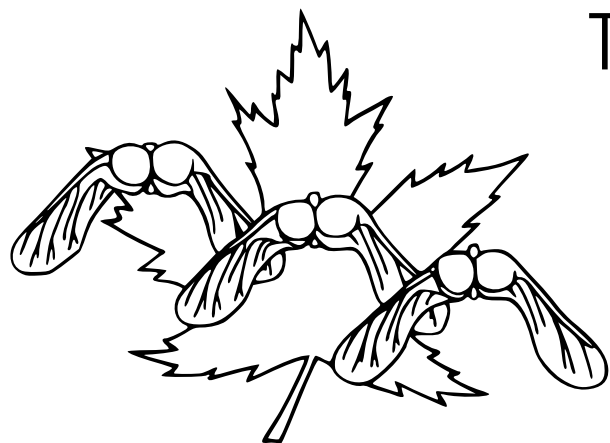
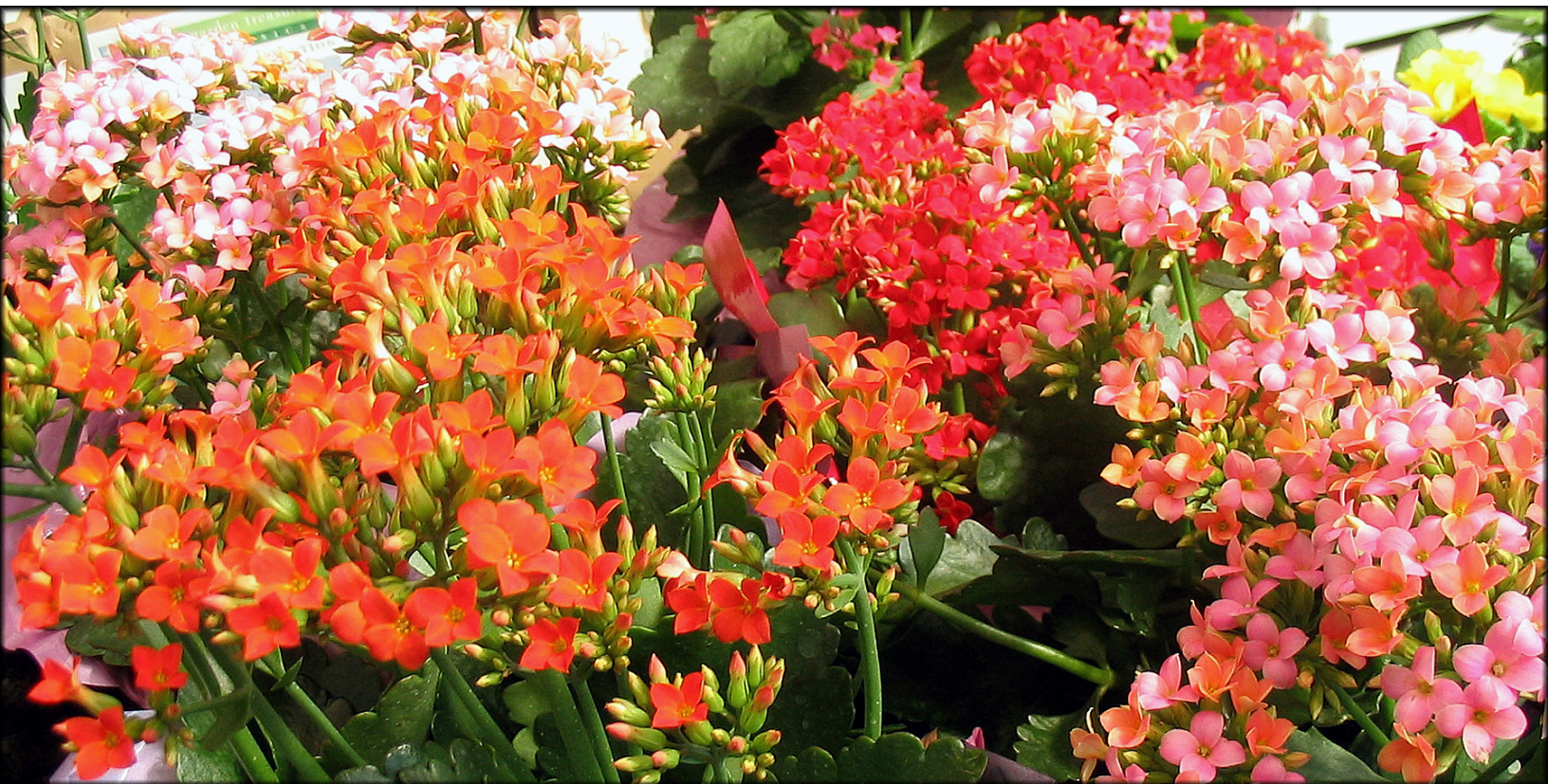




The Canadian Botanical Association Bulletin

Bulletin de l'Association Botanique du Canada

Vol. 52 Number 1, March/mars 2019



Kalanchoe. See story on page 7. ©Quadell (CC BY SA 3.0).

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The Canadian Botanical Association Bulletin

The CBA Bulletin is issued three times a year (March, September and December) and is freely available on the CBA website. Hardcopy subscriptions are available for a fee.

Information for Contributors

All members are welcome to submit texts in the form of papers, reviews, comments, essays, requests, or anything related to botany or botanists. For detailed directives on text submission please contact the Editor (see below). For general information about the CBA, go to the web site: www.cba-abc.ca

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Published in Ottawa, March 25th 2019
ISSN 0008-3046 (paper)
ISSN 1718-8164 (electronic)

Next issue

Texts for the next issue, 52(2), must be received by September 1, 2019

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Bulletin de l'Association Botanique du Canada

Le Bulletin de l'ABC paraît trois fois par année, normalement en mars, septembre et décembre. Il est envoyé à tous les membres de l'ABC.

Soumission de textes

Tous les membres de l'Association sont invités à envoyer des textes de toute nature concernant la botanique et les botanistes (articles, revues de publication, commentaires, requêtes, essais, etc.). Tous les supports de texte sont acceptés. Pour des renseignements détaillés sur la soumission de textes, veuillez consulter le rédacteur (voir ci-dessous). Infos générales sur l'ABC à l'url suivant: www.cba-abc.ca

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Publié à Ottawa, le 25 mars 2019
ISSN 0008-3046 (papier)
ISSN 1718-8164 (électronique)

Prochain numéro

La date de tombée des textes du prochain numéro, le no 52(2), est le 1 septembre 2019

Message du président

Il semble que l'hiver soit de plus en plus difficile avec l'âge. Quand j'étais jeune, il était toujours possible d'être réconforté par une énième victoire du Canadiens (Guy! Guy! Guy!), mais ces jours-ci, de telles certitudes se font rares. Disons qu'arrivé en février, je suis dans un « funk ».

Cependant, l'espoir jaillit! Une légère fonte vient de se produire et je dois admettre que cela m'a fait du bien. La perspective de beautés printanières commence à danser dans ma tête. Les trilles sont parmi mes plantes préférées et à Ottawa-Gatineau nous avons la chance d'en avoir quatre espèces, avec les rouges (*Trillium erectum*) et les blancs (*Trillium grandiflorum*) formant littéralement des tapis dans nos forêts. Quand ils sont mélangés avec des érythrones (*Erythronium americanum*), des uvulaires (*Uvularia grandiflora*), des sanguinaires (*Sanguinaria canadensis*), des dicentra (*Dicentra canadensis*) et des hépatiques (*Hepatica acutiloba*), même les botanistes les plus déprimés par l'hiver ne peuvent pas s'empêcher de sourire en pensant à ce qui est à venir.

Une autre chose qui me fait sourire, ce sont nos prix pour les publications de nos étudiants (Porsild-Consaul, J. Stan Rowe, Taylor A. Steeves et Luella K. Weresub). Personnellement, je pense que ce sont les prix les plus importants que nous puissions attribuer, car ils reconnaissent l'excellence et l'avenir de nos disciplines. Un bon nombre de personnes qui ont remporté ces prix sont maintenant des botanistes professionnels (dont moi-même! Porsild, 1999?),

c'est donc un grand honneur d'en recevoir un. Si vous êtes professeur, assurez-vous que vos étudiants postulent, et si vous êtes étudiant, assurez-vous de postuler! La date limite est le 15 avril et les détails concernant le dossier de candidature sont disponibles sur notre site web.

Un grand sourire me vient également à l'esprit quand je pense à notre assemblée annuelle à l'Université de Guelph avec Plant Canada du 7 au 10 juillet. C'est vraiment une conférence à ne pas manquer, car sept des plus grandes sociétés scientifiques en biologie végétale au Canada y participeront. Qu'est-ce qui vous intéresse? La phytopathologie? L'agronomie? L'horticulture? Les mauvaises herbes? Tous les intérêts botaniques seront satisfaits. Certains points à noter à propos de la conférence sont que les résumés pour les présentations orales doivent être soumis au plus tard le 24 mai et que l'inscription anticipée se termine le 30 mai. Vous voudrez peut-être également réserver votre hébergement tôt. Il reste beaucoup de temps, mais... visitez le site web de la conférence à l'adresse www.cspb-scbv.ca/PlantCanada2019/index.shtml.

Savez-vous quoi? Après tous ces sourires, je me sens vraiment mieux.

À bientôt, à Guelph!

Julian Starr
Université d'Ottawa

President's Message

It seems like winter only gets harder as I age. In the old days, you could always be cheered up by yet another win for the Canadiens (Guy! Guy! Guy!), but these days even such certainties seem hard to find. Let's say that by February I'm in a funk.

However, hope "springs" eternal. A slight melt has just occurred and I must admit it has done me some good. The prospect of spring beauties is starting to dance through my head. Trilliums are a particular favourite of mine and living in Ottawa-Gatineau, we are lucky to have four species with the red (*Trillium erectum*) and white (*Trillium grandiflorum*) trilliums literally forming carpets in our forests. When mixed with trout lilies (*Erythronium americanum*), bellworts (*Uvularia grandiflora*), bloodroots (*Sanguinaria canadensis*), squirrel corns (*Dicentra canadensis*) and hepaticas (*Hepatica acutiloba*), even the most downtrodden botanist in winter cannot avoid breaking out in smiles just thinking about what's to come.

Another thing that brings a smile to my face are our student publication awards (Porsild-Consaul, J. Stan Rowe, Taylor A. Steeves and Luella K. Weresub Awards). Personally, I think these are the most important awards we can give because it recognises excellence and the future of our disciplines. Many of the people that have won these awards

are now professional botanists (I am one! Porsild, 1999?), so it is a great honour to receive one. If you are a professor, make sure your students apply, and if you are a student, be sure to apply! The deadline is 15 April, and details regarding the application package are found on our website.

A big smile also comes to mind when thinking of our Annual Meeting at the University of Guelph with Plant Canada from the 7th till the 10th of July. This is really one that cannot be missed because seven of the top scientific plant societies in Canada are going to attend. What's your fancy? Phytopathology? Agronomy? Horticulture? Weeds? All botanical interests will be satisfied. Some things to note about the meeting are that abstracts for oral presentations need to be submitted by 24 May and that early bird registration ends on 30 May. You also might want to secure your accommodation early. There is lots of time now, but ... visit the conference website at www.cspb-scbv.ca/PlantCanada2019/index.shtml.

Well, you know what? After all those smiles, I am actually feeling better. See you soon in Guelph!

Julian Starr
University of Ottawa



A photographic representation of President Julian Starr's February mood. ©Julian Starr

Mycology Section News

The signs of spring are few and far between in northern BC, as there is a forecast of -25° again in Prince George for early March. When I am freezing like this, my thoughts always wander to warmer pastures full of mushrooms. The fall fruiting season was sporadic in the north after a summer of drought and fire in central BC. We are still hoping for a great 2019 morel season, but only time will tell as we hear that the snow melt will proceed quickly this year and again a dry spring is a possibility.

The Mycology Section took a pause last summer and therefore no Weresub lecture was organized for the BSA meeting in Rochester; the hiatus has continued with the usual fall craziness interfering with our plans to meet and organize. Consequently, we are still deciding on our Weresub lecturer for the 2019 AGM in Guelph.

We are getting organized to ask for submissions for the competition for the Luella K Weresub Award for best student paper in fungal biology published in 2018, with adjudication by April or May. The review committee is always bursting in anticipation of the array of top-quality contributions submitted. This year, our review committee consists of Shannon Berch, Hugues Massicotte, Greg Thorn, Jonathan Cale and Sarah Hambleton.

Perhaps more importantly though, after 13 years of co-chairing activities for the CBA Mycology section, one of us is retiring this spring and the other is planning a sabbatical in early 2020, therefore Shannon and I are serving notice that the chairing job for Mycology will be open as of July 2019.

Over those years, we have enjoyed helping the CBA recognize and learn from established mycologists through the Weresub lecture at the AGM and encouraging and rewarding the amazing research accomplishments of our mycologists-in-training through the Weresub Award for the best student paper in fungal biology. It is our sincere hope that one or two Canadian mycologists will be willing to carry on and breathe new life into the fungal wing of the CBA/ABC. If you are interested in chairing or co-chairing

the Mycology Section, or have questions about what is involved, please contact one of us.

Respectfully submitted
Shannon Berch and Hugues Massicotte
Mycology Section Co-Chairs



Shannon Berch and Hugues Massicotte foraging for the mycoheterotrophic plant *Pterospora andromedea* in Terrace, BC, August 2012.
©Hugues Massicotte

2019 Call for Award Nominations and Applications

Each year the Canadian Botanical Association / L'Association Botanique du Canada provides awards to botanists studying in Canada, and/or to Canadian botanists studying abroad. Applications and nominations are now open for the following:

CBA-ABC Student Awards

Published Papers

Application deadline: April 15, 2019.

These awards are given to students for a paper they have published in the last year:

Porsild-Consaul Award, \$1000: awarded for the best paper in phytogeography or systematics.

Stan Rowe Award, \$500: awarded for the best paper in plant ecology.

Taylor Steeves Award, \$500: awarded for the best paper in plant development or structure.

Luella Weresub Award, \$1000: awarded for the best paper in mycology or lichenology.

For Presentations at the Annual CBA-ABC Meeting

Application deadline: May 24, 2019.

Lionel Cinq-Mars Award, \$500: awarded for the best oral presentation.

Iain and Sylvia Taylor Award, \$500: awarded for the best poster presentation.

For Travel to Participate at the CBA-ABC Meeting

Application deadline: May 24, 2019.

These awards provide \$150-500 to assist travel costs for graduate (**Macoun Travel Bursary**) or undergraduate (**Winterhalder Travel Award**) students presenting talks or posters at the annual CBA/ABC meeting.

For Research Travel Related to Canada's North

Application deadline: March 11, 2019.

Laurie Consaul Northern Research Scholarship, \$1300:

This award supports graduate and undergraduate students performing botany research in Canada's North.

CBA-ABC Major Awards

The Lawson Medal is most prestigious award of the CBA-ABC. It recognizes excellence in the contribution on an individual to Canadian botany.

The Mary Elliott Service Award is given to an individual for meritorious service to CBA-ABC.

The Magister Award is given for teaching excellence in plant science within Canada.

Nomination deadline: March 11, 2019.

For more information about these CBA-ABC awards, please see www.cba-abc.ca

Top Canadian Ornamental Plants. 22. Kalanchoe

Ernest Small^{1,2}

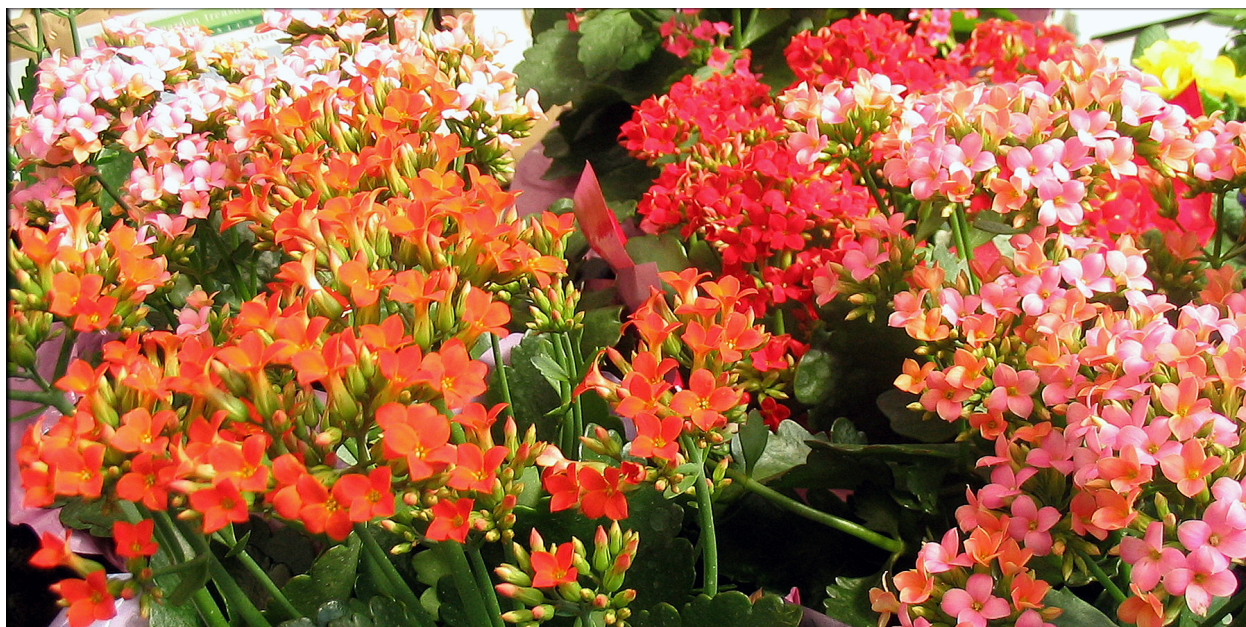


Figure 1: *Kalanchoe blossfeldiana* cultivars with different colours of flowers. ©Quadell (CC BY SA 3.0).

Kalanchoes are popular ornamental houseplants, most widely encountered as small potted specimens like African violets. These beautiful succulents are relatively hardy, require limited water, are easily propagated and maintained, and are available in an increasing variety of cultivars with very attractive floral and foliage displays. Kalanchoes are the second-most important indoor potted plant produced commercially in Canada, surpassed only by miniature roses. They are very popular gift plants, and can last for years.

Scientific names: The genus *Kalanchoe* is a Latinization of the Chinese *Kalan Cauhuy*, “that which falls and grows,” a reference to the plantlets produced on leaf margins which fall off and grow on the ground. As a scientific name, *Kalanchoë* with a diaeresis (dieresis, diëresis) is incorrect, although occasionally encountered. In the past, *Kalanchoe* was separated from the genera *Bryophyllum* and *Kitchingia*, but they are now united.

English names: Kalanchoe. It is generally recommended that the word be pronounced with four syllables, accenting the third syllable and pronouncing the ch as k, i.e. kal-un-KOE-ee. Several other names are applied to the cultivated species, as presented later. A group of very attractive double-flowered cultivars under the trademarked name “calandiva” is currently widely marketed (calandiva is kalanchoe, although sold as a different kind of plant).

French name: Kalanchoe.

Symbolism

In China, red-flowered plants are popular, because red is considered to be the colour of joy, symbolising virtue, truth and sincerity, and having the power to scare away bad fortune. Red-flowered kalanchoes are especially popular, and are commonly purchased during the Chinese Lunar Calendar New Year. The plants are known as *wan zi qian hong* (literally “thousands of red flowers”), and are thought to bring wealth and prosperity. Western flower merchants have assigned the symbolic meanings endurance and lasting affection to kalanchoe, presumably because the plants are long-lasting and attractive.

Wild *Kalanchoe* species

There are about 140 species of *Kalanchoe*, although some authorities recognize as many as 200. They are tropical natives of South and East Africa, Arabia, and Southeast Asia. Most are indigenous to Madagascar and tropical Africa. A few have been introduced and grow wild in the New World. Most are shrubs or perennial herbs, but several are annual or biennial. Kalanchoes are leafy succulents, producing clusters of small, usually brightly coloured flowers – frequently

¹Science and Technology Branch, Agriculture and Agri-Food Canada, Saunders Bldg., Central Experimental Farm, Ottawa ON, K1A 0C6

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Figure 2: Calandiva® series of double-flowered cultivars of *Kalanchoe blossfeldiana*. **Left:** ©Jonathan Cardy (CC BY SA 3.0). **Right:** ©JC7001 (CC BY SA 2.0)

yellow, orange, red, pink or magenta. Most species are less than 1 m in height, but the largest, *K. beharensis* of Madagascar, reaches 6 m.

Domesticated *Kalanchoe* species

Cultivated kalanchoes are mostly hybrids of *K. blossfeldiana*, and are mainly grown as flowering houseplants. Many are compact, and will grow well in very small containers, even in teacups, but modern varieties have also been bred that branch and spread extensively. Hybridization has generated cultivars with attractive foliage and a range of flower colours. Cultivated varieties usually have fleshy, thick, succulent leaves with scalloped margins, and clusters of small flowers with four petals (most other members of the Crassulaceae family have flowers with five petals). The blooms are available in many colours, most popular of which are red, yellow, pink, orange and white. Some cultivars have bicoloured flowers, and some have doubled, larger flowers (especially the calandiva selections). Some cultivars are grown specifically for their attractive, often variegated foliage. Several new cultivars are asexually propagated. Dozens of species of *Kalanchoe* are cultivated in specialty collections, but only a few have been domesticated. The three most widely grown are mentioned in the following.

Kalanchoe blossfeldiana (florist kalanchoe, Christmas kalanchoe, flaming Katy, Madagascar widow's thrill), the most widely grown species of *Kalanchoe*, is named for Robert Blossfeld, a German nurseryman who introduced it to Europe in 1932 from its native Madagascar. The wild species is a succulent herb or subshrub which can develop woody tissues with age.

Kalanchoe pinnata (air plant, Mexican love plant, cathedral bells) is another native of Madagascar. It is often grown as a curiosity, because a leaf cut from the plant is able to produce new plantlets along the margin.

Kalanchoe daigremontiana (mother-of-thousands, Mexican hat plant, Devil's backbone, alligator plant) is another curiosity, producing numerous plantlets on the leaf edges, which will produce new plants if they land in soil when they fall off. This native of Madagascar, has lost the ability to reproduce sexually, and cannot generate viable seeds.

Crassulacean acid metabolism

Three metabolic systems of photosynthesis are commonly recognized. The *C3* pathway, employed by about 85% of plants, was named for the first molecule produced in the cycle, the 3-carbon 3-phosphoglyceric acid. The presence



Figure 3: *Kalanchoe beharensis*, the largest species of the genus. **Left:** Tree growing in Madagascar. ©Lucile, Mada (CC BY 2.0). **Right:** Tree growing in the city nursery in Ellfenu Park, Bern, Switzerland. ©Sandstein (CC BY 3.0).

of oxygen reduces the efficiency of uptake of CO₂ by about 25%. The carbon fixation pathways used by C₄ and CAM plants, noted next, are more efficient than the C₃ pathway because their chloroplasts function in an oxygen-reduced environment, but this is achieved by investment in special adaptations. These alternative photosynthetic mechanisms have each evolved independently in over two dozen groups of plants.

The *C4* pathway, employed by about 3% of plants, is named for 4-carbon molecules produced during the process. Carbon dioxide from the atmosphere is chemically fixed and transported to special cells surrounding the veins. These "bundle sheath cells," which are a characteristic



Figure 4: *Kalanchoe blossfeldiana* cultivars. **Top:** Cultivar with normal flowers with four petals. ©HitroMilanese (CC BY SA 3.0). **Bottom:** Cultivar with doubled flowers. ©Yewchan (CC BY SA 2.0).



Figure 5: *Kalanchoe pinnata*. **Left:** Well-developed flowering plant. ©SKsiddhartthan (CC BY SA 4.0). **Right:** Plantlets developed on leaf margin. © Navaho (Stefan Walkowski) (CC BY SA 3.0).

feature of the “Kranz” leaf anatomy of C4 plants, are low in oxygen, and so increase the efficiency of CO₂ utilization. C4 plants are common in hot habitats.

The CAM (*crassulacean acid metabolism*) pathway, occurs in about 7% of plants. CAM plants are not only adapted to hot environments like C4 plants, they are also adapted to dry environments by succulence (not all succulents are CAM plants, and CAM has been observed in non-succulent organs). Succulents have thick, fleshy leaves and stems that retain moisture, along with adaptations to reduce evaporation through the epidermis. Terrestrial plants usually take up CO₂ through closable pores called stomata (= stomates; singular: stoma, stomate). CAM plants keep their stomata closed during the day to prevent water loss by transpiration. Instead, the stomata are opened at night to take in CO₂. Like C4 plants, they transform CO₂ into a chemically fixed form (malate). But unlike C4 plants, the fixed carbon is not quickly transformed into carbohydrates, but is stored until daylight, when the stomates are closed and once again an oxygen-poor environment exists that promotes more efficient photosynthesis. The advantage of CAM is that temperatures are generally lower at night when stomates are open, so water loss is reduced.

Some plants are flexible in the photosynthetic pathways they use, and this is especially true of *Kalanchoe*. Light intensity, water availability, temperature, and stage of reproduction have all been found to be influential. *Kalanchoe* species under stress tend to shift from conventional C3 metabolism to the CAM pathway, which is doubtless adaptive for the wild species, most of which occur in dry environments. However, the tight closure of stomates during the day, characteristic of CAM plants, is sometimes poorly developed in *Kalanchoe*, particularly in cultivars.

Economic value

In warmer climates than found in most of Canada, kalanchoes are grown outdoors, especially in rock gardens. While primarily a house plant, kalanchoe is also a popular balcony or patio plant for summer use, tolerant of both sun and shade. Growing the plants in hanging baskets allows them to be placed outdoors but quickly brought inside when the temperature becomes too low. There have been some efforts to develop a cut-flower industry, but this is currently very limited. The plants are popular with florists, in part because they can be forced to come into bloom at any time of the year, and so are available at peak selling

seasons, such as holidays (the name “Christmas kalanchoe” reflects the plant’s popularity at this season).

Toxicity and medical potential

All parts of kalanchoes are poisonous, especially the flowers. Several species are known for the presence of toxic cardiac glycosides known as bufadienolides (these are of the same class as the cardiotoxins secreted by the skin of toads of the genus *Bufo*). Sheep and cattle have been poisoned by consuming introduced species in South Africa and Australia. Cats, birds, iguanas and especially dogs have also been poisoned, and it has been recommended that the plants should be kept at a safe distance from household pets and young children. Common gastrointestinal symptoms include vomiting, bloody diarrhea and cramping, indicating that these are definitely not edible plants. Despite the toxicity, several kalanchoes are employed both internally and externally as traditional herbal medicines in regions where they are indigenous, and there is considerable research underway to examine potential applications as modern pharmaceuticals.

Obtaining potted plants

Acquiring a plant as a gift usually mean that it is in full bloom or at least many of the flowers are mature. Similarly, when buying a plant to give as a gift, many of the flowers will be attractively open. Since gift pots are often purchased in the winter, care should be taken that the plant is protected from cold stress, as kalanchoes are damaged at temperatures below 12° C (54° F). When obtaining a plant for personal use,



Figure 6: *Kalanchoe daigremontiana*. **Top:** Vegetative plants with plantlets on leaf margins. ©JMK (CC BY SA 3.0). **Bottom:** Close-up of plantlets on margin of a leaf. ©CrazyD (CC BY SA 2.5).

it is preferable to buy one when the flowers are all in bud, but showing some colour (so that the blooming period in the new location will be long).

Propagation

Some cultivars are grown from seed, but most are reproduced from terminal stem or petiole cuttings. Home growers can harvest stem-tip cuttings 5–7.5 cm (2–3 inches) long, removing any flowers. Preferably, use portions of vegetative stems with two pairs of leaves, denuding leaves from the bottom part that is planted. The cuttings should be placed in a porous germination medium like a mixture of peat and vermiculite, and a high humidity should be maintained (for example, in a plastic bag). A rooting hormone is unnecessary. After the cuttings root in 2 to 3 weeks they can be transplanted to a potting soil.

Although *Kalanchoe* species are easily propagated from leaf and stem cuttings, many produce plantlets (miniature plants; more technically known as bulbils or gemmae) in the notches of the leaf margins, sometimes so prolifically that the plants easily escape to the wild in hot climates, and can even become pests inside a greenhouse.

Maintaining indoor potted plants

Houseplant kalanchoes should be given as much light as possible, or they will become spindly. Plants that have become too tall and leggy should be cut back to about half their height, and provided with better growth conditions. Pinching the stem tips encourages branching and the production of a compact form. The leaves can be brittle, so plants should be handled carefully. Like most succulents, kalanchoes do well in dry conditions, and thrive in a well-drained growing medium such as specifically formulated for succulents (preparations for cacti will suffice, but are less recommended). Recommended soils are slightly acidic or neutral. The substrate is best allowed to become slightly dry before watering. Overwatering can result in crown rot and the death of the plant. Fertilization with a houseplant fertilizer (such as diluted 20-20-20, or a preparation higher in P to promote flowering) is best done when the plant is growing actively, applied at 2- to 4-week intervals. Night temperatures of about 15° C (59° F) and day temperatures about 10° C higher are recommended. Temperatures exceeding 24° C (75° F) tend to delay or reduce flowering.

Reblooming

Kalanchoes bloom for weeks, often several months, but eventually lose their attractive floral display, which should be cut away (“deadheaded”) when senesced to encourage natural reblooming. In the past, kalanchoes were usually regarded only as flowering gift plants, to be discarded after the flowers died. However, many modern cultivars can bloom repeatedly indoors, at any time of the year.

After the initial blooming, kalanchoes may not subsequently produce an impressive flowering display unless rejuvenated. Like poinsettias, kalanchoes are short-day plants, requiring a period of long nights to induce flower development. Poinsettias are usually tossed out after blooming, and too many do the same thing for kalanchoes, which however



Figure 7: Pots of *Kalanchoe blossfeldiana* on sale in a market. ©Richard Parker (CC BY 2.0).

are much easier to rejuvenate thanks to their small size. It is generally recommended that they be provided with about 6 weeks of alternating daily periods (about 10 hours) of good light and uninterrupted periods (about 14 hours) of total darkness, starting in October. (Some authorities state a shorter period will suffice.) A cool closet with a tightly closed door is suitable for the dark period. The plant may be repotted into a slightly larger container. In Canada, the naturally occurring daylight regime (long hours of light in the summer followed by short daylight hours in the winter) could result in excellent flowering of kalanchoes in midwinter, but it would be necessary to ensure that the rooms in which the plants are kept are not exposed to light during the nights.

Curiosities of Science and Technology

- Kalanchoe was one of the first plants to voyage in space, transported to the Soviet Salyut 1 space station in 1971. A mature plant was sent to comfort the cosmonauts who were experiencing stress (www.airspacemag.com/space/growing-pains-4148507/). Cultivation of vegetables in the microgravity of space, as a source of food for interplanetary travel, has been a primary research area, but several ornamental plants have also been grown in space, reflecting the basic human admiration of beautiful flowers.

- Kalanchoes open their flowers by growing new cells on the inner surface of the petals, forcing them outwards, and similarly close the flowers by cell division on the outside of the petals.

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Figure 8: Plantlets of *Kalanchoe daigremontiana* being established. ©Maja Dumat (CC BY 2.0).

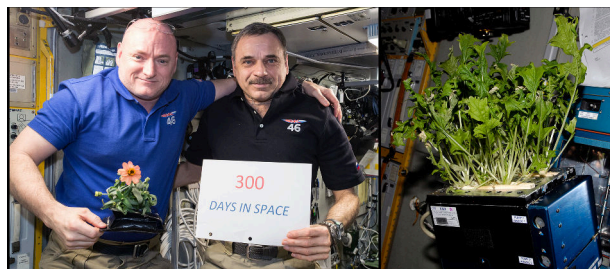


Figure 9: Plants cultivated in the international space station. **Left:** Scott Kelly of NASA (left) and Mikhail Kornienko of Roscosmos (right) celebrating their 300th consecutive day in space in 2016. Kelly is holding a zinnia grown in space. **Right:** Mizuna lettuce (*Brassica rapa* var. *niposinica*). Public domain photos by NASA.

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Acknowledgements

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Communicating Innovation in Plant Science

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KEY DATES!

- **May 30th**: Early Bird Registration Rate
- **May 24th**: Abstracts due for oral presentation consideration
- **June 14th**: Poster abstracts due

Welcome to the Plant Canada 2019 meeting!

This meeting brings together seven plant science societies to highlight technological innovations and to foster discovery and collaboration.

Prepare to be inspired by our keynote and international plenary speakers with topics ranging from evolution to gene editing, from systems biology to pest management, and from signalling mechanisms to photosynthesis.

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Looking forward to your participation!

Plant Canada 2019 Organizing Committee and the Plant Canada Board

Registration and Abstract submission is now open.

Please visit www.cspb-scbv.ca/PlantCanada2019/ for more information.

Plant Canada - Federation of Canadian Plant Science Societies is an independent umbrella organization that seeks to bring together all those in research, education and training in plant science and related discipline in Canada. The member societies of Plant Canada are Canadian Association for Plant Biotechnology (CAPB), Canadian Botanical Association (CBA), Canadian Phytopathological Society (CPS), Canadian Society of Agronomy (CSA), Canadian Society for Horticultural Science (CSHS), Canadian Society of Plant Biologists (CSPB) and Canadian Weed Science Society (CWSS).

