

Western Australia is world renowned for its extraordinary plant species diversity. Well over 11,500 native plant species have been recorded in the State, and this number continues to increase as more species are found and named every year.

Sometimes this happens when an already described species is split into several new species. This can occur when new specimens are discovered with morphological variation, or powerful new genetic tools reveal patterns of variation previously unknown. Combining genetic data with traditional morphological studies is increasingly resulting in new species being named.

In Western Australia, species completely new to science are still being found, even in places that are highly visited and plant diversity well documented. Sometimes a 'discovery' takes the right person to notice a plant looks different or is well outside its typical area of occurrence.

One such example is a plant previously unknown to science, but long known to the local farming family as 'penny bush' because of its small coin shaped leaves. In February 2020, Parks and Wildlife Service Conservation Officer Andrew Webb was surveying typical Jarrah bushland to the south-east of Collie when he found a small tree previously only known from hundreds of kilometres away, near Augusta and Mount Barker—*Lambertia orbifolia*. The species has orange-red tubular shaped flowers that give the species the common name of 'honeysuckle'. Taxonomic work in the late 1990s noted small morphological and significant genetic differences between the geographically isolated Augusta and Mt Barker populations and consequently recognised two informal subspecies—subsp. Scott River Plains (a.k.a. Scott River honeysuckle) at Augusta and subsp. *orbifolia* (a.k.a. round-leaf honeysuckle) at Mt Barker. Both subspecies had small plant numbers and were under threat from *Phytophthora*



Penny-leaved honeysuckle (*Lambertia orbifolia* subsp. *pecuniosa*)

dieback, so were subsequently conservation listed as threatened.

The new plants near Collie had features that were intermediate to both subspecies. This led to studies that combined morphological and genetic assessments to determine which subspecies the new Collie plants should be assigned to, whilst at the same time formally naming the known subspecies. A genetic study used microsatellite markers to look for patterns in genetic diversity between plants at the different locations. Simultaneously, flower, leaf and branch features were assessed for morphological features that differentiated the subspecies.

The team from the WA Herbarium, led by taxonomist Juliet Wege, found differences in the curvature of flower bracts, and number and length of hairs on the flowers and branchlets that differentiated the plants from the three different locations. The genetic data showed the same pattern of clear

differentiation between the three locations. The study confirmed the Collie plants were actually a new subspecies and it was named *Lambertia orbifolia* subsp. *pecuniosa*, with its scientific name (meaning moneyed, rich, wealthy) referencing the common name, penny bush, used by the local farmers. The subspecies near Augusta was also formally named as *Lambertia orbifolia* subsp. *vespera* (which references its location as the westernmost subspecies).

The discovery of *Lambertia orbifolia* near Collie was significant, as it considerably increased understanding of the species' distribution, prompted a finalisation of the species taxonomy and showed that even in well surveyed areas, small trees previously unknown to science can still be found.

Above Penny-leaved honeysuckle
(*Lambertia orbifolia* subsp. *pecuniosa*).
Photo – Leonie Monks/DBCA