Colorado Native Plant Society

NEWSLETTER

Volume 6 Number 2
April-June 1982

"DEDICATED TO THE APPRECIATION AND CONSERVATION OF THE COLORADO FLORA"

COMING EVENTS

25-27 JUNE. Piceance Basin Trip. For information call Scott Ellis (493-5578, work; 493-6069, home) or Ann Hilstead, The Nature Conservancy (837-0505).

10 JULY. Florissant Fossil Beds Plant Inventory. For information call Mary Edwards and look elsewhere in this newsletter.

Late AUGUST-Early SEPTEMBER. Subalpine-alpine field trip. CONPS joining The Nature Conservancy. For information call Ann Hilstead at The Nature Conservancy, (837-0505).

18 SEPTEMBER. Fall Annual Meeting. Look elsewhere in this newsletter for preliminary information about this meeting. More in the next newsletter.

NEW LOOK

This newsletter has been prepared directly from the output from an Epson MX-80 FT dot matrix printer connected to a Radio Shack, TRS-80 Model I microcomputer using Radio Shack's word processing program Scripsit and Apparat's modification to Scripsit, FLEXTEXT/80.

Another Apparat program CHEXTEXT was used to check spelling on the text after it was entered into the computer and before it was printed, if the EDITOR didn't forget to do it before he printed the text.

Any comments, favorable or not, suggestions, constructive criticism, questions, etc. should be sent to the EDITOR at the CONPS mailing address.

ACTIONS OF THE BOARD OF DIRECTORS

Here are some of the actions taken at the March 11th meeting.

* A two hundred dollar donation was made to help finance color plates for Dr. William A. Weber's new book Flora of Western Colorado.

* Publicity objectives for 1982 were developed:
1. Seek publicity by an established outdoor columnist.
2. Seek "Sunday Supplement" newspaper coverage.
3. Assure full reports for the newsletter of all field trips and meetings.
4. Pre-publicize field trips and meetings as needed.
5. Develope a permanent mailing list for publicity offerings.

At this writing, first efforts on objectives 1 and 2 have not been productive, objectives 3 and 4 are operational, number 5 has been completed.

* Decided we were not able at this time to accept an invitation from the Denver Audubon Society to submit a proposal for the design and execution of a survey of plant ecosystems and plant species in the area of the proposed Platte River Greenbelt.

* Voted to retain full membership on Colorado Open Space Council (COSC), but concluded we were unable at this time to help finance the Clean Air Coalition being organized by COSC.

*We have co-sponsored testimony to the federal House and Senate committees in support of the Endangered Species Act. We will keep members informed of Board actions, and of actions that members might take individually, regarding the Act.

* Arrangements were made for the Denver Botanic Garden Library to become the repository for the newsletters we have collected, and future newsletters that we will receive through our exchange program with related organizations.

- Lloyd Hayes

FIELD TRIP REPORTS

13 MARCH--Native & Rock Garden Plant Propagation

A group of 15 met in the greenhouses at the Denver Botanic Garden (DBG) to hear Panayoti Callas, Rock Garden Curator at the Garden, discuss propagation techniques and show a variety of unusual species destined for display in the Rock Garden. Panayoti first described the history of rock gardening, and provided a list of sources of native seeds and other unusual plant materials. He explained the essentials of preparing a good sterile medium for germinating seeds (the secret formula is approximately 1/2 perlite, 1/2 peat moss, with a pinch of Osmocote and bone meal), proper temperature and moisture conditions for germinating various types of seeds, and the techniques for transplanting seedlings into larger containers (each of us was given the opportunity to extract a tiny seedling from a matrix of soil and fellow seedling plant roots, grasp the seedling between clumsy thumb and forefinger, and then place the seedling in a hole formed in the potting soil with a dibble, an essential horticultural tool). We then toured the greenhouses where a variety of native plants are being grown from seed and cuttings. Finally, participants toured the Rock Garden while Panayoti outlined its design. The Rock Garden contains a range of soil types and slope exposures that can accommodate plants requiring acid soils and cool growing sites, as well as cold desert species tolerant of alkaline soils and hot temperatures. We also viewed the alpine house, a research facility where the temperature and humidity are carefully controlled to provide optimum growing conditions for rock garden plants.

Many thanks to Panayoti Callas for providing an excellent overview of propagation methods, and sharing his extensive knowledge and enthusiasm for native and rock garden plants. Thanks also to the DBG for letting CONPS members prowl "behind the scenes."

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24 APRIL-Uses of Native Plants in Landscaping

The Colorado Native Plant Society's Spring meeting attracted approximately 70 people to the Denver Botanic Garden (DBG) to hear discussions about applications of native plants in home landscapes. The focus of the program was on the practical problems of developing commercial supplies of native plants, and research on the proper uses of native woody and herbaceous species.

Larry Schlickenmayer of Schlickenmayer Nursery opened the meeting by tracing the history of the Colorado nursery trade's interest in propagating and selling native plants. He pointed out that the pioneer propagators, such as Harry Swift of Western Evergreen, and George Kelly, raised native plants as a sideline to their main stock in trade. Only recently has there been sufficient public interest in native plants to justify improvements in commercial scale propagation methods and further research into appropriate species. Larry anticipates a strong future demand for native species, and that the nursery trade will respond quickly to fulfill this need.

Jim Borland, of Weddle Native Gardens in Palisade, discussed the uses of native species in the context of local horticultural problems in the Grand Junction area-very saline and alkaline soils, low rainfall, and scarce irrigation water. Weddle Native Gardens, founded by Charles Weddle, a well-known plant breeder, is currently working with nearly 300 species of native and other drought tolerant plants to select attractive species that are well-adapted to the rigors of a cold desert climate. Jim described several species that they are now selling that show excellent promise for this large arid region.

Dorothy Falkenberg Borland, who recently completed her Masters thesis on the management of buffalograss, focussed on the practical aspects of establishing and maintaining buffalograss and blue gramma lawns. Her excellent slide show documented the appearance of these native lawns through the seasons. Considerable discussion ensued among meeting participants on appropriate buffalograss seeding rates, seed quality, weed control, and watering regimes. Dorothy then lead a tour of the DBG turf plots to provide participants with a firsthand look at drought-tolerant grasses.

Velma Richards, who is serving on the Plains Garden Committee at the DBG, presented a comprehensive slide show depicting representative

prairie habitats and plants on the eastern plains of Colorado. The Plains Garden Committee is integrating components of these various habitats into a new Plains Garden at the DBG. Velma then lead a tour of the Plains Garden site on the DBG grounds to explain how the Plains Garden concepts will be realized when this area is constructed.

Gayle Weinstein, a DBG staff member who specializes in woody plant materials, outlined recent efforts by the DBG to test more native plant species in horticultural settings. She lead a tour of the DBG grounds to show participants native species plantings, and to describe the problems and successes with these plants. Some of the biggest problems are with adjusting watering regimes to avoid overwatering drought-adapted species.

Many thanks to the speakers, some of whom came from long distances to make presentations, and to meeting participants, whose enthusiasm and questions made the meeting a success. Special thanks to Gayle Weinstein, who organized the meeting and arranged for the facilities.

Field Trip Reminders

25-27 June. Piceance Basin. Call Karen Wiley Eberle in Craig (824-8261) for more information.

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10 July. Florissant Plant Inventory. Mark this date on your calendar now! -- the day CONPS will continue the plant inventory and collection which was started last summer for an herbarium at Florissant Fossil Beds Nations Monument. The Florissant herbarium committee is working on plans for the trip. (For a more complete description of the project, see the last newsletter under "Scheduled Trips").

Everyone interested is urged to come and help with collecting that day. The Monument covers approximately 9 1/2 sq. miles; we have divided the area into 6 units, and so far have collected in only two!

Florissant Fossil Beds National Monument is 35 miles northwest of Colorado Springs on U.S. Hwy. 24, and just south of the town of Florissant.

We plan to meet at the Monument Headquarters at 9:00 A.M. on Saturday, July 10th. Call Mary Edwards at 233-8133 (2580 Parfet St., Lakewood, CO 80302) or Miriam Denham at 422-1020 (2945 3rd, Boulder, CO 80302) before July 7 to register and for additional information.

There are motels in the Divide-Florissant-St. George area and several campgrounds nearby in the Pike National Forest for those who would like to stay Friday or Saturday night and collect Sunday also.

Florissant collectors are needed at other times during the summer and fall. Call Mary or Miriam to plan a trip so that arrangements can be made with the Park Service.

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5 September. Subalpine-Alpine Trip (Joint with The Nature Conservancy) 8:00 A.M.-4:00 P.M.
Trip Leaders: Jim and Audrey Benedict.
Registration: Lydia Toll 333-1655; Mr. and Mrs. Silverling 238-9112.
Size: 35.
Cost: $5.00/person.
Location: Bunker Hill Preserve, West of Nederland, Boulder County.

An excellent time to see the alpine tundra in its autumn colors. Outstanding views of the Indian Peaks Wilderness nearby. The car pool meeting place will be in Boulder, east end of the parking lot directly west of the Municipal Building (SE corner of Broadway & Canyon). The trip will involve some travel where a 4 wheel drive will be required, so bring a sturdy 4WD if you have one. A one hour hike from the subalpine to the alpine zone will be required. An increase of 500 feet in altitude will be experienced during the hike to a final altitude of 11,700 ft. Bring warm clothing, water, and a sack lunch.

ATTENTION PHOTOGRAPHERS

As you are out in the field this summer with your camera, would you consider taking an extra picture for the Society's collection of pictures of Colorado plants, their habits and their habitats.

These extra slides would be most helpful if they were of a quality suitable for duplication. Your very best slide with that sparkle that's so delightful and you are so proud of will make a disappointing duplicate.

The best slides for duplication are those with little contrast. If the sun is bright, the contrast will be too great. You can diffuse the direct sunlight with several layers of cheesecloth stretched over a frame or fill in the shadows with a reflector made of a sheet of aluminum foil that has been crumpled and then flattened out again. A slightly overcast day will give you the best pictures for duplicaton.

Exposure is critical. A very slightly underexposed slide will make a much better duplicate.

Please make a record of where the slide was taken, when it was taken, and record any details about the habitat etc. that are not obvious in the picture.

If you have any questions call Miriam Denham in Boulder at 442-1020.

ENDANGERED SPECIES ACT REAUTHORIZATION

Both the Senate and the House should vote on the Endangered Species Act reauthorizaton in the very near future. Please write your Senators and Congressmen now. Urge them to be present when the bills are debated and to oppose any weakening amendments. Ask them to vote for the bills as reported out by the committee.

Weakening amendements that we fear may be raised on the floor include an exemption for Western water projects (Senate) and general attacks on Secton 7 by water and agricultural interests (House).

1981
ROCKY MOUNTAIN REGIONAL RARE PLANT CONFERENCE

The Denver Botanic Garden (DBG) was the site of this successful conference. Organized by the Colorado Native Plant Society and cosponsored by the Denver Botanic Gardens; National Park Service; U.S. Fish and Wildlife Service; the Native Plant Societies of Utah, Wyoming and New Mexico; and the Association of Western Native Plant Societies, the conference was held on the fifth and sixth of November. Approximately two hundred persons from ten of the western states attended, representing a wide range of interests, from industry to the interested layperson.

The theme, "Energy Development and Rare Plants: Planning for the Future," was addressed in six sessions: Federal Programs, State Programs, Information Sources, Industry Programs, Field Inventory and Plant Materials, and Work Groups to Seek Solutions.

For many, some of the high points of the conference occurred during the long breaks and the social hour. These times permitted everyone to meet with old acquaintances and discuss problems on an individual basis between agency and industry or university and industry representatives.

Below is a brief review of several of the presentations at the conference. Ms. Carolyn Johnson, representing the Natural Resources Defense Council (NRDC), spoke on the status of plants under the Endangered Species Act (ESA). This included a review of the performance of the U. S. Fish and Wildlife Service, as the lead agency under the ESA, and comments on the reauthorization of the ESA that will come before Congress this year. She pointed out that it was particularly discouraging that the new requirement that agencies confer regarding the likely impact of projects on proposed species has not been fully implemented.

Ms. Johnson also indicated that numerous amendments intended to weaken the protective provisions of the ESA are under consideration. Several would weaken the regulation of interstate and foreign commerce in Listed taxa, or complicate prosecution of such offenses. The impact on certain plants, especially horticulturally valuable cacti, which are threatened by overcollecting, might be severe.

The fact that the reauthorization of the ESA in a form that would offer protection to plants will be a major struggle was emphasized. The NRDC and several conservation organizations have formed a loose coalition to work for a strong bill. Some of their common goals are to work for continued eligibility for protection for all taxa, a continuation of Federal-State cooperative programs, and prompt Listing of taxa on the basis of their biological status and commercial exploitation.

One presentation during the State Policies section was by Mr. Larry Thompson of Montana. Mister Thompson stated that Montana contained a high floristic diversity, but has been the subject of relatively little botanical study. He indicated that one of the major problems in his state was the lack of a recent, comprehensive flora or a state list of rare and endangered plants, although an effort to compile a state list was underway.

Though Montana, like Colorado, has no state regulations specifically offering protection for rare plants, it does have statutes that imply protection. The acts are the Montana Environmental Policy Act of 1971, the Montana Major Facility Siting Act of 1973, and the Montana Strip and Underground Mine Reclamation Act of 1973. An environmental factor that must be considered under the Siting Act is the "effects on plant and animal life" and "effects on unique or otherwise significant ecosystems." If a federally classified or otherwise recognized rare or unique plant were to be discovered in a project area, the Siting Board would have these options: 1)grant the siting certificate and damage the population, 2)deny the certificate, or 3) grant a conditional certificate requiring modifications to the proposed facility, impact mitigation, or restoration or reestablishment of plant communities. To date, rare plants have not been an issue.

The Reclamation Act specifies "that certain lands, because of their unique or unusual characteristics may not be strip-mined or underground mined under any circumstances," and that a permit shall not be issued for "land having special, exceptional, critical, or unique characteristics." This section has been invoked only four times in the history of the Act, though none of the cases involved rare plants.

Dr. William A. Weber of the University of Colorado Museum gave a presentation entitled "The Real Data Base, and the Flora Manual." He expressed concern about the vegetation surveys that are occurring today in conjunction with development. Particular problems include uncoordinated surveys resulting in a duplication of effort, surveys resulting in only sight reports, poor quality specimens, and most importantly, surveys that are conducted with none of the specimens being deposited in a recognized, scientific herbarium (the real data base). Docter Weber pointed out that whole collections are not always submitted for verification, and the ecologist may choose not to submit specimens about which he or she is not confident of a correct identification. He stated that this was not wise. For instance, Dr. Dieter Wilken had showed him a plant from the Piceance Basin which has consistently been passed over as *Aquilegia barnebyi*, and had not been examined for flowers and fruit. This plant, in fact, was an undescribed endemic species of *Thalictrum*.

In order to change these practices, Dr. Weber urged impact ecologists to request at least one full season for surveys, to collect at least one excellent specimen of each species encountered, and that the first set of specimens be deposited at a recognized herbarium for review by a professional taxonomist.

Doctor Weber then made a few comments regarding his in-progress writing of two complimentary handbooks to provide coverage of the Colorado flora. He is committed to generating manuals that are affordable and easily handled in the field. Thanks to a bequest by Mrs. Crisp of Denver, Dr. Weber has been able to purchase a word processor, which has enabled him to produce a basic manuscript. He is now approaching industry, foundations, and individuals for contributions to subsidize the art work ($200 per plate) and the final publication. If you would like to contribute to this needed and worthwhile project, please contact Dr. Weber.

Join the

COLORADO NATIVE PLANT SOCIETY

on a field trip

to the

PICEANCE BASIN

June 25-26

SEE RARE Plants, LEARN about Plant Communities, and More . . .

To register, or for more information, call KAREN EBERLE in Craig at 824-8261.

LOWELL BRUTON

The paper presented by Dr. Patricia Rand of the Atlantic Richfield Company, entitled "Business and the Botanist;" caused everyone to sit up and take notice. Her remarks were based upon the following four premises: 1)change is the universal order of life; 2)despite natural comings and goings of species, people have an ethical obligation as well as the absolute necessity of sharing living space on earth with the multitudinous forms of life, which have evolved through time and upon which our survival depends; 3)industry, as a part of society, must share the burden of caring for earth's inhabitants; and 4) if we are losing the fight to save endangered plant species, we are doing so because we have failed in the marketplace and the halls of the money changers, to convey the importance of plants.

Doctor Rand stated that the major difficulty in bringing about consideration for rare plants is the fundamental lack of adequate education, and the communication between botanists and the world at large, including industry. To communicate, individuals must speak the same language. If the world won't learn ours, then we will have to learn the world's.

The botanical message, indicated Dr. Rand, is more powerful than any that other biologists tell. Without plants, neither birds, nor fish, nor bear, nor human beings themselves can survive. So what language must we speak to be understood? According to Dr. Rand, one must speak a jargon recognizable by engineers, for it is they who control the company fortunes, abetted by the business administration majors and a smattering of geologists.

How many engineers take biology? She stated that there is no biology department at the Colorado School of Mines. In Dr. Rand's words, why would we be surprised that engineers and miners don't understand our language? We don't teach them the grammar, but we expect them to translate at complicated levels. The understanding of principles and their application in the living world is the ingredient that professional biologists must supply the world. Simply, though effectively put, Dr. Rand suggested that we each take an engineer to lunch today.

The proceedings are currently being produced with the assistance of the National Park Service and the U. S. Fish and Wildlife Service. If you were not a registered attendant at the conference and wish to acquire a copy, please write to PROCEEDINGS, CONPS, P. O. Box 200, Fort Collins Co 80522. There is a possibility that there will be a charge for the proceedings.

– J. Scott Peterson

Anemone parviflora: A Little Known Colorado Native

Anemones are a showy component of forests and meadows over much of the Northern Hemisphere. Spring travelers marvel at the many, confusing species of Poppy Anemones that abound throughout the Mediterranean basin, such as *A. coronaria*, *A. fulgens* and *A. heldreichii*. The Woodland Anemone (*A. nemorosa*) constitutes what seems to be a single, unbroken carpet in the forests in the cooler parts of Europe. Many other sorts are common is Asiatic woods and steppes.

Of the five anemones that are found in Colorado, only the circumboreal *A. narcissiflora* occurs in numbers and to an extent to rival Eurasian Anemones. Even this striking species is rather local in its occurrence in the state. It seems to prevail mostly in the Sawatch Range and parts of the Front Range where its drifts of cream-colored flowers really do resemble the Poet's Narcissus from a distance where they seem to grow in such multitudes among timberline willows. They can flourish in one valley and be altogether absent in the next, although the identical conditions appear to prevail.

Anemone cylindrica and the closely allied *A. multifida* are a dingy gray and muddy red respectively. Both are distributed far more widely in the state, although they are frequently overlooked by most wildflower lovers. *Anemone canadensis* strays into Colorado from its principal range to the east and can occasionally be found in considerable abundance along streams throughout the eastern foothills of the Rockies. The disproportionate length of stem (often 50 cm. long) and fleeting flowers do not make this outlier any more conspicuous than the last two to casual hikers.

Anemone parviflora suffers somewhat from understatement: the Latin name means "small flowered" but the pure white blossoms can be almost as large as *A. canadensis*. Its stems, however, rarely exceed 6-10 cm. in height. It is such a rare Anemone in the continental United States, occurring in only a half dozen stations in Colorado, forming small colonies that are often remote from roads, I had despaired of finding it easily. As often happens when we search for rarer native plants, I stumbled on an unrecorded colony of this plant by accident in 1979 while backpacking in Chaffee County. In an instant I recognized it from the photograph in Alaska Wild Flowers. When I ran across the same Anemone in Summit County again a month later, I began to wonder if it was so rare after all. It grows in rather specialized localities that are not all that widespread in the state, so it will never be considered anything but rare and special to find. In Colorado *A. parviflora* grows only in thick moss bordering freshets and streams below willows and conifers on the steepest, coldest northern exposures at about 11,000' where icy water trickles all summer, even in drought years. Colonies may spread several yards in extent, but only near constant seepage. Each plant produces rhizomatous roots that grow into the substrate with the moss. Unlike the tiny, rhizomatous Anemones that are quite common further west, the roots of *A. parviflora* are not thickened or tuberous.

The glossy, green, tripartite leaves are bluntly lobed -- unlike any other Anemone that occurs in the United States -- resembling *A. altaica* in miniature. The flowers, with sepals stained blue on their outer surface, open when the stem is only a few cm. long, but the stem continues to elongate all of June. When the seed finally ripens in late July, the stems may be two cm. long.

Anemone parviflora is distributed primarily in the subarctic regions of northern Canada and Alaska where it is rather abundant in muskeg and mountain screes. It occurs sporadically southward as for as the mountains of Idaho and Montana and the Wallowa Mountains of Oregon. It

Anemone parviflora

somewhat resembles *A. magellanica* which originates from the extreme southern tip of South America and one wonders if both the austral species and our disjunct stations are not the result of dispersal by migratory birds.

Anemone parviflora is adapted to such specialized conditions that it cannot be expected to grow under garden conditions. Attempting to grow it along the Front Range Urban Corridor is tantamount to cruel and unusual punishment, if not outright murder. There are dozens of other Anemones in cultivation which approximate *A. parviflora* in effect, but which are commercially available from bulb houses and mail order nurseries. A few of these include *A. blanda*, *A. appenina*, *A. nemorosa*, *A. flaccida*, *A. baicalensis*, and *A. sylvestris*.

Although *A. parviflora* can hardly compare with other larger garden Anemones in ostentation, a steep, mossy slope lit up with its innumerable white blossoms is a sight not soon forgotten. The romance of botanizing in Colorado is always enhanced by the possibility of stumbling across just such exotic wildflowers as this.

– Panayoti Callas
Curator, Rock Alpine Garden
Denver Botanic Garden

THE BLUE SPRUCE
A Colorado Tree

By Dr. Gilbert H. Fechner, Forest and Wood Sciences, Colorado State University.

(This article is a reprint of an article that appeared in the November–December, 1973 issue of Colorado Outdoors. It is being reprinted with the permission of both Dr. Fechner and the Colorado Division of Wildlife that publishes the Colorado Outdoors.)

When the school children of Colorado chose the blue spruce as their state tree, they could not have chosen a more appropriate species. Blue spruce was discovered in Colorado, most of the natural blue spruce grows there, and the largest and best-formed trees of the species have been found in Colorado.

History—In 1939, through a resolution of the General Assembly (Joint House Resolution No. 7), blue spruce became the official state tree of Colorado. This action was prompted by a voting among elementary school children 47 years earlier on Arbor Day (Wixson, 1912) in 1892 and part of the preamble of the resolution accurately recognizes this fact. Another part of the preamble, however, is inaccurate. It espouses the oft-held belief that blue spruce was discovered by Dr. C. C. Parry on the slopes of Pikes Peak in 1862. This is not surprising, because some scientists (Sargent, 1897; Sudworth, 1916) had reported it that way. In reality, Dr. Parry discovered our state tree a year earlier on Clear Creek, about 35 miles west of Denver, Colorado Territory.

Dr. C. C. Parry, called Colorado's foremost botanical explorer by Joseph Ewan (1950), made several trips to the Rocky Mountains, but his 1861 and 1862 trips are most important here. British-born, Parry was educated in the United States, taking his M.D. at Columbia College in 1846, where he studied medical botany under the eminent Dr. John Torrey. Shortly, after graduation, Parry began his practice of medicine in Davenport, Iowa, also his later base of operations for botanical exploration. Having served as surgeon-naturalist on Owen's geological survey in 1848 (Ewan, 1950), and as a botanist on the Mexican Boundary Survey in 1849, he turned his sights to the Rocky Mountains.

In 1861, Parry came alone to Colorado. According to his "Physiographical sketch" (1862) he came to this region "with the especial object of studying its alpine vegetation and making collections of its native plants." He established an observation station near the headwaters of

(Continued on page 7)

South Clear Creek and spent the entire summer working there. The plant material collected by Parry in 1861 was classified by Dr. Asa Gray of Harvard University (1862a, 1862b, 1862c, 1862d), who enumerated the flowering plants and by Dr. George Engelmann of St. Louis, Mo. who listed the conifers in a joint article with Parry (1862).

Included in the list of conifers collected by Parry in 1861 is *Abies Menziesii* Lindl. This was undoubtedly blue spruce. In his notes, Parry referred to a finely shaped tree, which had a rather stiff outline and exhibited rapid growth. The wood was considered to be very compact but coarse-grained and pitchy. Parry also indicated in his notes that the logs of blue spruce tapered too rapidly to be useful as sawtimber (blue spruce is seldom logged even today). To Parry's notes, Englemann added that the leaves were stouter than any other allied species, and very acute, an observation with which you would agree, if you've handled blue spruce branches and needles.

Asa Gray (1863) also used the name *Abies Menziesii* Lindl. for blue spruce, in his enumeration of the plants collected by Parry, accompanied by Elihu Hall and J. P. Harbour, in Colorado in 1862. The fact that both Engelmann and Gray were referring to blue spruce with this name is clear from Parry's (1863) use of it, too, in his description of his ascent of Pikes Peak on July 1, 1862. In a letter to Torrey, he wrote that the trees present included *Abies grandis* (probably white fir) which was remarkable for the unusual length and breadth of its leaves; *Abies Douglasii* (Douglas-fir, by an old name) and *Pinus ponderosa* were also common. These species named by Parry are common associates of the montane forest in the central Colorado mountains and are found on the lower slopes of Pikes Peak.

It therefore seems quite clear that Parry, Engelmann and Gray all believed that the blue spruce collected by Parry in 1861 and in 1862 was, in fact, Sitka spruce of the Pacific Northwest, which it resembles and which bore the name *Abies Menziesii* Lindl. at that time.

Soon after its discovery, and even before Colorado became a state, blue spruce was introduced in Europe, where it soon became popular, as it also has throughout northern United States. Many horticultural forms, of which the weeping Koster variety is perhaps most famous, have been designated and are propagated by grafting often on Norway spruce stocks (Wells, 1953; Wyman, 1962). And its popularity remains, even though mature trees lose their lower branches, if growing near other trees.

The first indication that the specimens collected by Dr. Parry were obtained from trees distinct from Sitka spruce is given by Andre (1876), when he proposed to name it *Abies menziesii Parryana*, having seen the tree growing in Professor C. S. Sargent's garden at Brookline, Massachusetts. It was not, however, until 1879, 18 years after it was first collected by Parry, that blue spruce finally received its present name, *Picea pungens*, by Dr. Engelmann, who named it so for its sharply-pointed leaves, the feature he had noticed years before.

(Continued Next Issue)

Characteristics of Blue and Englemann Spruce

Characteristic	BLUE SPRUCE	ENGLEMANN SPRUCE
APPEARANCE	Straight, tapering trunks, with branches drooping near the base of the dense crown, horizontal in the middle, and ascending near the top; the ends of horizontal and drooping branches often turn upward.	Generally the same.
LEAVES	Very sharp-pointed, usually extending about 90 degrees from twig; with a piney odor when crushed. Harsh to the touch.	Acute-pointed, usually leaning toward the tip of the twig; disagreeable odor when crushed. Soft to the touch.
TWIGS	Shiny, without hairs; buds pointed, with scales peeling.	Dull, with fine short hairs; buds blunt with scales flat.
FLOWERS	Males 1/2 to 3/4 inches; females about 2 to 2 1/2 inches. Both sexes varying from bright yellow-green to deep pink.	Males 1/3 to 3/8 inches; females about 1 1/4 to 1 3/4 inches; both sexes deep blood red.
FRUIT (cones)	About 2 1/2 to 4 inches long (mostly about 3) and 1 inch or more across; concentrated mostly in upper 1/10 to 1/4 of the crown.	About 1 1/2 to 3 inches long (mostly about 2) and 3/4 inch across; often throughout the crown.
BARK	Scaly at first becoming dark gray and furrowed; sprouts common along trunk.	Scaly, reddish-brown; sprouts rare on trunk.
HABITAT	Mostly stream-bottom 7,000 - 9,000 feet, as a scattered tree, often near ponderosa pine; montane zone.	Mostly mountainside 8,500 to timberline, forest-forming often with subalpine fir; subalpine zone.

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P. O. BOX 200
FORT COLLINS CO 80522

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LIFE	$250.00
SUPPORTING	50.00
ORGANIZATION	25.00
FAMILY OR DUAL	12.00
INDIVIDUAL	8.00
STUDENT OR SENIOR	4.00

NEWSLETTER ARTICLES

Please direct all contributions and articles to the EDITOR in care of the Society's mailing address.

Deadlines for the quarterly NEWSLETTER are the first day of February, May, August and November with publication the last day of the month.

MEMBERSHIP RENEWALS AND INFORMATION

Please direct all membership applicatons, renewals and address changes to the MEMBERSHIP Chairperson in care of the Society's mailing address.

Please direct all other inquiries regarding the Society to the SECRETARY in care of the Society's mailing address.

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