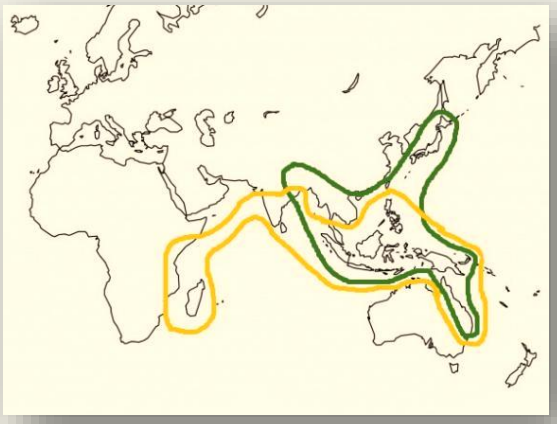
Pisonia and *Ceodes*
Bird Catcher Trees, Bird Lime Trees

Bird Catcher or **Bird Lime Trees (*Pisonia* and *Ceodes*)** are two closely related and quite extraordinary plants. Their flowers are small and relatively insignificant, but their sticky fruits exude a resin that adheres to birds, hence their unusual common name.

Ceodes umbellifera (formerly *Pisonia umbellifera*) occurs along coastal regions of New South Wales and Queensland and is widespread in South-east Asia, on islands of the Pacific, and north-westward as far as Bangladesh and Myanmar. ***Pisonia grandis*** trees grow on islands along the coast of far North Queensland, on islands of the Pacific and Indian Oceans, even reaching Kenya and Tanzania in Africa and Madagascar. It can form dense forests and provide nesting sites for terns and noddies.

Long distance dispersal of the trees has been attributed to the sticky seeds with tiny barbs being carried by migratory sea birds. Some, such as the White-capped Noddy (*Anous minutus*), are considered to have a mutualistic relationship with ***Pisonia*** and ***Ceodes***; they nest in the trees, using the leaves for nest construction while the trees benefit from deposition of guano.

Ceodes umbellifera – sticky fruits



Distribution of Bird Lime Trees *Pisonia grandis* (yellow) and *Ceodes umbellifera* (green). From: POWO 2025. "Plants of the World Online", Royal Botanic Gardens, Kew.

Pisonia and *Ceodes* often dominate nutrient-poor sands of coral cays and coral

atolls where they tolerate both saltwater and freshwater, and are able to grow over freshwater lenses, often outcompeting other types of woody vegetation.

Anous minutus – Black Noddy *or* White-capped Noddy, nesting in *Pisonia grandis* trees on Heron Island, Australia. Photograph: Nogwater from Oak Park, CA, USA, CC BY-SA 2.0 <https://creativecommons.org/licenses/by-sa/2.0>, via Wikimedia Commons

Sticky seeds benefit the trees but birds can become completely ensnared by it and die in the complex mesh of barbed, sticky fruits. In this case, the mutualistic relationship between the trees and the birds dispersing their seeds has gone too far but on nutrient-poor soils nothing is wasted: the decaying birds return their nutrients to the sandy cays. However, when compared with the massive amounts of nutrient from guano, dead chicks and failed eggs from the huge numbers of seabirds found on *Pisonia* and *Ceodes* dominated islands, the dead birds contribute little.

So why sticky seeds? A 2005 study by Cambridge biologist A E Burger on Cousin Island in the Seychelles looked at three possibilities: enhanced long-distance dispersal; enhanced seed germination and seed survival; and increased nutrients benefiting mature trees. He found little evidence that killing birds benefited *Pisonia grandis* trees. Instead, he found that seeds must be *extremely* sticky in order to stick to a seabird long enough to reach another island.

Small forests of *Pisonia grandis* on nutrient poor soils of the Low Isles, Great Barrier Reef, east of Mossman and the Daintree in far north Queensland.

Pisonia and *Ceodes* are genera in the Nyctaginaceae, a family of about 33 genera and almost 300 species, most occur in

tropical and subtropical regions with a few species extending to more temperate zones. Eye catching species include *Bougainvillea* and *Mirabilis jalapa*.

Pisonia and *Ceodes* trees have also evolved to be able to thrive in acidic guano rich soils.

Burger AE. 2005. Dispersal and germination of seeds of *Pisonia grandis*, an Indo-Pacific tropical tree associated with insular seabird colonies. *Journal of Tropical Ecology*. 21(3): 263-271. doi:10.1017/S0266467404002159

Hao K, Xu Q, Huang S-Q. 2022. Pollen-feeding behavior of diverse insects on *Geranium delavayi*, a flower with large, accessible pollen grains. *American Journal of Botany* 110(1): 1-9. e16113. DOI: https://doi.org/10.1002/ajb2.16113

Heatwole, H, Done, T, Cameron, E. 1981. *Community ecology of a coral cay: a study of One-Tree Island, Great Barrier Reef, Australia.* W. Junk.

POWO (2025). "Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:604995-1 Retrieved 08 April 2025

Wikipedia: http://en.wikipedia.org/wiki/Pisonia_umbellifera

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

Map: Distribution of ***Ceodes umbellifera*** and ***Pisonia grandis*** **–** Maps modified from POWO (2025) Australia's Virtual Herbarium, "Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:604995-1 Retrieved 08 April 2025

Alison Downing, Brian Atwell, Karen Marais, Kevin Downing

Pisonia grandis on nutrient poor sandy soils of Green Island, Great Barrier Reef, east of Cairns, in far north Queensland.

MACQUARIE University
SYDNEY·AUSTRALIA