

The correct name for the weedy *Homalanthus* (Euphorbiaceae) in Western Australia

Greg J. Keighery¹ and Andrew A. Mitchell

Western Australian Herbarium,
Biodiversity and Conservation Science,
Department of Biodiversity, Conservation and Attractions,
Locked Bag 104, Bentley Delivery Centre, Western Australia, 6983.
¹Corresponding author email: bjkeighe@it.net.au

SHORT COMMUNICATION

Homalanthus (Euphorbiaceae) is a genus of 23 species of trees and shrubs occurring in tropical Asia, Australia, and some Pacific Islands (Esser 1997; Council of Heads of Australasian Herbaria 2006–). In Australia three species are found: *Homalanthus novo-guineensis* (Warb.) Lauterb. & K.Schum., the Native Bleeding Heart, Native Poplar, Tropical Bleeding Heart, which occurs in Indonesia, Papua New Guinea, Solomon Islands, Northern Territory, Queensland and Western Australia; *Homalanthus populifolius* Graham, the Bleeding Heart, Native Poplar or Queensland Poplar, which occurs in Queensland, New South Wales, Victoria, Papua New Guinea, Lord Howe Island, Norfolk Island and the Solomon Islands; and *Homalanthus stillingiifolius* F.Muell., which occurs in Queensland and New South Wales and is not further relevant to this paper.

Since the first record in 1999 in Nerrigen Brook, at Armadale, a *Homalanthus* species has been recorded as invading many wetlands in south-west Australia, from Perth to Albany. Plants fruit abundantly and the fruits/seeds are dispersed by water, gravity and a wide range of birds. This commonly grown species appears to be highly invasive of native bushland and the toxic foliage (Quattrocchi 2012) is not eaten by native herbivores. Plants are capable of germinating in intact wetland sites and grow readily under canopy shade. The species is rapidly becoming a significant environmental weed.

These invasive weedy populations were originally allocated to *H. novo-guineensis*, (Western Australian Herbarium 1998–) but recently a collection of this weed by Andrew Mitchell was allocated to *H. populifolius* by Paul Forster at Queensland Herbarium (Forster pers. com.). This raised the issue of whether the weedy plants in south-west Australia were either or both species.

Three species (*H. novo-guineensis*, *H. nutans* (G.Forst.) Guill. and *H. populifolius*) are the only members of the genus where multiple inflorescence bract glands occur and are unlikely to be confused with other members of the genus. *Homalanthus nutans* occurs east of the other species throughout the south-west Pacific from New Caledonia to Samoa but is not recorded as being cultivated in Western Australia, so this species is not considered further in this study. The other two species are closely related and are difficult to separate. Both species are variable through their ranges, may hybridise in contact zones (Airy Shaw 1968) and have been subject to considerable discussion of useful distinguishing characters both in the field and herbarium. In the latest review of the genus affecting the Australian species, Esser (1997) noted that they are not distinguishable by measurements or characters of their leaves, flowers or

fruits. For example, Airy Shaw (1981) recorded that *H. populifolius* had an elongate stigma compared to *H. novo-guineensis*, and used this as a key separation character, but Esser (1997) states that this character completely overlaps with *H. novo-guineensis* and cannot be used to separate the species.

Forster (1994), when he combined *H. populifolius* under *H. nutans* (a decision that was reversed by Esser 1997), noted that *H. populifolius* had glabrous fruits compared to puberulous (hairy-papillate) fruits in *H. novo-guineensis*. Again, however, while they are generally hairy in *H. novo-guineensis*, this is a very variable character and not always consistent (Esser 1997).

In the field *H. populifolius* is recorded as having 1–4 fruits per inflorescence and *H. novo-guineensis* having 2–30, but this is difficult to see on most herbarium collections, which are often not collected in fruit. Plants in the field generally differ in that *H. novo-guineensis* has inflorescences that are normally unisexual, with a much higher number of female flowers per inflorescence. This is a good population/field guide but of limited use with herbarium collections.

Esser (1997) provides what he notes is the only means to separate flowering material of the two species, often the state found in herbarium collections, shown in the following key. Plants bear flowers in a long spike which normally has male flowers in the upper portion and female flowers at the base. The bracts of the clusters of staminate flowers have glands at their base.

1. Inflorescence bract glands in 1–3 pairs, each gland reddish pillow-shaped, uniformly glaucous-papillate. Plant glabrous.....**H. populifolius**
- 1: Inflorescence bract glands in many (at least 4) pairs, each gland cup-shaped, with a shiny green centre and paler glaucous-papillate, usually elevated margin. Plant glabrous or puberulous**H. novo-guineensis**

Using Esser's key, examination of flowering material of all 35 collections held in the Western Australian Herbarium showed that the native plants in the Kimberley corresponded to *H. novo-guineensis*, whereas the southern weedy populations corresponded to *H. populifolius*.

Naturalising material in southern Western Australia originates from garden plants. *Homalanthus populifolius* is currently widely cultivated in Australia for its form and red coloured senescent leaves. Cultivated material mainly comes from New South Wales and Queensland, where the species is common (Forster 2002). *Homalanthus novo-guineensis* is apparently rarely grown, so this is perhaps not unexpected. Finally, *H. populifolius* is also recorded as invasive in New Zealand, Hawaii, South Africa and Sri Lanka, but there are no records of *H. novo-guineensis* behaving as a weed (Randall 2017).

References

- Airy Shaw, H.K. (1968). New or Noteworthy Species of *Homalanthus* Juss. *Kew Bulletin* 21: 409–418.
- Airy Shaw, H.K. (1981). The Euphorbiaceae of Sumatra. *Kew Bulletin* 36: 309–310.
- Council of Heads of Australasian Herbaria (2006–). *National Species List*. <https://id.biodiversity.org.au/name/apni/86360> [Accessed 25 August 2021].
- Esser, H.J. (1997). A revision of *Omalanthus* (Euphorbiaceae) in Malesia. *Blumea* 42: 421–466.
- Forster, P.I. (1994). *Omalanthus nutans* (Euphorbiaceae), the correct name for the native 'Bleeding Heart' or 'Native Poplar' of Australia. *Telopea* 6: 169–171.
- Forster, P.I. (2002). Euphorbiaceae. In: Spencer, R.D. (ed.) *Horticultural Flora of south-eastern Australia. Vol. 3. Flowering Plants. Dicotyledons, Part 2. The Identification of garden and cultivated plants*. (University of New South Wales: Press, Sydney.)

- Quattrocchi, U. (2012). *CRC World Dictionary of Medicinal and Poisonous Plants*. (CRC Press, Taylor and Francis: London.)
- Randall, R.P. (2017). *A Global Compendium of Weeds*. Third Edition. (CRC Weeds: Mount Helena, Western Australia.)
- Western Australian Herbarium (1998–). *Florabase—the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions. <http://florabase.dbca.wa.gov.au/> [Accessed 10 August 2021].

