

## SAVE A TREE! SAVE A STAMP! USE E-MAIL!

To reduce the volume and cost of mailings for specific DBS events and classes, we'd like to establish an e-mail list for members interested in receiving news electronically. *Lasthenia* and renewal notices would continue to be sent to all members in paper copy.

If we can serve you this way, please give us your email address on your membership renewal form or send a message to the Membership Vice President, Bill McCoy, at [wfmccoy@ucdavis.edu](mailto:wfmccoy@ucdavis.edu).

## LASTHENIA

LASTHENIA, the Newsletter of the Davis Botanical Society, is published by the Society in collaboration with the staff of the UC Davis Botanical Conservatory and Center for Plant Diversity.

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# LASTHENIA

NEWSLETTER OF THE DAVIS BOTANICAL SOCIETY

## REMEMBERING GRADY WEBSTER

A massive and completely unexpected stroke took Grady Webster from his family and friends and from his eminent position in systematic botany in late October 2005, almost a year ago. Extensive tributes to his contributions to science and public service have appeared in scholarly publications.

Here in the herbarium of the Center for Plant Diversity, his absence is a more personal, recurrent sense of loss, as his daily presence was for so many years an integral part of normal operations. For that reason, we have gathered a series of anecdotes and reminiscences to remember the man we knew.

Born in Oklahoma in 1927, Grady grew up near Austin, Texas and became interested in plants in high school. After a bachelor's degree in botany at

the University of Texas, he completed a Ph.D. at the University of Michigan. He then spent four years at Harvard on one of the first NSF post-doctoral fellowships. At Harvard he was a member of the prestigious Society of Fellows. After eight years at Purdue, Grady came to Davis in 1966 to direct the Arboretum, and remained as professor in the Botany Department, succeeding John Tucker as director of the Tucker Herbarium in 1986. He retired in 1993.

His major teaching activities were in systematics, biogeography and pollination ecology, and in the supervision of approximately 20 doctoral students. He conducted major research expeditions to Mexico, the Caribbean islands, Central and South America, Hawaii, Australasia, Pakistan,



*Grady in the Tucker Herbarium in Robbins Hall in 1995. Photo E. Dean*

Africa and Europe, collecting more than 34,000 plant specimens that are deposited at the Center for Plant Diversity herbarium and at major herbaria around the world. His awards and achievements included NSF, Guggenheim, Smithsonian and Rackham fellowships; the Engler Medal from the International Association for Plant Taxonomy; the Merit Award from

*continued on page 4*

## DIRECTOR'S CORNER: MAJOR ORGANIZATIONAL, STAFFING CHANGES IN THE CENTER FOR PLANT DIVERSITY

*[Ed. Note: A column of news from the directors of the Center for Plant Diversity and Botanical Conservatory usually appears on page 2 of Lasthenia. Dan Potter's report about the Center for Plant Diversity, however, commands front page attention.]*

This has been a year of transitions in the Center for Plant Diversity (Herbarium). There has been loss and sadness, but there have also been some exciting new developments.

Last summer, Dr. Ellen Dean stepped down as Director and Curator of the Center for Plant Diversity, after ten years of outstanding service in that position, to take a job as a consultant in the Sacramento office of EDAW. This was a great loss to the campus, but Ellen felt it was time to expand her horizons as a botanist. It was also clear that the demands of

*continued on page 2*

## IN THIS ISSUE

Remembering Grady Webster .....	1
Organizational Changes .....	1
Society Profiles .....	3
Student Grants .....	5
Notable Botanical Publications .....	6
The Daturas .....	7

### Center for Plant Diversity

being both director and curator were too great for one person, even a person with Ellen's remarkable energy and commitment. Following Ellen's departure, it was decided to redefine the administrative structure of the herbarium to include both a faculty director and a curator as a separate 100% staff position. I agreed to serve as director beginning in January of this year. A faculty herbarium oversight committee was appointed; initial members are UCD professors: Michael Barbour, Joe DiTomaso, Judy Jernstedt, and Andy Walker from the College of Agricultural and Environmental Sciences, and Jim Doyle, Marcel Rejmanek, Tom Rost, and Maureen Stanton from the College of Biological Sciences. The director, curator, and collections manager (Jean Shepard) of the herbarium, as well as the president of the Davis Botanical Society, serve as *ex officio* members of the committee. Effective July 1, administration of the herbarium has been moved to my home department, Plant Sciences, in the College of Agricultural and Environmental Sciences.

In March, we opened an international search for a new curator; the search committee included Judy, Maureen, Marcel, and me. We received many excellent applications for the position from highly qualified candidates throughout the country and beyond. The other members of the search committee and I were both delighted and very surprised to find, among the applications, one from Ellen Dean! We were thrilled that, in her application and interview, Ellen expressed great enthusiasm for returning to UC Davis on the new terms. Because of her history and excellent past service here, Ellen emerged as the strongest candidate in a very strong pool. I am happy to report that Ellen has accepted the position and returned to the Center for Plant Diversity in this new role in September. Ellen's experiences at EDAW, in particular the expertise she has gained in conducting rare plant surveys, will allow her to bring a new and very valuable perspective to the position. Ellen and I have already had several discussions about exciting new



*Ellen Dean, Jean Shepard, and Dan Potter*

initiatives and priorities, which will include expanding the outreach and research activities in the herbarium.

The other major transition that occurred this past year was a very sad event; the unexpected death of Dr. Grady Webster last October. Much of this issue of *Lasthenia* is devoted to a tribute to Grady as a renowned botanist and a wonderful colleague and friend. He is greatly missed. Because Grady was so active until the very end of his life, he left behind many unfinished projects. Beginning last winter, Jean Shepard took the lead in contacting many of Grady's Euphorbiaceae colleagues throughout the world to ask them for assistance in coordinating the completion of some of those projects and for help with identification and annotation of herbarium specimens, including many that Grady had on loan from various herbaria. So far, Jean has helped arrange and coordinate visits to Davis by Scott Armbruster, Paul Berry, Lynn Gillespie, Helen Kennedy, Geoff Levin, Victor Steinmann, Ben Van Ee, and Ken Wurdack. Jean has also communicated with several of Grady's other collaborators, including Jeremy Bruhl, Him Henrickson, Klaus Kubitzki, and Burford Westlund. Robert Rhode and Grady's daughter Susan have continued their work on a Spanish translation of the Flora of Maquipucuna. All of these individuals' efforts will ensure that much of Grady's unfinished and very important research is completed and published.

I want to take this opportunity to thank all of the faculty, staff, students, and members of the community who have been so helpful and supportive during this transitional period, especially two individuals: Tom

Starbuck, who has worked tirelessly, often on a volunteer basis, to maintain and improve the information technology capabilities of the herbarium, and Jean Shepard, who has gone far beyond the call of duty and shown tremendous devotion to the herbarium by taking on many new responsibilities and working long hours to help keep the facility running smoothly and effectively over the last year. I feel very fortunate to occupy the position of director at this time; there are certainly challenges ahead but we have a wonderful new facility and an excellent group of staff and volunteers working together to maintain and build our strengths. I would love to hear any ideas any of you may have about future directions for the Center for Plant Diversity, and I look forward to seeing all of you in the herbarium and/or at various DBS events in the coming year.

*D. Potter*

### Conservatory

Twenty years ago, Michael Barbour, other Botany faculty and staff, Landscape Architecture classes, and Conservatory staff and volunteers transformed a utilitarian parking lot in the courtyard of Robbins Hall into an inviting enclosed garden of unusual plants grown to reflect departmental research efforts and for material for class exercises and tours. The Plant Biology and Evolution and Ecology departments have now moved their research and teaching programs to the Sciences Laboratory and Life Sciences Buildings and Storer Hall. Ernesto has spearheaded extending the botanically instructive and attractive plantings to the landscapes around the new buildings. The spectacular show of the beds planted last year on the southwest side of the Science Laboratory Building was strong motivation for the Conservatory volunteers and staff who spent several hot summer mornings spreading and spading in thirty tons of red lava rock in the beds on the east side of the Science Laboratory Building. Look for more major plantings this fall.

Excellent publicity in the *Sacramento Bee* brought over 200 visitors to the Conservatory Open

*continued on page 3*

## DIRECTOR'S CORNER (CONT. FROM PAGE 2)



New plantings of star of Madeira (*Echium candicans*) and tower of jewels (*Echium wildpretii*) installed outside the Sciences Laboratory Building by Conservatory staff. Photo: Darrell Brandon

House in February. The majority were first time visitors, from novices to experts, who relished the beauty and diversity of the plants and displays. Contacts led to further tours and an on-site watercolor workshop, a benefit for a non-profit organization that brings art into the lives of local children with disabilities. The Picnic Day display hosted ten times as many visitors. It was so crowded at times, we were again desperately wishing for a facility with much more space and an efficient traffic flow pattern.

The Conservatory carnivorous plant collection is outstanding because of extraordinary volunteers. In recent years, John Brittnacher, the seed bank coordinator for the International Carnivorous Plant Society and master hybridizer and grower, has been the source of a major increase in diversity. And Tom Cahill, who cannot resist finding a way to propagate and grow the "impossible" carnivorous plants, has been the source of many spectacular specimens for instructional use and trading with other collectors. He is responsible for the alluring Science Laboratory Building greenhouse display that can be viewed from the observation window in the hallway outside room 3096. This spring John retired and moved to Ashland. And this fall, Tom Cahill is taking a faculty position in Arizona. The plants and Conservatory staff will sorely miss them.

Other facets of the Conservatory collection and program besides the carnivorous plants are heavily dependent on non-career staff. In 2005-06 we had 19 students, 10 interns, and 19 volunteers. Due to lack of staff time to teach and supervise, we offered the formal Conservatory Internship only in spring quarter. The interns worked hard and learned a lot, with research topics from "Colchicine-Induced Polyploidy in Carnivorous Plant Genera" to "Finding the Best Host for the hemi-parasite *Castilleja exserta*". All the interns were outstanding and formed a pool of pre-trained students with strong motivation and excellent skills and attitudes from which we selected the two new student staff we needed.

In addition to the 2000 UC Davis students who visit annually on guided small group tours of the greenhouse, Conservatory staff serve 1000-2000 non-university participants, including community college classes, plant societies and other interest groups, and many K-12 classes. Each of the hundreds of tours requires set-up, clean-up, preparation of demonstration material, and recruiting and training docents or giving the tours ourselves. We considered reducing or canceling non-university tours because of the recent loss of most of the student staff funding but instead received authorization to start charging a \$2 per participant fee. The funds will cover enough of the baseline costs to continue the public instruction and outreach.

T. Metcalf

## SOCIETY PROFILES

### Deborah Canington

Dr. Deborah Canington's office in the Sciences Laboratory Building is notable for its two microscopes, both compound and dissecting. But that is only reasonable for a campus specialist in plant anatomy and in really tiny plants, mosses and their allies and algae. The 2006-07 Botanical Society president, a Continuing Lecturer in Plant Biology, has taught developmental plant anatomy for nine years and introductory phycology and bryology for ten years. In addition, she has taught the introductory plant biology and ecology course since becoming a faculty member in the Section of Plant Biology in 1989.



Dr. Canington hiking in Yellowstone National Park

Deborah came to Davis from Southern California as a doctoral student; her dissertation research compared the morphogenesis of the foliar and axillary buds of piggyback plant, *Tolmeia menziesii*. Currently she and Dr. Brenda Grewell, an ecologist with the USDA-ARS Invasive Weeds Research Lab, are collaborating on a study of *Ludwigia*, a wetland plant. Deborah is determining chromosome numbers of individuals from different *Ludwigia* populations throughout California and is investigating the anatomy of *Ludwigia* stems at different stages of development and under different water regimes.

A long-time DBS member, Deborah was most recently a Member-at-Large on the Board, where she arranged the highly successful Bryophytes Workshop in 2005. Her other interests include gardening, reading, hiking in the Sierra Nevada, traveling, and horseback riding in the mountains of Wyoming, an annual summer treat.

Come meet Deborah Canington in person as she presides at our program meetings this year—and enjoy the speakers as well!

K. Mawdsley

**Herbarium Building Campaign**

Bill & Jane Fischer  
Ray & Mary Evert  
Frances & Donald Foster  
Judith Jernstedt

**June McCaskill Memorial Fund**

Lewis Feldman  
Jack & Ellie Maze

**Herbarium Endowment**

Anonymous  
Brenda Grewell & Stephen Kidner  
Julie Knorr  
Bruce Kennedy &  
Peggy Kraus-Kennedy  
Valerie Layne  
Marjorie March  
William McCoy  
Katherine Mawdsley  
Jack & Ellie Maze  
Barbara & James Monroe  
Rodney & Gina Oswalt  
Robert & Laurie Preston  
Michelle McMahon &  
Michael Sanderson  
Maxine & Herbert Schmalenberger  
Maureen Stanton  
Gail Sullivan  
Alan Whittemore

*In Honor of John Tucker's Birthday:*

Ellen Dean & Thomas Starbuck  
Lewis Feldman  
Roman Gankin &  
Jobyna Kingsbury-Gankin  
Mary Major  
Grant & Grace Noda  
Roswita & Robert Norris  
Kay & Masako Ryugo

*In Memory of Grady Webster:*

Mitzi Aguirre  
Ellen Dean & Thomas Starbuck  
Genevieve Walden

*In Memory of June McCaskill:*

Elizabeth Bernhardt &  
Tedmund Swiecki  
Elizabeth Corbin

*Thank you for  
your support!*

the Botanical Society of America (BSA); and the Asa Gray Award from the American Society of Plant Taxonomists (ASPT). He served as president of BSA, ASPT and the California Botanical Society.

Robert Rhode, former student and continuing collaborator on the floristic checklist of Maquipucuna Reserve, a cloud forest reserve in Ecuador, described one of several University Research Expedition Program field trips that Grady led in Ecuador. On this particular trip, a guide led the group in the wrong direction and they wound up lost—but collected some beautiful bromeliads. Grady stayed indomitably cheerful until staff from the reserve came to pick up the group long after dark.

Piero Delprete, a past graduate student, fondly recalled several trips he shared with Grady to Maquipucuna. “Grady was a walking botanical encyclopedia. It was just incredible to me how he could have accumulated so much information. I have learned from him an exemplary professional life, human integrity, and appreciation for the beauty and diversity of nature.”



*Grady examining a marijuana specimen in 1982*

Grady's daughter, Dr. Susan Webster, generously permitted us to include excerpts from her remarks at the campus memorial service. “Grady was someone who could, over coffee, draw you a detailed map of ancient Mesopotamia on a napkin, describe the cultures, mark out the routes of war and trade, and link his historical discussion



*Grady on a break in Nanegalito, Ecuador in 1992. Photo: G. F. Hrusa*

with explanations of why modern personifications of liberty wear the Phrygian cap. Conversations with Grady were inevitably stimulating and always an education in themselves.

I remember a crosscountry road trip that we did in 1986, whose ostensible purpose was to get me and the car to graduate school in Massachusetts,

but which not surprisingly became a field trip in the process. I drove and Grady kept a journal, as he always did, in which he recorded what he considered to be the salient elements of the trip: he noted the gas mileage, elevations, place names, geological and plant life characteristics and, in addition, kept an account of all the music I played on the tape deck, awarding each song a rating on a 5-star scale. In addition to these elements, Grady was on the search for the perfect root beer float, and we stopped in every drug store and soda fountain along the way to sample them, giving each a rating on a 5-star scale. In thinking back on this journey, Grady's approach made it clear that this was not a trip whose goal was simply to get from one point to another in the most rapid and efficient manner; rather, it was decidedly a process with its own set of experiential goals that had to be sought out, spotted, discovered, enjoyed and recorded. Grady really was an explorer in every sense of the word, and it was this characteristic that made him such a wonderful teacher and traveling companion.”

Grady Webster's contributions to systematic and structural botany will be memorialized and perpetuated through two awards established by Susan and her mother, Dr. Barbara Webster, UC Davis Professor emerita. The awards, which are named in Grady's honor by the American Society of Plant Taxonomists and the Botanical Society of America, will recognize annually the best paper published in either the journal *Systematic Botany* or the *American Journal of Botany*.

*K. Mawdsley*

## 2006 STUDENT GRANTS AWARDED

A record number of applications for support through the Davis Botanical Society Student Research Grant program has yielded a strong panel of recipients of \$1000 awards for 2006.

Chris Mallek will use the Jack Major Memorial Endowment Award to continue his study of variation among populations of McNab cypress, *Cupressus macnabiana*, a Northern California foothill endemic. A student in the Ecology Graduate Group, Chris is working with Michael Barbour in the Dept. of Plant Sciences.

From Northern California to Madagascar, Brent J. Sewall will use the Larry W. and Charlotte Mitich Memorial Endowment Fund to investigate animal-mediated seed dispersal ecology and the conservation of tropical forests. Brent's emphasis will be on the foraging behavior of frugivores (fruit-eating animals). Also in the Ecology Graduate Group, Brent's advisor is Dirk Van Vuren in the Dept. of Wildlife, Fish, and Conservation Biology.

The E. Eric Grissell Award recipient is Heather Carpenter of the Plant Biology Graduate Group. Her project, *Caballitos and totora: Investigation of the giant sedge *Schoenoplectus californicus**, is directed by Eliska Rejmankova of the Dept. of Environmental Science and Policy. *Totora (Schoenoplectus californicus)* is used in the construction of housing and

boats and is a source of food for livestock and humans in many countries. It also provides important wildlife habitat in wetlands.

As we congratulate these students, we also look forward to reports from three other recent recipients at the May 2007 DBS program meeting. Look for the date and details in your DBS calendar.

K. Mawdsley



On September 14, 2005, DBS supporter Charlotte Mitich passed away. We miss Charlotte's enthusiasm and kindness. In addition to living on in each of our hearts, Charlotte will be remembered each spring when we award the Larry W. and Charlotte Mitich Memorial Student Grant. Charlotte is pictured here in 2004 (with Shad Canington and Roman Gankin).

## ENDOWMENTS RECEIVE GIFTS



From left to right: Dean Ken Burtis, Ernesto Sandoval, Eric Conn, and Tim Metcalf

viable level so that it can now provide meaningful yearly income to the Conservatory. Dr. Conn, Professor Emeritus of the College of Biological Sciences, also provided a generous gift to the Center for Plant Diversity Herbarium endowment in 2004. Many other Davis Botanical Society members gave to the Herbarium and Conservatory endowments in 2005 and 2006 (see side bars on pages five and six). We are grateful for this ongoing support which helps us build our endowments and increases the annual income that we receive from them. We thank all our members for their generous and forward-thinking contributions and encourage others who believe in the importance of the Conservatory and Herbarium at UC Davis to think about endowment contributions in 2006 or 2007.

In March 2006, Davis Botanical Society charter member Eric Conn donated \$20,000 to the Botanical Conservatory Endowment. The Conservatory Endowment was established in 2004 to provide yearly income to support the Conservatory's living collections, outdoor plantings, exhibits, and teaching programs. Dr. Conn's contribution increased the endowment to a financially

## 2005/2006 GIFTS

### Ernest Gifford Cycad Fund/ Conservatory Endowment

Eleanor Buehler  
Deborah & Shadrick Canington  
David Randall  
Susan Conard  
Eric Conn  
Sonia Cook  
Nancy & Donald Crosby  
Gerald Dickinson  
Ray & Mary Evert  
Herbert Fong  
Ernest & Jean Gifford  
Donnette & Daniel Gladish  
Stacey Harmer & Julin Maloof  
Terry & Benjamin Henry  
Judith Jernstedt  
Anton Krofranek  
Donald & Yoshie Kyhos  
Norma Lang  
Susan Larson  
Jeanette & Jonathan Lewis  
Joseph & Emma Lin  
Mary Major  
Katherine Mawdsley  
Debbie Maynard  
Bruce Beicke  
Jack & Ellie Maze  
Jocelyn & James Morris  
Robert and Roswita Norris  
James & Nancy Pollock  
Dan & Marcia Purcifull  
Calvin & Kathleen Qualset  
James & Elizabeth Quick  
Lawrence & Norma Rappaport  
Richard & Alice Riding  
Alison & Eric Roberts  
Warren Roberts  
Roy Sachs  
Penelope Knapp  
Robert Snider  
Alan & Elisabeth Stemler  
Ivan & Harriet Thomason  
Joe & Nema Traynor  
John Tucker  
Shirley & Kenneth Tucker  
Glenn Turner  
Larry & Rosalie Vanderhoef  
Dennis & Harriet Walker  
Marilyn & John Wilson  
Kathi & David Wilson

*Thank you for  
your support!*

**Conservatory Operations**

Anonymous  
Carole Ludlum  
Eugene Dammel  
John Tucker

**Herbarium Operations**

Nancy and Donald Crosby  
John Tucker

**Davis Botanical Society  
Student Grant Fund**

E. Eric Grissell  
Daniel Potter

**Larry & Charlotte Mitich  
Memorial Student Grant  
Fund**

*In memory of Charlotte Mitich:*  
Ellen Dean & Thomas Starbuck  
Layne Huiet  
Marjorie March  
Katherine Mawdsley  
Estate of Charlotte Mitich  
James and Catherine Murray  
Jean & Scott Shepard

**Jack Major Memorial  
Student Grant Fund**

Helen Carpenter  
Eric Conn  
Tena Farr  
Brenda Grewell & Stephen Kidner  
Ann F Johnson  
Franz & Bernette Kegel  
Mary C. Major  
Louise Jackson & Patrick  
McGuire  
Stephen & Jill Rae  
Marcel Rejmanek  
& Eliska Rejmankova  
Pat Williams  
Mary Hektner

**Gifts of Books**

Ken Fuller  
Katherine Mawdsley  
Robert Pearcy  
Wes Youngclaus

*Thank you for  
your support!*

**NOTABLE BOTANICAL PUBLICATIONS BY  
BOTANICAL SOCIETY MEMBERS**

In an issue of *Lasthenia* deeply imbued with Grady Webster's spirit and abiding influence, it is not inappropriate to revive an occasional feature from the early years of the newsletter he founded and originally edited—a report on notable botanical activities of people associated with UC Davis or DBS.

**Shirley C. Tucker**, UC Davis Botany Ph.D. and DBS life member, is lead author of the *Revised Catalog of Lichens, Lichenicoles, and Allied Fungi in California*. The *Catalog* was published in March 2006 as number 84 in the *Constancea* series of the University and Jepson Herbaria at UC Berkeley. It is available as a printable file or a searchable database at [ucjeps.berkeley.edu/constancea/84/index.html](http://ucjeps.berkeley.edu/constancea/84/index.html). As noted in the abstract, the catalog reports 1,575 taxa, an increase of about 580 since the 1979 catalog. A separate printable file lists 854 publications pertaining to California lichens.

**Barry Rice**, former president of DBS and Conservatory volunteer, is the author of *Growing Carnivorous Plants*. Published by Timber Press in Sept. 2006, the book contains 400 color photos. The pre-publication announcement notes Barry's activity as editor of *Carnivorous Plant Newsletter*, the publication of the International Carnivorous Plant Society and as its Director of Conservation Programs. We in Davis know him as an Invasive Species Specialist in the Global Invasive Plant Initiative of The Nature Conservancy, located in Robbins Hall.

Specimens from the Crampton Collection in the Center for Plant Diversity were the basis of botanical illustrations for which **Lesley Randall** was presented a Highly Commended Award at the 2006 Margaret Flockton Award Exhibition sponsored by the Royal Botanic Gardens in Sydney, New South Wales, Australia. The competition recognizes excellence in scientific botanical illustration and is the only prize to recognize this work, as opposed to botanical art. Lesley Randall, a free-lance botanical illustrator, received her Bachelor's Degree in landscape architecture from



*Scouring Rush (Equisetum),  
drawn by Leslie Randall*

Cornell and a Master's Degree in natural science from LSU. Among her notable projects have been the graminoids for the *Yosemite Flora*, euphorbs and grasses for the first edition of *The Jepson Manual*, and most recently oaks for John Tucker's treatment of that genus for the second edition. She is also currently a Staff Research Associate in the Arnold Bloom lab at UC Davis.

And finally, at least for this issue, **Rob Preston**, UC Davis Botany Ph.D., charter DBS member and donor of hundreds of splendid herbarium specimens resulting from personal trips or his professional consulting duties, published two articles this year reporting his taxonomic revision of several species of Northern California *Brodiaea*. "A Reconsideration of *Brodiaea Minor* (Benth.) S. Watson and *Brodiaea purdyi* Eastwood (Themidaceae), with the resurrection of *Brodiaea nana* Hoover" appeared in *Madrono*, 53:1. It analyzes and resolves previous confusion in applying names to a group of small-flowered *Brodiaea* species. "*Brodiaea sierrae* (Themidaceae), a new species from the Sierra Nevada foothills of California, U.S.A." publishes a new species endemic to the Sierra Nevada foothills of Butte, Yuba and Nevada Counties (*Novon* 16: 254). We are pleased that the holotype for the new species is located at DAV.

News of similar activity by DBS members is welcomed for future issues.

K. Mawdsley

## THE DATURAS: FAMILIAR TOXIC PLANTS

by D. Crosby

On their way to quell a 1675 uprising at the Virginia Colony's Jamestown, British soldiers ate roadside "greens" and became the first white people ever to be felled by "the Jamestown Weede" (that is, Jimsonweed). A coarse, 2- to 3-foot annual, this thornapple (*Datura stramonium*) has 5-inch, ill-smelling leaves—dark green and deeply notched—and produces trumpet-shaped white flowers that are upright, 4-inches wide, and often have a purplish center. They are followed by erect, egg-shaped, spiny fruit in the leaf axils. While sometimes seen in the



The fruit of many *Datura* species is a spiny capsule

West, this *Datura* occurs mainly in our East and Midwest.

Jimsonweed is indigenous to North America, and when the Europeans arrived, it was already in use by Native Americans to produce "visions." Its effects are felt within minutes after drinking tea made from it, or a few hours after eating leaves or seeds—intense thirst, blurred eyesight, and a pulse rapid and weak. Victims become delirious and nonsensical, plucking at large multicolored insects they imagine to be crawling on their skin or flying past. They may turn violent, convulsive, or comatose. Even a mild case may last several days, and chewing just a few of the seeds can kill a child.

The poisons are alkaloids: atropine (the stuff eye-doctors drop into your eyes to dilate the pupils) and scopolamine (the "truth serum" of detective stories that opens one's will to the suggestions of others). The alkaloid level in each plant determines

the response, and although the substances were popular hallucinogens in the 1960s, repeated use causes detachment from reality—the Zombie or "living corpse" of the Haitians.

The more familiar tolguaicha, *Datura wrightii* (formerly *D. meteloides*), occurs from California to Arizona and on into Mexico. Broader than those of Jimsonweed, its gray-green, smooth-edged leaves are over 8 inches long, its 5- to 9-inch trumpet-like flowers 10- rather than 5-pointed, and the fruit drooping instead of standing erect. However, the alkaloids and effects are the same as before, and children have been poisoned by sucking the stem-end of a single flower. Desert thornapple, *Datura discolor*, is a Southwest annual, and other species are even adapted to flower gardens.

Tree-sized daturas, called "angel's trumpet," are now classified as *Brugmansia*, but all of them are dangerous. They can reach a height of over 30 feet, with 6- to 12-inch, alternate oval leaves. An outstanding feature is their pendulous, foot-long, horn-shaped flowers: white, yellow, orange, red, or pink. Frost-hardy or not, depending on species, they may grow 10 feet within a few spring weeks. White flowers generally say *B. candida* or *B. sauveolens*, while red flowers mean *B. sanguinea*. The 12-foot *B. versicolor* var. 'Charles Grimaldi' with peach-colored flowers that grows on a corner near Putah Creek Lodge is a typical hybrid. Plants raised indoors are smaller but still colorful—and equally deadly.

Spanish explorers in South America reported that Indians used the plant to induce dreams, despite unpleasant and even terrifying side-effects. German explorer von Tschudi described the results of drinking *Tonga*, a tea made from *B. sanguinea*: "[The native's] eyes were dry but had become bright red and rolled about wildly... A thick white foam leaked out between his half-open lips; the pulses on his forehead and throat were beating too fast to count; his breathing was short and fast and did not seem to lift his chest... Sticky sweat covered his whole body, which was shaken by the most dreadful convulsions." The man later said he had been visiting his ancestors.

*Brugmansia* toxicity is like that of *Datura*, but alkaloid levels are higher; the leaves and seeds are equally potent.



Jimsonweed (*Datura stramonium*)

Most human poisonings are due to an accidental overdose during a youthful escapade, but "bad trips" have now made angel's trumpet infamous—a magical, evil plant—and only its beauty saves it from eradication. The 2002 book *Brugmansia and Datura* warns: "All parts [of the plants] contain dangerous levels of poison and may be fatal if ingested by humans or animals [and] some municipalities prohibit the purchase, sale, or cultivation of either or both..."

Daturas and Brugmansias clearly are plants to be enjoyed from a distance.

Dr. Crosby is author of *The Poisoned Weed: Plants Toxic to Skin* (Oxford Press, 2004). He will be our speaker on March 8, 2007 at the Davis Public Library.

### Book Reviewer Needed:

Among the manifold reasons we miss Grady Webster is his regular column in *Lasthenia*, Yolo County Bookshelves. There he reviewed one or more recent books of botanical interest. Plant people tend to be book people, readers and often buyers. Is there a reader, or perhaps more than one, who would share a report on recent publications likely to be of interest to other *Lasthenia* recipients? Please contact Kate Mawdsley (kfmawdsley@ucdavis.edu) if this opportunity is of interest.