A little bit about Nothofagaceae

It is sometimes forgotten that different trees provide us with different types of wood. Some trees provide very soft wood such as balsa wood others like Bulloak (*Allocasuarina luehmannii)* extraordinarily hard wood. By the time the most sustainable material we have is incorporated into an admired piece of furniture the process of getting it to that point is forgotten. In 1964 I used a very good wood called Rauli for the drawer components of a side-table. It is a pink to reddish even grained stable wood very similar to Beech (*Fagus sylvatica)* in its working properties.
I recall in the same year two lecturers from, I think, Cardiff University giving the 'A' level Geography class a talk with the title 'Wondering Poles and Drifting Continents' It was the early days of the acceptance of continental drift. Today no-one would doubt that the continents are highly mobile - if time is compressed to a geological pace that is (or Covid 19 lock down for that matter).
It is also the case that some genera and species are quite mobile moving from one family to another, and new families created from time to time. This has occurred with this genus. In the *Flora of Australia volume 3 Nothofagus* is in the *Fagaceae* but now finds itself in its own Family the *Nothofagaceae.*
This note is about a Family the distribution of which pointed to the drifting of continents. It is also one of over exploitation due to the quality of the wood many of the species produce.

The comments made in the introduction to previous notes applies 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. Something you are encouraged to do if you are looking for something to do at this rather frustrating time which, it seems, may be easing soon - or not as we go into winter. Let us hope we continue on the present trajectory.

Nothofagaceae

The only genus in this family is/was *Nothofagus* which was formerly placed in *Fagaceae* as it was by Helen.J. Hewson in the *Flora of Australia volume 3*. There are grounds for doing so as there are

many similarities with other species in the Family. However the species was assigned their own Family by *Ludmila Andreyevna Kuprianova* (1914-1987) in 1962. *Kuprianova* was a Russian palynologist who was associated with the *Komarov Botanical Institute* in Saint Petersburg.
Nothofagus Gr.-false and fagus L. beech tree. It was named by *Charles Ludwig de Blume* (1796-1862) in 1850. He was a German who spent his working life in Java and later the Netherlands. His name is also written as *Karl or Carl von Blume*. It is suggested that he mistakenly added the H as it would be more correct to have named it *Notofagus* Southern Beech. We will never know.

Nothofagus
Nothofagus is a genus of 35 species and 8 recognised hybrids. All are found in the Southern Hemisphere. In Chile, Argentina Australia, New Zealand, New Guinea, and New Caledonia and is well represented in the fossil record from the Late Cretaceous. The fossil record indicates that it was growing in Gondwana before it broke up.
The geological history of the Family has resulted in a great deal of interest from taxonomists and paleobotanists. The relatively recent ability to quickly identify clades has given rise to new insights. *Peter B. Heenan and Rob D. Smssen in Phytotaxa 146 (1) p.1-31 2013* support a breakdown of *Nothofagaceae* into 4 genera.

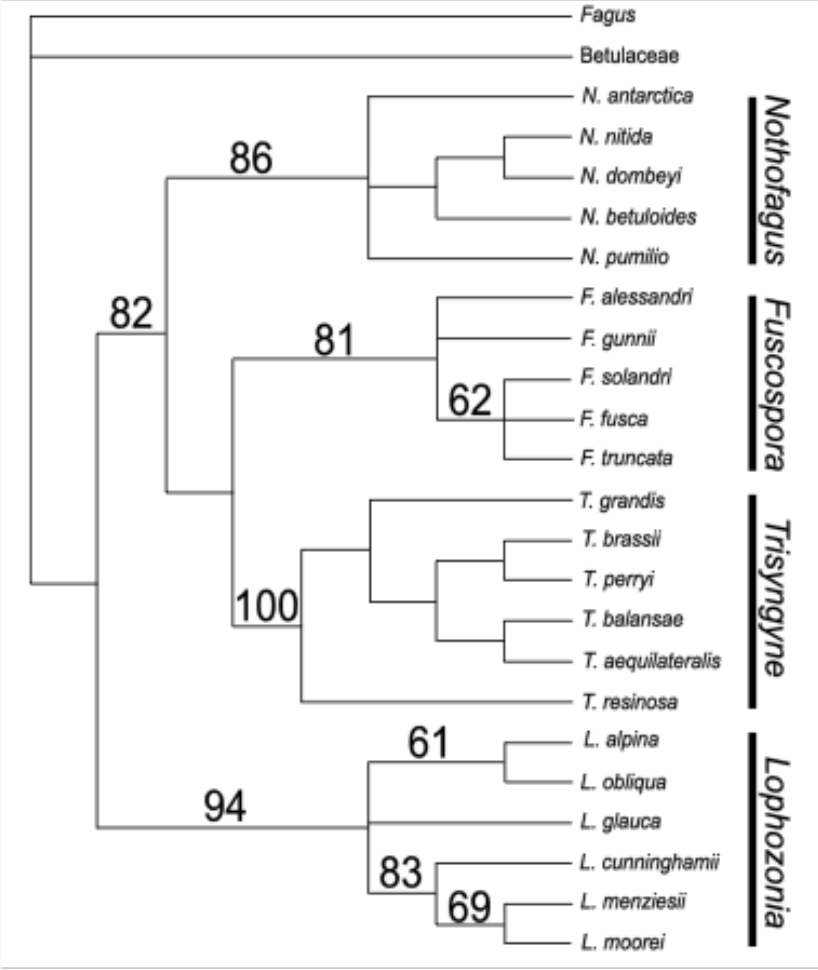
- ***Nothogagus***

- ***Fuscospora***
-
- ***Trisyngyne***
-
- ***Lophozonia***

For example they place *Nothofagus moorei* and *N. cunninghamii* in *Lophozonia* and *N. gunnii* in *Fuscospora*. One can be confident this is not the last word on the subject.
John Turnbull has pointed out to me that the three Australian southern beeches are still included in the genus Nothofagus by the Council of Heads of Australian Herbaria and listed as such in the

Australian Plant Census which can be viewed on the ANBG website under databases.
The Australian Plant Census (APC) is a list of the accepted scientific names for the Australian vascular flora, ferns, gymnosperms, hornworts and liverworts, both native and introduced, and includes synonyms and misapplications for these names. The APC covers all published scientific plant names used in an Australian context in the taxonomic literature, but excludes taxa known only from cultivation in Australia. The taxonomy and nomenclature adopted for the APC are endorsed by the Council of Heads of Australasian Herbaria (CHAH).

However because I am feeling that we all need a bit of uplifting I will use the 'new' genus names. The names used refer to very early work by botanists in Europe. They should be read as prospective or possible names developed from the fast moving genetic analysis now available.


Fagus
Betulaceae
N. antarctica
N. nitida
N. dombeyi
N. betuloides
N. pumilio
Nothofagus
F. alessandri
F. gunnii
F. solandri
F. fusca
F. truncata
Fuscospora
T. grandis
T. brassii
T. perryi
T. balansae
T. aequilateralis
T. resinosa
Trisyngyne
L. alpina
L. obliqua
L. glauca
L. cunninghamii
L. menziesii
L. moorei
Lophozonia
86
82
81
62
100
61
94
83
69

Taken from *Peter B. Heenan and Rob D. Smssen Revised circumscription of Nothofagus and recognition of the segregate genera Fuscospora, Lophozonia, and Trisyngyne (Nothofagaceae) in Phytotaxa 146 (1) p.1-31 2013*

The viability of *Nothofagaceae* species seed is not long and the length of time it could remain viable in salt water is very short. This is an important factor in the claim that species somehow managed the long trip to New Caledonia. The geological evidence for the time Gondwanaland broke up does not quite fit to the emerging genetic evidence for the time the species developed in New Caledonia. Inevitably this occupies some researchers minds, some propose that the wind or birds were the carriers. Well, like the issue of assigning species to genera or families it is well beyond my pay grade and I am not sure how much it matters to any reader of this simple note. Still it is interesting to wonder.

Lophozonia moorei

Lophozonia moorei was first named by *Ferdinand von Mueller* in 1896 as *Fagus moorei* in honour of *Charles Moore* (1828-1905). *Moore* trained in the Botanic Gardens of Trinity College Dublin and arrived in Sydney in 1848 taking up the position of Director of the Royal Botanic Gardens and holding that position for 48 years. Nineteen species were named after him by von Mueller.

L. moorei grows to 40m with a tendency to develop a crooked form. To foresters this may seem a disadvantage but to cabinet makers not so much as boards cut from the bendy bole can produce some very attractive grain, but of course the recovery rate can be low and hence not commercially attractive.

It grows in two rather small areas along the coast from 500m to 1500m from Barrington Tops to near the NSW border with Queensland. Typically along creek lines in cool temperate forest along with other species which provide attractive wood such as Coachwood and Sassafras.

The pink to reddish brown wood is used for furniture and turning. The most select pieces can produce very fine furniture although it is somewhat difficult to season and work.

Lophozonia cunninghamii

Lophozonia cunninghamii was first named by *William Jackson Hooker* in 1840 as *Fagus cunninghamii*. Both gentlemen are mentioned in other notes in this series.

It grows to 40m.in the cool temperate rainforest of Victoria and Tasmania. Sometimes as pure stands with tree fern understory and also with Southern sassafras, Leatherwood and King William Pine. Smaller trees are found in wet sclerophyll eucalypt forest. In high elevations it is reduced to a shrub where it resembles *Fuscospora gunnii*. It is a valuable timber species providing very much sought after wood for furniture and feature panels.

Fuscospora gunnii

Fuscospora gunnii is a deciduous sub-alpine shrub which grows to 3m and in good sites to 8m in Tasmania. In harsh sites Tanglefoot often forms a tangled impenetrable 2m high mass. It was named *Fagus gunnii* by *Joseph Hooker* in 1851 in honour of *Ronald Campbell Gunn* (1808-1881). Gunn was the superintendent of the convict barracks in Hobart among other things, and corresponded with Sir William Jackson Hooker. His main interest was botany but he also collected widely for the British Museum. *Sir J. D. Hooker* dedicated his *Flora Tasmaniae* to Gunn and William Archer. In it he said of Gunn

> *'There are few Tasmanian Plants that Mr Gunn has not seen alive, noted their habits in a living state, and collected large suits of specimens with singular tact and judgement. These has has transmitted to England accompanied with notes that display remarkable powers of observation, and a facility for seizing important characters in the physiognomy of plants, such as few experienced botanists possess"*

The wood has been used by craft and artist people to make small items of rustic furniture .

Lophozonia alpina

Lophozonia alpina was first named by *Eduard Friedrich Poeppig* (1798-1868) and his collaborator *Stephan Endlicher*. If the new Genus is accepted then it will be (Popp. & Endl) Heenan & Smissen.

Rauli is a deciduous tree which grows to 25m and on good soil to 40m The bole of this fast growing tree is straight cylindrical and free of branches which produces knots in the sawn timber. It has been heavily exploited and exported to Europe.
In its northern range the land has been converted to agriculture or Pinus radiata plantations. It is classified as Near Threatened in the IUCN Red List.
Because of its wood properties it has been trialed in Scotland and Wales where it has suffered badly from some very cold winters making it very unlikely to be planted commercially.
The reddish, even, close-grained wood is difficult to season but select material is very suitable for situations where beech would be used.

Nothofagus antarctica

Nothofagus antarctica was first named by *Johann Georg Adam Forster (*1754-1794) He accompanied his father on the second Cook voyage and had a short but influential career in botany ethnography and travel writing as well as politics and revolution.
Antarctic Beech grows from southern Chile and Argentina to Tierra del Fuego. It is found on Hoste Island which makes it the most southerly species in the world. It can grow to 25m but is usually a rather spreading tree of poor form. It is deciduous and when the small leaves emerge in the spring the branchlets and leaves give off a scent which is variously described as a sandalwood aroma or deliciously honey-scented.
It thrives in urban plantings with cold climates and good soil moisture.

Trisyngyne pullei

Trisyngyne pullei was named by *Cornelis Gijsbert Gerrit Jan van Steenis* (1901-1986) in 1953 in honour of *August Adrian Pulle* (1878-1955) who was a Dutch botanist who focussed on the flora of the then Dutch East Indies. *Steenis* was also a Dutch botanist who worked extensively on the flora of South East Asia. He traveled to Australia and New Zealand. Among other things he was the Professor and Director of the *National Herbarium of the Netherlands.*
T. pullei is a large tree growing to 50m with a straight bole. On ridges it can be a crooked dwarfed shrub to 2m. It grows in the

Highlands of PNG and throughout Melanesia. where it is a valued species for its useful wood.

The Australian species of Nothofagaceae can be seen in the ANBG Rainforest Gully. There are few other examples of these attractive trees in Canberra as soil moisture and humidity are too low for the species.

Letter to the Editor

In my student days (early 1950s) Norfolk Island Pine was known as Araucaria excelsa.

In the 1960s the Commonwealth Government tried to get the Norfolk Islanders to develop an export trade based on the tree's timber. I was the dummy selected by the Forestry & Timber Bureau to get a sample parcel of logs to Sydney where they were pealed. There are no wharves on Norfolk Island and I had to load the logs onto the ship at sea.

As far as I know nothing ever came of it.

John Gray