

SOUTHEASTERN SECTION MEETING — SEPTEMBER, 1994

by

Don Schnell, Coeditor

The first meeting of the Southeastern Section of ICPS was held at the Atlanta Botanical Gardens on 24-25 September 1994. Attendance was about 50 with folks attending from as far away as Washington state and the Los Angeles area of California! At the outset, we all appreciate the excellent hospitality of the Garden and Ron Determann and Ron Gagliardo. They were superb hosts and looked after our every need.

Ron Gagliardo opened the meeting and welcomed us bright and early Saturday morning. Ron is soon to elevate to curator of tropical plants but will continue with tissue culture as well. He outlined our schedule.

Ron Determann followed with mention that one of the missions of the Garden is conservation. He outlined the efforts toward this end with some of our native plants, including *Sarracenia purpurea* on private lands in north Georgia; saving and propagating plants of *S. rubra* ssp. *jonesii* from a threatened situation on private land in North Carolina; propagation from material of *S. rubra* ssp. *alabamensis*; propagating plants of *S. rubra* from Taylor County, Georgia; and working with *S. oreophylla* from northern Georgia. All of this work involves propping by seed germination, tissue culture and growing plants to maturity in the greenhouse to be replaced in suitable habitat in the wild. They are also working with endangered non-CP, such as *Helonias bullosa*.

Ron Gagliardo continued with mention that tissue culture plants seem more exuberant and grow faster and sturdier even after removal from the agar to soil. They are also working with collecting and propping the *Dionaea* variants such as all red and the various tooth anomalies. Ron also mentioned that plants started in tissue culture seem more amenable to growth in ordinary greenhouse temperatures, such as *Heliamphora* which grows better in warm greenhouse situations if started from tissue culture, and plants of these are happily growing in the Tucson and Miami areas.

Larry Mellichamp spoke next on the subject of sarracenias. He first outlined the various habitats from northern sphagnum bogs and fens to southern seeps and savannas, including wet Gulf coastal savannas. He discussed theories of evolution of the new world pitcher plants, possibly emanating from *Heliamphora* in South America into *Darlingtonia* (west) and *Sarracenia* (east). He also showed a photo of the peculiar *Codeaiaen variegata* "appendiculata", a croton with a peculiar terminal leaf appendage that looks like an incipient *Nepenthes* pitcher. Next, he presented a series of excellent slides of various *Sarracenia* species in the field, commenting on such things as variability, habitat and conservation concerns. There was a good series of photos of various inquilines. Larry concluded with a discussion of his work in producing artificial sarracenia hybrids, with a view to selecting those that seemed most horticulturally useful for ultimate tissue culture propagation one day so that they may be widely distributed. Larry also mentioned that he had found ORTHENE (liquid) to be perfectly safe to use diluted according to label to spray adult or seedling pitcher plants to kill pitcher distorting thrips and other small pests. The spray seems perfectly safe for droseras, utricularias and pinguiculas as well.

Don Schnell followed with a talk on utricularias, first discussing the anatomy of the trap and various theories of function. As he spoke, various terminology was clarified. The first part of the talk dealt with differentiation of various difficult US species, such as *U. inflata* and *U. radiata*, recent name changes, rarer US species such as *U. simulans*, and comments on habitat. There then followed a series of slides on non-

US species he was growing or had grown, such as *U. humboldtii*. Finally, he showed a brief series of informal slides of his greenhouse to demonstrate growing conditions and the concept that utricularias often did better if left to "run" from pots into surrounding tray water, or to other pots of different genera.

Following a box lunch out on a terrace overlooking the native plants garden, we were treated to tours of the conservatory areas, including the prop greenhouses thoroughly enjoyed by all. I was impressed with the general plant knowledge and wide plant interests of most of our attendees.

The first afternoon speaker was Bill Scholl who showed an excellent selection of Venezuelan Tepui slides. He mentioned that five days after the meeting he was off to Venezuela again. He discussed the many trials and tribulations of hiking to and tip tepuis, including altitude and rough country with heavy packs, fast streams, rains every night until noon the next day (this during the "dry" season!). Little sleep was had due to winds and the all night rains. He commented on the paucity of insects (prey) and possible pollinators on top of the tepuis, and seedpods did seem to contain few seeds. He also showed many of the other interesting plants in addition to heliamphoras.

Cliff Dodd followed with a very good presentation of nepenthes, both as he was growing them and slides from various sources showing many native areas as well. Throughout, he commented on the nomenclatural problems that plague the genus. He grows plants in both a warm greenhouse and an air conditioned one to accommodate the upland species in the Daytona Beach area. The audience was particularly taken by an excellent, huge *N. lowii* he was growing with loads of upper pitchers. The hairs under the lid of the lower pitchers exude a cheesy, foul smelling substance that he at first thought was pathogenic, but later realized it was to probably attract prey as a



Back row: Jim Powell, Bob Sarcolotto, Cliff Dodd II, Kyle Rollins, Brad Wilson, Joe Cumbee, Todd Lesseigne, Tommy Truman, Ron Determann, Mike Levy, Ron Gagliardo, Arthur Lauffenburger, Michael W. McCaffery, Bruce Bednar, Robert Church, Bob Hanrahan, Chet Buell, Donald E. Schnell, Craig Moretz, Andy Baldwin, Alex Solomon, Dave Crump, Bryan Fitzgerald, Manny Herrera, Clyde Bramblett, William Tanneberger.

Middle row: Bill Nethery, Bruce Dudley, Jim Zielinski, David Bressler, Randy Troup, Darwin Thomas, Cynthia Van Der Wiele, Dave Evans, Joey Meyers, Jay Smith, Brian Cochran.

Front row: Ginger Denmon, Kevin Snively, Ozzie Johnson, Ed Munn, Jeff Welch, Tom Johnson, Carl and Sherry Taylor, Henning von Schmeling, Steve Baker, Larry Mellichamp, Bill Scholl.

Not Pictured: Marcia Cohen, Tom Hayes, Joby Evans.

potential foodstuff. It was mentioned that Iowii upper pitchers are probably so shaped with the spoon shaped lid thrown so far back to act as water traps. He mentioned that a compound called DOMAIN was very safe and effective for treating the organisms causing the red splotching of nepenthes leaves. However, it is very expensive. He is also working with alternative potting media such as carefully rehydrated silica gel and rock wool. He concluded his program with a few slides of excellent examples of *Heliamphora* he was growing.

Brian Cochran followed with his method for germinating *Byblis gigantea* and the difficult variety of *B. liniflora*. Recent work indicates that there are at least three forms of *B. gigantea*, one growing to nearly three feet tall. Brian prepares a solution of gibberellic acid by dissolving 250 mg in 200 ml of water and letting it set for 24 hours. Soak the seed for 24 hours in this solution. Sow the seed on milled sphagnum, pushing the seeds slightly into the medium, and add a few drops of fungicide such as CHINOSOL or SUBDUE. Place under fluorescent lights in a terrarium and germination should occur in about 10-14 days. The seedlings are then carefully (do not bruise or break delicate long roots) into a mix of equal parts of perlite/peat/sand. Use more fungicide to continue to discourage damping off. Brian presented a very neat album of photos as case histories for each variety he tried and the results. One comment from the audience indicated that recent Australian research discloses that the previously touted method to germinate seed of the this genus using burning paper over the seed sown in the pot succeeds not by producing heat that stimulates germination, but that the smoke contains chemical compounds that stimulate germination. Some people on the west coast have been using the commercial compound SUPER-THRIVE, made up according to instructions on the bottle, essentially as a substitute for the gibberellic acid of this method. Coincidentally, when your reporter returned home at the conclusion of this conference, I found a nice set of recently germinated seedlings set out with the SUPER-THRIVE method.

The last formal presentation, on Sunday morning, was an interesting account by Henning von Schmeling of how German commercial CP grower Thomas Carow and his partner grow CP in northeast Bavaria. While Carow has a personal collection, the main thrust of his rather large setup is production for the wholesale market in Germany and Europe. His operation is on leased land since land in Germany is very expensive (spoken of in terms of square meters instead of acres as in America) and rarely sold. He had several greenhouses in a line with a headhouse, and many cold frames. All plants are grown and sown in clay pots—German people prefer them and do not accept plastic. The soil medium is peat and perlite for everything. No sphagnum is used since sphagnum is an endangered genus in Germany. Carow contracts out for tissue culture and receives the material in flat plastic containers of agar. These are potted out, grown to suitable sales size, and sold. Space is at such a premium that the greenhouse operation is in three layers. The under surfaces of the main benches are all fitted with fluorescent lights so plants may be grown underneath on the floors. Then, in addition to the main bench level, there is a half bench up on the glass wall above the main bench throughout. There is much cloudiness and haziness in Bavaria, and generally cool weather so fungus disease is a real problem. All plants are sprayed regularly with a fungicide. Henning showed slides of tray after tray on bench after bench of various CP, particularly impressive being the Mexican pinguiculas and massive *Heliamphora* production. Conspicuously absent was *Darlingtonia*. Carow is able to grow his own plants to nearly three feet tall in the very suitable climate, but production always fails with this genus at the potting stage. Plants are sold relatively cheaply and with full realization that nearly all will be dead in four weeks or less in their new homes. The public apparently buys out of curiosity and for the novelty. Mexican pinguiculas stand the best chance since they can be grown as windowsill

plants. I thought it was especially interesting to see heliamphoras and nepenthes, so coveted here, being sold by the hundreds to die. But he always has his parent plants so nothing is really lost since production is strictly commercial.

After some business matter discussion, the plant auction took place and was very successful. Plants donated by attendees were sold with precedes going towards next year's meeting.

The 1995 southeastern meeting will be hosted by Larry Mellichamp at the University of North Carolina in Charlotte, the dates being 22-24 September 1995. Mailings will be sent well ahead, and we look forward to seeing everyone again next year! Remember that the meeting is open to anyone in the CP world.

BYBLIS - A BOTANICAL PROBLEM ONCE AGAIN

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More attention is being given to this genus at present time, because very interesting and major differences among various populations of the species *Byblis liniflora* have been claimed (Meyers-Rice 1993). For instance, I can confirm the statement, that *B. liniflora* subsp. *occidentalis* Conran et Lowrie is autosterile. The mechanism of autogamy, which can be observed in the typical *B. liniflora* (fig. 1), does not work in the subspecies *occidentalis*.

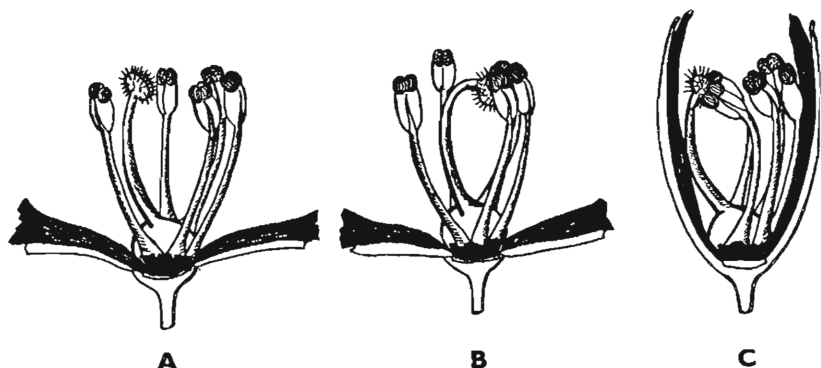


Fig. 1.- Pollination in typical *Byblis liniflora*. A - a freshly opened flower in the morning, B - a moment of autogamy in the afternoon, C - autogamy inside a flower-bud, if weather is unfavourable (cleistogamy). Notice the different function of stamens in B and C.

The genus has been fairly intensively studied previously because its systematic position had been uncertain. It has been placed in the families Pittosporaceae, Droseraceae, and or Lentibulariaceae (Lecoufle 1990: 86). Bearing sympetalous and at least suggestively zygomorphic flowers, *Byblis* can be related to the last family. An important article has been published supporting the idea. Research data on embryo sacs, ovules, and glands in *Byblis gigantea* indicate that *Byblis* could be a primitive ancestor of Lentibulariaceae (Lang 1901). A Czech botanist Prof. Karol Domin (of the Charles University in Prague) has studied particular characters of *Byblis* and