



Iris

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The Alberta Native Plant Council Newsletter

Good-bye to a dear friend James Bennett Posey (1942–2013)



Jim Posey relaxing on a hillside at William's Coulee, 2006.
Photo L. Allen



Jim Posey at Dry Island Buffalo Jump, 2012.
Photo D. Johnson

It is with a very heavy heart that we tell you Jim Posey died from health complications on September 20, 2013.

We at the Alberta Native Plant Council will miss him dearly. Jim was an active member of ANPC, sitting on the Board for many terms, participating in Botany Alberta events throughout the province, writing for the newsletter, creating the Rogue's Gallery of invasive plant information, sharing his substantial knowledge of native plants, and providing all of us with his entertaining viewpoint. Jim, you are in our thoughts.

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The obituary for Jim can be viewed using following link:
<http://www.mhfh.com/?s=posey&cat=86>

Members of ANPC have prepared a memorial powerpoint presentation as contribution to the Celebration of Jim's Life, held in Calgary on October 25, 2013. Please visit the ANPC website (www.anpc.ab.ca) to view this memorial. ♦



Welcome to ALTA – The University of Alberta Vascular Plant Herbarium

by Dorothy Fabijan

Herbaria are repositories of plant specimens, their associated collection data, and ancillary collections such as photographs, field notebooks and libraries. As such, they are an amazing and irreplaceable source of information about plants, their history, and the world they inhabit. Their uses are many and varied, including basic functions such as identifying plants and determining correct nomenclature, discerning distribution patterns, understanding the phenology of flowering and fruiting, compiling regional floristics and ecological preferences, and including more advanced functions such as research on plant taxonomy, morphology, systematics and genetics. More recently herbarium collections have played a role in studying climate change, ethnobotany and paleo-ethnobotany, paleo-environments, conservation biology, plant diseases and entomology. Herbaria were and are being established as teaching tools at all levels of the education system (public, graduate and post-graduate levels) as well as resources for the general public.

The University of Alberta herbarium is registered under the acronym “ALTA” as part of an international registry. The herbarium was established by the first biologist hired by the U of A in 1912, botanist Francis J. Lewis. It grew considerably so that ALTA now includes three large botanical collections within the Biological Sciences

Department: paleo-botany (plant fossils), the cryptogamic herbarium (bryophytes, lichens and fungi) and the vascular plant herbarium (ALTA-VP). The vascular plant herbarium contains over 136,000 specimens, including ferns and fern allies, conifers and flowering



Dorothy Fabijan pressing plants in the field.

Photo I. J. Dymock

plants. Though the focus is Alberta and western Canada, the collection's scope is global; there are specimens from all continents except Antarctica.

The herbarium collections, dating as far back as 1816, include the lifetime collections of past curators Francis J. Lewis, E. H. Moss (author of *Flora of Alberta*) and J. G. Packer (editor of the second edition of *Flora of Alberta*).

Over the years, the excellent amateur collections of W. C. McCalla of Calgary and Dr. G. H. Turner of Fort Saskatchewan, each numbering several thousand specimens, were acquired. Many other smaller personal collections have also been donated by individuals or their families, further enriching our collections.

Herbarium collections grow through the research activities of University faculty, staff and students; the acquisition of public and private collections; deposits from government agencies, industry and individuals; and exchanges with other herbaria. ALTA-VP continues to add a few thousand specimens to the permanent collection each year.

One of the Department's extensive research programs was a five-year study of the ecosystem of Devon Island, Northwest Territories, in conjunction with the International Biological Programme's Tundra Biome Project, 1969–1975. Both taxonomists and ecologists participated and deposited voucher specimens in the herbarium. A voucher specimen is the original data, the proof that a species listed in a publication was found at the time and place of the study.

Alberta's floristic biodiversity is well represented in the herbarium, but even after over 100 years of botanical exploration, many regions remain poorly explored and species are still being discovered for Alberta. For example, *Wolffia* (water meal), the world's smallest flowering plant, was discovered in a central Alberta lake in 1984. *Carex bicolor*, an alpine sedge, was

See Herbarium, page 3

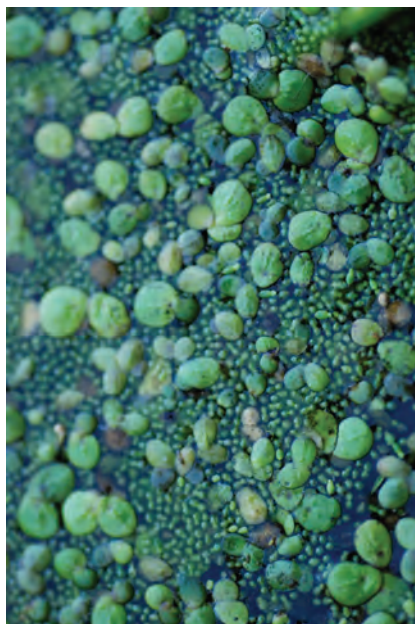
Herbarium, from page 2

discovered in Banff National Park in 2004. In 2006, I was pleased to participate in an Alberta Parks survey of Kakwa Interprovincial Park. My goal was to voucher as many vascular plant species found within the park as I could. Though I failed to acquire a specimen of every species that the survey noticed, I did come back with 800 specimens. The small-flowered paintbrush, *Castilleja parviflora*, was discovered in Alberta during that survey. As it turns out, when the main collection of the herbarium was examined, two specimens of this species had been collected in Alberta before but had been mis-identified as Raup's paintbrush, *C. raupii*. A growing list of new species for Alberta (since the publication of *Flora of Alberta*, second edition, edited by John G. Packer) can be found at our website. This list reveals an amazing increase of 130 taxa in the past 30 years.

The mandate of the herbarium is research and teaching. As well as the main collection, ALTA-VP maintains a reference collection of each species found in Alberta for use by those studying in advance of their field seasons and identifying specimens afterwards. There is a teaching collection for use in the classroom. ALTA-VP is open to users from research institutes, public agencies, private companies and the general public. We host scientists from around the world, students, the local environmental consulting community, public school classes and artists. The Alberta Native Plant Council's Central Alberta Rare Plant Study Group regularly meets and works in the herbarium. Through a partnership with the Nature Conservancy of Canada, plant species on their properties are catalogued and vouchered. Our collections were instrumental in building the tracking and watch lists of rare species by Alberta Conservation Information Management System. We continue to participate by accepting voucher specimens of rare species and by sharing information. From the City of Edmonton's weed specialists, to the media and to botanical gardens' volunteers, ALTA-VP contributes in many ways to many communities.

Collections are dynamic and vital facilities. The vascular plant herbarium has been working to compile collection data in a database available at our website (<http://vascularplant.museums.ualberta.ca/>). Currently just over 50% of the main collection is in the database, including all type specimens, 211 of 246 plant families, all new acquisitions since 2007, and all specimens originating from the Northwest Territories. ALTA is a participant in CanadenSys, a consortium of collections building a national natural history database. The goal is to allow interactive mapping and metadata mining to online users.

The utility of any herbarium is only limited by the questions we ask. We continue to collect and to research as we learn about our environment. We continue to reach out to the community to educate and inform. ♦



***Wolffia columbiana* with
Lemna minor.**
Photo D. Fabijan

Alberta Native Plant Council

Garneau P.O. 52099
Edmonton, AB T6G 2T5
website: www.anpc.ab.ca
e-mail: info@anpc.ab.ca

President

Laurie Hamilton
laurie@zanshinenvironmental.com

Vice- President

Leslie Monteleone
lesliemonteleone@hotmail.com

Secretary

Sandy McAndrews
s.mcandrews@shaw.ca

Treasurer

Amar Keshri
amarkeshri@yahoo.com

Directors

Marsha Hayward (Northern)
wildloonart@telus.net

Tony Blake (Central)
tonyblake@shaw.ca

Christina Metke (Southern)
christina.metke@gmail.com

Chrissie Smith (Nature Alberta)
dragonfly.neroli@gmail.com

Membership Secretary

Kelly Ostermann
kellyostermann19@gmail.com

Volunteer Coordinator

Janine Lemire
janinelemire10@hotmail.com

Conservation Action

John Potter
jpotter@solsticecanada.com

Education and Information

Mari Decker
mdecker@teraenv.com

Rare Plants

Leslie Monteleone
lesliemonteleone@hotmail.com

Norma Calvo
Norma.Calvo@stantec.com

Reclamation and Horticulture

Kristyn Housman
kristynhousman@gmail.com

Webmaster

Mark Mayner
mark.wf.mayner@gmail.com

Newsletter Committee

Dana Bush
danabush@telus.net

Laurie Hamilton
laurie@zanshinenvironmental.com

Patricia McIsaac
pmcisaac@abnorth.com

Alfred Falk
falk@arc.ab.ca

Why do some flowers have anthers with pores at their tips?

by Elizabeth Dickson

Species within at least 65 evolutionarily diverse plant families — including Solanaceae (Nightshade Family), Ericaceae (Heather Family), Primulaceae (Primrose Family), Boraginaceae (Borage Family), and the tropical families Melastomataceae and Caesalpinaceae — have pollen enclosed within the anthers, and pores or slits at the tips of the anthers.⁶ Although widespread across families, only 6–8% of flowering plants have these **poricidal anthers**,⁵ a trait thought to be driven by the plant–pollinator relationship. Along with poricidal anthers, floral features in common among these families often include radial symmetry, petals that are bent back, a prominent cone of stamens with short, stout stalks, and a simple style that protrudes from the tip of the anther cone.⁴ Flowers with poricidal anthers frequently lack nectar, resin, oil, or sites for brooding that would draw pollinators to them. But, as with most generalizations about evolutionary features, there are exceptions. For example, the presence of nectar can be found in many species of the Ericaceae and Boraginaceae and urn-shaped corollas are found in *Vaccinium* (blueberry and cranberry) species.

Insects are attracted by the pollen of these flowers, a rich oil and protein source. From anthers with slits that run lengthwise, bees can collect pollen by brushing against the surface, but poricidal anthers have pollen enclosed within the anther. Pollen foraging insects, usually bees, cling to the base of poricidal anthers with their mouthparts and vibrate at high frequency — they buzz — causing the release of pollen through the pore as it shakes like a salt



Prince's-pine (*Chimaphila umbellata*) flowers with poricidal anthers.
Photo Bryan Hamlin

shaker. As the bees forage for pollen, they inadvertently transport pollen to stigmas of other flowers they visit, promoting cross-pollination. Not all of the pollen is dispensed from an anther during a single buzzing.^{4, 7, 5} This encourages visits by multiple pollinators over an extended period of time and increases the likelihood of pollen dispersal over a wider area. In addition, pollen that is spilled onto the flower during a buzz-pollination event may be picked up by non-buzzing insects and be carried to other flowers, where cross-pollination may occur. Some flowers have two types of poricidal anthers that differ in position, size, colour, or shape;¹ one type acts as a food source, the other as a fertilization source.⁸

Evolutionary botany researchers suggest that nectar secretion is the primitive condition of the Ericaceae⁶ and Boraginaceae,³ with the loss of nectar being the more advanced condition. Researchers² also propose that buzz pollination has repeatedly evolved from competition between foraging visitors needing to obtain pollen and plants needing to control the rate of pollen release.

In Alberta, Ericaceae and Primulaceae are among the families having species with poricidal anthers and buzz pollination. All species formerly placed in the Pyrolaceae (Wintergreen Family) and now placed in Ericaceae have

See **Poricidal Anthers**, page 5

poricidal anthers. This includes one-flowered wintergreen (*Moneses uniflora*), one-sided wintergreen (*Orthilia secunda*), prince's-pine (*Chimaphila umbellata*), and species of *Pyrola*. A mixture of insect attractants is found in this group. Nectar rather than pollen appears to be the main attractant for pollinators of prince's-pine, either nectar or pollen draws pollinators to one-sided wintergreen, while pollen is the primary attractant of the buzz-pollinated *Pyrola* species.⁶ All other species of Ericaceae have poricidal anthers, including common bearberry (*Arctostaphylos uva-ursi*), bog cranberry (*Vaccinium vitis-idaea*), and crowberry (*Empetrum nigrum*), which was formerly placed in the family Empetraceae.

Another example from Alberta is mountain shooting star (*Dodecatheon conjugens*) — in the family Primulaceae — that lacks nectar and has anthers with slits located at the top; these slits elongate over the plant's three-day blooming period. At a study site in Sibbald Flats, Alberta, at least nine species of bumblebee visited mountain shooting star, and buzz pollination was observed.⁴ The mountain shooting star flowers were found to control the amount of pollen dispersed by being sensitive to the frequency of bee vibration and the number of pollinator visits. Researchers saw that pollen removal is restricted at lower buzz frequencies and is increased with fewer visits.⁴

The next time you are in the bush and come across a flower with poricidal anthers, see if you can observe a buzz-pollinating bee at work.

To see a buzz-pollinating bee in action:

<http://www.youtube.com/watch?v=rMvQSx2429U>

<http://www.anneleonard.com/buzz-pollination>

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Tongue-tied in Latin

by C. Dana Bush

I wrestle with the pronunciation of scientific names. When I'm speaking with someone about the rare wetland chaffweed (*Anagallis*), do I say a-nah-ga-lis or ăn-a-gab-lis. I've been stumped when people spoke of *Cardamine* as kar-dab-mi-nee, when I pronounce it kar-da-mine. Even the pronunciation guides vary. The reference I use below, pronounces *Oenothera* as oy-nō-the-ra, while an online guide pronounces it en-o-thee-ra.

In the interests of communication, I offer some standard (sort-of) pronunciation for some of our Alberta plants for which I have heard multiple pronunciations. However, if you choose to pronounce it differently, you will be in good company. Here are the A's. Next month — the B's.

ă = cat	a = apart, canal
o = hot	ō = note
i = in	

Abies	ă-bee-ayz
Abronia	a-brō-nee-a
Achillea	a-kil-lee-a or ă-kil-lee-a
Aconitum	ă-kon-ee-tum
Agastache	a-gab-sta-kee
Amelanchier	ă-me-lan-kee-er
Anagallis	ăn-a-gab-lis
Androsace	ăn-dros-a-kee
Angelica	ăn-gel-i-ka
Antennaria	ăn-ten-ah-ree-a
Aquilegia	ă-kwi-lee-gee-a
Artemisia	ar-tay-mis-ee-a
Asclepias	a-sklay-pee-as
Asplenium	a-splay-nee-um
Atriplex	ab-tri-plex

Reference:

Coombes, Allen J. 1985. *Dictionary of Plant Names: Botanical Names and Their Common Name Equivalents*. Timber Press, Portland, Oregon. ♦

Cardinal Divide access now more difficult

by *Alison Dinwoodie*

Some of you may have heard that the road south of the Cardinal Divide was washed out after the heavy rains in June. I was at the annual Trails meeting with Cardinal River Operations (CRO) about a week after this happened. A representative from Yellowhead County, which looks after the roads, was there to tell us about the closure. I had been up at the Cardinal Divide two days earlier and noticed the “Road Closed” signs, but several off-highway vehicles (OHVs) were ignoring the signs (as they usually do) and going on through. I assumed they were just going down the hill to their designated trail to the Cardinal Headwaters (OHVs are allowed on this county road).

The washout is about 8 km further south, beyond the Cardinal Divide parking lot. It is just to the west of the Alexis Reserve, which is still accessible from Highway 40 or from the north using the Pembina forestry road. There are no other settlements between there and Cadomin. The county official said that as it was a low priority road, it was unlikely to be opened soon or could remain closed.

Sam Pittman came along the road from Highway 40 a few weeks later and took the photograph to the right. He noted the OHVs were continuing to use the road by driving their vehicles along the river, which is unacceptable behavior and probably against the law because of destruction of fisheries habitat. Sam wrote to the Conservation Officers at Hinton about this but has had no response.

The large, mainly forested area south of the Divide and the Grave Flats road has several recognized OHV trails from both east and west of the washout (Toma, Ruby Creek Network, etc.), and these will continue to be used by OHV traffic, so it is likely they will continue to make a trail through and around the washout. As the County has enough difficulty maintaining the graveled Robb-Cadomin-Cardinal Divide road, I can see why they would not be keen on spending more money on a little-used, very rough, low-priority road.

As far as the Cardinal Divide area of the Whitehorse Wildland Park is concerned, the usual access at the parking lot is some distance away from the washout. There could be a problem with increased OHV access to the south end of the ridge, which at present is relatively little used, and once tracks are made, they tend to multiply.

So if anyone happens to be taking a hike along the ridge and notices any new disturbances, please let me know — adinwoodie@shaw.ca ♦



Road washout south of the Cardinal Divide in summer 2013.
Photo S. Pittman

Wanted: Writers

Do you enjoy writing?
The *Iris* newsletter needs writers
and we have ideas to
get you started!

Contact Dana at 403-282-3975 or
danabush@telus.net

Join Our Volunteers

**Are you looking to get
more involved with
the ANPC?
There are many positions
available that suit a
variety of interests.**

Please send an email to
info@anpc.ab.ca
for further information.

Become part of ANPC's Outreach Project

by Patricia McIsaac

ANPC has had many successful years of operation, and the group has a long history of getting things done — all thanks to the strong efforts of its volunteers.

Glancing back over just some of the projects completed by ANPC members, we can be proud of *Rare Vascular Plants of Alberta*, the Native Seed Source List, A Rogue's Gallery of Invasive Non-native Plants of Alberta, Botany Alberta events, Adopt-a-Plant Alberta, a purple loosestrife survey, smooth brome control work parties, 26 annual workshops, natural area stewardship, participation in many provincial and national advisory committees, and creation of numerous guidelines documents that assist both amateur and professional botanists.

In keeping with this long history of success, the current Board would like to see ANPC update its look and send its message to more people in more places. We'd like more members to join ANPC and more people to volunteer for initiatives. So, the Outreach Project has been born.

The Outreach Project will have a project manager (volunteer Pat McIsaac), and there are many ways ANPC members will be able to contribute to the goals of this ambitious project.

Bringing the name and face of ANPC to people at special events is the project's first goal. The organization and particular members are often approached to set up ANPC's display at special events throughout the province, but right now, ANPC can't fulfill all those requests. In the Outreach Project, four displays are planned. The displays will be stored throughout the province

and will make life easier for members in all regions who carry ANPC's name to the public at special events.

Developing a set of handouts to share with people is a related goal of the Outreach Project. Visitors to ANPC's display need a summary of who ANPC is and contact information they can hang on to. Handouts on such things as rare plants, school yard naturalization, invasive plants, regional ecological communities, gardening with native plants, and nifty plant facts will interest many visitors, and a variety of handouts need to be developed by volunteers.

The ANPC website receives a steady stream of inquiries from a wide variety of people, and there are questions that people repeatedly ask. The Outreach Project will be developing fact sheets to quickly answer these inquiries.

As you can imagine, this will be a complex project, and we're using a couple of basic strategies to create the displays and handouts. Firstly, we'll seek out a professional graphic designer. To use marketing jargon, the Outreach Project is in part intending to rebrand ANPC's displays and printed materials. A graphic designer will be contracted to develop a unifying look and design for all the materials we are planning, in the near and far term. The second part of our strategy calls on ANPC members to consider where they might assist and then jump right in to help.

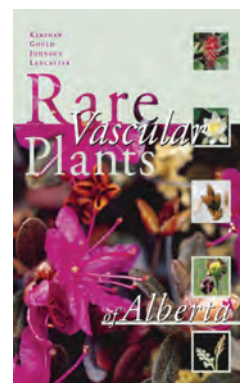
The Outreach Project will need a variety of volunteers and talents, including the following:

- writers for handout or display panel text
- researchers or content experts to team with writers, if needed

- photographers willing to donate photos
- members to set up the display and talk with visitors at events
- compilers to put together lists such as target events to attend

If you think you'd like to assist with the Outreach Project or if you have a suggestion that you'd like to contribute, please let us know. We're aiming to have the displays and other materials ready for the annual general meeting in spring 2014 and will need your help to make that happen.

Contact the project manager, Pat McIsaac, (pmcisaac@abnorth.com). She's looking forward to hearing from you. ♦



Addenda for the **Rare Vascular Plants of Alberta** are now available!

For information, drawings, and range maps of rare vascular plant species of Alberta not found in the *Rare Vascular Plants of Alberta* (Kershaw et al. 2001) please visit the Alberta Native Plant Council's website at www.anpc.ab.ca under Publications. This is an ongoing project with plant species added as the pages are completed.

Native Plant Portrait: Columbine (*Aquilegia species*)

by Dr. Al Fedkenheuer

This article is reprinted with permission.

This article presents our hardy native columbine species that grow well in full sun and also in shaded, moist areas. There are four native species present in Alberta: *Aquilegia brevistyla* (blue columbine), *A. flavescens* (yellow columbine), *A. formosa* (red or Sitka columbine) and *A. jonesii* (also called blue columbine). There is another red (or eastern red) columbine, *A. canadensis*, which is an eastern Canada species that is found as far west as eastern Saskatchewan. All columbines are attractive to hummingbirds, but they particularly love the bright red flowers, as do butterflies.

The name “Aquilegia” comes from the Latin “Aquila” which means eagle, and this comes from the resemblance of the spurred petals to eagle talons. In contrast, the common name is derived from the Latin “columbia” which means “dove-like” as the arched spurs and spreading sepals, for some, resemble five doves arranged in a circle drinking from a dish.

The leaves of columbines resemble those of meadow rue, as they are compound, several, mostly basal and finely divided. Yellow columbine has showy yellow flowers which appear in June–July. The flowers may be tinged with pink, are generally 2.5 to 4 cm across and 12 to 20 mm long, nodding, with white to cream blades 7 to 10 mm long. The spurs range from yellow to pinkish, 10 to 20 mm long, curved and the stamens protrude beyond the blades. Plant height ranges from 30 to 60 cm depending upon the site. Red columbine is very similar except the flowers are bright red with some yellow, the spurs are straight, it can grow up to 100 cm tall and flowers in June to early August. The two blue columbines have blue sepals, 12 to 20 mm long with white to pale yellow blades that range from 7 to 10 mm long. The spurs are hooked, blue, 5 to 8 mm long, shorter than the blades and appear in June–July. The two species are primarily differentiated by *A. brevistyla* growing in a height range



***Aquilegia formosa* – red or Sitka columbine**
Photo A. Fedkenheuer

of 20 to 80 cm tall and many-flowered while *A. jonesii* is much shorter, 5 to 20 cm, and typically has one flower.

Columbines grow well in shade, partial or semi-shade and full sun. They grow in ordinary garden soil, preferring moist soil, but not wet. None do well on heavy clay soil. These plants are all perennials but they tend to be shorter-lived, from three to five years, but they produce sufficient seed to replace themselves. Propagation is not difficult. Collect the seeds when they are black, and seed shallowly in the fall so they are naturally cold stratified by Mother Nature. If starting indoors, cold stratification will help with germination success. The species hybridizes so flower colour may change over time.

See **Columbine**, page 9



***Aquilegia formosa* – red or Sitka columbine**
Photo A. Fedkenheuer

Endangered Species Conservation Committee – Update

by C. Dana Bush

The Alberta Native Plant Council is a voting member on the Endangered Species Conservation Committee (ESCC). The ESCC meets three times a year to read newly prepared status reports, consider the status evaluation from the Scientific Subcommittee, recommend groups for membership on the recovery teams, and review the recovery reports. We pass our recommendations on to the minister of AESRD for the final decision. The ESCC is a multi-stakeholder group with members from conservation groups (ANPC, Nature Alberta, Alberta Conservation Association, etc.), academic and government scientists, treaty associations, industry (forestry, agriculture, ranching, oil and gas), and municipalities. The broad cross-section of people often results in spirited and pointed conversations. The group operates by consensus, or a 2/3 vote if necessary.

This meeting considered the status of **hare-footed locoweed** (*Oxytropis lagopus*) — I will update everyone as soon as the recommendation has been sent to the minister. The status report has been released but is not yet on the ESCC website. COSEWIC is also working on a federal status report.

The recovery plan for **whitebark pine** (*Pinus albicaulis*) has been approved and will soon be released. It is a comprehensive report with significant and expensive recommendations. It will be interesting to see which actions will actually be funded, given the five-year delay in producing the plan and the shortage of funds and staff.

There are several plant species of conservation concern that need more data before writing Alberta Wildlife Status Reports. These may be good species for volunteer field trips.

Tiny cryptantha (*Cryptantha minima*) is due for an update (Endangered in Alberta, Threatened by COSEWIC). Although lots of new data are available, additional population inventories are needed.

Biscuit-root (*Lomatium cous*) is found only in the Cypress Hills. We need basic data on population, habitat, distribution and limiting factors.

Dwarf woolly-heads (*Psilocarphus brevissimus*) (Special Concern by COSEWIC). This species likes ephemeral wetlands and fluctuates dramatically with the weather. Directed population inventories are needed.

Whiskered Millipede Lichen and **Desert Tumbleweed Lichen** both need basic data on population, habitat, distribution and limiting factors.

See **ESCC Update**, page 11

Columbine, from page 8



***Aquilegia flavescens* –
yellow columbine**
Photo A. Fedkenheuer

*Dr. Al and Pat are owners of ALCLA Native Plant Restoration Inc. of Calgary and have been growing and out-planting Alberta native plants for over 30 years.
Email: fedkenhp@telus.net ♦*



***Aquilegia brevistyla* –
blue columbine**
Photo A. Fedkenheuer

News and Events

Central Alberta Rare Plant Study Group

Location: University of Alberta Herbarium, B-613 (botany wing), Biological Sciences Building (east end), Saskatchewan Drive, Edmonton. Date: Last Monday of the month; October to April inclusive. Time: 6:30 to 8:30 p.m. Facilitator: Varina Crisfield (vcrisfield@gmail.com).

Southern Alberta Rare Plant Study Group

Location: University of Calgary Herbarium, Biological Sciences Basement. Date: First Saturday of the month; November to April inclusive. Time: noon to 4:00 p.m. Facilitator: Heide Blakely (enzian44@shaw.ca).

Medicine Hat Rare Plant Study Group

Location: Medicine Hat College Herbarium (L155). Date: Third Saturday of the month from noon to 3:00 p.m. Facilitator: Cathy Linowski (clinowski@memlane.com).

Saturday, November 16 (weather permitting) - Cheryl Bradley will do a presentation on wetland plants.

The Northern Plant and Ecology Study Group (NPESG)

also is part of ANPC. This is a field-based study group, active through the growing season and into early autumn. Contact Marsha Hayward for more information (wildloonart@telus.net).

ANPC Botany Alberta 2014 and Workshop 2014

Organizers needed

Please contact Mari at m_decker@telus.net or Janine at janinelemire10@hotmail.com if you have ideas and time to devote to helping organize the 2014 versions of Botany Alberta and the ANPC Spring Workshop.

Field Guide to the Plants of the Wildhorse Wildland Park and Cadomin Area

Volunteers are needed to take photographs this summer independently, to lead/join a field trip to the area, or to donate photos you have already taken in the area. If interested, contact adinwoodie@shaw.ca or bluestems@hotmail.com.

Recovery Strategies for Industrial Development in Native Prairie for the Dry Mixedgrass Natural Subregion of Alberta

The First Approximation is available on The Foothills Restoration Forum website at: <http://foothillsrestorationforum.ca> as a pdf or as a bound, full-colour hardcopy via the order form. The draft for the *Mixedgrass Natural Subregion* is available, and they are working on the *Northern Fescue Natural Subregion*.

Foothills Restoration Forum Fall Information Session

November 14, 2013. Claresholm Community Centre. \$20 registration fee. www.foothillsrestorationforum.ca

Call for *Iris* submissions

ANPC publishes the *Iris* newsletter three times per year to provide information on all issues botanical in Alberta and further afield. We are always looking for guest contributors to submit announcements, articles, features, photos, etc. to *Iris*. ANPC welcomes your submission to the *Iris* editor (cdbush@telusplanet.net) for consideration. Deadlines are October 1, November 15, and February 1.

Plant Happenings

Plant Happenings is an email listing of native plant related events, publications, and the like that Lorna Allen sends out whenever she has enough information gathered to make it worthwhile. If you wish to have your name added to her email list, or you have appropriate information that you would like posted, email her with the details (lorna.allen@gov.ab.ca).

ACIMS – Alberta Conservation Information Management System

ACIMS has released new tracking lists. The November 2012 iterations are now out of date.

- List of All Species and Ecological Communities in Alberta, within the ACIMS Database – June 2013
- List of Tracked and Watched Elements – June 2013
- Tracked Elements Listed by Natural Subregions – June 2013
- Ecological Community Tracking List – 2013
- Tracked Ecological Communities: Alphabetical listing with Natural Subregions – 2013

<http://albertaparks.ca/albertaparksca/management-land-use/alberta-conservation-information-management-system-%28acims%29/tracking-watch-lists.aspx>

Call for Feature Plant photos

Do you have any great plant species photos you'd like to share? ANPC needs a bank of plant species photos that we can switch out seasonally for the *Feature Plant* series on the ANPC website. The photo needs to look good at a width of 200 pixels and be accompanied by a little write-up about what makes the photo interesting. Please send your photos and text to s.mcandrews@shaw.ca.

The following table summarizes all federally and provincially assessed plant species.

Scientific Name	Common Name	SARA Listed (as of Oct. 2013)	ESCC/SCC Species Recommended Designations ¹ (as of Oct. 2013)	Provincial Recovery Plan ² (as of Oct. 2013)
Vascular Plants				
<i>Chenopodium subglabrum</i>	Smooth goosefoot	Threatened		
<i>Cryptantha minima</i>	Tiny cryptanthe	Endangered	Endangered (2005)**	Approved 2012
<i>Iris missouriensis</i>	Western blue flag	Special Concern	Special Concern (2005)**	Not Applicable
<i>Isoetes bolanderi</i>	Bolander's quillwort	Threatened	Not necessary as the only population is under federal jurisdiction (Waterton Lakes National Park)	
<i>Oxytropis lagopus</i>	Hare-footed locoweed	Special Concern	Recommendation pending (2013)	
<i>Pinus albicaulis</i>	Whitebark pine	Endangered	Endangered (2008)**	Approved (by ESCC) 2013
<i>Pinus flexilis</i>	Limber pine		Endangered (2008)**	In Progress
<i>Psilocarphus brevissimus</i>	Dwarf woolly-heads (prairie population)	Special Concern		
<i>Tradescantia occidentalis</i>	Western spiderwort	Threatened	Endangered (2001)**	Approved 2005, 2013
<i>Transberingia bursifolia</i> ssp. <i>virgata</i> (<i>Halimolobos virgata</i>)	Slender mouse-ear-cress	Threatened	Endangered (2011)**	
<i>Tripterocalyx micranthus</i> (<i>Abronia micrantha</i>)	Small-flowered sand verberna	Endangered	Threatened (2004)**	Approved 2012
<i>Yucca glauca</i>	Soapweed	Threatened	Endangered (2002)**	Approved 2006, 2013
Non-vascular Plants				
<i>Bartramia halleriana</i>	Haller's apple moss	Threatened	Not necessary as the entire population is under federal jurisdiction (Jasper National Park)	
<i>Bryum porsildii</i> (<i>Mielichhoferia macrocarpa</i>)	Porsild's bryum	Threatened	Endangered (2007)**	Approved 2010
¹ These are the recommended designations; however, some may not yet be listed in the Alberta <i>Wildlife Act</i> Regulations, due to the AESRD Minister's backlog. Dates refer to Minister Approval. ² Provincial Recovery Plans to be completed within 1 year for endangered species and 2 years for threatened species. ** Status report is available on AESRD's Species at Risk website at www.srd.alberta.ca/FishWildlife/SpeciesAtRisk/Default.aspx . NOTE: Species assessed by COSEWIC and determined to be Not at Risk are <i>Phlox alyssifolia</i> , <i>Erigeron radicans</i> , <i>Brickellia grandiflora</i> , <i>Carex nebrascensis</i> , <i>Stephanomeria runcinata</i> , <i>Stellaria arenicola</i> . Status reports are available upon request.				

University of Lethbridge Herbarium Digitization Project is complete

The collection currently includes over 20,000 specimens of vascular plants and remains an important research tool for botanists, students and the general public.

<http://digitallibrary.uleth.ca/cdm/landingpage/collection/herbarium>

Hare-footed locoweed
(*Oxytropis lagopus*)
Photo C. D. Bush ♦



Willow Stipules: A Handy Tool for ID

by Kim Gould

Willows! Does anyone feel confident identifying these variable woody species? There are a number of useful vegetative characteristics, such as stipules, that remain longer than ephemeral catkins. Stipules are leafy bracts found at the base of a leaf petiole and they can help distinguish some of the many species of *Salix*.

Species with stipules:

- S. alaxensis* (linear stipule) – felt leaf willow
- S. barclayi* (round stipule) – Barclay's willow
- S. barrattiana* (broad oval stipule) – Barratt's willow
- S. boothii* (sharp pointed stipule) – Booth's willow
- S. candida* (narrow stipule) – sage willow
- S. commutata* (half-moon stipule) – undergreen willow
- S. drummondiana* (narrow stipule) – Drummond's willow
- S. lanata* (large stipule) – woolly willow
- S. lucida* (half-moon stipule) – shining willow
- S. lutea* (oval clasping stipule) – yellow willow
- S. melanopsis* (oval or narrower stipule) – dusky willow
- S. prolixa* (oval clasping stipule) – MacKenzie's willow
- S. pseudomonticola* (oval stipule) – false mountain willow

Glandular stipules: a row of glands along the stem, occasionally with very small leaf-like structures:

- S. amygdaloides* (glandular stipules) – peach leaf willow
- S. arbusculoides* (glandular stipules) – little tree willow
- S. farriar* – Farr's willow
- S. glauca* (oval stipule) – gray leaf willow
- S. maccalliana* – McCalla's willow
- S. pedicellaris* – bog willow
- S. serissima* – autumn willow

Very small stipules, deciduous stipules or lacking stipules:

- S. alba* – white willow
- S. arctica* – arctic willow
- S. athabascensis* – Athabasca willow
- S. bebbiana* (deciduous stipule) – Bebb's willow
- S. brachycarpa* – barren ground willow, short leaf willow
- S. discolor* – pussy willow
- S. exigua* – sandbar willow, coyote willow
- S. fragilis* – crack willow
- S. myrtillofolia* – blueberry willow
- S. pentandra* – bay leaf willow, laurel willow
- S. petiolaris* (deciduous stipule) – meadow willow, slender willow
- S. planifolia* – diamond leaf willow
- S. pyrifolia* (deciduous stipule) – balsam willow
- S. reticulata* – netted leaf willow
- S. scouleriana* – Scouler's willow
- S. sitchensis* – Sitka willow
- S. stolonifera* – sprouting leaf willow
- S. tyrrellii* – Tyrrell's willow
- S. vestita* – rock willow

Obviously more characteristics are needed to identify a willow, but the presence or absence of stipules can be a quick and easy place to start. For those species with obvious stipules, such as *S. lanata*, *S. lutea* and *S. prolixa*, taking a look at the stem might give you a big clue to species.

Names and stipule descriptions are taken from E. H. Moss's *Flora of Alberta*, second edition, revised by J. G. Packer (1983). ♦



Past issues of *Iris* are now available online at www.anpc.ab.ca



Iris is published three times a year by ANPC. The Council aims to increase knowledge of Alberta's wild flora and to preserve this diverse resource for the enjoyment of present and future generations.

If you have an announcement, article or other item, you are invited to submit it to the editor for publication. Items concerning native plants will be given highest priority.

The editors reserve the right to edit submissions, but will review changes with the authors whenever possible. Disputes will be resolved in favour of the audience.

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Submission deadline for the next issue:

November 15, 2013

A subscription to *Iris* is included with membership in the ANPC. To join, contact the secretary, or check our website, www.anpc.ab.ca.