Aril Irises in SE Pennsylvania

By John Lonsdale

Prior to our move to the USA in 1995, as an active member of the UK Alpine Garden Society, I specialized in growing high alpine plants such as *Androsace*, *Dionysia*, *Primula* and *Saxifraga* species, as well as a wide range of hardy 'bulbs', including a few Oncocyclus iris species. All of my plants were grown in pots because it facilitated taking them to the many AGS national shows, and also gave an element of control of growing conditions, in tandem with greenhouse or cold frame cultivation. In this way it was possible to grow a large number of plants in a relatively small area, thus overcoming the space limitations of a typical English garden, and also mitigating against a climate generally unsuited to outdoor cultivation of many choice bulbs and plants. Although Oncocyclus iris cultivation in pots was reasonably successful, results were not spectacular and there was always a feeling that they, like many other plants, would do far better given a free root run and more consistent growing conditions.

The space issue was resolved with our move to the USA and purchase of a property with a little over 1.5 acres of land in Exton, SE Pennsylvania. Exton is in USDA zone 6b, winter minimum temperatures can reach -5F (-20C), summer maximum is over 100F (38C). Humidity is very low from late fall to late spring/early summer but often reaches 100% in July and August, accompanying temperatures in the 90-100F (32-38C) range. Much of the winter can pass without snow cover, approximately 24" being the total depth of snow falling in a normal winter. Since 1995 we have had up to 66" in '95-'96 and down to less than 3" in '96-'97. Ice storms can be as frequent as snow storms, and much more damaging. The number of days with abundant sunshine is great, on average between 5-6 days a week and, consequently, the conditions are excellent for growing 'in character' bulbs, in particular. Four defined seasons is the norm, fall colors are spectacular and the growing season outdoors is very long, generally from February through late October (and into late November for many crocus species). The garden faces south and is situated just below the ridge-line on the northern side of the Great Valley and is thus sheltered from the worst of the prevailing winds. It is around 700 feet above sea level, 400 feet above the valley floor. The soil is moderately acid and is superbly drained. In many places the ground is very rocky, with many exposed rocks; a few pockets tend towards pure sand.

Whilst the climate and conditions are very definitely not favorable for the cultivation of high alpine cushions, which are rapidly reduced to fungus-ridden mush in the summer months, it rapidly became clear that they were perfect for growing a wide variety of hardy bulbs, including many irises. The Oncocyclus and Regelia irises I'm growing are the subject of this article, the focus being cultivation and propagation. Virtually all of these irises are grown outdoors under identical conditions, the exceptions being *Iris cedretii*, *I. sofarana* var. *kasruensis* and *I. jordana*. The latter species are grown under frost-free greenhouse conditions

because they are small and recent acquisitions and their hardiness is not known. The compost they are grown in is identical to that I use for seed germiantion and will be discussed later. These species are kept well watered when in growth but dried off during summer dormancy, from June to mid-September.

All other aril irises are grown outside. These include *I. acutiloba*, *afghanica*, *barnumae*, *darwasica*, *ewbankiana*, *gatesii*, *hoogiana*, *iberica* ssp. *iberica*, *iberica ssp. elegantissima*, *iberica* ssp. *lycotis*, *iberica x paradoxa*, *kirkwoodii*, *korolkowii*, *meda*, *paradoxa* var. Choschab, *sari*, *sprengeri*, *stolonifera* and *urmiensis*. Whilst I grow a very few primary hybrids, my main interest is in working with species iris.

All my arils are grown under essentially identical conditions, in raised beds in full sun. The raised beds are made from 8' x 3" x 5" treated landscape timbers fastened together to fashion beds approximately 24' x 4' and around 12" high. These are a convenient size to work with, and also ideal when it comes to making covers from 8' x 4' sheets of twin-wall polycarbonate. The beds are filled with pure coarse sand, nothing else. I have had sand from a variety of sources and it seems to make little if any difference to the plants. Although numerous publications suggest incorporation of a wide range of materials, from gypsum to manure, I find the sand alone works exceptionally well. That is not to say that modifications might not be needed in significantly different climates. As can be seen in the accompanying photographs, rhizomes are planted horizontally such that the lower portion is in the sand whereas the upper surface is exposed. These are then covered with approximately ½ - 1" of 3/8" gravel as a top dressing. I like to place the rhizomes so that the new growing points sit just clear of the sand surface, roots easily find their way down into the compost, in many cases way down, even into the sub-soil. New, or freshly divided, rhizomes are ideally planted in early September. This ensures they are not in the ground for too long before they get their first watering, after the covers are taken off the beds in mid-late September.

I routinely cover the beds with arils in them for the months of June, July and August, removing them in mid-late September. I am not convinced of their necessity for the summer protection of the established arils but am certain that they are needed to provide a dry dormancy for some of the choice Juno irises with which they share the beds. Also, freshly divided oncos seem to be incredibly prone to bacterial rot for a few weeks after division and replanting, infection appearing even if they get a hint of moisture. The covers thus aid in protecting them until the air and soil temperatures drop sufficiently to significantly reduce this risk. The covers themselves are 8' x 4' sheets of twin-wall polycarbonate framed out with timber to make them sturdier. They are simply propped up about 12" above the beds, overlapped and sloped to ensure heavy rains from summer storms run harmlessly away – their sides are completely open all around.

Following removal of the covers in late September, watering occurs whenever it rains and at this point active growth of new roots is stimulated. There is also a

certain amount of top growth in many of the species, but nothing like that of the main spring flush. Losses to any cause are minimal once this point has been reached. Around this time I also apply a liberal dusting of bonemeal, the only fertilizer the plants get apart from a couple of spring waterings with a standard soluble liquid fertilizer. I have always believed in growing plants hard to reduce susceptibility to a number of pests and diseases, and keep the plants in character. The accompanying photographs suggest the plants have no complaints about their treatment!

Without doubt viruses are the single biggest threat to the health of any iris collection and I work very hard to keep aphid vectors at bay. My current favorite insecticide is Marathon (active ingredient imidacloprid) and this is also extremely convenient to apply, in either wettable powder or granular forms, and has the bonus of remaining active for 3-6 months after a single treatment. I repeat the application again in February. In this way I have thus far managed to keep very clean stocks.

The plants are then left to take whatever weather the winter throws at them, and seem to come to no harm other than some ice burn to the leaves. This soon becomes unnoticeable once they start back into growth in the spring, usually in March. At this time I have lost one or two advanced flower buds to a hard freeze but this is usually not a problem. The main flowering period is April and May, depending upon species. *I. gatesii* is always the last to flower and the time I collect its seed usually determines the time the covers go back on. Once on, the temperatures at soil level get well above 100F and the top few inches of the beds get very dry indeed. However, 6" or more down there is still some moisture and I feel this is very important to the plants health. When lifting plants for division in late summer, well established rhizomes have a mass of long roots which are very much alive and perennial. I'm certain that disturbing these roots sets the plants back and they take a while to recover their vigor. Mature clumps are generally divided every three years; this past summer saw all my clumps being divided. Following the methods outlined above I made approximately 100 divisions, many multi-nosed, and lost only 3 or 4 to bacterial rot in late summer. These were at the back of the beds and received some water during very heavy storms. They had rotted within days. The remainder has established nicely and as I write is emerging from under 9" of snow.

I have multiple clones of a number of species and do my best to pollinate them to ensure a good seed set. This, however, seems to vary from year to year in an unpredictable way, and this year, for example, I got wonderful seed production on *I. gatesii* and *I. sari* but little else. It is probably more a fault of my work schedule than the plant's foibles! Many regelias appeared to set seed but rewarded me only with empty pods. Seed is collected and sown as soon as ripe using the same compost and techniques I use for the 300+ pots of seed I sow every year. Seed are surface sown onto a compost of 50% BioComp BC5 compost and 50% supercoarse perlite. The BC5 is a mixture of coarse composted peanut hulls and bark and the

overall composition leads to a product which is exceptionally well drained yet holds plentiful moisture without ever being waterlogged. Seed pots are covered with ½" of granite grit, watered, and placed on the floor of a greenhouse which is allowed to go no lower than a temperature of around 28F. Germination of aril irises usually occurs the summer of the year after sowing. Seedlings are left undisturbed in the seed pots for two years, fed with dilute liquid fertilizer with each watering and dried off to a degree during the summer. I do find, however, that many seedlings prefer to keep ticking over during the summer rather than entering a true dormancy. After two years growth they are usually robust enough to be bare-rooted and planted out into the sand beds.

Whilst all currently appears to be well, complacency is the biggest killer and there is no substitute for constant observation and propagation. This is an incredible group of plants that deserves nothing but the best. The sight of just a single onco flower takes your breath away and the clump of *I. gatesii* bearing over thirty flowers that greeted me this summer made for one of life's true highlight moments. In addition to the pictures included with this article, many others can be found on my web site at http://www.johnlonsdale.net. Enjoy!