# IN REPLY TO THE ARTICLE ON "CANNINGTON SWAMP"

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The Cannington Swamp I wrote about in my article "Cannington Swamp R.I.P." is not the Yule Brook Botany Reserve in Kenwick. The Cannington Swamp I wrote about is in Cannington about 8 miles away from the University's reserve.

I don't "suggest" that Cannington Swamp is disappearing. I'm saying it "is" disappearing, and fast.

The road that runs through the middle of Cannington Swamp was once the only destruction. Now all one side of the road is housing. The *D. zonaria* patch is a huge sand pit. The best *Byblis gigantea* patch has a storm water drain right in the middle of it. The remaining swamp will also be housing, judging by the proposed road layout.

Yes, I believe the plants can be moved to a place where they will be admired. If they weren't removed they would be gone forever.

*D.* species "Lake Badgerup White," an unnamed pygmy *Drosera*, is a perfect example. If Steve Rose had not collected this *Drosera* five years ago, it would not be common in cultivation all over the world today. *D.* species "Lake Badgerup White" is no longer found in the wild. A market garden has taken over its habitat.

What people don't realise is that most of the rarer plants are confined to small scattered habitats all over Western Australia. If people like myself didn't make small collections of these plants, they could be lost forever. I would suggest that some of the plants found in Cannington Swamp in Cannington are not found on the Yule Brook Botany Reserve in Kenwick, and vice-versa.

# MORE ON PREDACIOUS FUNGI

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In my last article about predacious fungi (CPN 9:401980), I concentrated on the various methods used by these fungi to capture their prey. This article deals with several other diverse, but equally fascinating, aspects of these fungi, including the formation of traps, the presence of toxins in some fungi, and the classification of these organisms.

Although much of the confusion which used to surround the classification of predacious fungi has been cleared up in recent years, there are still some points of confusion. To begin with, it is still unclear whether fungi belong in the Kingdom Plantae, in the Kingdom Protista, or in their own kingdom. Also, the validity of several genera. The same is true for a few species which are so similar that they may just be varieties of the same species. As with the carnivorous Angiosperms, there are probably some species which have yet to be discovered, too.

Unlike most carnivorous plants, the

predacious Hyphomycetes generally do not form traps in pure culture. The introduction of nematodes will cause the traps to be produced, as will the introduction of sterile water in which nematodes have lived. Several other things have been found which will stimulate trap formation, including horse serum, rain water, an ethyl alcohol solution, and contact with glass. The name "nemin" is often given to the substance which *naturally* induces trap formation, although this substance has not yet been isolated and identified.

It seems practical to follow the plight of a nematode encounttering a Hyphomycete with adhesive traps. On contact with the adhesive (which, by the way, is normally adhesive only to nematodes), the worm quickly withdraws. Nine out of ten times, the worm will escape this way. If it is still held the worm will struggle violently. It may free itself, but even a small branch of fungus stuck to it will often kill the worm. If it cannot escape, the worm usually becomes quiet after an hour or so. Trophic hyphae then enter the nematode's body to absorb nutrients. After about twenty-four hours, the nutrients have been removed and the fungal protoplasm withdraws, leaving only an empty worm filled with empty hyphae. Most species with adhesive mycelial traps have a similar sequence for capturing and digesting prey.

Many mycologists have suggested that some species of predacious fungi produce a toxin which is used to kill prey. The rapidity with which nematodes captured by Hyphomycetes die (usually one to two hours) tends to discredit the old theory that the prey dies from its injuries alone. It has been found that sterile filtrate from nematodes captured by *Arthrobotrys oligospora* and often kills other nematodes, indicating the presence of a toxin in this species. It seems very likely that all or most of the predacious Hyphomycetes possess this same capability. It also appears that at least some of the species with adhesive spores use a toxin to kill their prey. A toxin would serve to decrease the likelihood that the spores are rubbed-off as the worm moves about. The presence of toxins in other species is very possible, although no evidence has been found to indicate their presence.

The minute size of the predacious fungi makes the various functions that the fungi perform even more impressive. The mycelium of some species is only .003 millimeter in diameter. The spores of some species are less than .002 millimeter in length. Nematodes which are only .6 millimeter long are too large to be caught by many species of fungi. Although the growth of some species may become very extensive, the parts are never large and the traps are generally much too small to see without magnification. In many cases, the entire trapping mechanism consists of from one to three cells.

The predacious fungi have evolved a number of mechanisms to help them capture, kill, and digest their prey. Though some appear similar to certain carnivorous Angiosperms, it is obvious that neither is the progenitor of the other. It is quite possible, however, that both evolved their carnivorous nature in response to similar environmental pressures.

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**(Please see FUNGI p. 20)**

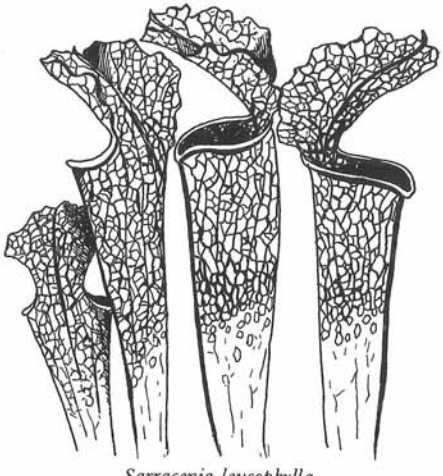
**BYBLIS - continued from p. 19**

pletely, leaving about 4 cm of woody stump in the pot. New eyes will develop, generally more than one. In a very short time, the plant grows again, but this time with better from. a good cut back every year produces betterl-looking plants with more flowers.

*Byblis gigantea* flowers are generally dark mauve through to light pink. Some blooms are completely circular and filled in. Others generally the northern form, are more open and star shaped.

Last year I found a rare *Byblis gigantea* that has produced a pure white flower. This plant, I'm happy to say, is growing very nicely for me, and with luck I may get seed from this plant this year. If luck goes my way I hope to get this *Byblis gigantea* var: *alba* to the point where it will be very common in cultivation. (Please see front cover.)

*Byblis gigantea* is fairly easy to grow and is well worth growing for the fantastic display of flowers it gives every year.



*Sarracenia leucophylla*
Drawing by Jim Miller

**N&V - ZART - continued from p. 7**

vacation to an island up in northern Michigan. We reached the 13 by 7 mile island by a 3 hour ferry ride from the mainland to the island port. While going down a trail looking for one of the island lakes, we came upon a sphagnum bog. Looking across the bog, you could see the ground covered with *Drosera rotundifolia,* and *D. anglica.* Also, we found *Sarracenia purpurea* in this bog.

While rowing along the bank of another isalnd lake, we spotted large *S. purpurea* plants with dozens of tall flowers. These plants were large, gorgeous specimens—the largest I've ever seen!

While fishing in another inland lake, we spotted a stand of tiny yellow flowers. Looking closer, we found *Utricularia cornuta* and *U. vulgaris.* Walking along the sandy beach, we came across many patches of *Drosera linearis, D. rotundifolia,* and *Pinguicula vulgaris* growing in the sand.

We went to the Biological Station on the island and talked with a man there. A book was written on the bog plants found on the island and so we used a copy to help us identify some of the plants. We came upon a little stream of water, and what a neat place this was! In the stream, on the very shallow edges, we found *Utricularia intermedia* and in the middle of the stream were huge bunches of *U. gibba,* practically clogging the stream.

This was the first time we ever saw CP in the wild, and it was very exciting! It's a special feeling to see these groups of CP in their natural habitat.

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**FUNGI - continued from p. 9**

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