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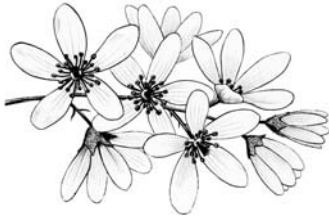
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# The Canadian Botanical Association Bulletin



## Bulletin de l'Association botanique du Canada

May / Mai 2003 • Volume 36 No. / N° 2

### CBA Annual Meeting In Antigonish

The **CBA annual meeting** in conjunction with **Plant Canada meeting** will be held in Antigonish in June. This is just a brief preview of the events that will occur under the hospice of the CBA. Don't forget that this is only a part of all the events that will happen during this meeting. **Plant Canada**, **Canadian Society of Plant Physiology** (CSPP) and **New Phytologist** have all prepared additional events that should keep all of us quite busy!

#### June 25

Public portion of the meeting	all day
Out-going executive CBA meeting	4:00 pm
Registration/reception	5:00 pm

#### June 26

Opening symposia and concurrent sessions	all day
CBA committee and section meetings	lunch
Weresub lecture	7:00 pm

#### June 27

Concurrent sessions	morning
Convocation (honorary degree to botanists)	lunch time
CBA committee and section meetings	lunch
Field trips	afternoon
Crystal Cliffs (BBQ)	5:00 pm

#### June 28

Concurrent sessions	all day
Annual General Meeting of CBA	5:00 pm
Banquet	6:00 pm

#### June 29

In-coming executive meeting	9:00 am
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For a more complete description of events, please take a look at the Plant Canada 2003 web site :

[http://phykos.stfx.ca/plant\\_canada/](http://phykos.stfx.ca/plant_canada/)

This, and other items, can be reached through the CBA web site :

<http://www.uoguelph.ca/botany/cba/>

## Canadian Botanical Association

The Canadian Botanical Association is honored to have a patron such as Her Excellency the Right Honourable Adrienne Clarkson, C.C., C.M.M., C.D., Governor General of Canada.

### Bulletin

The CBA Bulletin is issued quarterly (February, May, August, November) and sent to all CBA members. Comments or suggestions about the Bulletin should be directed to the Editor at the address below.

### Information for submitting texts

Texts and illustrations for the Bulletin should preferably be sent to the Editor as electronic documents, nevertheless any medium is acceptable. Any format for texts or illustrations are welcome. Please make sure that scanned illustrations are done with a very good resolution. If you have any question about text submission, please contact the Editor.



## Association botanique du Canada

L'Association botanique du Canada jouit du bienveillant patronage de sa présidente d'honneur, Son excellence la très honorable Adrienne Clarkson, C.C., C.M.M., C.D., Gouverneure générale du Canada.

### Bulletin

Le Bulletin de l'ABC paraît quatre fois par année, en février, mai, août et novembre. Il est envoyé à tous les membres de l'ABC. Tout commentaire concernant le bulletin est apprécié par le rédacteur.

### Directives aux contributeurs

Les textes et les images sont de préférence envoyés sous forme électronique, néanmoins, tous les supports de même que tous les formats imaginables sont acceptables. Les fichiers graphiques doivent être de très bonne définition. N'hésitez pas à contacter le rédacteur pour toute information.

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### Next issue / Prochain numéro

Texts for the next issue, 36(3), must be received before August 31st, 2003. La date de tombée des textes du prochain numéro, le no 36(3), est le 31 août 2003.

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## President's message

Academic institutions, as well as other organisations, have initiated new recruiting of professionals in different fields. The various spheres related to botany and plant science do not seem to escape this trend. The challenge is to know if we have been able to form enough young highly qualified personnel to fill all these new positions. In the past, the CBA has encouraged the promotion of completed Master and Ph.D. theses to be announced in their Bulletin. That section gave a good vision of the number of graduates and it helped promote our students and our association. I would, therefore, recommend reopening this section. It will be a very good opportunity to link with graduate students and encourage them to continue their studies in Botany.

I want to remind you, as spring is approaching, that our annual CBA meeting is coming in June. As mentioned in the previous Bulletin, we are in the first steps and activities of Plant Canada this year will be an important part of history for our Association. Although, for this first meeting, we only meet with CSPP, this new federation comprises other organisations such as Canadian Society of Soil Science, Canadian Phytopathology Society and Society of Weed Science. This coalition will allow professionals to have better representations in areas of Plant Sciences and to ensure a better sharing of knowledge in this growing research field. Presently, planning of the 2005 and 2007 are underway! This means our agendas may have to be modified, and we will discuss this issue at our upcoming annual meeting.

I invite you to participate in our Annual Conference, which will be held in Antigonish, Nova Scotia. It promises to be most interesting!

Liette Vasseur, CBA President



## Message de la présidente

Les institutions académiques tout comme les autres organisations semblent entamer un nouveau cycle de recrutement de professionnels dans divers domaines. Les sphères reliées à la botanique ne semblent pas y échapper. Le plus grand défi reste à savoir si nous avons été capables de former assez de jeunes chercheurs dans les dernières années pour combler tous ces postes. Il y a quelques années, l'ABC encourageait l'annonce des thèses de maîtrise et de doctorat qui venaient d'être complétées. Dans le bulletin, cette section donnait un peu le pouls du nombre de graduées et gradués et cela semblait aider à promouvoir nos étudiantes et étudiants et en même temps l'association. J'aimerais donc faire appel à toutes et tous pour recommencer cette section et permettre de faire connaître nos étudiantes et étudiants. Cela me semble être aussi une bonne façon d'encourager des liens avec les étudiantes et les étudiants.

Un dernier petit rappel, avec le printemps viennent les annonces pour la réunion annuelle de l'ABC. Comme mentionné dans le bulletin précédent, cette année sera importante dans l'histoire de notre association puisque nous commençons les premières activités de Plantes Canada. Bien que cette année la conférence regroupe la Société canadienne de physiologie végétale (SCPV) et l'Association botanique du Canada (ABC) seulement, cette nouvelle fédération comprend maintenant d'autres organisations comme la Société canadienne de la science du sol, la Société canadienne de phytopathologie et la Société canadienne de malherbologie. Cette coalition permettra aux professionnels oeuvrant dans le domaine des sciences végétales de pouvoir être mieux représentés et surtout d'avoir une nouvelle avenue pour mieux échanger nos connaissances dans ce vaste domaine. Déjà, le système est en marche pour la planification des conférences de 2005 et 2007! Cela va nous demander à l'ABC quelques changements dans nos horaires et cela sera discuté à l'assemblée générale annuelle.

Je vous invite donc à participer en grand nombre. La conférence annuelle à Antigonish, Nouvelle-Écosse, promet d'être des plus intéressantes.

Liette Vasseur, Présidente de l'ABC



## Fourth International Conference on Mycorrhizae

The Fourth International Conference on Mycorrhizae (ICOM 4) will be held in Montréal Québec Canada on August 10 - 15, 2003 under the theme: **Mycorrhizae, fundamental and multipurpose**. The theme refers to the basic role of mycorrhizae in the evolution of life, plant species, land ecosystems, and the multiple benefits man can derive from their use. The scientific program will include 4 plenary sessions, and 14 symposia, with more than 60 invited speakers, and several contributed paper sessions. Symposia topics will cover a variety of research fields such as evolution, diversity, agriculture, forestry, phylogeny, systematics, plant and fungi physiology, molecular biology, as well as agronomic, forestry, and industrial applications. The final symposium program will be posted on the ICOM 4 website:

<http://www.congresbcu.com/icom4>

The ICOM 4 is hosted in Canada for the first time, after Berkeley (U.S.A.) in 1996, Upsala (Sweden) in 1998, Adelaide (Australia) in 2001. The conference will be a prime source of information in the field of mycorrhizal symbiosis. As the conference will be held jointly with the Canadian Society of Agronomy (CSA) and the Canadian Society of Soil Sciences (CSSS) and as it will be attended by mycorrhizologists from all around the world, it should provide participants opportunities for networking with colleagues, scientists, agronomists, industry people, and other professionals from every continent.

The Conference will be held at the ICAO (International Civil Aviation Organization Conference Centre), a modern, well-equipped centre, located downtown Montreal, close to transportation, lodging, and restaurants. The ICOM 4

organizing committee includes representatives from universities, government, and industry, pointing out the multidisciplinary of developmental areas concerned. During the conference, field and tourist excursions will be organized to provide participants with the opportunity to profit from the surrounding nature and attractions. A dinner-cruise on the St-Lawrence river will be offered on Thursday night.

All information related to registration, oral and poster presentations, sponsorship, and social activities are posted on the web site mentioned above.

## Quatrième Conférence internationale sur les mycorhizes

La quatrième Conférence internationale sur les mycorhizes se tiendra à Montréal, Québec, Canada du 10 au 15 août 2003 sous le thème: **Mycorrhizes: fondamentales et polyvalentes**, un thème évoquant le rôle essentiel des mycorhizes dans l'évolution de la vie, des plantes et des écosystèmes et les énormes bénéfices qui en découlent pour l'humanité. Le programme scientifique comprend 4 plénières et 14 symposiums pour un total de plus de 60 conférenciers invités ainsi que plusieurs sessions de présentations orales, sur des sujets variés tels que l'évolution, la diversité, l'agronomie, la foresterie, la phylogénie, la systématique, la physiologie des plantes et des champignons, la biologie moléculaire sans compter toutes les applications agronomiques, forestières et industrielles. Le programme préliminaire figure au site web suivant:

<http://www.congresbcu.com/icom4>

Il s'agit d'une première pour le Canada, après Bercaill, É.U. en 1996, Upsala, Suède en 1998 et Adelaide, Australie en 2001. Tenue conjointement avec la Société canadienne d'Agronomie et la Société canadienne de science du sol et fréquentée par des scientifiques du monde entier, cette conférence constitue un événement unique pour les participants, une occasion de se mettre au diapason de la recherche dans le domaine des symbioses mycorrhiziennes.

L'événement se déroulera au Centre de conférence de l'OACI (Organisation de l'aviation civile internationale), un centre moderne, bien équipé situé au centre-ville, à proximité d'hôtels, de restaurants et des facilités de transport. Le comité organisateur est formé de représentants d'universités, du gouvernement et de l'industrie reflétant ainsi la polyvalence des sphères de développement engagées. Dans le cadre de la conférence de nombreuses excursions de terrain et visites touristiques seront offertes aux participants pour leur faire connaître les attraits des régions environnantes. Un souper-croisière sur le fleuve St-Laurent est prévu pour le jeudi soir.

Les informations concernant l'inscription, le programme scientifique et les diverses activités de la conférence figurent au site web ci-haut mentionné.

# Poorly Known Economic Plants of Canada - 37.

## Saskatoon, *Amelanchier alnifolia* - Canada's National Fruit?

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Is there a uniquely Canadian fruit crop? The closest candidate may be saskatoon, a species with most of its native range in Canada. The edible blue-black berries were a staple food of indigenous peoples, and a great variety of Canadian wildlife depends on it. Over the last decade saskatoon has grown rapidly as a cultivated crop in the prairie provinces but is not well known elsewhere, although grown across the country. Most of the commercial cultivation is in Canada and most of the improved cultivars have been produced by Canadians. Not surprisingly this biodiversity treasure has been suggested as Canada's national fruit.

### Latin name

*Amelanchier alnifolia* (Nutt.) Nutt. ex R. Roemer. The genus name *Amelanchier* is based on the French name *amélanchier*, which in turn is based on *amelanche*, the Provençal name (Provence is a section of southeastern France) of European serviceberry (*A. ovalis* Medic.). The epithet *alnifolia* is based on the Latin *alnus*, alder + *folium*, leaf, literally "with leaves like those of the alder."

### English Names

Saskatoon, saskatoon serviceberry, western serviceberry, mountain Juneberry, western shadbush, Rocky Mountain blueberry, Rocky Mountain service tree, lancewood, pigeonberry, serviceberry (and its corruption sarvisberry). In addition there are numerous local names, such as Canadian medlar, sugarplum, May cherry, snowy mespilus, swamp pear, sugar pear, grape pear, Indian pear, boxwood, and bilberry. Most of these names could lead to confusion with the established colloquial names of other species. The word saskatoon is said to be an anglicized version of the Cree name for the fruit, *mis-sask-qua-too-mina* or *mis-sask-a-too-mina*. It has also been suggested that the name was derived from the Cree name for the place where stems of saskatoon bushes were collected for arrow shafts: *Mane-me-sas-kwa-tan*. More than 80 common names have been applied to the genus in North America, and many of these have been applied to *A. alnifolia*, the best known species. However the common name saskatoon almost always refers to *A. alnifolia*.

### French Names

Poire(s), Saskatoon(s), Amélanchier à feuilles d'aune, Bois de flèche

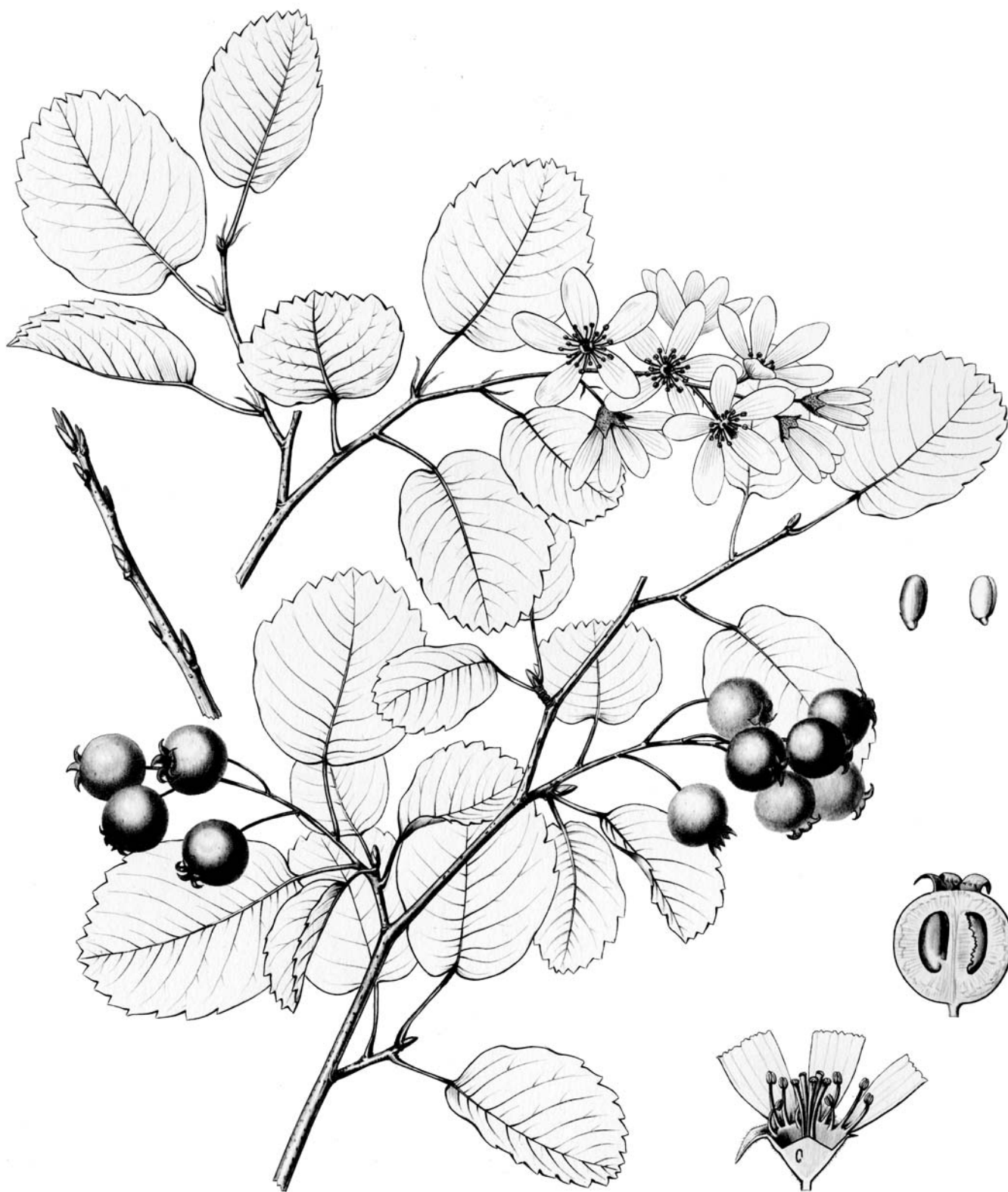
### Morphology

Saskatoons are shrubs 0.5-4.5 (rarely to 7) m tall that form thickets by suckering from short rhizomes. The stems are up to 25 cm in diameter. The leaves are ovate with a broadly rounded or flattened apex and large teeth. The undersides of the leaves have a dense covering of felt-like hair at flowering time, but this is soon shed in some variants. The flowers are white or creamy, short-stalked (0.5-1cm), 1.5-2 cm across, and appear early in the spring in dense spike-like clusters of 6-12. The "berries" (berry-like pomes) are 0.5-1.5 cm wide and are mostly dark blue or purple, sometimes cream, red or black. Morphological variation is considerable, within and among populations.

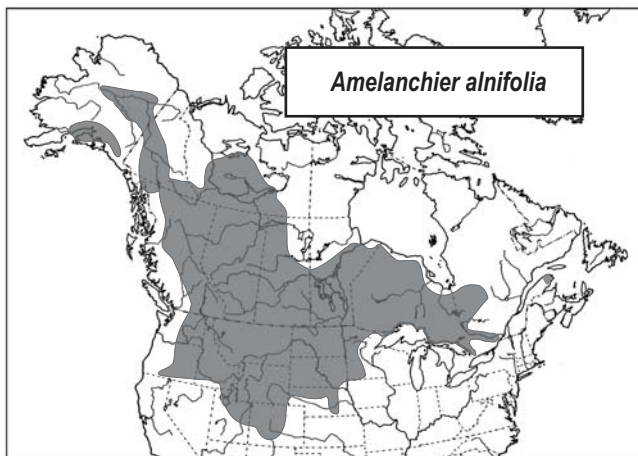
### Classification and geography

There are at least 33 species of *Amelanchier* (Rosaceae, subfamily Pomoideae) of which 26 occur in North America. The species are very difficult to classify and identify. These problems have been attributed to hybridization and agamospermy (asexual seed production). Agamospermy in various species is associated with the development of so-called "microspecies," i.e. uniform, locally distinguishable races. Although agamospermy has not been demonstrated in *A. alnifolia*, it is likely since the species is tetraploid (with four times the base number of chromosomes) and most of the tetraploid species of *Amelanchier* are agamospermic. Some recent studies have suggested that hybridization and agamospermy may contribute less to taxonomic confusion than previously thought.

Saskatoon occurs across much of Canada from British Columbia to western Quebec and north to the Yukon and the Northwest Territories. Some experts have included a number of previously described species within their concept of *A. alnifolia*, while others have defined the species in a more narrow sense. The accompanying map illustrates the distribution of *A. alnifolia* in the narrow sense. The following combination of characteristics distinguishes *A. alnifolia* from related species: ovary tomentose at the summit, leaf teeth large and less than twice as many as the prominent and straight veins, lower flower pedicels 5-10 mm long, and round leaves that are broadly rounded or truncate at the tip.



Over much of the Great Plains *A. alnifolia* is the only or the predominant species of *Amelanchier*. To the east is the closely related *A. humilis* Wieg. (*A. alnifolia* var. *compacta* (Nielsen) McKay) of calcareous prairies and limestone barrens. It differs in having oblong or ovate mature leaves with more pointed tips that are more persistently tomentose below (instead of orbicular and becoming glabrous as in *A. alnifolia*). To the west in the Rocky Mountains, a number of closely related taxa exist. These have either been maintained as distinct species, recognized at the infraspecific level, or treated as synonyms of *A. alnifolia*. These more western relatives include *A. alnifolia* var. *semiintegrifolia* (Hook.) C. L. Hitchc. and *A. cusickii* Fern., both of the interior between the Rocky Mountains and coast ranges, *A. oereophila* Nelson of dry slopes in the Rocky Mountains, and *A. florida* Lindl. (including its var. *humptulipensis* Jones) of the Pacific coast. Other species and varieties now placed in *A. alnifolia* are based on foliage characters of questionable value. The form *alba* Nielsen is so named for its white berries. A natural hybrid of *A. alnifolia* and *A. sanguinea* (Pursh) DC. has been reported and two intergeneric hybrids are known (*A. alnifolia* × *Pyrus* (*Sorbus*) *scopolina* = ×*Amelosorbus jackii* Rehder; *A. alnifolia* × *Sorbus aucuparia*).



### Ecology

Saskatoons occur in open prairies, coulees, and open woods, and on bluffs. Soils range from dry and rocky to deep, fertile, and moist. Although the above-ground parts are killed by fires, the plants sprout vigorously afterward and cover may increase over prefire conditions. Deep underground rhizomes protect the plants from even the most intense fires. Exclusion of fire and consequent closing of forest canopy leads to the decline of saskatoon. Many species of *Amelanchier* are long-lived and can survive in closed forests for long periods of time, although suppressed.

In many parts of its range saskatoon is the first shrub to flower in the spring. In the southern Canadian prairies it

blooms in May, but not until June in Alaska. At a particular locality blossoms last for 3-4 days and flowering continues over a period of 2 weeks. Pollinators include a variety of insects, especially numerous bee species. Although flower production is often similar from year to year there is much variability in fruit production.

Numerous species are either largely dependent on saskatoon or strongly influenced by it. A small leafy branch of saskatoon can support thousands of aphids. These are tended for honeydew by various kinds of ants. Large mammals and a variety of insects eat the leaves. At least 50 different pollinating insects have been observed visiting the flowers. The developing fruits are eaten by various insect larvae. In particular, saskatoon hosts the larvae of a number of spectacular swallowtail butterflies. The berries are eaten by more than 100 species of birds and mammals. In particular, the berries are a major food of bears.

Saskatoon provides habitat as well as food. Columbian sharp-tailed grouse select saskatoon-dominated shrub habitats, both in fall and in winter. Saskatoon is one of the woody plants most chosen for "antler rubs" (which serve as scent marks) by white-tailed deer in the northern Great Plains. Due to the frequent association with mammals it is not surprising that Rocky Mountain wood ticks are more abundant on saskatoon than on neighbouring plants.

One of the most commonly observed diseases is a witches' broom (a tight mass of leaves and branches) in which the leaves are blackened on the lower surface. This condition is caused by the systemic fungus *Apiospora collinsii*. Another fungus, the parasitic rust *Gymnosporangium*, has a life cycle alternating between two kinds of hosts - conifers, on which it produces brownish-orange jelly-like masses, and rose family shrubs including saskatoon on which it produces an orange growth on the underside of the leaves.

### Use as Food

Saskatoons were often used to make pemmican, a staple food of the indigenous peoples and voyageurs in the central plains of North America. Pemmican was prepared by stirring berries into dried (or a boiling mixture of) fat and pulverized meat of deer, moose, caribou, or most often buffalo, and pressing the resulting material into cakes. Stored pemmican was particularly important during periods of food shortage.

Saskatoon was also very important to the indigenous people of British Columbia and they recognized many different kinds based on variation in size, colour, taste, habitat, blooming time, ripening time, and growth form. The Okanagan distinguished eight kinds. The tribe may have a better understanding of the classification and genetic variation of these plants than is found in our

current botanical literature! Special ceremonial feasts were held to celebrate the beginning of the saskatoon picking season.

Today the berries are eaten fresh, or used for dessert toppings, pies and various other bakery products, as well as jams, wine, jellies, syrups, flavour concentrates, and liqueurs. The fruits are soft, juicy, and sweet. The taste has been described as a combination of apple and sweet cherry, with a hint of almond. The higher the temperatures used in food processing the greater the loss of flavor. Efficient processes for extracting juice have recently been developed. The berries contain higher levels of protein, fat, fibre, and calcium than blueberries. The distinctive dominant aroma is due to benzaldehyde. The major acids are malic and citric.



Saskatoon berries can be substituted freely in most blueberry recipes but many unique saskatoon recipes are available on the Web. The berries can be home-canned, frozen, and dried to yield "raisins". Barely ripe fruit jells more readily, and is better for freezing and preserving than mature fruit. Fully ripe fruit has a higher sugar content and is more suitable for making wine. Fresh fruit contains about 10-20 % sugar (mostly fructose) and 1-2% pectin. Pectin content of most varieties is insufficient to jell, and some needs to be added to make jelly.

#### Toxicity

Browsing mammals including livestock are susceptible to the cyanogenic glycoside, prunasin in young leaves and twigs. The prunasin is hydrolyzed by microbial enzymes in the rumen leading to the release of hydrogen cyanide, which can be lethal. Risk is greatest in the spring. Cyanide poisoning potential has been shown to vary geographically.

#### Medicinal Uses

Indigenous peoples used preparations of saskatoon berries, twigs, and bark as a tonic, laxative, and contraceptive, and to treat coughs, colds, fever, toothache, diarrhea, dysentery, gonorrhoea, and the discomforts of pregnancy and childbirth. Extracts of saskatoon have recently been shown to have antiviral activity, suggesting the validity of some of these uses. Concoctions (i.e. boiled preparations) of inner bark and fruit were used to treat snowblindness, sore eyes and stomach problems. The recently discovered antioxidant activity of the saskatoon berry may lead to its use in natural health products ("functional foods," "nutraceuticals") to protect against conditions such as heart disease, cancer and macular degeneration.

#### Other uses

Although *A. alnifolia* is dominant among fruit-producing cultivars of *Amelanchier*, most of the cultivars used for landscaping have been derived from other species. However, one cultivar, *A. alnifolia* 'Altaglow', has attracted attention for its outstanding fall color. This columnar tree is 5-7 m tall and has masses of white flowers followed by cream fruit. The long lasting autumn foliage transforms from dark green to purple, red, then reddish-brown and finally yellow. Saskatoon has also been used in the restoration of wildlife and game habitat and for windbreaks. Studies have shown that it is particularly effective for reclamation of acid mine sites. The readily observed foliar injury responses of saskatoon to sulphur dioxide can be used as a biological indicator. The wood has been used for fishing poles and umbrella handles. Indigenous people employed the thin straight stems of saskatoon bushes as arrow, spear and harpoon shafts, implement handles, basket frames, armor, shields

and canoe frames. The Thompson and Blackfoot tribes used dried saskatoon berries for trade.

### Agriculture and Commercial Aspects

In 1913 W. Donald Albright travelled to the Peace River in Alberta and settled where the Beaverlodge Research Station now stands. His enthusiasm for improving agriculture in the area led to correspondence with the director of the Central Experimental Farm in Ottawa, and in 1916 an experimental substation was established on his land with Albright as superintendent. That same year Albright planted saskatoons from local wild stock. Later he noticed that berries from his different bushes varied in taste. In 1928, Dominion Botanist W. T. Macoun made 27 selections from Albright's plants. One of these proved superior and was released in 1952 as the cultivar Smoky (named after the Smoky River drainage basin where Beaverlodge is situated). Smoky was maintained at Beaverlodge, and supplied seed and suckers for the first commercial orchards established in the 1970s. As a result, the saskatoon industry is largely based on Smoky. To what extent more recently produced cultivars are superior to Smoky is unclear.

In the early 1990s there were 100 ha of saskatoon under cultivation in Canada and much of this was on "pick-your-own" berry farms located near urban centres. Now there are at least 1,000 ha of orchards in production on about 1,500 farms. Growth has continued at a rate of 10% annually during recent years. Over 51% of the productive acreage is in Alberta, followed by Saskatchewan with over 31%, Manitoba with 11%, British Columbia with 2%, Ontario with 2%, Quebec with 0.5%, and New Brunswick and Nova Scotia together with 0.2%. To meet the increasing demand of the saskatoon processing industry, orchards are becoming larger, with wider rows to facilitate mechanical harvesting by combines. In Alberta, 60% of the crop is now mechanically harvested.

Maximum yield occurs at 8-15 years of age when harvests reach 10,000 kg/ha, but there are claims of twice that. A good yield for an individual plant is said to be 4.5 kg. The plants are productive for at least 25 years. The berries have reasonable keeping qualities and ship well. Because much of the crop is processed, its value is increased considerably. Information on cultivars, planting and management is available in the references listed below.

Cold hardiness of a fruit crop is a critical consideration for Canada. The cold hardiness of the saskatoon (down to -60°C) makes it appropriate for cold areas. It proved to be the hardiest of fruit plants tested at the Yukon experimental station on the Alaska highway. Abundant wild plants along the Yukon River have been harvested for sale in Dawson City - a location where few other fruit crops exist. It has been suggested that saskatoons



Saskatoon at Beaverlodge Research Station, with Brenda Brookes (technical assistant for this series)

Grown in the northern Canadian prairies have more intense flavour and that this may be related to the cooler night temperatures.

### Cultivars & Germplasm

There are more than 2 dozen cultivars of saskatoon. The cultivar Smoky, noted above, is a shrub up to 2.5 m tall with very sweet fruit. More recent cultivars (e.g. Thiessen and Honeywood, both produced in Saskatchewan) differ with respect to fruit size (generally larger), fruit taste, and flowering time (earlier or later). The variety Pembina has been highly recommended for the home garden because it takes up less space as a result of its more compact upright form and restricted suckering.

Wild saskatoon has become scarce in parts of the Canadian prairies due to increasing alteration of the natural landscape. In addition to urban, agricultural, and industrial pressures, natural stands have suffered in recent years from catastrophic frost, drought and pests. The resulting loss of genetic diversity is a growing concern. Although some material is currently protected in genebanks, collection projects need to be initiated to locate and conserve germplasm with special traits, both *in situ* and *ex situ*. Canada's *Amelanchier* germplasm has been recognized as a world resource. Prospects for new crops include several native *Amelanchier* species in addition to *A. alnifolia*. These related species produce an abundance of sweet, juicy berries of excellent flavour. A classification documenting unique genetic resources and their geographic occurrence is needed as a framework for further crop development.

## Prospects

Saskatoon is a beneficial crop. It contributes to alternative agricultural production and mixed farming; is profitable because of the value-added nature of the processing industry; and is much more biodiversity-friendly than most other crops. As a fruit crop saskatoon is similar to blueberry, but can be grown where blueberry will not survive. With its resistance to low temperature and drought, and tolerance of calcareous soils, saskatoon is particularly well adapted to the prairie provinces. It has been estimated that a minimum of 4,000 hectares could be planted on the Canadian prairies.

The supply of saskatoon has frequently been insufficient to meet consumer demand by the food processing industry, restaurants, caterers, and others. Currently the saskatoon industry in the prairies is growing faster than the blueberry industry did in eastern Canada. The Saskatchewan Fruit Growers Association is using saskatoon as an exploratory model for the development of profitable fruit crop industries in the province. Canadian saskatoon berries produced in orchards are now worth at least 3 million dollars. This most promising indigenous fruit crop, has come a long way in a short time, and is on the verge of becoming a major success.

## Myths, Legends, Tales, Folklore and Interesting Facts

The crest of the city of Saskatoon shows a lion holding a sprig of saskatoon berries in his paw. The city is believed to have been named for the saskatoon (not vice versa), in recognition of the abundance of the fruit along the banks of the South Saskatchewan River.

Attempts have been made to lure birds away from cherry orchards by planting saskatoon nearby. However, it has been observed that the birds simply eat the saskatoon berries and then return to the cherries.

Juneberry, shadbush and serviceberry are among the common names of *A. alnifolia* and many other species of *Amelanchier*. "Juneberry" is for early flowering with berries in June. "Shadbush" results from the conspicuous flowering of the shrub when the American shad (*Alosa sapidissima*) begins to ascend streams to spawn. This fish is "anadromous" like the salmon, returning from the sea to breed in fresh water streams. It inhabits the waters of the Atlantic coast from Newfoundland to

Florida. "Serviceberry" may have been derived from the Old World practice of cutting off branches of *Amelanchier* species in mid-winter and forcing them to bloom for church services. Alternatively, the name may have resulted from the fact that the species bloomed when the dirt roads had thawed and dried enough so the circuit riding preachers could visit and conduct religious services. Still another possibility is that when the shrub bloomed the ground was sufficiently thawed to bury and hold services for all who had died over the winter.

In a recent syndicated newspaper article (e.g. The Ottawa Citizen, 5 June 2002), well known New York food writer Steven Shaw (a.k.a. "fat guy") remarked: "It is virtually impossible for a traveller to make it across Saskatchewan without being subjected to saskatoon berries in infinite variety." He discovered saskatoon in pies, candies, jams, jellies, tea, and wine. In one restaurant he "experienced no less than five dishes - from soup... to chocolate cake - each featuring saskatoon berries." He was duly impressed.

## Additional Information

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Jones, G. N. 1946. American species of *Amelanchier*. *Illinois Biological Monographs* **20**(2): 1-126.

St. Pierre, R. G. 1997. Growing Saskatoons - A Manual for Orchardists. Fifth Edition. University of Saskatchewan. (with contributing authors, Hamish Tolluch and Catherine Greuel. Native Fruit Development Program, Department of Horticulture Science, Univ. Saskatchewan, 51 Campus Drive, Saskatoon, Saskatchewan, S7N 5A8, Phone: (306) 966-5867/8103) <http://www.ag.usask.ca/departments/plsc/nfdp/>

Saskatchewan Fruit Growers Association – <http://www.saskfruit.com>

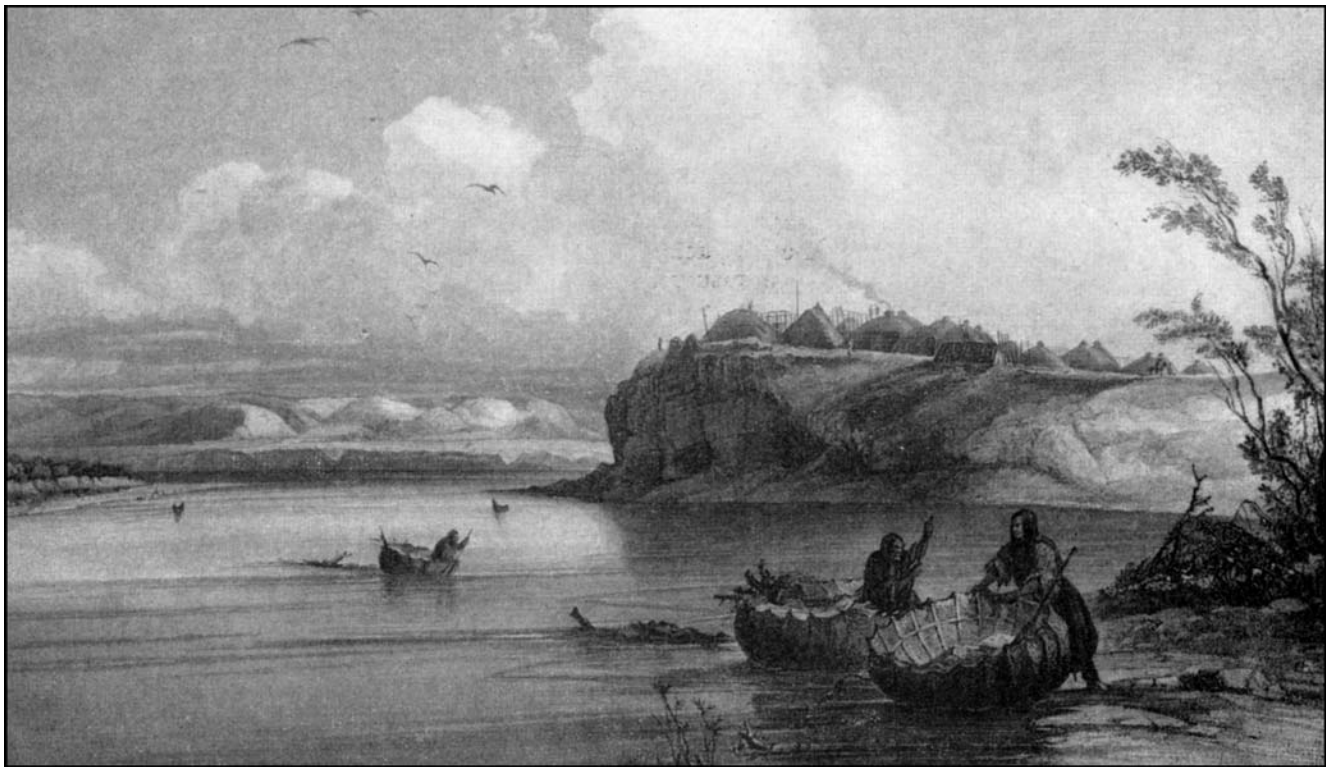
## Acknowledgements

B. Brookes (AAFC), W.J. Cody (AAFC), J. Cayouette (AAFC), L. Gilmore (Manitoba Agriculture and Food), A. Laforge (AAFC, Saskatchewan), L. L. Hausher (Alberta Agriculture), S. Purdy (Saskatchewan Fruit Growers Association).





Thomas Nuttall (on left) recognized *Amelanchier alnifolia* as a new species in 1811, based on plants he collected near the Missouri River at Fort Mandan, North Dakota, then far into a dangerous wilderness with roaming war parties. He noted that the agreeable fruit was used by the Mandan Indians, who practiced an advanced agriculture. A nearby Mandan village (below), illustrates the landscape that Nuttall encountered. Note the houses on the bluff and the "bull boats," made of buffalo skin stretched on a wooden frame, which was often made from saskatoon branches. Nuttall was so preoccupied with searching for plants that he was oblivious to hunger, fatigue, illness and biting insects. Although considered an entertaining eccentric by his companions, the Mandan Indians held him in the highest regard. He often wandered far away from the fort and on one occasion collapsed on the open prairie from extreme fatigue. Luckily he was saved by a passing Indian who took him back to the fort by canoe. (For more on Thomas Nuttall see Graustein, J. E. 1967. Thomas Nuttall naturalist - explorations in America 1808-1841. Harvard University Press, Cambridge, Massachusetts. 481 pp.)



# Book Review

## Revue de livre

**Weeds of Canada and the Northern United States.**  
by France Royer and Richard Dickinson, 1999  
Lone Pine Press / The University of Alberta Press, 434 p.  
ISBN 0-88864-311-X (softcover)  
Price: CND\$29.95, USD\$21.95

The format and the presentation of this new visual identification book make it ideal to carrying about in any outing both for the professional and the amateur botanist. It has a thoughtful presentation which uses both drawings, photos and clear concise description written in a layman language.

Both detailed drawing of important plant anatomy needed to distinguished the species and good photographs of the plant at different growth stage or the presentation of similar species that could be confused with the keyed species are very useful and warns the reader of the limitation of such visual keys. The visual key for the adult plant works well. However, the key for seedlings is slightly deficient. For example some seedlings in the lanceolate category should be placed within the ovate category.

The glossary augmented with pictures is a good idea. Most of the pictures of the weed seeds have been taken too far and the characters of the seed coat are not visible. The pictures are therefore not very useful to identify weeds from a seed lot sample.

It is also surprising that two major weeds have been omitted, Common ragweed (*Ambrosia artemisiifolia*) responsible for hay fever allergies and Green pigweed

(*Amaranthus powellii*) a major agricultural weed often confounded with Redroot pigweed (*Amaranthus retroflexus*), Eastern black nightshade (*Solanum ptycanthum*) and Three-seeded mercury (*Acalypha rhomboidea*).

Many of the scientific names given have not followed the recent changes in the taxonomic nomenclature. For example: *Agropyron repens* = *Elytrigia repens*, *Erigeron canadensis* = *Conyza canadensis*, *Polygonum convolvulus* = *Fallopia convolvulus*. On page 51, the close-up picture of the inflorescence corresponds to *Senecio vulgaris* and not *S. viscosus*. The error is also present in the text since the bracts of *S. viscosus* are not black tipped! On page 53, the close-up picture of the inflorescence corresponds to *Senecio viscosus* and not *S. vulgaris*.

Regardless of its few errors, this new visual identification book is a very good addition to anyone's collection. It is ideal to carrying about in any outing both for the professional and the amateur botanist.

**Diane Lyse Benoit**  
Agriculture and Agri-Food Canada  
Saint-Jean-sur-Richelieu (Québec)

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## Plant Canada 2003 CBA fundraising Auction

Plans are under way to organize a fund raising auction during the scheduled barbecue social at the meeting in Antigonish.

Our 'original' auctioneer, Dr. Hughes Massicotte - UNBC, has once again agreed to 'animate' the event!

Donations of botanical paraphernalia (books, art, clothing, knick-knacks, ...) are needed to make this a successful event. If you have any such items, please send them to Christian Lacroix at the address below or contact him to let him know that you will be bringing something with you for the auction at the meeting.

### Christian Lacroix

Department of Biology, University of Prince Edward Island, 550 University Avenue, Charlottetown, PEI C1A 4P3  
Tel. 902-566-0974, e-mail: lacroix@upeil.ca

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## Plantes Canada 2003 Vente aux enchères - levée de fonds pour l'ABC

Des préparatifs sont en cours pour organiser une vente aux enchères pour amasser des fonds pour l'ABC durant la soirée barbecue de la conférence à Antigonish.

Notre crieur 'original', Dr. Hughes Massicotte - UNBC, s'est encore porté volontaire pour 'animer' cet événement!

Vos dons d'effets à caractère botanique (livres, art, vêtements, bibelots, ...) sont demandés pour assurer le succès de l'événement. Si vous possédez de tels objets, veuillez s'il vous plaît les faire parvenir à Christian Lacroix à l'adresse ci-dessous ou contactez-le pour lui dire que vous apporterez quelque chose avec vous pour la vente aux enchères à la conférence.

## New feature on COSEWIC web site

We now have a feature on the COSEWIC web site that enables all those interested to be on the distribution list for notification of future calls for applications for membership and/or future calls for bids for the preparation of species status reports. Please visit the website to complete and submit the required information for future notification unless you have already done so.

## Nouveauté sur le site web du COSEWIC

Veillez consulter notre site web pour les appels de demandes pour les membres du COSEWIC. Nous avons maintenant une fonction sur le site web du COSEWIC qui permet à tous ceux qui sont intéressés de s'inscrire à la liste d'envoi afin de recevoir un avis en ce qui concerne les appels de demande de candidature ou les appels d'offre à venir pour la préparation de rapports de situation d'une espèce. Veuillez visiter le site web afin de fournir et de soumettre les renseignements nécessaires pour les prochains avis, à moins que vous ne l'avez déjà fait.

<http://www.cosewic.gc.ca/>

**Shirley Sheppard**  
COSEWIC Secretariat/  
Secrétariat du COSEWIC  
Canadian Wildlife Service/  
Service canadien de la faune  
Environment Canada/  
Environnement Canada  
OTTAWA



## Please note / À noter

Please use the corrected addresses for the following CBA officers.  
Pour rejoindre les personnes suivantes, veuillez utiliser leurs coordonnées corrigées.

**Anne Bruneau**, IRBV, Université de Montréal, 4101, rue Sherbrooke Est, Montréal, QC H1X 2B2  
Tél.: (514) 872-7301; fax : (514) 872-9506; courriel : [anne.bruneau@umontreal.ca](mailto:anne.bruneau@umontreal.ca)

**Pam Krannitz**, Pacific Wildlife Research Centre, 5421 Robertson Road, R.R. 1, Delta, BC V4K 3N2  
Tel.: (604) 940-4676; fax : (604) 946-7022; e-mail : [Pam.Krannitz@ec.gc.ca](mailto:Pam.Krannitz@ec.gc.ca)

## Assemblée générale annuelle de l'ABC à Antigonish

L'assemblée générale annuelle de l'ABC se tiendra lors du congrès de Plante Canada qui se déroulera à Antigonish, Nouvelle-Écosse, en juin 2003. Voici un aperçu des principales activités de l'ABC. L'ABC organise en outre de nombreuses autres activités (présentations, colloques). De plus, **Plante Canada**, la **Société canadienne de physiologie végétale** et le **Foundation New Phytologist** ont mis sur pied d'autres événements tous plus intéressants les uns que les autres.

### 25 Juin

Portes ouvertes au public	toute la journée
Réunion du bureau de direction sortant de l'ABC	16h00
Enregistrement/réception	17h00

### 26 Juin

Début des symposiums et des présentations	toute la journée
Réunions des comités et des sections de l'ABC	lunch
Conférence Weresub	19h00

### 27 Juin

Présentations	matinée
Remise des prix honorifiques	lunch
Réunions des comités et des sections de l'ABC	lunch
Excursions	après-midi
Barbecue à Crystal Cliffs	17h00

### 28 Juin

Présentations	toute la journée
Assemblée générale annuelle de l'ABC	17h00
Banquet	18h00

### 29 Juin

Réunion du nouveau bureau de direction	9h00
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Pour une description complète des activités, veuillez consulter le site web de Plant Canada 2003 :

[http://phykos.stfx.ca/plant\\_canada/](http://phykos.stfx.ca/plant_canada/)

On y accède également, ainsi qu'à d'autres informations pertinentes pour les membres, par le site web de l'ABC :

<http://www.uoguelph.ca/botany/cba/>

