

Variations on *Iris decora*

In this article, I discuss a small and incomplete journey I've taken into understanding variations on the species *Iris decora*. This species is native to a large region of the Himalayas encompassing parts of China, India, Nepal, Kashmir (currently split, administered, and contested by three nations), and Bhutan.

Year 2000: I photographed an *I. decora* flower in the U.C. Botanical Garden, in Berkeley, California. It is shown as the central flower in Figure 1.

Year 2003: I photographed an *I. decora* flower in my garden. I have since forgotten where I obtained this plant; it proved to be short lived. It is the right hand flower in Figure 1 and looks very much like the plant at the Botanical Garden.

Year 2009: I scanned iris slides from the estate of Lewis and Adele Lawyer. Included are two slides taken in 1960 labeled "*Iris nepalensis*, seedling raised by Elwood Molseed"; the name *I. nepalensis* has since been superseded by *I. decora*. The left hand photo in Figure 1 shows this flower. It is only slightly different from the other two images. One slide did reveal a stem that was more stiffly upright than those I observed prior to 2018.

Year 2010: I obtained seeds of *I. decora* from the North American Rock Garden Society (NARGS). I grew four plants from these seeds; Figure 2 shows a photo taken in 2018 of one clone. Its flowers are very much like those of the other plants I had seen. Carol Wilson, who studies the genus extensively, says that the most familiar plants of this species have origins in China. I don't have the ancestry of any of the plants in Figures 1 and 2, so China seems likely.

Start of 2015: I obtained seeds collected in Nepal in 2014 and distributed by Chris Chadwell. Some of them came from plants described as being close to *Iris decora*. This is where things get interesting. These seeds included five sets from two collections.

Collection #	Environment	Identification with seed packets	Location
CC7733	In grassy ground @ 3150m	<i>Iris</i> close to <i>decora</i>	Manaslu Himal, Nepal; google maps shows the mountain to be about 70 miles (115 km) NW of Katmandu.
CC7734	Grassy ground beside stream @ 3500m		
Til Jung 62		<i>Iris</i> sp.	Manasolu, Nepal (I'm not sure if this is a different general location, a typo in my notes, or an alternate spelling of Manaslu)
Til Jung 63			
Til Jung 64			

The claim that they are "close to *decora*" places them in the subgenus *Nepalensis*, which currently contains four species: *Iris barbatula*, *Iris collettii*, *Iris decora*, and *Iris staintonii*. My question when I received them was: did the seeds from Nepal look like those from plants in that subgenus? For comparison, I have photos of seeds from plants I've grown: *I. barbatula* (collected as *I. collettii* DJHC 0328; *I. barbatula* was split off from *I. collettii* in 1995) and horticultural varieties of *I. decora*. Figure 3 shows *I. barbatula* seeds on the left and *I. decora* seeds on the right (from the NARGS plants); the scale is in mm. Each has a light colored appendage at the end opposite the seed's point of attachment to the pod (the aril of aril irises is different; it is a collar around the point of attachment). I also have photos of

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seeds SIGNA 04X352, which are labeled *I. collettii* and have an appendage matching those of the *I. barbatula* seeds; unfortunately, I failed to grow and verify the plants. This type of appendage is rare in the genus *Iris*. *Iris dichotoma* can demonstrate a somewhat similar feature, but the seeds tend to be angular. I've seen some seeds from Juno Irises with a similar feature, but not consistently within a species and not as pronounced. I do have a photo of seeds that are supposed to be from *Iris dolichosiphon* that look like the seeds in Figure 3, but that species is a type of aril iris. Those seeds were wild collected within the range of Nepalensis species and I did not manage to grow them to verify their identification. I strongly suspect they were mislabeled. I considered the appearance of this type of appendage as good evidence for a plant belonging to the subgenus.

Figure 4 shows seeds from CC7733 and CC7734, photographed when they arrived. The appendages do not stand out as well as in Figure 3, but are clearly visible. Seeds from Til Jung 62, 63, and 65 are similar to CC7733 and CC7734. I was confident that all the seeds are from plants within Nepalensis. Interestingly, some seeds including those of CC7734 show what appear to be remnants of attachment structures apposite the appendages; 2018 seeds obtained from plants grown from the 2014 seeds did not show this. Perhaps the 2014 seeds were removed from the pods before they dried.

End of August in 2015: As I transplanted maturing seedlings, my confidence was reinforced. Figure 4 shows a seedling from Til Jung 63. When dormant, plants in this subgenus consist of a small bulb-like growth point with swollen storage roots below it; this is the defining characteristic for Nepalensis. The seedlings were forming storage roots in preparation for their first winter.

Spring/Early Summer 2018: seedlings started blooming. Not all seedlings that sprouted survived and not all surviving seedlings bloomed in 2018. However, only one seedling died during the preceding winter, so I'm hopeful that the remaining plants are reasonably adapted to my climate and the treatment I'm giving them.

Collection #	Surviving plants	Blooming plants
CC7733	5	1
CC7734	0	
Til Jung 62	3	2
Til Jung 63	3	3
Til Jung 64	0	

Open questions are

- Are all the irises from the same species?
- Which, if any, should be classified as *Iris decora*?

Figure 6 shows full plant photos of the CC7733 seedling that bloomed (on the left) and one of the seedlings from Til Jung 62. Each is in a 5 gallon pot (about 28 cm in diameter) and each has one non-blooming leaf fan and one bloom stalk. By contrast, one of the Til Jung 63 plants produced three highly branched bloom stalks with substantial stem leaves but no separate fans; the most highly branched stalk had 8 sets of spathes. The Til Jung 62 plant is about 75 cm to the top of the bloom; a larger Til Jung

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63 plant measured 91 cm. The CC7733 plant is 85 cm (measurement of tallest branch a week and a half after the photo was taken). The leaves of both plants are strongly ribbed, although, because of the lighting, the ribs don't stand out in the left hand photo.

The blooms from the two collections are very similar. The flowers on the CC7733 plant are perhaps 20% larger than those on the plants from the Til Jung collections. However, the falls on the CC7733 plant usually remain relatively horizontal as they age through the afternoon, while the falls on the Til Jung plants are often deflexed when the flowers are fully open; this difference creates the appearance of a larger size discrepancy. Figure 7 shows a CC7733 bloom on the left and a Til Jung 62 bloom on the right. When viewed under the same lighting and at the same angle, the flowers look even more similar. Note that on both plants the style crests are pronounced and the standards extend only slightly longer. Each set of spathes produces two to four blooms with a few days between each flower. Spathes higher on the stem tend to produce a higher number of blooms.

The extreme similarity of the various Nepal plants make it easy to classify them as the same species. Let's consider how they compare to existing species within *Nepalensis*. We can eliminate the three species other than *I. decora*. Of those species, *I. staintonii* is distinguished from the Nepal plants by having no crest and *I. barbatula* is distinguished by having a beard-like crest. *I. staintonii* has stems that top out at about 8 cm; the other two species are even shorter. Stem length alone makes none of these three species a good match.

However, even *I. decora* poses a problem; the standard description of that species has the stem 10 to 30 cm, rarely larger. This year, most of the bloom stalks on the NARGS clones are about 30 cm (Figure 2), although a couple of them are 40 cm to the base of the highest spathes. Still, even those "outsized" stalks are only half the height the Nepal plants whose stalks are also considerably thicker and stiffer. It is worth noting that the leaves of the Nepal plants are also two to three times wider than standard description of *I. decora*.

A clue as to how to handle this discrepancy comes from the British Iris Society's "A Guild to Species Irises, their identification, and cultivation" ("BIS Species Guide" for short). Clive Innes wrote the section on *Nepalensis*. Under the entry for *I. decora*, he mentions plants 90 cm and 120 cm tall. The later were grown recently (relative to the book's publication in 1997) at Kew Gardens. I was able to exchange some e-mails with Tony Hall who is retired from Kew and was familiar with these plants. They were collected in 1992 at Ganesh Himal, Buri Gandaki Valley, near Pansing in Nepal, which is about 87 miles (140 KM) southeast of Katmandu.

Tony explained to me that there are a variety of forms that fit within the current notion of *I. decora*. As mentioned in the introduction, they are spread across a wide area encompassing a number of countries. Some forms are tall and branched with fairly long capsules, but others are more dwarf in form and unbranched with much shorter capsules. Still others are intermediary. He noted that, based on observations of pollen, *I. decora* should be split into at least two species. However, the work of reclassifying the species would require collecting specimens across the species' range and doing extensive analysis. No one seems to have tackled that large problem yet.

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I'm now confident in labeling the plants from Nepal, *I. decora*. However, it is still interesting to look a bit more closely at the flowers. Both the BIS Species Guide and the earlier British book "The Iris" by Brian Mathew list the flower size of *I. decora* as 4 to 5 cm. I'm seeing the Til Jung flowers as 5.5 cm across (although only with the falls still horizontal), the CC7733 flowers as 6.5 cm across, but the NARGS flowers as 7 cm across. "The Iris of China" by James Waddick and Zhao Yu-tang does, however, does give a wider range of sizes for the species' blooms than the other two references: 2.5 to 6 cm. That is still a little smaller than what I'm seeing; perhaps the domestic form from NARGS has been selected for flower size for several generations.

Figures 1 and 2 show flowers with relatively long standards which spread outward at an angle similar to that of the falls. They match the typical description of the species but contrast with the short, upright-angled standards of the Nepal plants. If someone does eventually revise *I. decora*, it will be interesting to see what they do with the flower description.

Fall 2018

In the fall, I repotted and when possible divided, the plants that bloomed. Figure 8 shows a comparison of roots. The plants are, left to right, a Til Jung 62 with three root systems, a Til Jung 63 with three root systems, a CC7733 with two root systems, and a NARGS plant with seven root systems. They all have the characteristic swollen roots of the subgenus. The Nepal plants have roots that are somewhat more robust than those of the NARGS plant, but not to a large degree.

The old leaves of *I. decora* rot at ground level, leaving a sheath of fibers protecting the dormant growing tip beneath. In Figure 8, the Til Jung 63 leaves had not yet rotted away so I trimmed them to a few inches above the ground. In figure 9, on the left, I've pulled back the old leaves to reveal three new growths awaiting spring. These are on one of the lower plants of the entangled clump. On the right, I've opened up the cone of old leaf fibers on a division of the NARGS plant to show a single growth tip.

Cultivation notes

I. decora is native to a region with wet monsoon summers and relatively cold dry winters. My climate is the opposite: rainless summers and relatively wet winters. Temperatures here in all seasons are significantly warmer than the elevations of the Himalayas where *I. decora* grows. Watering, of course, compensates for a rainless summer. Plastic pots seem to work better than unglazed terracotta. Because we occasionally have summer days exceeding 100° F. (38° C.), I insure that the pots are protected from full sun in the afternoon. After quickly losing my first plant in the mid-2000's, I looked to the BIS Species Guide for advice when the NARGS seeds sprouted. It indicates that this plant needs to be kept on the dry side in the winter. Originally I put the pots for the newer plants, uncovered, in a refrigerator, but have since found that simply protecting them from rain in the winter works just as well. It should be noted that *I. decora* remains dormant well after other irises are up and growing vigorously; it is important not to give up on them too soon.

When trying to divide *I. decora*, it is not always possible to separate root systems. The swollen roots are brittle and intertwined and sometimes the plants are still attached to each other. Any attempt to

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separate the plants should be done gently after washing off the soil. The process is a little like untying a knot; focus on a small area at a time. The difference is that, unlike string, the roots will only bend a little before breaking.