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Rebloom's Alpine Connections

By Thomas Silvers

Photo Credits page 20:
 Thomas Silvers, *Provided*
 Clown Pants clump, *T. Silvers*
 Clown Pants, *T. Silvers*
I. cengialtii K-23A, *T. Silvers*
I. suaveolens v. m., *T. Silvers*
I. variegata, *R. Tasco*
 Cricket Song, *T. Silvers*

Note: *I. cengialtii* K-23A is a species clone obtained from Terry Varner of Ohio Gardens and originally came from Kew Royal Botanic Gardens in London.

Breeding for rebloom takes stubborn determination. If someone has figured out a magic formula that guarantees a crop of 100% reblooming seedlings, they must be keeping that formula a tightly guarded secret. Even so, with all the brilliant minds working on this puzzle, the pieces are starting to steadily fall into place.

Over a decade ago, I set out to breed for rebloom in the 24 chromosome diploid bearded (a group made up mostly of historic, old-style MTBs and wild species). I had a plan, but as it so often happens, it didn't quite work out how I'd figured it should. There are always surprises! One thing that had always puzzled me, was how *Iris cengialtii* had given me four rebloomers (out of about two dozen seedlings) by using 'Clown Pants' SPEC-X (*T. Silvers 2006*) pollen on it. To my knowledge at the time, *I. cengialtii* was a once bloomer, and my Species-X 'Clown Pants' (from *I. variegata* X *I. suaveolens* var. *mellita*) would occasionally send up some repeat stalks right after main season bloom, but it never made any fall stalks like these new seedlings. Two of the best, I've registered as the MTB's, 'Cricket Song' (*T. Silvers 2012*) and 'Easy Smile' (*T. Silvers, R. 2009*). These have rebloomed reliably every October here in Maryland since 2006.

At first, I'd figured that 'Clown Pants' was the key ingredient in the parentage of these rebloomers. But with time, I've come to appreciate more the role *I. cengialtii* has almost certainly played in this lucky break. My first clue was that the old historic rebloomer, 'Mrs. Alan Gray' TB (*Sir M. Foster 1909*), is from the cross of *I. cengialtii* X 'Queen of May'. The



Clown Pants SPEC-X (*T. Silvers 2006*)

second clue was that I got no other rebloomers from countless other crosses involving 'Clown Pants', even in the cross with a West Coast reblooming MTB 'Keirith' (*J. Witt 1998*).

(Recently, however, I have had two additional seedlings from a different *I. cengialtii* clone crossed with 'Clown Pants', that had repeat stalks after the main season.) A third and final clue showed itself this year, when an *I. cengialtii* X (*I. variegata* x *I. timofejewii*) seedling sent up two rebloom stalks.

Prompted by these clues and spurred on by the questioning mind of Mike Lockatell, a student and protégé of the well-known rebloom hybridizer Dr. Lloyd Zurbrigg, I've spent many hours researching *I. cengialtii* and found some fascinating information.

I. cengialtii takes its name from a mountain in the Northern Italian alps, Monte Cengio Alto. The famed physiologist and first scientific hybridizer of irises, Sir Michael Foster, (William Rikatson Dykes was his pupil) describes *I. cengialtii* in detail in a lengthy article in the *Gardeners' Chronicle* in 1886.¹ In addition to the dwarf stature that distinguishes *I. cengialtii* from *I. pallida*, Foster reports that "while the leaves of *I. pallida* proper remain above ground and green all the winter, those of *I. cengialtii*



Clown Pants close up



***I. cengialtii* K-23A**



I. suaveolens* var. *mellita



I. variegata



Cricket Song MTB
(T. Silvers 2012)



Easy Smile MTB (T. Silvers 2009)

die down altogether, so that if the rhizome be at all deeply buried the winter buds are completely hidden.” The seeds also are described as more like *I. pumila* than *I. pallida* in appearance.

Another interesting tidbit from that same article, is that Foster describes an *I. cengialtii* clone that had been given to him, “a plant from Mr. Ware”. This was undoubtedly Thomas S. Ware who was at the forefront of iris development in those early days. Foster writes that the clone



Gibson Girl TB (J.M. Gibson 1946)

of *I. cengialtii* given to him by Ware “flowers with great regularity a second time in autumn.” Take into consideration that Ware also introduced ‘Gracchus’ TB (T.S. Ware) in 1884. The still popular ‘Gracchus’ is a historic rebloomer with unrecorded ancestry. ‘Gracchus’ was used by Dr. G. Percy Brown of Barre, Massachusetts to breed ‘Autumn Elf’ IB (G.P. Brown 1935) which he combined with the Sass iris ‘Autumn King’ TB (H.P. Sass 1925) (descended from another Alpine species) to develop his influential cold-climate rebloomers.² Trace back the pedigree of almost any modern cold-climate rebloomer and you’ll find generous use of G. P. Brown cultivars.

Lately I’ve been thinking that many, if not all, of the major cold-climate reblooming lines might be traced back to original infusions from Alpine species. One example is the forty chromosome dwarf *Chamaeiris* complex, one of the earliest reported groups with rebloom. These dwarf rebloomers contributed their rebloom tendencies to the breeding programs of Nebraska brothers and iris breeders, Hans and Jacob

Sass. As Kelly Norris writes in his recent book, “The Sass brothers began their breeding work with IBs by crossing dwarf species from Europe with the modern TBs. . . .these ‘dwarf species’ most likely were *I. lutescens* or other species in the *chamaeiris* complex”.³ The Sass intermediates have had a huge impact throughout the pedigrees of rebloomers and once-bloomers as well. ‘Gibson Girl’ TB (J.M. Gibson 1946), which shows up repeatedly in rebloomer pedigrees, was bred from the Sass *plicata* ‘Tiffany’ TB (H.P. Sass 1938). Sass irises ‘Autumn King’ TB (H.P. Sass 1926) and ‘Autumn Queen’ DB (dwarf bearded) (H.P. Sass 1926) were also used extensively by iris breeders. Many other Sass irises that were used by other breeders, may have been carrying genes for rebloom too.

I. aphylla is another Alpine species of particular interest to the late hybridizer of rebloomers, Dr. Lloyd Zurbrigg. Mike Locketell, iris hybridizer and former Rebloom Chairman for AIS Region 4, enjoyed weekly Sunday night phone discussions with Lloyd about his strategies. According to Mike, Lloyd had a growing appreciation

for the role *I. aphylla* seems to have played in the development of some important reblooming lines. Many of Lloyd’s rebloomers can be traced back to *I. aphylla* roots, especially through Schreiner cultivars. *The World of Irises* mentions that first generation rebloomers have been grown directly from *I. aphylla*. Median iris hybridizer, Jim Craig, mentions in his January 2001 AIS Bulletin article how several clones of *I. aphylla* have been shown to breed rebloomers.⁴ Considering all the use of *I. aphylla* throughout iris history to intensify colors and improve branching, who can say how much contribution it might have been making indirectly to rebloom all along.

Thus far, we have three interminglings of Alpine species that have lead to rebloom: the *lutescens/Chamaeiris* complex coming through the Sass intermediates, the widespread and diffuse influx from *I. aphylla*, and (if you take

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Easy Smile, T. Silvers
Gibson Girl, C. Buchheim
Tom & Mike, N. Burnet



Thomas Silvers and Mike Locketell at Mike’s seedling bed in Bon Air, VA.



Gracchus TB
(T.S. Ware 1884)

Photo Credits page 22:
Gracchus, R. Tasco
Mrs. Alan Gray, R. Tasco

Note: Thomas has a blog titled, "Mid-Atlantic Plant Research Center" at <http://maprc.blogspot.com/>

the leap of faith that I have) also *I. cengialtii* through Ware's TB 'Gracchus' which leads on to Brown's influential lines. Other Alpine species could have contributed and may still be used to our advantage. For example, on the "Iris-Talk" on-line forum, Paul Archer reports rebloom on *I. suaveolens* var. *rubromarginata* and Doug Chyz has reported the same occurrence to me. Coincidentally, the mellita form of *I. suaveolens* is a key part of the parentage of my reblooming diploid MTBs described earlier. It may also be enlightening to look

more deeply into the contributions of a few other dwarf species that have unquestionably made their mark in other ways. For example, *I. reichenbachii* (syn. *I. balkana*, *I. bosniaca*) has figured into the unfolding drama of iris development, most obviously by bringing in the dominant amoena pattern. Nobody knows how much it may have inadvertently also contributed towards rebloom.

What is it about these Alpine dwarves that spawns rebloomers? In researching adaptations of plants in general to these harsh mountain environments, you'll find certain trends. One adaptation is that Alpine plants often will keep their growing points underground (think about the habits of *I. aphylla* and *I. cengialtii*) as protection against winter cold. Another adaptation to the extremely short growing season is that Alpine species often will race to flower immediately after snow melt or soil thaw. This is possible because they form their flower buds in the season before. According to Marion Shull's 1923 *AIS Bulletin* article, all irises (even once-bloomers) form their flower buds in the season before bloom.⁵ He mentions August, September and October as the critical bud formation period. So, how do these Alpine species and rebloomers derived from them differ from the typical once-bloomer? Could it be that they simply form flower buds much earlier and/or faster than once-bloomers?

Another clue in solving that mystery can be found in something that Rick Tasco and Roger

Duncan (of Superstition Iris Gardens in Cathey, California) communicated to me, when I was searching for a source of 'Mrs. Alan Gray' TB (Sir M. Foster 1909) and 'Gracchus' TB (T.S. Ware 1884). Rick and Roger used to grow both of these historic rebloomers and were very kind to describe their experiences with the two irises. Neither iris rebloomed for them, but Rick and Roger discontinued growing the two historic for nearly opposite reasons. 'Mrs. Alan Gray' grew well enough but hardly ever bloomed, even in Spring. In contrast, 'Gracchus' formed flowerstalks on just about every increase as well as the main fans, leaving no saleable fans. Rick and Roger told me that they dig and replant everything yearly and my theory is that maybe replanting time happened to be the critical time when 'Mrs. Alan Gray' was getting ready to form flower buds. 'Gracchus' evidently must have formed its buds before or after the yearly dig.



Mrs. Alan Gray TB
(Sir M. Foster 1909)

Maybe once-bloomers haven't typically developed their buds enough by fall to be able to respond to the temperature and/or light triggers that would normally induce those embryonic buds to expand into bloom stalks. Alternatively, the Alpine species may have lost any need for vernalization (cold conditioning) to be able to proceed to bloom. The high mountain climate would have such a short growing season that there wouldn't be much chance of blooming twice in the season anyway. Whatever the case, I'm hoping that some inquisitive minds might find other pieces to add to this puzzle. And meanwhile, I'll keep working the diploid rebloomer angle, with my newly adjusted focus on the "Alpine connection".

References:

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