

Borealis

the newsletter of the



November 1995

P.O. Box 141613, Anchorage, AK 99514

Anchorage Chapter ☆ November Meeting ☆

Monday,
November 6
7:30 p.m.

First Congregational Church
2610 E. Northern Lights Blvd.
(Please use back entrance)

Rebuilding the Bering Land Bridge: The Environmental History of Alaska and Siberia

This month's program will be given by Dr. Wendy Eisner, pollen analyst, palaeoecologist, archaeologist, and Visiting Associate Professor at UAA. Her work involves the reconstruction of Arctic landscapes, vegetation, and climate for the past 50,000 years, mainly through studying pollen in lake and peat sediments. In the course of her research, she has traveled to the North Slope of Alaska, the Seward Peninsula, Greenland, and Russia. Of particular interest is the ancient sub-continent of Beringia, the area of the Bering Land Bridge which existed between Alaska and Siberia during the last Ice Age, and over which mammoths, people, and even plants migrated to populate the New World.

This exciting program will focus on her travels in Siberia, her research on the vegetation and landscape of the past, and how this research helps us not only to understand the present-day Arctic, but also to predict the future climate and environment of the North.

Plant Family - Marilyn Barker will kick off our new series with an introduction to the non-flowering vascular plants, and a look at the horsetails. See pages 2 and 3.

Mini-Botany - Marlena Mooring will present a program on one of her favorite Alaskan berries: Lowbush Cranberries.

A board meeting will be held at 7:00 p.m.

Mystery Plant

This plant's dense, cylindrical flowering heads resemble a bottle-brush, and are among the most fragrant of Alaskan wild flowers. The numerous flowers lack petals, but have white or greenish petal-like sepals, and stamens that are prominently exerted.

When the leaves of our mystery plant first appear in spring, they are folded and fan-like. Once open, you can see that they are pinnately compound, with rounded and toothed leaflets. The leaf surface has an interesting texture, which totally repels water; when submerged a thin layer of air adheres to the surface, giving the leaves a silver-coated appearance. Look for this plant in bogs, swamps, meadows and moist places.

Answer on Page 3.



Mystery Plant drawings by Toby Tyler, ANPS Kachemak Chapter.

Nominating Committee

Election of a new board of officers for the Anchorage Chapter will take place at the November meeting. The slate proposed by the nominating committee is as follows:

Anchorage Chapter Board Members

President	Julia Ricketts
Vice-president	Frank Pratt
Secretary	Andrea Woods
Treasurer	Unison Hubbard

Additional nominations will be taken from the floor.

Mini-Botany: Low-bush Cranberries

Low-bush cranberries will be the theme of this month's mini-botany program. (If this sounds familiar, the program was originally scheduled early last year, but for a number of reasons didn't quite happen.) As well as providing some interesting facts about low-bush cranberries, it will be a hands-on program to experience with many of our senses. Marlena will be bringing cranberry plants and refreshments on a cranberry theme.

Seed Swap Coordinator Needed

A volunteer is still needed to coordinate the seed exchange project this year. If you are interested, call Verna at

Please bring seeds for this event to the November or December meetings, or mail them to the ANPS care of the post office box address.

Plant Family The Pteridophytes: Seedless Vascular Plants

This year, we will focus on the families of ferns and their allies, or the pteridophytes. These are primitive plants without true flowers or seeds, who reproduce by one-celled spores. More abundant during the Carboniferous period, they are currently represented by

an estimated 9085 species worldwide. Most inhabit moist, shady terrestrial habitats, but some are aquatic, and a few are found in xeric conditions.

The pteridophyta are subdivided into four groups:

- 1 Psilotophyta or Whisk Ferns: (none in Alaska)
- 2 Microphylophyta: Club Moss (Lycopodiaceae), Spike Moss (Selaginellaceae), Quillwort (Isoetaceae).
- 3 Arthrophyta or Horsetails (Equisetaceae)
- 4 Polypodiophyta or true ferns: Adder's Tongue (Ophioglossaceae), Maidenhair (Adiantaceae), Bracken (Hypolepidaceae), Filmy Fern (Hymenophyllaceae), Mountain Parsley (Cryptogrammaceae), Marsh Fern (Thelypteraceae), Spleenworts (Asplenaceae), Lady Fern (Athyriaceae), Shield Fern (Aspidiaceae), Licorice Ferns (Polypodiaceae) and Deer Fern (Blechnaceae).

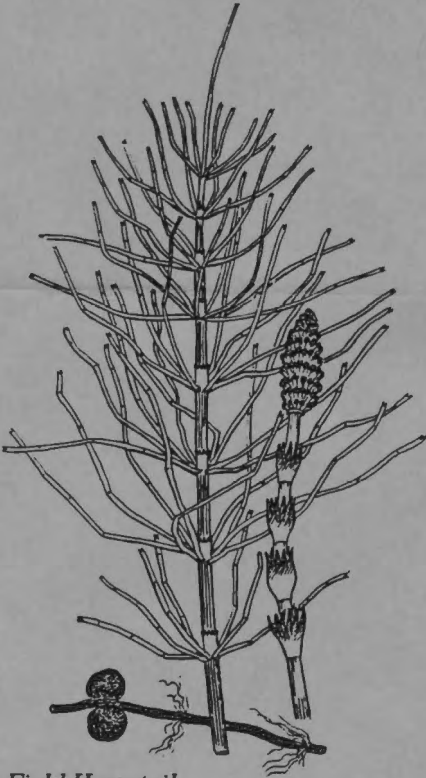
Most pteridophytes have roots, rhizomes (a modified, underground stem) and leaves. They differ from other plants in that their life cycle alternates between two distinct generations of unlike plants. The most obvious stage is that of the **sporophyte**, or diploid (with two complete sets of chromosomes) generation. This is the green, leafy stage we are all familiar with. As the sporophyte matures, its **sporangia** (spore-producing organs) develop and, eventually, release spores. If the spore lands on a suitable substrate, it will germinate and form the **gametophyte** or haploid (with a single set of complete chromosomes) generation. Gametophytes are tiny, generally less than a few centimeters long. Unless you are out looking for them, you will probably never see one. Usually gametophytes are bisexual, with both male (**antheridia**) and female (**archegonia**) sex organs. Sperm produced by the **antheridia** fertilize an egg in the **archegonia**. The resulting diploid **zygote** grows into another young **sporophyte** plant that completes the alternating phases of the life cycle.

Finally, plants may be either **homosporous** (producing spores of one size) or **heterosporous** (producing two types of spore from two distinct types of sporangia). In heterosporous plants, large spores (**megaspores**) develop into gametophytes that produce only archegonia, and small spores (**microspores**) form ones that only produce antheridia.

NB. Plant family presenters are needed for groups of pteridophytes, see page 8 for a breakdown.

The Horsetail Family: *Equisetaceae*

Horsetails are among the oldest plants, and were most abundant during the Carboniferous and Devonian periods, some 300 million years ago. Then, many were tree-like, towering up to 45 feet high. In a remote corner of the Amazon, species resembling these giant ancestors still exist, but few modern horsetails grow taller than a couple of feet. As a group they are easily recognized by their jointed, hollow stems; leaves, or microphylls (small modified leaves with a single vein), arranged in whorls at the nodes; and, if present, whorls of slender, green branches, that may be mistaken for leaves at first glance. Spores are produced by fleshy, cone-shaped structures at the tip of the stems. In some species, separate fertile (cone-bearing) and sterile stems are produced. All are homosporous.



Field Horsetail,
showing both summer and spring phases Drawing
by Toby Tyler

Horsetails are known by many names: jointed grass, puzzle grass, and scouring rush. The name Puzzle Grass refers to the way their jointed stems can be taken apart and put back together again. The plants earned the name scouring rush for the abrasive quality of the rough, green stalks. Their high silica content makes them useful as back-country pan scrubbers.

Historically, they were used by knights to polish armor, and by watchmakers and cabinetmakers as sandpaper for metal and wood. The botanical name is derived from *equus* meaning horse and *seta* meaning bristle, and refers to the brushy appearance of the mature plants of some species.

In Alaska there are 8 species, plus one sub-species. The familiar Field Horsetail (*Equisetum arvense*) is one of the most widespread plants in the world, and frequently occurs as an invasive garden weed. This incredibly tough plant was the first to send green shoots up through the debris of the 1980 eruption of Mt. St. Helens. In early spring, it produces pinkish-brown, fertile stems (spring phase), topped with a spore-bearing cone-like structure. A little later, barren, green stems (summer phase) appear, bearing whorls of narrow, jointed branches. By mid-summer, they resemble miniature brushy trees or "horse tails." *E. palustre* and *E. pratense* are similar species, but can be distinguished by the branching pattern at the nodes. In *E. arvense* the second node on the branches reaches to, or beyond, the corresponding sheath of the stem. Wood Horsetail (*E. silvaticum*) is the only species with branched branches. Swamp Horsetail (*E. fluviatile*) is the most common one found in very wet places, often standing with its feet in water.

There are three unbranched species found in Alaska: *E. hiemale*, a relatively rare plant of sandy shores and woods; *E. variegatum*, a more common plant of woods and tundra; and *E. scirpoides*, a smaller species with a more prostrate habit that grows in dense tufts in coniferous woods and tundra.

Mystery Plant Answer:



Sanguisorba stipulata
Burnet
Rosaceae

***Andromeda polifolia* (Bog Rosemary)**

Bog Rosemary (*Andromeda polifolia*) is one of a number of plants named after mythological characters. In Greek mythology, Andromeda was the beautiful daughter of Cassiopeia and Cepheus. The genus *Cassiope*, of which *C. stelleriana* (Moss Heather) and *C. tetragona* (Bell Heather) are examples, honor Cassiopeia. The famous Swedish botanist Carl Linnaeus, often called the Father of Modern Taxonomy, was responsible for naming many plants, including *Andromeda polifolia*. Although he was precise and painstaking in his work, Linnaeus could be colorful and poetic in his writings. In the following quote, taken from "A Species of Eternity" by Joseph Kastner, Linnaeus muses about the mythological maiden Andromeda, whom the poets

"represented as a Virgin of the most exquisite and unrivaled charms; but these charms remain in perfection only so long as she retains her virgin purity, which is also applicable to the plant. This plant is always fixed on some little turfy hillock in the midst of swamps, as Andromeda herself was chained to a rock in the sea. Dragons and venomous serpents surround her, as toads and other reptiles frequent the abode of her vegetable prototype; and when they pair in the spring, throw mud and water over its leaves and branches. As the distressed virgin cast down her blushing face through excessive affliction, so does the rosy-colored flower hang its head, growing paler and paler till it withers away."



Polifolia simply means "many leaves." The common name of the plant, Bog Rosemary, refers to the habitat in which the plant is found, and to the resemblance of its leaves to those of the culinary herb rosemary (*Rosmarinus officinalis*). However, Bog Rosemary is highly toxic and, if ingested, causes a lowering of blood pressure, breathing difficulties and a host of other problems.

**Shaggy Ink Caps or Shaggy Manes
(*Coprinus comatus*)**

This year Anchorage saw an explosion of Shaggy Ink Caps during the wet months of September and October. I was tantalized by these delicious-looking mushrooms that adorned our lawn, but unfortunately did not locate any recipes until after they were spent. I'm sure there are many local recipes, but thought I'd share these two from Britain.

Shaggy Ink Cap Soup

Serves 4

- | | |
|---|-----------------|
| 8 oz Shaggy Ink Caps | Pepper and salt |
| Butter | Chopped Parsley |
| 1 1/4 pints chicken stock | |
| Cream (substitute sour cream or yogurt if you wish) | |

Clean the Ink Caps, discarding the stems, then sauté for 4-5 minutes in a little butter. Remove from the heat and liquidize in a blender. Return to the pan and add chicken stock. Simmer for 15 minutes, season with salt and pepper, and serve with a spoon of cream and sprinkling of parsley.

Baked Eggs and Ink Caps

Serves 2-4

- | | |
|-------------------|-----------------|
| 6 ink caps | Salt and pepper |
| Butter | 4 eggs |
| 1 clove of garlic | |

Shaggy ink caps have a very delicate flavor that benefits from a touch of garlic. Clean and chop the ink caps, discarding the stems, and sauté for 2 minutes in butter. Butter 4 small oven-proof dishes and crack an egg into each one and top with the half-cooked mushrooms. Season with salt and pepper and a little crushed garlic. Bake in a pre-heated oven at 400 F, Gas Mark 6.

Caution: As always, do not eat wild mushrooms if you are in any doubt about their identity. According to "Alaska's Mushrooms" by Harriette Parker, unpleasant symptoms may result from drinking alcohol while consuming Shaggy Manes. Also, young Shaggy Manes in their button stage can be confused with buttons of poisonous *Amanita*, *Lepiota* and *Agaricus* species. Finally, over-mature Shaggy Manes occasionally cause indigestion; harvest them before the gills turn black.

**Turnagain Arm Trail:
For Blooming Diversity Walk it Again, and Again, and Again . . .
by Marlena Mooring**

The series of three Celebrating Wildflower walks along the Turnagain Arm Trail, beginning at Potter's Creek trailhead, were wonderful, fun experiences for me. Judging from the diversity of people who attended and their overwhelming numbers, there seems to be a need for people to get out there and commune with nature. My heartfelt thanks go to Julia & Trevor Ricketts and Ginny Moran. Without their help and expertise in all things wild, the hikes wouldn't have been a success.

The first "May Bloomers" hike was largely an exercise in identifying the many green leaves of plants just emerging from winter hibernation. On several occasions before the scheduled walk, I went out in the evening to look and see what, if anything, was blooming. On one occasion, I put in a call for HELP to Verna Pratt, who obligingly helped me distinguish the baneberry, goatsbeard, and hemlock parsley leaves that I'd picked. In addition, Julia, Trevor and I took a walk and identified plants, or should I say "green things that all look alike," before the hike. The 30 people who showed up on May 17 were not disappointed. Early flowers bloomed here and there, from Selkirk's violets, bedstraw, prickly saxifrage,

rockcress and kinnikinnick, to the exquisitely beautiful, bronzed blooms of soapberry.



Selkirk's Violet

wildflower walkers as they learned and began to identify the native plants, pointing them out by name as we walked up the trail. The bloomers included: dog

violets, baneberry, cow parsnip, Solomon's seal, watermelon berry, columbine, dogwood, serviceberry, anemone, grove sandwort, Jacob's ladder, cut-leaf fleabane and many more. By now the vegetation was so thick that I couldn't find the spot where Trevor had found a frog orchid on the earlier hike, and frog orchids further up the trail weren't blooming yet.

The third hike, on June 14, finally produced blooming frog orchids. Many hikers found them blooming everywhere along the trail, and I do mean everywhere! As we worked our way up the trail through thick, lush green vegetation, the group identified lupine, death camas, columbine, wild rose, pyrolas, coastal paintbrush, red currant, high bush cranberry, watermelon berry, potentilla, wild pea, oxytrope, yellow draba, cut-leaf fleabane, mountain ash, elderberry, yarrow, and artemesia. The weather cooperated, and everyone enjoyed themselves, made new friends, and came away with some knowledge and appreciation of Alaska's native plants.

The purpose of these walks was to introduce people to the native plants that grow in our own back yards, and have them develop an appreciation for wild plants and nature in general. By the end, everyone who participated in the walks was rewarded by knowing more about some of the flowers that they'll see along many trails in this area. Their enthusiasm was contagious; I've never had so much fun watching people of all ages (youngest was eight, youngest at heart was 72) discover the beauty that surrounds us here in Alaska. As a leader, I learned that you don't have to be an expert and know every blooming flower; people don't mind if you take a minute or two to identify a plant using one of Verna's books. I look forward to leading the wildflower walks again next year, and I hope I'll have some great volunteer guides to assist me. Many thanks again to Julia, Trevor, and Ginny.

Editor's Note:

For more on the Turnagain Arm Trail, read on. This summer, trail improvements have caused major changes to the Potter Creek section of the trail, and to many of the wildflowers that used to call it home.

Where Have All The Wildflowers Gone?

by Julia Ricketts

Last spring I was involved with a series of wildflower hikes on the Turnagain Arm Trail, starting from Potter Creek trailhead. The hikes were part of a Celebrating Wildflowers program and also, in part, to celebrate the 25th anniversary of Chugach State Park. Marlana's idea for a series proved to be a wonderful way to see the diversity of plants on this short, but special, section of trail. It was a joy to share one of Anchorage's best wildflower spots with a large group of new and excited plant enthusiasts. I know I learned a lot. In June, I



Prickly Rose

eagerly revisited the trail with our guests from the Native Plant Society of Texas. Again it was spectacular, with the biggest display of blooming prickly and Nootka roses I've ever seen.

Last Sunday, October 22, I read Bill Sherwonit's article "Work on Turnagain Arm Trail becomes too much of a good thing," in the Anchorage Daily News, with dismay. Not wanting to believe it, Trevor and I immediately headed for the trail to see what had happened. Tonight, Wednesday, we've just come back from a second trip with Marlana. The old trail has been demolished. Just as the article said: "Bulldozed into oblivion." Instead of the old, narrow, woodland path that wound its way between alders, cottonwoods and birch, there's a gravel road wide enough to drive a car on; the grasses and herbs that crowded along the trail's edge have been replaced by scraped and scarred ground; and where a wet seepage area supported devil's club and ferns, now, above the trail there's a huge gouge in the bank filled with piles of rocks, and downslope are smoothly sloping banks of new top soil already sprouting grass. Sherwonit put it well when he said: "I come to a place where a short stretch of old trail parallels the new, and the difference is startling. Hiking along the former trail, I walk among tree roots, and grasses, and dirt. I brush against grasses and wild

prickly rose, reach out and pluck a rose hip, or a cranberry, or touch a cottonwood. Here, I am with the forest. On the new trail, I'm distanced from the forest, separated from it rather than connected to it."

After the initial shock at the visual impact, our thoughts turned to some of the plants that had made this section of trail so special: Selkirk's violets, frog orchids, and rattlesnake ferns. Without a doubt, many violets and orchids have been destroyed. Struggling to get our bearings on the new trail, and unsure as to whether the leaves would still be visible in October, we searched among the alder roots and fallen leaves for violets. To our relief, we found a few plants.

Since then I've talked to Verna several times. As far as she knows, there are only a handful of places to find Selkirk's violets (*Viola Selkirkii*) in South-central Alaska: a few plants at McHugh, a few on Bird Ridge, and a small inaccessible population on the Kenai. The plants along the Potter Creek section of the Turnagain Arm Trail formed the most dense and accessible colony. Hulten lists the plant as "apparently rare," and marks only a few locations in the state. Maybe even more disturbing is the thought that a population of rattlesnake ferns (*Botrychium virginianum*) may have been affected. According to Verna, only about 10 plants



*Botrychium
virginianum*

were known to exist near the old trail, and these may have been the only ones in South-central Alaska. Hulten shows two more locations on his range maps, both out on the Aleutian chain. We'll probably have to wait for spring before we know exactly what has happened to these plants, just how many of them are buried beneath the gravel of the new road.

It'll be much longer before we know what effects the seeding of disturbed ground along the trail's edge may have. On the plus side, reseeding was done with Arctic Hair Grass (*Deschampsia* sp.), a native species that is

relatively fine and should allow native wildflowers back in. (The same grass has been used in revegetation projects at Glen Alps.) However, grass seed frequently contains additional seeds of undesirable species, e.g., clover, and these aggressive species can compete with our more delicate native plants, eventually replacing them. In addition, the disturbance along the trail's edges may encourage the spread of invasive, non-native species, such as plantain and dandelion.

The new trail is being built with state and federal highway funds designated to improve recreational and scenic facilities along the Seward Highway (another project involved "trail improvements" at Bird Ridge). In response to various criticisms, park officials state that conditions attached to these funds insist on certain standards, such as providing handicapped access; that the use of large machinery is more cost-effective; that the new trail more closely approximates the historic one, a telegraph line and wagon trail put in when the railroad was being built in the early 1900s; and that increased visibility will decrease the chances for bear encounters. Providing handicapped accessible facilities is laudable, but the scale and impact of this project go way beyond that. The other reasons seem like poor excuses for a vastly overblown development.

Usually the Native Plant Society likes to stay away from political issues. I think, occasionally, something comes along that hits so close to the heart that you have to get involved. Personally, I feel betrayed by park officials; I hate to think of the participants of our earlier hikes returning to the trail next May or June with expectations of the wildflower spectacle they saw last year, only to find a gravel road with grassy verges. I

know Marlana and Trevor feel the same. Why weren't people consulted? There are experts in the community who would happily have provided information on rare or sensitive species while construction was still in the planning stages. It's a sad day when we can't trust park staff to appreciate and protect what is special about the lands they care for.

I'm rarely motivated to write letters or protest, but this time is different. Many people have already expressed outrage over the project to State Park officials, but it is too easy for complaints to be dismissed as whining from a vocal minority. Regular park users, whether they be plant enthusiasts, birders, hikers or some other constituency, need to express what they want and value. The more perspectives represented, the better. Verna has already contacted Al Meiners, Chugach State Park Superintendent, and voiced her concerns. To his credit, he is listening and appears willing to try and mitigate some of the impact of this project. On Saturday, October 28, we will meet with him to discuss ways to encourage the recolonization of disturbed areas by native plants, and the possibility of creating a new foot trail that would try to recapture the feel of the old one.

I encourage everybody to go and have a look at the "trail improvements" on Turnagain Arm as soon as possible. I know many of you are familiar with the trail and its diversity of wildflowers, as it's been a popular destination for ANPS field trips for years. If you feel strongly about this matter, I urge you to write to Al Meiners at Chugach State Park, and also to the Anchorage Daily News.

ANNUAL MEMBERSHIP APPLICATION / RENEWAL

The Alaska Native Plant Society was organized in 1982 by an enthusiastic group of amateur and professional botanists. It is a non-profit educational organization with the aim of uniting all persons interested in the flora of Alaska.

Membership is open to any interested individual or organization. If you wish to join us, please indicate the category of membership you desire, then clip and mail this application with the appropriate remittance to: Alaska Native Plant Society, P.O. Box 141613, Anchorage, AK 99514.

Select the membership category you desire:

Full Time Student	[] \$5	Name: _____
Senior (over 65)	[] \$10	Address: _____
Individual	[] \$12	City: _____ State: _____ Zip: _____
Family	[] \$18	
Organization	[] \$30	Telephone: (Home) _____ (Work) _____

Membership is on a calendar year basis. Any renewals before the end of 1995 will be valid until December 1996.

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Main Program Ginny Moran
Plant Family Verna Pratt
Mini-Botany Marilyn Barker
Field Trips Julia Ricketts

Borealis

Editors Julia Ricketts
Trevor Ricketts
Circulation Martha Hatch

The newsletter of the ANPS is published monthly except for June, July, August and September. Material for the November issue should be mailed to: Julia and Trevor Ricketts, , Anchorage, AK 99516 to arrive by November 10.

Plant Family Presenters Needed

We need volunteers to give short Plant Family presentations each month. Marilyn Barker will start our new series on non-vascular plants with an introduction and overview of the horsetail family. The rest have been split into six groups as follows:

December	Quillworts, Club Mosses and Spike Mosses
January	Adder's Tongue (Moonworts) and Filmy Fern
February	Spleenworts, Licorice Ferns, and Bracken Fern
March	Mountain Parsley Family, Deer Fern and Ostrich Fern
April	Marsh Ferns and Maidenhair Fern
May	Lady Fern and Shield Fern families

If you have a favorite group and would like to give a 10 minute presentation at a membership meeting, give Verna a call. You don't need to have slides as Verna has an extensive collection. Presenting is a great way to learn about plants - why not give it a try?

**What's Happening on Turnagain Arm?
See pages 5 - 7 for details!**

Alaska Native Plant Society
P.O. Box 141613
Anchorage, AK 99514



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