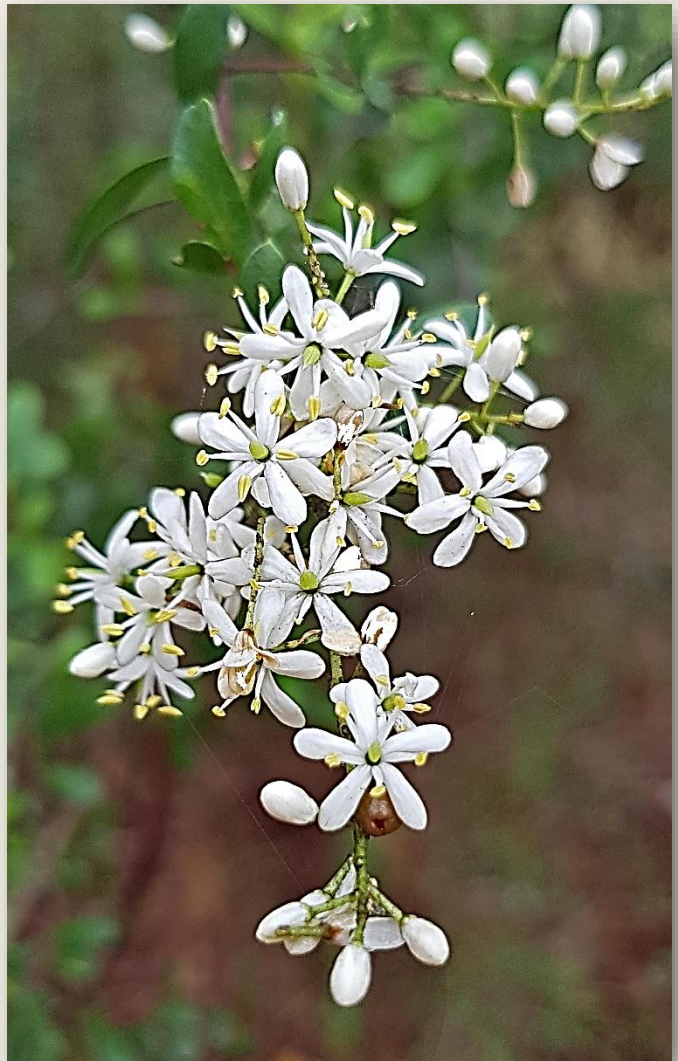


Bursaria *spinosa* Australian Blackthorn



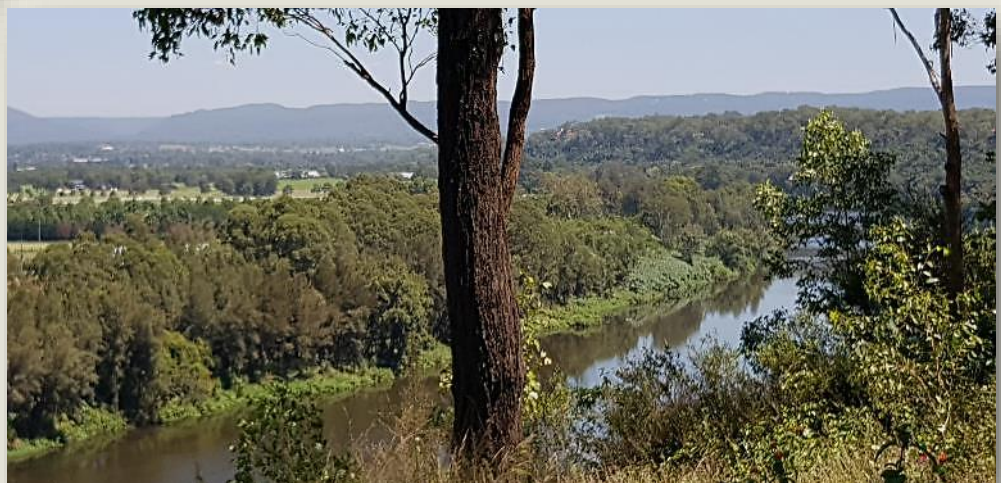
There continues to be debate about the origin of the name of the western Sydney suburb, *Rooty Hill*, but it seems likely that the growth habit of *Bursaria spinosa*, Australian Blackthorn, may well have contributed. *Bursaria spinosa* is a rather drab, unlovable, often spiny shrub growing at least 3 – 5 metres tall, and commonly occurring in *Eucalyptus* woodland on Sydney's Cumberland Plain. Plants can have

extensive underground networks of rhizomes creating huge difficulties for European settlers trying to plough the ground in the early days of settlement



For biologists it's intriguing that plants of a stand of *Bursaria spinosa* may cover a considerable area but be

View overlooking the Hawkesbury River to Western Sydney's Cumberland Plain showing the mix of native vegetation and farmland characteristic of the natural habitat of *Bursaria spinosa*.



genetically identical, connected by the vast underground rhizomatous network. And despite being genetically identical, individual shrubs may have phenotypes that widely differ from each other. *Bursaria spinosa* is a very tough plant, widespread across eastern and southern Australia, long lived (25 to 60 years) and able to resprout after bushfires.

The fragrant white flowers in summer are one redeeming feature that leads to it being known as *Christmas Bush* in both Tasmania and South Australia. It's also of importance to a wide range of insects: beetles are major (but not the only) pollinators, and there is a unique and complex symbiotic relationship between *Bursaria spinosa*, a butterfly - the Bright Copper (*Paralucia aurifera*) - and an ant (*Anonychomyrma nitidiceps*).



Bright Copper (*Paralucia aurifer*), Austin's Ferry, Tasmania, Australia. Photo: JJ Harrison (<https://222.jjharison.com.au>)



Photo: April Nobile / © AntWeb.org
https://commons.wikimedia.org/wiki/File:Anonychomyrma_gilberti_casent0069883_profile_1.jpg
(Same genus, different species)

A startling characteristic of *Bursaria spinosa* is the capacity of macerated leaves steeped in boiling water to emit a very strong blue colour in natural light. This fluorescence is produced by the chemical *esculin*, the same chemical extracted from the Horse Chestnut Tree, *Aesculus hippocastanum* – hence the name *esculin*.

Esculin from *Bursaria spinosa* can absorb UV light, so it has long been used as a sunscreen, from early European settlers in Australia to pilots flying at high altitudes



Macerated leaves turn water blue in sunlight (above)
Macerated leaves in artificial indoor light that lacks the ultraviolet wavelengths required to generate fluorescence (right)

during WWII when imports of esculin from Europe were blocked. Now esculin is used for a range of medical and biological applications, including the identification of bacteria, testing dairy products and treatment of a range of medical conditions.

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Wikipedia: https://en.wikipedia.org/wiki/Bursaria_spinosa

Wikipedia: <https://en.wikipedia.org/wiki/Fluorescence>

Wikipedia: https://en.wikipedia.org/wiki/Rooty_Hill,_New_South_Wales

Alison Downing, Brian Atwell, Karen Marais, Roger Hiller, Kevin Downing
School of Natural Sciences



MACQUARIE
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