

CULTIVATION OF *NEPENTHES NORTHIANA*

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One of the most beautiful of all lowland nepenthes, *N. northiana* hails from the limestone hills of the Bau region of Sarawak, Malaysia. Although most lowland *Nepenthes* are considered easy to grow (at least relative to the more slowly growing highland species), *N. northiana* has acquired a reputation for difficulty in cultivation. Having grown this species for several years now with some success, I feel qualified to share my observations and cultivation techniques with other growers, and hope to dispel some of the mystery surrounding this remarkable plant.

My experience growing this species in Colorado, USA, began about five years ago, when I received a rather small, bedraggled specimen, approximately 2 cm (less than 1 inch) in diameter. This seedling had been delayed in shipment and arrived in deplorable shape. Fearing that it would not survive, I placed it in compost comprised of fine grade horticultural charcoal and sphagnum peat moss, in the approximate ratio of 3:1. The specimen was then located in a partially closed plastic bag, and situated in a shady spot in my lowland *Nepenthes* greenhouse.

To my delight it survived, and after about two weeks I removed the plastic covering. Initial growth was tentative, until the appearance of pitchers which I began to feed with extremely small crickets. All my *Nepenthes* are hand-fed with insects, a process which is highly time-consuming for a collection of any real size (not to mention distasteful); however, I believe that much of the success I have enjoyed cultivating members of the genus is due to this approach. In any case, within a few weeks of the initial feeding, the rate of growth and size of successive leaves of my specimen began to increase. However, the plant was very slow to develop an extensive root system. In fact, for about a year, it was rooted so tenuously that unless great care was taken while watering, it would become unanchored and drift in its pot.

After about one year, the plant had reached a size of 8 cm (3 inches) or so, and it was at this point that it finally began to settle down and produce a reasonable root system. As chance would have it, my plant had settled near the edge of its pot, and its roots had grown down through an area of almost pure charcoal, allowing it excellent drainage. This was something I noticed after another year had passed, with the plant now about 15 cm (6 inches) in diameter and in need of placement in a larger pot. At this time, I placed it in a 15 cm vessel and used compost comprised of fine horticultural charcoal, fine orchid bark, and sphagnum peat, in the approximate ratio 3:2:1. I do not think that the use of orchid bark is in any way critical, but I often use it with charcoal to ensure good drainage, and because it is light and relatively inexpensive. No other compounds were added to the compost. I emphasize this point because there has been considerable speculation among several growers with whom I have conversed regarding the need for limestone, antimony, or other such substances in the compost for *N. northiana*, and much of the lack of real success in the cultivation of this species has been anecdotally attributed to the absence of these or other, as yet unknown, substances. I have found no reason to believe that anything other than what I have described need be used as compost for the successful cultivation of *N. northiana*!

Repotting was done in the middle of autumn, a time when temperatures are generally moderate at my location, and my greenhouse environment is typically devoid of extremes of temperature and humidity. And, for about the next six months or so, my *N. northiana* was fine, having settled into its new compost and produced a number of new,

ever larger leaves and pitchers. However, with the advent of spring that year, I began to notice some problems. Specifically, pitcher production ceased, and the leaves of the plant began to exhibit a bronze tint, with circular patches of dead tissue approximately 0.5 to 1.5 cm (0.2-0.6 inches) in diameter. Relocation to a less well-illuminated area mitigated the latter problem, immediately implying that this species may best be situated in a low-light environment. This was confirmed for me by several individuals who have had the good fortune to observe this plant *in situ*, and who have informed me that specimens growing in areas with significant direct sunlight tend to be less healthy and robust than those better shaded.

However, relocation of the plant to a less well-lit location did not result in the production of new pitchers. Furthermore, since the absence of pitchers had preceded the relocation of the plant, I did not think it likely that reduction of illumination was the cause. In fact, the crux of the problem was the relative humidity of the area in which I live. Typically, our humidity can drop into the teens (sometimes even into single digits—yikes!) during the summer months. (Temperatures in the growing area are approximately 28-36°C, 82-97°F during the day, and 20-24°C, 68-75°F during the night.) The necessary venting of my greenhouse to mitigate solar heating causes pronounced fluctuations in the humidity in the greenhouse. To combat these problems, I installed humidification equipment which raised the humidity to about 75%. As a result, all my lowland *Nepenthes* plants pitcher quite regularly—with the exception of *N. northiana*!

So, since my plant was still not pitching well, I decided to place it in a lowland environment with stable humidity. To do this, I put it into an aquarium with a thin sheet of clear Plexiglas covering the top. About two liters of water were poured into the tank to provide ample humidity, and the plant was placed on a stand so that it would be out of the water. Directly above the aquarium, I placed four 40 W fluorescent shop lamps (just standard shop lamps, not the broad-spectrum type typically touted as essential for growing plants) on a timer with a 13 hour photoperiod. The plant was watered thoroughly every two or three days with water purified by a reverse osmosis unit.

Much to my delight, my plant immediately began to pitcher again, but I noticed that the leaves were still developing the now familiar bronze tint. Therefore, I reduced the number of lamps illuminating the enclosure by half, and subsequent growth was a healthy green again, with no cessation of pitcher production! Since that time, the growth of this plant has been uninterrupted, with the size of the specimen increasing dramatically. At the present time, leaves are 65 cm (26 inches) in length, and I have had to construct a custom enclosure to replace the aquarium which it has long since outgrown! Pitcher size has increased to nearly 25 cm (10 inches), which although nowhere near the 40 cm (16 inches) commonly seen in the wild, is still respectable, with the pitchers exhibiting all the characteristics for which the species is so widely known (see Back Cover). Recently, though, my *N. northiana* did stop pitching, and this was a matter of some concern initially. However, a brief examination of the roots quickly revealed that the plant was root bound. I placed it in a 45 cm (18 inch) pot, and it has now happily resumed its familiar growth.

Having therefore enjoyed a reasonable degree of success growing this beautiful species, some time ago I decided to obtain a couple of new specimens from different sources for further experimentation, making sure that these new acquisitions were not clonally identical to my current specimen in the interest of ensuring that earlier success was not due to the good fortune of receiving a particularly hardy clone. Therefore, I placed one of the new plants in a mix essentially identical to that previously described. In addition, I placed the other plant in compost consisting of almost pure peat moss, in an attempt to determine the extent to which much more absorbent compost might affect growth. I am happy to report that after two years of experimentation, both of these plants are growing and pitching quite well, with the choice of compost having made little apparent difference!

Thus, although my experiences and observations regarding the cultivation of *N.*

northiana are anecdotal in nature, it is my belief that they may serve to clarify some of the confusion regarding the cultivation of this wonderful species. In summary, I believe that there are two key issues which the grower must address. 1: Provide a source of consistent, low-intensity illumination, which can be provided by something as simple as ordinary 40 W fluorescent shop lamps. Failing this, try placing your plant in a location where it will receive indirect sunlight, adjusting if leaf damage as described above occurs. 2: Ensure that your growing environment provides consistent, high humidity and temperatures in the approximate range of 20-35°C (68-95°F). It is my belief that observation of these points, along with the other general points of good *Nepenthes* horticulture, will likely enable the reader to enjoy the successful cultivation of this most remarkable and beautiful plant!

Those interested in sharing their experiences with this species, or who may have markedly different observations, are encouraged to contact the author.



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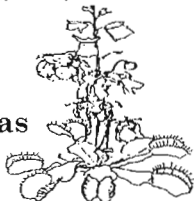
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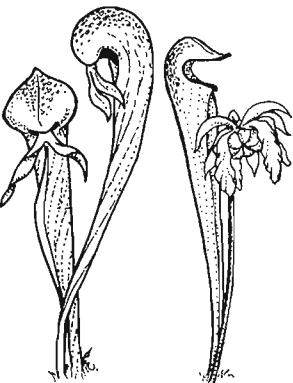
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Front Cover: *D. intermedia* on the left, *D. intermedia* x *capillaris* on the right, cultivated by Phil Sheridan. Photograph by Robert Gibson. See article on page 52.

Back Cover: A recent *Nepenthes northiana* pitcher (25 cm in height) from the author's largest plant. See article on page 49.

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