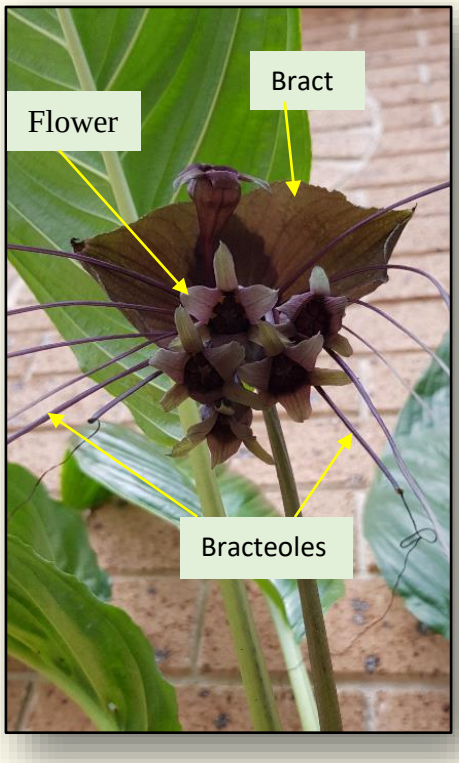
Black Bat Flower *Tacca chantrieri*

Black Bat Flower – *Tacca chantrieri*
Photo: Noel Tait

The ominous black flowers of this understorey plant from moist tropical rainforests of south-east Asia seem to be more fitting for Halloween than a cheerful floral display. *Tacca chantrieri* has an underground stem (rhizome) and broad, dark green leaves, but it is the inflorescence – the arrangement of flowers - that is most eye catching. Each inflorescence has dark, broad, wing-like *bracts* then many long whisker-like *bracteoles* beneath them. At the centre, nodules of dark, 5-petaled flowers, all contribute to the bat-like appearance of the inflorescence. The long whiskers have also spawned names such as *Devil Flower*, or *Cat Whiskers.*

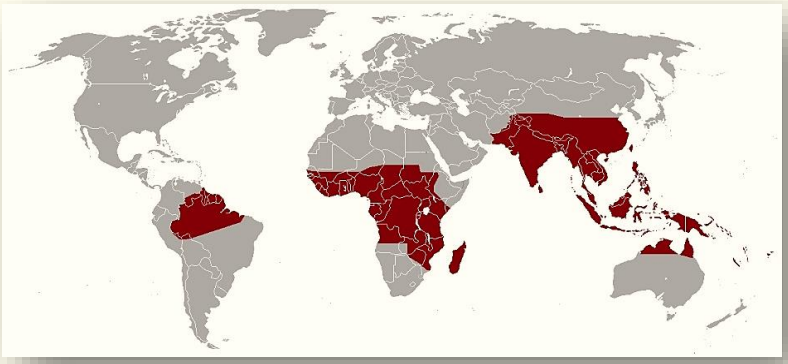
Natural distribution of Black Bat Flower, *Tacca chantrieri*, in south-east Asia.

Black, and other dark-coloured flowers typically found in tropical forests are often associated with unpleasant odours that resemble rotting flesh to attract carrion or dung flies for pollination; this is known as *sapromyiophilous* syndrome. However, the Black Bat Flower is an exception, as recent studies have shown it to be *self-pollinating* and not dependent on flies. Although flies are observed to enter the flowers, because of the lack of rewards they attempt to leave but the structure of the flowers is such that this is impossible. Hence they cannot assist in



pollination. Moreover, pollen bundles are present on flower stigmas *prior* to the flowers opening, a good indicator that flowers are self-pollinating. So why would the inflorescence no longer attract pollinators? If Bat Plants were once insect pollinated, the pollinators have long gone extinct.

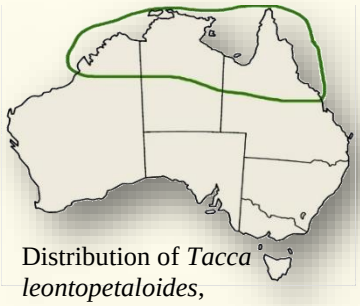
Worldwide, there are about 16 species of *Tacca* in the *Yam* family, Dioscoreaceae, including other *Bat Flowers* and *Polynesian* Arrowroot. The underground stems of Bat Flowers are tuberous rhizomes, like those of Polynesian Arrowroot, *Tacca leontopetaloides*, a plant of economic importance across the Pacific.



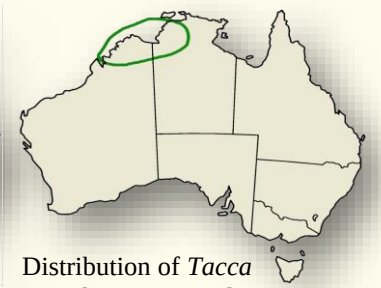
World Distribution of *Tacca* species – includes Bat Flowers and Polynesian Arrowroot. Map: Vardion, Public domain, via Wikimedia Commons.

Australia has two species of *Tacca*, *T. leontopetaloides* across northern Australia and *T. maculata*, known from northern regions of Western Australia and north-western Northern Territory, as well as Fiji and Samoa. The flowers of *T. maculata* also have the spectacular *whiskers* of the bat plants. Flowers are green on the outside, maroon inside.

Tacca maculata from northern Western Australia and the Northern Territory, Fiji and Samoa. Photo: Shib68, CC BY-SA 4.0 <https://creativecommons.org/licenses/by-sa/4.0>, via Wikimedia Commons



Distribution of *Tacca leontopetaloides*, Polynesian Arrowroot, in Australia



Distribution of *Tacca maculata* in Australia

Tacca integrifolia – **White Bat Flower** – at the Fairchild Tropical Botanic Garden, Miami, Florida, USA. Photo: *Scott from USA, CC BY 2.0 <https://creativecommons.org/licenses/by/2.0>, via Wikimedia Commons*

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Atlas of Living Australia: Distribution map, *Tacca leontopetaloides* https://biocache.ala.org.au/occurrences/search?q=lsid:https://id.biodiversity.org.au/node/apni/2895575#tab_mapView

Atlas of Living Australia: Distribution map, *Tacca maculata* https://biocache.ala.org.au/occurrences/search?q=lsid:https://id.biodiversity.org.au/node/apni/2907753#tab_mapView

University of Reading, Tropical Biodiversity. https://blogs.reading.ac.uk/tropical-biodiversity/2014/11/tacca-chantrieri/

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

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

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

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

Zhang L, Li H, Gao L, Yang J, Li D, Cannon C H, Chen J, Li Q. (2011). Phylogeny and Evolution of Bracts and Bracteoles in *Tacca* (Dioscoeaceae). *Journal of Integrative Plant Biology.* Vol. 53. No. 11. pp. 901-911.

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