

Reticulata Iris - A Whole New World

The First Iris To Bloom

A few facts before we begin:

- Reticulata Iris are one of the first flowers to bloom each year, starting just as the snow disappears.
- Available commercially in shades of blue and purple, along with the lemon yellow Iris *danfordiae*, and pale yellow Iris *winogradowii* (difficult)
- Primarily from eastern Turkey, Iran, and the Caucasus mountains where its very dry in the summer
- Can provide 2, even 3 flowers per bulb in succession, if the bulbs are large enough.
- Iris *danfordiae* is notorious for 'shattering'; meaning breaking up into a lot of rice grain-sized bulblets
- Many of the Dutch hybrids will bloom for two or three years and eventually die out in our climate
- Try sandy top soil in a well drained location with a reasonable space between the bulbs.
- A little bit of low nitrogen fertilizer at the beginning of the bloom season is good for bulb regeneration
- It takes 5 years to go from a seed to a flowering bulb.

My goal: To create new colors and patterns that will do well in North American gardens.

The adventure so far...

20 years ago, in 1985 and 1986, I went plant collecting in Turkey. My main goal was to find a diploid form of the lemon yellow Iris *danfordiae*¹. In each of those years I traveled 9,000 km over two week periods, getting close to the Russian, Iraq and Syrian borders. The trips were successful in a number of ways. First and foremost, I was very fortunate near the end of my first trip to find Iris *danfordiae* with the help of some locals. Second, I was able to collect a Reticulata that was pictured in Brian Mathew's 'The Iris' as being from near Erzurum. This is the Reticulata that I refer to as the Çat species, which has become very important from a hybridizing perspective. And third, to observe in the wild a host of other bulbs, including Juno Iris.

Why collect diploid *danfordiae*? In 1961 E.B. Anderson crossed Irises *winogradowii* and *histrioides* to create the lovely, but sterile, Katharine Hodgkin. The cross was repeated by others and we now also have 'Frank Elder' and 'Sheila Ann Germany' in commerce. I wanted to use *danfordiae* to see what hybrids its lemon yellow would yield. Over the late 80's and early 90's I made hundreds of crosses which produced over 4800 seeds, however most didn't even germinate. Of particular note were crosses with Iris *sophenensis*, which I was very fortunate to have been given by the late Frank Kalich of Albuquerque New Mexico. In 1994 sixteen clones bloomed from three crosses made in 1989. Disappointingly they were all blues². Some had a bit of yellow influence, but if anything this gave them a muddy appearance. Clearly nothing like the lovely 'Katharine Hogkin' that I had been hoping for. The expectation at that time was that they would be sterile. I felt that if anything was going to work it would be if I intercrossed the clones. By early summer I was able to report to Brian Mathew and others that I had produced 130 seeds from 11 successful crosses. Five years later, in 1999, two of these bloomed. The very first was a gorgeous creamy white with blue markings and a touch of yellow (94-HW-1). I couldn't believe my eyes. Absolutely stunning! The blue had been turned off and the yellow had been turned off, revealing an underlying pattern. The other clone was simply a small pale blue of no interest.

The next year I was particularly amazed by a backcross onto *danfordiae* that I categorize as 'spotted light blue-green' (96-BN-1). To me it's absolutely gorgeous. Over the next few years further hybrids bloomed and I was able to classify them into the following five categories: **Yellow** (*danfordiae*-like), **Blue** (light blue to dark blue), **Yellow-Blue** (from yellow with blue veining, through green, all the way to brown), **White** (typically with an underlying blue or green pattern; on rare occasions yellow), and in the case of backcrossing onto *danfordiae*, the occasional '**Spotted Light Blue-Green**.' I was able to determine from a high level perspective that two dominant genes are responsible for turning blue on and off, and one recessive gene for yellow.

Going into 2003 I was wondering if all I was going to get was simply more of the same.

Back in 1988 one cross I made was between *danfordiae* and the Çat species. Four small clones eventually bloomed. They largely looked like their Çat parent, and they didn't increase very well. In my mind I thought there was a chance something interesting would result if they could be crossed with the *danfordiae* x *sophenensis* clones. Indeed, that was

¹ The commercial clone is a triploid, and hence is sterile. Incidentally Kew Gardens did a cytological study on the bulbs I collected and conclusively concluded that *danfordiae* is $2n = 18$. Reference: The Identity Of Iris 'Katherine Hodgkin' - A Cytological And Morphological Approach, Margaret Johnson & Brian Mathew, Kew Bulletin Vol. 44 #3, 1989, page 516.

² Their standards were very narrow, from 1 to 3 mm vs. the normal 7 to 10 mm width. This is the result of combining *danfordiae*'s bristle with *sophenensis*' normal standard.

the case: in 2003, 16 clones from 3 1998 crosses bloomed, eventually increasing to 30 clones from 4 crosses. In particular, the 11 from the cross 98-NP were amazing. They ranged in colour from pale yellow to almost black (with blue style arms and yellow around the fall ridge, so a natural name would be Storm), including one that I call chameleon (pale yellow-green). There was also a spotted blue, a white with navy marking, a white with infused yellow, and a veined brown on yellow ground. The last three were solids: a purple, a plum, and a dark red. Almost all were ones I felt could be introduced; a good sign, but there is a practical reality to how many can be introduced over a period. Especially considering some of the other lovely hybrids I have.

The three other crosses all had small flowers, but three were of particular interest. 98-OO-1 was apricot in colour, however it wasn't sun-fast. 98-EO-2 and 98-ND-2 were also apricot. Clearly we will one day have orange *Reticulatas*!

A few more years have passed and I'm just starting to see 3rd generation hybrids. Quite a lot still fall into the 5 categories, but slowly but surely more are breaking away. Of particular interest were this year's pale yellow with green spots 02-GR-3 and the lovely yellow and white 01-FS-2. Last year's favorite was a blue, but oh what a blue: 01-IV-3. Wide white fall blade, dotted and veined blue with a wide bright yellow throat. Style ribs are dark blue changing to greenish along their length, with a white ridge. The large white style lobes have faint blue lines.

At this point it is still a case that any cross could be a break through and be just the right combination to pull out a wonderful new expression. A small parent with no standards could end up giving lots of large children with typical standards. Or it could yield a whole new color or pattern if combine with the right other parent. It may not have all of the other characteristics that are desired, but they can be added in future. The difficult thing is, you can't say for sure what you are looking for until you see what is possible. Once you have achieved that, then you ask "where can I go next?"

Two second generation crosses involving the first 'spotted light blue-green' have bloomed. Of interest are one clone from each that have taken the 'spotted light-blue-green' theme further. I am looking forward to pursuing this further in future and seeing where it takes me.

I now have some 140 whites. Some are more beautiful than others. For example, the shade of white or cream may be so much more striking with the underlying shade of blue or green markings, and the amount and size of spotting may be just that much more appropriate. The width of the fall can also make a difference in a flower's appeal.

Ideally what we want is to plant a bulb and after a few years have it form a clump of perhaps 5 or 6 flowers which consistently bloom year-after-year without any maintenance. There have been a number of times this has happened for me with small bulbs left behind when I replant part of the garden. On a number of occasions when I dig these clumps up and replant them they do poorly (perhaps because I don't give them enough space). I haven't yet tried removing say half the clump and leaving the remaining bulbs as undisturbed as possible.

For a number of years I've been trying to get the Dutch interested in my hybrids. The idea is to have them grow the bulbs commercially while I concentrate on hybridizing. Unfortunately several of the growers that had been testing my hybrids have dropped out. I'm not clear why, particularly with the monumental breakthrough I have achieved. In particular I am still working with Wim de Goede and I am confident that a number of my hybrids will be introduced. Wim is critical of the fact that many of my hybrids have no standards (simply a reality of using *danfordiae*; personally I don't believe it really matters e.g. 02-GR-3; but they do come back e.g. 02-GR-2). Wim is also critical that my flowers tend to be on the small side (35 – 50 mm³), due again to diploid *danfordiae* as well as the Çat species. Small can be nice. From a large-scale commercial perspective they should be 70 mm or more.

I will just point out that a significant number of years are required to build up stock. Take for example 02-GH-3. Assume the number of bloom-size bulbs doubles:

| Year | 2007 | 2008 | 2009 | 2010 | ... | 2016 | 2017 | 2018 | ... | 2022 | 2023 | 2024 | 2025 |
|---------|------|------|------|------|-----|------|------|------|-----|--------|--------|---------|---------|
| Flowers | 1 | 2 | 4 | 8 | ... | 512 | 1024 | 2048 | ... | 32,768 | 65,536 | 131,072 | 262,144 |

It would be at least 2021 before it could be introduced from a large scale perspective.

Of course Wim is well along the way to building up stock of several of my hybrids.

Culture Tips

Ideally, well-spaced bulbs should over the course of a number of years form clumps, which continue to bloom year after year and not require any maintenance. It is key that they be in a well drained location. Slightly sandy topsoil would be perfect.

³ Measured from fall tip-to-tip

Plant the base of the bulbs about 2 ³/₄ inches deep. If you are replanting smaller bulbs they should be shallower. A bit of mulch such as straw can be helpful to prevent the bulbs from heaving due to freeze-thaw cycles in early spring.

A little bit of low nitrogen fertilizer at the beginning of the bloom season is good for bulb regeneration

I have opened a door to a whole new world. One that no one knew existed. And I am only just beginning to explore it.

For more photos, etc. visit www.Reticulatas.com

Previous article: 'An Adventure With Reticulatas', July 2000 Bulletin