

Luma present – where is *Amomyrtus*? Resolving the confusion in New Zealand

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Summary

Two Chilean myrtle species, *Luma apiculata* and *Amomyrtus luma*, have frequently been confused in New Zealand and elsewhere. Their differences are described here to help identify them correctly. Information on presence of the very rare (or possibly now absent) *Amomyrtus luma* is sought from the New Zealand horticultural community.

Luma apiculata

Luma apiculata (DC.) Burret is a white-flowered shrub or small tree from South America, occurring in forested areas of Chile and western Argentina (Landrum, 1988; Hoffmann, 2006).

This species has been cultivated in New Zealand for more than 60 years, in collections such as Eastwoodhill Arboretum, Hackfalls Arboretum, Government Gardens at Rotorua (Fig. 1), Pukeiti and Tupare Gardens in Taranaki, Wellington Botanic Gardens, Christchurch Botanic Gardens and the Lincoln University arboretum (Fig. 2). A specimen at Blue Mountain Nurseries, Tapanui, sampled in 1965 (Allan Herbarium specimen CHR 157735), was planted as a commemorative tree and there were further trees in the local cemetery (Denis Hughes, pers. comm.), demonstrating its suitability for cooler regions. It is used as a street tree in some areas, including Rotorua, but has never been especially common, being recorded occasionally in parks and gardens throughout New Zealand, but mostly in the South Island (Sykes, 2002).

Luma apiculata is an occasional adventive and has been reported as naturalising from parent trees near Invercargill (e.g., CHR 526467) and recently (2018) on Stewart Island (CHR 646067).



Fig. 1 Well established grove of *Luma apiculata* cultivated at Government Gardens, Rotorua. March 2019. Photo: © Elizabeth Miller.



Fig. 2 Small tree of *Luma apiculata* cultivated at the Lincoln University arboretum, Canterbury. June 2019. Photo: © Murray Dawson, via iNaturalist NZ (<https://inaturalist.nz/observations/25246069>) (CC-BY).

Luma apiculata has distinctive orange to cinnamon-coloured bark with the texture of suede (Taylor, 1990) and some white patches where bark has recently exfoliated (Landrum, 1988) (Fig. 3A–C). The leaves are small, ovate and sharp-pointed. The fragrant, bowl-shaped flowers, with four creamy-white petals and a boss of many white stamens (170–300), are solitary in leaf axils and are produced in summer to autumn (Fig. 4A–C). The flowers are followed by dark purple or black globose, edible fruit up to 10 mm in diameter (Fig. 5A–C).

The fruit flavour is variable but can be sweet and aromatic (PFAF website). Leaves and fruit are used in traditional medicine (Fuentes et al., 2016). In Chile the hard wood is used for handles of tools and domestic utensils (Landrum, 1988).

In South America it is called arrayán, or less commonly palo colorado and other local names (Cordero et al., 2017). It is also known as Chilean myrtle. The nine genera and 26 species of the myrtle family (Myrtaceae) in Chile (Landrum, 1988) have suffered from a long series of botanical name changes, indicating that it has been difficult to differentiate them and determine how they are related.

The late Bill Sykes (2002) wrote a clear explanation of the taxonomic history of *Luma apiculata*, including that it had been named *Myrceugenia apiculata* (DC.) Kausel in the latter part of the 20th century, until that genus was included within *Luma* by Landrum (1988). Previously, it had been classified as *Eugenia apiculata* DC. as well as having been given another eleven species names within the genus *Eugenia* by a series of authors, three further names within *Luma* and also names within *Myrtus* and *Myrceugenella* (Landrum, 1988; Govaerts et al., 2008). In the past, *Myrtus luma* has been widely used to refer to the species now known as *Luma apiculata*, although they have never been synonymous (Taylor, 1990; Sykes, 2002), leading to much confusion. *Myrtus luma* Molina (and *M. luma* Barnéoud) is now placed in the genus *Amomyrtus*, as *Amomyrtus luma*. Neither is the name *Myrtus apiculata* (O.Berg) Kiaersk. an historic name for *Luma apiculata* – it is a former name for a species now in a different genus and species altogether (*Blepharocalyx salicifolius* (Kunth) O.Berg) (Govaerts et al., 2008; World Flora Online).

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Fig. 3 Trunks and bark of *Luma apiculata* showing orange to cinnamon-coloured bark with white patches. **A**, mature tree with spectacular bark, Pukeiti. October 2018. Photo: © Chris Ecroyd via iNaturalist NZ (<https://inaturalist.nz/observations/17207782>) (CC BY-NC). **B**, bark that has exfoliated to show large white patches underneath, Lincoln University arboretum, Canterbury. June 2019. Photo: © Murray Dawson, via iNaturalist NZ (<https://inaturalist.nz/observations/25246069>) (CC-BY). **C**, relatively intact bark from a mature grove, Government Gardens, Rotorua. March 2019. Photo: © Elizabeth Miller.



Fig. 4 Flowers of *Luma apiculata*. **A**, studio image of flowering shoot. March 2019. Photo: © Elizabeth Miller and Wendy Allen. **B**, flowers from tree growing in Tupare Gardens, New Plymouth. February 2016. Photo: © Phil Bendle, via iNaturalist NZ (<https://inaturalist.nz/observations/2735915>) (CC BY-NC). **C**, close-up of an opening flower showing four petals, Tupare Gardens, New Plymouth. December 2017. Photo: © Phil Bendle, via iNaturalist NZ (<https://inaturalist.nz/observations/9830492>) (CC BY-NC).



Fig. 5 Mature fruit of *Luma apiculata*. **A**, studio image of fruit and foliage. March 2019. Photo: © Elizabeth Miller and Wendy Allen. **B**, fruit and foliage, Olympus Way, Richmond. April 2018. Photo: © Chris Ecroyd. **C**, close-up of a fruit, Lincoln University arboretum, Canterbury. June 2019. Photo: © Murray Dawson, via iNaturalist NZ (<https://inaturalist.nz/observations/25246069>) (CC-BY).

Amomyrtus luma

Amomyrtus luma (Molina) D.Legrand & Kausel is native to Chile and to the Andean parts of Argentina, usually of wet habitats (Landrum, 1988).

It has reddish-brown bark (not as orange as that of *Luma apiculata*), small pointed leaves that are coppery when young (Fig. 6), and small creamy bowl-shaped flowers in spring (Fig. 7A–B, Fig. 8). Its maturing fruit are initially red, turning blackish when fully ripe (Fig. 9A–B). Like *Luma apiculata*, its fruit are also edible and to about 10 mm in diameter (Landrum, 1988).



Fig. 6 Young coppery foliage of *Amomyrtus luma*, Oncol Park, near Valdivia, Chile. November 2007. Photo: © "Lin liniao" (Robertin), via Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Brotos_de_Amomyrtus_luma.jpg) (CC BY-SA 3.0).



Fig. 7 *Amomyrtus luma* heavily flowering in cultivation, Small Dole, West Sussex, England. May 2011. **A**, habit of small tree. **B**, flower clusters. Photos: © "peganum" (Steve Law), via Flickr (www.flickr.com/photos/peganum/5684455383/) (CC BY-SA 2.0).



Fig. 8 Close-up of *Amomyrtus luma* flower cluster showing five petals per flower, Los Alamos, Biobio Region, Chile. December 2011. Photo: © "Mono Andes", via Flickr (www.flickr.com/photos/monolive/6491747779/), with permission from the photographer.



Fig. 9 Fruit of *Amomyrtus luma*. **A**, maturing red fruit, Chonchi, Chile. January 2006. Photo: "Lin liniao" (Robertin), via Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Amomyrtus_luma-Luma.JPG) (Public Domain). **B**, fruit ripened to black. Photo: © Lucia Abello.

In South America it is called luma, palo madroño and other names (Landrum, 1988; Cordero et al., 2017). As with *Luma apiculata*, it has historically been given a series of botanical names as botanists tried to group together species most closely related. Names include species within *Eugenia*, *Myrica*, *Myrtus* and *Pseudocaryophyllus* (Landrum, 1988).

Amomyrtus luma is different from *Luma apiculata*

The most distinctive differences between the two taxa are to be found in the number of petals and sepals, size and arrangement of flowers, and flowering season (Landrum, 1988; Thompson, 2001). In *Amomyrtus luma*, the smaller flowers (petals to 3 mm long) possess five petals and sepals and are arranged in clusters, whereas in *Luma apiculata* the larger flowers (petals up to 5 mm long) possess four petals and sepals and are borne singly in leaf axils. In keeping with the smaller size of the flower, *Amomyrtus luma* has fewer stamens – c. 40–80 that are 4–5 mm long, compared to more than 170 that are 5–7 mm long in flowers of *Luma apiculata* (Landrum, 1988). *Amomyrtus luma* flowers from spring to summer, whereas *Luma apiculata* flowers from summer to autumn (Landrum, 1988) sometimes with late flowers in May in New Zealand.

Reports of *Amomyrtus luma* in New Zealand

Amomyrtus luma has appeared on a few plant labels and lists in New Zealand but, despite attempting to track down such records in botanic gardens and nurseries, and checking with several experienced plants people, I have not been able to locate any live material still growing here. A record under the name *Amomyrtus luma* at Auckland Botanic Gardens has been re-identified as *Luma apiculata* (Emma Bodley, pers. comm.) and there have been re-identifications elsewhere. New Zealand-sourced herbarium specimens of only one tree of *Amomyrtus luma* have been located, collected by Bill Sykes (collection number 277/65) from Eastwoodhill Arboretum, and initially named *Myrtus lechleriana*. Allan Herbarium specimens (CHR 157426A–C) were collected in January 1965 (in fruit), October 1968 (in flower), and October 1972 (in flower), with the comment "flowers 5-merous". A specimen is also held in the Auckland Museum Herbarium, also collected October 1972 (AK 224717). It is likely to have been from the plant listed in 1972 as *Myrtus lechleriana*, now a synonym of *Amomyrtus luma*, in an Eastwoodhill Arboretum catalogue (Eastwoodhill Arboretum Catalogue, 1972, unpublished list).

Although this species is not included on current lists, it appears that both *Amomyrtus luma* and *Luma apiculata* have previously been grown at Eastwoodhill.

It is recorded that the first *Luma apiculata* at Eastwoodhill was purchased from Hillier's in England in 1950. *Amomyrtus luma* may have been imported as *Myrtus lechleriana* by Douglas Cook of Eastwoodhill from a nursery source but may also have been introduced to New Zealand as part of projects to import Chilean fruit and ornamental species (Vietmeyer, 1991). It would probably have been under a different name if before Landrum's 1988 publication as explained above. The MPI Plants Biosecurity Index (PBI) echoes the confusion over names of these taxa, stating, without author names, that *Myrtus apiculata* = *Luma apiculata*, and *Myrtus luma* = *Luma apiculata*, both of which are incorrect (Landrum, 1988; Govaerts et al., 2008; Plants of the World Online; The Plant List; World Flora Online).

Conclusions

It is particularly unfortunate that the common name 'luma' is now the common name of one species (*Amomyrtus luma*) and the genus name of another (*Luma apiculata*). The history of misapplication of the name *Myrtus luma*, a former name for *Amomyrtus luma*, has made the situation even more muddled. When updated names were introduced by Landrum (1988) it was not clear which name should be used for the plants that were grown in New Zealand. It is interesting that although *Luma apiculata* features in several recent gardening books on Southern Hemisphere or South American plants grown in British gardens (Taylor, 1990; Thompson, 2001) *Amomyrtus luma* is scarcely mentioned, except in comparison with *Luma apiculata*, and it does not appear to be as widely grown.

Lessons for plants people in New Zealand are:

- For all practical purposes, unless looking in old reference books, the name *Myrtus luma* can now be put aside.
- *Luma apiculata* and *Amomyrtus luma* are NOT alternative names for the same species.

- The Chilean myrtle tree seen in parks and gardens in New Zealand is most likely to be *Luma apiculata* (with four-petalled flowers).

If anyone knows of any genuine *Amomyrtus luma* trees existing in New Zealand (check for flowers with five petals), I would be most interested to learn of them. Trees should flower in late spring to summer.

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- The Plant List: www.theplantlist.org.
- World Flora Online: An online flora of all known plants: www.worldfloraonline.org.