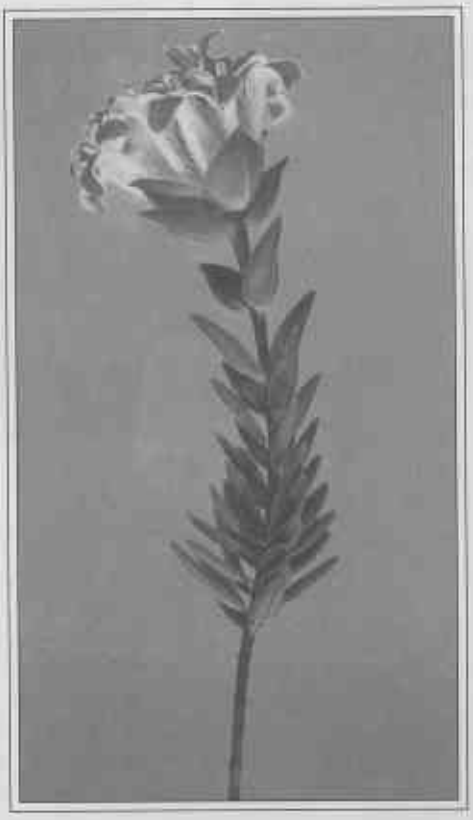
FLORA

PIMELEAS – THE ORIGINAL BANKSIAS!

Barbara Rye

PIMELEA is a genus of over 100 shrub species belonging to an almost world-wide plant group, the Daphne family (Thymelaeaceae). It has proved to be a particularly adaptable genus in Australia, extending across the full extent of the mainland and throughout Tasmania, and occupying a surprising diversity of habitats from coastal dunes to high alpine meadows. Beyond Australia, it extends south-east to Chatham Island and includes at least 17 species endemic to New Zealand. Only in some parts of the far north of mainland Australia is *Pimelea* absent, and there it is replaced by the very closely related herbaceous genus *Thecanthes*, which extends north to the Philippines.



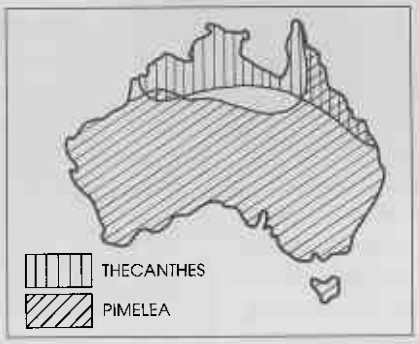
Pimelea preissii. Photo: B. Rye.

History

The genus was discovered, as least as far as European botanists were concerned, in New Zealand during Cook's second voyage of 1772–1775. The botanists who were to have accompanied Cook on this voyage, Joseph Banks and Daniel Solander, were replaced at the last moment by the German botanists Johann Forster and his son Georg. In 1775 the Forsters named the new genus they collected in New Zealand, not as *Pimelea* but as *Banksia* in honour of Sir Joseph Banks. It was only by a kind of botanical accident that the genus lost this name, as this was the earliest use of the name *Banksia* and should have been retained.

In 1782, however, Carl von Linnaeus (the younger) decided that the Forsters' *Banksia* was not sufficiently distinct to be treated as a separate genus and included its species under an African genus, *Passerina*, that had been named by his father of the same name (also considered to be the father of modern botany). At the same time the younger Linnaeus reused the name *Banksia* for a genus in the Proteaceae. This would not have been allowed under the current rules of botanical nomenclature, but the new use of the name became so well accepted that eventually, in 1940, the name *Banksia* was officially conserved for its current use.

Meanwhile a series of other generic names had been published for the Forsters' genus, with the oldest of these, *Pimelea* (1788), becoming the accepted name.



Common names and cultivation

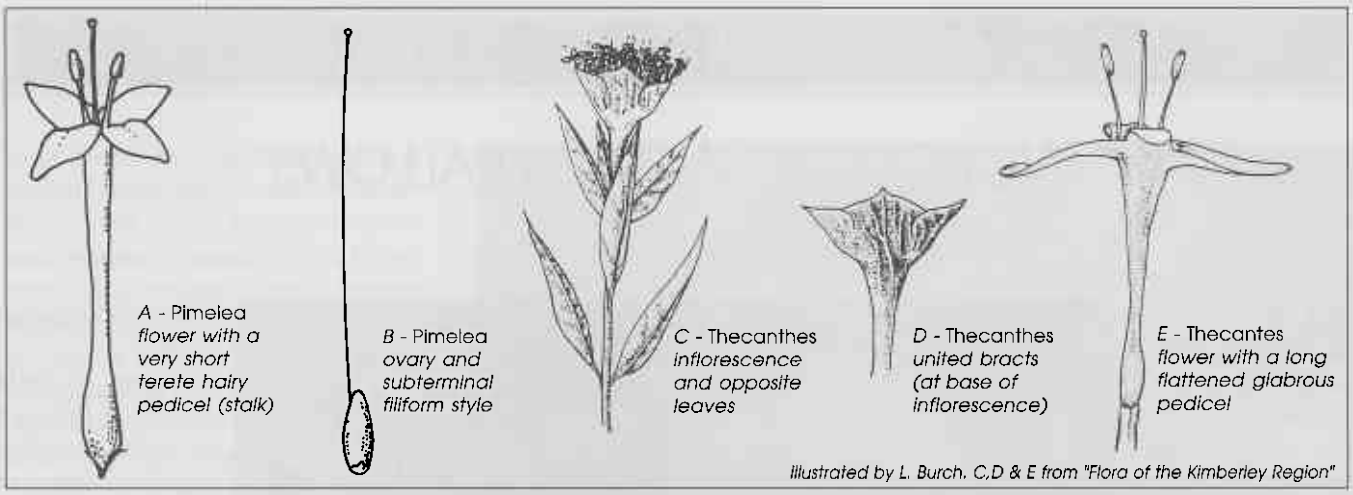
In South Australia and the eastern states of Australia, pimeleas are commonly known as riceflowers. Western Australian pimeleas are more commonly known by Aboriginal names. An example is the Bunjong, which is well-named botanically as *Pimelea spectabilis* since its particularly large inflorescences of very long flowers are among the most spectacular in the genus. Two other Western Australian species, Rose Banjine (*Pimelea rosea*) and Coastal Banjine (*Pimelea ferruginea*), both with beautiful deep pink flowers, have become well known horticulturally. The latter, in particular, is widely cultivated, and is prized for its natural domed shape that could only be achieved in most shrubs by careful pruning.

Economic importance

One characteristic of members of the family Thymelaeaceae is their very stringy bark which has been widely used by indigenous peoples in Australia and other parts of the world for string-making. In Western Australia, the reported Aboriginal uses of this fibre include fishing lines and fine-meshed nets.

One of the most widespread species, *Pimelea microcephala*, also appears to have been one of the most useful (see "Useful Bush Plants." by P. Bindon). It was known in the Murchison area of Western Australia by the Aboriginal name Gundagarrie and is known in other States as Mallee Riceflower. This is one of the relatively few species to have berries; most pimeleas have a dry fruit. In addition to its sweet edible berries and use for string-making, Gundagarrie can also be used for relieving throat and chest complaints with a drink produced from its root bark.

The vegetative parts of *Pimelea* species may commonly be toxic, as at least 13 species have been reported to cause stock poisoning.



Illustrated by L. Burch. C,D & E from "Flora of the Kimberley Region"

Characteristics and pollination

Pimeleas are nearly all shrubs, ranging from prostrate to tall, with the largest Western Australian species *P. lanata*, which is associated with swamps in the far south-west, being up to 4 m high. Apart from the stringy bark already mentioned, the genus is characterised by having tubular flowers massed into heads or more cylindrical inflorescences, a slender floral tube swollen at the base around a 1-celled superior ovary and topped by four petal-like lobes, a slender subterminal style and an indehiscent 1-seeded fruit. Most of the larger-flowered species are evidently adapted for pollination by butterflies and moths, as only insects with a long slender proboscis can reach the nectar present in the swollen base of the floral tube. Few, if any, other Australian genera have shown such a great development of butterfly-pollinated species as *Pimelea*. Even the small-flowered species attract small species of moths and butterflies, although in this case other small insects such as bees and flies may possibly have a greater importance as their pollinators.

The single exception to the insect-pollinated rule in *Pimelea* is the spectacular Qualup Bell. Some of the larger-flowered species of *Pimelea*, particularly in Western Australia, have large colourful bracts surrounding a large pendulous flower head. This has been carried to its extreme in the Qualup Bell, which closely resembles the Mountain Bell species found in an unrelated genus *Darwinia* of the Myrtle family (Myrtaceae). Like the Mountain Bells, the Qualup Bell is bird-pollinated. Alone among the pimeleas, this species has a broadened floral tube allowing easier access to the nectar, and extremely long stamens and style that would reach the feathers on the bird's face or head when it is feeding, and so allow pollen to be transferred between flowers.

Pimelea and its close relative *Thecanthes* are readily distinguished from all other members of their family by having only two stamens. One of the Tasmanian species of *Pimelea* has undergone a further reduction to only one stamen per flower. These low stamen numbers, when combined with the other floral characteristics described earlier, also distinguish the two genera from all other Australian plant groups.

Thecanthes differs from *Pimelea* in being a small tropical genus of herbs, its almost complete lack of hairs and its unique inflorescence, which has four large bracts

Pimelea spectabilis. Photo:B.Rye.

united together with the long flattened pedicels (stalks) of the flowers into a broad basal tube. In *Pimelea* simple hairs are present in nearly all species, although sometimes only in obscure locations such as the leaf axils or the inside of the floral tube. The *Pimelea* inflorescence is commonly subtended by two to numerous bracts but these are free from one another as well as from the short terete pedicels of the flowers. Flower colour in *Thecanthes* varies from white through to bright or deep red. Red is a rare colour among pimeleas, which mostly have white, pink or yellow flowers.

Conservation

Most species of *Pimelea* and *Thecanthes* are attractive and reasonably conspicuous plants that have consequently been well collected and well documented. In Western Australia most of the recognised species had been collected by 1900 and all of them by 1985. Fortunately, few are considered to be endangered. Even the somewhat elusive *Pimelea rara*, which was feared to be extinct since it had not been collected for over 80 years, is now known to be common! Its long period of 'disappearance' was due to a combination of its summer flowering time, its relatively diffuse low-growing habit hidden amongst dense shrubbery and its relatively sparse flowering pattern.

Barbara Rye is a botanist at the Western Australian Herbarium. Some of the plant groups she specialises in are the Lamiaceae, Myrtaceae, Proteaceae, Rhamnaceae and Thymelaeaceae. She can be contacted by phone on 9334 0141.