Gaillardia

The Oklahoma Native Plant Society Newsletter

The purpose of the ONPS is to encourage the study, protection, propagation, appreciation and use of Oklahoma native plants.

LOOK INSIDE FOR

Printed on 100% Recycled Paper

Volume 8 Number 3
Fall, 1993

Seventh Annual Meeting

The ONPS Annual Meeting and field trips will be headquartered on the campus of University of Central Oklahoma, Edmond, on Saturday and Sunday, October 16 & 17. See the inserted flyer for details and application form. A map showing the location of meeting rooms and listing some area motels is on the back of the flyer.

Ever been to a dull annual meeting? It wasn't one of ours! Our one speaker is Dr. Larry Magrath, the man-who-knows-every-thing about orchids. The business meeting will be brief and consists mostly of an election of next year's officers. All the rest of our time together will be spent on field trips: Saturday's to Oklahoma City's beautiful Martin Nature Park, staffed by two of our own members; Neal Garrison and Steve Thompson. Then on Sunday, we will travel to Roman Nose State Park, near Watonga (a distance of about 70 miles) for a conducted tour of that unique environment. (Have you ever seen the waterfall in the cave?) Add a couple of good meals with good friends new and old, and you have a great two-day vacation. **Register now!**

CALENDAR

17-19 September: OAS fall outing at Black Mesa. Call Ruth at (405)872-9652
27 September, 7:30 p.m.: Central Chapter field trip to OU Electron Microscope Lab.
16-17 October, Annual Meeting, Edmond
25 October, regular meeting of Central Ch. at the Horticulture Bldg. Oklahoma City
Note: planning for the 1993-4 season has just begun. More in next issue.

COPY AND ART DEADLINE FOR NEXT *Gaillardia:* Dec. 15

Note for contributors: to prevent having to continue your article from issue to issue, please try to make it no longer than one page with 0.3" margins, illustrations included.

Submission may be made on disk, IBM-clone word-processing systems such as *Word Perfect, Word for Windows, or Word-star*, or in ASCII. Disks will be returned.

NEW OFFICERS RECOMMENDED

The nominating committee made the following recommendations at the recent Board meeting:
For President, Dr. Connie Taylor, of Durant.
For Vice-president, Susan Chambers of Midwest City.
For Secretary, Darlene Michael of Oklahoma City.
For Treasurer, Judy Jordan of Norman.
For Historian, Karen Haworth of Tulsa.
For full terms on the Board of Directors, Ann Randle, of Duncan and Dr. T. H. Milby of Norman.
To replace Danny Wann and Connie Taylor on the Board, Betty Kemm of Tulsa and Frank Carl of Okeene.

The Botanist's Corner

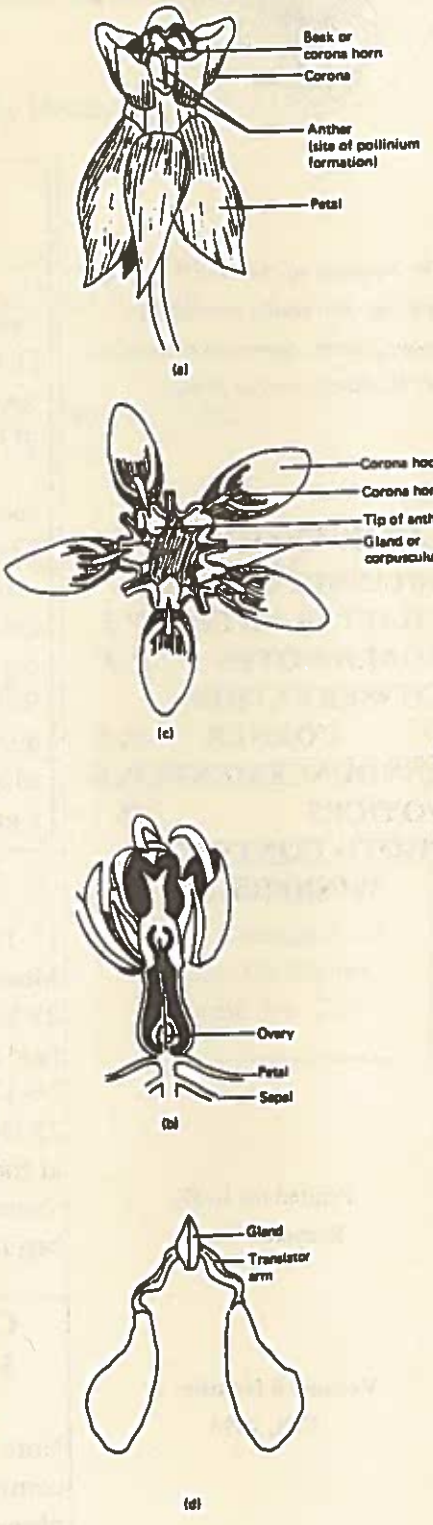
MILKWEEDS, A BEAUTIFUL DISPLAY OF FLORAL SPECIALIZATION AND DIVERSITY

by Linda E. Watson

The milkweeds, or the genus *Asclepias*, is composed of approximately 150 species. All are herbaceous perennials. The genus is easily recognizable by its opposite and whorled leaves, milky sap, and highly specialized flowers. Milkweed species occur in a variety of flower color and size. Different milkweed species attract different species of pollinators. For example, Butterfly weed (*Asclepias tuberosa*) has bright orange flowers that attract butterflies. Other species of *Asclepias* have pink or white flowers, which attract bees.

All milkweed flowers are composed of five, united petals that make up the corolla, and may be either erect or reflexed, and an elaborate corona of five hoods that hold nectar. Bees and butterflies are the primary pollinators, that feed on the nectar. As they forage for nectar on the flowers, their legs attach to waxy sacs of pollen (=pollinia) that are attached to each other in pairs (=pollinarium). As they fly away, the pollinarium dislodges from the corona and remains attached to the pollinator. When the bee lands on the next flower, in search of more nectar, it inadvertantly slips a pollinium (singular; one-half of a pollinarium) into the stigma of that flower and effects pollination. If the ovule is fertilized by this act of pollination, a fruit will develop from the ovary producing a follicle. The follicle has numerous seeds, with long hairs (=coma). When the follicle matures and dehisces, the seeds are carried by the wind, aided by the coma. During World War II, the United States was unable to import kapok, and hair from the seeds of *Asclepias* were used as a substitute in life jackets.

Monarch butterfly larvae feed on the leaves of milkweeds. They are able to metabolize the milky sap, which contains chemicals that are poisonous to humans and livestock. The metabolized chemicals remain present in the adult monarch butterflies, which makes them unpalatable to birds, their major natural predator, and affords them protection from being eaten. Once the bird tastes a monarch butterfly, it learns that this species tastes bad, and even though it will continue to eat other butterfly species, it will no longer eat monarch butterflies. This provides the monarch butterflies with a very effective chemical defense from predation. Different species of milkweeds have different types of chemical compounds. Interestingly, as the monarch butterflies metabolize these compounds, a characteristic 'fingerprint' results, that is a direct consequence of the type of chemical compound the butterfly originally ate. This allows researchers to trace which species of milkweeds each individual monarch ate as a larva. This has particular importance, since monarch butterflies migrate during the winter, from temperate North America to tropical Mexico and South America. Researchers can trace the migrational routes taken by the monarch butterflies, by examining the chemical 'fingerprints' of the butterflies and the 'fingerprints' of individual milkweed species. No wonder we all find nature truly amazing.



Chapter Notes

Central Chapter.....by Susan Chambers

The **Central** chapter enjoyed a field trip to the Lexington Wildlife Management Area in southern Cleveland County on the 16th of May. Amazingly successful for a Sunday morning in May, we had 22 people turn out for a hike through the preserve. Nineteen of them went on to tour the Milbys' *Prairie Dog Tree Farm* and then eleven of us went on to tour Ruth Boyd's "red clay hill".

Open prairie, deep woods and pond habitats were a few of the areas we saw. A low-growing native rose, *Rosa foliolosa*, and a "blooming" moss, as well as several large native trees were some of the highlights.

The tree farm is the retirement business of T. H. and Kathy Milby. Some of the more interesting species being grown are seaside alder and Quartz Mountain live oaks. Different methods of weed control and cover crops are being tried as well as the regular chores of pruning, planting and mowing.

Ruth's clay hill was in full bloom and doing pretty well despite a couple of weeks of very rainy, cloudy weather and late freezes in April. The garden is a true testament to the durability of some of our wildflowers and native plants.

On June 28 the Central chapter met for the third annual Folley farm picnic. Sixteen people brought brown bags, KFC bags, Braum's bags, etc., for a gathering at Pat and J. W. Folley's home east of Noble. After dinner and pond watching, the group went for a wildflower/bluebird hike until dusk. Several visitors and new members were among those attending.

Another field trip took the Central chapter to Chuck Harp's property northeast of Oklahoma City on the 31st of July. Chuck's brother Rob led a hike around the property to see the different plants used by butterflies and their larvae. Among the unusual seen on this hike were paw-paw, *Asimina triloba*; black hickory, *Carya texana;* pignut hickory, *Carya glabra;* mockernut hickory, *Carya tomentosa;* May-pop, *Passiflora incarnata;* toothache ash, *Zanthoxylum americanum;* and black oak (not blackjack), *Quercus velutina.*

After the tour, six of the nine attendees lunched at he Longhorn Cafe in Jones. Later, Wayne Chambers went back to the Harp property to salvage some of the introduced plants from the place. It has now been sold to a man intending to graze horses.

Northeast Chapter.....by Betty Kemm

The **Northeast** chapter will meet September 13 at the Tulsa Garden Center, 7:30 p.m. Members who attended the Black Mesa weekend are asked to bring their slides and other pictures and memorabila for a sharing and showing program. The 1993 Photo Contest posters will be on display at the meeting, too, for those who missed them at Black Mesa or want to see them again.

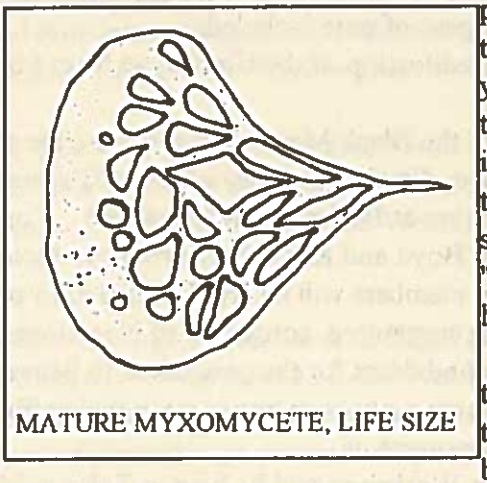
We have been invited to participate in a plant rescue with the Nature Conservancy and U.S. Fish and Wildlife service. The area in Rogers County will be strip-mined. Plants will be moved to an outdoor classroom at a school in Jenks.

Also, the Northeast Chapter will help host the Wildflower Workshop next year.

Dog Days and Driveway Lights

by Patricia Folley

It's August, and it's hot-hot-hot with dry-dry-dry. Even in the usually cool crosstimbers woods, the sparse grasses and litter are crunchy underfoot. But it's exactly the time of year that one of the strangest and most delicate life-forms on Earth becomes visible to the casual observer. Maybe it starts with the lessening of the day, so that sometimes I go down to the gate for the paper in the dark of early morning. Usually, I'm looking for the reappearance of Orion in the morning east. But--along the edges of the driveway where it crosses the woods are another kind of stars. About the size of a penny, they glow cooly among the dry grasses. Get a flashlight, and there's nothing to be seen! In fact, just my heavy tread while approaching seems to turn them off. For years, while I was too busy working to indulge every question that arose, I simply called them "the driveway lights".



MATURE MYXOMYCETE, LIFE SIZE

Of course, they're also seen in the evening. Maybe even all night long, and along the country road and my neighbor Sara's driveway too. A flashlight turns them off as well as a footfall. Mysterious and wonderful, these little beings. Naturalist Melynda Hickman came out for a swamp-walk on a full moon, one August years ago, and gave the lights

a name: **slime molds**. Myxomycetes, the antique encyclopedia from my college days calls them. Neither plant nor animal, but early in their complex lives, a lot like amoebas. One-celled somethings that move by streaming surges of protoplasm in the direction of food or moisture.

Sometime in the past several years, three new "kingdoms" have been added to the traditiional plant- and- animal ones, in part because of mysterious organisms like our little lights of the summer dusk. So Myx-omy-cetae now belong to a logical and rational group: the *Protista*. If you start its life story with the smallest unit--a protistan egg, or spore, you will follow a microscopic, dry, wind-borne mite to its landing site in a rich, moist soil or rotting log. The spore absorbs water, dissolves or ruptures its skin, and starts dividing, amoeba-like. And amoeba-like it lives for a time, alternating between a crawling and a swimming form. Eventually, some of these swarm cells fuse in a sexual union, and begin reproducing nuclei only, without pinching off separate bodies. When the supporting medium becomes depleted or dry, it can dry up, much like the spore, and wait as a tiny flake of gelatin for three to twenty years, if necessary, until conditions for growth are again right.

How do they live? Well, fungus-like, they can absorb decaying organic material from their environment, or they can pursue and capture bacteria. Being neither plant nor animal, they are not constrained by an either-or lifestyle. Eventually, having achieved a size that makes most of them visible to the human eye, they reach a point at which a more organized internal structure would be necessary to further growth, and coalesce to produce a new crop of spores. Often these are on tiny stalks, making the organism resemble a patch of fuzzy mold. That is the stage we see along the edge of the woods.

Why do they glow, and how do they sense the presence of the observer? My encyclopedia didn't say, and though I'd really like to know, I think of my mother's response to a questioning child: "they do it to make little girls ask questions". And to make magic of an August evening walk.

BOARD MEETING

The ONPS Board of Directors met at the Holiday Inn in Henryetta on 26 August to conduct the ONPS' business prior to theAnnual Meeting.

Treasurer Rebecca Troth presented a financial statement which showed that the organization is operating within its budget and that all records are kept up to date. Also, accounts for the two award funds have been reorganized, and plans made for the prudent investment and handling of the new life memberships.

The Membership committee, headed by Dr. Paul Buck, reported an increase in paid memberships from 383 to 405 during the past year. A corresponding decrease in courtesy subscriptions to the newsletter from 63 to 56 and an increase in the total of life memberships to five will contribute to the future of this young organization.

Other business of note included:

* Transfer of the editorship of the *Gaillardia* from Marilyn Bell to Patricia Folley. **Note that the ONPS address will not change.**
* Final reports on the Black Mesa weekend were heartening. Most attendees reported having had a uniquely rewarding experience. Field trip co-chair Connie Taylor suggests going to the opposite corner of the state, and having another similar outing at Broken Bow State Park. You will hear more about this later.
* Efforts by Ruth Boyd and Karen Haworth have increased the actual publication rate for our meeting announcements. Individual members will always be needed to promote the ONPS story in our own neighborhoods.
* The nominating committee, consisting of Nora Jones, T. H. Milby, and Rahmona Thompson, has prepared an outstanding slate of candidates for the new terms to begin in October. See the box on the front page for results.
* ONPS will become a player in a new state-wide effort to assist migragory birds, called *Partners in Flight* (PIF). Nora Jones will represent us.
* The Wildflower Workshop will be held in Tulsa in May, 1994.
* Clark Ovrebo is finalizing plans for the Annual Meeting on next October 16-17. See announcement this issue.
* Plans are for the Indoor Outing, to be held in the Botany building at University of Oklahoma next January or February. Dr. Jim Estes is in charge of arrangements.

Conservation Corner -- Missouri's Prairie State Park: Tallgrass Up Close and Personal

By Nora Jones, Conservation Co-chair

You all know that Oklahoma is blessed with a wide variety of habitats. In particular, we have some of the best remaining, least disturbed tallgrass prairie left anywhere. Fortunately we don't have a monopoly. On a recent blazing day in early August Jim Norman accompanied me to Prairie State Park, north of Joplin, Missouri. We were questing the Downy gentian and the Regal fritillary, two species rarely encountered in Oklahoma. Before the day ended we had seen these and much more on a hike over Regal Prairie and a visit to the Prairie State Park Visitor Center.

According to Steyermark *(Flora of Missouri)*, the Downy gentian has the deepest blue petals of any native flower in Missouri. We have to take his word for it. Since it is a late bloomer, we only observed it in bud. A later August or early September visit would probably have rewarded us with a chance to view the flowers in full bloom. Taylor and Taylor report in their *Annotated List* the Downy gentian was one of three gentians added to the Oklahoma flora since the 1969 edition of Waterfall's *Keys*. These additions give Oklahoma 12 recorded species in the Gentianaceae.

Steyermark records the Downy gentian's habitat as "undisturbed and unburnt prairie along railroads." In Oklahoma it has been reported from hay meadows in northeastern Oklahoma. Steyermark says the gentian will thrive in the wildflower garden, but, like other gentians, is difficult to propagate from seed. Steyermark recommends digging and transplanting as the best method for starting it in the garden. **But, please, ignore this advice!** Unless transferring prairie natives from one flower garden to another, or moving plants as part of a prairie salvage operation, native plant fanciers should try to avoid digging plants. Many native plants cannot stand to have their roots disturbed, many die in transport or shortly after transplant, and the plants left behind may be trampled or have injured roots. Showy plants such as gentians, orchids and penstemons are especially apt to be dug up so these suffer most losses from would-be plant lovers. Only a few high quality native prairies are still relatively undisturbed; please leave those few left to thrive in place.

Collecting native plant seed, if done judiciously, is much less harmful to plant populations. Get landowner permission to collect seed. Never collect if there are fewer than 2 dozen plants and don't collect more than 10% of the seed heads in a given area. Be sure to collect from as many different plants as possible to capture the range of variation in the population.

Harry Phillips (*Growing and Propagating Wildflowers*) gives detailed instructions for propagating the Bottle gentian (*Gentiana clausa* Raf.), a close relative of the Downy gentian. If you are successful, it will take two years from seed collection to flowering. Best of luck in using Phillips method on the Downy gentian.

On the same visit to Regal Prairie, Jim and I were rewarded by the sight of about twenty of the increasingly rare Regal fritillary (*Speyeria idalia* Drury). This sighting was a first for me, and to my surprise, for Jim, too. (Jimmy, we thought you'd seen everything.) We were elated.

This large, Monarch-sized butterfly is a consistent indicator of diverse native tallgrass prairie. And Regal Prairie (named for the butterfly) is certainly a hot spot for plant diversity! Adult regals are long-lived (for a butterfly) and require a variety of nectar sources, including gayfeathers, coneflowers and Ashy sunflowers. As Jim pushed aside the tallgrass to look for shorter forbs, we saw not only the Downy gentian but also the Prairie violet. Regal caterpillars require *Viola sp.*, especially Prairie violet *(Viola pedatafida* G. Don), for food.

Regals are such strong fliers they make Monarchs look lazy. When approached to closely or too quickly, they dart off and drop into tall vegetation to escape detection. Patience is needed to get a close view or a good photo.

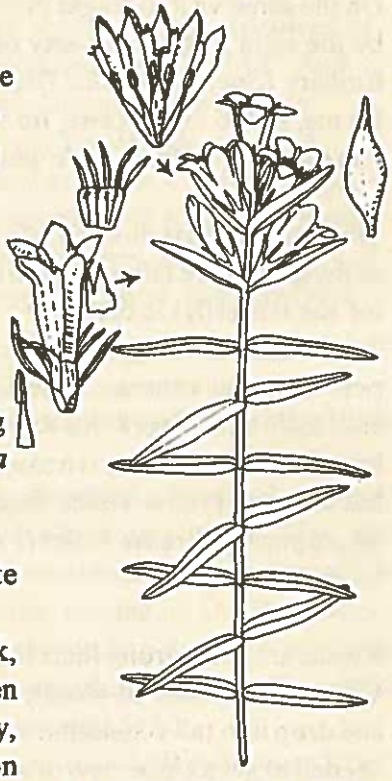
Jim also spotted several prairie birds. He pointed out two Henslow's sparrows, singing lustily while perched on grass stems a few feet from the path. We couldn't have been any closer.

After spending several hours at Regal Prairie, we ventured about a mile down the road to the Prairie State Park Visitor Center. What a treat! The centerpiece is an interpretive diorama of the tallgrass prairie, complete with bison, butterflies, amphibians and reptiles and an astonishing variety of plants. An adjacent wall shows a typical stream system, complete with an aquarium just above floor level, i.e., at fish level. A separate room traces the impacts of humans on the prairie from prehistory to present. Extensive collections of photographs and specimens of plants and animals make

hands-on learning enjoyable.

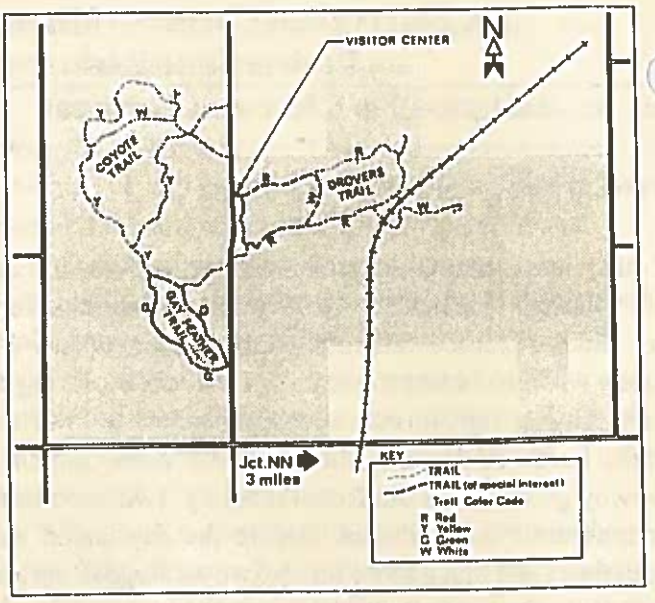
Best of all, though, was the experienced and enthusiastic staff who shared their vision for the prairie. There is an eleven minute slide show on the prairie which interpreters are happy to show. Visitors can also test prairie management skills by running an interactive computer program. To burn or not to burn? To graze or not? The computer guides you through a stewardship mini-course.

A small bison herd and a few elk have been reintroduced to the park. Stop at the Visitor Center first to see which trails are open. Ask for a plant list, then go out and explore. Don't miss this great day trip!



The Downy gentian's name has been changed to *Gentiana puberulenta* Pringle from *Gentiana puberula* Michx. (This is one time we must be thankful for authors using common names since otherwise I would have had trouble tracing this fact.) Drawing source: Steyermark, *Flora of Missouri*.

Directions to Prairie State Park:
To visit the 3,000 acre park, from U. S. 71 between Joplin and Kansas City, travel west from Lamar on U.S. 160. After about 10 miles, intersect MO Highway 43, go another 2 miles. Turn north on County Hwy. NN for 1 mile. Then, go west on a gravel road for three miles, then turn north on another gravel road. Regal Prairie is about 1/3 mile north. The Visitor Center is about another mile further. (Map: American Butterflies, Vol. 1, No. 1, p. 8. To join the new North American Butterfly Association, write 39 Highland Avenue, Chappaqua, NY 10514. Dues: $20/year individual.)



ANNOUNCEMENT

This issue of *Gaillardia* marks the debut of our new editor, Patricia Folley. Pat has been secretary of the ONPS since October 1991 and will continue in that capacity until the election of officers at our annual meeting in October. As *Gaillardia*'s fourth editor, Pat is no newcomer to publishing newsletters as she has published a bimonthly one for the Cleveland County Audubon Society for about ten years. We welcome Pat and know that she will do an outstanding job just as she does in anything she undertakes. She will be pleased to receive your contributions and suggestions. Her address is 15100 Etowah Road, Noble, OK 73068.

As is often the case, this good news is tempered by bad news. The down side of having a new editor is that we no longer have our old one. Marilyn Bell took over as our third editor with the November/December 1989 issue of the Gaillardia although she had been "editorial advisor" for the three issues preceeding that. Under Marilyn's guidance our newsletter has matured and become a very professional looking document. She has told me how much she enjoyed doingt the newsletter and has only given it up because she needs more time to devote to her profession as publisher and free-lance writer. Her talents will be sorely missed. However, she is not going anywhere and we will still see her at ONPS functions. Thank you, Marilyn, from all of us for a job well done. We wish you the very best in future endeavors.

by Ruth Boyd, President

The *Gaillardia*

Published quarterly by Oklahoma Native Plant Society
2435 S. Peoria / Tulsa, OK 74114 / (918)496-2218

President	Ruth Boyd
Vice President	Paul Buck
Secretary	Patricia Folley
Treasurer	Rebecca Troth
Historian	Marjorie Franklin

Edited by Patricia Folley, Noble, Oklahoma

NOTICE

> **Pre-registration is now required for all field trips.**
>Field trip announcements will contain the name, address, and telephone number of the leader. If you have doubts about terrain, difficulty, etc., ask.
>Field trips take place rain or shine. Proper dress and shoes, hat, etc., are essential. Bring water and lunch.
>Participation is at your own risk
>All ONPS field trips are open to the public at no charge, unless charges per member are specified in the announcement. Visitors and newcomers are always welcome.

NEW MEMBERS

ONPS proudly welcomes these new members:

Clara L. Bishop	Nancy M. Denton
Raymond & Viola Ernst	Dorothy Foster
Mary & Melvin Jones	Penny Rowley
Edgar Jay Whitaker	Dr. & Mrs. R. K. King
George & Wanda Largent	Douglas Zollner
Yvonne Evans	Joy Mosburg
Ed Brown	Bob & Maurita Nations
Walter Traxler.	

See anyone you know on this list? Call them up and ask them out for your next native-plant-related experience. All of us are ONPS--not just the officers!

LAST CALL FOR NOMINATIONS

Members who have been considering a nomination for the annual Anne Long Award must have them in to Paul Buck before 1 October. Individuals, groups, organizations or government agencies who have contributed to the ONPS purpose are eligible.

Send your nominations directly to Dr. Buck at the Biology Department, University of Tulsa 74104. Entries must include the nominee's name and address and the nominator's name and address on a cover sheet, followed by a description of the qualifying actions on a separate sheet.

BECOME AN OKLAHOMA NATIVE PLANT SOCIETY MEMBER

Please enroll me as a Member of the Oklahoma Native Plant Society. My dues payment is enclosed for the category checked. Make checks payable to *Oklahoma Native Plant Society*, and mail to:
Oklahoma Native Plant Society / 1435 South Peoria / Tulsa, OK 74114

_____$15.00 Family
_____$ 5.00 Student
_____$300.00 Lifetime Family
_____$_____ contribution. (All contributions are tax deductible)

____$10.00 Individual
____$200.00 Lifetime individual

Gift from_____
_____
Renewal
New Membership

NAME_____HOME PHONE_____

AFFILIATION_____

ADDRESS_____BUSINESS PH._____

CITY_____STATE_____ZIP_____

PHOTO CONTEST WINNERS

The Oklahoma Native Plant Society's Photo Contest Committee is proud to announce the following winners of the 1993 contest. Awards were made at the Wildflower Workshop in Enid.

Beginner class:
First, Nina Barnes, Tulsa. Second, Sally Burr, Newcastle Third, Dorothy Henthorn, Enid.
Honorable Mention, Dr. Raymond McCalment, Tulsa, and Nina Barnes, Tulsa.

Amateur Close-up:
First, Don Fadely, Grove. Second, Patricia Folley, Noble. Third, Nancy Cain, El Prado NM
Honorable Mention: Ellen Jacobs, Claremore; Barbara Tarbutton, Noble; Laurie Stillings, Harrah.

Advanced Close-up:
First, Jim Norman, Muskogee Second, John Miller, Casa Grande, AZ Third, David Willard, Tulsa.
Honorable Mention: Joe Machado, Tulsa; David Willard, Tulsa; C. G. Arnold, Pawhuska.

Scenic:
First, Dorothy Norris, Tulsa; Second, Tom Howard, Tulsa; Third, John Miller, Casa Grande NM
Honorable Mention: Jim Norman, Muskogee, Dan Van Durmen, Tulsa.

Merit for best photo from a botanical point of view: Jim Norman, Muskogee

Oklahoma Native Plant Society
c/o Tulsa Garden Center
2435 South Peoria
Tulsa, Oklahoma 74114

Non-Profit
U. S. Postage Paid
Tulsa, Oklahoma
Permit No. 789