

# REVIEW OF RECENT LITERATURE

Earley, Lawrence S. 1981. Cloning endangered plants. *Wildlife in North Carolina* 45:20.

A brief introductory article featuring ICPS member Bill Carroll discussing his work with plant tissue culture of rare and endangered native species, including CP. Features a photo of Bill with some of his progeny *en flasque*. The work is conducted at the North Carolina Botanical Gardens.

Fineran, B. A. & Gilbertson, J. M. Application of lanthanum and uranyl salts as tracers to demonstrate apoplastic pathways for transport in glands of the carnivorous plant *Utricularia monanthos*. *Eur. J. Cell Biol.* 23:910: 66-72 1980.

The electron microscope tracers mentioned above reveal that deposits of these salts occurred in the cells walls, but not in the protoplasts of intact cells.

Fineran, B. A. Ontogeny of external glands in the bladderwort *U. monanthos*. *Protoplasma* 105 (½): 9-26. 1980.

The author used electron microscopy to study early differentiation of the external glands which are mainly used to absorb solutes from the external medium before any traps were present in very young plants. When traps developed, the external gland became modified for water secretion.

Fromm-Trinta, E. Revision of the species of the genus *Genlisea* (Lentibulariaceae) in the southeastern and southern regions of Brazil. *Rodriguesia* 31(49): 17-140. 1979.

*Genlisea* and *Utricularia* belong to the same family; the former has a flower calyx that is 5-lobed and the trap leaf is a straight body attached by a pedicel to the rhizome, with a middle bladder and an elongated

neck with two twisted arms. *Utricularia* is differentiated by a 2-lobed calyx and urn-like bladders. There are five species of *Genlisea* in Brazil: *G. violacea*, *aurea*, *filiformis*, *repens* and *pygmaea*.

Kingsolver, J. 1981. The effect of environmental uncertainty on morphological design and fluid balance in *Sarracenia purpurea* L. *Oecologia* 48: 364-370.

This rather ephemeral paper uses engineering analysis techniques and wax models of leaves and bowls of the same volume to determine the resistance of *S. purpurea* pitchers to dry weather desiccation stress as a function of the "design" of the pitcher. The work indeed concludes that the design is efficient, and that larger pitchers are more resistant to desiccation than smaller. There is also a discussion of some fine points of ecological jargon and semantics.

Moeller, R., The temperature-determined growing season of a submerged hydrophyte: Tissue chemistry and biomass turnover of *Utricularia purpurea*. *Freshw. Biol.* 10(5): 391-400. 1980.

At Mirror Lake, New Hampshire, USA, the dynamics of thermal stratification limit the growing season depending on depth. At 6 m depth the growing season is about 8 weeks and at 2 m it is 17 weeks. Light may limit the growth at 6 m but not at 2-4 m. This species is unusually rich in zinc, relatively rich in nitrogen, but quite poor in phosphorus.

Reznick, A. A., John Goldie. 1891. Collecting site near Lake Simcoe, Ontario, Canada. *Can. Field-Nat.* 94(4): 439-442. 1980.

Goldie travelled in 1819 near Lake Simcoe by the present town of Hol-

land Landing. He reported *Drosera linearis* as growing here. In 1976, this site was rediscovered, but *D. anglica* was nowhere to be found. Another rare plant is gone.

MISSOURI BOTANICAL GARDEN'S  
FIRST ANNUAL  
CARNIVOROUS PLANT EXHIBIT

by Marilyn Maupin  
Staff horticulturist and  
curator of CP

Toth, R. and D. Toth. 1980. Cytochemical localization of acid phosphatase in the nematode-trapping fungus *Arthrobotrys oligospora*. *Mycologia* 72: 813-817.

The function of lysosomes intracellularly in digestive processes is well-known, and the commonly associated acid phosphatase enzymes in these organelles was selected as an indicator of lysosomal activity. Acid phosphatase was virtually absent prior to prey capture, increased subsequent to capture, and then appeared in the nematode body gradually. This points toward active digestion rather than autolysis of the captured prey.

Missouri Botanical Garden in St. Louis held its first carnivorous plant exhibit in the Climatron April 25 to May 17. It was very well attended by curious visitors, many of whom previously had no idea that there are so many different kinds of CP.

The main feature of the exhibit was a simulated bog environment. We used a free-form fiberglass pool, 7' x 13' at its maximum points, and elevated it on a platform for easier viewing. Long-fiber sphagnum moss was used inside the pool as a filler between the potted carnivorous plants. Sheet moss that had been sprayed with a waterproof green florists' dye was used over the top of the bog to hide the

Please see **EXHIBIT** on p. 111.



*Nepenthes* display at Missouri Botanical Garden CP Show. Photo supplied by MBG.