

# LITERATURE REVIEW

Folkerts, George W. and John D. Freeman. 1989. *Pinguicula lutea* Walt., *f. alba*, f. nov. (Letibulariaceae), a white-flowered form of the yellow butterwort. *Casanea* 54:40-42.

A white-flowered form of this usually yellow species was discovered in Liberty County, Florida north of Wilma. It grows among the yellow-flowered forms and is relatively rare, followup visits from 1981-1986 disclosing from 2 to 7 plants in the area. The variant has been designated *f. alba*. (DES)

Gardner, Rob, 1989. Growing native carnivorous plants at home. NC Wild Flower Preservation Soc. Newsletter 1:4-7.

This article knowledgeably covers cultivation of *Dionaea* and *Sarracenia*s as the most popular CP of interest. The author has had great success with these plants at the NC Botanical Garden in Chapel Hill. The author recommends the basic brown peat moss medium with either vermiculite, sand or perlite added, the plants potted up in plastic pots set in at least one inch of water. He advocates a light fertilization (1/4 label strength or less) monthly during the growing season only. Instructions are given for germinating seed. The article also contains five excellent line drawings of *Sarracenia*s by Dot Wilbur, plus a cover drawing of *S. leucophylla*. The final prize is a small packet of *Sarracenia* seed taped into the issue for the reader to try his or her hand. (DES)

George, Uwe. 1989. Venezuela's Island in Time. National Geographic Magazine, 175:526-561.

There seems to be a surfeit of information on the Venezuelan tepui lately. PBS TV in this country has had two one hour programs this past year, we have our two issue series going in CPN, and now National Geographic has this excellent article. Actually, some of us can never get enough of the tepui, we get "tepu fever" as described in the article and require more information and begin to seriously consider traveling down there.

This article is in the usual inimitable, excellent Geographic style and is very well written. The author spends most time on Mt. Roraima, but also much time on Auyan- tepui and he even visited the meteorologically forbidding Aparaman-tepu. There are the expected diagrammatic maps of how the tepui formed, beginning before the separation of Africa and South America. The aerial photos are superb as are the photos of inhabitants of tepui. Our CP are represented by *Drosera roraimae*, *Heliophora tatei* and *Brocchinia reducta*. The ecology and geography of the area is well illustrated, as is the author's adventures in getting to and from the tepui over several years' travel. The drenching daily and nightly rains with lightning and thunderbursts lasting a full minute are described. The climbs up faults in nearly sheer walls, the veil-like waterfalls coming off nearly all the tepui, all are here. If you can get a copy of this issue (May, 1989), it will be well worth the trouble. (DES)

PBS Television (USA), "Islands in the Mist", NATURE (Series Name), 16 April 1989 (Most local stations).

You may wonder what a review of a TV program is doing in the Literature Review section, but it seems a good place to put it. In the USA, most non-commercial quality TV is on the Public Broadcasting System (PBS), and one generally good series is called NATURE, which is on weekly. NATURE owes a great deal the BBC and the Oxford Films from whom it obtains most of its programming, usually with the narration by George Paige, the series editor.

In this case, we have a film by Wolfgang Bayer concerning the tepui of Venezuela. Unlike the silliness of the program of about a year ago (*not* the NATURE series) that featured skydivers pretending to be serious about their sport being the only way to land on the tepui, and during which there were serious injuries and an eventual pickup by helicopter, and during which we took in the fauna and flora as mainly background to the adventuresome goings-on (They trampled about over hectares of brocchinias, and even cut them up to make a long pipe for a show), THIS program is truly serious. The first half concentrates on the tepui themselves with superb aerial photography and fine shots of various geologic and biologic aspects shown on purpose. Various specialist expeditions are described. Most time is spent on Mt. Roraima and Auyan- tepui. CP shown include *Brocchinia reducta*, several *droseras* and one *Heliophora* in several views, including flower.

The second half of the program drifts, but is of some importance. It shifts to the Gran Sabana in which the tepui are located, the almost endless tropical lowland forests. The film maker points out how the Gran Sabana is being destroyed by deforestation (through burning) for agriculture. It is from the sabana that moisture rises daily to condense into thunderstorms over the tepui to give 150 inches per year of needed rain to retain the unique ecosystems and species.

Watch for this one in reruns and tape it for your collection.

Janartham, M.K. & A.N. Henry, A new *Utricularia* L. from Keraia, India. Bull. Bot. Surv. India 28(1-4): 195-197 1986.

A new species *U. nayarii* is described by the authors.

Takahashi, H., Ontogenetic development of pollen tetrads of *Drosera capensis* L. Bot. Gaz. 149(3): 275-282. 1988.

Using electron microscopy, the author found a proximal central pore which is regarded as a newly evolved structure in an ancestral type of *Drosera* pollen tetrad. There are 10-15 channels which are homologous to the ancestral apertures. A discussion how these structures relate to self-fertilization was also presented.

Vassilyev, A.E. & L.E. Muravnik, The ultrastructure of the digestive glands in *Pinguicula vulgaris* L. relative to their function: I The changes during maturation. Ann. Bot. (Lond.) 62(4): 329-342 1988.

Digestive glands are fully mature while the leaf is in the bud stage. All the gland cells remain on the fully opened leaf. The authors traced the origin of the digestive enzymes from the site of synthesis in the RER to the storage site in a special layer of cells associated with the slime layer and vacuoles.

Vassilyev, A.E. & L.E. Muravnik, The ultrastructure of the digestive glands in *Pinguicula vulgaris* L. relative to their function: II The changes on stimulation. Ann. Bot. (Lond.) 62(4): 343-352 1988.

During prey digestion and absorption of nutrients, the secretory cells of the digestive glands remain highly active. A model similar to that suggested for *Dionaea m.* is proposed. After the cycle of digestion and absorption, destructive processes are initiated in the glands which is similar to what happens in an aging and unstimulated leaf.

(Various authors on bogs in Ireland). 1987. Ireland of the welcomes, 36(3), May-June.

This issue of IRELAND OF THE WELCOMES, a magazine put out by the Irish Tourist Board, is devoted entirely to bogs. The subject is pretty well covered in ten articles by various authors and in photos and artwork. The articles range from natural history and scientific, to bogs in art and letters.

To mention a few of the articles, the issue begins with a very nice and clear explanation of the kinds and origins of bogs in Ireland. A very great portion (one-seventh) of the landmass was covered in bog which has played a significant role in Irish culture and history. The thick, red-brown, luxuriant domed sheet bogs of years ago would occasionally shift (bog bursts) and cover roads, forests and unfortunately people similar to a landslide in speed and cataclysmic results. A nice photo of *Sarracenia purpurea* illustrates mention of successful introduction of the species in 1909 and it has since proliferated. There are eleven species of CP in Irish boglands.

There is an interesting article on the archaeology of bogs, including some of the artifacts found (gold and bronze survived better than iron) and even of bodies of people, apparently placed in the bogs for burial).

An article on economic uses of bogs mentions how peat harvesting has kept the Irish fairly energy dependent for years. The dried peat is a major fuel source when used as briquets or as dust. There are details about the tools and methods for hand harvesting (still used by individuals) and the massively efficient machinery used by companies.

A final article on conservation mentions that the bogs are disappearing at a rate for exceeding initial predictions a half century ago. There are several reasons, mostly related to the economics including the harvesting of salable peat for fuel and as an additive to organically poor soils for gardening and farming all over the world, and the need for arable farmland and pastures. A board assigned to peat economic management has designated a very small percentage of the bogland for preservation, and even some of that has been disturbed.

The entire magazine is great reading. I wish to thank Phil Sheridan for bringing this issue to my attention. (DES)