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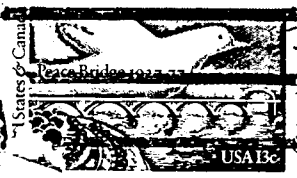

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Native Plant Society of New Mexico
January Newsletter 1978

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Tradescantia occidentalis

Spiderworts and Dayflowers (Commelinaceae) of New Mexico

The Commelinaceae is a primarily tropical and subtropical family of monocotyledonous plants (related to lilies, yuccas, grasses, and orchids) with about 600 species in 40 genera. Of these, two genera occur in New Mexico, Commelina (dayflowers) and Tradescantia (spiderworts). Like almost all of the monocots these plants have their floral parts arranged in threes -- three green sepals, three showy petals, three or six stamens, and a three carpellary ovary. Although the two genera which occur in New Mexico have structurally similar flowers they are easily distinguishable from each other. In Tradescantia all three petals are the same size and in Commelina the two upper petals are large and showy while the third (lower) petal is much smaller.

Linnaeus humorously named the genus Commelina after the brothers Commelijn, two of whom (the two large upper petals) were well known botanists while the third (the insignificant lower petal) did nothing, i.e. he was not a botanist! Tradescantia (also named by Linnaeus) commemorates John Tradescant, a botanical explorer who became gardener to Queen Henrietta Maria of England.

Representatives of this family surely familiar to almost everyone are the so-called wandering Jews which are grown as houseplants everywhere. These plants have a sprawling habit of growth and are often grown in hanging baskets. Their leaves are usually ovate, variegated (striped green and white), and are purple on the undersides. The species usually sold as wandering Jews are Zebrina pendula (purple-rose flowers), Tradescantia fluminensis (white flowers), and Commelina nudiflora (blue flowers). These plants are very similar vegetatively and, except for the color of the flowers, are distinguishable only by somewhat technical characters. Unlike the wandering Jews, the species of Commelina and Tradescantia native to New Mexico are more or less erect in their habit of growth and have leaves which are long and narrow.

The prairie spiderwort, Tradescantia occidentalis, is a somewhat scraggly plant with pretty flowers more than an inch in diameter. The flowers are usually purplish but may be bright blue to rose or magenta. The plants grow in clumps from thick roots and are found in prairies and plains, usually in sandy or rocky soil, from 5,000 to 8,000 feet in elevation. Two varieties occur in New Mexico. The typical variety, T. o. var. occidentalis, has a covering of tiny glandular hairs on the pedicels, sepals, and ovary. It is more or less general in the northern part of New Mexico. The second variety, T. o. var. scopulorum, lacks the glandular hairs and occurs in the northern and western parts of the state. Both varieties bloom May to July.

Another spiderwort, Tradescantia pinetorum, occurs in southwestern New Mexico at elevations of 5,000 to 9,000 feet. This species has tuberous roots which were eaten by the Indians and the plants themselves were consumed as pot-herbs. The plant is less than 12 inches tall, the stems are not branched, and the flowers are less than an inch wide. The flowers, although small, are pretty and may be found in shades of violet, rose, or blue. The blooming period is August and September.

A third spiderwort, Tradescantia wrightii, formerly considered to be entirely restricted (endemic) to the trans-Pecos region of Texas, has recently been found in New Mexico. This species is very rare and is known only from two small populations; one on the U. S. Fish and Wildlife Refuge at Sevietta and another at Dog Canyon in Otero County near Alamagordo. Aside from its rarity, this species is unusual in that its leaves and stems are cylindrical and somewhat fleshy-succulent giving it a superficial resemblance to some of the wild onions. The plants are small, six to eight inches tall, and the flowers (about 3/4 inch wide) are large for the size of the plant. The flowers vary in color from rose to purple and magenta and appear from May to September.

Commelina dianthifolia is a very attractive native wildflower with bright blue flowers. The color is that rare pure blue seen in Delphinium, Lobelia, Gentiana, and forget-me-nots. The plants are clump forming perennials with several stems 12 to 18 inches tall and narrow, grass-like leaves. The specific epithet dianthifolia means the plant has leaves which resemble those of carnations and pinks (genus Dianthus). Each stem bears a large cluster of flowers enclosed by two bracts resembling small leaves. Although each flower cluster contains many flowers, only one or two flowers are open at a time. The flowers open in the morning and fade by afternoon which is the reason for their common name of "dayflower". Even though the flowers are individually short-lived, the plants are rather showy in the garden because each branch of every stem will bear one or two flowers each day through August and September. This species commonly occurs in pine woods at elevations of 3,500 to 9,500 feet. I have seen it along the highway at Bandelier and along the Santa Fe ski basin road.

Our only other native species of Commelina is C. erecta var. angustifolia (= C. e. var. crispa). This species is easily distinguished from C. dianthifolia since the two large upper petals are blue and the small lower petal is white (in C. dianthifolia all three petals are blue). It occurs at elevations from 3,500 to 5,000 feet in the southern part of New Mexico.

All of the native dayflowers and spiderworts of New Mexico are relatively undemanding in cultivation. They generally transplant easily and the seeds germinate readily. They are relatively drought tolerant (Tradescantia spp. more so than Commelina spp.) and, although the flowers of both genera last only one day, their color range and long blooming season make them deserving of a place in our wildflower gardens.

David Deardorff

How To Join The Native Plant Society

The Native Plant Society of New Mexico is a non-profit organization dedicated to the preservation and protection of the flora of New Mexico. Members receive the newsletter every month. Monthly meetings feature speakers whose expertise spans a wide variety of relevant topics. The information shared through the newsletter and the meetings permits all of the members to become better informed on conservation issues. If you would like to become a member please notify Missy Deardorff, 542 Camino del Monte Sol, Santa Fe, N.M. 87501. Annual dues are $6.00 per individual and $8.00 per family. Please make checks payable to the Native Plant Society and be certain to include your name, address, and telephone number.

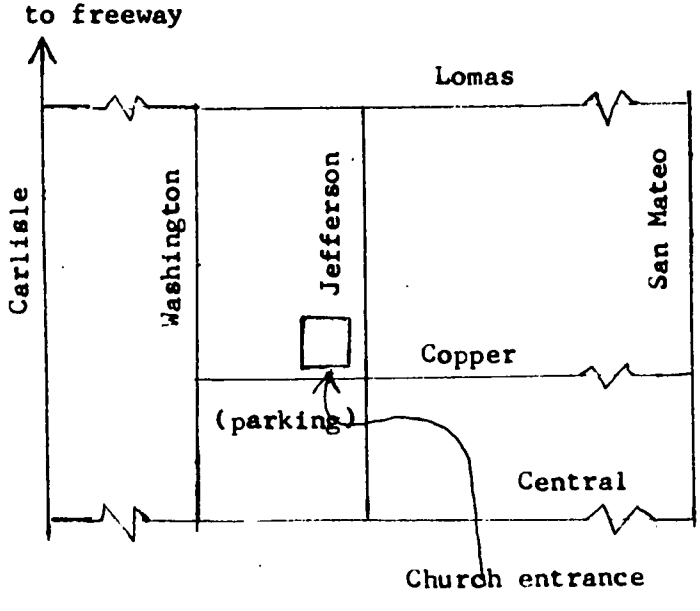
This month's meeting:

For our January meeting the Native Plant Society will join the New Mexico Wildflower Association for a joint meeting in Albuquerque on Friday the thirteenth (!). Mr. Steven Brack from Belen, owner-operator of Los Patios, a nursery specializing in cacti and succulents, will be our speaker for the evening. His subject will be the native cacti of New Mexico and we will be treated to a slide show of our beautiful cacti in bloom.

The meeting will be held at St. Timothy's Lutheran Church, 7:30 pm, on Friday, 13 January. The Church is a one story red brick building at the corner of Jefferson and Copper N.E. (see map below). For anyone wishing to stay overnight there are a number of motels close to the Church. We will attempt to coordinate a car pool -- call Missy or Dave Deardorff (988-1520) if you wish to participate.

Next month:

The New Mexico Wildflower Association is having its annual covered dish dinner on 12 February at 1:00 pm at St. Timothy's Lutheran Church. An open invitation has been extended to any members of the Native Plant Society who wish to participate. The dinner is to be covered-dish, with no special food assignments. They will furnish coffee and tea, you bring your own table service. The program will be a very unusual slide program of flowers which should be an enchanting photo treat.



Heritage Program Designates Natural Areas

Bill Isaacs, program coordinator of the New Mexico Heritage Program, explained the program's purposes and processes during last month's meeting of the Native Plant Society at St. John's College on December 14. A field biologist well acquainted with New Mexico's natural landscape, Isaacs gave a lucid, extemporaneous talk. The accompanying slides illustrated some of New Mexico's natural treasures and diagramed the mechanics of the Heritage Program.

The Heritage Program has two goals. First, it is developing a data management system to collect, store, retrieve and analyze environmental information about New Mexico. Data on endangered or threatened animals and plants occurring in our state as well as on geologic formations and soil types is stored in a computerized data bank. Second, the Program uses this storehouse of data to identify the unique areas where the rare, threatened, or endangered natural elements occur in significant numbers and designates these as natural areas or potential natural areas. There are 75 to 100 such natural areas currently identified in New Mexico.

New Mexico has an array of unique and exciting natural areas. For example, several outstanding events in the last few months put our state in a leadership position regarding handling of natural rarities. Currently the world's most exciting locality for fossil finding is in the badlands southwest of Farmington, where both fossilized plants and animals occur in great numbers. Here the first intact skeleton of an early mammal and the oldest skull of a carnivore have been found. A 200 feet long, eight feet in diameter fossilized tree from the Late Cretaceous flora has also been found. These three historic specimens are part of the most extensive fossil beds in the world. There is no existing museum which could physically house such a large collection of fossils. Northeast New Mexico has yielded a record number of intact dinosaur skeletons. Just how to preserve these finds is still undecided.

Some of the prime natural areas currently defined include Guadalupe Canyon in Hidalgo County, which is the only home for Sonoran Desert life forms in New Mexico. Blue Springs in Eddy County are limestone springs containing four species of endangered or threatened fish, at least three species of threatened or endangerd reptiles, and also plant communities unique to limestone soils. Sitting Bull Falls in the Guadalupe Mountains is another of these limestone sites which supports such rare or endangered plants as Aquilegia chaplinii and Penstemon cardinalis.

A proposal now before the U.S. Congress, the National Heritage Land Trust Bill, would fund a nationwide inventory of natural areas in order to create a national preservation program. This is the first systematic attempt by the Federal government to preserve our natural heritage. The Bill says that all existing programs such as our state Heritage Program would receive federal funds within 90 days

of passage. One quarter of a million dollars would be used for operating costs and land acquisition throughout New Mexico. The prospects for passage of the Bill look good. Time is short, however; land development is rapid and some plants and animals are fast disappearing. To add to the frustration, land prices are sky-rocketing so the land acquisition fund will not go far.

The Nature Conservancy began its work in New Mexico in the 1950's, and it initiated the Heritage Program in 1976. In the 1950's the conservancy took the "neat site" approach, a subjective judgement of an area, typically on aesthetic grounds. The Heritage Program's goal, however, is to quantify the "neatness" by objectively determining a unique or rare site through use of the computer stored data, a project which was too large for the Nature Conservancy to handle. It was up to the various Heritage Programs to stimulate the states do do this for themselves. New Mexico has accepted this responsibility. After one year of operating with one half Nature Conservancy funds and one half Federal Bureau of Outdoor Recreation funds, Gov. Apodaca set up the program as a state project. It is now in the Department of Game and Fish, though still receiving one half Bureau of Outdoor Recreation funds.

The Heritage Program is able to go beyond the objective computer selection of natural areas when circumstances warrant it. Isaacs illustrated this fact with the story of a rare invertebrate, the Socorro isopod, which is known only from Sedillo Springs south of Socorro. Since only one rare species occurs in the habitat, the area would not normally be designated a natural area. The Socorro isopod came to the Heritage Program's attention through some other means rather than through use of the data bank. The isopod is now on the Smithsonian list of rare or endangered species.

The inventory of natural areas is very complex, especially in New Mexico which has not been well explored. Areas can become more or less unique as more species are discovered here. New plant species turn up often. (See article on the Commelinaceae family of New Mexico in this issue.and Cupressus arizonica last issue.) Conversely, Aquilegia chaplinii has been considered an endangered species, but since it is repeatedly being found in new localities, including the Sacramento Mountains, it may be re-classified as a threatened species rather than an endangered one. As species are rediscovered again and again, botanists can begin to predict the ecological areas in which they will be found.

Isaacs said all Federal agencies have a mandate to study endangered species. Inventories of Federal lands are necessary to determine the presence of rare or endangered species and then the location of critical habitats. The protection of these habitats is of higher priority than the protection of the individual species.

The problem of managing these natural areas, of enforcing protective status for rare and endangered plants is a big one. Many cactus species of New Mexico are considered threatened under the Endangered Species Act. Yet seventy-five barrel cacti disappeared in Dona Ana County in two weeks. Isaacs said there are almost daily reports to the Heritage Program staff of cacti disappearing. A large barrel cactus is worth $800.00 on the market in Chicago or Los Angeles. Cactus rustling is big business, and the chances of survival for many species are nil. The concept of the natural area is still evolving, says Isaacs, and it may have the force of law behind it someday, but now it does not.

Locally, Upper Santa Fe Canyon qualifies as a natural area, and serves as well as the watershed for Santa Fe. The Forest Service now limits access to the area. This fine example of montane riparian vegetation is being considered for Wilderness Area status, a fate which would draw more visitors to the area and may actually endanger the delicate habitat more than protect it. Isaacs feels an effective management program for this natural area would be basically a maintenance of the status quo so as to prevent any possibility of fire in Santa Fe's watershed.

Bill Isaacs and the Heritage Program offices are now located in the Villagra Building at the junction of Galisteo and Cerillos Road. Their phone number is 824-2694.

Corrections to the December newsletter: The population of Cupressus arizonica on Cook's Peak was originally discovered in 1954 by Mr. Sidney P. Gordon of the U. S. Forest Service. The presence of this population was recently confirmed by Mr. Andrew Sandoval in September of 1977. The specimen growing in Santa Fe is located on Shelby St. between Water St. and East Alameda.