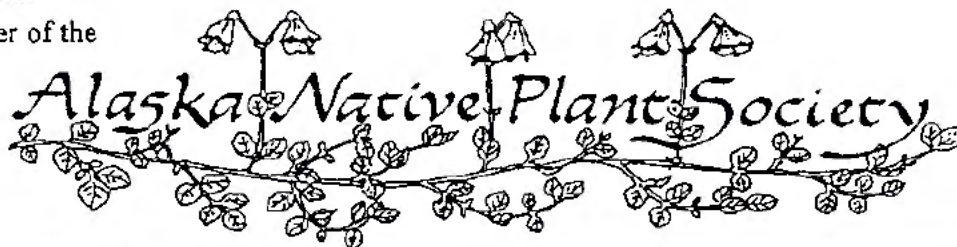


Borealis

the newsletter of the



PO Box 141613, Anchorage, Alaska

Oct/Nov 2018

Join us at our Next Meetings!

Monday, Oct 1, 6:00 p.m

Annual Potluck and Slide Show

Bring a dish and share up to 10 photos of your activities this past summer. The food and memories are always wonderful to share!



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

Main Topic: "Alaska's Invasive Weeds"

Speaker: Tim Stallard

Mini-Botany – "What a Plant Knows"

Chapter 1: "What a plant Sees"

Speaker: Tom Choate

Roseaceae Family Plant: *Sorbus*

Presenter: Glenn Brown

All of our meetings, unless otherwise announced, are held at the Campbell Creek Science Center, S600 Science Center Drive, just off Lake Otis Parkway, south of Tudor.

For the latest information about ANPS events and field trips, go to

www.aknps.org/

"Like" Us on Facebook!

AN ALL NEW SEASON

The October monthly meeting marks the beginning of our move to indoor meetings. We've all had a great summer, in Alaska and on field trips in Newfoundland and other exotic places and now it is time to think about what we have seen and done – and will see and do.

October also marks the end of the current terms of office for this year's ANPS officers. Beth Baker has been an amazing, energetic and enthusiastic President and we're glad that she will still hang around as Past President. As tradition dictates, Dennis Ronsse, who has been Vice-President, will step up to the President's job. He has already demonstrated that he will not be lowering the bar when it comes to amazing, energetic and enthusiastic! At the November meeting all current members will have the opportunity to vote for the slate officers for the 2018-2019 season.

The proposed slate of officers is:

President: Dennis Ronsse

Vice President: Zoe Meade

Secretary: Ginger Hudson

Treasurer: Mary Stella

If you would like to be considered for office, or to nominate another member for an office, please contact Beth Baker before the November meeting.

The list of keynote speakers for the upcoming meetings highlights Alaskan and foreign adventures and topics of concern. The Plant Family Study will continue to focus on members of the Roseaceae Family. Mini-Botany will have an all-new focus, thanks to Marilyn Barker. You can read more about that on Page 2.

We're already beginning to flesh out some exciting field trips and workshops for 2019. Make sure that your membership is current so that you will be able to stay current with what is happening. Membership is on an annual basis, January to January, so although you have a few more months, save yourself some time during the busy Christmas season and renew now! It will save you from the stress of wondering if you are caught up or not, and will keep these newsletters coming without a blip!

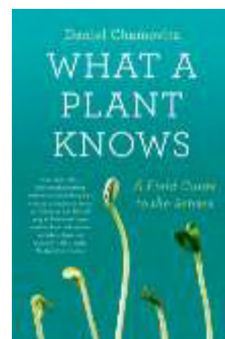
What A Plant Knows – This season's Mini-botany Focus

(First, a very appreciative **Thank You** to all those who offered to present a mini-botany. You make it happen!)

This year's mini-botany series will be a little different than from years past. It is based on a book written up in the Feb/Mar 2018 issue of *Borealis*. The book "**What a Plant Knows**" intrigued our Mini-Botany Coordinator, Marilyn Barker, so she stopped at Barnes & Noble and bought a copy. It became the inspiration for the series.

The book has 7 chapters on how plants perceive the environment which matches perfectly to 7 meetings which need a mini-botany. Each chapter compares a human sense, like sight and taste, to how a plant perceives the same stimuli. Plants may be brainless, eyeless and devoid of senses as we know them, but they have a rudimentary awareness of their environment. Just how a plant responds is explained with a series of experiments. The book has been described as pop science at its best.

The Book: **What A Plant Knows: A field guide to the senses.** By Daniel Chamovitz 2017



The schedule of topics is as follows:

November	"What a plant <i>Sees</i> "	presented by Tom Choate
December	"What a plant <i>Smells</i> "	presented by Joan Tovsen
January	"What a plant <i>Tastes</i> "	presented by Debbie Hinchey
February	"What a plant <i>Feels</i> "	presented by Glen Brown
April	"How a plant <i>Locates</i> "	presented by Marilyn Barker
May	"What a plant <i>Hears</i> "	presented by Beth Baker

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ALASKA NATIVE PLANT SOCIETY

State and Anchorage Chapter Officers

President	Beth Baker
Vice President	Dennis Ronsse
Secretary	Ginger Hudson
Treasurer	Mary Stella

Anchorage Chapter Program Coordinators

Membership	Mary Stella
Plant Family	Dennis Ronsse
Mini-Botany	Marilyn Barker
Field Trips	Dennis Ronsse

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



IT WORKS!

IN THE LAST 3 MONTHS ALONE, ANPS HAS EARNED OVER \$70 FROM JUST 14 MEMBERS SHOPPING AT FREDDY'S!

WON'T YOU JOIN US?

IT DOESN'T AFFECT YOUR OWN REWARDS POINTS.

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.

We're Likin' Lichen!

Story by Beth Baker, Photos by Dennis Ronsse



Dr. Brodo in the field

Did you ever take a class from a professor who wrote the textbook the class used? I never had..... up until taking the Dr. Irwin Brodo's lichen workshop last May. Dr. Brodo's 794 page book *Lichens of North America* is worth owning. The first 113 pages, with excellent illustrations, covers lichen structure, reproduction, physiology, growth, chemistry, and their geographic distribution patterns in North America.

Learning from a book is one thing....but learning from the man who wrote the book takes learning to a higher, more enjoyable level. The five day workshop included field trips to Campbell Creek Science Center, Eagle River Nature Center, and Glen Alps. The groups collected lichens where permits

allowed. These lichens were taken back to a spacious UAA biology lab where each was assessed with microscopes. In order to ID some, a variety of chemicals were used which when applied created colors which allowed their identification. Irvin also gave PowerPoint presentations to further our understanding.



Cladonia stygia

Black-footed Reindeer Lichen

Over 60 species of *Cladonia* occur in southern Alaska

Others in Alaska also benefited from his visit. He gave a lecture at Campbell Creek Science Center on pacific NW lichens. Irvin's wife Fenja, also a PhD, specializing in arctic craneflies, joined him in Alaska. The two doctor Brodos gave a talk on "Diversity in the Natural World: What Lichens and Craneflies Can Tell Us and Why We Should Listen" at the museum. They gave this same lecture a second time at Denali Park.

In short, we learned a lot from this lovely couple. If you missed learning about lichens at this class, fear not....you have another opportunity. James Walton, who is a non-vascular plant expert for the NPS, and Sarah Stehn, who did the first lichen and moss survey of Denali Park, will be co-teaching a 3 day lichen and moss class in Anchorage in mid Mary 2019. Stay tuned for more details.



Dragon Lichen

(*Cladonia scabriuscula*)



Snow Lichen

(*Flavocetraria nivalis*, previously *Cetaria nivalis*) used in health products. Others in this genus have been known as survival foods.



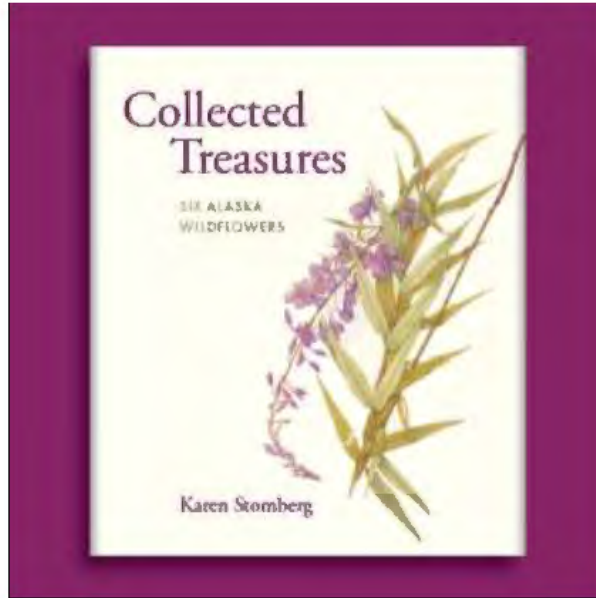
Lobaria pulmonaria

Lung lichen

Collected Treasures: Six Alaska Wildflowers

Karen Stomberg is a botanical artist who has worked extensively with the Georgeson Botanical Garden in Fairbanks to create beautiful art showcasing the natural aesthetics of plants – especially those native to Alaska. In her most recent show, hosted in the Bear Gallery at Centennial Hall in Pioneer Park in August, she has painted specimens from the National Herbarium in Washington, the Harriman Expedition to Alaska. This showing included both the art and scientific information on each of the original collectors. Karen's specimen and species has its own

Collected Treasures: Six Alaska eighteen drawings made from a flowering plant species: Wild Iris, Twinflower, Fireweed and from live and historic specimens. who is happy teaching in the history. She was an art specialist, Fairbanks North Star School District instructor at The University of educational consultant for Project art, art education and STEAM workshops for teachers and students of all ages around Alaska.



D.C., that were collected from and Chukotka, Russia, in 1899. itself as well as historical and specimen, species, and some goal is to show how each story to tell.

Wildflowers is a group of study of six iconic Alaska wild Wild Rose, Bunchberry, Monkshood. Her work is drawn Karen is a long time educator confluence of art, science and then an art coordinator for the for 25 years. She has been an Alaska Fairbanks, was an OneTree Alaska and has taught education at institutes and

Karen says that the process of drawing these plants and digging into records surrounding them has been a satisfying and engaging process. It is clear to her that one beautiful plant at a time, carefully preserved, one meaningful piece of evidence, collected in exuberant ease or in wet, cold, mosquito-infested, Pilot bread-eating misery makes a difference.

Karen is the recipient of a Fulbright Memorial Fund Award, An Arts Educators Grant from Rasmuson Foundation in 2005 and an Individual Artist Award from the Rasmuson Foundation in 2017. The Alaska State Council on the Arts has supported her personal art making and art education career through Travel Grants, Career Opportunity Grants and Workshop Grants.



While this exhibit is no longer showing at the Bear Gallery, it has been developed into a small art book which may be available for sale there. This free admission fine art gallery and gift shop is the product of a partnership between the Fairbanks Arts Association and Fairbanks North Star Borough Parks . It is located in the heart of Pioneer Park, on the third floor of the Alaska Centennial Center for the Arts in Pioneer Park at 2300 Airport Road. Winter hours: Noon to 6 pm, Tuesday through Saturday.



FROM WHAT WE GATHER

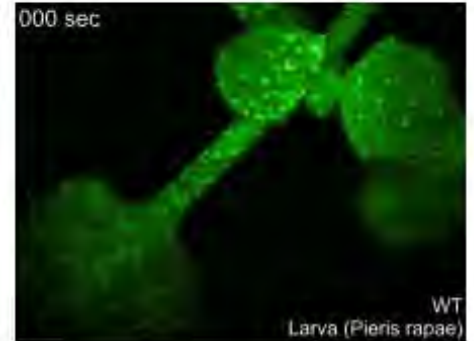


How Leaves Tell Each Other About a Bug Attack

A multi-university study has revealed how plant communication systems respond to threats from herbivores. The results, featured in *Science* on September 14, 2018, show that once wounded, plants use calcium signals to warn distant tissues of future attacks.

The study found that a chemical called glutamate – which is an abundant neurotransmitter in animals, including humans – activates a wave of calcium when the plant is wounded.

In one video, you can see a hungry caterpillar, first working around a leaf's edges, approaching the base of the leaf and, with one last bite, severing it from the rest of the plant. Within seconds, a blaze of fluorescent light washes over the other leaves - a signal that they should prepare for impending attacks by the caterpillar or its kin.



That fluorescent light tracks calcium as it zips across the plant's tissues, providing an electrical and chemical signal of a threat. The video is part of a study that shows how glutamate – an abundant neurotransmitter in animals – activates this wave of calcium when the plant is wounded. You can watch some of this amazing video and learn more about the study at: [Michigan State University](#)

Plant Blindness – Not a Problem for ANPS Members, But Worldwide Epidemic

If you lived in London at the height of William Shakespeare's fame, in the 15th century, you probably knew a fair amount about plants. The famous playwright often alluded to potions and poisons derived from plants, and most of his audience would have recognized them. By comparison, research has shown that most modern Londoners can't name more than a few wild flowers. This is true of most people in most cities in the world. Ask them who Kim Kardashian is and you'll get a more knowledgeable response.

There's a name for this inability to notice or recognize plants in one's own environment: "**plant blindness**". Two botanists, James Wandersee and Elisabeth Schussler, have proposed that our inability to see and notice plants is because they lack visual attention cues. They don't have a face; they don't move in the way that animals do; and they aren't threatening. Our eye-brain system and the visual cortex filter out so much "data" from what we see daily that most of the visual information about the plants we see is discarded.

This is a serious problem in today's world for when people don't pay attention to plants they are less likely to appreciate the importance and the role of plants in life on earth and to support plant conservation and research. As botanists have begun to understand this problem, many are suggesting ways to overcome it.

Further Links:

1. A research paper by Dr. James Wandersee: **Towards a Theory of Plant Blindness** at [Botany.org](#) To quote Dr. Wandersee, "*Paradoxically, plants form the basis of most animal habitats and all life on earth. While animals frequently steal the spotlight where extinction is concerned, one in eight plant species worldwide is currently threatened with extinction. Intellectually, we know that you don't get pandas without bamboo plants, but culturally, this is often forgotten*".
2. Benedict Furness, a Biology student at Bath Spa University, produced a video that articulates the problem of plant blindness and suggests ways in which this can be overcome. Please watch it, and share it in the hope that we can all help to make a difference to this issue. <https://www.youtube.com/watch?v=SuTkgcFjOWw>

Eschscholtz Buttercup

Ranunculus eschscholtzii

This cheery yellow buttercup honors Johann Friedrich Eschscholtz (1793-1831). Eschscholtz was the imperial Russian botanist and entomologist on the expeditionary ship Rurik under the command of Otto von Kotzebue from 1815-1818. The expedition circumnavigated the globe for the purpose of finding a northwest passage and exploring the lands bordering the Pacific Ocean. In addition to Eschscholtz, the scientific team included botanist Adelbert von Chamisso and artist Louis Choris. All 3 have these men contributed greatly to the early knowledge of Alaska natural history and their Latinized names grace many Alaska plants.



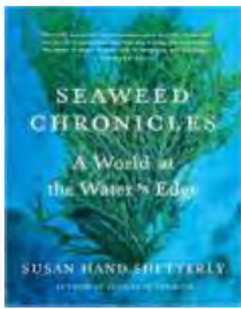
Eschscholtz was invited on a second voyage, again commanded by Otto von Kotzebue, he accepted. This second voyage was to resupply ports in the Pacific NW between California and Alaska from 1823-1826. This time his ship was the *Predpriaetie* (which translates to the "Enterprise"!) Eschscholtz continued making collections of plants and insects. When he returned home he began work on describing the specimens he found, however, he became ill and died at the age of 37. His colleagues honored him by continuing his work and naming several species and one genus in his name: the California Poppy *Eschscholzia californica*.

The flora of Alaska recognizes a couple dozen yellow buttercups, they all have in common bright shiny yellow flowers. Buttercups are actually easy to identify to genus because of the five glossy petals. The glossiness is achieved by combining thin walled epidermal cells filled with an oily yellow carotenoid pigment (and lacking all other cellular structures) over a layer of cells densely packed with white starch granules. The white surface below the yellow oily cells enhances the light reflection and makes the petals appear to have been buttered! Even white buttercups have this special sheen.

Buttercups are in the genus *Ranunculus* the namesake of the family Ranunculaceae. Buttercups come in all sizes from the pygmy buttercup (*R. pygmaeus*) at 1 cm to 1000 times that size. The Eschscholtz buttercup ranges between 5 and 25 cm in height. It is an erect plant, never rooting at the nodes. The basal leaves are reniform to oval in outline, 3 cleft and again lobed (see photo). Stem leaves are alternate or lacking. Stems and leaves are glabrous, which means they lack hairs. Five sepals are yellowish and five petals are glistening yellow. Stamens are numerous as are the simple pistils. The flower is complete (has petals and sepals) and perfect (has stamens and pistils). The fruit is an achene. A warning Eschscholtz buttercup and all buttercups contain toxins and should not be eaten.

Eschsholtz buttercup can be found throughout south-central Alaska, west along the Aleutian chain and north to the Alaska range. It's distribution continues along the coast to SE Alaska. It prefers alpine meadows and creeks, sometimes occurs on talus slopes, particularly at the edge of its range. Outside Alaska it follows the mountains, through western Canada south to New Mexico.





FROM OUR BOOKSHELVES



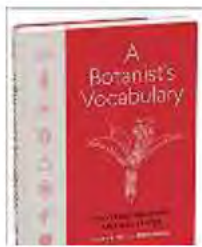
Seaweed Chronicles: A World at the Water's Edge

by Susan Hand Shetterly
Workman Publishing Company
August 2018

Seaweed Chronicles is a deeply informative look at a little understood and too often unappreciated part of our habitat. It is about seaweed species, the wild lives they feed and shelter, the harvesters who cut seaweeds, and the aquaculturists who grow them. It explores the work of scientists who protect habitats that are essential to the wellbeing of the oceans, and those who struggle to provide jobs for coastal people. One reviewer wrote: “*You might not expect unfettered passion on the topic of seaweed, but Shetterly is such a great storyteller that you find yourself following along eagerly.*”

“Seaweed is ancient and basic, a testament to the tenacious beginnings of life on earth,” writes Susan Hand Shetterly in this elegant, fascinating book. “Why wouldn’t seaweeds be a protean life source for the lives that have evolved since?” On a planet facing environmental change and diminishing natural resources, seaweed is increasingly important as a source of food and as a fundamental part of our global ecosystem.

Shetterly takes readers deep into the world of this essential organism by providing an immersive, often poetic look at life on the rugged shores of her beloved Gulf of Maine, where the growth and harvesting of seaweed is becoming a major industry. While examining the life cycle of seaweed and its place in the environment, she tells the stories of the men and women who farm and harvest it—and who are fighting to protect this critical species against forces both natural and man-made.



A Botanist's Vocabulary – 1300 Terms Explained and Illustrated

By Susan K. Pell and Bobbi Angell
Timber Press
2016

Gardeners are inherently curious. They make note of a plant label in a botanical garden and then go home to learn more. They pick up fallen blossoms to examine them closer. They spend hours reading plant catalogs. But they are often unable to accurately name or describe their discoveries. *A Botanist's Vocabulary* gives gardeners and naturalists a better understanding of what they see and a way to categorize and organize the natural world in which they are so intimately involved. Through concise definitions and detailed black and white illustrations, it defines 1300 words commonly used by botanists, naturalists, and gardeners to describe plants.

It is important to note the authors' focus on *practice*. This new glossary features not only plant morphology terms, but terminology from many disciplines. In addition to words like *scape*, *lacule* and *wharf*, are terms from at least 11 areas within the natural sciences. Here's a short list as an example:

- Soil science (e.g., calcareous)
- Molecular biology (e.g., chimera)
- Pollination biology (e.g., chiropterophily)
- Plant ecology (e.g., clinal variation)
- Plant taxonomy (e.g., conserved)
- Horticulture (e.g., cultigen)
- Genetics (e.g., hybrid swarm)
- Tissue culture (e.g., explant)
- Orchidology (e.g., keiki)
- Ecology (e.g., myrmecophyte)
- Biogeography (e.g., paleotropics)

The inclusion of terms such as these helps readers see beyond the morphological features of plants and beyond botany.

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 | \$12 |
| <input type="checkbox"/> | Senior Citizen | \$12 |
| <input type="checkbox"/> | Individual | \$15 |
| <input type="checkbox"/> | Family | \$20 |
| <input type="checkbox"/> | Organization | \$30 |

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City: _____ State _____ Zip _____

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Membership is on a calendar year basis.

**An All New Season of Monthly Meetings!
Join Us for the October Potluck and Slideshow
Details Inside**



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