Some Exocarpos Species

This weeks note is about a genus which is often confused with other pine looking species. Exocarpos species are found in many parts of Australia including the Canberra region. Not usually as large stands but more often as individuals in the eucalypt forest.

In Swahili on meeting one says jambo to which the reply is habari responded to with nzuri Hello Any news Fine ie. the news is good. And so it seems to be this week in Canberra. Let's hope it is so and we can start to move around again.
The world seems to be upside down at the present time which reminded me to make this weeks note about an often miss-named genus with some very upside down features.
The early Europeans found many aspects of Australia upside down, animals that bounced, trees that lose their bark rather than leaves platypus that looked like a duck and small trees which have the seed outside the fruit. A cherry with the seed outside. A tree which could be cut for Christmas trees in the height of summer! Indeed all very odd from a European perspective at least.

The comments made in the introduction to the earlier notes apply here namely that I have not included references as it is a quickly written piece for the times. There are no photographs as they are easily obtained by the reader on the net using your favourite search engine.

Santalaceae

There are 30 genera and 400 species in the sandalwood family *Santalaceae.* In Australia there are10 genera and 46 species. They are all root parasites except *Dendrommyza*.but there is not a great deal of information about the specific hosts. *Santalum spicatum* is the Australian sandalwood one of the high value sandalwoods. *Santalum acuminatum* is the now relatively well known quandong. Both are growing industries in W.A. with quite a lot of work done on the cultivation of them.

John Turnbull tells me that ACIAR has supported work on sandalwood in WA and the Pacific. He points out that Australian

native *Santalum spicatum* is very slow-growing so most plantations in W.A. are of *Santalum album,* which is native in south and southeast Asia, and grows faster. India is the major producer of sandalwood.
It used to be exploited in Indonesia but little is left of that resource. There are related species in Queensland and in the Pacific islands such as Fiji and New Caledonia.

One genus in the family is the rather interesting *Exocarpos.*

Exocarpos
Exocapos is one genus in this large family. It was named by *Jacques-Julien Houtou de Labillardiere* (1755-1843). He was born in France and was the naturalist on the *Bruni d'Entrecasteaux* expedition to find *La Perouse*. Because they were at war (again) the British seized his collection but thanks to *Joseph Banks* it was returned to him. He arrived back in France in 1796 and published the description in 1800. He derived the name from exeo G outside and carpos fruit. The fruit is really a swollen stem on the end of which is the single seed drupe (capsule). It varies in colour and size depending on the species but always has the same basic structure. They are hemiparasitic . That is they photosynthesis but also take nutrient and water from the host plant, which is often a tree but sometimes other species. Because they can do this they can grow in very poor conditions but are extremely difficult to grow in the nursery. Their size means they are of little interest to foresters but for ecologists the genus is significant in the ecosystem.
There are 9 species in the genus split into 2 Sections. One, *E. latifolius* is placed in a Section *Sarcocalyx* It is a small tree or Shrub to 10m, widespread across Northern Australia. It's common name is Mistletoe Tree. The remainder are placed in Section *Exocarpus.* The following few species illustrate the range of forms found in the Genus. The one we are most familiar with in the Canberra region is *E. Cupressiformis.*

E. cupressiformis
E. cupressiformis was named by L*abillardiere* from material he collected in Storm Bay Tasmania on the 9th May 1792. It is a small tree or shrub to 8m with a green pyramidal crown. Hence the name

cupressiformis - cypress like. The drooping foliage is actually branchlets with the leaf less than a millimetre long.
It grows from Q., N.S.W., Vic., and S.A. in open eucalypt woodland on a a range of soil types. It is not found in pastures as it is said to be poisonous to stock but rather on road sides and untended areas where its shape and colour makes it stand out. The 'berry' a swollen stem, is edible, bright red, and about 4-6mm long. but is not seen often as it is attractive to animals. The common name varies over the wide area in which it grows including Cherry Ballart and Native Cherry.

It has many uses and cultural significance for aboriginal people. The wood is strong and used for spear throwers and the sap to treat snake bite. Europeans used it for furniture, handles, and gun stocks and Christmas trees.
The trees provide protection for many species of birds as well as food from the many insects which are attracted to the canopy as well as the small red fruit. For example Regent Honeyeaters have been observed feeding on them. It is the only species in the genus which forms something of a tree the others are far more shrub-like with *E nanus* being particularly small.

E. nanus
E. nanus was named by *Joseph Dalton Hooker* in the *London Journal of Botany* page 281 in 1847 from a herbarium sample collected from 'mountain tops' in Tasmania in 1833
Hooker (1817-1911) worked at Kew Gardens and famously had a long spat with *Richard Owen* over the role of Kew v the British Museum. He was a very close friend of Darwin and was the first 'Man of Science' to publicly back Darwin.
It is a prostrate shrub in exposed sites but slightly taller in more sheltered spots. Usually on bogs and heath in subalpine regions of N.S.W., Vic., and Tas. but rare in the ACT. The common name is Alpine Ballart. The seed is typical of the species with a small dark red fruit and exposed 3mm long drupe.
It is the only Australian species with opposite leaves. which are only 0.5mm long.

E. strictus
This small tree or shrub grows to 3.5m It was named by *Robert Brown* (1773-1858) in 1810 after returning to Britain from his voyage with Flinders The type specimen was collected from the Derwent river in March 1804.
The fruit may be red, white, or mauve and the branchlets green or bronze-green. The appearance is much like broom. Pale Ballart is wide spread in south-eastern S.A.,Vic., and eastern N.S.W. including the ACT. It sometimes forms dense thickets in eucalypt forest and riverbanks.

E. phyllanthoides
E. phyllanthoides grows on Norfolk Island. It was named by *Stephan Ladislaus Endlicher* (1804-1849) whom we have met in previous Notes. The material was collected by *Ferdinand Lucas Bauer.* (1760-1826). He was an Austrian botanical illustrator. When Flinders returned to to England *Bauer* went to Norfolk Island for eight months. He returned to England and published the description in 1833. The name is from the fact that it is superficially similar to *Phyllanthus;* oides L. resembling.
Isaacwood grows to 8m and although not common is spread over the island in forested areas, which were far more extensive before Europeans arrived. It also occurs in New Caledonia. It is a constituent of the ecosystem required by the critically endangered Green Parrot and a food for the lava of a noctuid moth *Pantydia sparsa*. Canberra resident and graduate forester from the ANU Dr. Peter Coyne has worked on the flora of Norfolk Island for many years. His book *Norfolk Island's fascinating Flora* covers this topic along with many others.

The species in the Exocarpos genus are not trees in any meaningful sense but do form part of the ecosystems where they grow; providing food and shelter for many species of animals and insects. It would be hard to ignore *E. cypressiformis* in any survey of the bush. It stands out as being really hardy and always green.

Does anyone know where they got Ballart from?

They are not easy to grow This from the National Arboretum's David Shorthouse

The *Exocarpos cupressiformis* we have at Forest 20 was given to us by CIT (John Ellis) He had got several grown with his CIT students. It came to us about 18months ago and was growing on a *Eucalyptus.* I think it was either *pulverulenta* or *perriniana*, but this could possibly be confirmed through John Ellis.
Anyhow, in the last few months, the eucalypt part has died and I am thinking the *Exocarpos* has transferred itself to the nearby *E. macrorhyncha,* which I had hoped it would do. Currently we have a tree guard on the plant as it is just the right size for a hare to snip it off!

Letter to the Editor

I write this looking out through a beautiful rainy study window at a *Callitris oblonga ssp oblonga* absolutely loving the rain, a very elegant 3.5 m conical tree in Canberra.
I want to add two bits about the uses of *Callitris endlicheri* and *Callitris glaucophylla which were the subject of last weeks note.*

C glaucophylla is such a strong timber that during the rapid expansion of the wine industry 1990 to 2000 much of it was used for vine poles. We used it in my company on a number of our vineyards in the Barossa and Adelaide Hills where we found we got not only termite resistant poles but they were so tough they could be driven into the ground a much more simple process than drilling holes and putting in place.
If your readers want to see the essence of 'durability' they should go to the wonderful World Heritage site at Lake Mungo where as well as the Indigenous cultural sites there is a fabulous wool shed almost certainly over 100 years made from, i'm pretty sure, *C endlicheri* and which has been 'twitched' together with bull wire, (very thick fencing wire) no nails used.
Max Bourke

Twitching green poles together is very good way to go as one can tighten them up as the poles shrink.
Ed.

More about Tony Fearnside

Many of the readers will have known Tony Fearnside but it was not until seeing his memorial service on YouTube that Chris Borough found out that Tony was not only a respected forester but also a Theosophist in fact one-time President of the Theological Society in Canberra. Tony hosted his own website (https://tonyfearnside.com/).

Coincidentally he has recently published a book, "*The Light that Never Shone*", that traces the Theosophical Society from its formation in 1875 through to the link with organisations including the Liberal Catholic Church and the Order of the Star in the East.
The book focuses on the construction of a massive Star Amphitheatre at Balmoral Beach in Sydney. Now long gone. The amphitheatre was built for Jiddu Krishnamurti known to members of the Star as the New Leader or Teacher. Krishnamurti did come to Australia but he wanted nothing to do with the structure that had been built for him. The self-published book is only available from him in Forster. It is $25 including postage.
Contact Chris on chrisborough@gmail.com or by phone on 0458634624

I hope you are looking more closely at the species selected for the notes. It is intended as a starting point as there is so much material on the net now including pictures which one could never get to take and historic material which has been digitised. It is somehow fascinating to see the actual description as published around two hundred years ago, even if one can't read the Latin.

Steve Thomas
7/5/2020