

Literature Review

Antor, R.J. and M.B. Garcia. 1994. Prey capture by a carnivorous plant with hanging adhesive traps: *Pinguicula longifolia*. *Am. Midl. Nat.* 13 1:1 28-135.

Pinguicula longifolia endemic in the Pyrenees. A very useful aspect of this study is (though rarely done!) that an estimate of local insect population at plant level was made by trapping. Unlike other pinguiculas, this species' diet consisted mostly of flying insects, mainly diptera. The authors postulate that there may be a specific attraction feature of the leaves involved, and the fact that the leaves of these plants growing on rock walls hang pendulously.

Degreef, J.D. 1994. Carnivorous plants. (See address below). 28 p.

This handsome little 28 page booklet is a publication of the Belgian CP society called Drosera V.Z.W. It features 36 full color mostly excellent photos of various CP, common and rare, propagated and field shots. There are also 13 line drawings lining the insides of the covers featuring microscopic aspects of CP and hard to photograph things such as genlisea traps. The text is well done, although somewhat hurried due to space limitations. There are few editorial errors, mostly desktop publishing program errors where footnote numbers and exclamation points appear on their own lines at the ends of some paragraphs.

Writing is generally clear. There are a few concept errors. There is the old problem of "primitive vs. advanced", a concept that has largely been abandoned by most evolution specialists. Instead, specialized vs. non specialized, more adapted vs. less adapted, etc. are preferred. This is because the so-called simpler organisms (simple itself being anthropocentric) are actually highly evolved and adapted to specific habitats many times. Thus *heliophoras* and *Sarracenia purpurea* are probably not primitive but are highly adapted and possibly evolved to fit specific habitats. In fact, since overhanging hoods are the majority trait in sarracenias, this is more likely a primary feature rather than an "advanced" one comparatively to the erect hood of *S. purpurea*. Also, it has been shown that *S. purpurea* does not secrete enzymes. Genlisea spp. are not sucking traps in the same sense as utricularias. At most there seems to be a gentle current flow guiding potential prey up the arms into the utricle. Finally, illustration 4.4 is not a catopsis as the legend says, but is *Brocchinia reducta* as is mentioned later in the text.

It is difficult to say for whom the booklet is actually aimed, although I am pleased to have a copy I believe the intent is for the curious newcomer to CP, and possibly journalists. However, even the experienced CP person will want a copy to complete their library and for the photos; and I did learn about the algae that consume bacteria by phagocytosis when phosphate levels get low in their waters.

Conveniently, the booklet is published in four languages: Flemish, German, French and English. Specify which version you want. The cost is \$8 US, postpaid airmail, and can be ordered from Drosera V.Z.W., Plantentuin Universiteit Gent, K. Ledeganckstraat 35, B-9000 Gent, BELGIUM.

Freedman, B. et. al. 1992. The thread-leaved sundew, *Drosera filiformis* in Nova Scotia: An assessment of risks of a proposal to mine fuel peat from its habitat. *The Canadian Field Naturalist* 106:534-542.

In the northeast, *Drosera filiformis* has a rather disjunct occurrence due to subsidence of the former coastal plain extending originally from the present New

Jersey pine barrens, over Long Island and into the Canadian maritime provinces. *D. filliformis* was found in only four raised bogs in Nova Scotia, these being in close proximity and containing from single thousands to tens of thousands of individuals. A proposal to mine peat for fuel in some of these locations posed an immediate threat to the plants. The authors did studies of numbers and habitat, and produced the rare result of actually blocking peat mining in these areas. In addition, it was shown that adjacent water draw down would also have been disastrous.

Lowrie, Allen. 1994. *Drosera ordensis* (Droseraceae), a new tropical species of carnivorous plant from northern Australia. *Nuytsia* 9:363-367.

This new species is closely related to *D lanata* in the petiolaris complex, and was found near Kununurra, Western Australia. It is fibrous rooted and grows in sandy soil that remains somewhat more moist for longer periods of time. The species seems quite common in the immediate area. The paper includes a key for the petiolaris complex and a plate of specimen line drawings of plant parts.

Miller, T., et. al. 1994. Intraspecific and interspecific competition of *Wyeomyia smithii* (Coq.) (Culicidae) in pitcher plant communities. *Am. Midl. Nat.* 13 1:136-145.

This is a paper of negatives, the only positive finding being that larger mosquitoes tended to inhibit small-mosquito growth both in pitchers and in containers in the growth chamber. There apparently is no ecologic succession of inquilines in pitchers and little to no other effect of various organisms, pH and pitcher fluid volume. The pitcher plant species was *Sarracenia purpurea* in northern Florida.

Mitchell, R.S., et. al. 1994. *Utricularia inflata* Walt. (Lentibulariaceae), new to New York State. *Bull. Torr. Bot. Club* 12 1:295-297.

The three authors independently found *U. inflata* at Spruce Pond in Orange County for the first time in New York State. The species had been found in Massachusetts several years previously. The species sister species, *U. radiata*, has been found regularly into New England, but *U. inflata* usually occurs no farther north than New Jersey. The paper also discusses the history of the two species, confusion in differentiating the two, and other factors. Vegetatively, the species occurs throughout the approximately five acre pond, and forty inflorescences were noted the season of discovery. The question of whether the plants had not been noticed before and were always there (perhaps had never flowered or been seen by knowledgeable people during flowering), or are recent introductions through one means or another.

Williams, S.E., et. al. 1994. Relationships of Droseraceae: A cladistic analysis of rbcL sequence and morphologic data. *Am. J. Bot.* 81:1027-1037.

In addition to using rbcL data, the authors also use selected morphological data (e.g. pollen characters, leaf stipules, flower styles, etc.) in a unified study of cladistic analysis, resulting in a parsimonious tree of relationship. The authors conclude that *Dionaea* belongs in the family Droseraceae rather than one of its own. Also, *Drosophyllum* is the least related genus in the family, just below *Dionaea*. The species *D. regia* is just above *Dionaea*, but the rbcL technology loses its sensitivity below the genus level. Whether morphology increases sensitivity is problematical. The family is also related to others such as Nepenthaceae, and in terms of non-CP genera as well for family and order relationships, where rbcL itself has found greatest usefulness so far.