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Health Promoting Plants of the Brigalow Belt South-Central Queensland

By Andrew Pengelly

What is the Brigalow Belt?

Over the last year I have made a couple of camping trips to the Western Darling Downs and northward into the Central Queensland Highlands, camping over at places such as Myall Park, Expedition National Park (Lonesome section) and Isla Gorge. Most of this very large area of Queensland is part of the Brigalow Belt bioregion, extending from the New South Wales border almost as far as Townsville. To learn more about the complex vegetation patterns which typify the Brigalow Belt please see Nita Lester's *Woodlands to Weeds* (2008) book.

Acacia harpophylla –Brigalow

Brigalow *(Acacia harpophylla*) is a very tall wattle with tough black bark and silvery leaves. The species once dominated much, but not all, of the bioregion. At one time it covered vast stretches of the Darling Downs, however most of it has now been cleared for farming. In one estimate, in the so-called "melon hole country" of the Western Downs, brigalow grew to a density of up to 30,000 trees per hectare. Clearing brigalow was a major challenge for early white settlers, not made any easier by its' habit of putting up suckers after being felled.

Perhaps farmers would have been better off to leave some of the brigalow uncleared. No surprise to learn that the widely eradicated tree can provide numerous environmental and utilitarian benefits. The hard timber has been used by Aboriginal people for spear shafts, nulla nullas and fishing rods. The First Australians also used the inner bark as a poultice for burns and wounds, while other medicinal uses are reported (McKerney & White, 2011).

Being a legume, brigalow is a nitrogen fixer thereby improving soil fertility.

Indigenous Plants for Health Association, Inc.

Indigenous Plants for Health (IPHA) is a not-for-profit incorporated association, formed with the objectives of raising awareness, sourcing grants and sponsorship for sustainable production of indigenous plant-based products.

We acknowledge that Aboriginal and Torres Straight Island Peoples are the Traditional Owners of this country, and they retain their relationship and connection to the land, sea, and community .

The leaves are nitrogen-rich, and most palatable to browsing animals – native and introduced. Ironically, one of the main crops now being grown across the cleared Brigalow Belt for stock fodder is *Leucaena leucocephala*, a thorny, invasive legume species, which the Queensland Government informs us "forms dense thickets, hindering the movement of wildlife and excluding all other plants."
www.daf.qld.gov.au/__data/assets/pdf_file/0019/73450/leucaena.pdf

Plant diversity in the Brigalow Belt

Brachychiton rupestre – bottle tree
Sterculiaceae family

But this article isn't about one species. What has fascinated me at several sites of retained brigalow vegetation is the diversity of plant families represented. Most of Australia (excluding rainforests and the arid zone), tends to be dominated by a few plant families – Myrtaceae, Proteaceae, Ericaceae and Fabaceae (now renamed Leguminosae), however in much of the Brigalow there are no dominant plant families. In areas where eucalypts are scarce, a stand-out tree, size-wise, is the iconic Queensland bottle tree (*Brachychiton rupestre*) in the Sterculiaceae family, although in NSW Brachychitons are now part of the Malvaceae family.

As with other Brachychiton species (aka kurrajongs), bottle trees provide Aboriginal people with food in the form of gums secreted from the trunk, seeds eaten roasted or raw, and the roots of young trees (not recommended, as it may kill the tree). Roots also form a good source of drinking water. Pastoralists sometimes cut down whole trees in the drought, as the leaves and inner bark are edible for stock. Bottle trees are excellent specimen trees for parks, gardens, and street trees. The city of Roma has 93 trees planted along Heroes Avenue, each tree representing a fallen soldier during WWI. Roma also boasts the largest bottle tree with a girth of almost 10m.

The biggest bottle tree, Roma

Native Bauhinias

Lysiana subfalcata (Loranthaceae family). Mistletoe parasitising a native bauhinia (*Lysiphyllum* spp. Leguminosae family)

Bauhinias are generally regarded as exotic flowering trees, often planted in parks and gardens. However, Queensland has two native species that inhabit the Brigalow Belt. Previously classified in the Bauhinia genus, the two trees are now named *Lysiphyllum. L. hookeri,* the white flowered species, inhabits the northern part of the Brigalow, extending to coastal regions between Rockhampton and Cairns. I travelled through Bauhinia Shire, centred around the town of Moura, and the striking trees with their black flaky bark may be readily seen on the side of the highways. The red bauhinia *(L. carronii*) covers a broader range of distribution, right up to the Gulf of Carpentaria.

Indigenous Plants for Health Association

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Editorial

The towns of the Granite Belt are ablaze with Autumn colour thanks to the presence of so many exotic trees, indicating that winter will soon be with us. Australian winters typically mark the beginning of the wattle season, their golden blossoms now only a month or two away, providing widespread colour as another spring approaches.

At the time of writing IPHA has conducted another field day in SE Queensland, this time at the home of our research officer, Sophie Ader, and her fellow-permaculturalist husband Xavier. Like all field days in the last two years we were impacted by rain and Covid, and we went ahead with a smaller event with many registrants unable to attend. The emphasis was on bush foods with presentations from researchers at Queensland University's Uniquely Australian Foods Centre, plus some enjoyable field walks over the property in between showers. We are grateful to Sophie and her family for sharing their house and land on another rainy Brisbane day.

Our relationship with Uniquely Australian Foods continues to bear fruit (please excuse pun) with the beginning of the Persoonia collaboration, as the research report in this edition reveals. While IPHA isn't directly involved in the laboratory experiments now underway, we are responsible for monitoring and collecting fruit from specimens in the Hunter Valley and SE Queensland. Guidelines for collectors are also included in this edition.

A special thanks to one of our valued members, Maree McCarthy, for providing us with her insights into Davidson's plum, we welcome such contributions from the membership. We are also fortunate to have an education piece on the history of essential oil distillation by long-time IPHA committee member Rob Santich.

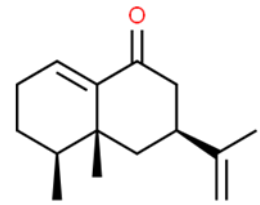
Finally, I hope that my report on some of the flora encountered during two trips through parts of Queensland's Brigalow Belt provides some information of interest to readers.

Andrew Pengelly, PhD, FNHAA, IPHA

According to one source, the finely cut bark of these trees may be soaked and used to treat sores. When I visited the area the trees were not in flower, however virtually every tree was parasitised by the red-flowering mistletoe *Lysiana subfalcata.* The trees all appeared to be in good health. This mistletoe is host to Jezebel butterfly larvae.

Budda/false or bastard sandalwood

This is *Eremophila mitchellii*, a hardy shrub or small tree with rough bark, like brigalow it has a root suckering habit, hence regarded as a weed by some farmers. Although not parasitic like true sandalwoods (Santalaceae family), heartwood of the false sandalwood is also aromatic, and it can be distilled into a perfumery grade essential oil, consisting mainly of eremophilone and related sesquiterpenoid ketones. The fragrant timber harvested from the species is termite resistant, and despite the short size, good for making fenceposts. The essential oil was first marketed in the 1800s, is now marketed as Australian Desert Rosewood Essential Oil. Leaves are aromatic and the smoke produced from burning leaves is used by Aboriginal people for medicinal, purification and mosquito repellent purposes.



Eremophilone

Eremophila mitchellii
Schrophulariaceae family

A prickly bush with edible fruit

Carissa ovata, known as currant bush, a widespread, low understory plant, is also considered a pastoral weed across much of the Brigalow Belt. Though very prickly in nature, it produces a small juicy, edible fruit. I came across masses of it near the Lonesome campground, although no fruit was observed.

Carissa ovata – currant bush
Apocynaceae family

Native tobacco

Nicotiana forsteri
Solanaceae family

At least two native tobacco species inhabit the region, the one that I came across near Lonesome campground is *Nicotiana forsteri*. This erect herb has large simple leaves and terminal heads of funnel-shaped white flowers.

In the past native tobaccos were a source of the psychoactive drug pituri, due to the presence of the alkaloids nicotine and nornicotine.

Corymbia bloxsomei

Plants from Isla Gorge

View over Isla Gorge

Sandstone Bluffs near Lonesome Lookout

Isla Gorge, situated to the East of the Expedition Range, is well worth a visit for the spectacular views and convenient campsites. Whilst it falls geographically within the Brigalow Belt, the flora of the rugged sandstone hills and gorges are not typical of the Brigalow. It is a fascinating site to survey plants.

Corymbia bloxsomei – yellowjacket
Myrtaceae family

One of the most distinctive eucalypts present on the hilltops is the yellowjacket, *Corymbia bloxsomei*, also known as yellow bloodwood. Showy yellow bark is matched by clusters of creamy-white flowers in winter. They were full of flower buds during my visit. Like all bloodwoods, yellowjacket trunks secrete copious quantities of kino (a gummy resin), which is high in tannins and has antimicrobial properties, useful for topical treatment of skin infections and sores.

There is a similar looking tree in the area, the large-fruited yellow jacket (*Corymbia watsoniana*), which can be distinguished by the very distinctive operculum (the cap covering flower buds).

Hopbushes

Numerous species of hopbush (*Dodonaea* spp.) are found in the Brigalow, however the dominant species on the tops of Isla Gorge is *D. filifolia*, with very fine, sticky leaves. While there is little published research on this species, the stickiness and characteristic odour of the leaves are very reminiscent of the more well studied *D. viscosa*, and I suggest it would likely have similar potential as an anti-inflammatory and antidiabetic medicinal native plant.

Dodonaea filifolia – fine leaf hop bush
Sapindaceae family

Specimen with female flowers

An aromatic *Phebalium*

Another plant with sticky leaves, in this case due to the presence of essential oils, is *Phebalium nottii,* a small shrub characterised by very bright pink flowers and oil dots on the leaves. *Phebalium* is an interesting genus, as classification of individual species is based on their essential oil chemistry, which has been analysed directly from herbarium specimens using GCMS technology. Essential oil from pink-flowering species such as *P. nottii*, are characterized by sesquiterpenes including spathulenol and bicyclogermacrene, along with volatile coumarins (Sadgrove et al, 2020)

Phebalium nottii, Rutaceae family

Wilga

Finally, I can't overlook the wilga (*Geijera parviflora*), a spreading tree with a weeping habit, and small white flowers, throughout the Brigalow and well beyond. The long narrow leaves are quite aromatic, producing a green coloured essential oil consisting of geijerene and pregeijerene, compounds with antimicrobial properties. (Sadgrove, 2022)

Geijera parviflora – wilga — Rutaceae family

The great explorer and botanist Ludwig Leichhardt was the first European to explore the Brigalow Belt. The Leichhardt tree is a *Eucalyptus coolabah*, which Leichhardt passed by in 1844, in the now small Brigalow town of Tahroom.

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Post-script

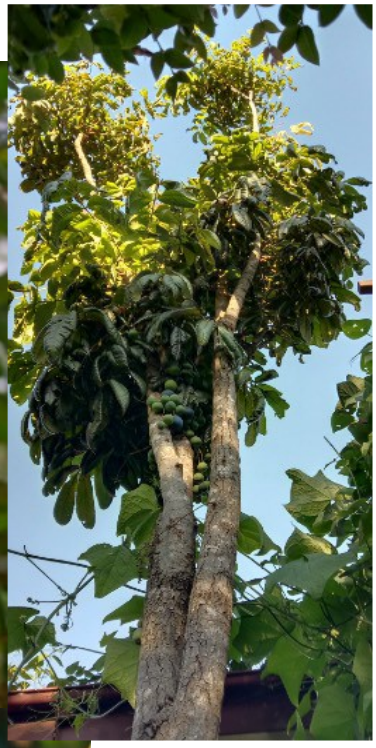
Andrew is considering organizing a field trip to see the Isla Gorge and other sites in the Brigalow Belt later in the year. The only cost would be for accommodation, which would be minimal for any who choose to camp at Isla Gorge. If you are interested, please contact Andrew at trueunicorn11@gmail.com

Ooray — Davidson Plums

by Maree McCarthy

Davidson Plum Highlights -

- An indigenous Australian fruit rich in potassium, lutein, vitamins C & E, folate, quercetin, zinc, magnesium, calcium, phenolics and anthocyanins—which are very strong antioxidants.
- These antioxidants improve collagen and have a powerful anti-inflammatory effect on the skin.
- Anti-proliferative activity against cancers of pancreas, breast, lung, brain, skin, colon and ovary. [1]
- Decreased abdominal fat, adipose cells size and total fat mass. [2]
- Improved cardiovascular structure and function.
- Improved liver structure and function.
- Lots more lutein than an avocado.
- Fruit has been used to heal wounds and kill bacteria.
- Fruit currently sells at various prices but I've seen it on-line frozen for $9/100g (thats $90/kg!).



Photos:
Maree McCarthy

Davidson Plums, cont.

Funny story -

I was really sick with Covid two months ago and found the recommended treatment of vitamin C and D, turmeric, zinc, as well as quercetin hard on my stomach. But Davidson Plums goes down well so I looked up what nutrients they have.

Surprisingly I discovered that our own Australian Davidson Plums are extremely high in all the supplements recommended for Covid, including quercetin glycosides (193 mg/100 g). Davidson Plums have also been found to help with diet-induced metabolic syndrome. [2]

Apparently apples are used to extract quercetin, but I read that apples only have 4.4mg/100g of Quercetin. [2]

But what do the native plums taste like? Very tart and richly flavoured. Makes yummy smoothie with frozen banana.

Davidson Plum varieties

There are at least three species of Davidson Plums - all are attractive plants suitable for growing in home gardens and/or pots on balconies as long as frost is not too severe and they get some shelter from harsh winds.

- *Davidsonia johnsonii* is rare and endangered. It grows as a small shrub and has the smallest of the Davidson Plum fruits.
- *Davidsonia jerseyana* is a rare and endangered shade-loving narrow shrub to 3m high, but never wider than 1m. It bears its fruit directly on the trunk. There appears to be another sub-species that grows taller.

Davidsonia pruriens is the most amazing tree, growing to about 5 or 6m high in Newcastle. Like *D. jerseyana,* they are the most apically dominant plants I have ever met. *D. pruriens* loves full sun but also tolerates shade. It does need shelter from high wind.

It doesn't matter if you cut off the trunk at any point, it just continues up straight as an extremely skinny tree.

I had to cut mine so my house could be painted - no problem! See photo of them growing back—Right.

Being such a skinny and always straight upright tree that takes shade, it is very useful in narrow corridors between houses or beside driveways.

The lower part of the trunk in both *D. pruriens*, and *D. jerseyana* is bare (unless covered with fruit) and has a nice tidy little crown never wider than 1m so it is good for shade close to your house in summer whilst still allowing winter sun to come underneath when lower in the sky.

All of them simply drop their fruit when ripe so all you have to do is pick them up as they fall.

Davidson Plum, cont.

Best way to store the fruit is to remove the two largish hairy seeds and freeze them. There are many recipes online these days. Sow seeds fresh—straight out of the fruit for almost 100% germination rate.

How fantastic is our Australian bush food!

References/Resources

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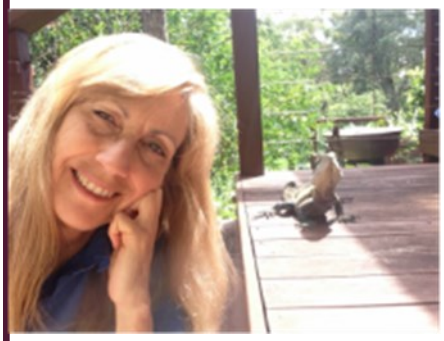

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A Bushfood Conference

in the Brisbane region on 18th - 20th August

More details will be circulated as they come to hand—or check their website

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Australian Native Flowers: The Grand Collection

By Taleisha Barker—Flowers across Sydney. Excerpt from website posted February 28, 2022.

As we specialize in flowers, we decided to make a grand collection of native flowers to make people familiar with them and even encourage them to grow in their gardens! Mazhar Fahad

Australia is an incredibly diverse place, especially when it comes to native flowers. Composed of mountain ranges, sandplains, wetlands, and vast coastlines. Australia provides a rich environment for abundant plant life to thrive. Additionally, Australia ranks third in the world in having the most endemic species of flora.

See researchgate.net/figure/Top-ten-countries-with-the-largest-number-of-endemic-species_fig4_315596971.

A number of the country's plants have gained worldwide attention and renown over the years. In fact, plants such as the Eucalyptus, Banksia, and Wattle, many of the country's fascinating species are still relatively unknown.

So, let's dive into a grand collection of Australian native flowers and get to know some of its fascinating species!

Heart-leaf Flame Pea (*Chorizema cordatum*)

You can spot the stunning Heart-leaf Flame Pea from miles away. With its bountiful hot orange and pink flowers that cover almost the entire shrub. Additionally, as its evergreen heart-shaped foliage, it is designed to mesmerise.

This plant is known as Kaly by the Aboriginal people in the southwest of Western Australia. The Heart-leaf Flame Pea blooms mostly during spring. Lastly, It grows up to 1 metre high, making for a lovely hedge or border.

Waratah (*Telopea speciosissima)*

Australian Native Flowers, cont.

With its spectacular and elegant floral display, the Waratah certainly deserves the honour of being the official flower of NSW. There are only five known species of Waratah, all of which are found on the east coast of Australia.

The New South Wales Waratah is the most popular and commonly occurring. Scientifically known as Telopea speciosissima, the New South Wales Waratah has large crimson-coloured flowerheads with over 250 individual flowers. Its graceful shape is so striking that it has been featured in multiple aspects of pop culture. From stamps and architecture to art, advertising, and souvenirs.

Rhododendron lochiae

Found on the mountaintops of northern Queensland, the *Rhododendron lochiae* is one of only two Rhododendrons native to Australia. Referred to as a tropical rhododendron. It is easily identifiable by its dark red bell-shaped blooms that happily populate its stout, wide frame. In fact, the flowers grow to between 2.5 cm and 5.5 cm long and bloom during the spring months. Additionally, when grown from seedlings, *Rhododendron lochiae* usually reaches maturity after three years. Lastly, this species was named after Lady Loch who was the wife of the Governor of Victoria in 1884.

Pincushion Hakea (*Hakea laurina*)

There are so many astoundingly beautiful species of Hakea that it is very difficult to feature only one. From the captivating *Hakea lehmmaniana.* Which is one of the few plants in nature that produces blue flowers. To the delicate *Hakea laurina* with its pink ball-shaped flowers covered with soft white needles. Including the mesmerising *Hakea cucullata*, which grows in a multilayered skyscraper formation. Where each red flower balances atop a single leaf, this species is as extraordinarily diverse as it is intriguing. Hakeas can be found in every state and are highly ornamental.

Australian Native Flowers, cont.

Fairy Fan Flower (*Scaevola aemula*)

This exquisite species has inspired artists from around the world with its remarkable and distinctive formation of flowers. It almost always produces dazzling purple flowers, each with exactly five petals that are 'fanned out' in a semi-circle. It is an exceedingly generous bloomer and seeing a shrub almost entirely covered in flowers is an extraordinary sight. Found in various parts of the country, including Victoria, Western Australia, South Australia, and New South Wales. The Fairy Fan Flower works particularly well as a bedding plant or anywhere where its magnificent blooms are in full display.

Cranbrook Bells (*Darwinia meeboldii*)

Although they are botanically known as Darwinia, Cranbrook Bells mainly occur in the south of Western Australia. They produce multiple branches covered with vivid green leaves. Each branch bears a single flower that hangs from its end like a bell. Blooming mostly in springtime, they take about four to five years to reach maturity. The flowers are usually white with a red edge at the tip. Cranbrook Bells prefer the rocky hillsides of Stirling Range National Park and are consequently also known as Mountain Bells. They are currently listed as threatened due to habitat changes and weed invasion. However, they are fighters and have the ability to resprout even after forest fires.

Violet Kunzea (Kunzea parvifolia)

A quintessentially evergreen shrub, the Violet Kunzea is particularly boisterous in both colour and flowering. Producing dense clusters of round spikey blooms that kind of resemble birthday sparklers. Its flowers commonly range from a vivid pink to an inviting purple. All 40 species of Kunzea are native to Australia.

Australian Native Flowers, cont.

Violet Kunzea are primarily found in the woodlands of New South Wales and Victoria. Except for one that also occurs in New Zealand. It's closely related to the bottlebrush plant. Just as similarly, it grows into a rounded bush, reaching an average height of 1 metre.

Conclusion

Australia is a treasure trove of native flowers. Its unique geography, climate, and ecology mean that it is home to some of the world's most fascinating and stunning flowers. Some that cannot be found anywhere else on earth. To own a piece of native Australiana in your home, check out our range of native flowers at Flowers Across Sydney www.blog.flowersacrosssydney.com.au.

With same-day delivery and the option to tailor your bouquet according to your preferences, you will find the perfect arrangement for you and your loved ones.

blog.flowersacrosssydney.com.au/australian-native-flowers-the-grand-collection

The Distillation of Essential Oils: A brief history

By Ron Santich, IPHA Committee Member

Arabic distillation, source pinterest.com

Although the roots of this method can be traced back to Mesopotamia nearly 5,000 years ago, distillation as we know it today was developed by the Arabian medieval Alchemists. These techniques were then further developed in Grasse, in the south of France, the home of the perfume industry.

In terms of the Australian experience, it is apparent that indigenous Australians were well aware of the medicinal virtues of the many essential oil bearing local plant species. Aboriginal use is and was in the form of infusions and decoctions to treat various bronchial illnesses, as well as poultices used to promote healing.

Soon after European occupation, efforts were made to examine the therapeutic effects of the native plants. Denis Considen, the assistant Surgeon General of the First Fleet, is accredited with the distillation and shipment to England of a sample of Eucalyptus oil for evaluation. The oil was said to have a peppermint aroma and is believed to be *Eucalyptus piperita* containing piperitone. Comparisons were made with *Mentha piperita* (menthol and menthone) and Considen considered the local oil to be more effective than peppermint oil in removing colicky complaints.

The distillation of essential oils, cont.

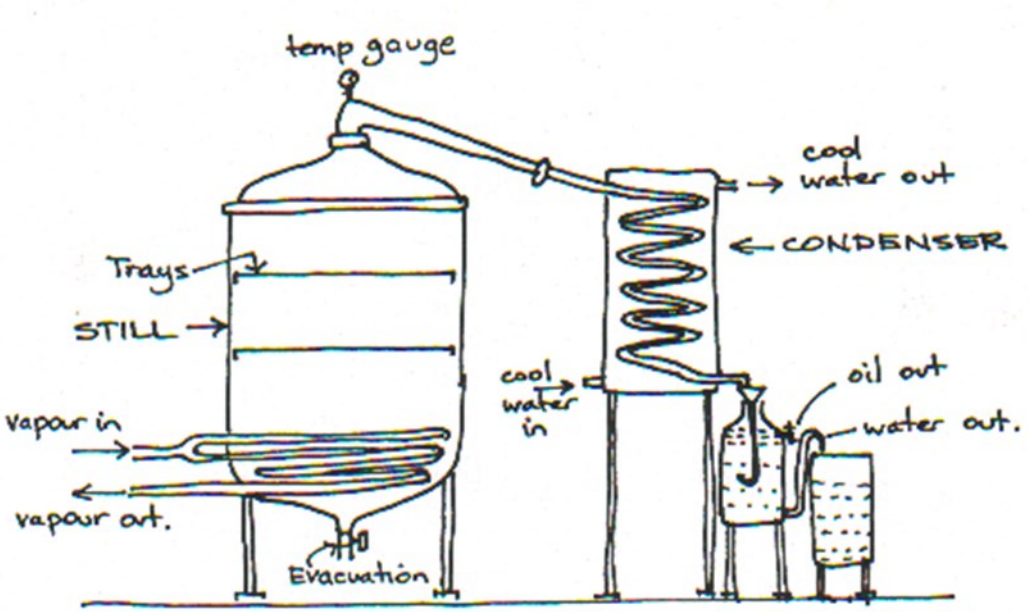
It took quite some time for the local industry to develop. The first government botanist for Victoria, Baron Ferdinand von Mueller, is credited with convincing his pharmacist friend, Joseph Bosisto, of the medicinal virtues of Eucalyptus oil and the potential for a local industry. Bosisto built the first commercial still near Dandenong in 1854. The first Eucalyptus tree to be worked for its oil was *E. radiata* or narrow leafed peppermint.

As time passed Bosisto expanded his operation (Bosisto Eucalyptus Oil is still available to this day), and others entered into the industry. *E. radiata* lost its popularity to be replaced by *E. globulus*. The industry was still centred in Victoria and Tasmania with many of the early farmers and gold miners supplementing their income by producing Eucalyptus oil.

The industry experienced its first boom around WW I, when the oil was extensively used for medicine. The industry reached its peak in 1946, with a total production of 1000 tonnes with 70% destined for the export market. Since that time the industry has dramatically declined, due to overseas production with lower production costs. Currently Australia has about 5-10% of the world market.

Distillation

Distillation is a method of extracting the volatile components or essential oils, from plants that contain them. Not all plants contain essential oils. An easy method of testing a plant for essential oils is to crush some leaves with your fingers and smell the crushed plant material, if you can detect an aroma, it is highly likely the plant contains essential oils and that those oils can be extracted by distillation. Although not all aromatic compounds found in plants are essential oils e.g. coumarins. The main methods used for most plants is water and steam distillation or steam distillation. Other methods are used for certain essential oils, e.g. the essential oils from citrus fruit is obtained by a method known as expression. This process was once carried out by hand, by squeezing the rind and collecting the oil in a sponge. Machines using centrifugal force are now used instead.



DISTILLATION PLANT

The distillation of essential oils, cont.

Water and steam distillation

Water is heated to boiling in the bottom of the distillation pot. The resultant steam then rises and passes through the plant material, which is suspended above the boiling water, picking up the essential oils on the way. These gases then pass into a condenser, which cools and condenses the vapours back into liquids. The liquids are collected, these will naturally separate, as most essential oils are poorly soluble in water and will float on the water and can be tapped off. Some oils are heavier than water and will sit at the bottom of the separator e.g. the oil of *Melaleuca bracteata*. The water and steam method is the most convenient for small producers. The distilled water by-product is known as hydrosol and has many uses, including internal use e.g. the hydrosol of *Anethola anisata* as a carminative.

Steam distillation

This is a more modern method suitable for large commercial operations. Steam is generated in a high temperature boiler and is piped into the base of the charge vat. The steam rises through the plant material, taking the volatile oil with it, to be passed into the condenser as gases to then be transformed back into liquids.

Hydrosols

Hydrosols or the waters of distillation contain minute amounts, usually in the range of 400 to 500 parts per million of essential oil as well as water soluble phytochemicals such as plant acids and other phenolic compounds.

Hydrosols are comparable to floral waters such as lavender and rose water. Hydrosols and floral waters make excellent skin toners. Use them throughout the day to freshen and hydrate the skin. Many commercial skin toners actually dry the skin, as they are often prepared using alcohol. These commercial products will give a refreshing feel to the skin due to the rapid evaporation of the alcohol, but the long-term effects are drying.

Hydrosols have been put to many and varied usage, from moistening clothes before ironing, cleaning floors and greasy kitchen surfaces, and washing dirty wounds.

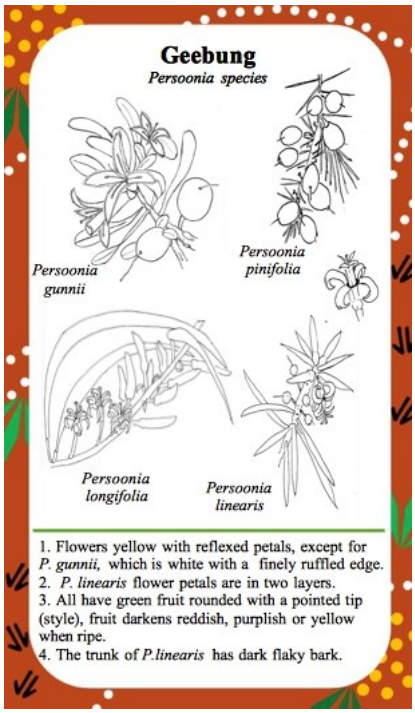
Rob giving distillation demonstration at an IPHA Field Day

Research Collaboration—IPHA and University of Queensland's Queensland Alliance for Agriculture and Food Innovation (QAAFI)

The Indigenous Plants for Health Association (IPHA) recently signed an agreement with Professor Yasmina Sultanbawa, Director of Australian Research Council Industrial Transformation Training Centre for Uniquely Australian Foods, at the University of Queensland, to investigate the chemical constituents and health-promoting properties of *Persoonia* spp. IPHA is contributing to funding of the project.

Persoonia is a genus of shrubs and small trees, with multiple species distributed throughout Australia. Persoonias are commonly referred to as "geebung" – an Aboriginal name for the succulent fruit, a traditional food source across much of the Australian continent. Although medicinal uses for *Persoonia* spp. are not widely reported in the literature, geebung fruit (most likely from *P. linearis*) is highly revered by First Nation people of the Hunter Valley, NSW. One of its reported uses is by the application of the juice derived from the fruit, for local treatment of skin infections due to infection by *Staphylococcus* bacteria, and for other skin disorders including psoriasis.

The primary research for the project is being conducted by a doctoral student, Jiale Zhang, under the supervision of Professor Sultanbawa. IPHA President Dr. Andrew Pengelly is acting as an external advisor. For the first year the project will focus on two species, *Persoonia linearis* collected in the Hunter Valley, and *P. stradbrokensis* from the Brisbane region. IPHA members will be largely responsible for sourcing and harvesting the required plant materials.



Above: IPHA Knowledge card for Geebung

The project will investigate various biological properties of geebung fruit, leaves and seeds, including for antimicrobial, anti-inflammatory, antioxidant activities and potential for toxicity. Other aspects to be investigated include environmental, nutritional and properties of soil collected from around the specimens. Depending on the outcome of these investigations, consideration may be given to the development of topical or nutraceutical products. Any such initiatives would be conducted in consultation with IPHA and First Nation representatives.

Introducing Jiale Zhang

I come from Hohhot, Inner Mongolia, China. Currently I am a PhD student at QAAFI, University of Queensland. My bachelor's degree is in Environmental Science, with a double major from Edith Cowan University and Beijing University of Agriculture. I also completed a master's degree in Biotechnology here at the University of Queensland.

I currently work at the Centre for Nutrition and Food Sciences investigating and modelling interactive effects of environment and physicochemical properties of *Persoonia* spp., i.e., geebung. My principal supervisor is Professor Yasmina Sultanbawa in association with supervisors Dr Michael Netzel, Dr Anh Phan and Dr Andrew Pengelly. The project is to study the interactive effects of environmental factors from their habits and physio-chemical/bioactive properties of *Persoonia* species and to investigate the potential development of value-added products species for market access.

Persoonia project – guidelines for harvesting

Persoonia is a genus of plants, commonly referred to as geebung.

While there are numerous species of Persoonia across Australia, the ones we need specimens of for 2022 are as follows:

Persoonia linearis – found across much of eastern NSW

P. stradbrokensis – found in SE Queensland

A third species, *P. pinifolia*, found only in the Sydney region, is also of interest to the researchers.

Any members who think they have any of these species on their property should contact Andrew Pengelly at trueunicorn11@gmail.com. Please attach photos showing leaves, fruit and/or flowers.

The fruit, which is edible, is the main part of the plant that is being tested. Some tests will also be conducted on the leaves. Fruit should be harvested in the semi-ripe stage, i.e. when the colour starts to change from green to yellow. In subsequent years (2023-24) unripe and fully ripe fruit will also be tested.

We plan to test fruit harvested from three locations in each state. Between minimum 5 – 10 trees with fruit from each location are needed, with between 100-200 gram of fruit from each tree.

It is important that trees selected for harvest be tagged and given a code number for future reference.

How to collect and transport fruit

- Tag each tree and give it an id code.
- The fruit are quite small and need to be picked manually, however, since fruit often drops to the ground when starting to ripen, or may be eaten by birds, it is best to enclose selected bunches of green fruit in a muslin (or similar) bag and monitor for colour change. See photos below.
- Once fruit is picked, place it into a ziplock bag and immediately place in a freezer. Use a permanent marker to record the date and code number of the specific tree.
- Keep harvesting records. We suggest using a notebook in the field. If you wish you can transfer the data to a computer. Record: Date, time, weather, location, tree ID and amount collected. Use a different collection bag for each tree. A kitchen scale can be used to weigh the fruit.

When your harvest is complete, contact a member of the IPHA committee in your state, to ensure the samples are dispatched to the lab at Qld. University in a frozen state.

Currently, contacts are as follows:
NSW – Reesa Ryan. reesaran@telstra.com
Qld – Sophie Ader. S.ader@uq.edu.au

Persoonia linearis –

Left: Fruit enclosed in bag

Right: green fruit

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Geebung berries in the QAAFI laboratory

See article page 15.

Indigenous Plants for Health – Field Day

Mt Cotton Qld — 14 May 2022

Left:

Plant medicine identification walk in the rain

Below:

Sampling wattle seed bread provided by Dr. Sandra Olarte Mantilla

IPHA – Resources page

Native grains harvest brings together culture, food and regenerative farming

www.abc.net.au/news/2022-02-13/narrabri-plant-breeding-institute-native-grains-harvest/100819478?utm_campaign=The%20Week%20in%20Botany&utm_medium=email&utm_source=Revue%20newsletter

Sustainable Gardening Australia

WiseGardening rates garden chemical products for risks to human health, bees, birds, frogs, pets, earthworms, fish, other aquatic species, soil mobility and persistence. Where information is available, final Star Ratings go from 0 to 6.

Wise gardens app: www.sgaonline.org.au/wisegardening/

Myrtle rust is a spreading problem affecting native plants including *Eucalyptus* species, willow myrtle (*Agonis flexuosa*), turpentine (*Syncarpia glomulifera*), bottlebrush and paperbark (*Melaleuca* species), water gum (*Tristanis neriifolia*), tea tree (*Leptospermum* species), lilly pilly (*Syzygium speciesi*) – all in the Myrtaceae family

Readers will note this list includes many aromatic species that are used for medicinal and aromatherapy applications. www.sgaonline.org.au/myrtle-rust-is-a-spreading-problem/

Good information and source of bushfoods — pocketherbs.com.au/product-category/bush-foods

Indigenous PhD graduate blends traditional medicine and modern science

Thanks to knowledge from his elders, La Perouse community's first indigenous PhD graduate in microbiology, Dr Shane Ingrey, is using modern science to shine a spotlight on the medicinal potential of local plants.

newsroom.unsw.edu.au/news/science-tech/indigenous-phd-graduate-blends-traditional-medicine-and-modern-science?fbclid=IwAR3bxgcaAF-xn_qHMW5FAAZr9d7h3XHuCUCx7h4liKFjCUUxuT52UNwsXCg

Indigenous Plants for Health Association (Inc)

MEMBERSHIP APPLICATION FORM

Set out below are my membership application details for Indigenous Plants for Health Association Inc.

Enclosed/transferred is the sum of $20 annual membership fee. The amount has been paid by:

Cash Cheque

Paid by Bank Transfer (Important — flag your name with payment)

Post Membership Form and cheque to:

IPHA Treasurer, 196 Bridge St. Muswellbrook, NSW 2333 **or** if paying by transfer you may scan and email the completed and signed form to Patricia Collins (patcollins196@hotmail.com)

Bank Details for Payments: BSB 637000 Account 722660722

Name: _____

Address: _____

_____Postcode_____

Tel: Home_____

Mobile_____

Email: _____

I agree to abide by the Constitution and any policies, rules or regulations established within the association.

These are listed on the website www.indigenousplantsforhealth.com

Signed_____

Date _____

IPHA Committee Members

President, Newsletter editor in chief: Andrew Pengelly

Vice President: Phil Sheppard

Treasurer: Patricia Collins

Secretary, Newsletter editor: Reesa Ryan

Web, projects coordinator: Kathleen Bennett

Research Director: Sophie Ader

General member: Rob Santich