

Komiya S. 1966. A report on the natural habitat of *Aldrovanda vesiculosa* found in Hanyu City. Amatores Herb. (Kobe, Japan): 27: 5-13.

Lüttge U. 1983. Ecophysiology of carnivorous plants. In: Lange O. L., Nobel P. S., Osmond C. B., Ziegler H (eds.), Encyclopedia of Plant Physiology, New Series. Vol. 12C. Berlin-Heidelberg-New York, pp. 489-517.

Maberly S. C., Spence D. H. N. 1983. Photosynthetic inorganic carbon use by freshwater plants. J. Ecol. 71: 705-724.

Moeller R. E., 1978. Carbon-uptake by the submerged hydrophyte *Utricularia purpurea*. Aquat. Bot. 5: 209-126.

Sand-Jensen K., Gordon D. M., 1986. Variable HCO_3^- affinity of *Elodea canadensis* Michaux in response to different HCO_3^- and CO_2 concentrations during growth. Oecologia (Berlin) 70: 426-432.

Literature Review

Cheek Martin. 1994. *Pinguicula greenwoodii* (Lentibulariaceae), a new butterwort from Mexico. Kew Bull. 49:813-815.

Yet another new Mexican pinguicula comes to light, this one being most closely related to *P. jackii*, the latter occurring in Cuba and heretofore the only member of Section *Homophyllum*. It is found in a shaded dripping limestone cliff in Oaxaca. The plant's leaves are monomorphic; that is the leaves do not become the typically small, succulent type of other Mexican pinguiculas in winter. The flower is relatively small, pale and bilabiate, the corolla lacks a palate and the leaves are thin and membranous. This brings to a total of 17 new Mexican species since Casper's monograph, most of these in the orchid flowered section where distinctions are often difficult.

Heard, Stephen B. 1994. Pitcher-plant midges and mosquitoes: A processing chain commensalism. Ecology 75:1 647-660.

Working in the field in Newfoundland, the author studied the coexistence of a midge larva (*Metriocnemus knabi*) and a mosquito larva (*Wyeomyia smithii*) in the pitchers of *Sarracenia purpurea*. Trying to determine whether there was competition or not, the author made some interesting studies. The midges sought food by chewing on prey carcasses (mostly ants in this location) deep in the narrow part of the pitcher. The mosquito larvae floated near the fluid surface and are filter feeders, feeding on particles and bacteria excreted by the midge larvae. Thus the mosquito larvae benefitted from the presence of the midges who essentially processed food for them, while the midges gained nothing from the mosquito larvae but did not suffer either. Thus this is an example of what the author calls processing chain commensalism. The author performed several manipulations on over 100 pitchers to discover the relative value of numbers of either larvae, with and without ant food, in pitchers.

Labat, Jean-Jacques, and Paul Starosta (Photography). 1993. L'Univers des plantes carnivores. DuMay, Paris. 140 pp.

IN FRENCH

This is the latest hard cover book addition to the CP literature. The book is nicely jacketed and bound and measures 25 x 31 cm. The first 113 pages are full color photos of at least one per genus of CP, often more, and many of the photos being full page size. Closeups are effective in certain cases such as *Nepenthes* spp. and *Cephalotus* in 25 x

31 cm portraits. The paper quality is excellent as is the photography which is sharp and nicely lighted. While many of the photos are works of art, this does not detract from identification points. The book is printed in Spain, and something unfortunate happened during printing because from p.15 on, many double page color plate sets have an off color cast toward lavender or light purple where there should be red or white. Thus we are treated to a lavender flower of *Dionaea* on p. 25 (should be dead white) or lavender gland hairs, peristomes, etc., all of which should be bright crimson, and so on in many plates. However many other plates are properly hued. Still, this lack of careful control on the part of the printer in a book of this quality in general and of this cost is inexcusable and distracting.

P. 59 offers one of the best shots of *Genlisea* traps, a very difficult subject. The second author is responsible for photography and deserves commendation.

Labeling is remarkably free of error, except in one and possibly two instances. P. 77 is clearly not *Nepenthes truncata*, which is a shame since this quite unique plant would have been a good subject. On p. 67, we are shown *N maxima*, but plants so labeled (or even *N. fusca*) in many collections are really *N x dyeriana*, and I am suspicious of this one.

The remainder of the book is text with "genus pages" following the photo section, written in French, each page devoted to a genus in print size such that quite a lot is covered in one page. The effort is far more successful than the recent tragic LeCoufle English version. The usual factors such as description, species, habitat life cycle and detailed growing tips are covered. My French is limited but those pages I labored through seemed accurate and useful.

Finally, there is a species list, short glossary, a list of important addresses such as societies and sources, and a rather limited bibliography. An index is conspicuously absent, but there is a brief table of contents at the beginning. All in all, this is a sumptuous and also useful production, but the color error takes much the edge off the total effect. I would hope that if a second edition or translation is undertaken, this can be corrected with new plates where called for. The printer is certainly liable. The price is 450 F, which in US comes to between 85-90 dollars, depending on daily exchange rates. Though only 140 pages and covering the world, the pages are packed full. If one can afford it, and is willing to overlook some of the poor color rendition, this is a useful addition to complete a CP library. The book is available only, as of this writing, through Labat Jean-Jacques, 32360 Peyrusse Massas, France. They request international postal money order only for 450 F plus whatever mailing you wish.

Schneider, Julio (Transl. Harvey L. Kendall).1995. *Brocchinia reducta* : A carnivorous bromeliad from the Guayana highlands of Venezuela. J. Bromel. Soc. 45:77-83.

This article is an excellent summary of this relatively newly recognized and controversial carnivorous plant. It's close relative, *B. hecchtoides*, may also be carnivorous, both among other species in the genus because the leaves grow in full sun in such a way as to produce a tube that is similar to pitcher plants. The article has a general location map, three excellent color photos of plants in habitat, and drawings of absorbant trichomes. There is no enzyme secretion and digestion presumably occurs through bacterial action. Cultivation notes are given and include the need for full sun to elicit the plant's fully developed tubular habit. I have noted that if there is any shade at all, the leaves forming the tube tend to spread. It can be grown in peat/sand in clay pots,

and fertilization is recommended. This article was originally published in German in *Der Palmengarten* 58/1, 1994.

Seine, Rudiger and Wilhelm Barthlott. 1994. Some proposals on the infrageneric classification of *Drosera* L. *Taxon* 43:583-589.

These authors present a nest subgeneric grouping classification for sundews. They recognize three subgenera: *D. regia* in it's own subgenus, those plants without tubers (seven sections) and those plants that are tuberous (three sections). The paper includes a key for all three subgenera and ten sections.

Tan, Tommy H. 1994. Dewe of the Sonne — The carnivorous sundew plant. *Nature Malaysiana* 19:75-77.

This is a brief review of sundews in Malaysia, focusing on *Drosera spathulata* including three color photos, mention of the three variants of the species, and a short description of its carnivorous activity. The particular plants described are in Bako National Park.

Weihee, ER and CW Boylen. 1994. Alterations in aquatic plant community structure following liming of an acidic Adirondack lake. *Can. J. Fish. Aquat. Sci.* 51:20-24.

Those who follow the environment recall that acid rains have acidified many lakes in the northeastern United States in particular. Such lakes are described as clarified and quite blue and pristine in appearance but there have been drastic reductions in animal life. Several of us have wondered if CP populations may not actually be helped by this acidification process, and damaged by attempts to dump alkalinizing agents into lakes to bring them back to circumneutral pH.

In this case, calcite was added and over a period of several years, this particular acid lake was brought back to circumneutral pH. During this process, sphagnum disappeared along with *Utricularia geminiscapa*, but *U. purpurea* only decreased to 3-30% of its former level in the previously acidified lake. Curiously, *U. resupinata* along the shoreline showed no significant change at all. Further followup on other lakes, particularly those with a shoreline sphagnum mat containing *Sarracenia purpurea*, would be of interest.

EDITORIAL NOTE

I wish to apologize for the large number of spelling, typo, dangling phrase, etc. errors in my articles in the March, 1995 issue of CPN. I assure you that all copy left my desk in perfect order. The problem is that Steve's and my computers cannot read each other's disks so I submit material as printouts which Steve places in his computer by using a scanner. This process is also used for anyone else's printouts or typewritten manuscripts since hand keying the entire article is quite laborious and still prone to human errors.

Scanners are remarkable devices but they cannot "read" everything accurately, hence the numerous errors in the March and portions of preceding issues. The obvious solution: After scanning, Steve will make a printout of what he has and send it on to me for proofreading so he can key in corrections prior to setting up pages in his computer. This process will apply to anything sent in by anyone that requires scanning. Thank you for your patience.

Don Schnell