



Left: a typical scattering of kowhai trees in full flower spread along a bush margin alongside a tidal estuary in lower Northland



The rich golden colour of these flowers and the open skirt of petals create a most impressive display



The light yellow flowers on this tree don't have the rich golden glow seen in the most impressive flowering specimens – not that the nectar feeding tui is overly concerned.

It's under-rated and overlooked, says Graeme Platt, yet the genus that produces New Zealand's national flower can be counted among the world's best flowering trees

The kowhai – New Zealand's gold-standard flowering native

WHENEVER THE subject of kowhai trees arises it's often emphasised that it is New Zealand's unofficial national flower.

It's not an issue of any great consequence as to whether or not kowhai has ever received official recognition as the country's national flower.

What is at issue regarding this outstanding genus, which can be

counted among the world's best flowering trees, is that the kowhai has not been given the priority recognition it warrants.

People visit city parks to enjoy time among Spring-flowering cherry trees, mass displays of daf-

fodils, or the yellow Autumn foliage of Ginkgo bilobas.

No one ever visits the parks or city streets to see mass plantings of kowhai because there has been no effort expended to create spectacular groves and avenues of these trees.

When the attributes of kowhai are compared with all the other native flowering trees and plants,

their virtue over the others becomes readily apparent.

The dominant feature that kowhai possess over all the other pretenders competing for the position of the country's national flower is the fact that they can be grown over the most extensive area of the country whereas many of our other flowering tree and plant species have a more restricted range of climatic tolerances.

An alpine meadow garnished with Mount Cook Lilies *Ranunculus lyallii* may be resplendent with their sublime, large, shiny green leaves and gleaming white flowers, however, the very limited number of Mount Cook Lilies I have ever encountered growing under conditions of cultivation have inevitably been a very poor impersonation of the real thing.

This gem of a plant's range of climatic tolerances is far too restricting to allow it to be widely utilised as an amenity plant species and this is the case with a considerable percentage of the country's spectacular flowering native trees and plants.

A harbinger of Spring

The golden blaze of flowering kowhai trees is a harbinger of Spring.

In reality it marks the commencement of the annual four-season cycle of nature. While the Gregorian calendar is the most widely used one around the world to keep track of the days of the year, it does not commence its



Left: this sublime specimen of *Sophora chathamica* in full flower is an ideal candidate for clonal propagation due to its prolific display of brilliant golden-hued flowers

Far left: this *Sophora microphylla* brightens up a showery wet spring day in a North Shore industrial park, Auckland



Left: a feature of *Sophora godleyi* is a clean branchless vertical trunk making this species a useful candidate for roadside berms and front lawns where formal order is required

Right: sprawling *Sophora molloyi* is an ideal shrub for today's smaller garden



Again, while the display below created by this mass of flowers is impressive, the tightly furled flowers don't have the impact of those possessing that rich golden glow

or members of the Podocarpaceae.

The ancient shade-tolerant Palaeozoic tree ferns and giant wet-seeded Mesozoic tree species have denied entry of modern Cainozoic flowering plant species into the heart of the native bush

by simply defending their patch with shade.

The majority of New Zealand's impressive array of flowering native plants occupy very limited areas of distribution. These species include the Kaka beak *Clianthus maximus* and *puniceus*,





Heavy crops of seed are a good indication that this kowhai tree flowers prolifically. Above right: the cultivar *Sophora molloyi* 'My Margaret' selected by Denis Hughes is proving to be an ideal garden subject outside our dining area window.

Hebe speciosa, *Rautini Brachyglottis huntii*, Chatham Island forget-me-not *Myosotidium Hortensia*, *Bulbinella Rossii*, *Pleurophyllum speciosum*, *Clematis paniculate*, the host of *Celmisia* species, the Marlborough rock daisy *Pacystegia insignis* and the bright-yellow flowered *Ranunculus insignis*.

Exotic members of the Sophora genus

There are approximately 45 species of the *Sophora* genus spread over an extensive area of the planet and a small number of them have been introduced into New Zealand at different times.

Of the introduced species, *Sophora howinsula* from Lord Howe Island is the one most commonly encountered. The two

Chilean species, *Sophora cascioides* and *Sophora macrocarpa*, are also occasionally encountered in cultivation.

Sophora tomentosa, is a large shrub rather than a tree, and is encountered throughout the coastal tropics from Northern Australia to Florida in the USA, often growing in stabilised coral sand in behind tropical beaches.

It possesses a very large pinnately compound leaf compared to the NZ *Sophora* species, at times up to 240mm in length with leaflets of up to 40mm.

The flowers of *S. tomentosa* are small and don't compare with the magnificent displays produced each Spring by the New Zealand species.

It is an interesting feature of our native flora that with every genera that is shared with the rest of the world, which is most of them, the New Zealand species have the smallest leaves.

During the couple of decades that we operated Platt's Native Tree and Plant Nursery it was always one of my intentions to spend some time tracking down superior flowering forms of kowhai and introduce them into cultivation.

This never happened as Spring was the busiest time of the year and there was no time to get away. During my annual mid-Summer to Autumn seed collection trips around the country, by the way, the selection criteria that

I relied on was to locate healthy, well-formed, good-looking trees that were loaded with copious quantities of seed, a reliable indicator that those trees would flower profusely.

The biggest handicap to selecting and introducing superior forms of flowering kowhai into cultivation is that they are notoriously difficult to propagate from cuttings and clonal propagation is an essential procedural step required for the introduction of superior forms of trees or plant species into cultivation.

Selecting cuttings off old, marginalised, half-starved trees in their natural environment compared to selecting from young well-fed trees growing under conditions of cultivation are two vastly different propositions. What we did find was that, rather than selecting dormant wood during the Winter or the heat of Summer, the best results were achieved when the trees were in full growth during early November,

All soft new Spring growth was removed from the half-ripe cuttings and only a few mature leaves retained. The theory supporting this propagation technique is that the cambium would be fully active while the trees are in full growth. The best time to induce root initiation in any plant is during periods when they are naturally growing profusely.

After discussing the issue of

Lord Howe Island *Sophora howinsula* trees, growing in their natural habitat on the island, are capable of attaining a decent size, as this example shows. Below right: flowers of Lord Howe Island *Sophora*



Named Sophora cultivars

Murray Dawson at LandCare Christchurch combed through the available references and kindly provided the following list of named *Sophora* cultivars recorded in the literature.

- Sophora chathamica* 'Milligold'
- Sophora microphylla* 'Chevalier'
- Sophora microphylla* 'Goldies Mantle'
- Sophora microphylla* 'Goldilocks'
- Sophora microphylla* 'Ohingaiti'
- Sophora chathamica* 'Te Atatu Gold'
- Sophora microphylla* 'Tredwelli' = *longicarinata*
- Sophora molloyi* 'Dragons Gold'
- Sophora molloyi* 'Early Gold'
- Sophora prostrata* 'Little baby'
- Sophora tetraptera* 'Kiwi Gold' Hort
- Sophora tetraptera* 'Grandiflora' nom illeg. (= *tetraptera*)
- Sophora tetraptera* *Gnome* = *Howinsula* = *howinsula* 'Gnome'
- Sophora tetraptera* 'Otari Gnome' = *howinsula* 'Gnome'
- Sophora howinsula* 'Gnome' – a non-native species.

The main problem with these named selections is there is no one in the country who can recognise more than any two or three of them

propagating kowhai from cuttings with Tom Johnson, who served as Dawn Rothay Nurse's propagator since the beginning of time, Tom volunteered the successful use of the same technique. We cultivated a form of *Sophora molloyi* from cuttings as this species propagates reasonably well vegetatively.

A few years ago, Dennis Hughes from Blue Mountain Nurseries presented me with a *Sophora molloyi*, a shrubby species possessing a sprawling habit of growth that he selected from the exposed cliffs rising up behind Ngawi in the vicinity of Cape Palliser.

Dennis named this selection *Sophora molloyi* 'My Margaret' after Margaret Hughes, his late wife. This specimen was planted on a low bank outside the western corner of our house where it has grown well. It is currently just over one metre high and two metres wide.

The outstanding feature of *S. molloyi* "My Margaret" is its prolonged period of flowering. From the time the first flowers commence opening until the last ones wilt into obscurity can stretch to few days over one month. Se-

lected forms of *S. molloyi* are an ideal species of kowhai for today's smaller gardens.

Selecting superior flowering forms of kowhai

There is a considerable variation in both the colour and form of kowhai flowers. The flower colour can vary from yellow with a greenish tinge, insipid light yellow, clean bright yellow, to a rich golden yellow.

Flower shape can vary from tightly furled tubes to flared open skirts of petals. The length of the flowers can also vary considerably. These variations are encountered with all of the species except *S. prostrata*.

The flowers of some variations of shrubby *S. prostrata* can have an orange colour, however, they are generally too small and tightly furled to create a significant display.

Two factors contribute to the making of an impressive flower display -- flowers that possess a highly reflective rich golden glow and a flared open skirt of petals. While flowers with a good average length can contribute to an overall good display, length is not as critically important as intensity of colour and flower shape



The person who planted this kowhai in the grounds of this Waikato church has good reason to be glowing with satisfaction

for creating an impressive display.


Feeding requirements

The natural habitat of *Sophora* species is often extremely exposed locations including limestone and papa cliffs, bleak wind-

swept, salt-sprayed coastal cliffs, riverbanks and lakeside escarpments. Many of these locations are often extremely nutrient impoverished. Many people have voiced the opinion that kowhai trees are difficult to establish in the garden. Kowhai trees are pro-

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Left: this specimen of *Sophora tomentosa* is growing in coral sand in its typical tropical habitat, in this case on the speck of an Island in Eastern Indonesia. Centre picture shows a leaf of *Sophora tomentosa* lying on coral sand alongside a size 8 shoe. Right: the flowers of *Sophora tomentosa* do not compare with the magnificence of the New Zealand tree species

lific feeders and good nutrition is essential for promoting healthy growth and prolific flowering.

Sophora species, being legumes, produce some of their own requirement of soluble nitrate with the aid of nodule-forming rhizobia attached to their roots.

While cobalt is not an essential plant food it is an essential element for animal life including nitrogen-fixing soil rhizobia. Both blood and bone fertiliser or fish meal will provide essential elements including cobalt.

An occasional dressing of calcium nitrate fertiliser will boost young trees into luxuriant growth. One of the best boosters of kowhai growth is a light application of urea.

Naming confusion

There has been a considerable amount of confusion surrounding the naming of both *Sophora* species and the identity of selected cultivars.

Much of this confusion has its origins in the fact that three additional species names were formally published during 2001 and have subsequently incrementally crept their way into wider usage.

Sophora chathamica was first described by Cokayne during 1901, 1902, and its name was reinstated during 2001.

The natural habitat of *S. chathamica* extends from Northland where it is dominantly encountered, to the Chatham Is-

lands. There a number of small outlying occurrences of this species scattered around the coast. For good reason this species is occasionally referred to as the coastal kowhai.

Both *Sophora molloyi* and *Sophora godleyi* were additional names that were formally published during the 2001 revision of the genera in New Zealand.

S. molloyi is a sprawling shrub that is capable of reaching about two metres in height and anything up to five meters in width.

It is best known by the widely-grown cultivar *Sophora molloyi* 'Dragon's Gold'. This species is often referred to as the Stephens Island Kowhai, however *S. molloyi* has a significantly more ex-

tensive distribution at various places along the Wellington coastline of Cook Straight. These three species were all previously sold as *Sophora microphylla*.

Sophora godleyi occupies a natural habitat in the lower eastern side of the North Island. The best place to observe this species in all its glory is around the town on Taihape where it thrives on the sedimentary calcium carbonate rock types and in the weathered calcareous soils. *S. godleyi* trees are often encountered with a clean, straight, vertical trunk and a cascade of drooping branches. It is by far the best-structured and neatest formed of the kowhai species.

Sophora longicarinata with its extremely fine, wispy foliage is occasionally encountered growing among limestone outcrops on the Takaka hill in North West Nelson and along the banks of the Cobb River.

The New Zealand kowhai with the largest leaves is *Sophora tetraptera* seen growing along the eastern shores of Lake Taupo in the central North Island and out along the east coast at much the same latitude as Taupo.

***Sophora howinsula* 'Otari Gnome'**

The confusion surrounding the naming of *Sophora howinsula* in New Zealand had its origins in a deviant cultivar being erroneously named *Sophora tetraptera* 'Otari Gnome'.

There were a number of specimens of 'Otari Gnome' growing in Wellington at what was previously called the Otari Native Plant Museum, an institution that has subsequently morphed into Otari Wiltons Bush.

We used to propagate this shrubby cultivar from seed and sold it under the name of *Sophora tetraptera* 'Otari Gnome' for a couple of decades. Subsequently it was decided this shrub was not *Sophora tetraptera* but *S. howinsula* from Lord Howe Island.

During a visit to Lord Howe with a couple of friends we had the opportunity to have a good look at *Sophora howinsula* and during our stay we had no difficulty confirming 'Otari Gnome' was indeed a deviant form of *Sophora howinsula*. In its natural habitat *Sophora howinsula* grows into a respectable sized tree.

Our stay on the island took place a little too early to see *S. howinsula* in full flower, however, the first flowers of the season were opening on the trees. The foliage, flowers and seed pods were every bit consistent with 'Otari Gnome'.

None of the *S. howinsula* trees we encountered on the island, however, possessed the basal lignotuber and erect multi-stemmed habit of growth, definitive features of the cultivar 'Otari Gnome'.

During the time he was employed at the Levin Horticultural Research Centre John Goldie

Below: *Sophora godleyi* trees grace the environment in the vicinity of Taihape with their often well-ordered structure



made a number of selections of kowhai, including *S. 'Goldies Mantle'* and *S. 'Early Gold'* among others. These were named after his tragic accidental death.

Bruce Haggio at his Dawn Rothay Nursery made a couple of selections, one of the best being a *Sophora chathamica* 'Te Atatu Gold'. The other was *S. microphylla* 'Chevalier'. Both these species were distributed and sold at the time as *Sophora microphylla*.

A word on eco-sourcing

There is an often-quoted mantra dictating that native trees and plants must be 'eco-sourced.' Every native species ever selected from its natural habitat was by definition properly eco-sourced. However, there is not a shred of evidence to confirm many of them have been ethically ecoplanted.

How do the disciples of this nonsense expect the people of New Zealand to grow, conserve, and enjoy the country's critically endangered species such as *Tecomanthe speciosa*, *Pennantia baylisiana*, *Myosotidium hortensia*, and *Metrosideros bartlettii* among many others, if they have to be exclusively planted within the boundaries of their natural ecologies?

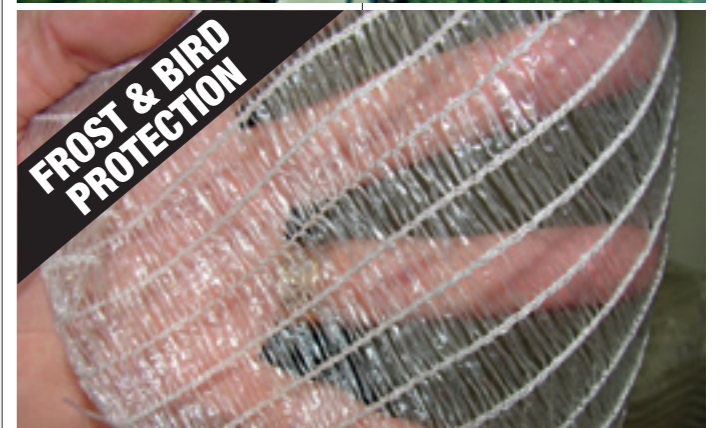
What people plant in their gardens and suburban parks in the confines of highly degraded suburban environments, and what is planted in the natural environment are two vastly different scenarios.

Educated beyond their intelligence

While it is essential that the tree and plant species required for re-naturing projects are properly eco-sourced and ethically planted, the concept of eco-sourcing the trees and plants required for planting in domestic gardens and suburban parks as currently being preached from the sidelines by those demanding politically correctness, is banal nonsense.

The mindless cliché that we must be 'politically correct' is in reality a euphemism to justify the gutless cultural and social bullying being inflicted on society by those educated beyond their intelligence.

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