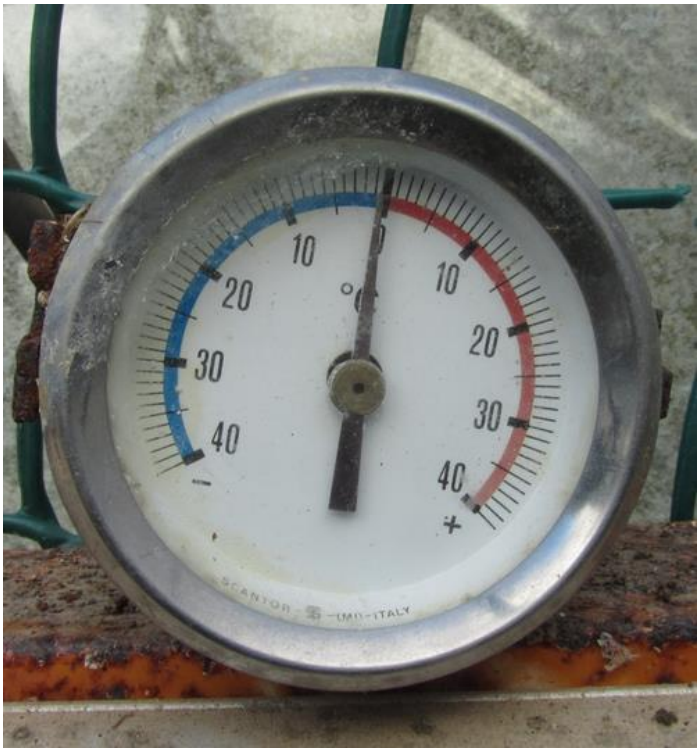
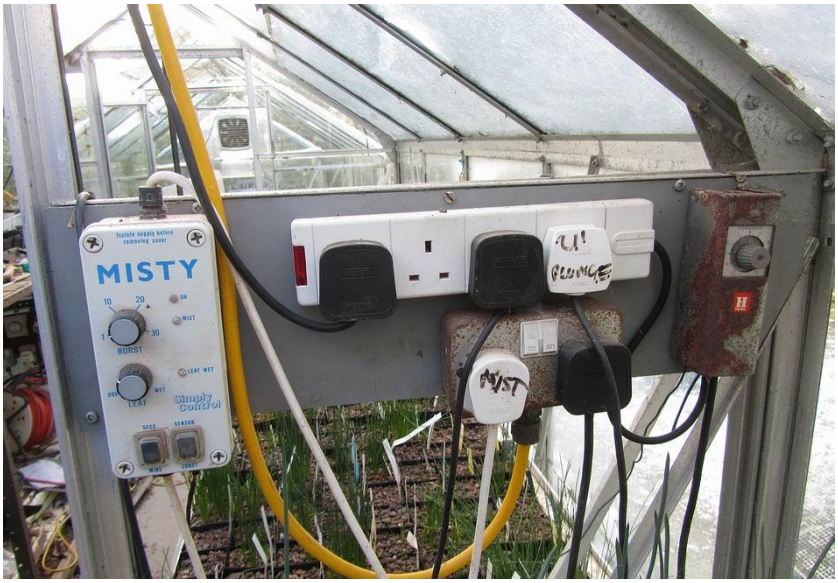
BULB LOG 47.....25th November 2015

Includes chapter on Erythronium sibiricum





The first signs of winter have arrived in Aberdeen with the arrival of the first light snow fall indicating the temperatures are near zero degrees C – two days later it was up a bit. Checking the bulb house thermometer shows the temperature is dipping below zero so I have to prepare for winter by first turning off the outside water to prevent burst pipes then checking that the warming cables are working properly. The thermostat on the right of the electric plugs controls the warming cables in the sand plunge below the pots - it is set to zero degrees C and the sensor is below the pots in the sand plunge. I do not want to heat the bulbs but to protect them from freezing during prolonged periods of sub-zero temperatures.

Another steady routine is removing any spent flowers, mostly on the Crocus just now, before they get infected by grey moulds – the first signs of which you can see on these flowers.

These Narcissus seedlings - hybrids between N. romieuxii and N. cantabricus are flowering in the sand plunge and interestingly well ahead of similar plants in pots.

A pot of Galanthus reginae -olgae is also putting on a nice display of flowers in the bulb house.

Thankfully, temperatures have risen a little now.

This week I bring another chapter from my book on Erythroniums in Cultivation: this time I describe our experiences of growing and studying Erythronium sibiricum and, as you will read, the work on the classification of Erythronium is an ongoing process and far from complete……

ERYTHRONIUMS IN CULTIVATION © Ian Young

Erythronium sibiricum

Erythronium sibiricum

I first received Erythronium sibiricum many years ago by way of a single bulb - I did not find it easy to grow to flower properly – the flower had a tendency to open underground before the scape (stem) pushed it above ground. When you consider the climate where it grows in the Altai Mountains and Siberia where long cold winters are followed by a sudden switch into spring it is easy to understand why it did not grow well in our maritime climate with poorly defined seasons. I kept the pot in the coldest plunge frame we had, fully shaded from any winter sunshine then in late February moved it into the glasshouse or even the kitchen to give it the rapid change from cold to warm that it was accustomed to in its native habitat.

Erythronium sibiricum

Using this method I did manage to flower it well enough to get a seed set one year, around the same time I was given a quantity of fresh seed by a friend in Tromsø where their climate allows them to grow Erythronium sibiricum well in the open garden, even to the extent that it seeds around becoming a ‘weed’ – a problem I would welcome! The seedlings from my sowings provided me with a good quantity of bulbs the majority of which flowered after five years many setting seed which I sowed as soon as it was ripe resulting in a second generation of seedlings. Each sowing of seeds will produce a range of forms - those seedlings that survive are those which can best tolerate our garden conditions so by collecting and sowing our garden seed every year each successive generation of plants becomes more acclimatised to our garden. We now have many plants growing both in plunge baskets and the open garden that come up flowering normally and producing seed most years. This process of acclimatising plants through generations of garden collected seeds has helped us introduce a few of the difficult species such as Erythronium sibiricum and Erythronium montanum – it is not a case of me selecting the plants rather they select me.

Flower

As well as the climatic tolerance range the seed raised plants also exhibited quite a variation in shape, form and colour of the flowers which was noticeable in bud before the flowers fully opened – also some had patterned leaves (right)while others have plain green leaves (below).

Erythronium sibiricum with patterned leaves

Erythronium sibiricum with plain green leaves.

The golden yellow anthers were the first thing I look for when separating this species from the others in the Eurasian group as all the forms that I have grown or seen in cultivation have yellow pollen however I have seen photographs of wild populations where the pollen colour varies between dark violet and yellow. The flower on the left comes from a bulb with patterned leaves - the one below from a plain green leaved form.

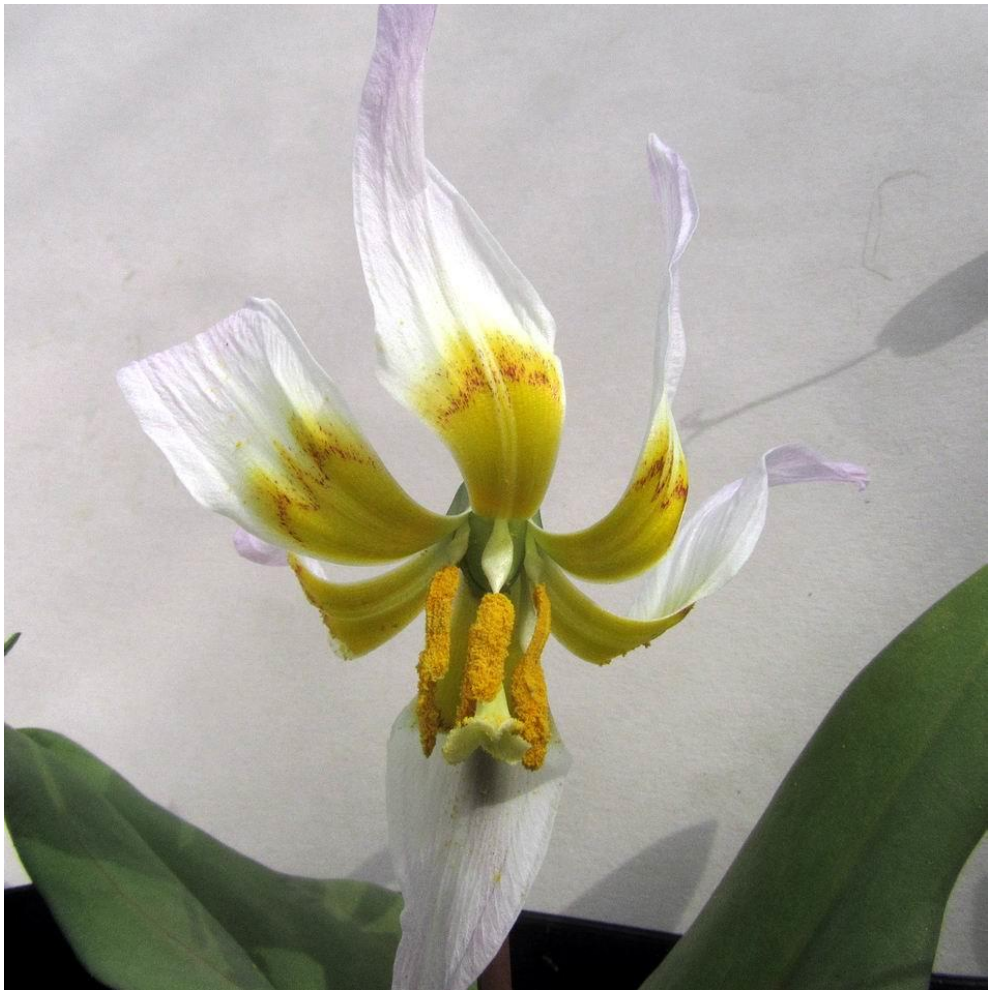
The colour variations are often also visible on the back of the flowers.

White forms also occur - Janis Ruksans offered a few named white forms one of which he went on to describe as **Erythronium sibiricum ssp. altaicum,** however much work has been carried out in an ongoing process of studying this group both in the field and by DNA resulting in a number of new species being described.

Erythronium sibiricum ssp. altaicum is now considered as a synonym of Erythronium krylovii and indeed I suspect that as well as this white plant some of the plain green-leaved forms that we grow are also Erytrhonium krylovii.

Another new species described is Erythronium sajanense - this was also formally known as Erythronium sibiricum and shows that this whole group requires more study.

I intend to do a much more detailed observation of all the plants we grow as Erythronium sibiricum next season and will update this chapter if necessary.



Erythronium krylovii

Erythronium sibiricum flowers.

This montage shows just some of the variations in the flowers of Erythronium sibiricum that we grow and I will be studying in greater detail in the coming seasons.

Detailed photographs of the dissected flowers, especially showing the shape of the filaments and style, will help in identifying the different species.

Seed

Seed is best harvested as soon as the capsules start to turn colour and to achieve the best germination results the fresh ripe seed should be sown immediately – in our garden this is usually around mid-June.

Fresh seed is white with curly elaiosomes on one end.

If not sown immediately the seed will first turn tan then brown and the elaiosomes wither but it is still viable.

If the seed is to be stored longer term it is best if it is kept moist by mixing it with sphagnum moss for instance. Dried seed should be soaked overnight before sowing.

Seed sown fresh will give a good germination with the seedlings appearing around the same time as the parent plants come into growth – this pot was pictured germinating in mid-April.

Leaves

I am always fascinated how many of the early flowering bulbs have a hardened tip to their leaves to help them force their way up through hard often frozen ground or snow. On the left you can see this hard tip with the second leaf tucked under and wrapped around protecting the flower bud – once through the ground the leaves can part allowing the flower to expand and grow.

You will notice that the leaves above are plain without the dark blotched pattern and these I think are **Erythronium krylovii**.

The plant on the right has patterned leaves and is **Erythronium sibiricum**.

Erythronium sibiricum

For all the years I have been growing Erythronium sibiricum I have suspected that we actually had a few different species masquerading under that name. The plant on the left with plain green leaves, broader petals, and different shaped filaments is what I believe to be Erythronium krylovii while the one below with patterned leaves and narrower petals is Erythronium sibiricum.

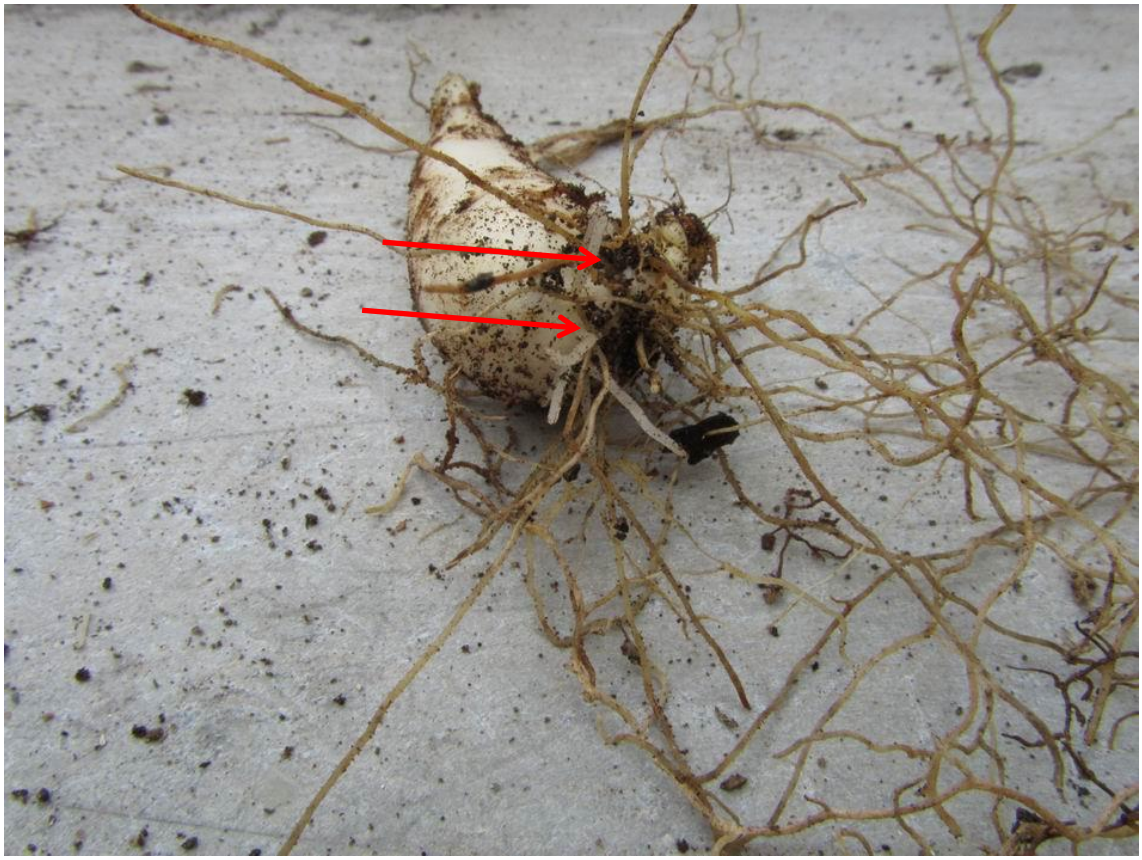
Erythronium krylovii

Erythronium sibiricum

Bulb

The bulbs of Erythronium sibiricum look much like the rest of the Eurasian group with the remains of previous years bulbs attached as chains to the base - a number of the bulbs we have raised do show a willingnesss to increase by forming offsets.

Bulbs from a plunge basket tipped out in August show that the previous years roots have not yet dried out fully.



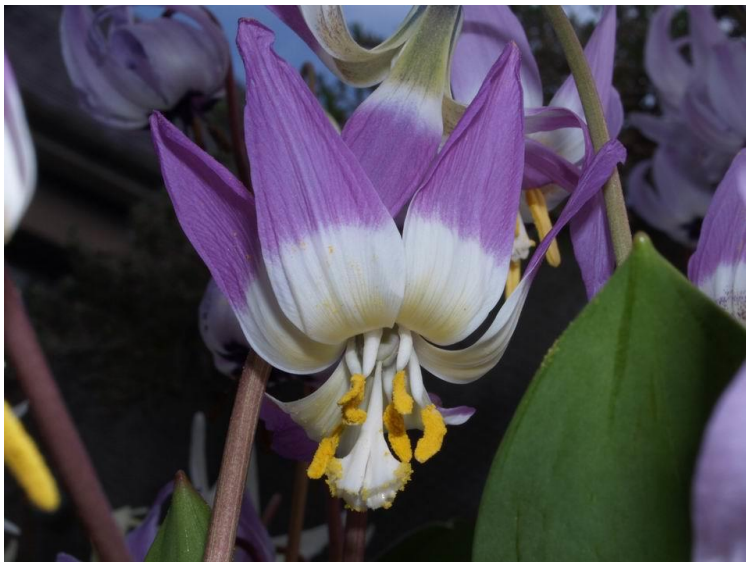
Bulb showing new roots emerging.

Even at this time (August) care must be taken when handling the bulbs because new roots are emerging even before the previous roots have died away.

When repotting I always ensure that the bulbs are kept shadded and moist then replanted as soon as possible into a damp potting mix so as not to damage the new roots.

Erythronium krylovii

Erythronium krylovii white form



Erythronium krylovii

Erythronium sibiricum

I continue to read the papers published while corresponding with friends who visit these plants in their habitat gathering information that will help me identify exactly what we grow under the name Erythronium sibiricum. I have named the pictures above according to my understanding of the information I have received.

Seed raised plants

Seed raised plants shows the mixture of plants we are growing as Erythronium sibiricum.

Both **Erythronium sibiricum** (with patterned leaves) and **Erythronium krylovii** (with plain leaves) are shown in this group.

With growing from seed over a few generations we can now have Erythronium sibiricum growing normally in our garden.

It seems that the form I now believe to be **Erythronium krylovii** is the best adapted to our growing conditions as you see from the plant on the left growing well in a raised garden bed.

There is no question that you stand the best chance of succeeding with Erythronium sibiricum and its related species by raising them from seed.

I look forward to learning how many plants known to us collectively as Erythronium sibiricum turn out to be related species.