Borealis

the newsletter of the Alaska Native Plant Society

PO Box 141613, Anchorage, Alaska | December 2014- January 2015

Join us at our Next Meetings!

Monday, Dec. 1, 7:00 p.m

***Main Topic*: "A Rose By Any Other Name – Plant Nomenclature in an Age of Molecular Systematics"**

***Speaker*: Dr. Matt Carlson, UAA Botany**

Plants of Scree and Talus: *Papaver alboroseum, Silene acaulis*

***Leader*: Verna Pratt**

***Mini-Ethno-Botany*: Spruce, Sphagnum Moss**

***Presenter*: Mel Langdon**

ALSO: Election of Board Members

Monday, Jan. 5, 7:00 p.m

***Main Topic*: "Plants versus Herbivores"**

***Speaker*: Ute Olsson**

Plants of Scree and Talus: *Cadamine bellidifolia, Oxytropis nigrescens*

***Leader*: Glenn Brown**

***Mini-Ethno-Botany*: Willow, Yarrow**

***Presenter*: James Sowerwine**

For the latest information about ANPS events and field trips, go to www.aknps.org/

"Like" Us on Facebook!

Participate!

IT IS STILL ELECTION TIME!

We can all breathe a sigh of relief that we have finally pretty much dispensed with another round of national and state elections. Our phones will likely be quieter and mailboxes emptier until the rush of Christmas cheer. But wait – there's more! The best is yet to come! You can be a successful candidate! I promise you this election is low-key, low budget but with immediate results and EVERYONE will win!

Every two years at our December monthly meeting, the Alaska Native Plant Society elects a new Board of Officers. Elections are held in even years, so that means December 1st of 2014 is ANPS Election Evening. It will take place during the "New Business" section of the agenda.

The officers to be elected for a two year term include President, Vice-President, Secretary and Treasurer. Other volunteers coordinate educational, field trip, newsletter and membership committees.

Some officer nominations have come to the Board, but nominations will also be accepted from membership at the meeting. **IF YOU HAVE AN INTEREST IN PARTICIPATING AT THE BOARD LEVEL, WE WOULD DEFINITELY APPRECIATE IT.** Being a Board member is fun, it usually involves delicious dinners, and it is an essential component of a successful Alaska Native Plant Society. Not to mention that you'll have special access to emeritus ANPS Presidents Verna and Marilyn!

Are you eligible to vote?

The ANPS Constitution says "Voting members shall be individuals or organizations having current dues paid, and such memberships shall have a vote(s) according to the following:

- Individual memberships shall be entitled to one vote.
- Family memberships shall be restricted to persons with the same mailing address and shall be entitled to a limit of two votes.
- Student memberships shall be restricted to individuals who are full-time students and shall be entitled to a limit of one vote.
- Group memberships shall be restricted to established non-profit organizations, and shall be entitled to a limit of one vote.

MYSTERY PLANT

This plant is frequently missed in the field, as it grows in dry roadside areas and is not showy enough to draw attention for a closer look.

The three parted lobed leaves are easily recognized to its genus and have a slightly bluish appearance. The 5-petaled flowers have lavender sepals and white petals with a short lavender spur.

It can be found in Eastern Alaska, dry interior sections of South Central Alaska at low elevations, and northern plains areas of Canada.

Answer on Page 6. No Peeking!

Fred Meyer community rewards
Where shopping & giving unite

HELP ANPS EARN DONATIONS JUST BY SHOPPING WITH YOUR FRED MEYER REWARDS CARD!

Fred Meyer is donating $2.5 million per year to non-profits in Alaska, Idaho, Oregon and Washington, based on where their customers tell them to give. Here's how the program works:

- Sign up for the Community Rewards program by linking your Fred Meyer Rewards Card to (non-profit) at www.fredmeyer.com/communityrewards. You can search for us by our name or by our non-profit number **90390**.
- Then, every time you shop and use your Rewards Card, you are helping (non-profit) earn a donation!
- You still earn your Rewards Points, Fuel Points, and Rebates, just as you do today.
- If you do not have a Rewards Card, they are available at the Customer Service desk of any Fred Meyer store.
- For more information, please visit www.fredmeyer.com/communityrewards.

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ALASKA NATIVE PLANT SOCIETY

State and Anchorage Chapter Officers

President	Anjanette Steer
Vice President	James Sowerwine
Secretary	Beryl Wardlaw
Treasurer	Bernadine Raiskums

Anchorage Chapter Program Coordinators

Membership	Bernadine Raiskums
Plant Family	Beth Baker
Mini-Botany	Beth Baker
Field Trips	Marilyn Barker

Newsletter ("*Borealis*")

Editor	Ginny Moore

Borealis is published bi-monthly, fall through spring. Articles may be sent to Ginny Moore, , Anchorage, AK 99516.
Phone or FAX: , E-mail: elfinwood@gmail.com

SUMMER ANPS FIELD TRIP TO DUTCH HARBOR WITH SUZI GOLODOFF

(Suzi is the author of "Wildflowers Of Unalaska Island-A Guide To The Flowering Plants Of An Aleutian Island" — now out in 2nd Edition)

Dates: July 19-21, 2015 - Limited to 12 persons

Costs:

- $40 per day for Suzi Golodoff
- Share cost of van and gas
- Lodging: grand aleutian hotel will give us a discount—rates not set for 2015 yet
- Travel:
  - Ferry out-plane back or
  - Flight both ways: (cheaper way—use airline miles or use Alaska Airlines $99 companion fare and split the ticket with someone)
  - You will be responsible for making your own transportation and lodging plans but do not do so until your class reservation is confirmed.
- Food: We will buy group food for lunch makings; on your own

Timing is essential – airline and ferry reservations for summer fill up early – fishing and tourists are big deals!

If interested, please contact Beth Baker for more details and to make sure space is available:

daisymae@mtaonline.net
or
call and leave a message

DON'T MISS THIS AWESOME TRIP NOT LIKELY TO BE REPEATED BY ANPS IN THE NEAR FUTURE!

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Alaska Botany Forum in Anchorage – New *Draba*?

The Alaska Botany Forum, held at UAA at the end of October, was a unique gathering of amateur and professional botanists. Overviews of field work during the 2014 summer were presented.

One of the most interesting presentations was Justin Fulkerson's (AK Natural Heritage Program) and Dr. Matt Carlson's find of what is likely a new *Draba* species. This species (*Draba healyi*) had been recently reported by Ihsan A. Al-Shehbaz and Gerald A. Mulligan (2013), in the Harvard Papers in Botany, as a new species with only one recorded Alaska specimen from 1980.

Pre-field work research identified likely areas to find the *Draba* north of Cantwell, Alaska. July weather was great and allowed Justin and Matt to hike to the likely areas and, sure enough, they found three populations. These are truly plants of slope and scree! All were found on mountain side slopes or at the base of weathered rhyolite talus and outcrops, typically in more stabilized silt-sand (sometimes overlain with scree). 30-50° slope, N-facing, 90% bare ground. Other plants found in the same environment included *Dryas alaskensis, Lloydia serotina, Salix rotundata, Salix recticulata, Saxifraga oppositifolia, Cardamine purpurea, Silene acaulis, Chamerion latifolium.*

Field samples were sent to Al-Shehbaz, the world's expert on Brassicaceae, at the Missouri Botanical Garden for confirmation. We'll keep you posted!

Ethnobotany in Alaska – Plants Sustaining People

At the November ANPS meeting guest speaker Dr. Gary Ferguson of the Alaska Native Tribal Health Consortium presented a strong case for Alaskans taking advantage of the "Store Outside Your Door".

ANTHC's Store Outside Your Door program was created after a nutrition research demonstrated a strong need for Alaska Native People to incorporate more of their traditional foods to support efforts to decrease illness and disease. The mission is to promote foods which are hunted, grown, fished or gathered in Alaska as the healthiest option for the Alaska Native diet. The Alaska Natives' ancestors thrived for thousands of years living off of native plants, not only for nutrition, but also for their many healing qualities.

The "Gather, Grow" part is what the team has been focusing on for the last year. They have found that many Alaska elders remember harvesting and using certain plants growing up, but fewer and fewer people know how to use them today. Over the past 200 years, much of that knowledge has been lost in the transition to a cash-based economy. Dr. Ferguson and ANTHC are trying to capture traditional knowledge of local foods before it slips away. "The knowledge is still alive, it just needs to be rediscovered," Ferguson said.

Store Outside Your Door Production Webisodes support efforts for Alaska Native People to showcase their unique and nutritious traditional foods and the cultural ways of accessing them in their own--**"Store Outside Your Door."** There are now almost 40 **"The Store Outside Your Door" episodes on YouTube**. Around three minutes long, each video features people from different Alaska communities talking about their traditions. They often share a tasty recipe too -- from abalone and sea cucumber fried rice in Hydaburg to bearded seal oil (misigaq) in Barrow.

More Ethnobotany Options:

ALASKAN PLANTS AS FOOD & MEDICINE SYMPOSIUM

The 4th annual Alaskan Plants as Food and Medicine symposium will be held on June 22-24, 2015 at Alaska Pacific University in Anchorage. There will also be a free community Solstice celebration on June 21. For more information contact Alaska Native Tribal Health Consortium Health Promotion, Disease Prevent ion Program: apfm@anthc.org or 907-729-3639.

ALASKA'S WILD HERBS STUDY GROUP

Come learn about the edible and medicinal uses of the plants that grow in your backyard!
When: 2nd Tuesday of Every Month 7-9pm
Where: Mat-Su College
8295 College Drive, Palmer
Room: FSM 202

December 9: Tonic Herbs
January 13: Digestive Issues and Nausea
February 10: Anti-Inflammatories
March 10: Detoxification
April 14: Women's Issues
May 12: Rashes, Burns, Bug Bites and Other Skin Issues

Send an e-mail to be added to the notification list: akwildherbs@gmail.com

Alaska Native Plant Society 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 for current year. 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.

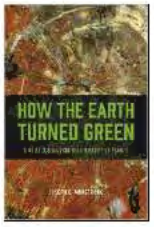
You can download a copy of the order form with these instructions at http://aknps.org/pdfs/Seed_Order_Form.pdf

No.	Name	Comments
1*.	Androsace chamaejasme, Rock Jasmine	
2.	Aquilega formosa, Western Columbine	Easy germination; red/yellow
3.	Arnica amplexicaulis, Tall Arnica	
4.	Arnica frigida, Frigid Arnica	
5.	Caltha leptosepala, Mountain Marigold	Damp stratify
6.*	Diapensia laponicum, Lapland diapensia	
7.	Draba incerta, Whitlow Grass	
8.	Erigeron glabellus, Fringed Fleabane	Easy germination;
9.	Fritillaria camschatcensis, Chocolate Lily	Damp stratify
10.	Iris setosa, Wild Iris, Blue Flag	Damp stratify
11.*	Lloydia serotina, Alp Lily	Damp stratify
12.	Menyanthes trifoliata, Bog Bean	Damp stratify
13.	Papaver albo-roseum, Pale-pink poppy	
14.	Papaver alaskanum, Alaska Poppy	
15.	Papaver lapponicum, Lapland Poppy	
16.*	Parnassia palustris, Grass of Parnassus, Bog Star	Damp stratify
17.	Polemonium acutifolium, Tall Jacobs Ladder	
18.*	Potentilla villosa, Villous Cinqufoil	
19.	Saxifraga tricuspidata, Prickly Saxifrage	
20.*	Silene acaulis, Moss Campion	
21.	Sisyrinchium litorale, Blue-eyed Grass	Damp stratify
22.	Solidago lepida, Elegant Goldenrod	
23.	Wilhelmsia physodes	

References for Germination Protocols

1. http://nativeplants.for.uidaho.edu/network - Good site to search for germination protocols by common or scientific name. Have found that protocols from northern states are most applicable to our species. **Seed Germination Theory and Practice**. 2nd edition. Norman Deno. 1993. http://www.slideshare.net/PX8/t3b244
2. **Seeds of Wildland Plants: Collecting, Processing and Germinating**. James A. Young & Cheryl G. Young. 1986.

FROM OUR BOOKSHELVES



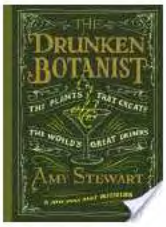
How the Earth Turned Green: A Brief 3.8-billion year History of Plants

By Joseph E. Armstrong
University of Chicago Press, 2014

"Practicing or apprenticing botanists, plant biologists, agronomists, and horticulturists need a detailed understanding of the evolution of plants for a correct perspective on the organisms they study and use, but the current general textbooks provide an inadequate watered-down history. In *How the Earth Turned Green*, through the knowledge, skill, and friendly writing of Armstrong and the wisdom of the University of Chicago Press, we finally have a book to fill this gap. Its eleven chapters—the final two about the flowering plants—tell the whole story, backed up by a detailed and illustrated appendix on fossil and living ancestors going back to the green algae and cyanobacteria. An essential book for plant students and professionals." (David Lee, Florida International University *author of "Nature's Palette: The Science of Plant Color"*)

Using an evolutionary framework, *How the Earth Turned Green* addresses questions such as: Should all green organisms be considered plants? Why do these organisms look the way they do? How are they related to one another and to other chlorophyll-free organisms? How do they reproduce? How have they changed and diversified over time? And how has the presence of green organisms changed the Earth's ecosystems? More engaging than a traditional textbook and displaying an astonishing breadth, *How the Earth Turned Green* will both delight and enlighten embryonic botanists and any student interested in the evolutionary history of plants.
The primary novelty of the 576-page book is based on several things. First, it's the whole history of plants. Second, the book is a narrative. Third, it is intended for a more general readership. Fourth, along the way it attempts to explain how things are known and how science works.

Armstrong is the director of the Laboratory for Plant Identification and Conservation and head curator of the George S. Vasey Herbarium at Illinois State University.



The Drunken Botanist
By Amy Stewart

You might already be a fan of Amy Stewart, the botanist/author of a number of books with quirky plant themes: "*Wicked Plants*", "*The Earth Moved: On the Remarkable Achievements of Earthworm*" "*Flower Confidential: The Good, the Bad, and the Beautiful in the Business of Flowers*". In *The Drunken Botanist*, she explores the dizzying array of herbs, flowers, trees, fruits, and fungi that humans have, through ingenuity, inspiration, and sheer desperation, contrived to transform into alcohol over the centuries.

Sake began with a grain of rice. Scotch emerged from barley, tequila from agave, rum from sugarcane, bourbon from corn. Thirsty yet? Of all the extraordinary and obscure plants that have been fermented and distilled, a few are dangerous, some are downright bizarre, and one is as ancient as dinosaurs--but each represents a unique cultural contribution to our global drinking traditions and our history.

This fascinating concoction of biology, chemistry, history, etymology, and mixology--with more than fifty drink recipes and growing tips for gardeners--will make you the most popular guest at any cocktail party this holiday season.

The Territorial Seed Company has put together a Drunken Botanist Plant & Seed Collection based on the book, and wholesale grower Log House Plants, based in Oregon, is supplying the plants to garden centers and other retailers on the West Coast.

Answer to Mystery Plant (Page 2)

Aquilegia brevistyla
Small Blue Columbine
Ranunculaceae or Buttercup Family

From What We Gather – around the web

Have you ever wished there were a way to stay updated on the latest botonical news in one easy ploce, like a digest? Livescience (http://www.livescience.com/topics/plants/) is a website that comes close. The information reported below all began with stories they published. Warning: the one obnoxious component of the site is horrendous amount of advertising, even hidden in words highlighted in the text. But – and this is a BIG BUT! it is free to internet users, unlike many of the scientific journals they reference.

Plant Life Forms in the Fossil Record: When Did the First Canopy Flowers Appear?

Flowering plants, which make up 90% of all plant life on land, are the most successful group of plants on Earth. When did they begin to dominate? New research conducted from the top of a 130 feet "cherry picker" looks at clues in their leaf plumbing.

Researchers know that angiosperms had diversified and spread before the dino-killing meteorite smashed into Earth and reset life on the planet 65 million years ago. But the fossil evidence is ambiguous as to whether the mass extinction was a tipping point, or if angiosperms were already on their way to world domination before the impact.

In a recent study published online in August 2014, in GEOLOGY, Camilla Crifò, a biologist at the Smithsonian Tropical Research Institute in Panama, and colleagues used leaf vein density to compare modern forests to fossil plants. The team measured leaves from top to bottom in two tropical forests in Panama and one temperate forest in Maryland. In modern tropical forests, sun-loving trees grab the most energy with tightly packed leaf veins, while trees relegated to the shade have leaves with veins spaced wider apart. This leaf "vein density" is a hallmark of photosynthesis, or how fast a leaf can transport water and take in carbon dioxide.

The authors show that venation density, like plant metabolism (i.e., transpiration and photosynthesis), is higher in the leaves located in the forest canopy and decreases in leaves at lower levels. Furthermore, they found that leaves from the forest floor, which are the closest analog to fossil floras, preserve this pattern.

The team also reanalyzed vein density data from the literature from the Early Cretaceous to the Paleocene to determine when flowering plants became part of the upper forest canopy. Vein density values similar to present ones appeared about 58 million years ago, suggesting that angiosperm forests resembling today's tropical forests dominated after the meteorite impact, not before. Crifò's team hopes to continue using vein density to reconstruct the photosynthetic capabilities of plants that lived 140 million years ago.

1,500-Year-Old Antarctic Moss Brought Back to Life

Moss frozen on an Antarctic island for more than 1,500 years was brought back to life in a British laboratory, researchers report. The verdant growth marks the first time a plant has been resurrected after such a long freeze, the researchers said. "This is the very first instance we have of any plant or animal surviving [being frozen] for more than a couple of decades," said study co-author Peter Convey, an ecologist with the British Antarctic Survey. There is potential for even longer cryopreservation, or survival by freezing, if mosses are blanketed by glaciers during a long ice age, the researchers think. Antarctica's oldest frozen mosses date back more than 5,000 years.

And speaking of moss...

Scientists at the Bezanilla Lab at the University of Massachusetts, Amherst are using moss, specifically *Physcomitrella* patens, to study how all cells, plant and animal, may grow.

By removing the cell walls from moss tissue, it is possible to generate a suspension of single cells called protoplasts. Moss protoplasts can be transformed with DNA and then regenerated into whole plants. Moss protoplasts can regenerate into a whole plant within a few days. Moss performs RNAi-induced gene silencing. Double stranded RNA can be generated by transformation of DNA constructs containing inverted repeats of the sequence targeted for gene silencing. Their website http://www.bezanillalab.com/ includes all of their research reports, movies of live cell imaging, and many of the things you might want to know about working with moss – a moss user guide and list of available reagents.

Plants Respond to Salt Just Like Humans Respond to Pain

Plants cannot escape the toxic effects of increased salinity of the soil, but some are able to mount a defense. When roots sense salt, calcium ions rise in a continuous wave throughout the plant. When the plants' shoots received the signal, they alter what they are doing, reconfiguring their cellular functions – manufacturing new molecules that help the plant contend with salt, by adjusting water balance within the plant, and setting up barriers to salt invasion of the plant tissues.

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, pleas 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

☐	Full-time Student	$12
☐	Senior Citizen	$12
☐	Individual	$15
☐	Family	$20
☐	Organization	$30

Name _____

Address _____

City: _____ State_____ Zip_____

Telephone: (Home)_____(Work)_____E-Mail _____

Membership is on a calendar year basis.

Would you rather receive the newsletter by e-mail instead of by snail mail?
It will save ANPS some postage and you'll always receive your newsletter in a timely manner.
Let us know when renewing or by e-mail to elfinwood@gmail.com.

Renewing NOW will give you membership through 2015. ***Sign up a new member for only $10!***

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