mannus 1928 - 2021, who served on the Executive Committee of the Botanical Society for several years, offering guidance with a steady and gentle hand.

“To encourage and support the study and promotion of the botanical sciences within Bermuda”

In our garden - Loquat, *Eriobotrya japonica* Diana Chudleigh - text and photos

February is the month to celebrate the loquat in Bermuda. Children enjoy picking its fruit along the wayside and I enjoy making loquat jam and chutney and stewing and freezing the fruit for future loquat pies, from the two trees in our garden.

Loquats are one of the many blessings of living in Bermuda.

The plant is originally from China though it has been cultivated in Japan for more than one thousand years. It was introduced by man to Bermuda where it has become naturalised, growing freely all over the island.

There are a couple of stories about its introduction here. Some believe that William Reid, who was the Governor of Bermuda from 1839 to 1846, introduced the plant from Malta whilst others that it arrived on a ship from Japan bound for England which came into St George's in distress in 1853

Whichever story you choose to believe, it prospered here. It is an attractive small tree with large oval leaves.

It is in the *Rosaceae*, or rose, family. It flowers in November and December and fruits from January to March.

The fruit is plum-like and is yellow or apricot-coloured when ripe and contains several small brown shiny seeds which have a slight almond flavour that provide depth to homemade loquat liqueur.

Our garden is exposed to wind from both the North Shore and Harrington Sound so our trees are planted in the slightly sheltered area in the middle of our garden where they are protected by hedges of Surinam cherry, *Eugenia uniflora*. We keep our trees topped so the fruit are easier to pick and are below the level of full force of the wind.



Loquat's membership of the Rosaceae family can be easily recognised by its flowers which are in bloom in November and December.



Loquats are ripe and ready for picking this month.

“To encourage and support the study and promotion of the botanical sciences within Bermuda”

BURRS (Ed. note: this article is being repeated, with apologies, because of layout errors in Feb's issue.)

George Peterich

Thinking about the ways how plants spread their seeds, one wonders how such a diversity came about. It is hard to understand that this happened without being intended from the beginning. The evolution theory tells us that what we observe has come into being by a continuous stream of random events. This means that words like design and solution do not fit into the theory of evolution.

But there is another way to look at the marvels of nature: the pragmatic way. A good example would be burrs. Burrs are spread, away from the mother plant, by being attached to the fur of animals, and as we humans know, by getting attached to our clothes, even to our shoelaces. Sometime in the 20th century, there was a man in Switzerland, who was bothered by burrs on his dog and his clothes and took a good look at them. His name is Georges de Mestral. What he saw were of course the burrs of the European Burdock plant, *Arctium lappa*. The small hooks on the burrs can be clearly seen, and he had the idea, that it would be worthwhile to copy this, because he could imagine practical use of it as a fastener.

The thought of making two different materials, one cloth with tiny loops and another with tiny hooks,. The loops were easy – cloth like that existed already, but the hooks took much longer to produce and had to be in large quantities on a strip of material. Finding a way to do that took many years, but he persisted and eventually succeeded. He named the new product Velcro (the name is composed from the French words *velours* and *crochet*, meaning velvet and hook) The commercial success also took long. It is worth it to read the whole story - you can find it on the Internet. Only after it went to the moon, did velcro become well known.

Here in Bermuda we have the Burrbush (*Triumfetta semitriloba*,) the May Weed (*Ammi majus*) and the Trefoil, (*Desmodium canadense*), also called Creeping Beggarweed, Showy tick-trefoil. The small hooks on the seeds of Burrbush and May Weed can be seen by the naked eye or or with a magnifying glass. The small seedpods of the Trefoil are extremely sticky, and they seem to be covered with some glue. But under the microscope one can see that they are no exception: there are numerous, perhaps hundreds of tiny hooks. There is another trick of the seedpods: after they get dry, they can fall apart into separate pieces, each containing a seed.

Two photos: Trefoil, one showing the seedpods on the plant – they are about two centimetres long. And the other of one dry segment of a seedpod, actual size about 3 millimetres. This photo was taken with a microscope by Dr Robbie Smith at the Museum of Natural History.

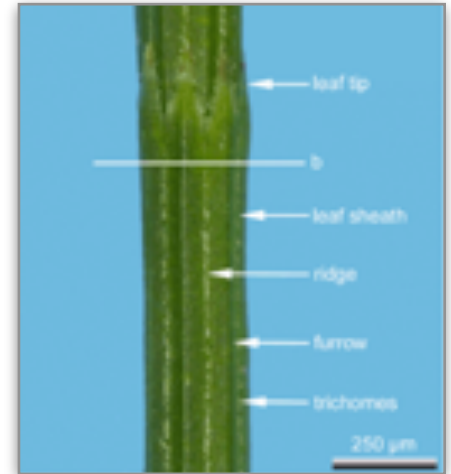


“To encourage and support the study and promotion of the botanical sciences within Bermuda”

A Bit About Casuarinas in Bermuda

Gary Taylor, M.F.C. text and photos

The name casuarina is actually the genus given to the species of trees that Bermuda conservationists love to hate, *Casuarina equisetifolia*. It comes from the trees' foliage looking like the plumage of the cassowary, genus *Casuaris*, a flightless bird native to northeastern Australia. Standing under casuarinas on a windy day, it is not difficult to understand why one of their common names is the Australian whistling or whispering pine. The 'whistling' comes from the wind blowing through what look like thousands of pine-like needles that are in fact branchlets. A closer look at these branchlets will reveal rings which are the tips of the leaf sheaths that cover the branchlets (photo right).



Detail of the leaf of *C. equisetifolia*, from Dörken, Veit & Parsons, Robert. (2017). Morpho-anatomical studies on the leaf reduction in Casuarina: the ecology of xeromorphy. *Trees*. 31. 10.1007/s00468-017-1535-5.

Casuarinas are now a large part of Bermuda's scenery, having replaced our Bermuda cedar as the most prominent tree on the island. According to former Bermuda governor (1872-1877), John Henry Lefroy, only a few were here during his tenure as governor, having possibly been introduced from the West Indies. Casuarinas were introduced into Mexico from their native East Asia or the South Pacific sometime before 1852, followed by the Caribbean in 1870. After the loss of nearly all of our Bermuda cedars to cedar blight in the middle of the 20th century, casuarinas were heavily planted in Bermuda to protect sensitive vegetation from heavy winds and salt spray, as well as to protect our shallow soil from erosion, a job that the cedars did well for thousands of years. Casuarinas have since become very invasive, spreading all over the island. The recent draft of Bermuda's Invasive Species Act, 2021, lists all casuarina species as restricted 'Category A' species, restricting anyone from reproducing, selling, supplying, or allowing the release or spread of any plants by anyone in Bermuda, unless by special permit.

Casuarinas can grow as much as eight feet per year, outpacing endemic trees like the cedar, which grows about a foot each year. Their rapid growth isn't the only thing that helps with their invasiveness. The trees are allelopathic, altering the ecosystem for their own benefit. Casuarinas produce large amounts of leaf litter that decomposes very slowly, leaving a very thick groundcover that severely inhibits the germination of most other plants' seeds. As if that weren't enough, as the litter breaks down it releases highly toxic selenium and salts into the soil that further discourage the germination and growth of most other plants. According to very recent research, our endemic great Bermuda land snails, *Poecilozonites bermudensis*, avoid areas overrun by casuarinas and their litter. This might be due to the toxicity of the casuarina's litter. What other ways might casuarinas be disturbing Bermuda's delicate ecosystems?



C. equisetifolia leaf litter



C. equisetifolia looming overhead

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St. Andrew's Cross – One of Bermuda's Rarest Natives

Alison Copeland - text and photos

Those who have visited the Botanical Society's native and endemic plant flowerbed at the Botanical Gardens recently may have noticed the addition of three small bushes of St. Andrew's Cross (*Hypericum hypericoides*). They appear to have settled in well, and are producing the characteristic X-shaped yellow flowers, from which this species gets its common name (Fig. 1). During the preparation of the text for the sign in the flowerbed, we had to pull together some information on the habitat of St. Andrew's Cross in Bermuda – and it is on that subject, I thought I would prepare this note.

The taxonomy and indigenous status of St. Andrew's Cross has changed many times over the years, which makes tracking it through the historic literature tricky. John Henry Lefroy used the names *Ascyrum Crux-Andrew* and *Ascyrum hypericoides* to refer to it in his 1884 *Botany of Bermuda*. Later, Nathaniel Britton in his 1918 *Flora of Bermuda* applied the name *Ascyrum macrosepalum*. Dr. Britton published a paper in the *Journal of the New York Botanical Garden* in 1912 in which he describes *Ascyrum macrosepalum* – the Bermuda St. Andrew's Cross – as an endemic species, with sepals, leaves and seeds that differ from related species. More recently, the name *Hypericum hypericoides* has been applied to Bermuda's St. Andrew's Cross, and it is now considered a native rather than endemic species. *Hypericum hypericoides* is distributed in eastern North America, Central America and the Caribbean ([POWO, 2022](#)).

The distribution of St. Andrew's Cross on Bermuda was described broadly by Britton as "frequent in marshes and on hillsides" (Britton, 1918). Other writers give more detailed locations. Lefroy (1884) says "This pretty plant is abundant in Pembroke marsh, and not uncommon on hillsides in moist places...". Addison Verrill (1902) also gave Pembroke Marsh as a location for St. Andrew's Cross. In his description of the plants in Paget Marsh, Dr. A. B. Rendle (1937) wrote "...in the drier parts of the marsh with the native *Psychotria ligustrifolia* and the endemic *Ascyrum macrosepalum*."

To these historic observations in Paget Marsh and Pembroke Marsh, we can add more recent data from Devonshire Marsh. During their island-wide vegetation survey from 1998 to 2000, the Bermuda Biodiversity Project (BBP) recorded St. Andrew's Cross at six sites; four spots in Devonshire Marsh, one point in Paget Marsh, and one place at Ferry Point Park. Unfortunately, all four of the points at Devonshire Marsh were in the area that burned during the fire in March 2018 (Fig. 2). Jeremy Madeiros had mentioned to me that historically St. Andrew's Cross was one of the first things to regenerate after a fire, but despite multiple visits to Devonshire Marsh throughout 2018, we never saw any. In fact I wrote an article for the Society's [May 2018 newsletter](#) about these visits.

cont.



St. Andrew's Cross flower in the Botanical Gardens, December 2021.



Figure 2: The Bermuda Biodiversity Project's four St. Andrew's Cross observations, plotted over drone imagery collected by the Department of Environment and Natural Resources in March 2018 following the Devonshire Marsh fire. The blue lines are the Audubon Society's nature reserves.

From reading the historic accounts of this species, it is clear that it has declined in abundance over time. We go from Lefroy calling it "abundant" in 1884, to Britton referring to it as "frequent" in 1918, to Rendle in 1937 saying "occurs ...; but I did not find it frequent, as described by Britton." More recently, the Bermuda Biodiversity Project surveyed 1,220 locations in various habitats around the island from 1998-2000 and only found this plant at six (0.5%) of them.

During my survey work for the Red Listing project (started in 2013) an intern and I mapped rare native and endemic plants at 1,171 locations around Bermuda, and the only St. Andrew's Cross plants we observed were nursery-raised plantings. We recorded St. Andrew's Cross planted at BAMZ, Pomander Road, the Arboretum, Windreach and Carter House (Copeland, 2021). A number of these have since died out. I am told it still grows at the Bermuda National Trust's Chaplin O'Neill nature reserve on Harbour Road in Warwick. Despite fairly intense searches at Paget Marsh and Devonshire Marsh during my almost 14 years with the Department of Environment and Natural Resources, St. Andrew's Cross remains a plant I have never seen growing wild.

References

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Ceiba pentandra, Kapok Jennifer Flood - text and photo

Thanks to those members who responded to requests for the whereabouts of Kapok's in Bermuda to assist the research of Bill Davidson, (William V. Davidson, Chair (retired), Dept. of Geography & Anthropology, Louisiana State University, Baton Rouge, Louisiana).

Bill had hoped to visit Bermuda late January, circumstances prevented this, but the Bermuda National Trust hosted a zoom presentation where he spoke about his work throughout the Caribbean region. A fascinating look at the people/kapok connections. Bill's publications on Caribbean can be found at <http://williamvdavidson.com/publications> scroll to the end for his papers on *Ceiba*.

Myles Darrell of the BNT has created this amazing map of kapoks in Bermuda to be found at:

<https://www.google.com/maps/d/u/0/viewer?mid=1iV5J7n1m5Gly6MfkelsG3cww1PQQVW5&ll=32.34877632646172%2C-64.72516105277498&z=12>



George Peterich next to the Kapok on the eastern side of Camden Lawn, Botanical Gardens

Miscellany

Looking for Elderberry fruit:

Wendy McLeod (island_clan@mac.com) is very interested in planting shrubs and trees which produce edibles. At a meeting of the Botanical Society she met a lady who had an elderberry from which she made jam and cordial. If you know who this might be, can you ask her to contact Wendy who would like to get some seeds.

Thank you from Jocelyn Morrison:

A note of Thanks to all members unable to be at the AGM on Saturday, November 20th. Thank you to all those who have participated consistently or randomly. Every little part played counts towards the whole. Thank you to each Committee member but in particular *a big thank you to Jennifer* for all the behind the scenes work done to keep the momentum of programmes in motion.

Activities:

February Sunday 20th (rain date 27th): Join us for a **Tail-gate Tea** - an outdoor opportunity to catch up with fellow members. Bring your own thermos of tea (or preferred beverage). A few tea treats will be provided. Location: St. Georges, Penno's Wharf Parking Lot (enter near Godet and Young Hardware Store). Sign up: bdabotanicalsociety@gmail.com. subject: Tailgate

March: to be announced

April 3rd (rain date 10th): **Guided walk of the South Shore dunes** with Lisa Greene. Come and learn about the plants, geology and natural history of this coastal area. Sign up: bdabotanicalsociety@gmail.com subject: South Shore dunes

May: Red Listing Bermuda's Endemic Plants with Alison Copeland

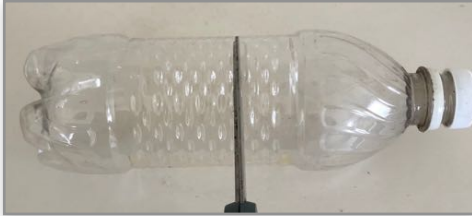
Government Covid-restrictions will apply and limit the number of people who can attend.

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Children's Corner

Try Making a Self Watering Plastic Bottle Garden

Felicity Holmes - text and photos



1. Cut a water bottle about two thirds the way up the bottle.



2. Make a hole in the cap.



3. Cut a strip of cotton fabric from an old T Shirt or sock, poke it through the hole and tie the end. This will act as your wick, which will draw water up it and into the soil.

4. Place the top of the bottle upside down in the bottom of the bottle, fill the top with moist potting mix and plant your seeds.

5. Add water to the bottom of the bottle so it comes up just below the bottle cap and the fabric strip dangles down into the water. Place in a sunny location.



The fabric 'wick' will keep the soil moist and your plants will grow

There are many ways to use plastic bottles to grow plants, here is another idea Go to:

[Easy Kids Activity - Planting Seeds in a DIY Plastic Bottle ...](https://www.youtube.com/watch?v=...)

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