Review of Recent Literature


The plants involved were Utricularia minor, Elodea canadensis and Lemma minor. There were fewer mosquito eggs and larvae in ponds filled with the above plants than in plantless controls, and more predators in the Utricularia and Elodea ponds than in the Lemma and plantless ponds.


A summary of this fascinating work appeared in the June, 1981 issue of CPN (10:37).


Three species of Utricularia (purpurea, juncea and inflata) were sampled from 7 marshes and partitioned into roots, rhizomes, stems, petioles, leaves and flowers. Utricularia had the highest concentrations in iron and aluminum and generally the elements, potassium, calcium, sodium and manganese were higher in concentration in upper plant parts than roots and rhizomes.


The study of the wood anatomy of Cephalotus apparently shows that it is related to the Saxifragaceae and allied families.


An excellent article by a Canadian naturalist covering Sarracenia purpurea and Drosera rotundifolia as they grow in northern bogs and written from an ecological behaviorist viewpoint, as the title suggests. The author stresses natural habitat, but gives advice on outdoor growing, to be recommended for these species over indoor growing. Accompanied by six superb color photos (one full page) and a range map.


Fossil pollen identified as Drosera uniflora was found in deposits that dated 10,425 carbon-14 years ago. This species continues to grow today in the Cordillera Pelada. The author discusses the climate changes that occurred during this long time period.


Among several plant genera discussed, the CP genera of Drosera, Dionaea, Aldrovanda and Utricularia are of course reviewed. These are brief summaries in which the main thrust is the authors' contention that movement is chiefly due to osmotic fluid shifts stimulated through various mechanisms. The paper should be read for more details including mathematical formulae and bibliography.


In a 20-acre sphagnum bog in Vermont, the author found comparatively few, widely scattered clumps of the above orchids. The sundews were always found in association with the orchids, in spite
of apparently similar habitat abundant throughout the large area. DES

The author spent several days in a Saskatchewan sphagnum bog collecting beetles. One interesting feature of the article is that the author found many records or unusual species by noting elytra and other chitinous body parts in Sarracenia purpurea pitchers, which thus served as natural concentration traps for the collecting entomologist. DES

Action potential studies indicate a mechanism very similar to Dionaea. This is interesting in view of differences in natural habitat adaptations. Both mechanisms may have advanced from the slow one of Drosera. DES

An action potential was generated in a cell in the base of a sensory hair. Recordings indicated that the potential spread electronically over the lobe. EM disclosed numerous communicating plasmodesmata between cells which would allow an electrical transmission between cells.

There has been much discussion lately in popular and scientific annals about the acid rain problem, often with few facts to back up emotional assertions. The author does a fine job of summarizing what we know to date, including what little experimental work has been done. In fact, while acid rain may decrease various kinds of productivity of some plants, it increases many others (including agricultural species). The ratio is about 50/50 overall. The greatest threat of acid rain then may be to diversity rather than plant life itself (effects on animal life are far more profound in many cases, especially amphibians and fishes). CP are not specifically mentioned, but it is noted that eutrophication in many Adiron-dacks boggy lakes is arrested. Specific research on CP would be of interest. DES

Volatile organics were determined by gas chromatograph, and CO₂, NH₃ and acetic and propionic acids by other methods, as expressed from nematodes. The effects of some of these compounds in trap induction in Arthrobotrys oligospora. Generally (somewhat concentration dependent—see paper), CO₂ inhibited, NH₃ stimulated and the two acids had no effect on trap induction.

A large, privately-owned pocosin was drained and cleared for silviculture. This afforded an opportunity to observe the phenology and some possible relationships of pitcher plant survival under varying conditions after the treatment. Immediately after clearing, increased light and space resulted in a massive display of three Sarracenia spp. the following spring, and reasoning is offered against nutrient ash effect. As the results of ditching became effective a year or more later, pitcher plant growth ceased, indicating soil moisture as a limiting factor since there was insufficient pocosin shrub
regrowth yet to bring light and space limitations into play. The observations were in effect a model of the effects of these three factors on pitcher plant populations. (Reprints: D.E. Schnell, Rt. 1, Box 145C, Pulaski, VA 24301).


This popular article discusses the need for plant scientists to resume research into the "real" electrical signals that a large variety of plants evoke including CP for regulating many different processes. The author describes why electrophysiology was neglected for decades, which left a gap of knowledge that was filled by sensationalists who grossly exaggerated the plants' response to stimuli. This is an article that will stimulate new ideas for research and should be read by everyone interested in this area.


Various arthropods associated with this sundew in native habitat were studied. Several were prey for the sundew, some were pre-robbers. Physical model studies in the field indicated that insect components were sufficient to supply 100% of nitrogen and phosphorous, but a negligible portion of potassium which came from soil sources.


An environmental chamber of S. purpurea plants was set up in the lab and the plants captured measured numbers of fruit flies introduced into the chambers. New pitchers captured more insects than old, as did pitchers with wider openings. Also, older pitchers on plants with a new pitcher captured more flies than older pitchers on plants without new pitchers. These results were within limits of numbers of introduced flies which were varied.

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WANT ADS


Steve Friedrich (172 Hutchens Close, Baringa Gardens, Melba A.C.T. 2615, Australia). Wanted: Plants, seeds or cuttings of Nepenthes and Heliamphora. I have for trade Drosera prolifera, D. schizandra, D. indica, Byblis gigantea, Chrysanthemum californicum, Nepenthes mixta, N. boliviana, N. mirabilis and many others.

Donald Kalb, Jr., (Box 25, Peosta, Iowa 52068). WB: Byblis gigantea seeds or plants; Drosera regia seeds or plants.

Lee's Botanical Gardens (P.O. Box 7026, Ocala FL 32672). TS: giant psittacina, red flava, flava mixima, psittacina × alata, psittacina × purpurea, flava × rubra, rubra × purpurea, psittacina × leucophylla, leucophylla alba, many more. WT: Nepenthes plants or cuttings.

CHELSEA (from page 100.)

If I may be allowed to quote from our rules, the Constitution of the Society, our primary aim is 'to further the knowledge of the public in the field of carnivorous plants.' I think that this stand furthered everybody's knowledge.

Naturally, no education process ever stops, and we would be pleased to hear other people's comments on plant carnivory so that we can work towards a definition of plant carnivory that is acceptable to everybody. The Carnivorous Plant Society can be contacted at 'Carn View,' Lanner Hill, Redruth, Cornwall TR16 6DA, ENGLAND. (John Sirkett's address.)