



BULB LOG 7.....18th February 2009



Narcissus 'Atlas Gold'



I closed off last week's bulb log with a very sorry looking flopped over and frozen Narcissus 'Atlas Gold', picture left. As you can see above things have improved as the temperature has at last risen above freezing.

I mentioned the soil warming cables that I have in the sand plunges below the pots and want to explain about more about how they work.

Originally when I made most of the plunges I was growing the bulbs in clay pots and these were plunged as deep as possible into the sand with the warming cable just below the bottom of the pots.

The thermostats are set to -1C and the sensor was placed

1-2cms below the surface of the sand plunge. On no account do I want to heat the bulbs but I do want to prevent them being frozen solid in the compost for prolonged periods where possible. The air temperature regularly drops below freezing at night through the winter and the cables rarely come on. It is only when we get prolonged freezing temperatures that persist through the daylight hours that the plunge temperature drops enough to trip the sensor and activate the cables. Now I grow the bulbs in plastic pots (these are not plunged into, but just sit on top of, the sand) they are even more susceptible to prolonged freezing conditions especially the ones around the outside edges. When I switched to plastic I reduced the depth of sand in the plunges so that there is around 1cm of sand between the bottom of the pots and the warming cables. This is the longest very cold spell we have had since I switched over to plastic pots so it is very interesting and a bit worrying to see what has been happening. I had to adjust the thermostat on one of the big plunges as it was set too low and did not come on even though the temperature was minus 9C; the others had come on and I could see the difference in the plants which were protected. Luckily the cold lifted after a week but it served to remind me that I have to be alert to the dangers of prolonged periods of sub-

zero temperatures. One side of the prop-house has no protection from cables and it will be interesting to compare how those bulbs perform. I have found that the bulbs that are most susceptible to being damaged by freezing are the true bulbs such as Narcissus while Fritillaria and Crocus seem much more adapted to surviving freezing conditions. I would also like to point out that the bulbs in pots sitting on the sand beds are much more vulnerable to frosts which can penetrate from all sides as well as the top and bottom than the bulbs planted more naturally in the garden.



Narcissus hedraeanthus

This is the first seedling of *Narcissus hedraeanthus* to flower from seed sown in January 2005. It is one of three and it does not look like the others are big enough to flower this year.

This is also the first time that I have had what I think of as true *Narcissus hedraeanthus*. It has a very short stem that raises at an angle from the gravel, very few leaves and a small flower. The style and anthers should protrude from the corona when the flower is mature – this one is only just opening so only the style and one anther are visible at this stage.

Narcissus hedraeanthus ?

Here is another bulb that I got within the last few years as *Narcissus hedraeanthus*- I have not recorded where I got it from and cannot remember.

This is not the true plant but it could be a hybrid with some of the others in that group such as *N. romieuxii*





Crocus abantensis

Crocus abantensis was in the bud stage when the cold weather struck and that is how it stayed until we had a bright sunny day that raised the temperature in the glasshouses to double figures. What a lovely day that was with so many of the flowers feeling as pleased as we were to see the sun and feel that warmth and they responded by both opening their flowers and filling the bulb house with scent.



Crocus abantensis

The flower in the foreground has only managed to produce three tepals perhaps it is a small corm or something damaged the growth bud at an early stage causing this mutation. You will notice that the anthers and style are fully formed so it is mature enough to set seed.



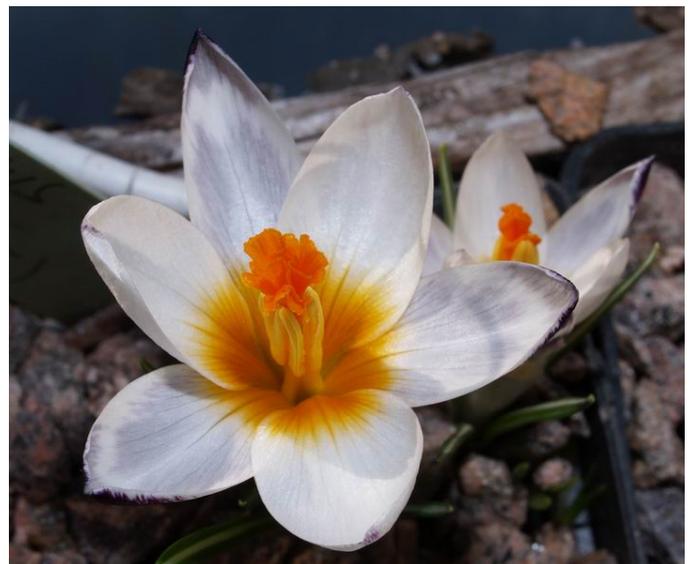
Crocus biflorus alexandri

Another pot of seedlings from our own garden seed and flowering for the first time is this one of *Crocus biflorus alexandri* which even though only two corms have reached maturity you can see the variation in colours that raising crocus from seed gives you. Both corms are also producing two flowers and if I can meet their needs by getting the correct balance of water and food that should mean that they will make two corms each by the end of this season.



Crocus sieberi sieberi

The variation in colour and pattern can also be seen in these few early seedlings of *Crocus sieberi sieberi* flowering in this pot sown in back in 2002.



Crocus sieberi sieberi seedlings

When they open they reveal the most flamboyant bright orange congested, frilly style.



Crocus fleisheri flower

Towards the other end of the scale but no less flamboyant is the style of *Crocus fleisheri* which has a very pronounced branch like structure.



This *Crocus fleisheri* is again another pot of seedlings flowering for the first time this year and the flowers show some variation in the amount of purple/violet markings on the outside of the tepals. If you are very observant you will have already noticed that there are yellow pollen grains on the stigmatic surfaces on the end of each orange branch.

That is because I have been busy with my paint brush fertilising all the bulbs that are in flower just now.

My main objective with any plant is to get a viable seed set so that I can keep a steady supply of young healthy bulbs coming on from our own stock plants.

When ever possible I also like to introduce seed from other sources, especially from wild collections when available, to keep as wide a genetic base for the various species as I can.

I think it is our responsibility as gardeners to conserve and preserve all the pants that we have in cultivation and the best way to do that is by continually raising them from seed.



Iris nicolai

Because we only have a finite amount of space under glass it is not possible to grow everything we would like to so we only grow a few Iris.

Many years ago we had a lot of them but with the space we had under glass coming under increasing pressure we had to rationalise what we were growing. Many of the most desirable Irises are very susceptible to attack from virus and our collection was showing signs of infection so I binned the whole lot about 15 years ago.

Since then a few choice ones have crept back in like this very beautiful Iris nicolai- a present from a friend and expert.

I always remember the first time I tried to fertilise Iris winogradowii with my paint brush.

I had no problems finding the pollen as it is very obvious but where was the stigma? I asked a friend who was also a botanist at the University and he did not know but said he would find out. It took a while before he came back to me and by then I had pulled a flower apart and discovered it myself.

Iris nicolai



Stigma on Iris

It is not a separate structure like the style of the related Crocus but it is on the leading lower edge of the standard just above the anthers.



Pollen on stigma of Iris

Once it has been fertilised it is easier to see because the yellow pollen grains stand out clearly from the silvery white of the stigma. It makes me wonder what the natural pollinator is for these Irises and exactly how the process works.



Crocus biflorus isauricus

Pollinating Crocus biflorus isauricus is so much simpler with both anthers and stigma displayed so obviously. Even though this is a relatively common crocus that increases well vegetatively I still always sow seed to keep a healthy young vigorous stock coming along. Plants are like us, the older we get the more prone they become to problems and illness and the less vigorous they are.



‘Sun Spot’

Crocus ‘Sun Spot’

Just like a dark spot on the golden sun the almost black stigma of the well named Crocus ‘Sun Spot’ is one of the most dramatic that I have seen.

This is the first time we have had this lovely selection from Crocus chrysanthus we got a few corms from Rob Potterton last October. Its stunning looks are reinforced by the amount of flowers that come from one corm – we only have three in this pot giving eleven flowers.





Crocus danfordiae

Here is a different form of the tiny *Crocus danfordiae* to the one that I showed in the bulb log two weeks ago - this one is a paler almost primrose yellow with very faint markings on the exterior. The flowers have been drawn up by the poor light which has been made worse recently with the snow on the roof.



Crocus reticulatus

One flower of this *Crocus reticulatus* has been pulled to face the light in the south while the next one stands straight up. It is amazing how the one sunny mild day has opened all these crocus flowers revealing the ripe pollen all ready for transferring. I have not seen a single flying insect yet and do not expect to for some time so once again it is out with my paint brush.



Crocus michelsonii

My pot of seed raised *Crocus michelsonii* is also enjoying the warm sunshine which gave me the opportunity to fertilise it as well. I do not often try and make intentional hybrids as I think it is difficult to improve on the beauty that nature has provided for us but sometimes it is possible to make a difficult or rare plant more readily obtainable by making a hybrid from it. With that in mind, but more to satisfy my curiosity, after I had pollinated all the *Crocus michelsonii* flowers I crossed it by applying its pollen to the stigmas of a few different forms of the apparently closely related *Crocus korolkowii*. Time will tell if the cross was successful and if so, will the offspring be any good?



Frozen pot Erythronium

Looking outside I wanted to show you one of the problems we encounter with both pots and troughs as the thaw sets in and that is they defrost from the top down. The bottom around the drainage holes remains frozen while the snow and ice on the surface turns into water leaving the pot flooded. Above right is one Lily that has no problems with the snow.



Lily in the Snow



Eranthis pinnatifida flower

My pot of *Eranthis pinnatifida* is now in full bloom with most of the flowers now fully expanded and several of the violet blue anthers dehiscing to reveal the white pollen. I have been at work with my paint brush and will continue on a daily basis in the hope that I will again get some seeds which I will sow back into the same pot as the parents as soon as it is ripe. The reason I did that last time was I only had one tuber of the *Eranthis* and a small amount of seeds so it saved me having to find space for another pot however if I am lucky to get a good amount of seed then I will find the space and sow it into a separate pot. I will leave you with an almost abstract picture showing some of the split anthers and the white pollen on the stigma.

