

Before the advent of tissue culture, a number of new breaks were achieved by using various techniques such as x-rays. This method produced 'Flamboyant', which presumably has damaged genes. The juvenile plant exhibits three or four colours in every leaf. As the plant matures, three or four years later, these multiple variations disappear and the leaves end up with merely a wide cream margin. Not unpleasing but not the original 'Flamboyant'. The mature form has been given the new name of 'Shade Fanfare'. This raises problems with the Trade Descriptions Act if the plant is not carefully described at the point of sale.

It may be tempting to buy in all these new cultivars as soon as they appear, but do not let us forget that they are bred primarily for heavily shaded American gardens where the climate and more particularly the intensity of sunlight, is quite different from our own.

Hostas are wonderful foliage plants and in the end it is their shape, poise, and bearing rather than a complex variegation which singles them out as aristocrats.

PRIMULAS

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Introduction to the genus. Primulas are a vast genus, covering the whole of the northern hemisphere. We grow somewhere in the region of 300 different species, cultivars and hybrids, an indication of how freely primulas hybridise. If you get primulas of the same section, such as the candelabra section, together you end up with hybrids. At the nursery we plant the different cultivars well away from each other to prevent crossing and untrues. Primuls are so notorious, that if you get seed from seed exchanges you should actually check to see if it is true-to-type. Primulas crop up in many different places—parks, bedding polyanths, pot primroses for Mothering Sunday, the lovely wild birds-eye primroses of the north of England and Scotland, and, further, North America.

Primulas start to flower as early as January. One of the first we have on the nursery is a form of *Primula megasaeafolia* collected recently by George Smith. It has large, deep magenta flowers, and comes from Turkey. Previously this species has been found to almost defoliate in winter and looks extremely scruffy, this is a much better collected form we got hold of last year and are now building up stocks. It flowers continuously from January through to March and in addition has super rounded leaves.

Primula bhutanica 'Franklin form' is an extremely vigorous form of *P. bhutanica*, a species from the petiolaris section of primulas. Growing the petiolaris primulas is almost impossible in the south of England because of the low rainfall but in the north the rainfall is sufficient for their needs. In the wild these grow almost behind waterfalls where there is a constant moist atmosphere and they never dry out.

Primula gracilipes, also in the petiolaris section is again one of the first to flower, you can often have it in flower for Christmas day and it will go right through until about the end of April. It is practically the far eastern version of our primrose, with lovely tight clusters of flowers—up to 100 flowers in each rosette. To keep these in healthy growth you have to divide them, and it is important to stress this to customers. This should be done at least every other year, from September when the nights are cooler, then they grow away really well. After splitting them up, put them into a closed frame for two or three weeks. By then they have taken root into the new compost and will carry on growing right through the winter.

Another group of primulas making a marvelous show in spring are the European primulas. These have given rise to many hybrids in cultivation, and lots of wild hybrids. George Smith has collected some lovely wild forms from the Alps but there are also some extremely good forms in cultivation from garden raising, collectively known as the *Primula* × *pubescens*.

Primula marginata, which has predominantly farina-covered foliage with a saw edge and purple blue flowers also comes in various different forms, a very dark form of this being Pritchards variety. Holdens variety, raised by my predecessor at the nursery, has very deep tooth serrations. A tremendous amount of variation can occur within that single species without any hybridisation at all. These propagate quite freely but it is essential to ensure stock plants are true-to-name because they are divided in summer when there is no flower. We ensure each plant is labelled and after about three years we scrap the stock plant and bring young stock in from the young stock frames to get new stock plants. This keeps vigour in the stock all the time because if you keep splitting up the same plants you tend to lose vigour quite readily.

You do have to watch out for virus. One of the most susceptible primulas is *P. × pubescens* 'Beverly White'. Most of the others tend to stay quite clean.

We have just got stock of one of the *P. allionii* hybrids, 'Margaret', a fairly new one to me, although it got an RHS Award of Merit in the early 1960's. It is a *P. allionii* cross with *P. × pubescens* and a really dwarf compact cultivar with a lovely white eye.

Another super one is called *P. 'Beatrice Wooster'*, *P. allionii* crossed with *P. 'Linda Pope'* *P. marginata* hybrid. It is a prolific hybrid with quite a tooth edge to the leaf but no farina and is quite

freely available in the alpine trade. These are best grown as pan plants in the alpine house. Once they have finished flowering they can be put out in the weather. Plenty of rain doesn't hurt them but to keep the flower in top condition give them cover in the early part of the year to preserve the condition of the leaves with the farinaceous types. The wild form of *P. auricula*, as it occurs in the Alps, has a small white eye in the centre of the flower, and a very sweet scent which has been passed on to the many hybrids that have been raised over the last 100 to 150 years.

P. marginata, has beautiful farinaceous foliage, especially if it is given cover during the first months of the year. *P. marginata* 'Coerulea' is a pale blue version, with lovely tothing to the foliage. It goes down to dormant resting buds in winter and then emerges around the end of February or early March. The rootstock is quite woody, and in the wild they tend to grow in crevices in cliffs where the woody stems will grow almost a foot in length, with quite a woody base. These can be cut back for propagation purposes and we sometimes just chop back the tops to use as cuttings or divide and take away base offsets that have already rooted. These cut back stems will readily re-shoot.

There are many hybrids around in cultivation now and tissue culture has made a lot of scarce old cultivars, which are very shy to throw offsets naturally, much more freely available.

'Mohave' is a lovely one with beautiful farina-covered foliage, a clear white ring of paste in the centre. Another which is extremely well named is 'Neat and Tidy', again with a lovely clear eye in the centre of a very dark coloured flower and the foliage is very white.

'Greta', is one of the green-edged cultivars. Some of the green-edged types tend to hold the petal flat back so you can see the green margins; some of them, like 'Greta', tend to curl inwards.

The farinosa section includes *P. elliptica*. It is quite an early flowering one, early April, and sets a large amount of seed. On the nursery we never seem to be able to catch the seed on time and have to collect seedlings from around the parent plant. Seeds germinate quite freely in this situation.

If you sow primula seed the worst thing to do is give it heat. Sow as early in the year as possible in cool conditions and the minute germination takes place take off any glass cover.

The candelabra primulas cover a vast range of different species and hybrids, naturally occurring ones as well as cultivated types. *P. helodoxa* is a very bright yellow species, with whirls of flower all the way up the stem. It hybridises quite freely if not kept in isolation. Candelabra primulas need ample moisture with stream side or bog garden conditions. *P. poissonii* is one of the latest types of the candelabras to flower, going right into June and early July and growing up to 60 cm or even 90 cm tall.

One of the hybrids that has to be propagated vegetatively rather than from seed is the Inverewe hybrid, a lovely deep fiery red. It will not come true from seed so you have to propagate by division.

Among the bell group of primulas is the sikkimensis section, including *P. sikkimensis* itself. 'Tilmans No. 2' is the seed strain, very sweetly scented with quite a delicate slender stem but quite a tough little primula in its own right and a lovely deep yellow flower.

P. vialii, the red hot poker primula, is lovely with a graceful flower spike, purple flower buds and pink flowers.

P. capitata is a later flowering one, often going on into the autumn. It has lovely farina during winter on the evergreen rosettes. Recently collected by Peter Cullinton at Ness Botanic Garden, Cheshire, is *P. capitata crispata* which holds its flowers all to one side of the head and has much deeper colouring.

P. florindae is one of the last primulas to flower. Colours are lovely deep reds and oranges, and scent is very spicy. It is very strong growing, with cabbagey leaves, and grows to a height of 1.0m or even 1.3m tall.

Production. We sow the seed in small quantities, because primulas germinate very readily indeed, and the minute they are large enough to prick out we take the lights out and get them into seed trays. The thing is not to have any check in growth.

A frame full of seedlings pricked out in early July takes about two months before foliage completely covers the boxes and they are ready for potting for flowering the following spring. The plants are grown fairly open; we try to cover them as little as possible although the early flowering ones are given cover during the winter. They should still be well ventilated except in the most extreme frosty conditions. They will tolerate anything down to -20°C quite easily.

We have done *P. oriator* from micropropagation but growth is very weak. But another type that we do from micropropagation are the double-flowered primroses which flower at various times of the year and make acceptable and vigorous plants.

Seed collecting should be done with the seed heads just ready for bursting. The only one that we actually sow green is the petiolaris primulas—if we collect the seeds; we sow them immediately the day we get them, since they do not store well at all.

Stock plants. Everything is grown in pots and repotted about every other year to keep them in good health. At the same time an insecticide is incorporated to control vine weevil. A drench had been used for the last couple of years but we found this quite ineffective. Aldrin is now the only treatment recommended by the Ministry of Agriculture because drenches seem to be no good at all. We are going back to using compost incorporation of Aldrin. It will last for about three years and gives quite good protection.