Borealis

the newsletter of the

Alaska Native Plant Society

PO Box 141613, Anchorage, Alaska December January 2010/11

Join us at our Next Meetings!

Monday, December 6, 7:30 p.m.

(Campbell Creek Science Center)

Topic: "Brrr – Plant Reproduction in the Arctic"
How flowers reproduce in the Arctic and Alpine tundra environments including questions about how and why flowers attract pollinators and how climate change can affect food resources for native people in the Arctic.

Speaker: Justin Fulkerson, UAA Biological Sciences

Plant Family: Apiaceae/ Cicuta and Sium
Presenter: Joe Flynn

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Monday, January 3, 7:30 p.m.

Topic: "Where Trees Live: Biogeography of North American Trees"
Discussing the laws of biogeography as well as how micro climates affect range distributions

Speaker: Scott Christy

Plant Family: Apiaceae/ Ligusticum, Podistera, and Phlojodicarpus
Presenter: Anjanette Steer

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For latest information on ANPS events, check our website at:
http:// AkNPS.org

LICHEN MINING IN THE KLONDIKE

Alaska may be staking out yet another claim to a natural treasure. In article appearing in October in the journal *The Bryologist*, a team of researchers from Austria, Norway, Spain and the United States reports the highest diversity of lichens found anywhere on the North American continent from the Klondike Gold Rush National Historical Park (KLGO).

Located at the headwaters of the longest fjord in southeast Alaska, an area of only 13,000 acres (53 square kilometers) harbors the highest number of lichens and associated fungi ever found in an area of comparable size: 766 species in two slivers of land along the 1898-99 Gold Rush trails out of Skagway and Dyea, Alaska.

While lichen surveys have been completed for only a few national parks in North America, the Klondike survey, funded by the U.S. National Park Service, is notable for edging out some much larger National Parks, including 300 more species than Yellowstone, Glacier and Great Smoky Mountains National Parks. Indeed, the Klondike study has the ninth highest number of species of any lichen survey ever conducted worldwide in an area under 10,000 square kilometers.

Perhaps most surprisingly, however, fully seventy-five species -- nearly 10% of all species found -- are candidates for being new to science because they do not match any known species in a global literature review. Among the notable finds, the authors discovered a new genus of lichens with similarities to rock-dwelling genus *Steinera* in New Zealand and subantarctic islands. They name the genus *Steineropsis*, meaning 'looking like *Steinera*'. The authors describe another species, *Coccotrema hahriae*, in honor of Meg Hahr, the former natural resources program manager of Klondike Gold Rush National Historical Park, who passed away last year. Altogether five new species for science are described in the current paper.

"This is like uncovering a biodiversity hotspot on the order of some of the lost forests in New Guinea or Mozambique," says the principal investigator, Toby Spribille, a Montana native and current graduate student at the University of Graz, Austria.

From: http://www.sciencedaily.com/releases/2010/10/101018074534.htm

Apiaceae/Umbelliferae (Parsley) Family – *Cicuta* and *Sium*

At our December meeting, Joe Flynn will provide us with an overview of *Cicuta* and *Sium* genera of the Apiacea Family. Water parsnip (*Sium*) and water hemlock (*Cicuta*) both have cluster of small white flowers shaped like umbrellas, and both have the same habitat near the shore line of lakes, and rivers. Therefore, these plants are confused with each other. It is crucial, however, that we be able to distinguish *Cicuta* from all other similar-looking plants.

Of all the poisonous plants in Alaska, the Cicuta/water hemlocks are the most deadly and act most rapidly. All species of cicuta are exceedingly poisonous both to human beings and animals. Although there is some difference of opinion as to the amount of toxicity in the upper portion of the plant, yet all agree the roots and swollen base of the stem are the most virulent. They are usually eaten by animals early in the season, when they offer an abundant green fodder. As they grow on wet, soft land, the roots are easily pulled up by stock when eating the herbage. The toxic principles are the alkaloid cicutine, with oil of cicuta and cicutoxine, a bitter resinous substance.

Cicuta bulbifera/ Bulb-bearing Water-hemlock: The common name comes from small bulblets that are clustered on the leaves. This is a slender perennial plant, much branched, growing from one to three feet high. The leaves are divided two or three times into narrow, saw-toothed leaflets. The upper leaves are less divided and bear small clustered bulblets in the angles formed by the leaf and stem. The white flower clusters are arranged in umbels similar to those of the other water hemlocks. The roots also are similar but seldom as large. It is in bloom from July to September. Bulb-bearing water hemlock is deadly poisonous. The poisonous substance is so rapid in its action that little or nothing can be done in the way of remedial treatment. When poisoning has been discovered the animals are either dead or dying or in such excitement that any attempt at treatment tends to hasten death.

Cicuta douglasii/Western water-hemlock is also a highly toxic, native member of the Apiaceae Family. Western water-hemlock is found in sloughs, wet meadows, along streambanks and other wet areas throughout Alaska. This plant is poisonous to all types of livestock and to humans. The onset of symptoms is so rapid that treatment is not usually successful.

The toxins are concentrated in the chambered rootstock but also occur in the leaves and stems as well. A consumption of 0.1% of body weight of the green material (leaves and stems) is lethal, however, the oil in a single bulb is enough to kill a 1600 pound cow.

Sium suave/Water Parsnip is an erect, stout, branched perennial herb from two to six feet high. The lower leaves are long-stalked and the uppermost are nearly sessile. Sometimes a few of the lower leaves are submersed and finely dissected, but in general the leaflets are undivided, one and one-half to five inches long, narrow, sharply pointed and saw-edged. The umbels and umbellets of small white flowers are subtended by numerous narrow bracts. The fruit is oval and prominently ridged. It is in bloom from July to October.

Western water-hemlock has an **asymmetrical bulb** with **narrow chambers** containing a clear **oil (cicutoxin)** which turns bright orange when it is exposed to air. The bulb has fleshy side roots that allow the bulb to float in times of high water.
Water parsnip has a symmetrical root with large chambers containing no oil, and it has fibrous roots which anchors the bulb into the soil.

Western water-hemlock has compound leaves with the veins usually ending in the notches along the leaf margins.
Water Parsnip has a simple, opposite leaves with the veins ending at the leaf tips.

Western water-hemlock has white to greenish-coloured flowers formed in a compound umbel (umbrella-shaped flower head); it is bractless (no leaves at base of flower heads).
Water parsnip has white-coloured flowers formed in an umbel; it has bracts (leaves at base of large umbel and at base of small umbels making up the flower head).

ALASKA NATIVE PLANT SOCIETY 2009 Seed Exchange

The Alaska Native Plant Society sells seed of plants native to Alaska, which have been collected by members during the year. Seeds can be purchased at the regular monthly meetings or by mail order.

NOTE to Donors: If you have gathered seeds that you'd like to donate, please do. We will offer them at meetings and upcoming mall shows.

The price is $0.50 per package. Package sizes vary considerably due to the number or amount of seeds collected. Some rare or difficult to collect species may contain few seeds, while some easy to collect species may contain a large number of seeds. For mail orders, include an additional $0.50 for 1 -5 packages, or $1.00 for 6 or more. Make checks payable to: Alaska Native Plant Society. Send order to: Alaska Native Plant Society, PO Box 141613, Anchorage, AK. 99514

NEED MORE HELP TO GROW YOUR SEEDS?

For more information on growing native plants from seeds, check out these websites:

The Native Plant Network: Website of the Professional Native Plant Industry whose goal is to provide technical and practical information on the growing and planting of North American (Canada, US, and Mexico) native plants for restoration, conservation, reforestation, landscaping, roadsides, and so on.
http://www.nativeplantnetwork.org/

Illustrated Tutorial To Sowing Native Plant Seeds
http://www.wnps.org/landscaping/documents/tutorial_alan_yen.pdf

"Native Seed Information & Culture" Puget Sound Chapter Washington Native Plant Society
ftp://kcwppub3.co.kitsap.wa.us/pw/sw/Native%20Seed.pdf

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ANPS SEED EXCHANGE ORDER FORM

Orders will be filled in the order that they are received

Order by plant number appearing before the name

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The price is $0.50 per packet. For mail orders, add $0.50 for 1 -5 packets, or $1.00 for 6 or more.

Name_____Number of packets ___ @$.50 = $____

Address_____Mailing cost ($.50 for 1-5 or $1.00 for 6 or more) = $____

City_____State_____Zip_____ Total enclosed $_____

Make checks payable to: Alaska Native Plant Society
Send order to: Alaska Native Plant Society, PO Box 141613, Anchorage, AK. 99514

From What We Gather

Bot:May – What's That?

- The Situation: You are a **botanist** standing in open terrain and **mapping plants**. It is windy. You are fighting with your data sheet and the topographic map. Back in the office you have yet to digitalise the data on your computer. It is unnerving.
- The Fantasy: Wouldn't it be nice to have something in your pocket which knows the **scientific names**? Something that secures the locality automatically? Something that can conveniently transmit the collected data to your computer?
  Yes, this would be nice, you sigh?!

- The Solution: And here you are! With Bot:Map a newly developed software for your iPhone® you have access to more than 665,000 scientific names and synonyms. Locations are identified by GPS, plants are administered separately according to field trips, data is exported browser-based or via e-mail. For more information see http://www.botmap.de/en/

Field Guide To Seaweeds of Alaska

This book is the first and only field guide to more than 100 common seaweeds, seagrasses, and marine lichens of Alaska. Filled with color photos and clearly written descriptions, and printed on water-resistant paper, it is a must-have addition to the reference collections of any scientist, coastal monitor, naturalist, educator, student, or beachcomber interested in Alaska's coastal ecosystems. Author Mandy Lindeberg is a biologist with the National Oceanic and Atmospheric Administration in Juneau, Alaska. In 2006 she discovered a new genus of kelp, golden V (depicted on the cover), in the Aleutian Islands. Coauthor Sandra Lindstrom is a professor at the University of British Columbia and has published many journal articles and books on algae.

- Authors: Mandy R. Lindeberg and Sandra C. Lindstrom
- Pub. no.: SG-ED-69
- Year: 2010 — It's here!
- No. pages: 192
- Price: $30.00 US
- ISBN: 978-1-56612-156-9

Available at:
http://seagrant.uaf.edu/bookstore/pubs/SG-ED-69.html

Books Botanists Use

Ever wonder what books other botanists have on their shelves? Here is a list compiled by the U.S. Forest Service of the books their Alaskan botanists and non-botanists use. Some are technical and some are colorful picture-rich field guides aimed at the general wildflower viewer.

Alaska Trees and Shrubs. Second Edition. Viereck, L. A., and E. L. Little. 2007. University of Alaska Press, Fairbanks, Alaska.

Anderson's Flora of Alaska and adjacent parts of Canada. *Welsh, S.L. 1974. Brigham Young University* Press, Provo, Utah.

Discovering Wild Plants: Alaska, Western Canada, Northwest. Schofield, J. J. 2003. Alaska Northwest Books. Portland, Oregon.

Field Guide to Alaskan Wildflowers: Commonly Seen Along Highways and Byways. Pratt, V. E. 1990. Alaskakrafts Inc., Anchorage, Alaska.

Flora of Alaska and Neighboring Territories. Hulten, E. 1968. Stanford University Press, Stanford, California.

Flora of the Pacific Northwest, An Illustrated Manual. Hitchcock, C.L. and A. Cronquist. 1974. University of Washington Press. Seattle, Washington.

Flora of the Yukon Territory. Cody, W.J. 1996.National Research Council of Canada Press, Ottawa, Ontario. 643pp.

Mosses Lichens and Ferns of Northwest North America. Vitt, D. H., J. E. Marsh and R. B. Bovey. 2007. Lone Pine Publishing, Vancouver, British Columbia.

Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia & Alaska. Pojar, J. and A. MacKinnon. 2004. Lone Pine Publishing, Vancouver, British Columbia.

Wildflowers of Unalaska Island: A Guide to the Flowering Plants of an Aleutian Island. Golodoff, S. 2003. University of Alaska Press. Fairbanks, Alaska

Mystery Plant Answer:

Senecio resedifolius/Dwarf Arctic Butterweed
Asteracea Family

Alaska Native Plant Society

2011 Seed List

	Scientific Name	Common Name	Height	Flower Color	Comments
1.	*Aconitum delphinifolium*	Monkshood	2-4 ft.	Dark blue	Damp; stratify 2-4 months; may take 2 years to germinate
2.	*Androsace septemtrionalis*		6-8 in.	Whithe	Easy; probably a biennial
3.	*Anemone narcissiflora*				Stratify or plant outdoors
4.	*Antennaria dioica*	Pink Pussytoes	5-6 in.	Pink	Stratify
5.	*Aquilega brevistyla*	Small Blue Columbine	12-14 in.	Lavender and white	Easy
6.	*Aquilega formosa*	Western Columbine	Up to 3 ft.	Red sepals Yellow laminae	Easy
7.	*Arenaria capillaris*		5-6 in.	White	Easy; dry soil
8.	*Campanula lasiocarpa*	Mountain Harebell	2-4 in.	Blue	Easy
9.	*Diapensia lapponica*				Stratify; make take 2 years
10.	*Dodecatheon pulchellum*	Shooting Star	10-14 in.	Pink	Stratify; recommend direct sowing – may take two years
11.	*Draba incerta*	Whitlow Grass			
12.	*Fritillaria camschatcensis*	Chocolate Lily	10-24 in.	Brownish-purple	
13.	*Geranium erianthemum*	Wild Geranium-White	2 ft.	White	Easy
14.	*Oxytropis viscida*		6-9 in.	Pink	Dry soil
15.	*Pulsatilla patens*	Pasqueflower	3-10 in.	Purple	Sow outside for winter stratification
16.	*Saxifraga bronchialis*	Yellow-dot saxifrage	3-4 in	White	Easy; dry, gravelly soil
17.	*Saxifraga punctata*	Dotted saxifrage	8 in.	White	Damp
18.	*Scheuchzeria palustris*	Rannoch-rush, pod grass	4-14 in.	Greenish yellow	Damp stratification
19.	*Swertia perennis*	Star gentian	8-12 in	Purple/blue	Stratification recommended

Growing Native Plants From Seeds Reference: Phillips, Harry R., ***Growing and Propagating Wild Flowers, An easy-to-use guide for all gardeners***, The University of North Carolina Press.

Different types of seeds have different needs. A good reference book like the one above will help greatly. Some of the special considerations include the need for a period of dormancy (stratification), the need for the seed to be continuously moist, and the need for sunlight to break dormancy or the need for the seed coat to be damaged.

1) Stratification methods:

a. The easiest way to "stratify" seeds is to plant them in pots during the late fall or winter. Moisten the soil and seal the pot inside a zipper sealed bag. Keep the pot in an outdoor location, out of the sun, until the seeds germinate. Transplant to individual pots after the first "real" leaves appear.

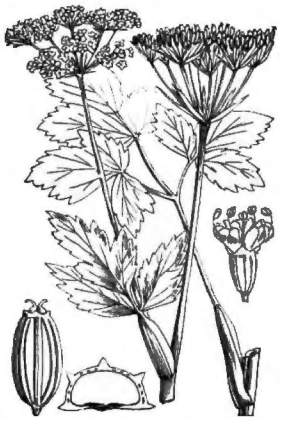
b. A little trickier technique is to mix the seeds with a small amount of moist (not dripping wet!) sand. Seal the mixture in a zipper sealed bag in the refrigerator. Check at least weekly for any germination and plant immediately.

2) Some of the seeds require light to germinate (usually the really tiny seeds). They must be sown on the surface with NO soil covering. Best to firm potting soil slightly, then cover with a thin layer of fine milled sphagnum moss and spread the seeds on top of that.

3) Some larger, thick walled seeds must be "scarified" before planting. Scarification can be accomplished by scratching lightly with a file, soaking in hot water to break the seed wall, dilute acid treatments, or digestion in the stomach of an animal! Best to check several references for recommendations on the planting of these seeds.

Apiaceae/Umbelliferae Family - *Ligusticum*, *Podistera*, and *Phlojodicarpus*

Anjanette Steer will help us learn to identify a few more Apiacea genera at our January meeting. Just pronouncing some of them will be a challenge. Phlojodicarpus sounds like some sort of cross between Flo Jo and Leonardo Di Caprio!



Ligusticum scoticum

Ligusticum scoticum, Beach Lovage or Scotch Lovage, is a cosmopolitan, easily grown perennial whose haunts span all the way from New England and our Pacific coast to northern Europe and Asia, Blooming in summer, its charming sprays of tiny, brilliant white flowers contrast with thick scalloped foliage that forms a low, dark green compact clump supporting sturdy, branching purple stalks and numerous pearly umbels. It was once eaten by sailors to help prevent scurvy and added to salads, soups and stews for its celery-like flavor.

Ligusticum mutellinoides grows in stony, dry places on tundra and in the mountains, to over 1700 meters.

Podistera yukonensis, Yukon podistera, is endemic to the upper Yukon River region between McQuesten, Yukon Territory, and Circle, Alaska. It grows in dry, mostly south-facing rubble slopes, rock ledges, and grasslands from 1,000-4,000 ft e.evation. It is unlikely to be confused wit any other species in Alaska. Flowering in June. References: Batten et al 1979; Cody 1994, 1996; Hultén 1968; Mathias and Constance 1959; Murray and Lipkin 1987; Parker 1995.

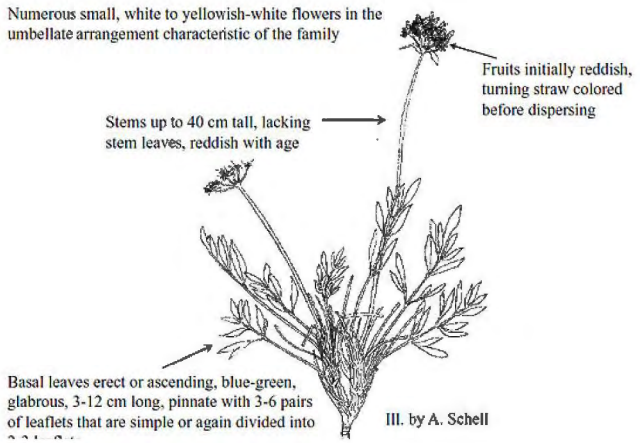


Figure 336. 1–8. Phlojodicarpus sibiricus (Fischer ex Sprengel) Koso-Poljansky, 假风序 zhang gao qin. — 1. Proximal portion of plant. —2. Distal portion of flowering plant. —3. Fruiting umbel. —4. Bracteole. —5. Flower. —6. Petal. —7. Fruit. —8. Mericarp cross section. 9–12. P. villosus (Turczaninow ex Fischer & C. A. Meyer) Turczaninow ex Ledebour, 密毛假风序 mi mao zhang gao qin. —9. Stem portion. —10. Ultimate leaf segment. —11. Petal. —12. Young fruit. (POC 181, 182; PBPS 55(3): 122, pl. 51. 1992. —史刚奎 Shi Weiqing).

Phlojodicarpus villosus is listed in Hultén's *Flora of Alaska*, but the herbarium at UAF has only plants that have been collected in the Russian Far East, the closest being a collection by Carolyn Parker from the Anadyar area. It has also been found in Mongolia and other areas of China, on rock debris and stone fields, screes in moss-lichen tundra in alpine areas, sometimes in the upper part of forest areas. The roots of this plant contain coumarin, a compound that discourages herbivory by insects, rodents and larger herbivores, but smells nice to us humans (fresh hay, vanilla). Coumarim compounds have been used for a variety of medicinal uses including skin conditions, heart disease, stroke, but is somewhat toxic in high amounts.

"Dicarpus" means two seeds and villosus refers to the downy leaves. The plant has a number of synonyms including *Libanotis petrophila*, *Libanotis villosa*, *Phlojodicarpus sibiricus* subsp. *Villosus*, *Phlojodicarpus sibiricus* var. *villosus*, *Stenocoelium villosum*.

MYSTERY PLANT

Provided by Verna Pratt

Last month's program "Flowers of Baikal Lake" presented by Mary Plumb-Mentjes, was the reason to choose this month's mystery plant. The program showed many Alaska native plants and some very closely related species. This one's brilliant yellow flower heads with reddish orange centers made it easy to recognize. A quick check of the range map in Hulten's "Flora of Alaska" indicates that it grows all across the arctic sections of Siberia and the Baikal Lake region. There doesn't seem to be another plant quite like it. The stems and leaves are glabrous. The undersides of the leaves are reddish-maroon. The basal leaf shape varies from ovate to oblong with crenate edges. Stem leaves are reduced and pinnatifid. Flower heads are singular and the ray flowers are bright yellow with a reddish underside and the disk flowers are a dark reddish orange. The involueral bracts are maroonish. This plant grows in many mountainous habitats of the Alaska range, the Brook's Range and coastal mountains of north-western Alaska. The most impressive plants I have seen were growing in gravelly scree.

Answer on Page 4.

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ALASKA NATIVE PLANT SOCIETY

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Newsletter ("*Borealis*")

Editor Ginny Moore

FAX:

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

UPCOMING GARDENING EVENTS

December 2, 10 AM
Wildflower Garden Club – Workshop: Fresh Holiday Wreaths
Annie Nevalidine 10 am, Central Lutheran Church
1420 Cordova Street (15th & Cordova)

December 14, 7 PM
Monthly meeting with educational program open to the public.
Central Lugheran Church, 1420 Cordova (15th and Cordova)

December 16, 7PM
Alaska Master Gardeners Association Anchorage - Program:
CES, 1675 C Street, Suite 100

To
Mary Plumb-Mentjes and Glen Brown and who volunteered their time and expertise to educate us at our November meeting!

You make it happen!

More Botany Puns – Botanists Have All The Anthers!

What is the attitude of many botanists? Haploid go luckoid

What do you call a curly haired monoceous plant? A perm-aphrodite

What is a boring plant eater? An Herbi-bore A plant eating pig? An herbi-boar

Why did the flower go to the salon? To have his hair styled

What do you say when a botanist sneezes? Hirsute-ite

How do horticulturists get across bodies of water? With the help of a Boat-anist

What do you call something done accidently by a rolled plant leaf? Involutary

What do you call a plant that is vericose and eats insects? A venous fly trap

If Jonathan Swift was a botanist what would his smallest characters be? The Lily-putians

What is a Sesame Street botany toy? Utricle me Elmo

What does a botanist sleep on? A monocot

from: http://boomsblog.blogspot.com/2006/09/101-botany-puns.html

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