Borealis

the newsletter of the

Alaska Native Plant Society

PO Box 141613, Anchorage, Alaska March/April 2012

Join us at our Next Meetings!

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

Topic: "What's New and Native At the Alaska Botanical Gardens?"

Speaker: Julianne McGuinness
Executive Director, ABT

Plant Family: *Euphrasia* and *Rhinanthus*

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

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Monday, April 2, 7:00 p.m.

Topic: Carnivorous Plants - Beware!

Speaker: Mike Baldwin. President International Carnivorous Plant Society

Plant Family: *Pedicularis*
Presenter: Annie Nevaldine

Always be prepared for
Verna Pratt's Mystery Plant!

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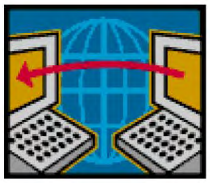

Planning Ahead

It's that time of year again – time to "Think Summer" – as in "Field Trips"!

It is time to start planning this summer's field trips so that all members can arrange their own summer plans accordingly, especially if trips require extra time or money, or a limit on how many can attend. Our outings are ALWAYS fun, no matter what size the group, or whatever the weather. There have been many memorable trips. Let's make this a memorable year.

On Page 3 you'll find the standard Field Trip Planning Worksheet and once again we're asking you to get all excited about taking a group of plant lovers to one of your favorite places to enjoy the summer bounty.

All members are encouraged to submit field trip proposals, even if you don't consider yourself an expert botanist. There is always someone along who can help you figure out what you might be seeing – and that's part of the fun of these trips!

Preliminary proposals for field trips should include the following:

1) Your name and email address,
2) Title of the field trip,
3) Name(s) and contact information for all organizers,
4) A brief description of the field trip,
5) Preferred day(s) of the field trip,
6) Special needs,
7) Enrollment limit and
8) Tentative budget (e.g., travel and food items; estimated cost per participant).

It would be great if we could have the whole slate of summer activities lined up by the end of April!

***Scrophulariaceae* (the Figworts)**

Pedicularis - Louseworts

In April Ann Nevaldine will continue our study of what used to be the Scrophulariaceae family with a discussion on the *Pedicularis* genus. This circumboreal genus, known commonly as Louseworts, has twenty-something species growing in Alaska, and has been reclassified into the Orobanchaceae, or Broomrape Family. Nearly all of these North American

Almost all *Pedicularis* are hemiparasitic, meaning that, while they contain chlorophyll and can live without attaching to another plant, they will parasitize if presented with the opportunity. Suction-cup-shaped protuberances on its roots, called haustoria, connect the phloem of *Pedicularis* with that of the host plant. Root parasites are able to draw compounds through their roots by maintaining transpiration rates that are higher than those of their hosts. In some *Pedicularis* species, haustoria form on the fine roots away from the center of the plant, and not on the larger roots near the crown. Haustoria average 1.5 mm in diameter. Most *Pedicularis* are not host-specific. They have been found attached to graminoids, broad-leaved flowering herbs, woody plants, horsetails and ferns. Other species of *Pedicularis* have been known to develop haustorial attachments to inanimate objects. Nonetheless, some host plant species may provide a better source of nutrients than others. Potential host plants that are deep-rooted may not have roots accessible to the roots of Pedicularis seedlings for example.

Haustorium: The bridge of tissue connecting the host and parasite, usually a swollen mass consisting of both host and parasite tissue. this acts as a conduit for the flow of water and nutrient from host to parasite. the appendage or of the root of a parasitic plant that penetrates the host's tissue and draws nutrients from it. Haustoria do not penetrate the host's cell membranes.

The general structure of such a haustorium is shown on this picture. The body of the haustorium consists of parenchymatic ground tissue and a central vascular tissue. The vascular tissue builds the link between the two central cylinders of parasite (in cross section, above) and host root (in longitudinal section, below).
General and specific information are given in the textbook Weber (1993): Parasitismus von Blütenpflanzen, Wissenschaftl. Buchges., Darmstadt (UB Marburg: Biol 270, Bibl. Fb Biologie: G 860:9)

What does the *Pedicularis* acquire from this relationship? There are the basic products of photosynthesis. There are minerals. There's water. And there are alkaloids. Chemical analysis of tissue from five *Pedicularis* species consistently revealed the presence of alkaloids also found in the host plant's roots. This could be a general feature of the genus and raises interesting ecological questions. Alkaloids exhibit potent biological effects—often deadly—and can protect plants from insects or other herbivores, including humans. Can hemiparasites commandeer alkaloids for their own protection? Biologist Lynn Adler demonstrated just this by growing Texas paintbrush (*Castilleja indivisa*), a southern relative of our local *Castilleja* species, alongside "bitter" and "sweet" varieties of lupine. Texas paintbrush plants parasitizing "bitter" lupines, which contain high levels of alkaloids, were far less prone to insect damage and produced more viable seed. What are the implications for preserving hemiparasitic plant species, especially generalists? For each species, it isn't just a matter of securing a host, but identifying the *appropriate* host—or combination of hosts—to ensure the plant is prepared to resist the local array of insect and mammalian (e.g., deer) pests. There's also a serious lesson here for herbalists. The value or safety of a plant could depend on where it is growing. For example, though wood-betony is classified as a medicinal plant, you probably don't want to consume wood-betony growing near *Senecio vulgaris*; this introduced host's roots contain potent alkaloids that cause hepatic necrosis.
Wood-betony also acquires an indirect benefit from its relationship with host plants. By weakening the competition—by diverting resources—this generalist can suppresses the growth of other plants and opens up the canopy for itself and its comrades. Ecologists noticed a tendency for wood-betony to grow alongside relatively shorter populations of certain grasses and forbs, but there was the question of which arrives first, the wood-betony or the shorter competitors. It could simply be soil conditions. But research by Andrew Hedberg and others of Illinois State University clearly showed wood-betony reduces the above-ground growth of plants such as tall goldenrod (*Solidago canadensis*) and big bluestem (*Andropogon gerardii*). Not all species studied were affected, but it is clear wood-betony can shift the balance of power on a patch of prairie sod.

ALASKA NATIVE PLANT SOCIETY

2010 FIELD TRIP PLANNING WORKSHEET

Return this form to: Marilyn Barker by April 15. E-mail: afmhb@uaa.alaska.edu; Phone:

Leader: _____

Telephone: _____ FAX: _____ E-Mail: _____

Field Trip to: _____

Date: _____ Day of Week: _____ Time Allotted: _____

Meeting Time: _____ Meeting Place: _____

Driving Distance/Car Pooling, etc. _____

_____

Reservations by (date): _____

Level of Difficulty _____ Minimum Age: _____

Description of Trip: _____

_____

_____

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_____

_____

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_____

Special Instructions: _____

_____

_____

_____

There are numerous other fungi in the Hope area, whose edibility is unknown. Edibility has never been established due to lack of consumption, too small too be of significance for harvesting, toughness of the specimen, rank odor, insipid taste, etc.

Some important pointers on eating wild mushrooms:

1. Some mushrooms are edible when cooked, but can be poisonous when eaten raw. The recommendation is that all mushrooms should be well cooked before eating. Mushrooms should not be eaten raw.

2. Some mushrooms can be eaten (well cooked) without any adverse reactions, but can cause adverse reactions when consuming alcohol with them.

3. Mushrooms should not be given to the very young, the very old or to people with compromised immune systems.

4. Numerous mushrooms have look a-likes that can be poisonous, therefore it is important to know these look alikes to avoid illness, and in some cases, death.

5. Before preparing mushrooms for consumption, positive identification of the mushroom is of utmost importance. If a positive identification cannot be made, the mushroom should not be consumed.

6. A mushroom that is edible, does not necessarily mean that everyone can eat it. Some people may have an idiosyncrasy that can cause an adverse or allergic reaction.

7. If trying a mushroom for the first time, only a small portion should be eaten, again, well cooked. Wait for 24 hours before eating any more. If no adverse reactions occur, a little more can be eaten. Don't eat any mushrooms on the 3rd day. If no adverse reactions have occurred, then it is probably safe to that mushroom. Consumption should always be in moderation.

8. If trying a mushroom for the first time, it is a good idea to save one or two specimens in the refrigerator. If an adverse reaction does occur, there will a specimen for identification.

9. Only specimens in prime condition should be used. The very young, the old and the wormy ones should be left in the field.

Alaskan Mycological Associations and Clubs

The Cordova Fungus Pluckers
Website: www.freewebs.com/cordovafungusfestival.com
Contact name: Carol Hernley
Address:
Email: cjhernley@yahoo.com Phone:

The Greater Anchorage Mycological Association
Contacts: Blanche Tinius, GAMA Field Trip Coordinator
Phone: 907 694- 1634 E-mail: btinius@worldnet.att.net
Lori Trummer, Pathologist, USDA Forest Service
State and Private Forestry, Anchorage, Alaska
Phone: 907 271-2570 E-mail: ltrummer@fs.fed.us

Kenai Peninsula Mycological Society
E-group site: http://groups.google.com/group/kpms?hl=en
Address:
Phone Email: sscott@alaska.net

MYSTERY PLANT

This is a very aggressive plant of moist shady areas of S. E. Alaska and Prince William Sound. The shiney, heart shaped leaves and spikes of tiny white flowers make it a beautiful ground cover. It spreads by rhizomes and is about 6 to 8 inches tall. Do not under-estimate the power of any plant that spreads by rhizomes. The red berries that are produced in the fall are considered poisonous as they react on the heart. It can also be seen on the west side of the Chugach Mountains along Turnagain Arm as it is slowly spreading north and westward.

Answer on Page 6.

Mushroom Picking Near Anchorage

Southcentral Alaska is great mushroom picking territory. Spring to fall, mushroom enthusiasts gather several delicious species from forests, hillsides, fields, and trails.

Springtime launches fevered (and secretive) searches for the highly prized morel mushrooms. Summer and fall herald the emergence of delicious and easily recognizable King Boletes, Hedgehogs and Shaggy Manes, as well as the delicate (and excellent) Hericium. The colorful but poisonous Fly Agaric is prolific as well.

Local stores have excellent guidebooks about Alaska's most popular mushrooms, with hints of favorable habitats, gathering techniques and etiquette. Mushroom gathering is a grand way to experience Alaska's outdoors, followed by a mouthwatering reward.

Edible fungi around Hope and Resurrection Creek, Alaska
Compiled by members of Greater Anchorage Mycological Association

SPECIES LIST

Agaricus arvensis:(aka as the Horse Mushroom) has an anise or almond odor. When bruised will turn slightly yellow in the bruised area. Edible for most people
Agaricus silvaticus: bruises dull to reddish brown. Edible
Armillariella mellea:(Also referred to as Honey Mushroom, not because of the taste, but because of the color of the fungi) Edible. Only the firm caps should be used. The tough stem discarded.
Boletus edulis: Edible and choice. Though most people can eat this mushroom without ill effects, there have been reports of some people developing a reaction when eating this mushroom.
Boletus subtomentosus: Edible, but not of the best quality.
Coprinus micaceus: Edible, but very thin fleshed and watery.
Hericium ramosum: Edible
Hydnum imbricatum:(aka Sarcodon imbricatum) Edible, but of poor quality. Bitter and tough. Causes indigestion in some people.
Lactarius deterrimus: Exudes a reddish- orange latex or milk when cut. Edible.
Laetiporus sulphureus: (aka Polyporus sulphureus or Sulfur Shelf. It is also referred to by common names of Chicken Mushroom and Chicken of the Woods.) In Alaska this fungi grows on dead spruce and hemlock. Edible, but there have been reports of adverse reactions to this fungi. Harvest the tender outer area. The rest is tough and best left on the tree.
Leccinum scabrum: Edible.
Leccinum testaceoscabrum: Edible. Reports of adverse reactions when not well cooked.
Lycoperdon pyriforme:(Pear-Shaped Puffball) Edible. Specimens should be firm and pure white, like a marshmallow, when cut in half. It is important to cut puffballs in half to check for whiteness and that there is no outline of a cap or stem. An Amanita muscaria button, that is not edible, could be mistaken for a puffball if not checked for the above features.
Lyophyllum decastes:(Also referred to by the common name "Fried Chicken Mushroom") Edible.
Pluteus cervinus:(also referred to by the common name "Deer Mushroom") Edible. Best when young and firm.
Russula xerampelina:odor is shrimp or crab-like as it ages. Edible.

Russula aeruginea:Edible.

Plant Family Study

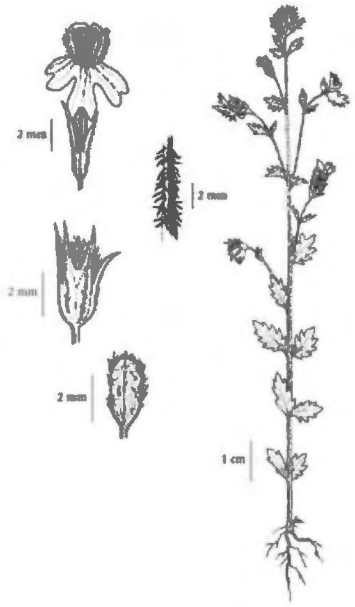
MARCH

***Scrophulariaceae* (the Figworts)**

Euphrasia and *Rhinanthus*

At our March meeting, we wil be focusing on Euphrasia and Rhinanthus genera. While both of these genera have been considered part of the Scrophulariaceae, they have recently been moved into the family Orobanchaceae according the ITIS Standard Report for Taxonomic Serial No. 33597.

Euphrasia, more commonly known as "Eyebright", is an attractive little plant with small white bright-eyed flowers. It is particularly noticeable when growing in profusion amongst the plants in old grassland as an uplifting constellation of small flowers. Eyebrights are an extremely variable and botanically difficult group of species and subspecies. *Euphrasia nemorosa*. the commonest eyebright in Alaska, has flowers, like all eyebrights, that carry a yellow blotch on the lower lip and are often tinged purple.



Euphrasia nemorosa

Eyebright parasitizes and draws nutrients from the roots of a wide range of meadow plants including grasses and legumes. Research has however not established to what extent eyebright debilitates its host plants or can change as a result the balance of species in grassland. Seed requires a period of chilling to break dormancy and germinates in early spring. Eyebright is an annual that must set seed each year to perpetuate from year to year.

Euphrasia nemorosa is an annual herb from a taproot; stems slender, erect, 10-40 cm tall, simple or freely branched, minutely hairy. *Leaves are* opposite, unstalked, few, egg-shaped to nearly circular, 5-15 mm long, palmately veined, prominently 7- to 11-toothed, smooth or sparsely hairy beneath; bracts resembling the leaves but with awl-shaped or bristle-tipped teeth. *Flowers:* Inflorescence a terminal spike of single flowers in the axils of leafy bracts; corollas typically pale lavender with purple lines, and a yellow spot on the lower lip, 5-10 mm long, 2-lipped, the upper lip slightly concave with 2 lobes, the lower lip spreading, with 3 notched, oblong lobes; calyces bell-shaped, smooth or nearly so, shorter than the corolla, 4-toothed, the teeth lanceolate, 2-3.5 mm long; stamens 4. *Fruits:* Capsules, oblong, flattened, smooth or nearly so; seeds numerous, 1-2 mm long, narrowly winged.

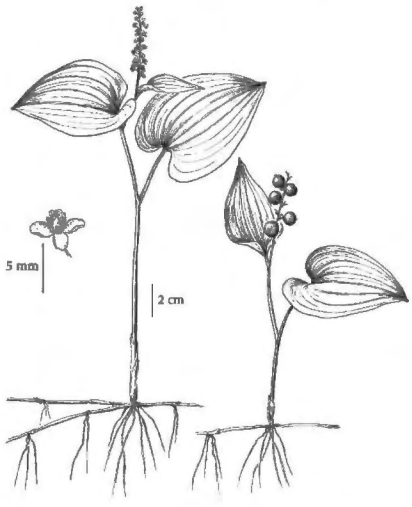
Euphrasia subarctica Raup is a roadside and creekbed species, commonly known as "Arctic Eyebright". Hultén lists the species in this area as *E. disjuncta* and says that *E. subarctica* is included in *E.disjuncta.* ITIS and GBIF list both as separate species. The yellow spot is characteristic of *E. subarctica*.

Euphrasia Mollis, or more commonly know as Subalpine Eyebright, is another annual eyebright found in Southeast Alaska.

Eyebrights are annual hemiparasite of low fertility grasslands particularly dry habitats on calcareous soils including meadows and roadsides.

Rhinanthus minor, also known as *Rhinanthus borealis*, is a roadside plant of lower elevations known as the "Arctic rattlebox". It grows to 25-50 cm tall, with opposite, simple leaves, with a serrated margin. The flowers are yellow, produced on a terminal raceme. The fruit is a dry capsule, which contain loose, rattling seeds when ripe; the plant's name refers to these. Its preferred habitat is dry fields or meadows, where its flowering period is between June and September.

Mystery Plant Answer:
Maianthemum dilatatum
False Lily of the Valley
Liliaceae /Lily Family



Maianthemum dilatatum

Julie Jessen on Macrophotography

by Beryl Wardlaw

Meeting Recap

At our December meeting, Julie Jessen spoke about macrophotography and treated us to a delightful slide show of her work. If you missed the talk or would just like to see some of her images again, visit her website at http://www.blueirisimages.com/. Check out her Alaska gallery, the section about wildflowers.

Julie has been a photographer for twelve years, and done macrophotography for eight years. She is currently the president of the Alaska Society of Outdoor and Nature Photographers. http://www.asonp.org/about.htm Of course as members of Alaska Native Plant Society, we all love wildflowers, yet there is something truly special about the way Julie captures them with her camera. Their freshness, delicacy and vivid colors come through.

Julie had her gear displayed on a table in front of the audience and gave us an overview of what it can accomplish. Her digital camera is a Cannon 20D with 100 mm lens and various attachments. A removable flash can be aimed to highlight the subject. Her tripod, with short post, can be adjusted to stand very low to the ground where wildflowers typically grow. Julie has a little tripod that can hold a plant sample still in a stiff breeze. Great for closeups. To throw light on the subject hand held reflectors, and even an ordinary mini flashlight prove useful. A diffuser helps soften contours in harsh light. A cable release enables you to step back from the camera, if for example you wish to avoid throwing a shadow on your subject. Worse than a shadow, you don't want your fellow hikers to accidentally crush your subject with a misplaced boot! Where to set y our depth of field to emphasize foreground or include scenery further away is part of the photographer's skill. One low tech piece of equipment is a set of fabric samples with mottled prints that can be draped in the background, eliminating clutter and distractions.

However, Julie assured us that more important than really nice equipment is how you convey your feelings about what you see. A sense of good composition is helpful. How you create a balance of elements in the scene makes a difference. Putting your subject smack in the middle is likely to look boring. It is more effective to place your center of attention about a third of the way across your field of vision, or consider the classic Golden Mean proportion. You also don't want an element –a diagonal piece of grass perhaps– to lead your eye out of the picture, pulling it into a corner or making it hang off the edge. There is a visceral sense of rhythm in how you choose to place the inherent lines and curves in a scene. Note also the dramatic contrast between orienting your scene vertically versus horizontally. A flower seen from below has an imposing presence as compared to what it may look like from a standing position. Macrophotography involves lots of time spent flat on the ground on your stomach.

When your audience has not personally experienced being at a particular location, it helps to convey a sense of place. Include a shot of wider scenery to orient your viewer to what the landscape looks like. For example, think of standing on a hill looking out over a series of magenta expanses of fireweed in July. Then you can pull in closer to get more detailed pictures of the plants you are interested in. What draws your attention? What inspires you to take a closer look?

After Julie hooked up some background music she encouraged us to sit back and enjoy the slide show. As they say, a picture is worth a thousand words. Have you been to the Eklutna flats in mid summer and seen the big fields of irises in bloom? Your eye shifts from the expanse of purple to focus in on stately spires of three lobed flowers in a sea of green spears pointing skyward. You may also find chocolate lilies nearby, surrounded by magenta shooting stars. In early spring you may come upon a wooly lousewort, protected against the lingering cold by a dense fuzzy coat that catches the light coming from behind. The ferns are emerging, fronds still curled up in tight spirals. Catkins hang on bushes, turning yellow as their stamens reach out to the wind. Later on in June you are bound to encounter the wild roses, ready to unfurl delicate petals and release their perfume into the air. Wild forget-me-nots cling to the slopes painting them with intense blue. You may find a clump of dogwood cuddled up against a fallen log bleached grey from years of weathering. Wabi sabi is an expression indicating there is beauty in decay as well as in fresh blooms at the height of their growth. A withered leaf reduced to delicate structure of the veins can also be lovely.

I hope you will be inspired to take out your camera when the weather turns warm enough to bring out the flowers. Thank you, Julie, for sharing this beauty.

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.

IT IS TIME TO RENEW! ANPS membership is on a calendar year basis. Would you rather receive your Alaska Native Plant Society electronically? You can save postage, paper, and receive your information in a more timely fashion! All you need to do is e-mail Ginny Moore at tgmoore@gci.net and your next newsletter will be sent electronically instead of by snail mail.

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