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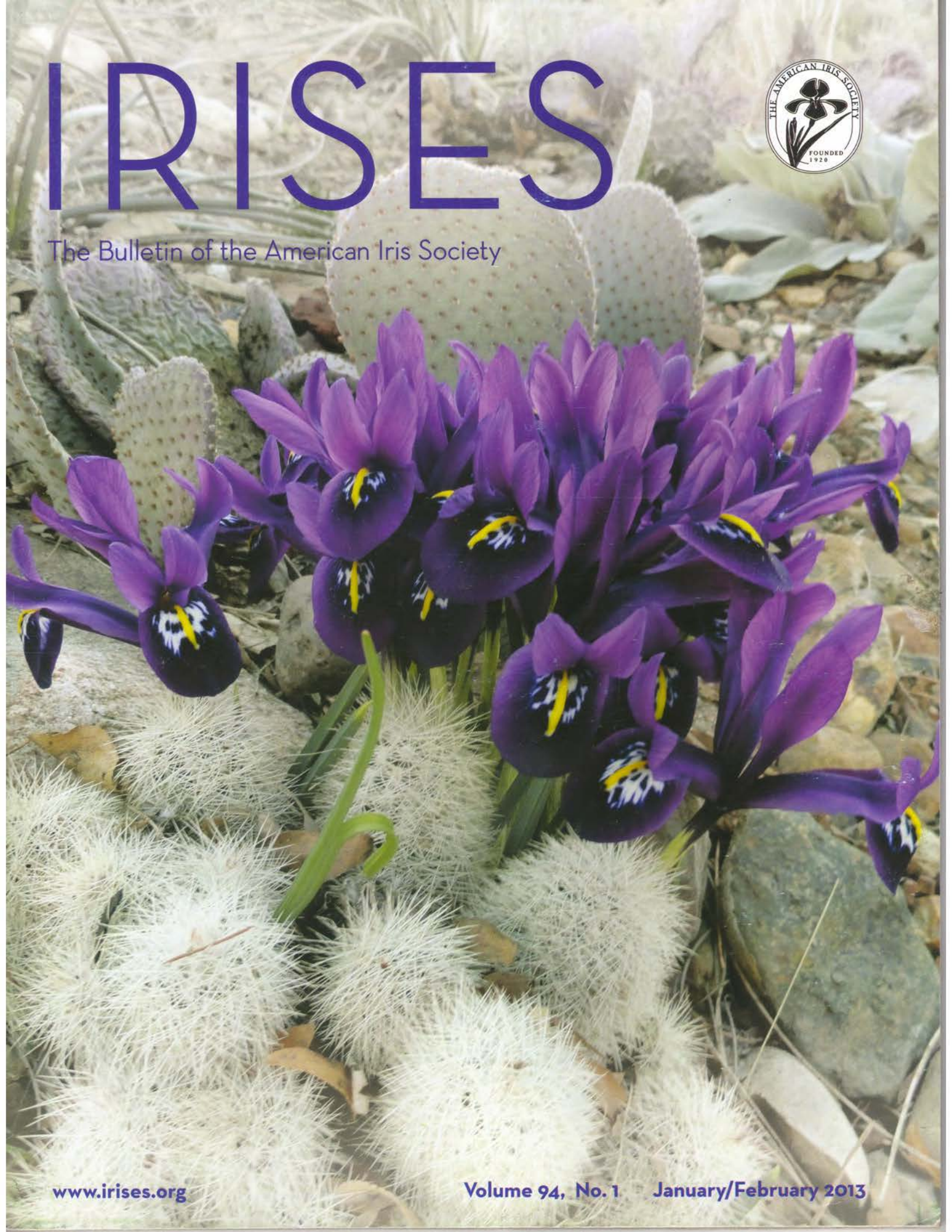

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Iris reticulata with emerging *Sedum* 'Angelina'. See article, page 32.

Photo: Panayoti Kelaidis

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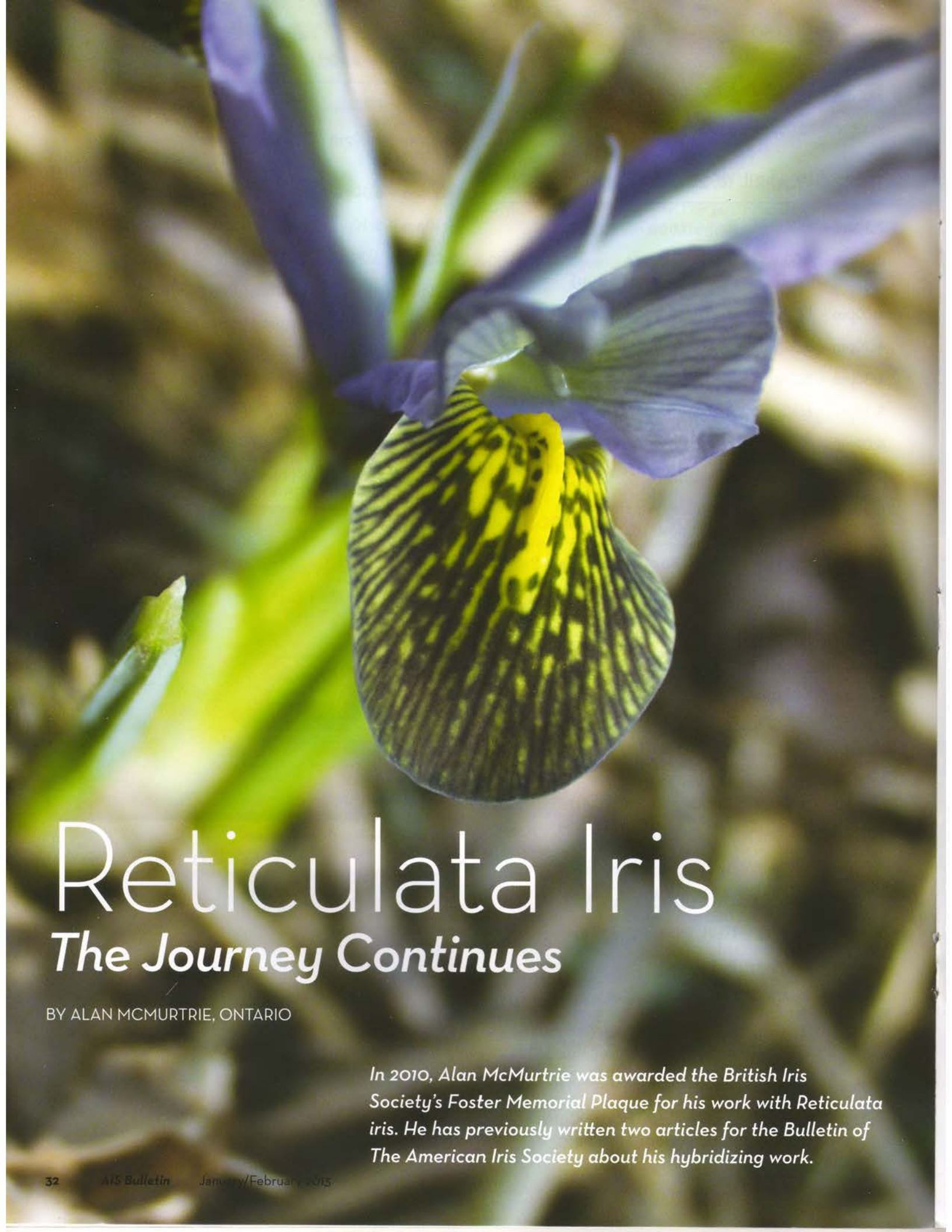
On the Front Cover

Iris reticulata

Photo: Panayoti Kelaidis



Reticulata Iris

The Journey Continues

BY ALAN MCMURTRIE, ONTARIO

In 2010, Alan McMurtrie was awarded the British Iris Society's Foster Memorial Plaque for his work with Reticulata iris. He has previously written two articles for the Bulletin of The American Iris Society about his hybridizing work.

This is the third article about my work with reticulata iris[1]. Let's do a quick recap. Reticulata iris start blooming right as the snow disappears, which makes them the perfect plant to have to help shake off the winter blahs. After a long winter, you can imagine what a delight it is to see these first signs of spring. Typically that's the last week of March here in Toronto, Ontario, though in recent winters they've started flowering as early as mid-March due to warmer weather. Reticulata iris typically flower in blue and purple. There is also the lovely lemon yellow *Iris danfordiae*. When new varieties are introduced into the Dutch trade, it's more of the same: another shade of blue or purple. What I have done is open up that world to a rainbow of color.

In part, I did this by crossing *Iris sophenensis* and *I. danfordiae*. The result was "just blues"[2]. The first generation hybrids (F_1) were all blues, with hair-like standards. These very narrow standards are a result of he bristle standards of *I. danfordiae*, which is only five millimeters long, combining with a normal standard (typically 7 x 30 mm in dimensions). In further generations the standards tend to be half-length hairs, but on occasion can be almost normal standards.

It was in the second generation that things began to open up. The very first F_2 hybrid was 'Starlight' (94-HW-1), a white with blue accents. To think of colors like light switches, in 'Starlight' the blue got turned off, the yellow got turned off, and revealed an underlying pattern that I refer to as accents, consisting of blue dotting near the throat of the fall and blue stripes along either side of the style arm. Overall the F_2 hybrids can be classified into five groups: whites (with blue or green accents), yellows (*danfordiae*-like), blues (light blue to dark blue), yellow-blues (yellow with blue spotting, yellow with blue veining, through greens, and all the way to browns), and what I call "spotted light blue-green." Adding a third reticulata that I collected near Çat, Turkey really opened things up and showed, for example, that orange is possible.

What I would like to do in this article is let you know 1) what exciting new hybrids have bloomed for the first time in the past five years, 2) let you know how things are going in getting them to market, and 3) provide some additional thoughts about cultivation.

1 Previous articles: 'Reticulata Iris: A Whole New World', October 2007 Bulletin

'An Adventure With Reticulatas', July 2000 Bulletin

2 Wim de Goede, in reference to the fact there are already lots of blues in the trade.

What's New

So what new and exciting things have bloomed in the past five years? First, let's remember that here in Toronto it takes five (occasionally four) years to go from a seed to a flowering bulb. Interestingly that means that nearly all the hybrids that bloomed for the first time since my last article were already planted when it was published. Can you imagine what even more exciting things are waiting to open in the next few years from the seed that is currently planted?

What I've been able to accomplish in just a couple of generations is truly impressive, even magical! Of course along the way there have been a lot of ordinary blues, yellows, etc. produced. My goal is to do whatever I can to break away from the ordinary and come up with the unusual. I keep asking myself what I can do to shake up the genes and bring more amazing things to life. One thing I would really love to create is a pink reticulata. At this point I'm not sure that it is possible, but let's have fun trying.

Getting to Market

It's been a slow, uphill battle, getting into the Dutch market. The first grower began testing my hybrids 15 years ago. At one point there were 4 growers testing them. Two dropped out and are pursuing their own hybridizing efforts. Their paths are different from mine. One seems to be working with tetraploid blues and purples, and the other is focusing mainly on *I. winogradowii* hybrids. The original grower and his son, Wim de Goede and Mark, have continued to building up stock of several of my hybrids and are close to being able to start wholesale sales of a couple.

I'll just point out that each of the growers knew about the others, and they were given exclusive rights to the varieties they were growing. I had hopes that we could eventually form a cooperative of sorts[3]. I knew there was a significant potential in the direction I was headed, and that no one grower would be interested in all of my best hybrids[4]. It was also a matter of finding out what each of the growers was interested in growing and marketing. In a sense it's too bad my work wasn't five to 10 years further along. If it had been, there's a possibility they would be propagating my hybrids today.

3 Interestingly, now several years later, these growers are cooperating on other bulbs such as tulips.

4 From the point-of-view of large-scale propagation and the fact that no more than ~15% of land is used at any one time for reticulatas due to crop rotation.

Maybe I really just don't know what the market for Reticulata Iris is like. Certainly I had, and still have, hopes of being able to grow the market once people see what wonderful new hybrids are available. I don't believe that the market is a fixed size, and that if something new is introduced, something needs to be taken out. That's probably true if all you are doing is introducing another blue. People only have an appetite for so many blues.

In recent years 'Alida' and 'Pixie' (both sports from 'Harmony'), one lighter blue and the other violet, have been introduced. A new variety 'Blue Note', which is a sport of Pauline, is showing up in Dutch cultivation statistics (indicating the stock is fairly large). The two firms I referred to above, clearly intend to introduce several of their own hybrids in the next couple of years, and I know of an additional firm that also has some new hybrids/sports based on *I. winogradowii*. I need to get with it and built up stock of several of my hybrids pictured here. I can't just wait around and let others take over the market by getting there first.

One of the most frustrating things is how long it takes to build up stock (see table below). This is due to the scale of the problem—to go from a single bulb to hundreds of bulbs, or better yet, tens of thousands, while doing so at a reasonable price. The initial propagation is quite expensive because it's all hand labor. Once you have a couple of thousand bulbs, then you can use machines, which brings the cost down, but it still takes many, many years to build up the numbers. In theory, a lab can be used to shorten the process, but there's a significant up-front cost involved.

With a lab, once you've initiated a clone, a year can roughly be simulated by a 12-week cycle. There's also a lengthy hardening off process required prior to delivery of the bulblets. The bulblets then need to be planted out and grown to full-size bulbs over the course of about two years, resulting in an overall process that takes four to five years.

Looking at the table you can see that if something spectacular blooms for the first time this year, it will take 6-7 years before there are 100 flowering-size bulbs. Another three years and there could be 1000 bulbs. Still another three years and there could be 10,000. Twelve-plus years later, we're close to having enough to start sales.

Keep in mind that the rate of increase varies from year to year, and there are no guarantees. You can have problems that can cause setbacks. Generally when this happens it takes two or more years to clear up the problem, and then rebuild the stock to where it had been. In the past I have made use of a lab in Holland, but there were issues. The work seemed to go well. A quantity of bulblets was delivered. However on one occasion the grower told me that only 10% survived, and in two subsequent years, none survived! The lab claims they now know what the problem was and that the issues have been resolved.

Don't forget that lab work is expensive. To get the most advantage it really needs to be done in the early years and in sufficient quantity. Of course there's the very, very important issue of needing grower commitment. When I first started the lab work, growers questioned why I would have done that. To them it didn't make sense. Yes, it was a risk. I wanted to get to market sooner, rather than later, but of course what good is that if in the end they don't go forward with any of the varieties that I put in the lab (that's essentially what happened). I knew at the very least I would gain an understanding of the process, and the variability of the rate of increase between the clones, as well as the variability of the cycles. And fundamentally I would see whether or not the lab could successfully tissue culture 2n=18 and 2n=20 reticulata iris.

If all you need is a small number of bulbs like 25 or 50, there are things you can do to help get there reasonably quickly. For example, you can replant every year, bringing any small bulbs/bulblets up closer to the soil surface, as well as give them more space and a little bit of fertilizer at the right time.

Table 1. Rate of increase (y-axis) over time.

Year	**2013**	**2014** 1	**2015** 2	**2016** 3	**2017** 4	**2018** 5	**2019** 6	**2020** 7	**2021** 8	**2022** 9	**2023** 10	**2024** 11	...	**2027** 14
2x	1	2	4	8	16	32	64	128	256	512	1024	2048	...	16,384
2.2x	1	2	4	8	17	37	81	178	391	860	1892	4162	...	44,314
2.3x	1	2	4	9	20	46	105	241	554	1274	2930	6739	...	81,988
2.4x	1	2	4	9	21	50	120	288	691	1658	3979	9549	...	132,000

Listed top row to bottom, left to right:

'Ruby'; 03-HW-1; 'Holland Glory'; 03-FQ-1; 05-GQ-3; 05-HW-1; 03-CV-4; 03-AQ-1; 'Regal'; 05-GQ-3; 05-BL-4; 'Snow and Sky'

Wim has now been growing 'Spot On' (87-DQ-1) for 15 years. It was amazing to walk the field in 2011 and pace out 32 m of it (the rows are 1.5 m wide). In 2012 I paced out 77 m and was told that the bed had been planted denser. As I write this, the field is being planted for 2013. I won't be surprised if this spring I am able to pace off 190 m or slightly more. Wow. Now we're getting somewhere! A guess might be that's 35,000 bulbs.

On one hand that's quite something. But the new variety 'Blue Note', had 0.25 hectares under cultivation last year, which I estimated to be more than 250,000 bulbs. Depending on how many were sold, substantially more than that were likely replanted this past fall.

'White Caucasus' isn't one of my hybrids as such. Rather it appeared one year in my garden in some collected bulbs from the Lake Sevan area of Armenia. Wim and Mark have released only a small quantity of bulbs of 'White Caucasus' over the past 3 years while they continue to build up stock. As a result it can be purchased from several English bulb retailers, as well as Bulbs-Bollen.nl in Holland (European Union orders only).

Mark says my hybrids are "not complete." What he means by that is, he wants them to have large flowers and normal standards—to be normal reticulata iris, so-to-speak. The reality is, two of the original three parents are small, so by their very nature, the siblings are going to tend to be small. *I. danfordiae*, which has a bristle instead of a standard, sells by the millions every year. It's understandable that its siblings aren't going to tend to have normal standards, but does that really matter?

I understand the idea of large flowers—they attract your eye from a distance. However there's nothing wrong with small flowers. They're perfect for rock garden settings. If you want a larger patch, just plant more bulbs. For visual impact it also helps if they are brightly colored (e.g. whites, yellows, oranges). Of course what the grower is looking at is the large-scale commercial market.

Unlike daffodils or tulips, reticulatas can't be used as cut flowers. They can however be grown and sold in pots. This is referred to as the "green trade." In this case larger flowers means fewer bulbs are needed to fill a pot with blooms. For a given selling price, that means the grower gets more per bulb. Alternatively, the pot could be sold for less (i.e. making it more attractive for the customer to buy), but I'm more convinced the middle man will simply take a larger profit, rather than pass the cost savings on to the customer.

With all of the time and effort taken to build up a stock, and the economies of scale, growers want to find the perfect flower, and grow it in large quantities for years and years. In my mind, as a consumer, I want something new every year, just like fashion. Yes, I enjoy what I have, but I also get excited about trying a couple more. With a wide range of colors people can pick what fancies them at the time. One year browns, another whites, and yet another oranges or yellows.

I think it's unfortunate that we keep seeing the same old varieties in garden centers year after year. It is nice to have certain classic old favorites, for example 'Tete-a-Tete' in daffodils. It's a great cultivar. I have this same feeling for lovely dark blue *I. reticulata*. Can you imagine if bearded irises were like that? We would still be growing the tailored varieties of the 1930s and 1940s in limited colors. A few from that era, like 'Wabash' for instance, are quite nice, but look at how far bearded irises have come today and continue to evolve.

In northern Holland there is a flower show, called the Lentetuin ("Spring Garden" in Dutch), held at the end of February in Breezand. In 2012 my hybrid 'Avalanche' (98-NP-4), a bright white with navy accents, was awarded "Primeur Lentetuin 2012."

So, why the Dutch market? My dream is to one day have my hybrids widely available. It would be wonderful to go into a local garden centre in the fall and see one or more of my hybrids being sold along with the other boxes of dry bulbs. Also, I don't have room here for commercial production, even on a small scale. I just have enough for all of my hybridizing work. As well it's a matter of where do I want to put my time, along with what I'm most interested in; to which the clear answer is hybridizing. In addition, the Dutch have great growing conditions as well as a distribution and marketing network.

To date I have introduced almost 40 hybrids, primarily through Janis Ruksans in Latvia. They are all ones that Wim was not interested in going through with, but I thought were quite nice, or in the case of the F1 "just blues," represented a significant breakthrough.

Over the years I've given a number of talks about my work, but the trouble was I never had any bulbs to sell[5]. I finally gave in and have started a small-scale "commercial" operation at a farm about two hours away near Lake Erie. At the moment it takes a solid day to get the bulbs planted, and it takes two days to dig them, plus another day for sorting, etc. The benefit for me, and the real reason I am doing this, is for off-site propagation, particularly of some of my newest hybrids (to give me additional bulbs for hybridizing). The only reason this is possible now, is because I'm retired.

5 The issue is not about any money; it's about letting other people also enjoy my hybrids. The money is still important to pay expenses, and is a way for people show they appreciate what I'm doing.

Garden Import, a mail-order bulb retailer here in Toronto sold three of my hybrids for the first time this year: 'Starlight' (94-HW-1, white with blue accents), 'Storm' (98-NP-2, nearly solid black veining and spotting on a yellow ground with blue style arms), and 'Sea Green' (97-CQ-1, green and dark blue that slowly fades to light blue when the flowers finish). Interestingly, they sold out in reverse order. I am looking forward to seeing what I can supply next year, and how well customers respond.

Cultivation Tips

I highly recommend replanting your reticulata iris every two or three years. Give the bulbs a reasonable amount of space. It's actually a good idea to plant some in another part of the garden. That way if something happens to one patch, such as a critter digging it up, you'll always have the others. If you plant some in a sunny location and some in a shady location, you can extend the growing season. It's also a good idea to plant some early varieties and some later ones.

If you happen to plant seeds, be sure to cover them each winter with a mulch of leaves, or better yet, straw (leaves have a tendency to blow off). This isn't to protect them from freezing. It's actually to protect against sudden cold snaps. If there's a warm spell for several days or a week, the seeds/seedlings might germinate. Their cell sap starts to flow. If you then have a sudden deep cold snap, the cells don't have the same antifreeze capability. All that the leaves and straw do is act as a buffer to keep the soil surface frozen. Once the snow has melted you can remove most of the straw.

Last Words

When you consider the world of reticulata iris is blue and purples, what I've been able to do is truly incredible. Now if only I could get other Dutch bulb growers to realize that, so together we can get them into your garden! My wish for you—plant a few new reticulata iris this year. ✤

For more photos and information about Alan's work, visit www.Reticulatas.com.


'Sea Green'


'White Caucasus'


'Down To Earth'