

Borealis

the newsletter of the



PO Box 141613, Anchorage, Alaska

November 2001

Join us at our November meeting!

**Monday, November 5, 7:30 p.m.
at the Campbell Creek Center
off 68th and Lake Otis**

Topic:

Alaska Native Rock Garden Plants

Speaker:

Verna Pratt

While this year's garden is still fresh in your mind, start thinking about what you might want to be growing next summer. Verna will share lots of information about what does and does not work when trying to include Alaska native plants in our rock gardens.

**Plant Family Study
A New Family!!**

Pink (Caryophyllaceae) Family

**DON'T FORGET SEEDS FOR
THIS YEAR'S
SEED EXCHANGE!!**

Please bring to the next meeting, or mail to
Gary Rasmussen

Anchorage, AK 99503-1917

Keeping In Touch

Borealis Goes Quarterly!

Beginning with this issue of the newsletter, Borealis will become a quarterly, with issues published in November, January and March and a May Field Trip Issue. Postcard reminders of monthly meetings will be mailed September, December, February and April. This new schedule is an effort to cut production and mailing costs, while still providing timely information and meeting updates. The quarterly issues will be expanded to include notes on two months of Plant Family Studies as well as other articles of local interest. We hope you'll find these changes to your liking.

We're On-Line

The Alaska Native Plant Society has been listed in PlantSociety.com's online reference listing. PlantSociety is the largest plant society, club, organization and supplier locator on the web, with over 20,000 listings. The site offers numerous no-cost benefits including:

- an online calendar system where we can post meeting, shows, sales and special events,
- hosting of a web site,
- online discussion groups for all plant related topics, and
- online plant related classified section.

Please explore the site and provide them with comments or suggestions. These kinds of sites are only as good as the interaction that happens when we all participate.

Contribute

So, too, the Borealis is only as good as the interaction that happens when we all participate. We encourage everyone who has an interest in any aspect of Alaska Native Plants to share their expertise, experiences, updates and questions. Please help us to make this newsletter be the connecting link between us all, wherever we are, and whatever we're doing. You can send (even hand-written) faxes, e-mails or hard copy to Ginny Moore, Anchorage, AK 99516, Phone and Fax:

, e-mail: mooretg@alaska.net. Anything sent before the 20th of the month before publication should make it into the next newsletter.

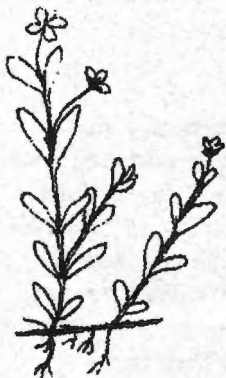
Introducing the Caryophyllaceae (Pink) Family

This year ANPS will study the Pink (Caryophyllaceae) Family. Basic characteristics of this family include a regular flower having 5 rounded, united petals, 5 sepals, 5-10 stamens, and a 2-5 parted ovary. The upright seed capsule opens at the top. Leaves are simple, entire, and placed opposite on the stems. Usually the stem is slightly swollen where the leaves join it. There are 80 genera worldwide, most in cool climates. There are 20 genera in the United States and 12 of these are native to Alaska.

In November, we will study two genera, each with only one species in Alaska. *Dianthus* is probably one of the easiest genera to recognize as a member of this family, since the genera includes the popular florist flower, Carnation. Alaska's *Dianthus repens* has a one-inch flower made up of a single row of pink petals with toothed edges. The sepals are connected like those of a carnation. The leaves are also narrow and somewhat glaucous, also like a carnation, and are one-nerved.



According to Hultén's "Flora of Alaska", *Dianthus repens* can be found in sandy or rocky areas of northwestern Alaska, the Brooks Range, and one area on the Kenai Peninsula. We saw it on a Native Plant Society trip to Peterson Bay. A few plants were hanging onto a steep rocky bank on the west side of the peninsula. Clinging to the bank and photographing the one blooming specimen was a challenge!



common in dry woodlands. It can also be found in dry meadows and thickets, usually below treeline.

The other plant to be studied this month is *Moehringia lateriflora*, or grove sandwort. The sepals are not connected in this genera. The 5 small white petals are rounded and entire. It spreads by rhizomes and the leaves are somewhat oblong and mostly glabrous. This plant can be found in most parts of Alaska and is

In December, Marilyn Barker will lead a discussion of two other genera in the Pink (Caryophyllaceae) Family: *Honckenya* and *Wilhelmsia*.

Both genera have plants that grow in wet areas and have thick, somewhat succulent leaves. Their area of distribution, however, is quite different. *Honckenya* is a coastal (beach) species, whereas *Wilhelmsia* is located more inland.

Honckenya peploides sps *peploides* can be found along the Arctic Coast and coastal N.W. Alaska down into Norton Sound. This is a circumpolar northern arctic plant. The plant is strongly branched, with ovate to oblong, glabrous, fleshy, yellowish-green leaves. The flowers are small, greenish-white and scattered on the stems. The globose seed capsule is smooth.



Honckenya Peploides subsp *major* is a similar plant with longer and narrower leaves. It can be found in Southeast, Southcentral, the Aleutian chain and Southwestern Alaska up onto the Seward Peninsula.



These are edible plants and frequently used in soups or pot roast, as they also supply slat for cooking.

Wilhelmsia physodes (*Arenaria physodes* by some authors) has stems that creep along the ground and small ovate, glabrous ciliated leaves. The flowers are small and white with long stamens. The sepals are often reddish. The unique spherical capsule is inflated and has several grooves.



Volunteers are needed to present other general in this family Call Verna at _____ and specify which unit and the month you prefer: *Stellaria*, *Cerastium*, *Sagina* and *Spergularia*, *Minuartia* and *Arenaria*, *Silene* and *Melandrium*.

Bunchberry

Cornus Canadensis or *Cornus Unalaschkensis*

Ken Chambers – Emeritus Professor of Botany, Oregon State University

Editor's Note: This article, originally published in the Oregon native Plant Society Bulletin and then again in *Douglasia*, the Washington Native plant society Newsletter, with an update, should be of great interest to us in Alaska, as well.

There's an old botanical joke to the effect that *Cornus*, the genus of dogwood, can be recognized by its "bark". This can hardly be true, however, of *Cornus canadensis* (bunchberry or dwarf cornel) which is an herb, only a few inches tall, lacking both wood and bark, and forming an extensive groundcover by means of creeping rhizomes. Its relationship to the more familiar arborescent (tree-like species of *Cornus*, such as flowering dogwood, *C. nuttallii*, and its widely cultivated eastern relative *C. florida*, is evident only in technical features of the inflorescence including the four white, petal-like bracts which surround a head-like cluster of tiny flowers. As in all *Cornus* species, the fruits of bunchberry are drupes ("berry" is botanically a misnomer), and each individual flower has four sepals, four petals, four stamens, and a single style. The leaves are always opposite (two per node), but in *C. canadensis* the upper two to three pairs are very closely spaced and appear to be whorled at the tip of the stem. *Cornus canadensis* is not only one of America's best known and most attractive wildflowers but it is also a favored horticultural subject for temperate-zone gardens. Its natural range, as given in most current reference books, is throughout Canada, Alaska, and the northern tier of states of the "lower 48" south in the Rocky Mountains to New Mexico and along the Pacific Coast to northwestern California. It is also found disjunctly in eastern Asia, from Korea and China to northern Japan. There is only one other herbaceous species of dogwood, *Cornus suecica*, a plant of northern Europe ("suecica" is Latin for "Swedish"), Greenland, eastern Canada, Alaska, and coastal Asia. As shown in Figure 1, this very close relative of *C. canadensis* has several pairs of stem leaves (instead of one or none) and only a single leaf pair at the tip of the flowering stem (instead of a "whorl" of four to six", also its flower cluster is purplish rather than greenish-yellow as in *C. Canadensis*). The widespread boreal distribution patterns of these two species are thus not identical (e.g. *C. canadensis* is absent from Europe, while *C. suecica* is not present in central and western Canada nor in the United States

south of Alaska); nonetheless, they overlap in eastern Canada, Alaska, and eastern Asia.

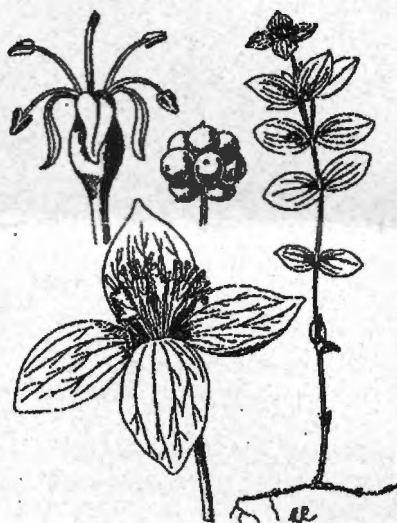
For such a well-known species as *Cornus canadensis*, we would hardly expect a question could arise concerning its identity and correct scientific name. Yet in recent floristic publications covering western Canada, taxonomists James Calder and Roy Taylor have proposed using the name *Cornus unalaschkensis* for nearly all the "*C. canadensis*" plants of coastal and southwestern British Columbia, plus Washington, Oregon, and California. Their evidence, which has also been supported in studies by John Bain and Keith Denford of the University of Alberta, is based on the known ability of *C. canadensis* and *C. suecica* to hybridize with each other (in those areas of Alaska and eastern Canada where their natural ranges overlap).

Botanists working on the floras of Alaska and eastern Canada have long been aware that hybrids can be found between these two kinds of bunchberries, wherever the berries, wherever the species occur together. The assumption has been, however, that these morphologically intermediate plants were infertile and propagated themselves only by rhizomes; under such circumstances, they would not deserve separate species status.

The critical discovery made by the Canadian botanists cited above is that many of the Northwest American plants presently called "*Cornus canadensis*" – especially in areas with a maritime rather than continental climate – not only have a hybrid-like morphology but

are tetraploids.

That is, their chromosome number (44) is twice the usual number found in diploid *C. canadensis* and *C. suecica* (22). Like many other plant species that have hybrid origins and doubled chromosome numbers, the tetraploids are reproductively fertile and genetically distinct from their original parents; therefore, they are evolutionarily and biologically a separate species. The name *Cornus unalaschkensis* was given to such plants a century-and-a-half ago by German botanist Carl Ledebour, an authority on the flora of Russia (Alaska was then a part of the Russian Empire). Recent collections of bunchberries from Unalaska Island – the type locality – were examined by Bain and Denford and have the cell-size characteristics of tetraploids; therefore, the species properly must bear the name assigned to it by Ledebour.



If we agree that *Cornus unalaschkensis* is a separate species from *C. canadensis*, then the former name is apparently correct for all bunchberries in Oregon. I have examined "*Cornus canadensis*" collections in the OSU Herbarium and verified that everything we have from southwestern British Columbia, Washington (from the Cascades to the coast) and Oregon (even as far east as the Willowa Mountains and south to Klamath County) is *Cornus unalaschkensis*. Taxonomically, then, for Oregon we have no problem – we can simply switch names from *canadensis* to *unalaschkensis* without worrying about how to tell which species is which, morphologically. Elsewhere in Canada and the western United States, however, it seems to be (based on available herbarium specimens) that *C. unalaschkensis* very much resembles *canadensis* in leaf shape and growth form (whorled upper leaves, with a pair of reduced leaves at the next lower node). The one most consistent difference is in flower color, referring not to the bracts of the inflorescence (white in both species) but to the petals of the tiny, clustered flowers. In *Cornus canadensis* proper, the petals are greenish-yellow, whereas in *C. unalaschkensis* they are purplish on the tip and midline, and yellowish at the edges and base (bicolored petals, in other words). This coloration is the only clear-cut characteristic inherited from its *C. suecica* parent, which has dark purple petals; all other traits appear to be variable and only subtly different from *C. canadensis*.

I have not yet seen any scientific articles discussing the distribution of *Cornus unalaschkensis* in states to the east. The OSU herbarium has specimens from Idaho, and it has been reported from as far east as Colorado. Another unanswered question is if there are spots in the US or Canada where *C. unalaschkensis* and *C. canadensis* (in the narrow sense, having yellow petals and 22 chromosomes) exist together. Only a slight morphological difference distinguishes these two, making them 'cryptic species' in the terminology of systematists. This phrase implies that closely related species of a given genus may be biologically distinct to the same degree as "normal species", but show only a minor amount of morphological divergence. Superficially these two species look very much alike, but at a deeper biological level, the hybrid origin and doubled chromosome number of *C. unalaschkensis* strongly argue against lumping it taxonomically under *C. canadensis*.

There must have been two or more periods in the history of these species when hybridization occurred

between *canadensis* and *suecica*. Today, where they grow together in the far north, active exchange of genes leads to sterile diploid hybrids having 22 chromosomes and a distinctly intermediate morphology. A much earlier cycle of hybridization in preglacial times probably produced *C. unalaschkensis* through chromosome doubling, stabilization of its characteristic morphologic and ecologic features, and establishment of a discrete geographical range south of the continental ice sheets. After the retreat of the glaciers, it migrated northward in British Columbia and southern Alaska. All aspects of this historical narrative need further study and scientific verification, however. The questions posed by these bunch-berrys are typical of the many unsolved puzzles so characteristic of Oregon's fascinating native flora.



Addendum, 1994: Since the time the article above was written, a new taxonomic reference for the flora of California has appeared, "*The Jepson Manual. Higher Plants of California*" James C. Hickman, editor (University of California Press, Berkeley, 1993). In the treatment of *Cornus* by James R. Shevock (pages 522-524), the name *Cornus canadensis* is used for the species I discussed as *C. unalaschkensis*, with no reference to the latter name.

There continues to be disagreement among taxonomists on whether the hybrid-origin tetraploid species ought to be recognized as different from *C. canadensis*. A recent reference called, "*The Vascular Plants of British Columbia, Part 1*, by George Douglas and coauthors (B.C. Ministry of Forests, 1989) is equivocal, stating (page 161), "Hybrids between *C. canadensis* and *C. suecica* have been treated as either a variety of *C. canadensis* var. *intermedia* Farr.) or as a separate species (*C. unalaschkensis* Ledeb.)."

The petal color difference – greenish-yellow vs. purplish-tipped – is minor but easy to observe. Anyone who prefers a broad and inclusive species concept for bunch-berry is free to use the name *Cornus canadensis* for both flower types, in spite of the chromosome difference and hybrid influence of *C. suecica*. The name *C. unalaschkensis* is more precise for the purplish-flowered plants, but because this is not a well known name, it may cause confusion among people who don't know of the botanical studies explaining the subtle distinction between the two similar-looking kinds of bunch-berry.

**C. suecica* from Gustav Hegi's *Illustrated Flora of Middle Europe*.

**C. unalaschkensis* from Calder & Taylor's *Flora of the Queen Charlotte Island*.

Myosotis: Journal of the Alaska Native Plant Society

Local Anchorage folks interested in the native flora and educating others to our rich flora founded the Alaska Native Plant Society in 1982. To celebrate twenty successful years of operation, the Board and the Membership have decided to produce a Journal of the Alaska Native Plant Society. The newsletter of the society is *Borealis* and the logo is a stylized *Linnaea borealis*. The journal will be called *Myosotis* in honor of our state flower.

- Taxonomy of vascular plants, mosses, algae and lichens
- Ecology of native species and plant communities
- Ethnobotany of native plants
- Notes of botanists, scientists, explorers and botanical artists
- Landscape restoration
- Horticulture as it relates to use of native species
- Range extensions

The manuscript should be double-spaced throughout with 1-inch margins on all sides. Pages should be numbered and tables and figures should be numbered consecutively. Articles should follow the general format: abstract, introduction, materials and methods, results, discussion, summary and literature cited.

Two or more members of the society or outside reviewers will review each manuscript received. After review, authors will be notified of the acceptance or rejection of manuscripts.

Authors will have the opportunity to review their articles before publication and are expected to correct any errors.

For publication of the first volume, articles should be submitted no later than January 1, 2003.

Please submit 2 copies of the manuscript. (All articles will be printed in black and white). *Myosotis* will be prepared on a PC using MS Word/Excel/Publisher. All manuscripts and inquiries should be sent to:

Editor of *Myosotis*
Alaska Native Plant Society
PO. Box 141613
Anchorage, Alaska 99514

MYSTERY PLANT

Although this plant may not be a mystery to many of you, in Alaska it is only native to the Aleutian Chain, Southeast and some remote spots in the Eastern Chugach Mountains. Many years ago I saw it near Skagway and the past year we saw repeated evidence of it near the Bering Glacier. This begins to fill the gap between southeast Alaska and the Aleutian Chain.

It is a perennial plant, 10-18 inches tall, and has a thick stiff stem. It spreads by rhizomes. The leaves are long and narrow and come off the stem in many directions. They are usually somewhat glabrous above, but very downy/hairy beneath. Some high alpine specimens have leaves that are downy on both sides. The flowers are small yellow disks in the center of many rows of pearly-white broad involucral bracts. They dry naturally like a strawflower, giving it its common name. **Answer on Page 7.**



ANPS Helps Fund Nature Trail Pamphlet

By Sue Jensen

Last year the Alaska Native Plant Society donated \$500 to Alaska Botanical Garden for creating a native plant pamphlet for the Garden. These funds in conjunction with a State Trails Grant has allowed ABG to create twenty-two interpretive signs and an accompanying pamphlet for the 1.1 mile Lowenfels Family Nature Trail in the Alaska Botanical Garden. This loop trail starts just south of the Herb Garden, goes through birch and alder forest south to Campbell Creek, the turns northwest along the creek, and north through spruce forest with views of the Chugach Range. The 10"x12" low profile signs describe and illustrate native plants, several geologic features, and several cultural features along the trail.

The beautiful botanical illustrations, which will be used both on the interpretive signs and in the pamphlet, were drawn and donated by Cara Wardlaw-Bailey, a member of ANPS. Drs. Marilyn Barker and Anne Pasch provided the botanical and geological research and descriptions for the pamphlet. Linda Lockhart Designs is designing the pamphlet that will be available at the entrance to the trail next summer. Next spring there will be a dedication of the interpretive signs to thank those who were instrumental in this project. We keep you advised of the date and all ANPS members will be welcome. The 22 points of interest along the trail are:

Iditarod Trail

Horsetail - *Equisetum arvense*

High Bush Cranberry - *Viburnum edule*

Broomrape - *Boschniakia rossica*

Devil's Club - *Echinopanax horridum*

Spruce beetle: A villain or just doing its job?

Bracket fungi - *Polyporus betulina*

Fool's Huckleberry - *Menziesia ferruginea*

Ferns

Ostrich Fern - *Matteuccia struthiopteris*

Oak Fern - *Gymnocarptum dryopteris*

Lady Fern - *Athyrium filix-femina*

Willow dinner

Shifting Shorelines - Ice Age Debris

Chugach Mountains - Border Ranges Fault

Wintergreens:

Pink Flowered - *Pyrola asarifolia*

Sidebells - *Pyrola secunda*

Fox Holes

Grass meadow - Bluejoint Grass - *Calamagrostis canadensis*

Berries and Bears

Club Moss

Spiny Club Moss - *Lycopodium annotinum*

Creeping Jennie - *Lycopodium complanatum*

A Free Ride - Glacial Erratic

Mosses

Stairstep moss - *Hylocomium splendens*

Hairycap moss - *Polytrichum juniperinum*

Wall moss - *Pleurozium schreberi*

Paper birch - *Betula papyrifera*

Labrador Tea - *Ledum palustre*

Dwarf Dogwood - *Cornus canadensis*

Anchorage Horticulture Coalition Needs E-mail Addresses!

The Municipality of Anchorage is currently in the process of developing its budget for next year. Although at the time of this writing the Anchorage Horticulture Coalition does not have specific figures, we anticipate it may take some effort to keep the City's existing Horticulture budget intact.

In order to communicate with you efficiently and economically on this issue, we need your e-mail address. If you use e-mail, please send your address to the Coalition at anchoragehorticulture@hci.net.

If you did not receive information from the Anchorage Horticulture Coalition last winter and would like to be placed on our mailing list, please contact us at AHC, P.O. Box 202476, Anchorage AK 99520 or use voice mail at 644-hort (4678). (E-mail addresses are preferred due to the expense of sending out regular mail.)

Thanks for your support in keeping Anchorage Beautiful.

Julie Riley

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 goal 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, fill in the form below and mail it with the appropriate remittance to:

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

STATUS New RENEWAL

CATEGORY

- | | | |
|--------------------------|-------------------|------|
| <input type="checkbox"/> | Full-time Student | \$ 5 |
| <input type="checkbox"/> | Senior Citizen | \$10 |
| <input type="checkbox"/> | Individual | \$12 |
| <input type="checkbox"/> | Family | \$18 |
| <input type="checkbox"/> | Organization | \$30 |

Name _____

Address _____

City: _____ State _____ Zip _____

Telephone: (Home) _____ (Work) _____

Membership is on a calendar year basis.

Volunteers Are Needed!

- To present Plant Family information at the monthly meetings: Call Verna at _____ and specify which unit and the month you prefer: Stellaria, Cerastium, Sagina and Spergularia, Minuartia and Arenaria, Silene and Melandrium
- To provide mini-botany presentations at monthly meetings. Call Marilyn Barker,
- Field Trip Coordinator to organize next season's field trips

SEEDS FOR SEED EXCHANGE!!

Please bring to the next meeting, or mail to
Gary Rasmussen

Anchorage, AK 99503-1917

MYSTERY PLANT ANSWER

Anaphalis margaritacea
"Pearly Everlasting"
Asteraceae/Composite Family

Thanks!!

Thanks to those who helped with this past summer's field trips. We're starting to think about next season, all ready, so if you have some good ideas let us know.

ALASKA NATIVE PLANT SOCIETY

State and Anchorage Chapter Officers

President	Frank Pratt
Vice President	Leonard Grau
Secretary	Beth Koltun
Treasurer	Sue Jensen

Anchorage Chapter Program Coordinators

Main Program	Susan Klein
Plant Family	Verna Pratt
Mini-Botany	Marilyn Barker
Field Trips	Open

Newsletter ("Borealis")

Editor	Ginny Moore
Circulation	Martha Hatch

Borealis is published monthly October through May. Articles may be sent to Ginny Moore, Anchorage, AK 99516. Phone or FAX: _____ or E-mail: mooretg@alaska.net



UPCOMING PLANTS & NATURE EVENTS

November 1 Anchorage Garden Club: "Flower Design" by Letti Delk - 7:30 p.m. at the Pioneer Schoolhouse located at 3rd and Eagle. Contact: 566-0539 for information

November 5, 7:30 PM Alaska Native Plant Society Monthly Meeting *Campbell Creek Science Center*

December 3, 7:30 PM Alaska Native Plant Society Monthly Meeting *Campbell Creek Science Center*

November 13-14 Anchorage Garden Club: Holiday Flower Show Contact: for information

November 17, 2001 2 PM Alaska Rock Garden Society: Regular Meeting. Member's slides and Pictures. Coop Extension Service, Anchorage. Members are invited to bring 10 to 20 slides or photographs of gardens and plant materials to share at the meeting.

Herb Study Group: 4th Thursday of the month at 7:30 p.m. in the Cooperative Extension Service conference room
2221 E. Northern Lights (Northern Lights and Lake Otis Parkway behind Medical Park)
Call Julie Riley for more information



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P.O. Box 141613
Anchorage, AK 99514