

Book Review

By Donald Schnell

Lecoufle, Marcel. 1990. *Carnivorous plants—Care and cultivation..* Blandford (Villiers House, 41/47 Strand, London WC2N 5JE; England; UK). 144 pages.

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This long awaited book is an English translation of the original French published in 1989. Unhappily, in spite of many positive aspects, it is an overall disappointment which could have been prevented with more pre-publication attention to this English language version.

To start, the book is physically excellent. A bright, full color jacket is provided, the hard cover binding is strong and supple, the page size (ca 21 x 27 cm) allows for full size photo printing. The paper stock is glazed and of high quality, color photo and print production are faultless with very bright, accurately colored and sharp photos throughout. The print fonts are very clear and good and allow comfortable reading. Diagrams are well-designed and clearly show what they are supposed to. Near the center of the book is a fifteen page color photo album of very well printed pictures, but color photos are also liberally placed throughout the text, there hardly being a page without one.

While being very well plated and printed as mentioned above, about 15% of the photo subjects are not prime examples of what is to be shown. All photos are presumably by the author except a half dozen or so which are acknowledged on the title pages. I suspect many of the problem photos are due to shots of many plants in cultivation and not native to France. (The only field photos are of relatively few species in France, and borrowed pictures). The several photos of *Sarracenia x catesbaei*, for example, are not the best sample and the plant used appears introgressive and possibly diseased. There is confusion with *S. purpurea*. and its subspecies. One photo purportedly showing flowers of *S. purpurea* and *S. rubra* side by side for comparison actually is of all *S. purpurea* flowers in two different stages of development. These are just a few examples, not to mention the many left/right, above/below, etc. mix-ups. Finally, I have noticed that many plants grown in Great Britain and France have a somewhat etiolated character, probably due to fewer fully sunny, clear, blue skied days during the growing season than we are used to here in North America.

Now we must discuss the text, and this is where the book is in trouble. The title page lists a translator from French to English, in addition to two editors of the English edition. Throughout the book, at least three to five times per text page there is clear awkwardness relating directly to the translation. One is tempted to excuse this since it is a translation after all, but when one spends what book costs, one must demand that the book stand on its own merit as presented. The fault clearly lies with very poor editing, either the guest editors or the publishing house editors, or most likely both. I have a feeling that the guest editors passed on the typescript (which they still should have worked on!), and it would have helped if they had also worked on the galley proofs.

As an example of the above, the very first sentence of the book, the first sentence of the "blurb" on the inside front jacket fold reads, "Carnivorous plants are the only vegetation on our planet capable of attracting, capturing and digesting animal prey for the purpose of both pollination and nutrition." First of all, pollinators are not captured in these species; secondly, it is difficult imagining digested prey accomplishing pollination! This continues on throughout the text at the conservative rate mentioned above.

Clumsy translation and finally editing might still be excused by the diehard really anxious to receive this book if it were not for the fact that the clumsy phrases often result in much misinformation and erroneous comments and recommendations. For example, the instructions for handling *Byblis gigantea* seeds are completely lost in muddle.

There is a forward by Jean-Marie Pelt, Professor of Plant Biology at the University of Metz which lends little to the book. Professor Pelt marvels at the concept of plant movement stating that at best we have simply noted it and that there are practically no in depth studies, this apparently totally ignoring the two dozen papers alone reviewed in recent years in CPN which describe very sophisticated studies and conclusions. A foreword by someone with more CP experience might be more useful.

The book is divided into three parts of several chapters each. Part one is GENERAL PRINCIPLES, and here there is limited and often inaccurate information beyond what can be blamed on poor translation and editing. These five chapters are the weakest in the book since the summaries of taxonomy, anatomy, morphology, physiology, etc. suffer much for brevity and the translation/editing problems noted. The author is clearly stronger on the subject of cultivation, and there is a useful section on pests and diseases, although the final "grabber"—how to treat them—is too often passed over too superficially. For instance, when use of fungicides or insecticides are finally mentioned, there is no detail on which ones would be recommended regarding safety for plants and growers, avoidance of plant-toxic solvents (present in nearly all products sold as solutions ready for dilution) and the avoidance of aerosol can sprays which can freeze a small plant if held too close. And what fungicide should be used for those sown seeds? Not a clue.

Part two is the photo album mentioned above. Part three is probably the strongest part of the book relatively speaking, but errors and bad translation persist. The section covers 35 species in eleven genera of carnivorous plants in more detail. These are mentioned as the most commonly grown species, but this is seriously open to question depending on where one lives and what is available. They more likely represent what is usually most available in the Lecoufle Nurseries.

Each species section or chapter runs either two or four pages and all are liberally sprinkled with fine color photos. There is a pictogram summarizing culture requirement. The text begins with an entymology of species names, followed by descriptions of variable usefulness, (on *Nepenthes*: "... inflorescence is in the form of an elongated bunch..." "Bunch?") and then culture and propagation (sexual and asexual). A few pests are listed with reference to the pests chapter previously. Again, there are difficulties with awkward translation, errors and poor editing. I will not dwell on these in detail.

I presume the species sections are intended to stand as independent references for the reader. Thus, if one wishes to look up *Sarracenia psittacina*, one can do so and skip the other four sarracenias covered. Again, this does not quite work since common features of a genus are often dispersed over all the species sections, or are repeated. The first error causes frustration, the second wastes pages which might have been used for more species or pictures. For example, the various asexual methods of propagating sarracenias are dispersed one each over the five species chapters, and yet all apply to all sarracenias! Reversely, one is bombarded with description features common to all species repeated in each species section instead of a paragraph of differences between the species of a genus in one place.

The book winds up with a CP species and hybrids list which is strongest for *Nepenthes*; a fairly useful glossary with some rather peripheral definitions; and an index.

In conclusion, from a world coverage viewpoint (that is, the most genera and species) regarding species descriptions and how to grow CP, Slack's INSECT EATING PLANTS AND HOW TO GROW THEM is still vastly superior and the leader still by far in this book category. Unfortunately, it is now hard to get. I regret, in some ways,

seeming so negative about the Lecoufle book since we all crave new CP books, but it does not stand well on its own. I would not recommend it to beginning or intermediate CP people because of its text errors and confusion in translation with very poor editing—at least as a first or only reference, especially considering the price. Experienced CP people may wish to buy the book simply to complete their libraries and to see how other people do things, after reading between the lines and using some imagination.

Literature Reviews

Albert, Victor A., et. al. 1992. Parallel evolution and phyletic co-occurrence of different trapping mechanisms in carnivorous plants. II. Bot. Soc. Am. meeting abstracts for 9-13 August 1992, papers No. 378 and 379. (We should mention that the "et al" includes old CPN friend Stephen E. Williams).

These two papers came out of a series of polymerase chain reaction fired analyses of rbcL chloroplast genes in leaves of various CP. These studies are being done on various plant groups throughout the world in order to have another tool to enhance concepts of phylogeny. They seem to be a must for any serious taxonomy student and the journals are full of them. These concentrate on our CP. Some of the conclusions are that perhaps *Byblis* has a close affinity to the Lentibulariaceae, *Roridula* to the Sarraceniaceae, and *Cephalotus* to a large group including the Cunoniaceae and Oxalidaceae. Studies suggest that glandular specialization is a prerequisite for evolution of carnivory. Further, pitcher and "flypaper" trap plants may have evolved independently at least six times in parallel in flowering plants. [DES]

Case, F. W. 1992. Carnivorous plants for bog Gardens. Bulletin of the American Rock Garden Society, 50:205-210 (Color photos: pp.203-204)

This is a brief but useful review of the major American species of CP and their function in carnivory, and primarily the author's success in growing and propagating them in an outdoor bog in the Great Lakes area. The author's bog is located next to a pond, and there is a line drawing explanation of how to rig a siphon to keep the adjacent bog watered to proper level by using water from the larger pond. If the pond water subsides for whatever reason, it can be refilled with tap water since dilution and possibly other chemical and biological factors in the pond render the water non-toxic to the bog.

Cippolini, Donald, et. al. 1992. Total carbohydrates in nectar of pitcher plants (*Sarracenia purpurea*). Bot Soc Am meeting abstracts for 9-13 Aug 1992, paper No. 197

This abstract summarizes research in which pitcher leaf nectar was collected from pitchers of varying ages and at varying locations on the pitcher leaf. Collection was done using filter paper discs followed by carbohydrate estimation by the Anthrone method. They found that younger first year pitchers produced the most carbohydrate rich nectar, particularly in the pitcher mouth area. This correlates with the authors' observations that insects seem to show greater interest in younger pitchers during the season. [DES]

A recent issue of **CLIPPINGS** (15:6-7, 1992), the newsletter of the Atlanta Botanical Garden, contains two articles of interest. Madeleine Groves, a Garden intern from Kew, has completed a study in the southeastern US regarding the impact of harvesting pitchers from the field for the florist trade here and mainly abroad. She has found that as many as four million pitchers are harvested annually, and study of this factor along with examination of techniques and timing, leads her to the conclusion that such harvesting is indeed detrimental to pitcher plant bogs. She has endeavored to interest harvesters in propagation for the trade, which we would all hope will come to pass.

However, harvesters are probably not likely to invest time, money and in such efforts when the market may be ephemeral at best, and it is easier to harvest from private forest lands. There are funds to follow-up on Madeleine's efforts, and we can all hope my pessimism is misplaced here.

The second article is a page and half featuring a black and white photo of *Sarracenia rubra* ssp. *alabamensis* at the head and describing new outdoor container plantings of sarracenias on a patio adjacent to the outdoor bog area next to the Fuqua Conservatory. The second half of the article describes ABG's methods for seed propping in the Atlanta area. One of several questions often asked has been solved by their research and that is three weeks stratification at 38° F is sufficient to break dormancy of *Sarracenia* seed, and that germination is enhanced by bottom warming of pots or trays.

Fromm-Trinta, E. 1991. 0 genero *Utricularia* L. no Brasil. VI. Especies da regio centro-oeste. *Bradea* 5:424-431. IN PORTUGUESE.

This is a paper in the author's continuing series on the Lentibulariaceae of Brazil. This covers the Utricularias of the central- western portion of the country, particularly the states of Mato Grosso, Mato Grosso do Sul, Goias and the Federal District. She records 37 species and presents a key that should be use botanizing the area. The remainder of the paper lists notable occurrences and habitat of each species. She remarks that two usually terrestrial species can be found in unusual habitats: *U. triloba* as an epiphyte, and *U. viscosa* an aquatic.

Knight, S. E. 1992. Costs of carnivory in the common bladderwort, *Utricularia macrorhiza*. *Oecologica* 89:348-355.

The author proposes that when a plant produces structures with reduced or no photosynthetic activity at the expense of green leaves, such as the traps of *Utricularia*, then the plant is expending valuable energy and growth resources into this venture. The traps should provide some advantage to make up for this loss of photosynthetic productivity. Indeed, measurements of respiratory and other activity indicate that with bladders grow only to 21-83% of the size of plants with bladders extirpated in various lake waters and other solutions. Thus there clearly is expenditure into the traps, but the question of whether this proves useful to the plant is left. Perhaps further studies on various other aspects of growth, turion formation and reproductive capacity may clarify this.

Lowrie, Allen and Neville Marchant. 1992. Four new *Drosera* taxa from south Western Australia. *Nuytsia* 8:323-332.

In 1982, Marchant and George recorded 42 species of *Drosera* from south Western Australia in FLORA OF AUSTRALIA. Through the studies of Lowrie and friends, new taxa have been found bringing the current number to 68.

This paper describes four new taxa: *Drosera browniana*, *Drosera stolonifera* ssp. *monticola* (these are tuberous), *Drosera grieviei* and *Drosera sargentii* (these are pygmies). The paper includes full page botanical drawings to scale of details for each taxon (similar to Lowrie's books) and detailed descriptions, habitat information, etc.

Mohlenbrock, Robert H. 1992. Boykin Springs Longleaf, Texas. *Natural History*, July, pp. 62-64 (Volume number not available).

Boykin Springs Longleaf is a sector of Angelina National Forest in east Texas in the area once known as the Big Thicket. The sector has been set aside as a preserve. The area is interesting, generally much like the sandhills regions of the Carolinas and middle east Georgia. The country consists of rolling sandy soil hills originally covered by longleaf pines and a rather rich understory flora. Near the bottoms of many of the hills, there are seep bogs (seven in the preserve) due to water running through the upper sandy soil and then striking hardpan, resulting in some wet lateral outflow at the seeps. While the tops of the hills are quite dry most of the year due to drainage, the

seeps are a bog habitat in which sundews and *Sarracenia alata* grow. The article features three color photos, including one of *S. alata* plants full page in early spring flower with the pitchers yet unopened. There is a detail map showing the location of the preserve in relationship to numbered roads. [DES]

Newell, Sandra J., et. al. 1992. Proficiency of insect capture by pitcher plants (*Sarracenia purpurea*) Bot Soc Am meeting abstracts for 9-13 August 1992, paper No. 210.

This abstract briefly summarizes the authors' work on measuring the efficiency of *Sarracenia purpurea* in capturing insects in a Pennsylvania bog throughout the spring/summer season. The method is quite clever: A camcorder was set up to cover three or four pitchers over a two hour period, until a total of 70 or so pitchers were recorded for each date session. The resulting tape was studied and showed extreme variability in insect interest in pitchers. Many that did enter the pitchers seemed to escape easily, and the famous downward pointing hairs of the lid were easily maneuvered on in most cases. The authors concluded that proficiency of insect capture was extremely low. (Ed. Note—Low compared to what? What was relative energy expenditure over any gain? Apparently what is caught is sufficient to have sustained the species over possibly millions of years!). [DES]

Salter, Ian. 1992. Courting daughters? CPS News No. 3.

The author describes inducing vegetative budding in *Drosera capensis* by excising the head of the developing flower spike when it is no more than two to three inches tall. A new plant will then develop at the base of the peduncle. When it develops a root, it can be separated, or allowed to grow on along with the main plant.

Schlauer, Jan. 1991. *Pinguicula reticulata* spec. nov., ein neues fettkraut aus Mexico. Palmengarten 55:26-29. IN GERMAN.

The author describes still another new species of Mexico, this near San Luis Potosi. The flower has a white corolla with very distinct and striking purple veins. The article features a full page of diagnostic line drawings, including corolla hairs, and a small photo of the plant flowering in a pot. There is considerable discussion on distinguishing this species from several others.

Stoutamire, Warren P. 1992. Orchid seeds versus the mails. American Orchid Society Bulletin 61:578-581.

The reader is probably wondering what mailed orchid seeds have to do with CP, but I think we might extrapolate a lesson from this in our own CP seed mailings. In his usual thorough and precise manner, the author assesses damage done by mailing orchid seed in envelopes through the US Postal System. While there is partial tongue-in-cheek, he is basically quite serious. I will only briefly describe his methods and review the results. Orchid seeds are very small, dustlike, and several species from several genera were placed in cellophane envelopes, the envelopes containing relatively few seed to prevent a padding effect. The packets were taped side by side so a central one in a pile would not be shielded by the outer ones. These were placed in an envelope folded in an ordinary sheet of stationery and mailed from Akron, Ohio to various places around the US and to foreign countries, with instructions to mail the envelopes back to him. Microscopic examination of the well traveled seed disclosed appalling damage ranging from fragmentation to "flour" to crushing of embryos. Needless to say, the previously fresh or well stored seed did not do well in germination tests compared to control seed of the same lots kept in Akron. The clincher is that a follow-up study in which seed cellophane packets were padded with either tissue paper, convoluted foam or bubble pack (oops!—I had used that often—Note past tense now!) disclosed even more disheartening results with equal damage physically and zero to very low germination rates. It seems the mills of the USPS equipment are very

determined. The moral is that even the smallest seed should be shipped in some sort of rigid packet that will protect from milling damage as is required when mailing in envelopes, even with padding. I will no longer blame poor storage at point of origin out of hand for bad germination results of seed sent me in envelopes without some "rigidization"! [DES]

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