

Amelanchier lamarckii in New Zealand

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Amelanchier lamarckii, better but wrongly known in New Zealand as *Amelanchier canadensis*, is a charming small to medium-sized garden tree of uncertain origin; it suffers from the unfortunate handicap of being much more common than the knowledge of its correct name.

The genus within the Rosaceae to which it belongs is primarily North American, with between 18 and 20 recognised species in the United States (where there is at least one species native to every state except Hawai'i) and Canada. They have a variety of common names there, including juneberry, serviceberry, shadbush, shadwood, snowy mespilus, and sugarplum. Elsewhere, two species occur in Asia, one in Europe, and one each in Turkey and North Africa. All the species are deciduous woody plants, ranging from small shrubs to tall trees, with attractive white flowers in spring. Most of the American species put on a colourful display of autumn leaf colour, but only a few are cultivated. As well as *A. lamarckii*, these include *A. laevis*, *A. canadensis*, and the round-leaved *A. alnifolia* and its smaller subspecies *pumila*, which is recognised by some taxonomists as a species in its own right.

The name *A. canadensis* is very familiar in cultivation, but the species itself has not, as far as I can ascertain, been grown in New Zealand. Plants bearing this name in garden centres and nurseries invariably turn out to be *A. lamarckii*. Superficially the two are very similar in summer and autumn, but the differences between them are clear in spring. Both are small, multi-stemmed (but not suckering) trees up to about eight metres tall. Both have white flowers in showy racemes, but *A. lamarckii* flowers are larger, and the panicles are longer, up to 8 cm from the lowermost flower compared with about 5 cm for *A. canadensis*. The unfurling leaves of both species are covered with short-lived white

hairs, but the leaves of *A. lamarckii* are flushed with rich coppery bronze (Fig. 1) that sets off the flowers to perfection, whereas *A. canadensis* leaves are plain green. Both have small, sweetly vanilla flavoured fruit that passes through red before turning black when ripe, but opportunities to taste them are rare because blackbirds and thrushes devour them ravenously, often before they are fully ripe.



Fig. 1 Flowering shoot of *Amelanchier lamarckii*. Note the copper flush on the young leaves.

In the garden trade, *A. lamarckii* is usually propagated through cuttings. Its quality as a garden plant is reflected in it receiving an RHS Award of Garden Merit in 1993.

As a wild plant, *A. canadensis* is widely distributed throughout New Brunswick, Quebec, and Nova Scotia in Canada and from New England down to Alabama in the eastern United States. But here the plot thickens, because although the North American origin, either directly or indirectly, of *A. lamarckii* has never been questioned, it has not been recorded anywhere in North America as a wild plant. It was not even recognised as a distinct species until a German botanist described and named it from naturalised specimens

collected in the Netherlands and north-western Germany in the 1960s², yet it has been grown in Britain and Europe for perhaps two centuries. Specimens collected from widely separated naturalised stands in Surrey in the early 1890s have been identified as *A. lamarckii*. It must have been cultivated there for much longer to be so well established then. Today, *A. lamarckii* is so extensively naturalised in woodlands in southern England, the Netherlands, and north-western Germany that it is almost considered part of the natural flora.

Two solutions have been advanced for the puzzle of its origin. The first, and possibly the less likely, is that *A. lamarckii* was originally collected and brought into cultivation from a small wild population in North America that has since died out, or was a microspecies (a discrete population with limited genetic variability) that has been absorbed back into a larger population. The more likely explanation, however, is that it is a stable microspecies which arose spontaneously in cultivation somewhere in Britain or Europe as a result of spontaneous hybridisation between two unidentified American species. The rich bronze colour of the unfurling leaves suggests that one parent must be *A. laevis*. The other is probably either *A. arborea* or *A. canadensis* with the odds tilted slightly in favour of the latter.

Microspecies of this kind are not uncommon in wild populations of Rosaceae. Many have been identified within American species of the genus *Crataegus* and in Europe among the *Sorbus*, both of which are close relatives of the amelanchiers.

What makes the mystery of *A. lamarckii* (or *A. × lamarckii* if a hybrid origin is accepted) more interesting (and, some might say, confusing) is that the extreme uniformity of populations in both Britain and Europe suggests that it is probably apomictic, i.e., it can produce

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² *Amelanchier lamarckii* was described by Fred-Günter Schroeder in the journal *Taxon*, No. 17, p. 633 (1968).

viable, true-to-type seed without the aid of an external pollinator. This phenomenon is not common, but is well known.

The inference from this reinforces the theory that *A. lamarckii* is a microspecies that arose in cultivation, possibly from a single individual seedling. As far as I can ascertain the suggestion that all of its individual offspring may be genetic duplicates has not yet been confirmed by molecular biologists.

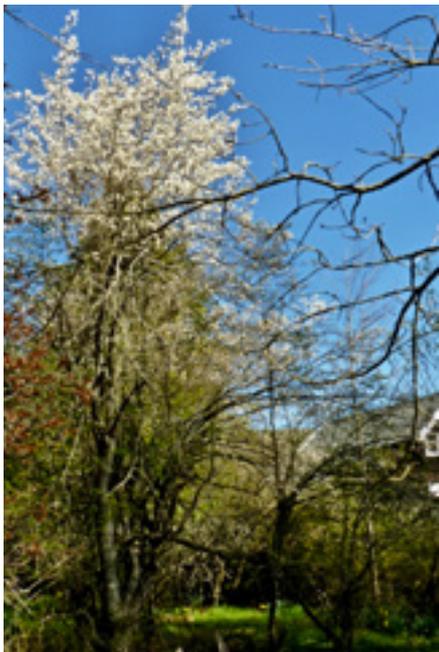


Fig. 2 This old specimen at Barrosa Station, Mid-Canterbury, shows clear evidence of successive stems having matured, died, and been replaced.

I have been unable to discover when, or from where, *A. lamarckii* was introduced to New Zealand, but specimens seen in old gardens suggest a starting date in the late 19th or early 20th century. This means it has probably been in this country for between 100 and 120 years, masquerading in the nursery trade as *A. canadensis* for most of this time. Its multi-stemmed habit makes it impossible to determine the age of existing specimens by ring counts, so its probable life span in this country is not known. Although not large, the tree photographed (Fig. 2) in the grounds of the former Barrosa Station homestead in the Ashburton Gorge, inland from Mt Somers in Mid-Canterbury, shows clear evidence

of successive stems having matured and died. The homestead was built between 1910 and 1914. Ring counts of other old trees felled in the vicinity of the homestead since Barrosa became part of Castleridge Station early in 2011 show them to have been between 90 and 100 years old, so it is probable that the amelanchier was of an age with them.

Curiously, although it must have had plenty of opportunities to do so, *Amelanchier lamarckii* has shown little inclination to naturalise in this country, although our climate and soils should suit it. In England its favoured habitat seems to be the fringes of oak and beech woodlands in sandy loam, but it is obviously adaptable, and has also been recorded growing in soils that become water-logged in winter.

It certainly grows well enough in New Zealand gardens, even old neglected ones, and the presence or absence of irrigation does not seem to trouble it. Spontaneous seedlings do appear within gardens from time to time, but the *Flora of New Zealand, Vol IV*, published in 1988, recorded only one example of specimens considered to be growing wild, collected in 1954 from two trees on the fringe of Riccarton Bush, Christchurch. They were thought to have seeded from one of the many surrounding urban gardens. A handful of other naturalised examples have been found since then, in scattered localities: one from Wellington, one from Westland, and three from Southland³. A few of the specimens were initially confused with *Prunus*,

because of the superficial similarity between the two genera.

This apparent failure to naturalise widely is a little surprising, given the length of time the species (or microspecies, or hybrid) has been in the country and the obvious affinity that planted specimens have for our climate and soils. Clearly it has something to do with the conditions required for seed germination. My own plant, now about five metres tall, overhangs one end of a large plunge bed in which there are always a few pots and troughs of bare soil that get watered along with everything else, producing what should be an ideal seed bed. Yet while it fruits freely every year, it only sporadically produces seedlings. In the 20 or so years since it was planted clusters of seedlings have appeared on only three occasions. None have appeared in the “between” years. I have seen similar patterns of periodic mass germination in other woody members of the Rosaceae, including *Sorbus*. The absence of a suitable mycorrhizal fungus is a possible reason for non-naturalisation, but I consider this to be unlikely because the few seedlings I have saved and given away have flourished. One of them is doing well at Castleridge Station in the Lake Heron basin, at an altitude of 695 metres. At that altitude, in a basin surrounded by mountains, frosts can occur in any month of the year, and air temperatures of -15°C or lower can occur in winter, so *Amelanchier lamarckii* is clearly very hardy and adaptable, as well as attractive in all seasons (Fig. 3).

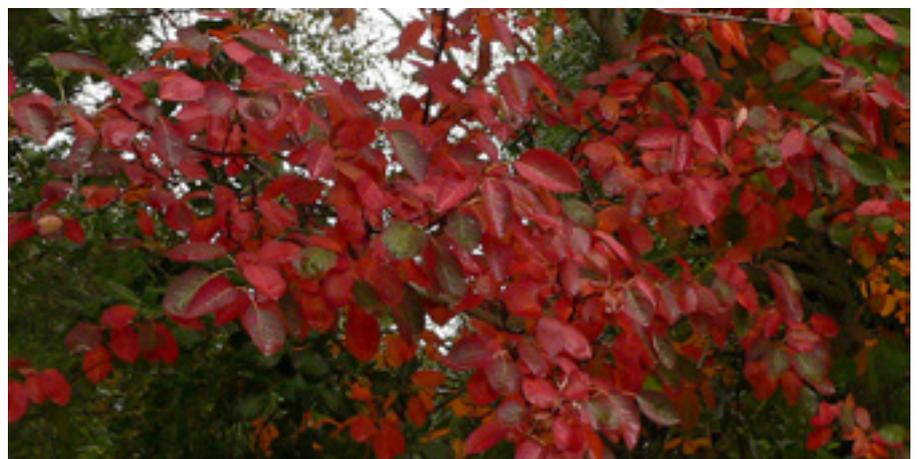


Fig. 3 Foliage in autumn.

³ Allan Herbarium specimens include two trees on the edge of Riccarton Bush, Christchurch, collected in 1954 and identified by A.J. Healy, CHR 91413A–B; later collections, all identified by Bill Sykes, are CHR 474975 (Wellington), CHR 478985 (Westland), and CHR 513178A–B, CHR 513215A–B, CHR 603273 (Southland).