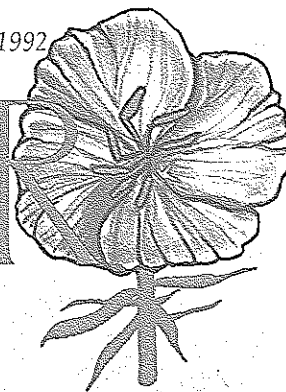
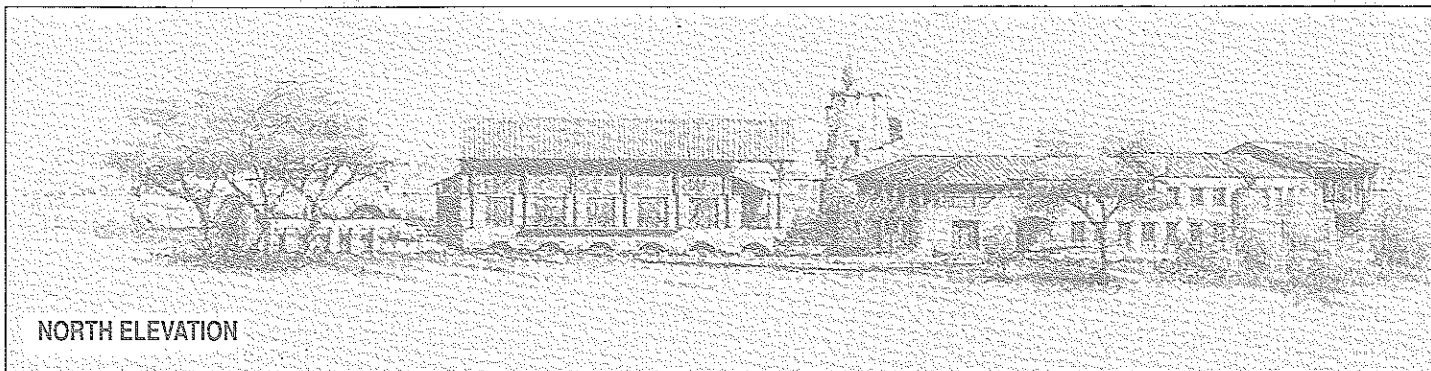


WILDFLOWER



A non-profit organization dedicated to researching and promoting wildflowers to further their economic, environmental, and aesthetic use.

Architectural plans for new facility taking shape



NORTH ELEVATION

The Wildflower Center's new home will be nestled into a beautiful Texas Hill Country site just southwest of downtown Austin.

Our tenth anniversary has been exciting and hectic; much of our attention has been focused on developing architectural plans for our new facility, which should open by the summer of 1994.

The move from a former hayfield to a 42-acre site in the heart of the Texas Hill Country will symbolize our growth — and potential — as a true force on the national environmental scene.

The new facility will provide increased visitor access space, something sorely needed at our present site. In fact, the new building will be large enough to enable us to offer regular educational programming such as workshops, seminars, and regional and national conferences for professionals, academicians, and homeowners. Our new home will have a 250-seat auditorium, five classroom-sized meeting areas, a multi-purpose room that can be divided into smaller areas, and a large educational display gallery for permanent and rotating exhibits. The grounds will include numerous research display gardens, landscaped areas, theme gardens, and plant communities such as a preserved woodland and an enhanced natural grassland.

We're excited about this new facility because it will give us an opportu-

nity to demonstrate how construction methods can be environmentally responsible. We'll nestle the buildings into existing topographic features and protect all significant trees on the site, using building techniques that require minimal cut-and-fill disturbance. Plus, the building is designed for maximum energy efficiency, using breezeways, wide porches, passive solar heating, and zoned air conditioning systems.

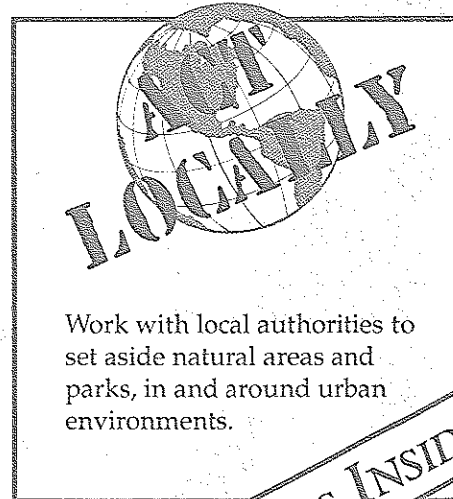
We'll also show how to conserve irrigation water, by using cisterns to collect roof runoff for later use — a system we've used successfully at our present site for the past eight years.

The new facility will further our educational goals by demonstrating a range of landscaping approaches from stylized formal areas to more natural-looking ones, so our visitors can see how they might incorporate native plants into their own landscaped areas. We want our displays at the new Wildflower Center to invite visitor participation to a greater degree than our present site allows. Displays will emphasize resource conservation and its role in helping humans develop a sustainable co-existence with the land. Visitors will learn how native plants help in preserving and conserving natural

resources.

The display gardens will feature examples of native annuals and perennials used in formal and "wild" landscapes, native grasses for lawn and landscaping use, and shrubs, trees, and understory (shade-loving) plants suitable for all types of landscapes. Theme gardens will include a pollination garden, an endangered species garden, and a garden with plants that native peoples used for food, fiber, medicine, dyes, and building materials. Our

(read on, page 6)



Work with local authorities to set aside natural areas and parks, in and around urban environments.

GIFTS INSIDE

WILDFLOWER CENTER NEWS

The Wildflower Center staff hosted a party in September to honor the Center's hard working volunteers. Nearly 200 people attended the event, which included food, entertainment, and a tour of the Center's new site. **Betty Scace**, one of the Wildflower Center's first volunteers, was recognized as the volunteer providing the longest continued service, and **Lil and Norm Flaigg** were recognized for giving the most volunteer hours. Thanks so much to all our volunteers!

Science and Children magazine featured the Center's educational poster in the October issue, and ran a feature article on teaching about wildflowers. The magazine has a distribution of 26,000. Many thanks to Shell Oil for underwriting the cost of printing the posters for the magazine issue!

Mr. and Mrs. Howard Callaway hosted a special fund-raising retreat in August at their rustic cabins in the North Pole Basin, a remote area just north of **Crested Butte, Colorado**. Eleven participants enjoyed four days of hiking, fishing, and the best display of Alpine meadow wildflowers seen in years. Mrs. Callaway is vice-president for education for the Wildflower Center's Board of Trustees.

Wildflower, the Center's newsletter, has received the national Clarion Award for best non-profit internal newsletter from Women In Communications, Inc. This is the second year

in a row that the newsletter has received this prestigious award.

Marcia Hermann, botanist assistant, traveled to the Texas Panhandle to attend the U.S. Department of Agriculture's open house at the **Knox City Plant Materials Center** in Knox City. She was accompanied by Wildflower Center volunteer **Dena Hull**.

Campbell and Lynn Loughmiller, authors of *Texas Wildflowers*, donated 7,000 slides of wildflowers, including many in Hawaii and Alaska, to the Center's photographic collection.

More than 300 people attended the Wildflower Center's **Membership Open House** at the Center and more than 600 people attended the **Bloom-in' Celebration** at the LBJ Ranch in Stonewall, Texas, in October. Both events celebrated the Center's Tenth Anniversary. Thanks for attending!

Several people have joined the Wildflower Center family. **Flo Oxley**, last year's research intern, is now resource botanist, replacing **Beth Anderson**, who is now with Plants of the Southwest in Santa Fe, N.M. **Denise Delaney**, research horticulturist, replaces **Elinor Crank**, who is now a consultant in Austin; and **Patricia Alholm** is public information coordinator, replacing **Elizabeth Carmack**. Watch for more details on our new staff members in the next newsletter!

FROM THE
F.I.E.L.D.

Managing Water Resources During Global Change, Nov. 1-5, *Reno, NV*. Contact: **Michael C. Fink**, American Water Resources Association, 5410 Grosvenor Lane #220, Bethesda, MD 20814-2192, (301) 493-8600.

Applications and Prospects of Biotechnology for Arid and Semi-Arid Lands, Nov. 5-7, *Lubbock, TX*. Sponsored by Texas Tech University. Contact: **Dr. Tom Mabry**, IC² Institute, 2815 San Gabriel, Austin, TX 78705, (512) 471-1900.

Partners in Stewardship, Nov. 16-20, *Jacksonville, FL*. Seventh conference on research and resource management in parks and on public lands. Contact: **The George Wright Society**, P.O. Box 65, Hancock, MI 49930-0065, (906) 487-9722.

International Congress of Traditional Medicine & Folklore, Dec. 6-11, *Kingsville, TX*. Conference sponsored by Texas A&I University and the Academia Mexicana de Medicina Tradicional. Contact: **Dr. Eliseo Torres**, Texas A&I University, P.O. Box 2205, Kingsville, TX 78363, (512) 595-3612.

Roadside and Right-of-Way Vegetation Management, Dec. 15, *New Brunswick, NJ*. Continuing professional education class. Contact: **Ofc. of Cont. Ed.**, Cook College, Rutgers University, P.O. Box 231, New Brunswick, NJ 08903, (908) 932-9271.

Fifth Annual Midwestern Herb Show, Feb. 12-14, *Mt. Vernon, IL*. Sponsored by the Herbs for Health and Fun Club. Contact: **Mt. Vernon Convention & Visitors Bureau**, (800) 252-5464.

Urban Forestry, Feb. 15-Mar. 3, *New Brunswick, NJ*. Continuing professional education class. Contact: **Ofc. of Cont. Ed.**, Cook College, Rutgers University, P.O. Box 231, New Brunswick, NJ 08903, (908) 932-9271.

Wildflower

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Executive Director: *David K. Northington, Ph.D.*

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Native Plants Provide Local Color ~ ^{For} Clothing

Even before people wore clothing thousands of years ago, they decorated their bodies with plant saps, juices, and colored earth for a variety of reasons.

The Picts, a group of ancient Britons, dyed their bodies blue with woad (*Isatis tinctoria*) to scare their enemies during battle. In their quest for beauty, Greek and Egyptian women used henna (*Lawsonia inermis*) to dye their hair and Mediterranean women used alkanet (*Alkanna tinctoria*) as rouge and lipstick.

Different colors frequently were associated with cosmic or religious forces, status and class, and with sickness and health. In some societies, the use of certain colors was strictly governed by law, and choice



pigments from rare sources were reserved for the clothing of kings and priests. For example, Irish kings wore robes dyed with saffron stigmas. Other colors were reserved for the masses and often became symbols in their quest for freedom from oppression.

In their book *Economic Botany*, Simpson and Ogorzaly note that the green we associate with Robin Hood's band of merry men was achieved by dipping clothes first in a dye bath of woad blue and then in a bath of deep yellow weld (*Reseda luteola*), producing the color called "Sherwood green," which allowed Robin's men to "fade" into Sherwood Forest and escape capture by the

Sheriff of Nottingham during their fight to overthrow his rule.

In the Old World, native plant species produced dyes in shades of yellow, tan, and brown, while highly prized reds and blues remained



elusive. As Europeans expanded their sphere of influence, new sources of brightly colored dyes were among the most sought-after commodities. Much effort was put into obtaining the exotic reds and blues that Europe's fashion-conscious upper classes demanded. The plants that provided these rich new colors became an important commodity in the European and world economy. But when Europeans began colonizing the New World, few bothered to learn about native dye plants from Native Americans. Instead, they relied almost exclusively on imported dyes from Europe.

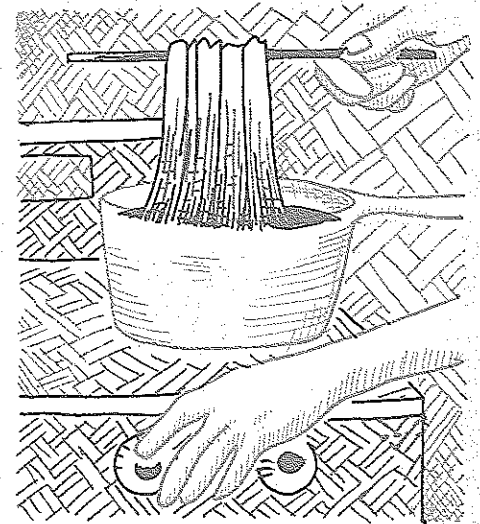
In 1856, the dye industry radically changed when English chemist William Perkin accidentally produced a lavender dye from a coal-tar derivative called aniline — a discovery that led to the production of synthetic dyes in an array of colors not available from plant extracts. The beautiful blues and reds that were so elusive in nature now were produced easily in the laboratory, so dyes were readily available and less expensive. The new synthetic dyes produced colors that were more dependable and easier to reproduce than those

produced by plants. By the end of the nineteenth century, only a few natural dyes remained in use.

Today, however, many artists, quilters, weavers, and spinners have rediscovered the beautiful dyes possible from native plants.

Natural dyestuffs will produce unique and often one-of-a-kind colors that can't be duplicated because of the characteristics of the plant material used. Even collections of the same species from different localities can produce major color differences.

Using mordants during the dyeing process also will affect the colors a dye can produce. A mordant is a chemical, usually a metallic salt, that will help the fiber accept the dye more easily and can make the base color richer, darker, or brighter. In some cases, a mordant can completely alter the color of the dye; different mordants will produce color variations with the same dye. Common



mordants include iron, which is said to "sadden" colors; tin and chrome which "brighten" them; and copper, which enhances blues.

A word of caution when using mordants: some mordants are extremely poisonous and care should be taken when using them. Use mordants in well-ventilated areas and never use dye pots for anything other than dyeing.

(read on, page 6)

Basic Guidelines For Dyeing ~ With Native Plants

The following basic directions can be used with most native plant dyes:

The wool must be clean, so gently wash it in warm soapy water or with a gentle detergent to remove any oils, dirt, or synthetic finishes. Rinse in warm water, squeeze out excess moisture, and hang to dry.

Next, mordant the wool so it will accept the dye. Dissolve the mordant in a quart of warm water, stirring thoroughly. Pour the solution into an enamel or stainless steel pot that's large enough to float out the fiber. Add enough water to make the pot two-thirds full and stir to make sure the mordant has dissolved completely.

Moisten the wool and gently submerge it in the mordant bath. The wool can be used immediately after cleaning and rinsing, if desired. Bring the water to just under a boil and simmer for approximately one hour. **DO NOT BOIL!!** Be sure to mordant in a well-ventilated room and follow all precautionary statements on the packaging. After an hour, remove the pot from the heat, cover it, and allow the wool to cool and soak from one to 24 hours. The fiber is now ready to be dyed.

While your wool is soaking, prepare the plant material. Crush or shred plant material into a second stainless steel or enamel pot, cover with water, and bring to a near boil. Keep the pot at a near boil for one or several hours, depending on the plant material. Because heat tends to weaken certain dyes, the amount of time you allow the dye to "cook" will depend on the recipe or experiment. If you are a beginner, be sure to consult a good reference to determine approximate times. Delena Tull's book *A Practical Guide To Edible and Useful Plants* has an excellent chapter on dyeing.

Once the dye plant is adequately "cooked," remove the pot from the heat and strain the liquid through several layers of cheese cloth or a plastic colander. Be sure to save the liquid — this is the dye. Add enough water to equal about four and a half gallons.



The flowers pictured above are pokeweed (*Phytolacca americana*), coreopsis (*Coreopsis tinctoria*), woad (*Isatis tinctoria*), and weld (*Reseda tinctoria*).

Remove the wool from the mordant and rinse out the mordant solution. Squeeze out excess water and add the wool to the dye bath. Simmer for 30 minutes to an hour or until the wool reaches the desired color, stirring gently. Let the wool cool in the dye bath, then rinse it in warm water until the water is clear. Wash in mild soapy water, rinse, gently squeeze out excess water. To complete

the process, hang to dry away from the sun.

A few words of advice: When collecting plant material for your dyeing projects, always collect responsibly. Check federal, state, and local regulations governing collecting. If you collect on private land, get the landowner's permission first. Collect only what you need and **DON'T** collect rare or endangered species. Correctly identify any plants to be used as dyestuff and avoid all plants that are toxic.

All equipment used in the dyeing process, including dye pots, stirring spoons, sponges used to wipe up spills, etc., should **NEVER** be used for anything else. Use these tools only for your dyeing projects.

Finally, experiment. Try different types of plants and use different mordants to see what colors can be extracted from the plant material. Try several different dyes to see what shades are possible. Test different types of fibers and fabrics to see which dyes are best.

And, above all else, enjoy!

F. M. Oxley
Resource Botanist
National Wildflower Research Center

REFERENCES

- Bliss, A. 1986. *North American Dye Plants*. Boulder, Colo.: Juniper House.
- _____. 1978. *Weeds: A Guide for Dyers*. Boulder, Colo.: Juniper House.
- Buchanan, R. 1987. *A Weaver's Garden*. Loveland, Colo.: Interweave Press.
- Simpson, B. B. and M. C. Ogorzaly. 1986. *Economic Botany: Plants in Our World*. New York, N. Y.: McGraw-Hill.
- Tull, D. 1987. *A Practical Guide To Edible and Useful Plants*. Austin, Tx. Texas Monthly Press.

Don't forget our gift shop this season!

As you make your list and check it twice for holiday gift-giving, keep in mind that the Wildflower Center's products division can help you with ideas. Besides the products shown in the gift catalog, many other items are available through the gift shop and by mail order. All members receive a 10-percent discount on purchases.

One of the newest additions to the gift gallery: a 100-percent silk wildflower scarf (\$42), covered with 46 different flowers in golden, navy, scarlet, and light green tones. Edged in navy with gold accents, the 30-inch-square scarf comes with a flower identification key. To request a picture, please write "Products—Scarf," at the Center.

Entertaining and enlightening is *Wildflowers with Helen Hayes* (\$19.95), a 25-minute video produced by KERA-TV/Dallas and shown this year on PBS affiliates across the country.

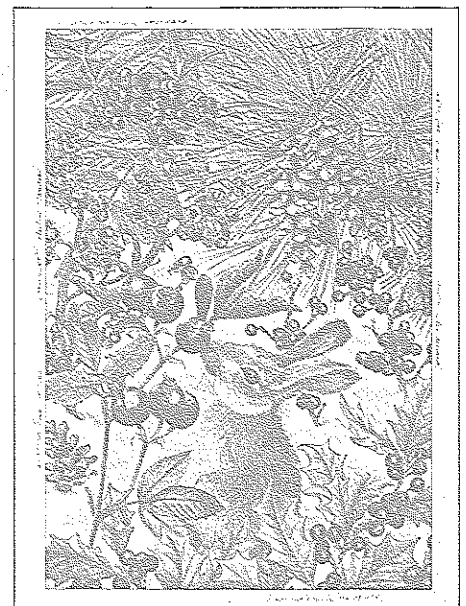
Rick Imes' new book, *Wildflowers: How to Identify Flowers in the Wild and How to Grow Them in Your Garden* (\$24.95), is beautifully laid out and illustrated, virtually drawing the reader into its many interesting chapters. Imes covers such topics as soils, wildflower life cycles, site evaluation, conservation, propagation, and maintenance. Regional overviews, representative plants, and helpful identification charts

round out the second half of the 160-page hard-cover book.

Lupines in brilliant blue decorate several gift suggestions for men: boxer shorts (\$16.95), please specify size: S, M, L, XL; and a large coffee mug (\$8). For women, five one-inch white porcelain lupine button covers (\$16.50) dress up blouses and shirts.

Smaller gifts and stocking stuffers are always convenient to have on hand during the season. The Center produced the *Wildflowers of North America Postcard Collection* (\$8.95) with Voyageur Press this year, a booklet containing 30 picture postcards to send or to keep. It's a nice way to spread the word about wildflowers throughout the year. So are wildflower photo note-cards (\$11.95), a set of twenty cards, five each of four photography subjects. A set of gardener's soaps (\$12) contains three fragrant French-milled soaps in a small wooden crate with a raffia bow.

You can use the enclosed order form to mail your order and to figure shipping charges. Telephone orders — (512) 929-3600, VISA and MasterCard accepted — and FAX (512) 929-0513 — are open Monday through Friday, from 9 a.m. until 4 p.m., Central time. Orders received after December 11 cannot be guaranteed to arrive before December 25, so order early!



Holiday cards available!

You can show your support for the Wildflower Center this season by sending our own holiday card, adapted from our educational "Four Seasons" poster. This delightful winter scene bursts with the color and texture of wild rose, yaupon, white pine, and other native American plants—and it shows how native plants attract wildlife. Sentiment inside: "Happy Holidays!" Ten 5"x7" cards and envelopes, \$6.95. (Use catalog order form; add shipping charges as indicated.)

WILDFLOWER OUTLOOK

More than 120 people participated in a wildflower plant rescue near Frankfort, Ky., in mid-April. The event was the first well-organized plant rescue operation in Kentucky history.

The Kentucky Native Plant Society, the Frankfort Audubon chapter, and Shooting Star Nursery of Frankfort sponsored the event, which rescued thousands of plants from destruction during a highway widening project.

Sherri Evans, owner and general manager of Shooting Star Nursery, said that about 1,000 people called, wanting to be a part of the rescue project, after a story about the rescue appeared in a local newspaper.

For safety and manageability, the dig was limited to 60 people (120 showed up), but the rest of the people who called will be contacted to participate in future projects, Ms. Evans says. Two additional plant rescues were planned.

Wildflowers were part of the international Ameriflora Exhibition in Columbus, Ohio, this year. Hocking College and Valley Creek Wildflowers sponsored a display that featured wildflowers, herbs, vegetables — and a 150-year-old reconstructed log cabin.

The college, located in Nelsonville, Ohio, rebuilt the log cabin at the Ameriflora site. When the exhibition closes, the cabin will again be torn down and rebuilt — for the last time — at the college.

The display was the only one featuring native wildflowers during the exhibition.

Pink lady's slipper was the first plant named to a special rare-plant list by the State of Tennessee, according to the *Tennessee Native Plant Society Newsletter*.

According to the newsletter, the special rare-plant listing applies to plants

that are "considered to be endangered in Tennessee due to evidence of large numbers being taken from the wild and lack of commercial success with propagation or transplantation."

International Wildlife reports that the U.S. Fish and Wildlife Service is turning 8,600 acres of farmland into tallgrass prairie at the Walnut Creek National Wildlife Refuge in Iowa.

Know of a special project or newsworthy native plant event in your area that would interest our members? Please send news clippings or releases about the project to the Newsletter Editor at the address listed on the back page. When sending a news clipping, please include the name of the publication and the date it appeared.

Plants provide local color from page 3

Many annuals and perennials, including herbs and wildflowers, are good sources of dyestuff. Marigolds, asters, dahlias, and coreopsis are just a few of the flowering plants that produce good dyes; dandelions and goldenrod are plentiful and dye well.

Leaves, stems, roots, and flowers impart their own shades to fibers, so don't be afraid to use all of the plant parts. Berries, bark, and nutshells, some with their own built-in mordants, will produce interesting colors. Lichens, moss, and fungi are good sources of unusual shades.

Although many good reference books are available, don't be afraid to experiment. Many experts agree that there are almost no rules, other than good common sense. And, while some books may say that certain plants don't make good

dyestuffs, you may have excellent luck with them. To duplicate your results, keep records of what plants you used, where you collected them, what mordants you used, and the colors they produced.

A wide variety of untreated fibers, including silk, linen, cotton, and jute, can be dyed using native plants. Wool is the most common fiber used because it will take strong colors with the least amount of effort and preparation, although it requires a bit more careful handling than other types of fibers to prevent felting. As with dye plants, don't hesitate to experiment with different kinds of fibers. The results may pleasantly surprise you.

F. M. Oxley
Resource Botanist
National Wildflower Research Center

New facility from page 1

younger — and older — visitors will enjoy our plant "petting zoo." Also planned is a research study comparing the cost of maintaining a traditional yard using exotic plants and one using native plants.

We hope you're as excited about this project as we are. We'll keep you posted as our new home springs from the ground.

David K. Northington, Ph.D.
Executive Director
National Wildflower
Research Center

Harvest a wealth of knowledge: Join the National Wildflower Research Center!

Members of the National Wildflower Research Center support wildflower and other native plant work across the nation. Benefits include *Wildflower*, the newsletter and *Wildflower*, the journal; 10% discount on unique Center products such as wildflower books, calendars, and T-shirts; advance notice on tours and discounts to Center seminars; free wildflower information from the Center's Clearinghouse; a membership card; and other benefits.

- \$25 Supporting Member. All benefits listed above.
- \$50 Sustaining Member. All the above plus a set of specially commissioned wildflower note cards.
- \$100 Key Member. All the above plus wildflower tote bag and invitations to special events.
- \$250 Center Sponsor. All the above plus full-color wildflower address book.
- \$500 Trust Member and \$1,000 Benefactor. All the above plus special privileges.

* Thank you! Your contribution is partially tax deductible. Contact the Development Office for detailed information on tax-deductibility.

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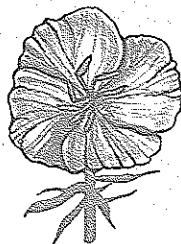
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