

Phaius tankervilleae (?) by Jim Brydie

In the beginning, *Phaius tankervilleae* was regarded as a highly variable species that ranged from India across to China, down through all of SE Asia through Thailand, Malaysia, Indonesia, PNG, and Australia. In Australia it was thought to occur in the Northern Territory, Queensland, and down as far as northern NSW. It is essentially a swamp plant, growing among grasses and sedges in wet areas. In the north it was reported as occurring mainly on the tablelands or higher country but further south it is restricted to lowlands. It is a large plant with clustered, fleshy pseudobulbs, and big pleated leaves which are up to 1.2 metres long and about 15cm wide. The flowers are large and showy too. About 12 to 15cm across, white on the back of the segments but brownish red to cinnamon inside, with purple in the lip.



However, today's thinking (perhaps from the 'splitters'?) is that what we previously believed to be one widespread species (*tankervilleae*) is actually three or four, variable, but fairly similar species, whose ranges overlap. Among these, perhaps the most confused pair are *Phaius tankervilleae* and *Phaius wallichii*. In the Kew Bulletin on Australia, we often see *Phaius tankervilleae* reported as occurring in the wild, but there is considerable doubt over the accuracy of these reports. Concerning a plant reportedly found in the wild near Woodburn in northern NSW (over 40 years ago), the highly respected David Banks advised that he had a piece of this 'Woodburn' plant but that it actually matches *Phaius wallichii* very well. He said that it was ironic that this "one off" discovery occurred in an area that the related but different, *Phaius australis* still grows wild today, and that he understood that it was the only one of these "*tankervilleae*" (or *wallichii*) plants that has ever turned up along the east Australian coastline. He was doubtful that any real *Phaius tankervilleae*/*wallichii* ever really occurred naturally in New South Wales. In David Jones's book *Native Orchids of Australia*, he also believes that all reports of *Phaius tankervilleae* and *Phaius wallichii* in Australia are wrong.

This all leads us to the distinctions between the various species that do occur in Australia. Jones reports the Australian species as only; *Phaius amboinensis*, a white flowered species from the Northern Territory and PNG, two forms of *P. australis*, which is somewhat similar to *Phaius tankervilleae* and occurs in Qld and just down into Northern NSW, and *Phaius pictus* from Qld, which is a quite different looking brown and yellowish species that could never be confused with *Phaius tankervilleae* or *Phaius wallichii*. Reports of Australian collections of either *tankervilleae* or *wallichii* are likely to be either *Phaius australis*, or material sourced from imported plants of *Phaius tankervilleae* or *Phaius wallichii*. The Royal Horticultural Society, in I think 2005, Phillip Cribb, Mei Sun, & Gloria Barretto published an article titled "*Phaius tankervilleae* and *Phaius wallichii*, a pair of confused species" in which they give some of the relevant history and clarify the differences between the pair.

The following text is based on that article:

"... *Phaius tankervilleae* (alternately but wrongly spelt '*tankervilleae*' and '*tankervilleae*') is a well-known and widespread species but one that has caused considerable taxonomic confusion over the years. Wide-spread and variable species often acquire names from various parts of their range, that analysis of the entire variation can show to be synonyms or regional variants.

A plant of Chinese origin was first flowered and named *Limodorum tankervilleae* by Joseph Banks, a name subsequently validated by Aiton in 1795. Carl Blume transferred it to the present genus in 1856. Many authors followed Hooker (1894) in accepting a morphologically variable species for which he used the name *Phaius wallichii*, with the earlier names *Limodorum tankervilleae*, and *Phaius grandiflorus* in synonymy. *Phaius wallichii* was discovered in Sylhet (India) by Nathaniel Wallich and was described by John Lindley in 1831. Most recent authors (Kataki in 1986, Chowdhery in 1998, Pearce and Cribb 2001) have followed Seidenfaden (1986) in recognising the priority of the name *tankervilleae*. Seidenfaden recognised *tankervilleae* as a morphologically variable species distributed from India and Sri Lanka to Taiwan, the Philippines archipelago-ago, the Malaya archipelago, SW Pacific, and East Australia.

This paper originates from the discovery of two distinct, large *Phaius* species in Hong Kong. One of them which has been known for many years on Hong Kong, matches well the type material of *P. tankervilleae*, but the other, a recent discovery there, is quite distinct in its floral morphology.

The former species (i.e. *Phaius tankervilleae*) originally described from Chinese material, has sub-nutant (semi nodding) flowers with sepals and petals that are tan brown within and white outside, a trumpet shaped lip with a broad purple margin and blunt apex and a short spur (less than 9mm long).

The other (i.e., *Phaius wallichii*) has larger flowers with more spreading, ochre coloured sepals and petals and a conical, acute lip (ie pointed apex) which is predominantly white with a yellow & purple band in the throat, and a spur up to 20mm long. The latter has been referred to in Hong Kong as the “Kadoorie” *Phaius* (it was first found growing on the estate of the Kadoorie Botanical Garden in the new Territories) and clearly does not fall within the variation of *Phaius tankervilleae* as usually understood. A similar plant was illustrated in colour by Chen et al (1994). However, in its floral morphology it matches closely the species described from the Himalayas as *Phaius wallichii* and from Sri Lanka as *Phaius bicolor*.

Living plants and recently collected herbarium and spirit collections of the two Hong Kong taxa have been studied and compared with herbarium and spirit material from elsewhere in south and southeast Asia and Sri Lanka in the herbaria of Beijing, Kew, Leiden, the natural History Museum, Paris, and Singapore. In the living state and in the herbarium, two distinct taxa can be readily distinguished in southern and eastern Asia. *Phaius tankervilleae* has smaller rather pendent flowers with a blunt lip and a short spur, usually 5-6mm long.

The other species, *Phaius wallichii*, has larger flowers that are spreading rather than pendent, have an apiculate (sharp pointed) lip with a longer spur, usually 10-20mm.”

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At this point I am going to stop mentioning any species other than *Phaius australis*, *Phaius tankervilleae*, and *Phaius wallichii*. These 3 are closely related and look very similar in colour and flower form, so they are the 3 that we need to be able to separate.





So how do we tell the difference? Well for starters, *australis* flowers are a bit smaller. Generally, 10cm vs about 12-15cm for the other two, although *Phaius wallichii* is a little the larger of those two. In addition, there are differences in the spur at the back of the flowers, and simple differences in the shape of the lip, but it is the lip shape we will use here.

In *Phaius tankervilleae* and *Phaius wallichii* the side lobes of the lip curl strongly up over the column and form a relatively tight, closed tube over the column. In *australis* the side lobes do not usually curl up over the column. The gap is variable from clone to clone but only in the rarest cases will the side lobes even partly enclose the column.

To separate *Phaius tankervilleae* and *Phaius wallichii*, we look at the length of the mid lobe of the lip (i.e., the end part extending furthest out in front of the column). In *wallichii* the midlobe is large and widely flared. In *Phaius tankervilleae* it is short. The pictures above show several examples for each species. Please don't judge by the colour, that is not a factor.

The other 'variety' of *Phaius australis* is var. *bernaysii* which is much the same shape and form as variety *P. australis*, but it is a clear greenish yellow colour. Some experts regard *Phaius bernaysii* as a species in its own right. There is also a yellow form of *Phaius tankervilleae* and an albino form as well but there can be no confusion with *bernaysii* because of the lip side lobes.

Unfortunately for all of us however, because in the old days the only name anyone knew was *tankervilleae*, that was what every label read no matter what the species was. In addition, the plants being imported were almost shared, sold, and given away in Australia for such a long time, that nearly all "tankervilleae" on the market, and in collections, are probably divisions of these old "wallichii's".

Culture - *Phaius tankervilleae*, and *wallichii*, are both lovely species that grow quite well here in Sydney, although in the coldest areas they might need just a little protection in winter. The same may apply to *australis*, but for some reason I have never even seen it at meetings in Sydney so I will leave it out of my culture discussion.

In nature these species all grow as terrestrials in swampy, wet soils among grasses and low shrubs. I believe you can grow them as garden plants in soil, but I haven't tried it myself. Orchid growers usually grow it in large Cymbidium pots in various mixes. Whichever you choose, they are shade lovers (50-70%) and should stand near the ground for higher humidity. For potting I use a fine Cymbidium mix with some added peat moss, crumbled foam, and a little sand, but others recommend just a basic garden potting mix with a rich humus component. I don't think *Phaius* are all that fussy so long as you repot reasonably regularly to keep the mix fresh, and that you feed and water to their needs.

Bill Dobson, one of Sydney's best growers of all orchids advises: "In cultivation it is easy, needing a largish container as it grows, with a rich compost. Large plants only become so if ample food is available, *Phaius tankervilleae* loves food while in growth. The addition of such things as 'Blood and Bone', bone meal, chicken pellets etc., to the compost is welcome and additional feeding with such things as slow-release fertilizers and dressings of organics will assist growth. During Spring and Summer, containers should be placed in a saucer of water, so that water level is 2 to 3 inches up the pot, which approximates the natural conditions for this species. It does not grow in water, but in soil and compost just above water level when its habitat is flooded."

(Jim: I don't stand them in a saucer of water but I am a fairly heavy waterer anyway, so perhaps that compensates) certainly *Phaius wallichii*, probably just because they were more readily available. All these old plants have been divided,

These Phaius are large plants and needs to be given space. Their leaves are up to a metre long and 15cm wide at their broadest point, with a pleated surface. The inflorescence is usually up to 1.5m tall, but can be over 2m, and carries up to 20 of these amazing, stunningly coloured, big flowers. Because of the size of the leaves, if you grow them out in the garden, bugs and strong wind might be a problem with damage to the leaves. The plants make a nicer display at flowering time if they are grown in a shadehouse and the leaves kept as clean as possible.

Phaius species are soft fleshed plants that are prone to snail damage and can also be a target for aphids or scale, but not much worse than other orchids. You just need to keep an eye out for pests and take action as soon as you see a problem. They aren't supposed to be deciduous, or have a marked resting period, but in winter I cut back my water and fertiliser routines for the whole shadehouse and they don't seem to object. In fact, the spike on my plant commenced early winter and continued to develop nicely over winter.

Interestingly, it seems that *Phaius tankervilleae/wallichii* are among those orchids that can be propagated by cuttings from the flower spike. I haven't tried it myself but I have propagated *Thunia* species from stem cuttings in a similar way. An explanation of the process for *Phaius* can be found under "node culture" at the web site <http://www.orchideenvermehrung.at/english/index.htm>

It would no doubt be a slowish process and would take quite a few years to produce flowering plants of the propagated clone, but it is easily done, cheap, and can produce multiple divisions of a good one. Why not give it a try this season?

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Thanks, Jim, for clarifying a number of issues regarding Phaius orchids we see on the show benches.