

References

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***Nepenthes* Growing Media**

By

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The subject of growing media for *Nepenthes* has not been extensively explored. Frequently, writers cover the subject with a generalization. Such sources often contain general references to long fiber sphagnum. This observation, incidentally, is not entirely directed at others. For example, a prior note, CPN 16:83-87 (1987), surveyed some cultural variables for growing *Nepenthes* under lights, but made only a summary reference to long-fiber sphagnum as a growing medium. Certainly, long fiber is a good starting point for discussion, but there are some choices and alternatives. These choices become more important as the *Nepenthes* collection expands from the generally available, easily grown varieties, to rarer and more difficult species or hybrids.

True, many *Nepenthes* species and hybrids take well to long fiber sphagnum, as well as a variety of other growing media. However, sphagnum is not infallible. In particular, sphagnum can become waterlogged. This condition can lead to root rot. I have lost specimens of *N. reinwardtiana* and *albo-marginata* using this medium, apparently because of waterlogged root systems. Thus it is sometimes desirable to have a medium which provides greater aeration and drainage than pure sphagnum. Indeed, as one gets away from the more commonly grown species and hybrids, several species demand a medium which, for all practical purposes, is an epiphytic mix. This requirement suggests that some orchid media, either alone or mixed with sphagnum, have some relevance to growers of *Nepenthes*.

Interestingly, the orchid world has discovered that many orchids do well in sphagnum or sphagnum mixes. One of the larger suppliers of growing media and potting supplies to the orchid community is OFE International. Of course, if one is an orchid grower, there is sphagnum and then there is sphagnum. The hot item in the orchid world currently seems to be New Zealand sphagnum moss. OFE, in a recent catalog, offered NZ long fiber in 1/4 cubic foot bags, one and five kilo boxes, as well as NZ short fiber. Moss is shipped dry, and a one kilo box is pretty good size for a hobbyist. An article in the March, 1989 American Orchid Society Bulletin, titled "The New Sphagnum Moss from New Zealand", by Ann and Jim Mann, discusses the advantages of New Zealand moss. According to the Manns, NZ moss is a robust, resilient species, *Sphagnum cristatum*, which grows in the Pahiki swamps of New Zealand's south island, reaching a height of several inches. It is clean when harvested, according to the Manns, and also is picked over to remove leaves and debris. My experience is that NZ moss is indeed freer from leaves, sticks and grass than moss from domestic sources. I have no independent knowledge on this subject.

The Manns go on and assert that, because the moss is clean, and deemed to be free of soil, insects or fungi, they do not fear contacting sporotrichosis when handling it. This latter assertion has triggered some debate in the orchid literature. In the May, 1989 AOS Journal, Dr. Isadore Rudnikoff commented on the Mann article. She related that she had sent some NZ sphagnum to a hospital laboratory for analysis. Fungus culture yielded the presence of the mucoracea group, which Dr. Rudnikoff asserted is pathogenic to humans, citing as an example, mucormycosis (or Phycomycosis per Merck Manual 15th Ed.; editor's note). She called for an independent investigation.

The better view may be that no unsterilized organic matter is free of potential disease causing organisms. Perhaps the Manns confused absence of visible signs of soil, insects or fungi with the total absence of such factors. Consequently, one should take the same precautions when handling NZ moss as when handling other sphagnum. Again, I do not presume to know the "right" precautions, but parental common sense suggests that one keep the moss in a closed container, use it in a well ventilated area, not handle it when open wounds, such as cuts and scratches, are present on the hands. Individuals predisposed to infection obviously should carefully consider their options. Above all, say your prayers and brush your teeth regularly.

According to the Manns, the Japanese are the world's largest importers of NZ sphagnum. New Zealand's exports of this commodity have grown from under 10 metric tons in 1977 to 640 tons in 1987. Genera said to be grown using NZ moss include phalenopsis, cattleyas, oncidiums the beautiful south African terrestrials which have been photographed growing next to *Drosera capensis*. The Manns also mention the long lasting nature of the medium. Not surprisingly, they are also a commercial source for NZ moss.

OFE also has offered Canadian green long fibered sphagnum and Florida long fibered sphagnum, which I have no experience with. I generally use NZ moss. Although I do not agree with all the claims made for it, I have found it to be an excellent growing medium. However, in view of the potential health hazards which are not yet well-defined, I would not recommend it to others except at their own risk.

OFE and others also offer epiphytic mixes. OFE, for example, offers a phalenopsis mix consisting of NZ sphagnum, cork nuggets and charcoal. The mix alone dries out too quickly for my conditions, but when mixed with an equal amount of sphagnum, works very well. In particular, this mix avoids many of the root rot problems of straight sphagnum. Other epiphytic mixes appropriate for *Nepenthes* do not contain any sphagnum. For example, Slack, a leading authority on CP cultivation, has suggested either sphagnum or, as an alternative, a mix of peat, orchid bark and perlite. Kensington Orchids, another supplier of orchid potting media, offers a cattleya mix which contains similar ingredients, although apparently not in the same proportions recommended by Slack. Bill Scholl, an experienced *Nepenthes* grower, has reported that his plants do well in bark chips. He uses hardwood chips which are a side product of many industrial establishments. Pring (1943), a pioneer cultivator and hybridizer of *Nepenthes*, stated that he used three parts orchid peat to one part sphagnum moss. Pring also wrote that he applied liquid cow manure to stimulate pitcher formation. In deference to other members of the household, the Pring fertilization method has not yet been applied to my collection.

Two varieties which now grow in a strictly epiphytic mix in my collection are *N. tenticulata* and *N. veitchii*. *N. veitchii*, a seedling, appears content in the Kensington cattleya mix with a top dressing of peat/sand and perlite. *N. tenticulata* is in the grower's mix, which appears to be hardwood chips or shavings. Approximately two dozen other *Nepenthes* variants are doing well in mixes of ordinary sphagnum, NZ sphagnum and/or OFE phalenopsis mix. These include *N. alata*, *boschiana*, *coccinea*,

khasiana, *merilliana*, *reinwardtiana*, *trichocarpa*, *tobaica*, *truncata*, *ventricosa*, and several *ventricosa* hybrids, as well as several recent additions. Plants which grow in straight sphagnum include *N. boissense* (rubra), *infundibuliformis*, *mastersiana* and *superba*. I use sphagnum with these primarily because they tend to dry out more quickly, due to the size or vigor of the plants.

In addition, Bill Scholl has grown *N. ventricosa* in straight sand. The plants grown in this media are reportedly smaller in size than plants of comparable age in wood chips. This feature may in fact be desirable for growers with a space problem. Perhaps it would be useful for CPN readers to write in to discuss their growing media. If readers wish to write to me I will attempt to collate the answers for future use.

Suppliers which have recently advertised New Zealand sphagnum or bark mixes in the AOS Bulletin include the following:

OFE International, Inc,
P.O. Box 161302
Miami, Florida 33116

A & P Orchids
Peters Road
Swansea, Massachusetts 02777

Ann Mann's Orchids
9045 Ron-Den Lane
Windermere, Florida 32786-9238

Kensington Orchids
3301 Plyers Mill Road
Kensington, Maryland 20985
(has not offered sphagnum)

The above listing should not be viewed as an endorsement. I do not endorse any of these sources nor do I have any financial interest in them.

Authorities cited

Mann, A & J. The 'New' Sphagnum Moss From New Zealand. AOS Bull. 58:250 (March, 1989),

Pring, *Nepenthes*, XXXI Mo.Bot.G.Bull. 169, 172 (1943)

Rudnikoff. Letter to the Editor. AOS Bull. 58 :492 (May, 1989)

Slack, *Insect Eating Plants and How to Grow Them* 136 (1986)

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