

CULTIVATING ERYTHRONIUMS

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A fact of life unlikely to change in the near future is that it is difficult to get hold of many of the species and varieties of *Erythronium*; when you do find them, they are going to be expensive. The way I have built up our collection is to raise the majority from seed, only reverting to buying bulbs when I want a particular cultivar or a difficult-to-get species, and then my first task is to get it into flower and get a crop of seed from it.

I collect most of our own seed when it ripens in June or July, unless in one of the beds under large rhododendrons where I want the plants to self-sow and naturalise. When I was first interested in rock gardening and visited some of the better established gardens of those days, how impressed I was at plants' self-seeding all around. I used to wonder why this did not happen in our garden until I realised that I was collecting all the seed either to sow in pots or for the SRGC Seed Exchange. The answer was blindingly obvious! So it is with many of the other challenges we face when cultivating plants: as gardeners we have to learn to think laterally and observe our plants carefully.

I mostly collect the *Erythronium* seeds by cutting the stem complete with seed heads just as the first ones have opened; even though others may still be green, the seed is fully formed. I put them upside down in paper bags in a shaded shed without high temperature swings. Why don't I copy Nature and sow them immediately they are ripe? Well, thinking laterally, I am copying Nature: in the wild the splitting capsule sheds seed into a climate it has evolved to cope with – generally a hot dry summer. The summer in north-east Scotland is often cool and wet, and seeds sown into pots left outside are subjected to many bacterial and fungal rots. I have experimented and get far better results by storing the seeds in paper bags through the summer. Seed shed naturally into the garden



Dry stored seed



Soaked seed

beds germinates well enough and we have a good population coming along but there are two points to be aware of. First, conditions in an open well-drained bed under trees and rhododendrons are very different to a plastic pot and, second, because large quantities of seeds shed onto this bed, we are less aware of the low germination rates than when we sow them in pots with high expectations of germination.

Having stored the seed over the summer it is best to sow it in September or October, first soaking it for a day in a little water to rehydrate it – it is amazing how it plumps up and gives a better rate of germination in the first spring.

Seed from a seed exchange or specialist seed merchant may arrive as late as February but, as soon as possible, I go through the same process of soaking and sowing. Although I have written a lot about sowing certain types of bulb seed at depth for best results, *Erythronium* seed should be sown on the surface and only covered with a few centimetres of gravel. Sowing *Erythronium* deeper than this, I have had little or no germination and I wonder if the seed requires light to germinate. Thinking about how seed is shed and distributed in the wild gives us the biggest clue as to whether to sow on the surface or at depth. As the capsule dries, it splits towards the top, the dry stem becomes rigid and springs back quickly to its upright position when bent by wind or animals, catapulting out the seed nearest the top. Unlike *Narcissus* or *Crocus*, *Erythronium* seed has no sweet attachment to encourage insects, so its distribution is limited by the catapult distance. I have measured it: 2 metres is typical so, if we take five years for the seed to germinate and flower before it sheds its seed another 2 metres, we can see it would take about 2500 years for the plant to extend its range by 1 km even in



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- favourable conditions. Geographical barriers such as rivers would also constrain the spread of a plant with such a limited method of distribution. These factors go a long way to explaining why so many *Erythronium* species have such restricted distributions in the wild, even without considering habitat and climate.

I use our standard well-drained compost of two parts loam, one part leaf mould and two parts 6 mm grit, with a scattering of bone meal to provide some slow-release nitrogen. I fill the pot to about 2 cm from the top, scatter the seed and then top the pot with 6 mm grit before placing it on a sand bed in a plunge open to all weather through the winter. I only place a cover over it when bad weather and snow arrive in the spring and if the seed has started to germinate.

When the seed germinates it puts down a root and sends up its first leaf, then a stem-like structure pushes down into the compost and the young bulb forms towards the bottom of this structure. Do not repot the seedlings until after their second year of growth at least, by which time they will have taken themselves even deeper. Because they are still extending into the compost, the bulbs will often be very long, narrow and delicate structures so handle them with great care. If you break one - almost inevitable when handling many - plant both bits and at least one will grow on. The bulbs like to be planted deeply, so I prefer a range of plastic pots that are 12 cm deep. Even with these deeper pots some species of *Erythronium* try to escape through the bottom in their second year.

I generally repot at the end of the third year, by which time the bulbs are all at the bottom and of a good size to handle. At this stage I have two options: plant directly into the garden; or repot into fresh compost. The large number of bulbs we grow in pots means we sometimes run out of time and delay repotting some erythroniums until they have reached flowering size - this can take five to seven years. It is not until year three that any leaf patterning appears on species that display such a feature; the true extent of leaf markings will not develop until the bulbs are five years old. Exceptionally, first flowers may appear as early as the third year but very few will reward you this quickly; a good target is flowering-sized bulbs in five to seven years.

Bulb Increase

Although some *Erythronium* species, like *E. tuolumnense*, increase well vegetatively, the majority



Clump-forming bulbs

increases only slowly in this way and some never split. The other extreme is found in some species from eastern America, such as *E. americanum*, which reproduce by sending out stolons on whose ends a new small bulb forms. It can be a problem that some of these plants concentrate energy on the emission of stolons and form very few flowering-sized bulbs. There are many tales of how to prevent this behaviour - such as burying them deep or placing a stone underneath to keep them shallow - none offers helpful advice. Some forms produce a good flower display every year and others produce masses of single leaves with only an occasional flower. Plant them into a bed of good well-drained humus-rich compost, preferably fortified with well-rotted farmyard manure, leaf mould or both, and you stand the best chance of getting these reluctant forms into flower. *Erythronium* 'White Beauty' is one of the most reliable in division, single bulbs producing up to five offsets in a year. This results in two, occasionally three, flowering-sized bulbs and the others will flower after one year. Clump-forming erythroniums are best divided every three to five years to prevent the congestion which may reduce the number of flowers.

New offset bulbs form in two ways: the largest bulbs form where the roots emerge at the base of the old stem; smaller offset bulbs sometimes occur further up the stem when growing conditions are favourable, the old bulb usually being used up.

In *Erythronium dens-canis*, its relatives and a few western North American species such as *Erythronium montanum*, the old bulbs do not



Chains on *E. dens-canis* bulbs



E. dens-canis chain split into links