

The rise and rise of the purple akeake

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Introduction

Of all the New Zealand indigenous ornamental plants, *Dodonaea viscosa* 'Purpurea' is one of the most popular. It is encountered in cultivation throughout most of the country, but especially so in Christchurch and Canterbury, where it can be seen in a variety of guises: from clipped hedges and limbed up specimen trees, to naturalistic bushland plantings, adding its distinctive purplish maroon foliage to the suburban landscape, particularly in winter.

In many parts of Christchurch, there seems to be a purple akeake growing in every street, where its self-sown seedlings are a regular sight along driveways, pavements and waste area. This arouses little concern, despite the fact that purple akeake did not originate in the Canterbury region and is inappropriately planted in some conservation projects! This article sheds some light on how this unusually coloured plant was brought into cultivation, became a local best seller for several decades, and is now escaping our suburban gardens for a new life as a casual adventive - with implications for conservation now and into the future. This is followed by a discussion on how best to manage this colourful, yet polarising, plant.

Discovery and commercial release

As with many cultivars, the discovery of *Dodonaea viscosa* 'Purpurea' was a chance encounter. According to Lawrie Metcalf in his *Cultivation of New Zealand trees and shrubs* (Metcalf 1972), a Mrs Thomas Wilkins spotted a lone purple-leaved akeake along the Wairau River, Marlborough, in the early 1890s. She collected seeds from this plant and raised seedlings to plant in her garden. Eventually a nurseryman from Christchurch (no name of the person or nursery!) secured seeds and raised plants that quickly sold throughout the New Zealand horticultural market. Other authors, such as Harrison (1959) and Palmer (1971), assert the discovery of purple akeake much later in 1930, but they may be mistaking that with the year of its commercial release. The original plant was lost in a flood on the Wairau River shortly after its discovery (Metcalf 1972), and it is interesting that no other purple-leaved individuals were since seen in the wild.

The purple akeake represents a novel mutation from the wild green-leaved species. Firstly, it has the characteristic deep reddish purple leaf colouration – the pigments probably affording extra protection from frost and UV damage. Secondly, the purple akeake is self-fertile, with a large proportion of its seeds

coming true to type. Both of these features, along with rapid early growth and good hardiness made purple akeake a sure fire winner for the ornamental nursery trade and the home gardener alike. Assuming that the purple akeake was commercially available in the 1930s, the appetite for native trees and shrubs would have been subdued, owing to economic pressures and a preference for exotic flowers and home produce. It was after the Second World War that ornamental native trees would “have their day in the sun”.

Post-war popularity

The popularity of *Dodonaea viscosa* 'Purpurea' in the affluent post-war era was meteoric, fuelled mainly by the pent up demand for “new” plants, especially those with dramatic foliage or interesting form as well as functional uses such as windbreaks and hedges.

Purple akeake was particularly favoured by the gardening public with its glossy good looks and hardiness in barren subdivisions. All the major nurseries promoted it with zeal. A quick search through Duncan & Davies catalogues from that period is very revealing. In the 1952-53 edition, *D. viscosa* 'Purpurea' is clearly marked with a bold star to denote “special merit”, with advice to “plant in the open to maintain colour”. By 1965 pot grown plants are offered for hedging at 38/- per 100, and the plant is considered “one of the finest ornamental foliated shrubs” and “always showy” (Duncan and Davies Nurseries 1952-53; 1965).

In 1970, purple akeake wins the Royal New Zealand Institute of Horticulture’s “Award of Garden Excellence”, while glowing praise from both Stanley Palmer’s *Manual of trees, shrubs & climbers* (1971) and Lawrie Metcalf’s *Cultivation of New Zealand Plants* (1972) further added to the popularity of purple akeake.

Dodonaea viscosa 'Purpurea' even manages to impress gardeners in California where it is called purple hop bush, and influential lifestyle publications like *Sunset Magazine* “promote its use on bare clay banks for colourful erosion control” and to “complement the redwood cladding of the house and deck” (Sunset Books and Sunset Magazine 1968, pp 76-77; 1975, p 65). In Australia, purple hop bush is popular around Melbourne and Adelaide although Ernest Lord in his authoritative *Shrubs and trees for Australian gardens* downplays it as “widely planted, fast-growing but often short lived” (Lord 1970, p 269).

Meanwhile back in Christchurch, purple akeake was planted enthusiastically across the city for “shelter from the easterly”, the papery summer seed heads were used for flower arranging in the home, and people wanting a “patch of bush” in their front garden planted it in garish combination with golden totara (*Podocarpus totara* 'Aurea'), red beech (*Fuscospora fusca*), and variegated flaxes! The plantings may look ghastly to our eyes today, but it was acceptable at the time!

Mass plantings and early seedlings

If the demand for purple akeake was high in private gardens, then it was equally popular for public planting. Thousands of indigenous trees and shrubs were required for the landscaping of newly built schools, university campuses, motorway embankments, bush plantings and picnic grounds across the city. In a region that regularly suffers from constant wind and crippling summer droughts, purple akeake ticked all the boxes! By the early 1980s, the familiar dark purple native tree was firmly established around Christchurch and the Port Hills, flourishing on the loess hillsides of Victoria Park and Kennedy's Bush, battling the sea spray at Scarborough Beach, or absorbing car exhaust fumes along the Southern Motorway.

In the 1980s and 90s, the gardening public began to tire of the purple akeake. It was unfashionably commonplace and reminded people of past decades they would rather forget. Many of the plants offered for sale during this time were poor selections of a brownish green colour rather than the reddish purple of the original cultivar characteristics. At the same time, older plants from the early post-war period were dying from overzealous pruning or toppling over in gales – problems that Harrison warned of in 1959! During this time we began to see the first signs of spontaneous naturalization of *Dodonaea viscosa* 'Purpurea'. Unassisted seedlings were noted in the early 1980s at Hunter's Gully, Diamond Harbour (Partridge pers. comm.). It was not unusual to see purple and brown seedlings germinating in driveways or footpaths although roading maintenance and winter frosts were enough to kill most of these seedlings. Seedlings of purple akeake in private gardens became common enough to be given away or potted up into yoghurt containers and sold at the local church fair.

Today a trip to any major garden centre (or Farmers Market) will show the full range of akeake seedlings from deep, rich purple to various brownish green shades as well as the wild green type. Plants are cheap to buy and almost all of them will survive, making them an attractive option for cash-strapped volunteer groups or landowners needing quick shelter, especially on the Port Hills and the rural fringe of Christchurch.

Concerns during and after the 1990s and early 2000s about proper eco-sourcing of indigenous plantings spelt the end for public plantings of *D. viscosa* 'Purpurea' - only green, wild, Banks Peninsula-sourced akeake could be planted from then on, but propagation of the purple akeake in commerce or gardens continued into the new millennium.

Continued spread of purple akeake

In the second half of the 2010s a series of mild winters and changes to spraying/maintenance regimes in public areas have allowed previously suppressed purple akeake seedlings to flourish into sizeable saplings. I have listed a few of the most conspicuous ones here:

- A bushy sapling amongst coastal boulders, exotic ice plant, and hebe bushes at Scarborough beach, Sumner, an area regularly affected by seawater.
- A slender, brownish green (hybrid) akeake sapling in bark chip beds alongside classrooms at Hagley High, St Asaph Street.
- Two tall saplings emerging out of median strip junipers and *Choisya ternata* on the Main North Road in Belfast.
- A small group of purple and green saplings clinging to a clay hillside cutting, growing with exotic ice plant along Cashmere Road near Halswell Quarry.
- A richly coloured seedling spotted in a gravel tree ring in a supermarket carpark at Christchurch Airport.
- A tall, bushy sub-adult tree seen growing on the north side of the as yet unrepaired Anglican Cathedral in the centre of town!
- Several purple and green saplings that have recently appeared among spinifex dune plantings along the foreshore at Sumner bay near the Surf Club.
- A richly coloured sapling seen in an olearia hedge next to the Chinese Takeway on Hoon Hay Road.

In almost every case, the parent tree(s) are usually close by in a neighbouring garden and sometimes there are drifts of papery seedcases blowing along the gutters and footpaths.

The sporadic spread of *Dodonaea viscosa* 'Purpurea' as a casual adventive in and around Christchurch City and the Port Hills is not currently a cause for concern, especially given there are so many other more serious weed species to be dealt with. The purple akeake is very much at the lower threshold of weediness as its seedlings are mostly confined to the specialised hard surfaces of urban areas that are continually being modified, i.e. footpaths, carparks, and vacant lots etc. The risk of purple akeake escaping into forest or wetlands is very low, as *Dodonaea viscosa* is naturally a seral species requiring high light levels to establish, and it is intolerant of prolonged flooding. Indeed, we should be more concerned about the North Island tree species that are spreading around Christchurch such as *Pittosporum ralphii*, *P. crassifolius*, *Corynocarpus laevigatus* and *Pseudopanax lessonii* x *crassifolius* hybrids, as they are bird dispersed and shade tolerant. Hybridization of the purple akeake with the local green-leaved populations on the Port Hills/Banks Peninsula is a more serious threat, as the two forms readily hybridize wherever they grow in close proximity. A possibility is that future generations of wild green akeake could exhibit better frost tolerance and drought resistance, but conversely, have shorter lifespan and increased stem brittleness courtesy of *D. viscosa* 'Purpurea' genes. The environments most considered at risk of invasion by purple akeake would be those that resemble those of its urban

home, i.e. dry, rocky, sandy or gravelly areas that have sparse, low-statured vegetation cover. The rocky bluffs and shorelines of the Port Hills/Lyttelton Basin could offer ideal conditions for the spread of purple akeake as well as the semi-arid coastal grassy shrublands and dunefields of Kaitorete Spit/Birdlings Flat. These contain some of Canterbury's most threatened endemics, including the southernmost naturally occurring individuals of *Dodonaea viscosa* in New Zealand.

Moving forward

What are some of the measures that agencies and communities can do to manage or curtail the spread of purple akeake? The most effective measure so far, at least on public lands, is the continued planting of locally sourced (Port Hills or Banks Peninsula) green akeake in revegetation programmes. Some of these plantings are now beginning to self-seed, e.g. at Mt Vernon Farm Park and Halswell Quarry, and, in theory, should override any influx of purple akeake genes.

The next most effective measure is to encourage home gardeners to plant green akeake, especially in the coastal hill suburbs or areas above bluffs. However, some people will continue to plant the purple akeake because of its colour or because it doesn't grow as large as the green one. Plant nurseries and horticulturalists will need to get on board with the issue of weed potential of purple akeake (something that applies to many popular exotic plants too numerous to count!) and advise the public via labelling, planting days or public talks.

For existing groves or plantings of purple akeake either in reserves or in private gardens, a mixture of options exists. One is to simply let old age set in – many purple akeakes around Christchurch are reaching the end of their allotted lifespan while top-heavy, root-bound trees can be expected to topple over in the next major storm! In other cases it may be an option to underplant the akeake with a shade tolerant species such as mahoe, fivefinger or totara and let succession do the job.

For some property owners, the practice of clipping or thinning the canopy after flowering would prevent excess seed production, while raking and sweeping up the fallen seed capsules before they blow away may be more realistic and practical. This would be more important for gardens bordering natural areas such as cliffs and beaches.

Finally, the role of social media applications like i-Naturalist NZ and plant interest groups can assist in the identification process, especially in the observation of new populations, although purple akeake falls into a “grey area” owing to its complex situation as a “cultivated native adventive.”

Conclusions

The chance discovery of a novel, purple-leaved, self-fertile seedling of akeake by a 19th century plants-woman, its dramatic journey to horticultural eminence through the 20th Century, and its gradual fall from favour in the 21st, loosely reflect the evolving appreciation of New Zealand's indigenous plants as well as its horticultural practices and conservation challenges. For some people, the development of cultivars and hybrids in the New Zealand flora represents a terrible mistake. But for others, the development of a brightly coloured ornamental native plant such as *Dodonaea viscosa* 'Purpurea' allows the gardening public to enjoy a "homegrown" product. The story of *Dodonaea viscosa* 'Purpurea' illustrates the dilemmas of what plant breeders, gardeners and conservationists must all face in a world awash with novel or invasive plants.

References

- Duncan and Davies Nurseries (1952-53 and 1965). Catalogue. Library archival collection of the Christchurch Botanic Gardens.
- Harrison RE. 1959. Handbook of trees and shrubs for the Southern Hemisphere. Wellington: AH & AW Reed.
- Lord EE. 1970. Shrubs and trees for Australian gardens. Melbourne: Lothian Publishing.
- Metcalf LJ. 1972. The cultivation of New Zealand trees and shrubs. Wellington: AH & AW Reed.
- Palmer SJ. 1971. Palmer's manual of trees shrubs and climbers. Auckland: Comprint.
- Sunset Books and Sunset Magazine [editorial staff]. 1968. Planning and landscaping hillside homes. Menlo Park, California: Lane Magazine & Book Company.
- Sunset Books and Sunset Magazine [editorial staff]. 1975. Sunset ideas for landscaping. Menlo Park, California: Lane Magazine & Book Company.

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Postscript. As of when this article was submitted in March 2020, there have been reports of small numbers of purple akeake seedlings (estimated at around 4

out of a 1000 seedlings) appearing in wild collected seed of *Dodonaea viscosa* from Banks Peninsula in the DOC Nursery at Motukarara. These originate from isolated, naturally-occurring green akeake from either Hoon Hay Valley or Pigeon Bay sources! (Luke Martin pers. comm.).

Botanic Gardens *Ileostylus micranthus* update 2020

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Back in May 2016 we carried out a trial to find out the establishment rate of *Ileostylus micranthus* on a range of different host plants in the Christchurch Botanic Gardens. I can now report that after 4 years of growth the most vigorous of the remaining established plants are producing flower buds for the first time. *Ileostylus* flower (inflorescence) buds appear opposite each other in the axils of the leaves. Buds were first noticed at the start of June on *Coprosma virescens* (in garden of the author) and by 24th June had elongated to 4 mm long with individual flowers buds within the inflorescence being noticeable. At the time of submitting this article, inflorescences were 13mm in diameter and individual flowers, which are in clusters of three were up to 5mm long. These plants look like flowering towards the end of August. Flowering time for *Ileostylus micranthus* is from September- December (Kirby 2014).

Coprosma virescens as mentioned above has the most advanced buds with *Ileostylus* on *Pittosporum dallii* (in Botanic Gardens) about a week or two behind. Plants on *Pseudowintera* and *Melicytus* are still in tight bud and are likely to flower later in the flowering season. The remaining host plants have smaller *Ileostylus* plants, which were still in tight bud as at end of July and might not produce flowers this season (Table 1).

Thrips appear to be a serious pest of *Ileostylus micranthus* and seriously impedes the growth of young plants and in severe cases can kill young plants. Plants in moister situations appear to be less affected.

References

- Kirby CL. 2014. Field guide to New Zealand's epiphytes, vines & mistletoes. Environmental Research Institute, University of Waikato.
- Pendrigh D, Macdonald KJ. 2017. Mistletoe success for the Christchurch Botanic Gardens. *Canterbury Botanical Society Journal* 48: 36–42.