# Borealis

The Newsletter of the Alaska Native Plant Society

PO Box 141613, Anchorage, Alaska | December 2024- January 2025


## Join us at our Next Meetings!

**Monday, Dec 2, 2024**

**Via Zoom or at Campbell Creek Science Center**

In-person Potluck: 6-6:45 pm
Member Meeting: 7-9 pm

Main Topic: **"Moonwort Madness"**
Speaker: Cindy Johnson

Aquatics: Ranunculaceae (Buttercups): Marilyn Barker

Medicinal Plants: **Speaker: Beth Baker**

**Monday, Jan 6, 7:00 PM**

**VIA ZOOM ONLY**

Main Topic: **"AKNPS Field Trips"**
Speakers: Debbie Hinchey, Glenn Brown, Dennis Ronsse

Monocots: Introduction
Speaker: Glenn Brown

Medicinal Plants: **Speaker: Sara Hogan**

**In-Person Meetings**
**Campbell Creek Science Center**
**5600 Science Center Dr, Anchorage, AK 99507**

**Virtual Meeting Link**: Join via Zoom
Meeting ID: 947 5146 9324
Passcode: 812931

**For the latest information about ANPS events and field trips, go to www.aknps.org/ or find us on Facebook.**

# Membership Renewal Time!

## We're Over 300 Members-Strong! Join Us!

At our November meeting, outgoing Treasurer Aaron Wells reported that our current membership roster included 322 paying members! Back in 2020 that number was only 90. And while 2020 was the Covid-era, when life gave us lemons, we not only made lemonade, we planted the seeds, nurtured them, and are now growing our own "orchard". We've taken the lessons we learned from necessary online meetings to now be able to offer combination in-person and Zoom meetings. Members from around the state and across the country can participate more fully!

Although non-members are always welcome at our meetings, **members are the lifeblood of our organization**. They're the reason why we do what we do and they're what keeps our organization running. The more members we have, the bigger impact we can make on our community and achieve our mission.

## Breaking news

**Potentilla Workshop – July 11-12, 2025 - Anchorage**

Puzzled by Potentilla? Baffled by all the name changes? This upcoming workshop is for you! It will provide a worldwide overview of all of Potentilleae, hands-on examination of freshly collected and herbarium representatives of a wide diversity of Alaska's Potentilleae, and an outing to observe the complexity of local populations. In the process we'll learn the rationale for the recognition of segregate genera such as *Drymocallis*, *Dasiphora*, and *Comarum*, with a look at ongoing challenges. We'll also take a close look at particularly problematic groups in Alaska, notably sect. Niveae and sect. Pensylvanicae, in an effort to clarify the nomenclatural musical chairs that has been taking place over the last several decades.

Taught by Dr. Barbara Ertter, lead author of ***Potentilla and related genera*** for ***Flora of North America***, emeritus Curator of Western North American Flora at the University and Jepson Herbaria, UC-Berkeley.

# Thank You for Your Service – Past and Future!

November was election month all over the country, and no matter how you feel about those political results, we know you'll be enthusiastic about OUR election news. As a community organization, the Alaska Native Plant Society is governed by a board of which the 4 executive members are elected by its members for a two-year term. We have a great slate of officers we hope you'll welcome aboard!

It's a bizarre role a person must play when on the Board of Directors for a nonprofit organization. Basically, board members, who usually also have a full-time job, are responsible for setting strategic direction, and serving as advocates for an organization that does not pay them. Board service is the toughest volunteer role. And yet, board members come and go every day in the nonprofit sector without much fanfare. As board members rotate off nonprofit boards, there's a pat on the back, a gift, a thank you.

As we take time to recognize and **sincerely thank** our outgoing board members and welcome new members, we also want to extend a heartfelt thanks to ALL of our volunteers - past, present, and future - for their contributions and dedication to the ANPS mission.

## We REFUSE To Say Farewell to Outgoing Board Members – You Don't Get Off So Easily!

**Elizabeth Bluemink** has served as President of the ANPS board for two terms,– including those Covid years. She has passionately helped guide us through several transitions as we dealt first with only virtual meetings and then transitioned to a combination. She has spearheaded so many projects for the club, including Native Plant Month, and hoody choosing! Luckily for us, Elizabeth will be assuming the role of Editor of the Borealis newsletter. She comes to that with great credentials: she was the 2010 David Stolberg Meritorious Service Award Winner from the Society of Environmental Journalists, and was an environmental journalist for the Anchorage Daily News. Expect fabulous changes in this newsletter in months to come!

**Preston Villumsen:** Shortly after moving to Alaska, while out photographing insects, a serendipitous encounter with ANPS botanist Dennis Ronsee inspired Preston to join the Alaska Native Plant Society. It was while on group hikes with us that Preston developed a love of lichens and Alaskan flora in general. Preston is currently working at the Alaska Center for Conservation Science, with various projects from the Alaska Bee Atlas, rare plant surveys, and the early stages of writing an Alaskan lichen field guide. With all of that on his plate, we hope that Preston will stay connected with our club!

**Aaron Wells**' official title was Treasurer, which means he was in control of collection and disbursement of our funds – as well as keeping track of and reporting them! But during his two terms on the Board, he has provided so many more services. The membership database he and Timm developed will be especially useful to Aaron as we are so fortunate that he will be continuing in a new role as membership coordinator. He specializes in ecosystem classification, so you can be sure he's got you classified.

And, our Secretary **Anne Gore**, who sprang into service mid-term, doesn't even get a reprieve! She will continue to fulfill that role. You can read more about her on the following page.

# ANPS Is Truly State-wide!

## Meet The New Board Officers

While the Alaska Native Plant Society has always aimed to offer a state-wide focus on our native plants, and we've encouraged member participation from outside the Anchorage area, it hasn't traditionally been easy to promote. Now, with the benefits of on-line meetings, we can all share the botany – just not the cookies.

**Sara Hogan – President, Chase, Alaska**

Hello, I'm Sara, and I'm honored to be the new president of the Alaska Native Plant Society. My love for plants started when I was young, especially with a focus on their medicinal uses. When I moved to Chase—a small, remote community north of Talkeetna—it reignited that passion in a whole new way. Surrounded by the wild beauty of the boreal forest, I dove into gardening and studied ethnobotany at UAF to really deepen my connection and understanding of our native plants. Living here has given me such a strong appreciation for Alaska's unique flora, and being part of a community like this—where people share the same passion—feels like the perfect place to learn, grow, and exchange knowledge. While I'm new to AKNPS, I'm excited to be part of the community and contribute in any way I can. I also love passing this passion on to my 13-year-old son, who has a budding interest in native plants. He's read Janice Schofield's books and my ethnobotany texts cover to cover, and can already recognize and understand the uses of many of Alaska's native plants. I'm looking forward to the chance to engage, continue learning, and help foster a deeper understanding and appreciation for Alaska's incredible plant life.

**Amy Tippery - Vice President, Fairbanks, Alaska**

Native plants have always been wise companions. I grew up on the coast and rainforest of Cascadia, Alaska's southern bioregion, stuffing my face with salmonberry and carefully rolled nettle leaf. For the last 20 yrs, these have been replaced by saskatoon and raspberry while I humbly learn the plant ways of the Interior and sub-arctic. Wetlands work and studying Zostera for my masters brought me here, and working collaboratively to support and conserve our wild places keeps me busy. In 2014 I co-led efforts to stand up an Interior chapter of AKNPS with Jeff Mason and others. I would like to use my volunteer time to re-invigorate this chapter, and be of service to the organization in my relentless promotion of native plants. In my professional time, I help lead the Alaska Native Plant Working Group, a collective of agencies and groups, in a push to stand up native plant nurseries in each region of the state. These will ensure Alaska's bounty of native flowers, forests, berries and traditional medicines are available for restoration and reclamation of degraded places, sharing cultural knowledge, and supporting wildlife for the next generation.

**Zoe Meade – Treasurer, Palmer, Alaska**

I've been a member of the Alaska Native Plant Society for six years and have loved learning and exploring through the events and lectures. I'm honored to be working with the board again. I grew up in Alaska and attended school at the University of Alaska. My family lives in the Knik River Valley. I worked in the environmental industry till I became a mom 10 years ago. Now I fill my summers with kid camping trips, filling plant presses, and seasonal field work. The pandemic gave me the opportunity to be home-based for a season and I was able to spend time developing art endeavors. Thank you for this opportunity; I look forward to helping support ANPS over the next two years.

**Anne Gore – Secretary, Anchorage, Alaska**

I am a communications and fundraising professional and have worked for several different nonprofit environmental organizations. I am also a certified Alaska Naturalist through the now defunct Alaska Naturalist Institute at UAS. My botanical interests include photographing wildflowers, foraging, and learning about traditional and medicinal uses of plants. I became a member of the Alaska Native Plant Society (AKNPS) after being invited on a really fun plant hike organized by the society. In January of 2024 I accepted an invitation to fill a last-minute opening for the board Secretary position. I have greatly enjoyed my role as Secretary, which is primarily responsible for recording the minutes from each board meeting, as well as corresponding with our members, guest speakers and presenters. I am grateful for the opportunity to serve the organization in this capacity and am interested in continuing this work for another two years. I look forward to working with the other board members to organize and promote member education and engagement opportunities, to assist with member communications, and to personally learn more about Alaska's beautiful and fascinating native flora.

# Gifts For Botanists

This winter solstice season is also a  time of year when our thoughts are drawn to gift giving. Whether you are a professional botanist, an aspiring one, or just want to encourage a loved one to get involved, there are so many ways you can "gift" them!  Here are a few that might inspire you.

1. **ANPS Membership** – We aim to keep our membership fees economical enough for any budget, but

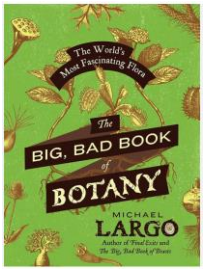
**2. ANPS Merchandise:** we've created 2024 Alaska Native Plant of the Year shirts now available for purchase! The shirts feature a botanical drawing in the Flora of North America (see FNA fireweed info). Fun fact: AKNPS sponsored the FNA drawing several years ago, and the folks at FNA endorsed our shirt project.

**3. Plant Press**

a. The do-it-yourselfer might want to craft their own
b. Standard Wood Press – from large to hand-held
c. Large Microwave Flower Press Kit, for use in a standard microwave oven, producing consistent results in minutes, effectively drying and pressing plant material while preserving its color well.


4. **Hand Lens:** You can't go wrong with a 10x hand lens, a standard tool for anyone looking at small identifying features in the field, or for plant inspections at home. We can always use more!

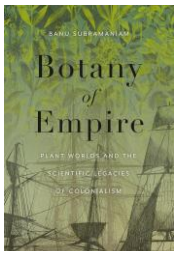
**5. Books**: There is no better gift for botany lovers than a new book. Every one of our newsletters has included information about a few books that have caught our attention but just by googling "Botany books" you'll go down a rabbit hole of incredible ideas for all ages and levels of interest. The options are amazing – from bare bones botany to field guides, gardening, medicinal herbals, mysteries and children's books.




6. **There's an app for that** - Plant identification apps for smart phones have seen significant improvements over the past several years, offering the opportunity to take a photo and get an instant identification in many cases.  You can share information about an app like PlantID, which is free, or offer a gift subscription for a plant-id app or offer them an app store gift card with a list of pre-re  searched apps for geeky plant lovers



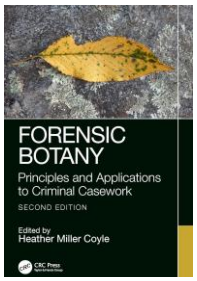

# From Our Bookshelves




## Botany of Empire: Plant Worlds and Scientific Legacies of Colonialism

Author: Banu Subramaniam
University of Washington Press
June 25, 2024
ISBN : 978-0295752457

"Colonial ambitions spawned imperial attitudes, theories, and practices that remain entrenched within botany and across the life sciences. Banu Subramaniam draws on fields as disparate as queer studies, Indigenous studies, and the biological sciences to explore the labyrinthine history of how colonialism transformed rich and complex plant worlds into biological knowledge. Botany of Empire demonstrates how botany's foundational theories and practices were shaped and fortified in the aid of colonial rule and its extractive ambitions. We see how colonizers obliterated plant time's deep history to create a reductionist system that imposed a Latin-based naming system, drew on the imagined sex lives of European elites to explain plant sexuality, and discussed foreign plants like foreign humans. Subramanian then pivots to imagining a more inclusive and capacious field of botany untethered and decentered from its origins in histories of racism, slavery, and colonialism. This vision harnesses the power of feminist and scientific thought to chart a course for more socially just practices of experimental biology.




## Forensic Botany

Editor: Heather Miller Coyle
CRC Press: August 26, 2024
ISBN 978-1439866740

**Forensic Botany: Principles and Applications to Criminal Casework**, Second Edition updates what, at the time, was the very first book published on the subject. This latest edition offers a concise introduction to plant identification, biology, genetics, and how to utilize and apply botanical evidence in criminal cases.

In recent years, forensic botany and the use of various plant and plant-derived evidence have been increasingly utilized in criminal investigations and court cases. Likewise, forensic palynology and other such terms have entered the vernacular as botanical sciences have widened the applications in which such evidence can help solve cases. This includes the use of current and emergent genetic markers and DNA technology, toxicology, diatoms, and pollen. The numerous advances since the last edition was published necessitated added coverage of the technology and testing capabilities that have achieved new levels as the field has developed.

The chapters are written by some of the top experts in the field. Every chapter in the Second Edition is fully updated, with several new chapters focusing on Random Amplified Polymorphic DNA (RAPD), Restriction Fragment Length Polymorphism (RFLP), and Amplified Fragment Length Polymorphism (AFLP), plant-derived toxins and forensic toxicology, identifying ancient plants used in burial practices for dating sites, digested plants as evidence, and more.

Forensic Botany provides scientists working with DNA, trace evidence, and botanical evidence—as well as investigators and legal professionals—with a thorough understanding of the latest advances and current capabilities in utilizing such evidence in investigating and adjudicating criminal cases.

# From What We Gather – Q&A Research

## Why Do Flowers Wilt?

A quick search on the internet asking why flowers on living plants wilt produces the usual answers: that the plant is stressed and needs more or less water, more or less sun, better soil conditions. But a recently published study in the journal Plant Biology suggests that a wilting flower is not always a sign of poor health or inadequate care. It could actually be a strategic play, millions of years in the making, created by Mother Nature herself.

Researchers from Macquarie University in Australia, along with international collaborators, have discovered a simple strategy that has been overlooked: plants recycle resources from wilting flowers for future reproduction. “Our research delivers the first direct demonstration that plants can salvage resources from wilting flowers and reuse these resources to promote future reproduction,” said lead author Professor Graham Pyke from Macquarie University. Why bother with this recycling effort? Well, flowers aren’t just pretty faces. They are rich in energy and nutrients such as nitrogen and phosphorus. When they wilt, it isn’t necessarily the end but rather the beginning of another chapter.

The researchers found that plants in their study did not use resources from wilted flowers to bolster short-term reproduction. “These plants salvage resources invested in reproduction during one flowering season and reuse these resources during the next flowering season,” explained Professor Pyke. *Blandfordia grandiflora,* for instance, was found to transfer resources from its wilting flowers to its underground corms and roots, effectively storing this “chemical energy” to produce new flowering stems in the subsequent season, often a year later.

Professor Pyke noted that plants work on principles similar to economics. “Plants must make decisions about where to allocate their limited resources; investing in one area means they can’t invest as much in another.”

Professor Pyke says plants have evolved diverse strategies for managing their flowers after they've served their primary reproductive function, with wilting just one of several possible approaches.

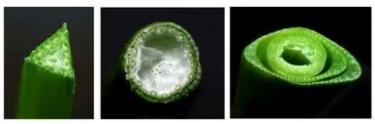
Some flowers will still bloom on some plants long after they can be fertilized and after they stop producing nectar. "Flowers make the whole plant more attractive to pollinators even when they are just there as part of the overall display," he says.

Some plants will even drop their blooms well before they wilt. "For example, jacaranda flowers that seem perfectly good will just drop to the ground; frangipani trees will also shed intact flowers rather than have them wilt."

*Macquarie University. (2024, November 1). The reasons flowers wilt could explain how plants spend (and save) their energy. ScienceDaily. Retrieved November 5, 2024 from www.sciencedaily.com/releases/2024/11/241101123836.*htm

“ Sedges have edges and rushes are round and grasses have JOINTS when the cops aren't around”...or was it “grasses have KNEES that bend to the ground” or “grasses are HOLLOW right up from the ground? Or “…” ?

Which one works best for you?



# WHY ARE INNER AND OUTER SIDES OF FLOWER PETALS DIFFERENTLY COLORED?

The flower perianth has various, non-mutually exclusive functions, such as visual signaling to pollinators and protecting the reproductive organs from the elements and from florivores, but how different perianth structures and their different sides play a role in these functions is unclear. Intriguingly, in many species there is a clear color difference between the different sides of the perianth, with color patterns or pigmentation present on only one side. Any adaptive benefit from such color asymmetry is unclear, as is how the asymmetry evolved.

In this viewpoint paper, researchers addressed the phenomenon of flowers with differently colored inner and outer perianth sides, focusing on petals of erect flowers. Guided by existing literature and our own observations, they delineated three non-mutually exclusive evolutionary hypotheses that may explain the factors underlying differently colored perianth sides. 1. The pollen-protection hypothesis predicts that the outer side of petals contributes to protect pollen against UV radiation, especially during the bud stage. 2. The herbivore-avoidance hypothesis predicts that the outer side of petals reduces the flower's visibility to herbivores. 3.The signaling-to-pollinators hypothesis predicts that flower colors evolve to increase conspicuousness to pollinators. The pollen-protection hypothesis, the herbivore-avoidance hypothesis, and the signaling-to-pollinators hypothesis generate largely but not entirely overlapping predictions about the color of the inner and outer side of the petals. Further field and laboratory research is necessary to disentangle the main drivers and adaptive significance of inner-outer petal side color asymmetry.



**Evolutionary hypotheses to explain why inner and outer sides of petals are often differently coloured: signaling to pollinators, avoidance of herbivores, protection against UV-radiation**


UV-pattern only on the outer side of the petals

Strong UV-absorption of the flower bud

UV-pattern only on the inner side of the petals

Pale colour and moderate UV-reflection on the outer side of the petals

Colour pattern only on the inner side of the petals

Colour of the outer side different to to any colour of the inner side

Stronger UV-absorption on the inner side of the petals in *T. m.*

No noticeable difference of the colour of the inner side and outer side of the petals in *C. c.*

## And for the "Ferners" among us:

Why should you never look under ferns? You'll get a sore eye (sori).

How does an old fern begin its stories? "Well, bracken the day..." *(With a nod and a wink to Tom Choate!)*

# 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 or to renew, you can either use our convenient on-line method by going to https://aknps.org/membership, or 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 | E-Mail Newsletter | Snail-Mail Newsletter | Both Mail Deliveries |
|---|---|---|---|
| ☐ **Full-time Student** | **$12** | **$22** | **$22** |
| ☐ **Senior Citizen** | **$12** | **$22** | **$22** |
| ☐ **Individual** | **$15** | **$25** | **$25** |
| ☐ **Family** | **$20** | **$30** | **$30** |

**Name:** _____

**Address:**_____

**City** _____**State:** _____**Zip:**_____

**Telephone: (Home)**_____**(Cell)**_____**E-mail**_____

**Celebrate the New Year!**

**Meeting ID: 947 5146 9324; Passcode: 812931**

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