

disappear completely but leave a small remnant attached to the base of the new one. After some years you may find a chain of these past years' bulbs.

As long as these chains are attached to the main bulb they remain dormant but, if you remove them, split them into individual links and grow on as a normal bulb; each forms at least one new bulb.

## Growing in pots

Once bulbs are mature they may still be grown in pots, provided you keep them cool in the summer. *Erythroniums* tolerate dry periods during dormancy but respond very badly to being too hot and they hate to be out of the soil for long. This comes as no surprise when considering the depth that the bulbs reach in both the wild and the garden; they are going down to a more stable layer that does not heat up much in summer. I like to repot mature bulbs every second year to get them into fresh compost and to prevent their escape through the drainage holes into the sand plunge below.

On first lifting a pot from the sand plunge, I look at the bottom to see if any bulbs are sticking out and then I probe the sand below to seek those that have already escaped. I must mention some disagreement as to whether *Erythronium* is a bulb or a corm: because it displays properties of both, I think it is 'in-between' but I continue to call it a bulb for the purposes of this article. It renews itself every year and sometimes a new bulb forms half-in and half-out of the pot; it is fatter both sides of the hole and is impossible to pull out without breaking the bulb or carefully cutting the pot open. However, at least one of the bits - if planted - will grow.

I also use 29 cm deep polystyrene boxes, carved and painted to resemble troughs, to grow *erythroniums*, especially clump-forming ones whose rate of increase I maximise by annual splitting. Should I have a lot of seed of any one species I sow it directly into one of these deep



Chains on *E. dens-canis* bulbs



Bulb escaping through bottom



Mesh basket

most bulbs that is; a few always try to escape downwards through even the smallest mesh holes (1 mm). I have a large number of baskets filled with my standard compost - as above - and sunk in plunges. This makes it very easy to lift and repot, ideally every two years but - more realistically - every three or four years. When repotting, rather than replacing the compost completely, I often refresh it by adding one fifth by volume of leaf mould and a small amount of bone meal, mixing it well. I prefer leaf mould to peat because it is full of nutrients and trace elements whereas peat is not only pretty inert but seems to be actively disliked by some *Erythronium* species.

All our erythroniums in pots or baskets are left open for most of the year. I only cover them early in the year when they are starting to germinate and - for some of the rarer flowering bulbs - when in flower. A simple cover about 1 metre above the flowering bulbs greatly improves the pollination and gives a better seed set.

In years when we do not get round to repotting I scatter some bone meal over the pots and baskets in the late autumn and water in a sprinkle of sulphate of potash when the flowers fade in the spring.

boxes to grow until the bulbs reach flowering size.

## Mesh Baskets

My favoured containers for growing erythroniums are the deepest mesh pond baskets that I can find. These baskets are made for aquatic plants, with a very fine mesh that allows roots and moisture through but retains the bulbs. Well,



Mesh baskets in sand plunge





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## Growing in the Garden

We are lucky to have the best conditions for planting erythroniums straight into the garden. Our well-drained sandy loam sits over granitic (slightly acid) rock and over the years we have added a deal of organic matter, mostly compost from shredded prunings, hedge trimmings and, of course, leaf mould. Our moderate climate, with summer temperatures rarely reaching the mid twenties, an all-time record of 29.4°C in 2006, an average winter temperature not much below -10°C, along with average rainfall of about 1000 mm, makes for good growing conditions. You should plant bulbs of the western North American species at a good depth, covering them at least 10-15 cm; the eastern North American species such as *E. albidum* and *E. americanum*, or the Eurasian bulbs related to *E. dens-canis*, need not be planted quite so deeply - 7 to 8 cm will suffice.

Our bulbs are planted to good effect in full sun or in shade. In the North of Scotland there is little need to protect from the sun but the one thing they do not like is wind. Even a mild but gusty day may devastate many of their leaves which, like those of many *Trillium* species, do not cope well with gusty conditions.

After a number of years, clump-forming species and hybrids need lifting and splitting as the amount of flowers starts to drop off from the intense competition. I am always amazed at how many bulbs of the likes of *Erythronium* 'White Beauty' or *E. tuolumnense* you get from splitting a clump; I only wish that all erythroniums would increase themselves so readily. The best time to dig and divide a clump is as the leaves start to turn yellow, when the stems will guide you down to the bulbs. Where possible, dig a deep hole at least 30 cm deep close to the clump, carefully excavate sideways towards it until finding a bulb indicates that you are deep enough to get a spade or fork underneath to prise out the bulbs. Once lifted, it is easy to separate them and replant in several

groups. I always work compost or leaf mould into the holes before replanting.

Unfortunately, not all erythroniums increase quickly. We have species that have not multiplied vegetatively in 15 years; this is why a good seed set is so important. One of the main reasons I raise so many from seed is my hope of a clump-forming clone of some of the species that make offsets so reluctantly. I have had some success with *Erythronium revolutum* but, unfortunately, forms that increase vegetatively do not have the best leaves or flowers so must be crossed with those that do. I hope that somewhere down the line we will get the best of both. I am convinced that this selection program can succeed despite so many bulbs in the wild growing as individuals with only a few clumps to be seen. Clump-forming genes must be present in all erythroniums but a clump-forming type is at a disadvantage in the wild: as the bulbs split and multiply, becoming congested, they compete for moisture and food and starve slowly in their fight for survival, unlike a sole bulb that has no close competition. Nevertheless, if such a clump-forming type had been collected and brought into cultivation it would be more likely to survive because growers would lift and split regularly, spreading it around, sharing it with friends and increasing it rapidly like the excellent *Erythronium* 'White Beauty'.

When you raise from seed, especially that cultivated where we have many species growing in a relatively small area, some hybrids will

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