

New and Novel Temperate Legumes for Ornamental and Landscape Horticulture

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INTRODUCTION

The Leguminosae is one of the largest plant families, and the source of many valuable food, fodder, grazing, and ornamental plants. Most of us when we think of legumes, focus quickly on food, that is peas and beans, or on fodder, that is lucerne or clover, and those of us who are also gardeners, certainly know of lupins and sweet peas.

However, there are a number of little-known, or completely new, leguminous species which possess attributes that lend them to broader horticultural application. There are also wider benefits in growing legumes. Not only do the majority have attractive flowers and foliage, but they are also soil enrichers via their symbiotic relationship with nitrogen-forming bacteria, known as rhizobia. This symbiosis is particularly valuable when we use annual plants as green manure, a fertility-building system that works equally as well in the ornamental garden as in the vegetable garden. This ability to fix nitrogen is particularly useful when legumes are used to restore fertility back into virtually sterile sites, for example, new road embankments, mine spoil sites, or to the patient and forward-thinking home gardener, when cover is needed in a new home site. The principal genera and species are:

Dorycnium. A small genus of three species from the western Mediterranean, two have high potential as ornamentals and as landscape repairers. *Dorycnium hirsutum*, often known as, hairy canary clover, is a particularly attractive small shrub grown to 1 metre high and across. It has a very long flowering period with the pink-white flowers evident over the grey foliage for more than 6 months. It does particularly well on dry, acid soils. *Dorycnium pentaphyllum* is of a similar size but with finer foliage, small white flowers, and a preference for soils with high lime levels. Both are excellent bee-attracting plants.

Lathyrus. A large genus with species occurring naturally on every continent except Australia. One of the most familiar species is *L. latifolius*, the perennial pea, in its many forms. It is an excellent plant for covering an unsightly fence, or as a spill-over on an embankment. It has a short but spectacular flowering period of approximately 3 weeks in mid-summer. A more appealing plant which fills the same niche, but flowering for at least 6 weeks is *L. longifolius*. Coming from the drier parts of the Balkans, it is cold hardy enough to be grown throughout temperate Australia, and has no specific soil requirements. The highly ornamental flowers are in dense heads, magenta pink in colour, and held high above the foliage.

Originating also from southeast Europe, *L. digitatus* is particularly useful for well-drained, limestone-based soils. A herbaceous, long-lived perennial, with a long flowering period over late spring and early summer, the two-toned purple and white flowers are well displayed. Judging from its origin, it would be cold hardy

throughout Australia and it can stand quite long periods of summer dryness. It has potential both as a garden plant and a pot or tub specimen.

In the mountains of central Asia *L. mulkak*, a herbaceous perennial, is found on dry, rocky limestone-derived soils. It is a rare plant in its native habitat owing to its palatability to livestock. Seed has only become available in the last few years. The striking features of this somewhat sprawling plant are the very large two-toned red flowers and the long flowering period over the summer months.

The newly discovered annual *L. belininsis* is the closest relative of the well known sweet pea. It was found in a remote mountainous region of southern Turkey where it occurs, like most members of the genus, on limestone-derived soils. The bright yellow and red flowers are unusual in that they are highly scented, a characteristic shared only with the sweet pea from the genus *Lathyrus*. It is quick growing, tolerating very cold winters and flowering in the late spring. This species is attractive in its present form but clearly a combination of both perfume, and yellow flowers would surely encourage the plant breeders to produce even more exciting characteristics.

Lupinus. A very large genus with virtually all the species having ornamental potential coming from the Americas. Many are dwarf, caespitose perennials, adapted to very well-drained soils and an alpine dry atmosphere, and as such have little to offer the general gardener. However, a small number are particularly showy and have already proven themselves in cultivation.

Lupinus rivularis is a small shrub growing to just under 1 m high. It is evergreen in Tasmania and maintains a neat appearance throughout the year. The showy purple-blue and white flowers are produced throughout the summer months with an occasional second blooming in the late autumn. This lupin is not specific in its soil requirements and is surprisingly drought tolerant. It would fit comfortably into a mixed garden bed.

Lupinus sp. aff *caudatus* is a small shrubby species growing up to 60 cm, but with flower spikes attaining a metre in height. It flowers profusely in early spring, when there is little colour around and the mauve blooms are spectacular. Coming from northern California it is quite hardy in temperate Australia, a period of heavy frosts assists the species reaching its full flowering potential. Seemingly indifferent to soils, it has grown and tolerates dry conditions.

Another as yet unnamed species is *L. sp. aff mutabilis* collected in the Andes mountains of Ecuador. It is a fast-growing annual or short-lived perennial growing to a height of approximately 1.5 m on a single stem. The flowers appear in mid-spring and continue on until mid-autumn, although in warmer areas it may flower continuously. The blooms are large and showy—blue, white and yellow in colour—and produce an agreeable perfume. Its main use is likely to be where there is a need for a quick-growing shrub that can also double as a fertility builder. It is surprisingly frost tolerant considering its origin.

Lupinus littoralis is another tidy evergreen shrub, growing to 1.5 m. It is native to the coastal areas of California and Oregon where it grows profusely on exposed sand dunes. Attractive in bloom, with numerous small flowers (for a lupin), the blue colour stands out against the deep green foliage. Whilst it may well find a place in gardens, especially those with sandy soils that dry out rapidly, its greatest use is likely to be in stabilising coastal dunes where it will be used as a fertility restorer.

Lupinus varicolor is well named; a mixture of red, pink, and yellow flowers all produced on the same plant. The growth is semi-decumbent to prostrate spreading to approximately 1 m. Originating in the near coastal areas of California it will probably prove to be hardy throughout temperate Australia.

Lupinus leucophyllus could be grown for its downy grey foliage alone, but with its long spikes of light purple flowers it makes a most attractive addition to the spring garden. It does require a dry position in the garden, well drained, and with no hint of waterlogging, no doubt reflecting its origins from the semi-arid region of northern California. It has proved to be very cold tolerant in Tasmania.

Parochetus. *Parochetus communis*, shamrock pea, is probably a native of the high mountains of east Africa. It has been known in cultivation for a long time, but like many such plants is tender in the major gardening areas of Europe and North America. Unlike many other legumes it thrives in damp, shady situations and provides quite an adequate ground cover, spreading quickly by surface stolons. It is quite spectacular as a hanging basket subject or even as a potted house plant, with a combination of trailing stems and deep blue flowers over a long period. It is surprisingly cold tolerant in Australia withstanding temperatures as low as -8C. It has the further advantage of being easily propagated vegetatively.

Trifolium. A genus better known for its contribution to feeding livestock rather than its ability to provide ornamental horticultural plants. Nevertheless many of the species are known for their attractive flowers produced over a long period of time. *Trifolium burchellianum* is found in many forms, from the sub-alpine zone of the East African mountains to the warm temperate woodlands of South Africa. The flowers have been described as miniature pom-pom dahlias, and the two-tone purple and white blossoms are produced in abundance during both the spring and the autumn. The plant is naturally a dense ground cover, but its greatest use is likely to be in pots to which it is very well adapted. Easily propagated from both seeds and runners it has clearly demonstrated horticultural potential.

Trifolium alpestre is well known as an alpine garden plant in Europe. It is a herbaceous perennial, spreading from rhizomes to eventually form a dense mat. It is probably suited to only the coldest areas in Australia, and prefers a high level of summer moisture. The bright red flowers appear very early in the spring and continue to appear well into the summer. Ideally suited to both pot culture and garden it can be readily propagated vegetatively.

Trifolium decorum is found naturally on the highest mountains of Ethiopia, where it grows on some very infertile soils. A short-lived perennial, it is ideally suited to pot culture in cold areas but would probably adapt quite well to areas that suffer only light frosts. The flowering period starts in the spring and finishes in autumn, with the red and pink flowers held well above the foliage. Unfortunately it is a poor seed producer and probably requires a high bee population in order to ensure seed set.

There are many species of legumes that remain to be brought into general horticulture, some still await discovery, others only needing recognition from within the industry. As their many valuable characteristics become known, the potential exists for a much greater use of leguminous plants in ornamental and landscape horticulture.