



The Canadian Botanical Association Bulletin

Bulletin de l'Association Botanique du Canada

Volume 57 Number 1 - March/mars 2024

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President's Message

Dear CBA members,

1) **Thank you very much for your donations!** Your generosity is immensely appreciated. Over the years, CBA expenses have been growing while our revenues have stagnated or declined. It is gratifying to present dozens of awards, support students to attend the annual meeting, and sponsor symposia, but this is costly. While our financial situation has been adequate, if the current trend continues, perhaps in a not-so-distant future the Association will have to undertake some financial readjustments. Rest assured that we are trying to make the most out of the donations and membership dues to keep true to the purposes of the Association.



2) Speaking of revenues, if you have not already done so, **please renew your membership!** As per our By-law, membership ceases if dues are not paid within three calendar months of the renewal time at the end of December. Membership dues are our main source of income, without which we cannot survive financially. So, please do not forget to support the Association and botany in Canada. At the last Board of Directors meeting (February 2nd), I proposed that CBA should continue to offer a reduced membership (\$25) to the students who have completed their studies but who are not yet employed. The same for the postdocs who have finished their contract, until they secure a position elsewhere.

3) **This year we are seeking nominations for the President Elect and one Director for the West.** My term ends on July 10 when Santokh Singh will commence his two-year tenure as a President. Although I am not fond of administrative responsibilities, my experience as a CBA president

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 website: www.cba-abc.ca

Executive Editor

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Next issue

Texts for the next issue, 57(2), must be received by August 1, 2024.

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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

Rédactrice en chef

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Prochain numéro

La date de tombée des textes du prochain numéro, le no 57(2), est le 1 août 2024.

has been positive, and I do not regret having accepted this function. The president role may bring different rewards/satisfactions to different people, and I would be happy to answer any questions one might have about this position. Please, consider self-nominating (see inside the *Bulletin* for more information).

4) **Nominate your students** for one of our awards and/or support them for the travel awards (see more details inside the Bulletin).

5) **Last preparations are ongoing for the Plant Canada meeting (Winnipeg, July 6-10, 2024)**. Three CBA symposia and the Weresub lecture are planned together with many other events. Please see details on the [program and registration](#).

Snow drops and skunk cabbage are already in flower here in Southern Ontario!

Wishing you blue skies and a great botanizing season in 2024!

§

Chers membres de l'ABC,

1) **Merci beaucoup pour vos dons !** Votre générosité est immensément appréciée. Aux cours des années, les dépenses de l'ABC ont augmenté alors que nos revenus ont stagné ou diminué. Alors qu'il est gratifiant de décerner des dizaines de prix, d'aider des étudiants à assister à la réunion annuelle et de parrainer des symposiums, ceci est coûteux. Bien que notre situation financière ait été satisfaisante, si la tendance actuelle se poursuit, l'Association devra peut-être, dans un avenir pas si lointain, procéder à des réajustements financiers. Soyez assurés que nous essayons de tirer le meilleur parti des dons et des cotisations des membres pour rester fidèles aux objectifs de l'Association.

2) En parlant de revenus, si vous ne l'avez pas encore fait, **veuillez renouveler votre adhésion !** Conformément à notre règlement, l'adhésion prend fin si la cotisation n'est pas payée dans les trois mois civils suivant la date de renouvellement, fin décembre. Les cotisations des membres constituent notre principale source de revenus, sans laquelle nous ne pourrions pas survivre

financièrement. N'oubliez donc pas de soutenir l'Association et la botanique au Canada. Lors de la dernière réunion du Conseil d'administration (2 février), j'ai proposé que l'ABC continue d'offrir une cotisation réduite (25 \$) aux étudiants qui ont terminé leurs études mais qui n'ont pas encore d'emploi. Il en irait de même pour les postdocs qui ont terminé leur contrat, et ce jusqu'à ce qu'ils obtiennent un autre poste.

3) **Cette année, nous recherchons des candidatures pour le Président élu et un Directeur pour les régions Ouest.** Mon mandat s'achève le 10 juillet, date à laquelle Santokh Singh entamera son mandat de deux ans en tant que président. Bien que je ne sois pas un fan des responsabilités administratives, mon expérience en tant que président de l'ABC a été positive et je ne regrette pas d'avoir accepté cette fonction. Les récompenses/satisfactions apportées par la présidence sont variées et dépendront de la personne ; je serais heureux de répondre à toutes les questions que l'on pourrait avoir sur ce poste. N'hésitez pas à vous porter candidat (voir l'intérieur du Bulletin pour plus d'informations).

4) **Nommez vos étudiants** pour l'un de nos prix et/ou soutenez-les pour les prix de voyage (voir plus de détails à l'intérieur du Bulletin).

5) **Les derniers préparatifs sont en cours pour la réunion de Plant Canada (Winnipeg, 6-10 juillet 2024).** Trois symposiums de l'ABC et la conférence Weresub sont prévus ainsi que de nombreux autres événements. Veuillez consulter les détails du [programme et de l'inscription](#) à la conférence.

Les perce-neiges et les choux puants sont déjà en fleurs ici dans le Sud de l'Ontario !

Nous vous souhaitons un ciel bleu et une excellente saison de botanique en 2024 !

~Mihai Costea

[Translated in French by Frédérique Guinel]




Galanthus elwesii from Mihai's garden.



Symplocarpus foetidus, Sudden Tract Regional forest.

Congratulations to Dr. Nicole Fenton!

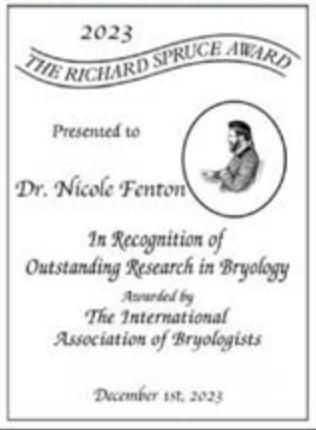


Spruce award 2023: Dr. Nicole Fenton


Dr. Fenton has published 109 peer-reviewed papers and four book chapters, which have gathered close to 3900 citations. Her work has appeared in various international journals reaching a broad audience.

She has shown exceptional mentorship by (co-)advising 21 PhD students, 24 MSc students, and 8 postdoctoral fellows from six continents.

Her work focuses on fundamental questions related to bryophyte biology and conservation, and in particular, on bryophyte dispersal and community assembly in North American boreal forests.



2023
THE RICHARD SPRUCE AWARD
Presented to
Dr. Nicole Fenton
In Recognition of
Outstanding Research in Bryology
Awarded by
The International
Association of Bryologists
December 1st, 2023



Canadensys has a new data portal!

Canadensys has launched a [new data portal](#), which provides free and open access to data on Canadian biodiversity. The site was built in collaboration with GBIF using its [hosted portal service](#).

Have a look, [explore the data](#), discover our [tools](#) and [documentation](#), and provide us with any feedback you might have. We believe this is an important step forward and that the new portal will help researchers, students and other data users find relevant data about biodiversity in Canada.

[Click here](#) to learn about what has changed, what stays the same, and why a GBIF hosted portal.

Canadensys a un nouveau portail !

Canadensys a inauguré son [nouveau portail](#), qui rend ouvertement accessible des données sur la biodiversité du Canada. Le site est produit en collaboration avec GBIF en utilisant son service de [portails hébergés](#).

Jetez un coup d'œil, [explorez les données](#), découvrez [nos outils](#) et [notre documentation](#), et revenez nous avec vos commentaires ! Ce nouveau portail représente une importante transformation qui viendra en appui aux chercheurs, étudiants et autres utilisateurs souhaitant trouver des données sur la biodiversité au Canada.

[Cliquez ici](#) pour en savoir plus sur ce qui a changé, ce qui n'a pas changé et pourquoi nous avons fait le choix de migrer vers un portail hébergé de GBIF.



CBA/ABC invites nominations for a new President-Elect

The President-Elect serves a 2-year term before assuming the President role, and shall originally have served a term as a Director or an equivalent service elsewhere in the Corporation (e.g., as an officer of a Section). The President-Elect's main duties are:

- To chair the Lionel Cinq-Mars and Iain and Sylvia Taylor committee awards, including the presentation of the awards.
- To manage the CBA/ABC undergraduate awards offered at the different regional competitions held across Canada.

The position will start in July 2024.

If you are interested in these essential volunteer positions for CBA/ABC, please submit a brief (1/2 page) statement describing your current position and/or motivation for the position via email to Mihai Costea, mcostea@wlu.ca by March 1st, 2024. If you have questions, please feel free to inquire using the same email address. The Board of Directors is looking forward to receiving your nominations and will present a slate of candidates to the membership several weeks prior to the AGM.

L'ABC lance un appel de candidatures pour un nouveau président élu

Le président élu remplit un mandat de deux ans avant d'assumer le rôle de président, et doit au départ avoir rempli un mandat de directeur ou un service équivalent ailleurs dans la société (par exemple, en tant que dirigeant d'une section). Les principales fonctions du président élu sont les suivantes :

- Présider les prix des comités Lionel Cinq-Mars et Iain et Sylvia Taylor, y compris la remise des prix.
- Gérer les prix de premier cycle de l'ABC offerts lors des différents concours régionaux tenus au Canada.

Ces trois postes débiteront en juillet 2024.

Si vous êtes intéressé(e) par ces postes bénévoles essentiels pour l'ABC, veuillez soumettre une brève déclaration (1/2 page) décrivant votre position actuelle et/ou votre motivation pour le poste par courriel à Mihai Costea, mcostea@wlu.ca avant le 1er mars 2024. Si vous avez des questions, n'hésitez pas à vous renseigner en utilisant la même adresse électronique. Le conseil d'administration de l'Association se réjouit de recevoir vos nominations et présentera une liste de candidats aux membres plusieurs semaines avant l'AGM.



Former CBA Presidents, Montreal 2014

REMINDER: Canadian Botanical Association 2024 Call for student award nominations and applications

Each year the Canadian Botanical Association gives [awards](#) to botanists studying in Canada and Canadian botanists studying abroad. Many of the awards are available to non-Association members. Applications and nominations are open for the following:

For published papers

Alf Erling Porsild - Laurie Consaul Award for best paper in plant systematics or phytogeography. Value \$1,000

J. Stan Rowe Award for best paper in plant ecology. Value \$500

Taylor A. Steeves Award for the best paper in plant development or structure. Value \$500

Luella K. Weresub Memorial Award for the best paper in mycology or lichenology. Value \$1,000

Deadline: **March 31, 2024**

For travel to attend the Annual CBA/ABC meeting

John Macoun Travel Bursary for graduate students presenting talks or posters.

Several awards are available; value \$200-\$600

Undergraduate Travel Award for students presenting talks or posters.

Several awards are available; value \$200-\$600

Deadline: **Abstract submission deadline for the 2024 conference**

For best presentations at the Annual CBA/ABC meeting

Lionel Cinq-Mars Award is awarded for the best oral presentation in two categories:

Proposal-stage; value \$250

Results-stage; value \$500

Iain and Sylvia Taylor Award is awarded for the best poster in two categories:

Proposal-stage; value \$250

Results-stage; value \$500

Deadline: **Abstract submission deadline for the 2024 conference**

RAPPEL : Association Botanique du Canada - 2024 Appel à candidatures pour les prix étudiants et les applications

Chaque année, l'Association Botanique du Canada décerne [des prix](#) à des botanistes étudiant au Canada et à des botanistes canadiens étudiant à l'étranger. Les étudiants n'appartenant pas à l'Association sont éligibles pour plusieurs de ces prix. Les candidatures et les nominations sont maintenant ouvertes pour les prix suivants :

Pour Publication

Prix Alf Erling Porsild – Laurie Consaul pour le meilleur article en systématique et phytogéographie. Valeur : \$ 1,000

Prix J. Stan Rowe pour le meilleur article en écologie végétale. Valeur \$ 500

Prix Taylor A. Steeves pour le meilleur article concernant le développement, la structure ou la morphologie végétale. Valeur : \$ 500

Prix Commémoratif Luella K. Weresub pour le meilleur article en mycologie. Valeur \$ 1,000

Date limite de candidature : **31 Mars 2024**

Pour les frais de déplacement en vue d'assister à la réunion annuelle de l'ABC

Bourse de voyage John Macoun pour les étudiants diplômés présentant une communication orale ou une affiche. Plusieurs prix sont disponibles. Valeur : \$ 200-600

Bourse de Voyage de Bachelier pour les étudiants de premier cycle présentant une communication orale ou une affiche. Plusieurs prix sont disponibles. Valeur : \$ 200-600

Date limite de candidature similaire à **la date limite de soumission de résumé pour le congrès annuel de 2024**

Prix de la meilleure présentation à la réunion annuelle de l'ABC

Prix Lionel Cinq-Mars pour la meilleure présentation orale d'un étudiant en deux catégories :

Phase de proposition. Valeur : \$ 250.

Stade des résultats. Valeur : \$ 500.

Prix Iain and Sylvia Taylor pour la meilleure affiche étudiante en deux catégories :

Phase de proposition. Valeur : \$ 250.

Stade des résultats. Valeur : \$ 500.

Date limite de candidature similaire à **la date limite de soumission de résumé pour le congrès annuel de 2024**

PhD project – Eco-evolutionary and conservation dynamics of desert succulents (*Lithops* spp.) from southern Africa

The Integrative Wildlife Conservation lab at Trent University, in collaboration with the Lithops Research and Conservation Foundation, is offering a unique PhD project on the eco-evolutionary and conservation dynamics of *Lithops* spp., a genus of small succulent plants occurring across desert landscapes in southern Africa. In the wild, *Lithops* are susceptible to human collection, habitat loss and climate change, and currently there are important knowledge gaps related to *Lithops* phylogeny and ecology that are impacting rigorous conservation status assessment and protection. The project involves several critical facets that are available for integration into a PhD thesis, including: 1) Genome sequencing to support re-assessment of *Lithops* phylogeny and evolutionary linkages; 2) Hyperspectral imaging to assess plant health and composition in relation to local environmental conditions; 3) Remote sensing to determine habitat suitability needs and potential for recolonization; 4) Population and meta-population viability analysis to assess scenarios for long-term persistence; and 5) Species distribution modeling to better understand potential responses of populations to climate change. The model for fieldwork will be *L. schwantesii*, which is among the most widespread and best-studied *Lithops* species; fieldwork is conducted in Namibia. The PhD student will have the opportunity to develop specific research questions within the scope of the larger project.



Successful candidates MUST have an MSc in Ecology, Conservation Biology, or related field, demonstrated evidence of peer-reviewed publications, strong lab and field skills, and an interest in working collaboratively within a large and diverse research group. Additional desirable qualifications include DNA sequencing, bioinformatics, remote sensing and GIS analysis, and working in remote field conditions.

To apply, send a cover letter, curriculum vitae, unofficial academic transcript, and contact information for three references to: Dennis Murray (dennismurray@trentu.ca).

For additional details, see www.dennismurray.ca and www.lithopsfoundation.com.

The position will be filled as soon as a suitable candidate is found.

PhD project - Assessing boreal forest dynamics under climate change

The Integrative Wildlife Conservation lab at Trent University is offering a PhD project on the application of remote sensing technologies for assessing the state of boreal forest structure and dynamics near Kluane Lake, Yukon. For decades, Canada lynx and their prey have been studied intensively in the Kluane region, and the new project extends this work into the realm of vegetation and snow dynamics in this rapidly-changing northern landscape. Using an unmanned aerial vehicle equipped with LiDAR, multispectral, hyperspectral, thermal and RGB cameras, and combined with archived satellite data for the region, we will investigate several of the following questions: 1) patterns of forest productivity, regeneration, and phenology across space and time; 2) sources of forest heterogeneity and resiliency to climate change; 3) spatial mapping of wildlife habitat and resources; and 4) snow condition variation and its implications on forest structure and wildlife habitat availability. In addition, this project provides several opportunities and potential collaborations related to: 5) validating new remote sensing tools for forest health and snow condition assessment; 6) forecasting future boreal forest dynamics under climate change; and 7) relating forest characteristics to the movements and habitat selection of Canada lynx and snowshoe hares that are radio-collared on site. The PhD student will have the opportunity to develop specific research questions within the scope of the larger project.



Successful candidates **MUST** have an MSc in Ecology, Remote Sensing, or related field, demonstrated evidence of peer-reviewed publications, strong field and quantitative skills, GIS and related analysis, and an interest in working collaboratively within a large and diverse research group. Additional desirable skills include experience in drone operation and working in remote field conditions.

To apply, send a cover letter, curriculum vitae, unofficial academic transcript, and contact information for three references to: Dennis Murray (dennismurray@trentu.ca).

For additional details, see www.dennismurray.ca.

The start date is May 2024 or September 2024. The position will be filled as soon as a suitable candidate is found.

Save the Date!
...for *Plant Canada 2024*



Botanique en vedette

Saviez-vous?

Botanique est la revue scientifique associée à l'Association botanique du Canada. Elle publie des articles de recherche et des notes compréhensives dans tous les disciplines des sciences végétales, incluant biologie cellulaire et moléculaire, physiologie et biochimie, structure et développement, génétique, génomiques, systématiques et phytogéographie.

La revue publie aussi des articles de méthodes, des commentaires, des ressources génomiques, des revues sur des sujets d'intérêt courant. Les contributions proviennent de scientifiques de partout dans le monde. *Botanique* accepte aussi des manuscrits écrits par les gardiens du savoir traditionnel autochtones.

La revue publie des articles en français et en anglais et est en train de faire la transition complète vers la publication à accès ouvert.

Pour en savoir plus, cliquer [ici](#).

Numéros spéciaux – Appel à articles

Botanique invite les biologistes des plantes à proposer des numéros spéciaux. Nous avons actuellement l'appel suivant sur [la restauration des écosystèmes](#).

Les espèces végétales sont une des composantes fondamentales de tout projet en restauration. [La Décennie des Nations Unies en restauration des écosystèmes](#) promeut l'utilisation des espèces indigènes et la biodiversité pour assurer que les écosystèmes soient fonctionnels et résilients.

Les plantes indigènes sont généralement mieux adaptées

aux conditions environnementales et climatiques locales et peuvent améliorer la qualité des sols et de l'eau. Elles servent aussi d'habitats pour la faune. Dans ce numéro spécial de *Botanique*, nous invitons les chercheurs(euses) et praticiens(iennes) à soumettre leurs articles sur l'importance de la sélection des plantes et leur utilisation en restauration des écosystèmes. Nous invitons aussi des revues provenant de divers écosystèmes, incluant mais non limité à :

- Forêts
- Terres humides et plans d'eau douce
- Tourbières
- Zones urbaines



Photo credit: Aamir Shehzad Khan

- Ecosystèmes agricoles, terres agricoles, prairies, zones arbustives
- Mines, carrières, impact routier
- Zones côtières et océans
- Toundra arctique

La date limite de soumission est le 15 mars 2024. N'hésitez pas à contacter les éditrices invitées pour plus amples détails ou si vous avez des questions sur le titre ou le sujet de votre soumission proposée.

Chao Liu

Éditrice invitée

chao.liu.3@ulaval.ca

Mélina Guêné-Nanchen

Éditrice invitée

melina.guene-nanchen.1@ulaval.ca

Nominez un collègue

Le comité éditorial de *Botanique* consiste en plus de 30 scientifiques d'institutions académiques et agences gouvernementales du Canada, des États Unies, du Brésil, de l'Italie, et de la Chine. Nous sommes présentement à la recherche d'éditeur(ices) associé(e)s dans les disciplines suivantes : mycologie, systématiques, et analyse de métadonnées. Les chercheurs(euses) en début de carrière sont les bienvenus.

N'hésitez pas à nous contacter, Liette Vasseur (lvasseur@brocku.ca) ou Shelley Hepworth (shelley.hepworth@carleton.ca) si vous êtes intéressés.

Botany Spotlight

Did you know?

Botany is an affiliated journal of the Canadian Botanical Association that publishes comprehensive research articles and notes in all segments of plant sciences, including cell and molecular biology, ecology, mycology and plant-microbe interactions, phycology, physiology and biochemistry, structure and development, genetics, genomics, systematics, and phytogeography.

The journal also publishes methods, commentaries, plant genomic resources, and review articles on topics of current interest, contributed by scientists from all over the world. *Botany* also accepts manuscripts written by Indigenous Traditional Knowledge keepers.

The journal publishes articles in French or English and is gradually moving towards being fully open-access.

To learn more, click [here](#).

Special issues – call for proposals

Botany invites plant biologists to propose Special Issues. We currently have the following call on [Ecosystem Restoration](#).

Plant species are one of the fundamental components for any restoration project. The [UN Decade on Ecosystem Restoration](#) promotes the use of native species and biodiversity to ensure that ecosystems are functional and resilient. Native plants are generally more adapted to the local environmental and climatic conditions and can improve soil

and water quality. They also serve as habitats for wildlife. In this *Botany* collection, we invite researchers and practitioners to submit papers on the importance of plant selection and use in ecosystem restoration. We invite research or review papers from various ecosystems, including but not limited to:

- Forests
- Wetlands, freshwater bodies
- Peatlands
- Urban areas
- Agricultural ecosystems, farmlands, grasslands, shrublands



Photo credit: Aamir Shehzad Khan

- Mines, borrow pits, road impacts
- Coastal zones and oceans
- Arctic tundra

The submission deadline is March 15, 2024. Please contact the guest editors at any time for further details or if you have any questions regarding the tentative title or scope of your proposed submission.

Chao Liu

Guest Editor

chao.liu.3@ulaval.ca

Mélina Guêné-Nanchen

Guest Editor

melina.guene-nanchen.1@ulaval.ca

Nominate a colleague

The Editorial Board of *Botany* consists of 30+ scientists at academic institutions and government agencies in Canada, the USA, Germany, Brazil, Italy, and China. We are currently seeking associate editors in the areas of mycology, systematics, and metadata analysis. Early career researchers are welcome!

Please contact Editors-in-Chief Liette Vasseur (lvasseur@brocku.ca) or Shelley Hepworth (shelley.hepworth@carleton.ca) if you are interested.



ICAR 2024-SAN DIEGO

July 15-19, University of California, San Diego
**Arabidopsis as a Nexus for
 Discovery, Innovation, Application and Impact**

- ✓ Welcome Reception
- ✓ Weed Stampede (5K walk or run)
- ✓ Inaugural ICAR Art Show
- ✓ Pre-ICAR Social Event & Workshops
- ✓ Conference Dinner
- ✓ Community Awards Presentations

Keynote Speakers






José Dinneny
Sue Rhee
Keiko Sugimoto
Dolf Weijers

- ✓ 22 Plenary Speakers
- ✓ 2 Poster Sessions
- ✓ 300 Talks Available
- ✓ 38 Community Sessions
- ✓ Submit your abstract by April 15 (talk) or May 31 (poster)



SCAN FOR INFORMATION



Activities of the Teaching Section

Laura Super, CBA Teaching Section Chair

With respect to the CBA Teaching Section, there are two main things to report: on phytobiome outreach and the Kindness Project. **We are still looking for a co-chair and other colleagues to help with the CBA Teaching Section, so please reach out if you are interested (Dr. Laura Super leslaura@gmail.com or Dr. Mihai Costea mcostea@wlu.ca).** Section Chairs are not elected and the role of this position is flexible. As you know, CBA Sections have one annual meeting during the conference of that particular year, and they may organize different events. Also, Chairs keep their Section webpage updated, write announcements and articles for the *Bulletin*, and in general, pursue any initiative compatible with the interests of the Section.



Laura Super tree-hugging, Vancouver.

1. Phytobiomes

Phytobiomes are plants, their associated organisms and the environment. Laura Super and colleagues are co-creating phytobiome outreach series events for adults and families (children and youth); the two groups involved in material development are the Phytobiome Research Working Group and the Pacific Spirit Park Society. These events run January to April 2024 (with possibility for summer). The events focus on phytobiomes, authentic science exploration, best data practices and experiential inquiry. So far, people have loved learning as scientists.

Some of the events are in person collecting plant data in Pacific Spirit Regional Park and doing Science, Technology, Engineering, Arts and Mathematics (STEAM) activities (such as poetry, drawing, etc.). As well as the wonderful world of plants, we are going over other activities in person and on Zoom: ways to combat hype in science, the importance of critical thinking in science, why focusing on accuracy in science is so important, why useful data matters in science and the messiness of science. We have upcoming Zoom data meetings in February and March to data-check, discuss data, and more with K-12 to adult participants to improve science and data literacy. We welcome any CBA members to come to our Zoom events and join us! You can watch or help us co-create.

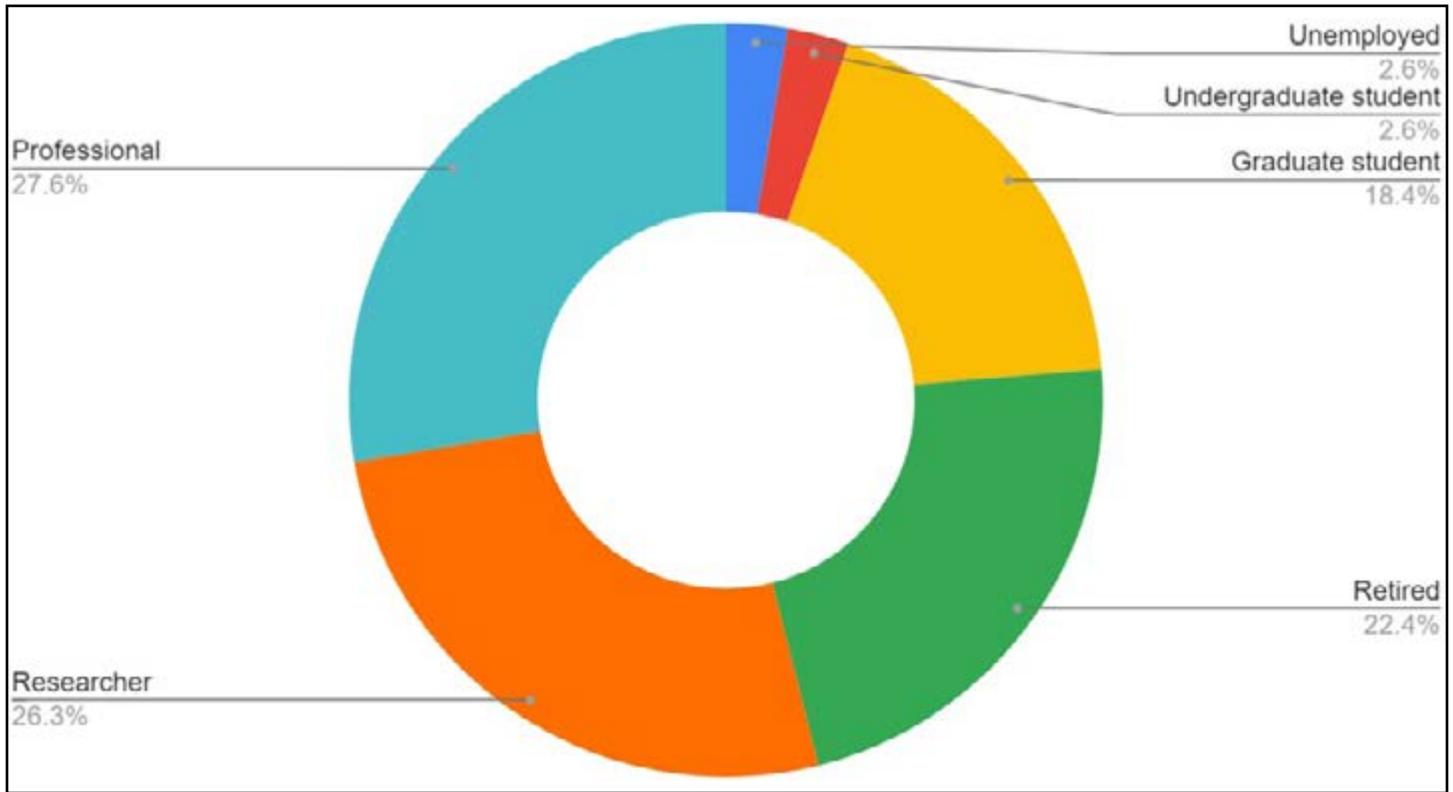
2. Kindness Project

[The Kindness Project](#) is an initiative to increase kindness in academic and world culture. Laura Super and colleagues are co-creating material on topics such as anti-ableism, climate kindness pedagogy, and other topics. This is an international, trans-disciplinary initiative and is beyond just the botany community, but there are multiple CBA members who attend.

We welcome anyone who wants to join us, CBA and beyond, on Zoom; we have regular meetings! These meetings are a great way to bring any issue you care about, positive solutions and actions; we will help you turn ideas into action. We facilitate discussion of ideas and are a collective and network of concerned faculty, staff, students and off-campus partners.

IDEA Committee Survey Results

Thanks to everyone who filled out our IDEA survey last year! We had a great participation rate, with around a third of CBA members responding. The results of the survey have revealed some important insights into our association that we want to share. Firstly, we have a relatively even spread between professionals, retirees, researchers, and students, with each of these categories making up between 18-28% of the association. Surprisingly, not a single post-doctoral fellow answered our survey. When registering for the CBA, post-doctoral fellows are grouped with graduate students, and it's possible that this lack of post-doctoral fellows in our survey represents a previously unrecognized lack of post-doctoral fellows in the association. This begs the question, where are our post-doctoral fellows?



Our gender-breakdown is relatively representative, with a slim majority of members identifying as female. Just under 3% of members identify as indigenous, and just over a tenth identify as a member of an underrepresented ethnic or cultural group. Nearly three-quarters of respondents reported that English was their most used language and nearly a fifth of respondents reported using French as one of their most used languages.

One of the biggest highlights of our survey is the number of respondents answering that they identify as neurodiverse, or unsure as to whether they are neurodiverse. Without giving exact numbers to maintain the confidentiality of the survey, we can say that this component of our community is rather large, and these results should inform how events are planned by the association.

Finally, we asked what activities members were interested in participating in at future conferences and allowed for suggestions as well. The most popular of these was a workshop on integrating Truth and Reconciliation, with nearly 3/4 of members expressing interest. This was followed by over half of respondents interested in a more general seminar of best practices in a diverse world and in third, perhaps unsurprisingly given our large neurodivergent community, a seminar on neurodiversity and ableism in botany. Seminars on microaggression/bullying and religion and spirituality in botany also garnered some interest. Some suggested activities included seminars on teaching sex in botany outside of the binary, ageism in science, and the importance of herbaria.

Overall, this survey has given us many important insights into the CBA membership, and we are very happy with the number of respondents and comments we received.

Thank you to everyone who responded!

~ CBA-ABC Inclusion, Diversity, Equity & Access Committee



CBA/ABC members enjoy the Botany 2012 field trip to the Cantwell Cliffs outside Columbus, Ohio.

Photos compliments of Mihai Costea.



Portraits of native, invasive and ornamental plants in Canada

Mihai Costea

Webpage: <https://www.cba-abc.ca/resources/portraits-of-native-alien-invasive-and-ornamental-plants-in-canada/>

In January 1994, Paul Catling and Ernest Small published in the CBA *Bulletin* the first paper of what would become a three decade-long, uninterrupted collection of articles documenting interesting plants from Canada. The inaugural paper auspiciously profiled *Polygala senega* (Seneca Snakeroot) in a series that the authors entitled “*Poorly Known Economic Plants of Canada.*” Over time, this series branched into two directions: “*Native Plant Emblems of Canada*” and “*Major Invasive Alien Plants in Natural Habitats in Canada.*” Dr. Small further enriched this botanical saga from 2012 to 2023 with a new series “*Top Canadian Ornamental Plants.*” The articles penned in the nineties were succinct and sparsely illustrated, but as the years unfolded, they became more detailed and lavishly illustrated. Other botanists, such as Gisèle Mitrow, Amanda Ward, and Liette Vasseur, co-authored some of the invasive plant papers adding diversity to the collection. Noteworthy mentions go to Paul Heydon and Stephen Derbyshire, among others, who contributed some papers as sole authors. Regrettably, as conveyed in *Bulletin* 56(2) from 2023, Ernest Small announced an end to his contribution to this remarkable botanical odyssey.

Overall, ca. 140 articles profiled plants from across the entire spectrum of the Canadian flora: native, invasive/ alien and ornamental (cultivated) plants. While a few of the articles provided general overviews or identification keys, the majority focused on certain species, groups of species, or genera. Recognizing the intrinsic value of this collection to the CBA/ABC members and plant enthusiasts at large, with the kind permission of the authors, I extracted the articles from the original *Bulletins*, and made them available on this webpage: [Portraits of native, alien/invasive, and ornamental plants in Canada.](#)

General topic articles can be found at the top, followed by the plant profiles in alphabetical order by genus and species, irrespective of their native, introduced or cultivated status in Canada. This eclectic organization is the most pragmatic because it allows the fastest search by Latin name, and it does not discriminate based on the geographical origin (native versus alien) or the perceived “goodness/evilness” of the plants (e.g., native or ornamental plants versus the invasive).

Ultimately, my hope is that by making these articles more visible and accessible online, other Canadian botanists will be stimulated to continue the tradition established by the founding authors. Canadian flora is rich and countless species wait for their portrait to be created. We have no lichen or fungus at the moment! If your favorite species has/have not been profiled yet, please consider publishing a paper or papers in the *Bulletin*, and allow for this valuable collection to grow.

General Articles

- A Short List of References Frequently Used by Professional Botanists for Identification of Canadian Vascular Plants
- A Prioritized List of the Invasive Alien Plants of Natural Habitats in Canada
- A Key to the Common Grasses of Southeastern Canada by Vegetative Characteristics
- Canadian Alvars and Limestone Barrens: Areas of “Special Conservation Concern” for Plants?
- Overview of Canadian Plant Symbols
- Top Ornamental Plants General - Considerations 1

- Top Ornamental Plants General - Considerations 2
- Top Ornamental Plants General - Considerations 3

Plant profiles (follows French text below)

In a few cases, the Latin names used in the original articles have been updated to the currently accepted binomials in [VASCAN](#). When the genus includes both native and cultivated species (e.g., *Lilium*, *Rhododendron*, *Viola*), the word “ornamental” was added as a disambiguation to the corresponding cultivated plants. However, genera such as *Begonia*, *Gladiolus*, etc., which do not include native species, were left without an additional label because it is clear that those plants are solely cultivated as ornamentals in Canada. For citation, I recommend referring to the original papers published in the *Bulletin*.

Portraits de plantes indigènes, envahissantes et ornementales au Canada

Page web: <https://www.cba-abc.ca/fr/ressources/portraits-de-plantes-indigenes-envahissantes-et-ornementales-au-canada/>

En janvier 1994, Paul Catling et Ernest Small ont publié dans le Bulletin de l'ABC le premier article de ce qui allait devenir une collection d'articles ininterrompue de trois décennies documentant des plantes intéressantes du Canada. L'article inaugural présentait sous les meilleurs auspices *Polygala senega* (Renoncule de Séneca) dans une série que les auteurs ont intitulée « *Plantes économiques mal connues du Canada* ». Au fil du temps, cette série a pris deux directions : « *Les emblèmes des plantes indigènes du Canada* » et « *Les principales plantes exotiques envahissantes dans les habitats naturels du Canada* ». De 2012 à 2023, Dr. Small a enrichi cette saga botanique d'une nouvelle série intitulée « *Principales plantes ornementales du Canada* ». Les articles rédigés dans les années 90 étaient succincts et peu illustrés, mais au fil des ans, ils sont devenus de plus en plus détaillés et richement illustrés. D'autres botanistes, tels que Gisèle Mitrow, Amanda Ward et Liette Vasseur, ont cosigné les articles sur les plantes envahissantes, ajoutant ainsi de la diversité à la collection. Il convient de mentionner Paul Heydon et Stephen Derbyshire, entre autres, qui ont contribué à certains articles en tant qu'auteurs uniques. Malheureusement, comme indiqué dans le Bulletin 56(2) de 2023, Ernest Small a annoncé qu'il mettait fin à sa contribution à cette remarquable odyssée botanique.

Au total, environ 140 articles présentent des plantes de l'ensemble de la flore canadienne : plantes indigènes, invasives/étrangères et ornementales (cultivées). Si quelques articles fournissent des aperçus généraux ou des clés d'identification, la majorité d'entre eux se concentrent sur certaines espèces, certains groupes d'espèces ou certains genres. Reconnaisant la valeur intrinsèque de cette collection pour les membres du CBA/ABC et les amateurs de plantes en général, avec l'aimable autorisation des auteurs, j'ai extrait les articles des Bulletins originaux et les ai mis sur cette page web — [Portraits de plantes indigènes, envahissantes et ornementales au Canada](#) — de façon à ce qu'ils soient accessibles à un plus grand nombre. Les articles sur les sujets généraux se trouvent en haut de la page, suivis des profils de plantes par ordre alphabétique de genre et d'espèce, indépendamment de leur statut d'indigène, d'introduite ou de cultivée au Canada. Cette organisation éclectique est la plus pragmatique car elle permet une recherche rapide par nom latin, et elle ne fait pas de discrimination en fonction de l'origine géographique (indigène ou exotique) ou de la perception de la “bienfaisance/malfaisance” des plantes (par exemple, les plantes indigènes ou ornementales par rapport aux plantes envahissantes).

J'espère qu'en rendant ces articles visibles et accessibles en ligne, d'autres botanistes canadiens seront incités à poursuivre la tradition établie par les fondateurs de cette série. La flore canadienne est riche et d'innombrables espèces attendent que leur portrait soit réalisé. Nous n'avons pas de lichen ou de champignon pour le moment ! Si

votre espèce préférée n'a pas encore fait l'objet d'un portrait, veuillez envisager de publier un ou plusieurs articles dans le Bulletin, afin de permettre à cette précieuse collection de s'enrichir.

Articles généraux

- Une courte liste de références fréquemment utilisées par les botanistes professionnels pour l'identification des plantes vasculaires canadiennes
- Liste priorisée des plantes exotiques envahissantes des habitats naturels du Canada
- Clé des graminées communes du sud-est du Canada, basée sur les caractéristiques végétaives
- Alvars et landes calcaires du Canada : Des zones de "préoccupation spéciale en matière de conservation" pour les plantes ?
- Aperçu des symboles végétaux canadiens
- Principales plantes ornementales - Considérations générales 1
- Plantes ornementales supérieures - Considérations générales 2
- Plantes ornementales supérieures - Considérations générales 3

Profil de plantes

Dans quelques cas, les noms latins utilisés dans les articles originaux ont été mis à jour avec les binômes actuellement acceptés dans [VASCAN](#). Lorsque le genre comprend à la fois des espèces indigènes et cultivées (par exemple, *Lilium*, *Rhododendron*, *Viola*), le mot "ornemental" a été ajouté pour clarifier ce dont à quoi les auteurs faisaient référence. Cependant, des genres tels que *Begonia* et *Gladiolus*, qui ne comprennent pas d'espèces indigènes, ont été laissés sans étiquette supplémentaire parce qu'il est clair que ces plantes sont uniquement cultivées comme plantes ornementales au Canada. Pour les citations, je recommande de se référer aux articles originaux publiés dans le Bulletin.

Abies balsamea

Abies lasiocarpa

Acer sp. [Canadian species]

Achillea millefolium

Actaea racemosa [≡ *Cimicifuga racemosa*]

Agropyron cristatum and *Agropyron fragile*

Alliariapetiolata

Allium tricoccum

Allium schoenoprasum

Alstroemeria spp.

Amelanchier alnifolia

Ammannia robusta



Achillea millefolium

Amphicarpaeabracteata
Anthoxanthum nitens subsp. *nitens* [≡*Hierochloë odorata*]
Apios americana
Arctostaphylos uva-ursi
Aronia melanocarpa
Asimina triloba
Balsamorhiza sagittata
Begonia spp.
Betula alleghaniensis
Betula papyrifera
Bromus inermis
Buddlejadavidii
Butomusumbellatus
Castanea dentata
Carya ovata and *Caryalacinos*
Chamaenerion angustifolium (subsp. *angustifolium*)
Chrysanthemum spp. (ornamental)
Cornusnuttallii
Corylus americana and *Corylus cornuta*
Cryptotaenia canadensis
Cyclamen spp.
Cypripedium acaule
Cytisusscoparius
Dianthus sp.(ornamental)
Dryas integrifolia
Echinacea angustifolia
Epigaea repens
Euphorbia esula
Euphorbia pulcherrima
Festuca altaica
Frangula alnus



Agropyron cristatum



Asimina triloba



Iris germanica Kind Hearted

Gaylussacia spp. (Western Canada)

Gerbera spp.

Gladiolus spp.

Hamamelis virginiana

Hesperostipacomata

Hibiscus spp. (ornamental)

Hippeastrum spp.

Humulus lupulus

Hydrangea spp.

Hydrastis canadensis

Hydrocharismorsus-ranae

Impatiens spp. (ornamental)

Iris versicolor

Iris sp. (ornamental)

Isoetes engelmannii

Juglans nigra and *Juglans cinerea*

Kalanchoe spp.

“Kelp”

Larix laricina

Lilium candidum

Lilium philadelphicum

Lilium spp. (ornamental)

Lonicera tatarica

Lupinus spp. (ornamental)

Lythrum salicaria

Malus spp.

Matteuccia struthiopteris

Morus rubra

Myriophyllum spp.

Narcissus spp.

Oenothera biennis



Paeonia lactiflora Do Tell



Arctostaphylos uva-ursi



Narcissus poeticus

Paeonia sp.

Panax quinquefolius

Pelargonium spp.

Petunia spp.

Picea abies

Picea mariana

Picea rubens

Pinus contorta

Pinus strobus

Phalenopsis spp.

Phalaris arundinacea

Phragmites australis: general introduction;

Phragmites australis: native and alien forms in Canada;

Phragmites australis: invasive in Canada

Polygala senega

Podophyllum peltatum

Primula spp.

Pulsatilla nuttalliana [≡*Anemone patens* var. *multifida*]

Quercus rubra

Reynoutria japonica

Rhamnus cathartica

Rhamnus purshiana

Rhodiola rosea

Rhododendron groenlandicum [≡*Ledum groenlandicum*]

Rhododendron sp. (ornamental)

Rosa acicularis

Rosa sp. (ornamental)

Rubus chamaemorus

Saintpaulia ionantha hybrids

Sambucus nigra

Sanguinaria canadensis



Rosa Moon Dance



Podophyllum peltatum



Primula sp.

Sarracenia purpurea

Saxifraga oppositifolia

Shepherdia canadensis and *Shepherdia argentea*

Syringa spp.

Taraxacum spp.

Taxus brevifolia

Taxus canadensis

Thuja plicata

Trillium grandiflorum

Tulipa spp.

Typha spp.

Urtica dioica

Vaccinium macrocarpon

Vaccinium myrtillus

Vaccinium spp. from Western Canada

Viburnum opulus

Viola cucullata

Viola spp. (ornamental)

Zizania aquatica and *Zizania palustris*



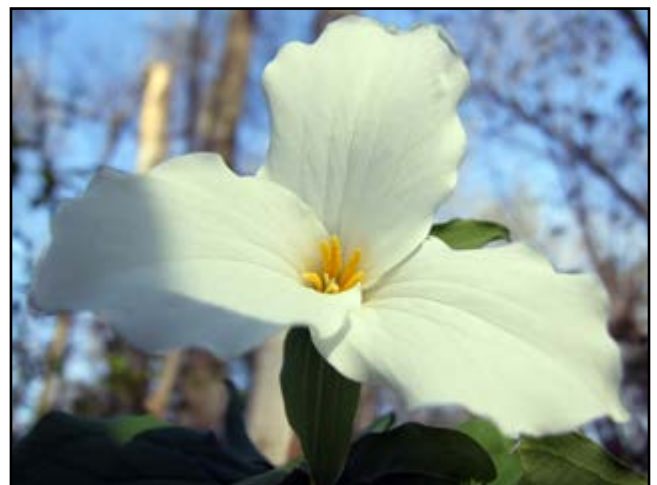
Rosa Double Delight



Rhododendron Christie's Favorite



Sassafras albidum



Trillium grandiflorum



Corporation 086179-1

CBA/ABC, February 22, 2024

CBA/ABC Ordinary Resolution #5, Support Duke Herbarium

Preamble:

On February 13, DUKE Herbarium faculty and staff were tasked by the University Administration to initiate a comprehensive 2- to 3-year process of transferring the holdings to other institutions. The decision was based on the alleged unsustainable financial burden of maintaining the collection at Duke University.

Removing the herbarium from Duke University will have far-reaching consequences. It permanently deprives the campus and regional herbarium users of a vital resource for teaching, learning, and original research. The move demonstrates a neglect of institutional responsibility by imposing the care of the collection on other organizations, and it publicly devalues biodiversity and conservation science at a time when they have never been more important. The closure of the herbarium shows disregard for the labour and sacrifices made by generations of botanists, and it reflects an unfortunate ignorance of the pivotal role that natural history collections play in understanding and safeguarding nature and its crucial roles in protecting human health. Finally, it places past and future botanical knowledge in jeopardy for herbarium users across North America and around the world. Ultimately, the decision violates Duke's own [University Environmental Policy](#), which commits the institution to "continue to be in the forefront of environmental research and education."

Resolution:

Be it resolved therefore that the Canadian Botanical Association / l'Association Botanique du Canada (CBA/ABC) advocates (e.g., through correspondence with decision-makers, social media, web-site, bulletin, and/or partnering in the initiatives of other organizations) to reverse the decision to close the DUKE herbarium. The CBA/ABC urges the administrators of Duke University to reconsider the concerns voiced by their dedicated staff and by the international scientific community, and to explore alternative solutions that prioritize the long-term curation and expansion of the collections at their existing site. The accessibility of these specimens to Duke students, researchers and collaborators is more critical than ever for understanding and protecting the Earth's biodiversity during a scientifically recognized period of accelerated extinction.

Resolution unanimously approved by the CBA/ABC Board of Directors.

Mihai Costea, President

Jennifer Doubt, Secretary

Resources to better understand Duke Herbarium situation:

Amadi, A. [The uncertain future of the Duke Herbarium: Impact on botanical research and conservation efforts](#). Medriva (Feb 14, 2024)

Cranford, C. [‘To kill a program’: Duke to close herbarium after over 100 years of operation](#). The Chronicle (Feb 15, 2024)

Johnson, M. [Closing Duke’s Herbarium: A fear of long-term climate commitment?](#) The Chronicle (Feb 20, 2024).

Palmer, K. [Scientists decry closure of Duke’s Herbarium](#). Inside Higher Education (Feb 16, 2024)

Zimmer, C. [Duke shuts down huge plant collection, causing scientific uproar](#). The New York Times (Feb 21, 2024).

Sign petition to stop the closure of Duke Herbarium (started Feb 15, 2024):

Goodwin J. [Urge Duke University to reconsider closing their herbarium](#).



Pinguicula vulgaris



Sarracenia purpurea

Photos compliments of Mihai Costea

Kew Less? Board Approves Herbarium (K) Move

Julian R. Starr, Jennifer Doubt, Mihai Costea

We continue to bring you updates on the ongoing saga surrounding the Kew Herbarium relocation project [1]. Despite the serious concerns voiced by the curatorial staff and the backing of over 17,000 signatures on a petition opposing the move [2], on the 7th of December 2023, the Kew Board of Trustees approved the plan to relocate Kew's world-famous herbarium (K; Fig. 1) to the Thames Valley Science Park (TVSP) south of Reading. Thus begins a period of uncertainty for the broader scientific community as to what will ultimately be done with the collection and how its move could affect the unique research synergy among plant scientists and horticulturists that currently exists at its historic location in Richmond, London.

This uncertainty is highlighted by the fact that the Trustees' approval came with a significant caveat; viz., "Construction of a new herbarium is conditional upon resolving several outstanding issues and securing funding" [3]. Although no detail was given as to what the "several outstanding issues" may be, securing funding for the project would require a submission to the UK Government's next comprehensive spending review. This is scheduled to occur 2025, which will almost certainly be after the next election that is expected sometime before the end of 2024.

As currently envisioned, the facility that would house the collection is estimated to cost upwards of 200 million pounds [2], and this among other issues, has not escaped the attention of the opposition Labour Party that is expected to secure victory in the upcoming election if polling predictions prove accurate [4]. In late 2023, the Shadow Secretary of State for the Department for Environment Food and Rural Affairs (Defra), Steve Reed MP, penned a letter [5] to the Right Honourable Steve Barclay, Secretary of State for Defra, which is responsible for funding the move, to echo many of the same concerns articulated by Kew's staff and the broader botanical research community. Moreover, on January 5th, 2024, Toby Perkins MP, Shadow Defra Minister (Nature and Rural Affairs) tabled five further questions on Kew [6] to the Defra Secretary in the House of Commons on matters such as the business case for the move, whether an assessment of potential loss or damage to collections had been made, and whether the move could incite countries of origin to seek repatriation of specimens. Nearly two weeks later, a reply to these questions came not from the Secretary of State, but from Ms. Rebecca Pow MP, the Under-Secretary for Defra. In a series of terse replies with little substance [6], the Under-Secretary made no reference to the TVSP despite its inclusion in most of Mr. Perkins's questions, and she stressed five times that no final funding decision on a new herbarium had been made. Notably, she assured Mr. Perkins that "Physical specimens will remain accessible at the Kew Herbarium regardless of location." In the event of a Labour victory, the content of the letter [5] and the continued concerns of other Labour MPs cast doubt on whether the project would ever materialize. Irrespective of the political landscape, if the UK government grants approval to the project, the design and construction of a new herbarium are anticipated to take at least five years [7]. Consequently, the new facility's inauguration could not be expected before the year 2030 at best.

Although the fate of the Herbarium at Kew will be decided by the UK Government, Kew's Board of Trustees, and the citizens of the United Kingdom, the decisions made for the future of the collection are of global interest because



Fig. 1. The Victorian (1877) Wing C of the Kew Herbarium Complex, Royal Botanic Gardens, Kew in December 2023 (Photo: J. Starr).

most of the collection at Kew is not from the British Isles. The specimens and their associated records, which includes ethnobotanical artifacts, document the European exploration, exploitation, and colonisation of countries worldwide, particularly those that were once part of the British Empire. Consequently, they are increasingly recognized as valuable historical, cultural, and even economic resources, and this has motivated requests for specimen repatriation [e.g., 8,9] and for increased access to the collection for educational and research needs [e.g., 10].

As we did with our first installment on the controversial move of Kew Herbarium [1], we commit to keeping you informed of any significant developments in the future (Fig. 2). Till then, we offer you some extra information on the saga under “Other Resources.”



Fig. 2. The world-famous Palm House on the grounds of Kew Gardens and a five-minute walk from the herbarium in December 2023 (Photo: J. Starr). Constructed in 1844, its scale marks the ambition and wealth of Victorian Britain, and the reach of its empire.

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- [2] Curator Botanist. 2024. Keep the Kew Herbarium at Kew. <https://www.change.org/p/keep-the-kew-herbarium-at-kew> (petition started 6 August 2023).
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- [4] Ipsos. 2024. Latest UK opinion polls: Government approval recent changes. <https://www.ipsos.com/en-uk/uk-opinion-polls> (30 January 2024)
- [5] Reed, S. 2024. Letter publicly published by Steve Reed to Steve Barclay on X, formerly known as Twitter on 9 December. (<https://x.com/SteveReedMP/status/1733547217204519197?s=20>).
- [6] Perkins, T. 2024. Questions for Department for Environment, Food and Rural Affairs with replies by Rebecca Pow, Under-Secretary for Defra. UIN 7877, tabled on 5 January 2024. <https://questions-statements.parliament.uk/written-questions?SearchTerm=Herbarium&DateFrom=07%2F11%2F2023&DateTo=07%2F10%2F2024&AnsweredFrom=&AnsweredTo=&House=Commons&Answered=Any&Expanded=True>
- [7] Kew Website. Anon. 2023. Read & Watch. Relocating Kew’s herbarium for the future of our collections <https://www.kew.org/read-and-watch/relocating-kews-herbarium> (9 August 2023)
- [8] Barton, A. 2023. [Kew Gardens’ plants of Empire must return to ‘country of origin’, says botanist](#). *The Telegraph* (24 November 2023).
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- [10] Kew Website. Science projects. Anon. 2024. Reflora: Repatriating Brazil’s plant diversity information and building capacity for greater use through digitisation, dissemination and research visits. <https://www.kew.org/science/our-science/projects> (accessed 7 February 2024)

Other Resources

Hortweek. 2024. [Kew herbarium proposed move raised in Parliament](#) (16 Feb 2024).

Knapton, S. 2023. [Historic bequest could put block on plans to move Kew Herbarium](#). *The Telegraph* (18 November 2023).

McKie, R. 2023. [‘Cultural vandalism’: row as Kew Gardens and Natural History Museum plan to move collections out of London](#). *The Guardian*. (25 November 2023).

Private Eye Magazine. 2023. Disorderly Kew (December 2023).

Thiers, B.M. 2024. Strengthening partnerships to safeguard the future of herbaria. *Diversity*.16(1):36. <https://doi.org/10.3390/d16010036> (5 January 2024).



*Aquilegia
canadensis*



Gentianopsis virgata

Photos compliments of Mihai Costea

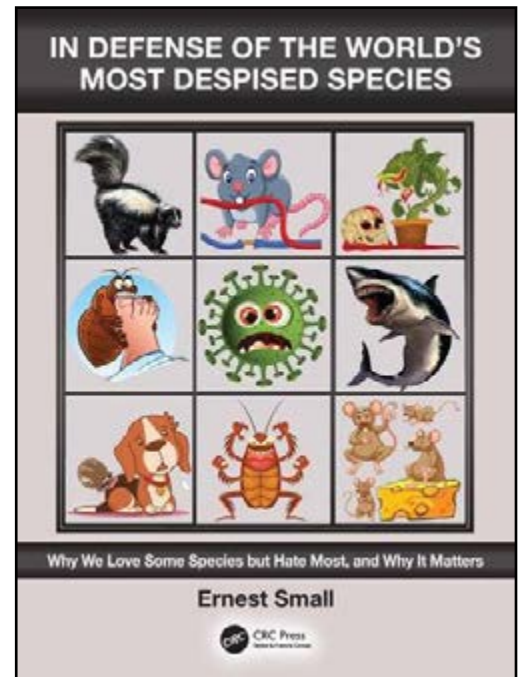
In Defense of the World's Most Despised Species

by Ernest Small

Reviewed by Edeline Gagnon

I must confess to being guilty of judging a book by its title and cover. When I agreed to review “*In Defense of the World's Most Despised Species*” by Dr. Ernie Small, a regular contributor to the *CBA Bulletin*, I envisioned a novel or essay exploring the various animals, plants, and other organisms deemed unpopular or troublesome to humans. However, to my great surprise, what landed in my mailbox was a 724-page manual published by CRC Press.

The book's ambition surpasses merely discussing nefarious or unloved species. The first seven chapters delve into human perceptions and attractiveness towards different species, exploring the creation of preferences and prejudices. The second section urges readers to consider the essential role biodiversity plays in human welfare, acknowledging that some species can be harmful to ecosystems. It goes on to address extinction risks, along with challenges related to species conservation such as agriculture, urbanization, and genetic engineering. The final part features seven chapters presenting case studies of the world's most despised invertebrates, animals, and various plants considered toxic or significant weeds.



[Available now from CRC Press](#)

I was pleasantly surprised by the breadth of subjects covered, far exceeding my initial expectations based on the title and cover. While the entire manual is meticulously referenced with scientific articles, the text is generally well-written, with a broad audience in mind. Personally, my favorite aspect was its equal focus on plants and animals, overcoming the typical plant awareness disparity that is prevalent in biology manuals. The final chapters on weedy and toxic plants, in particular, stood out. The 20 plant species that are presented in the book include species that are well-known or common, from tobacco and poison ivy, dandelion and common reed, to more exotic species such as cactus pear, kudzu and opium poppy. Dr. Small's talent for discussing the biology and history of various species shines through in extensive case studies. I can easily envision this as an excellent starting point for a discussion in class about the nature of weeds and toxic plants, as these examples are likely to be familiar to students, even if they do not know their biology in great detail.

In contrast, I thought that other sections of this work, particularly those delving into human psychology and the formation of prejudices, took an overly expansive form. For instance, while the discussion on speciesism, superstitions, and how they impact human's relationship with other species was appreciated, the chapter on beauty left me perplexed. Certain sections, like those discussing sexual preferences and attractiveness between humans, felt irrelevant to the book's main theme. Nonetheless, I appreciate how the author wanted to connect how our hatred and love for different species ultimately had an impact on our protection of biodiversity.

Additionally, the book features more than 2000 photos, illustrations, and cartoons, which make it a very colourful and entertaining manual in this regard. While most figures enhanced the reading experience, I am ambivalent about the prevalence of cartoon-like figures on the cover and throughout various chapters. Although they can be amusing, I found them at odds with the serious writing style and wealth of knowledge in the book. I found myself questioning whether more realistic images could have been used. In the preface, it is stated that it was a choice to

avoid offending the readers with overly graphic images of cruel or painful behavior towards species, and disease-causing organisms. Cartoons were also deliberately used to critique exploitative segments of society. Personally, I do hope that if a future edition of this manual is ever considered, that there will revisit the choice of illustrations, as to better reflect the high-quality content of the manual, and ensure that it attracts better its target audience, which is older teenagers to adults.

In summary, Dr. Small's book breaks away from typical biodiversity manuals. Its size and format is such that while I would not necessarily recommend this work for leisure reading, I found it to be well-structured and easy to navigate and read and jump from one section to another. It is definitely suitable for an audience that has little knowledge about biodiversity and are looking to learn more about different aspects of what influences their conservation. I would also recommend it as a resource for people needing to prepare material with regards to biodiversity, whether it be for scientific outreach, teaching high-school curriculum or undergraduate biology classes.



Cypripedium parviflorum



Iris lacustris

Photos compliments of Mihai Costea

Unrooted – Botany, Motherhood, and the Fight to Save an Old Science

by Erin Zimmerman

Reviewed by Frédérique Guinel, Professor Emerita at Wilfrid Laurier University, Department of Biology

This book is unfortunately too timely! Many of you would have heard that Duke University was thinking of closing their herbarium which is over 100 years old. Here, Zimmerman explains why this type of closure is short-sighted and dangerous. She argues the following thesis – the lack of financial support by federal and provincial agencies and by university administrations towards scientific fields considered “old-ish” or nerdy, such as plant morphology and plant taxonomy, will have extensive consequences on plant biodiversity and its conservation. As she makes her point, Zimmerman weaves together some facts related to the science of taxonomy and her personal history.

To me, this science memoir was loaded with emotion and I read it with avidity and much interest. As a retired female professor, coming from Europe, I was well aware that the academic road taken by females and foreigners was a difficult one, with many obstacles and ambushes. I had travelled that road and with the help of a few mentors, some chance, and a lot of work, I had been more or less successful. Throughout my career, I discussed with colleagues and administrators the roughness of that road, thinking that the persons who would follow me will have a smoother path. Reading this book made me realize that I had been quite naïve, that the road was still bumpy today with much place for improvement. This memoir underlined in an elegant and sometimes shocking way the fact that gender problems have not yet been resolved.

Zimmerman, an excellent communicator, retraced her life in a familiar tone which makes the reading accessible to all. Her book is well-written, with a straightforward style, good analogies and many appropriate examples. There is some humour in the book, humour often directed at the author herself. Throughout, one cannot escape from Zimmerman’s love for plants and the science of plant taxonomy, and her willingness to share what she knows. Making the book more interesting is the historical lens Zimmerman took when writing about herbaria, botanical drawings (mostly performed by women illustrators), naming of plants, discovery expeditions, and the role played by women amateurs in the 18th and 19th centuries. The names she cites, the anecdotes she gives, are all great resources to look into for further readings.

Zimmerman recalls her childhood in a small place in Southern Ontario, her youth in a world mostly occupied by men, her move to university first at Guelph and then at l’Institut de recherche en biologie végétale in Montreal, where she embraced a new language and a new culture because of her love of botany. We follow her growth as a person moving through her graduate studies. In her PhD studies’ description, she cleverly paints the two sides one finds in such programs. On one hand, it is not an easy place to be; for many, it is a time during which one questions oneself, one’s aptitudes, and one’s confidence. Often, this leads to anxiety and depression; over all lays the question of one’s future. On the other hand, it is an exciting time when one is exposed to new ideas, new people, and new places. She shares many personal steps of her life, not masking the difficulties of being a graduate student despite being supervised by professors for whom she has great respect and who created an environment proficient to learning. Often, she was at a loss, but then she was also offered amazing opportunities, such as studying at

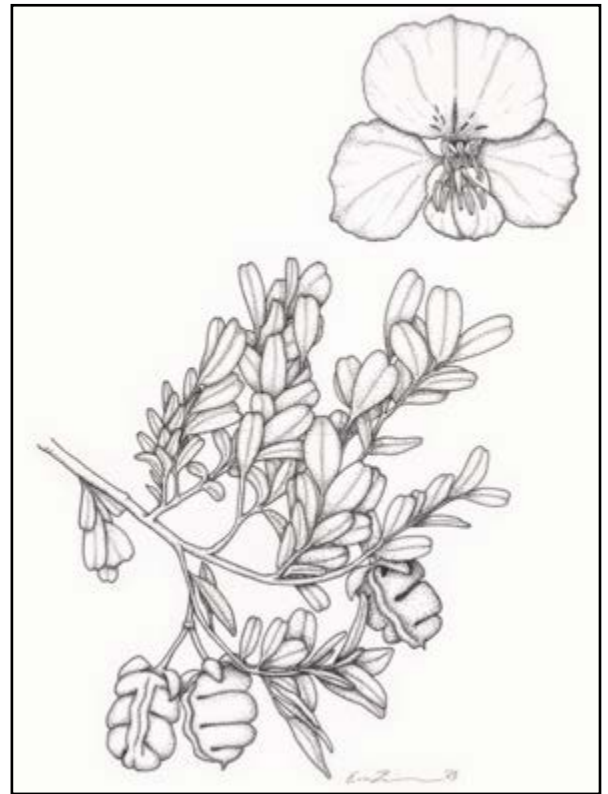


[Coming April 2024 from Melville House](#)

the Jodrell Laboratory at Kew Gardens, participating to a discovery expedition in the Guyanese rainforest, and attending meetings in faraway places.

At the beginning of her studies, Zimmerman thought that her path was well traced and saw herself as an established plant taxonomist in a relatively near future. However, when her partner decided to quit academia, she began to doubt and felt vulnerable. As her PhD came to a close, she realized that the road she chose may be blocked and yet she decided to pursue her dreams, only to fall unfortunately from higher up. After a failed post-doc through no fault of her own, she changed path and used her strength, acquired skills and resilience, to find a place for herself, a niche where she would be able to care for her family and do something she loves – communicate her passion for plants through writing, drawing, and undertaking citizen science. With a heavy heart, she had to adapt to a society still unfriendly to women who want to have both, a family life and a rewarding position in a scientific field they love. In her book, Zimmerman is not afraid to paint a rather bleak picture of some sides of academia that some of us choose not to see, and she does so with great honesty.

The first page of each chapter is adorned with one of Zimmerman's stunning botanical drawings. Unfortunately, no details, such as the binomials of the plants drawn, accompany the illustrations. Nonetheless, these drawings are a great addition to the book. Paying attention to minute details through the use of a microscope was useful to Zimmerman during her studies. Having to organize them in a meaningful representation allowed her to go beyond looking, ask new questions and integrate the answers so that her drawings could reflect perfectly what she was seeing. Drawing was also comforting to Zimmerman as it gave her a sense of peace but likely also a sense of pride as her creativity was being used. Towards the end of her PhD, Zimmerman participated in the Kamloops meeting of the Canadian Botanical Association, where she received the Taylor Steeves Award for part of her PhD work and displayed some of her illustrations at the art show. During one of the field-trips organized, she met a kindred spirit, Lyn Baldwin, a professor of ecology in Kamloops, who offered her the unique opportunity to see her sketchbooks. Perusing those was a revelation to Zimmerman and it opened a new dimension to her life. It also unlocked a box, one concerning motherhood, that she had always kept tightly closed.



An illustration from the book showing *Eligmocarpus cynometroides*

Weaved tightly in her personal recollections is the thesis mentioned at the beginning of this review. To argue her position, Zimmerman researched thoroughly the state of taxonomy and systematics, fields based on natural history, in today's world. To do so, she interviewed well-known North-American scientists who are experts in these fields. She met Spencer Barrett, Professor Emeritus of Ecology and Evolutionary Biology at the University of Toronto; Barbara Thiers, Director Emerita of the William and Lynda Steere Herbarium of the New York Botanical Garden; and Pamela Diggle, Professor and Head of the Department of Ecology and Evolutionary Biology at the University of Connecticut. She also met Alice Tangerini, illustrator for the Department of Botany for the Smithsonian Institution; Pamela Soltis, Distinguished Professor in the Florida Museum of Natural History; and Damon Little, Curator of bioinformatics at the New York Botanical Garden. All gave her their point of view on the future of their science, and the result is a rather grim picture due to lack of funding and of trained persons, and this leads to a loss of fundamental knowledge.

These experts generally agree on the negative impact molecular biology, viewed by many as a “sexy” science,

may have played on the natural history-based scientific fields. Although it is an important field with good technology, alone it cannot solve conservation problems. Too often, lack of fundamental knowledge in taxonomy or morphology leads to misinterpretation of data obtained with molecular tools. In contrast to the molecular biologist who takes a reductionist view, the taxonomist must take a holistic view where morphology, genetics, and ecology are needed to place a plant on the evolutionary tree of life. Society should come to understand that naming a plant is not just to label it; it is to recognize its value. Some hope is being placed in new technology, such as artificial intelligence, or in program involving public participation. However, to remedy decades of neglect towards herbaria and lack of trainees, an army with a good strategy is needed, and Zimmerman's book should be seen as a strong wake-up call for society (especially funding agencies and university administrators) to change.

Zimmerman brings forward strong arguments for the importance of transmission – transmission of information not only between supervisors and students, parents and children, and mentors and younger faculty, but also between past discoverers and taxonomists studying older herbarium sheets. Maybe this concept of transmission is the backbone of this book. Universities must continue to offer courses in plant morphology and taxonomy and must continue to train students in these “older” disciplines so that the students can decipher the information hidden in the specimens. However, this will not be sufficient; administrators of funding agencies and of universities and governments have a role to play so that money is made available quickly to maintain alive these scientific fields and the associated herbaria! The public too will have to play its part, in electing the proper government, in participating in citizen science, and in volunteering in maintaining and updating herbaria.

When reading this book, as a lover of nature, a teacher, and a mother, I was completely attuned to Zimmerman. What I was reading was familiar, yet “original” as it was exposed from a point of view different from mine. Zimmerman displayed here great sensibility in this engaging ode to the study of botany.

[*Acknowledgment – I would like to thank Mihai Costea for his feedback on an early draft.*]



Drosera linearis

Photo compliments of Mihai Costea

Little-known Botanical Illustrator and Botanist: Helen Sharp (1865-1934)

By Mihai Costea

While perusing the digitized collections of the Lenhardt Library from the Chicago Botanic Garden, freely accessible in BHL, I chanced upon the work of an exceptional botanical illustrator and botanist: Helen Sharp. Notably absent from the list of around 1,500 women interested in plants in the 19th-century United States and Canada compiled by Rudolph (1982, 1990; also, Crump and Lannoo 2022), the scant biographical information presented below was only recently unearthed by Leora Siegel (2019).

Between 1888 and 1910, [Helen Sharp crafted nearly 1,000 compositions](#), grouped into 18 albums/volumes. The plants featured in the initial 16 volumes were primarily sketched from nature in various Massachusetts towns, her place of residence, and also in Maine, New Hampshire, Connecticut, New Jersey, and North Carolina. The species in these 16 albums were grouped not chronologically but taxonomically, following Gray's Manual of Botany. Volume 17 captured some common species during European travels, while Volume 18 showcased plants from Bermuda, visited in 1893 and 1903.

“Leisure botany” was considered a suitable pastime for women in the U.S.A. and Canada during the 19th century. Especially after the American Civil War (1861-1865), basic botanical education for young women was widely promoted in various ways, particularly in NE North America. As Coxe (1840, pp 160) mentioned: “[...] *this delightful science (botany) has become at the present time a favorite with the young, refined, and delicate of our sex, and introductory publications on a plan, easy, practical, and comprehensive are now readily procurable by the ladies of our country who desire to be initiated into this branch of knowledge.*” Consequently, many women possessed sound knowledge about plants but were denied the opportunity to pursue university-level studies or become practicing botanists. Helen Sharp was one such women whose potential and contributions to science went largely unrecognized. She served as a humble classroom assistant for a teacher training program in botany offered by the Boston Society of Natural History in 1891 and 1892. Drawing was an integral part of botanical pedagogy during those times, and her plates served as a teaching aid.

The level of botanical detail in Helen Sharp's works is remarkable. Only an accomplished botanist could observe and render them so accurately. The beauty of plants emanates from the watercolors naturally, devoid of the artistic embellishments that many botanical illustrators like to incorporate into their compositions. Typically, the plants were initially outlined in pencil, with only the diagnostic parts – flowers, leaves, fruits and seeds – watercoloured afterward. Each plate is accompanied by a label indicating the Latin and common names, locality, and date. Latin names were frequently crossed out and replaced with new binomials, reflecting a preoccupation with the nomenclature changes of the time.

Helen Sharp was elected a member of the Massachusetts Horticultural Society in 1898 and exhibited her work at the Boston Society of Natural History, Boston Public Library, and Brookline Public Library. According to Siegel (2019), she actively participated in the North Bennet Street



Amaranthus cruentus



Amelanchier canadensis

Industrial School (NBSI) and served on its executive committee until 1929. NBSI provided job training for new immigrants and assisted them in integrating into the American society and culture of the time. You can peruse her rediscovered work here: <https://www.biodiversitylibrary.org/bibliography/100572>

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Decodon verticillatus



Asclepias tuberosa



Hibiscus trionum



Lobelia cardinalis



Iris versicolor



Nuphar advena



Stylophorum diphyllum



Rubus odoratus

The Botanical Society of Canada – Its Purpose, Organization and Activities

Frédérique Guinel¹ and Jennifer Doubt²

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In our [first instalment](#), we reviewed George Lawson’s life as it relates to the CBA’s inspiration to give his name to its most prestigious award, the George Lawson Medal. In doing so, we summarized Lawson’s founding influence on the Botanical Society of Canada (BSC) in the early 1860s. Here, in this latest chapter in an ever-expanding series, we present the structure and core activities of the BSC in greater detail.

Botanical Society’s role in a developing colony

Lawson and his cofounders created the BSC to promote the science of Botany in the burgeoning colony of Canada, the flora of which, until the late 1850s, had been documented primarily through dried specimens carried home by passing European and American visitors (*Annals of the Botanical Society of Canada* (BSC Annals), p 5). Lawson (1860), in his opening address to the new Society, stated that its purpose would be to increase Canadian botanical knowledge “in all its departments – Structural, Physiological, Systematic, and Geographical”– to promote interest in the study of Botany, and to record new discoveries of species and their distributions. In his view, botanical knowledge of plants indigenous to Canada would support the development of economically useful industries around food, forestry, medicine, and chemistry, providing practical solutions to farmers’ or manufacturers’ problems (Zeller, 2003). Lawson proposed several means by which to accomplish these goals, such as publications, monthly meetings in the winter and field trips during the summer, the creation of a botanical library, the development of a herbarium, and the establishment of a botanical garden in Kingston (Lawson, 1860).

Lawson cautioned members against “the degeneration of the society into (a) popular institution, calculated rather for the amusement of the many than for the encouragement and aid of the few who are engaged in the prosecution of original discovery.” (Lawson, 1860). As a teacher with *standards*, he added “we should seek rather to bring our members and the public into scientific modes of thoughts and expression, than to allow our Society to yield up its scientific character to suit the popular taste.” As a teacher with *experience*, he went on to say “Let us not be disappointed with our first results. Let us lay a foundation, and persevere in the work, and workers will gather around us as they have done before in the Botanical Societies of other countries.” (Lawson, 1860).

BSC organization and structure

The Society established and published in its Annals a well-defined constitution, a third of which concerned its leadership and membership hierarchies (Rousseau and Dore, 1966). In 1861, the extensive Board consisted of a President, two Vice-Presidents, 21 Council Members, one Secretary (Lawson), one Treasurer, four Curators to take care of the herbarium, and one Librarian (BSC Annals, p 20). The leadership group only grew over time; in 1862, one seat was added to the Board and two additional curator positions were created (BSC Annals, p 178). Furthermore, that same year, Viscount Lord Monck, Governor General of British North America, was elected as Patron of the BSC (*Daily British Whig* (DBW), 1). Then, in 1863, two additional Vice-Presidents, a further Curator, and an Auditor joined the Board roster (*Weekly British Whig* (WBW), 1). In the constitution, Article IX, it was stipulated that “At least one-half of the new office-bearers at each election shall be chosen from among the Fellows, and the other half may be selected from among the Annual Subscribers.” (BSC Annals, p 16). This may have been the chance for Kingstonians eager to climb the social ladder to get a title and some prestige (Connor,

1986; Kennedy, 2010).

According to the BSC Laws (BSC Annals, pp 14-16), **there were five categories of members.**

1. The **Honorary Members** were nominated by the Council and selected based on their expertise in Botany. Their distribution encompassed a great part of the colonial world; their number in each geopolitical class was restricted:

Four had to be Canadian residents (e.g., William Dawson of McGill, Sir William Logan, Director of the Geological Survey of Canada (GSC)); six had to be British (e.g., John Hutton Balfour, Lawson's mentor in Scotland, and Sir William Jackson Hooker, Director of the Kew Gardens); four had to be residents of the British Empire colonies. Furthermore, there were four American (e.g., Asa Gray of Harvard University, and John Torrey, Professor Emeritus of Columbia University); and six from "Foreign countries" (e.g., Alphonse de Candolle from Genève, Nathanael Pringsheim from Berlin, and Ludovic Tulasne from Paris).

2. To be registered as a **Fellow**, a member had to be nominated by at least two other Fellows and must have proven his interest in Botany by providing either an original memoir on a botanical subject or a donation of plant specimens he had collected. If the nomination was accepted by the Council, the work presented was accessible for review by members for four weeks, after which a vote among Fellows was taken at a general meeting. Fellowship came with advantages; after paying the \$2 dues, a Fellow received a certificate, and was allowed to vote at the Society meetings, exchange specimens, request seeds and receive copies of the Society publications.

3. In sharp contrast with the other Canadian societies of the times (Connor, 1986), **Lady Members** were allowed to participate in the activities of the Society by complying with the requirements requested from Fellow Members, and received the same benefits (Article V of the Constitution, BSC Annals, p 15). Not surprisingly for the time, this membership group was the smallest of all, and no Lady Members were elected as Office-bearers, despite there being no prohibition against it in the Constitution.

The names of both Fellow Members and Lady Members were recorded in a membership ledger with the date of their election (Fig. 1).



Fig. 1 - Ledger (left) with names of Fellow Members and Lady Members of the Botanical Society of Canada. On the left page of the ledger, the names of the Fellows (next page left) and Lady Members were inscribed alphabetically. On the right page (next page right), one could find in the first column the date on which the Fellows were elected. In the following columns, the number of the receipt the Fellow would have received as a proof of payment of dues for the years 1861 to 1863 was written. (Queen's University Archives, Botanical Society of Canada Fonds).

Fellows.

12	Loring, Geo.,	Marquette
14	Larvell, Prof. M.D.	
91	Lawson, Prof.,	Secretary
21	Leitch, W. Rev. Principal,	President
131	Logie, Judge,	Marquette
16	Litchfield, J. P., Prof. M.D.	
64	Lochhead, J.,	North Governor
100	Lochhead, J.	North Governor

	1861	1862	1863
11 Jan. 1861	12	215	
7 Dec. 1860	14	208	
7 Dec. 1860	91	217	paid
7 Dec. 1860	21	261	6x 12
15 Feb. 1861	131	200	46x 12
7 Dec. 1860	16	197	
7 Dec. 1860	66	258	

Once a Fellow or Lady Member was elected, according to the BSC Laws, they were issued a diploma/certificate as a proof of having fulfilled the requested criteria. One such certificate (Fig. 2), uncovered in the Library and Archives Canada, had been issued to James Hubbert, in December 1864, by Robert Bell (Fig. 2).

Minutes of Ancient College Kingston
Canada Dec. 7th 1864

Rev. & James Hubbert B.A.

Sir:

At a meeting of the Botanical Society of Kingston held on the 2^d of January 1863, you were unanimously elected a Fellow of said Society.

I am, Sir,
Yours most obt. servt.
Robert Bell
Secretary

F. B. S. C.
Certificate for
Mr. Hubbert
Dec. 7th 64

Fig. 2 – This is the certificate (right) that Rev'd Hubbert received from Robert Bell with a letter (left) dated Dec. 7, 1864 (although, inexplicably, he had been elected Fellow almost two years earlier, in January 1863). As this document was found in the Robert Bell Fonds at Library and Archives Canada, it may just have been a draft.

4. Any person willing to pay annual dues of \$2 could become an **Annual Subscriber** entitled to attend the meetings, obtain seeds and exchange specimens; they were not allowed to vote for Fellows and Office-bearers, but they could be elected to the Board. This group was the largest; their names are not listed in the ledger but they appear in the proceedings as attendance was generally taken during the meetings. For Connor (1986) and Kennedy (2010), the simple existence of this class made the Society an elitist one as it created a hierarchy with the Fellows at the top of the pyramid and the amateur Subscribers at its base. Annual Subscribers came from the Kingston community and beyond: some came to the first meeting (BSC Annals, p 13) from as far away as Chatham, Belleville, Newmarket, Perth, and London. One Subscriber attending that first meeting was even listed as living in Boston, USA.

5. The **Corresponding Members** were elected members who were recommended by the Council. They could be botanists from far away or Canadians who had made significant botanical contributions. They were exempt from annual fees. This group of members not only were genuinely interested in the Canadian Flora but

also appreciated the sheer amount of work required to identify, by their Latin names, all the plants in this vast territory (Connor, 1986). Overseas corresponding members included Eugène Bourgeau (a French naturalist and collector), Elias Magnus Fries (a Swedish botanist and mycologist), and Charles Léo Lesquereux (a Swiss bryologist and paleobotanist) (Rousseau and Dore, 1966). Closer to home, we could mention Robert Bell from the GSC, who was elected Corresponding Member on Feb. 15, 1861 (Fig. 3) and Catharine Parr Traill, an author and renowned amateur botanist, who was elected on Nov. 15, 1861.

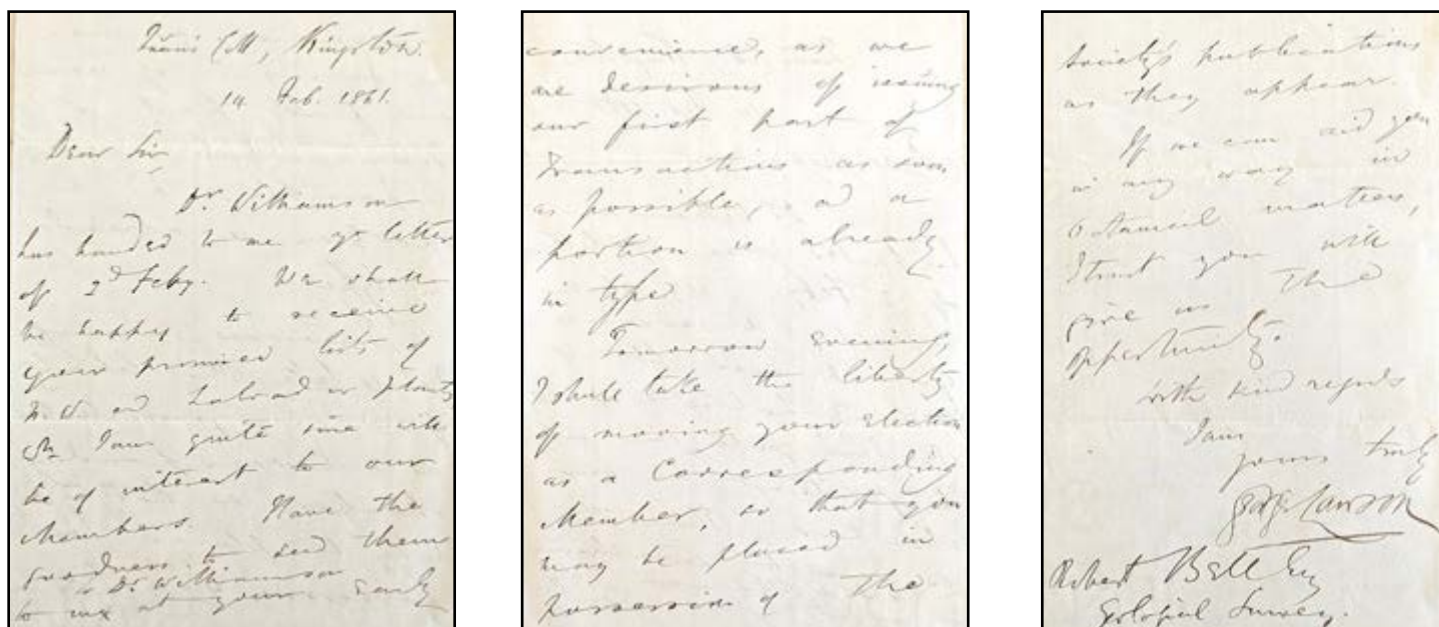


Fig. 3 – A letter that Lawson had written to Robert Bell, from the Geological Survey of Canada, on Feb. 14 1861. Towards the end of the letter, Lawson mentioned that “*Tomorrow evening, I shall take the liberty of moving your election as a Corresponding Member, so that you may be placed in possession of the Society’s publications as they appear.*” Indeed, in the proceedings recorded in the Annals of the meeting held on Feb. 15 1861, one can read that Bell was duly elected. (Library and Archives Canada, Robert Bell Fonds).

We assume that the students of Queen’s College, counting 97 in the year 1860-1861 and 153 in 1862-1863 (Rousseau and Dore, 1966), were encouraged to attend the meetings of the BSC. In their first addresses to the members (BSC Annals, pp 3-9), President Leitch and Secretary Lawson clearly emphasized that Botany in Canada could be developed via “fostering the taste for its study” (Leitch), with the help of “a good botanical library and a good herbarium” (Lawson). It must have worked; according to Rousseau and Dore (1966), such prominent Canadian botanists as A.T. Drummond, John and Robert Bell, and John Kerr McMorine were among Lawson’s students around this time.

Meetings of the BSC from its inception to its folding

Meetings were advertised and meeting proceedings were reported not only in scientific journals but also in local newspapers. The BSC relied principally on two of the former: the *British American Journal* (BAJ) for persons interested in medicine and the *Canadian Naturalist and Geologist* (CNG, published by the Natural History Society of Montreal) for those interested in natural science and geology. As for local newspapers, the Society counted heavily on the DBW and the WBW.

Meetings, usually held on Fridays at 8:00 pm, first took place in the Chemistry Classroom of Queen’s College and then – likely due to high attendance – moved to its Convocation Hall. At the first meeting, 91 men were present; these were declared to be the Original Fellows of the Society (BSC Annals, p 13). There were 103 men at the second meeting, and about 200 men and women at the third. By the time the last known meeting was held on April 9, 1864, the members met again in the Chemistry Classroom, likely because of their dwindling number.

There is some confusion in the literature regarding the number of meetings held by the Society. Connor (1986) mentioned five assemblies, three in its first year and two at most in its second year. Rousseau and Dore (1966), having likely based their numbers only on the proceedings found in the Annals, counted 11 meetings, seven during the first session and four in the second. Complementing the Annals with records from Kingston local newspapers, we realized that the BSC had in fact had three full sessions, each running from the late fall to the following spring. The first session started on Dec. 7, 1860, the founding date of the BSC, and included seven meetings (see reports in the BSC Annals). During the second session, begun on Nov. 15, 1861, members met six times (see BSC Annals and DBW, 2 and 3). During the third session, reported to have started on Jan. 26, 1863 (DBW, 4), members met four times. Reading through the reports of the different meetings held in 1863 offers a glimpse of storm clouds gathering on the horizon of the BSC. The fourth session, which started on Oct. 9, 1863 (DBW, 5), saw the unofficial folding of the Society. The ad (DBW, 6) for this meeting featured a rather desperate plea: “*Members are especially expected to be present, and indeed should make a point of attending all Meetings of the Society, and doing all they can for its welfare.*” The ensuing meeting reports (DBW, 5; WBW, 2) may have been the last ones written by Lawson, since his letter of resignation to Queen’s College was submitted on Oct. 13, 1863 (Connor, 1986). The exact date on which he left Kingston is uncertain, given that he is reported to have presented two papers on Oct. 9 (DBW, 5), yet Zeller (2003) recounts that Lawson took his new position on Oct. 3.

By the fourth session, the Secretary position had been split in half, as evidenced by a Dec. 11, 1863 meeting call that was issued by both recording and corresponding secretaries (Fig. 4). This change in duties speaks to the high volume of work Lawson must have handled as the BSC’s sole Secretary (Connor, 1986). There was at least one other meeting in that session, on April 9, 1864 (DBW, 7), where (it was ominously advertised) important decisions would be discussed. Unfortunately, we did not find any report for this meeting, and it is not difficult to imagine that the Society was on its last legs.

The official closure of the BSC was still years ahead. Rousseau and Dore (1966) reference a letter they found at the Queen’s University Archives, showing that as late as April 15, 1867, Lawson and Drummond (now a lawyer sitting on Queen’s College Board of Trustees) were contemplating a potential revival of the Society and a new series for the Annals. A later circular, dated Dec. 9, 1867 (Fig. 5), demonstrates that the idea had advanced. Lawson signed the circular as “General Secretary and Treasurer of the Bot. Soc., Ca.”. However, no further information on the continuity of the BSC has been found.

A description of a typical BSC meeting based on the Annals proceedings

Based on the reports found in the Annals, there was a regular pattern to the meeting procedures. At the beginning of the meeting, administrative duties were

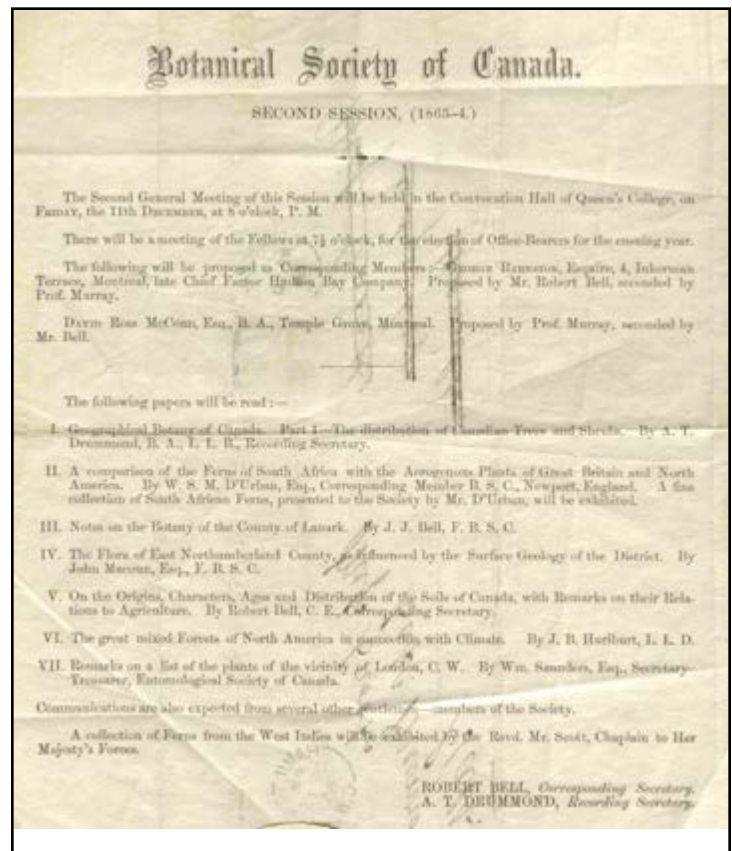


Fig. 4— A circular advertising the general meeting to be held on Dec. 11, 1863. It is very likely that this is the first BSC meeting that Lawson would not have attended as he was now living in Halifax. Although it is indicated at the top of the circular that this concerns the second session (1863-4), it is in fact the fourth session of the BSC. This circular was addressed to a Lady Member, Miss Kate Crooks, who was living in Galt at the time.

Fellows were to meet at the Convocation Hall at 7:30 pm for the election of the Office-Bearers. The public was then invited to join 8:00 pm. Seven papers were intended to be read and a collection of ferns from the West Indies was to be exhibited. (Queen’s University Archives, Botanical Society of Canada Fonds).

performed; this was followed by the reading of papers and exhibition of specimens.

Administrative duties listed in the Annals included **the election of members and the reporting of donations** to the Society. In meeting reports, Lawson recounted in great detail the dried plant specimens, seeds, monetary sums, publications and books received. These were used to develop the Herbarium, the Society Library, and the Botanic Garden. Donations came from far and wide. For example, on Feb. 15, 1861, W. Dawson offered some of his original publications; Messrs. Vilmorin, Andrieux & Co, from Paris, sent seeds of their new upright tomato and new double Zinnias; and a Mr. John Carruthers, Esq. from Kingston, donated \$25.00, which we estimate to be equivalent to CAD\$ 870.00 today. On April 12, 1861, Braddish Billings gave “a large and very valuable collection of plants, chiefly from the neighbourhood of Prescott.” On Nov. 15, 1861, one can see that the Society received an extensive donation from Asa Gray for the Botanic Garden and seeds from Handasyde, McMillan & Co, in Melbourne. At the same meeting, Sir W. Logan presented to the Society “various collections of plants that had been made at different times by the officers of the GSC – many of these were from localities inaccessible to ordinary collectors, and were of great interest.”

From mid-1861 onwards, much meeting time was spent **reading letters from Honorary and Corresponding Members**. A few of these letters are published in the Annals, with their translations performed by members or subscribers of the Society (Fig. 6).

Following the administrative duties, **papers by the Fellow, Honorary, and Corresponding Members** (we cannot affirm that subscribing members had papers read or published) were read to those assembled. Were all papers published? We do not know, and we are uncertain of the criteria used for accepting publications. We know, however, that time constraints limited the number of published papers that could be read at meetings. The papers were published in the Annals and in several of the outlets mentioned earlier (e.g., DBW and CNG). At least three foreign journals also covered Society activities: *Bonplandia* (edited by Berthold Seemann), *Phytologist* (edited by William Pamplin), and the *Edinburgh New Philosophical Journal* (which at the time was likely edited by J.H. Balfour). The first paper to be read (BSC Annals, pp 22-24) was from Prof. George S. Blackie, M.D., from Nashville, Tennessee, one of the Four Honorary Members representing America. His paper was likely read by a Fellow Member as it is difficult to imagine that Blackie attended the meeting. Readers of papers are seldom named in the Annals or in the reports of the meetings, although there are exceptions. At the third meeting, a paper from Lauder Lindsey, one of the six Honorary Members from Great-Britain, who was at the time the Physician-Superintendent of Murray’s Royal Asylum in Perth, was read by its author (BAJ, 1). On the eighth meeting, a paper written by Fellow D. McGillivray was communicated by J.C. Smith (BSC Annals, p 171). Kennedy (2010) mentioned that women were unlikely to have read their own work, but we did not find any evidence supporting or refuting this statement.

From the transactions, we can infer that following the reading, discussion of findings was possible (e.g., BSC

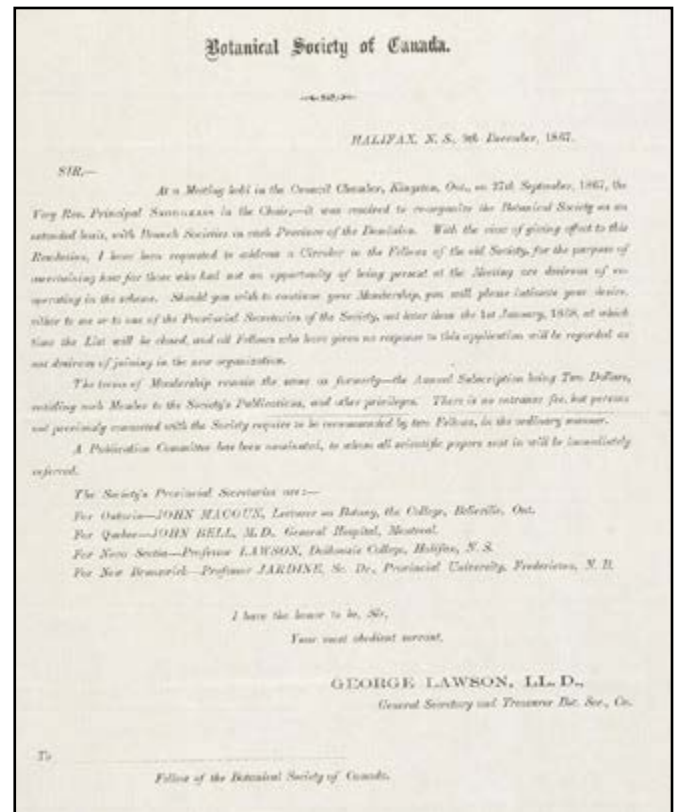


Fig. 5 – In a Kingston meeting on Sept. 27, 1867, a few members voted on a resolution for reviving the Botanical Society of Canada. In order to test the interest of the membership, Lawson sent the circular seen here to previous members and requested a response by Jan. 1, 1868. In it, he proposed to retain the prior terms of membership while adopting a new Society structure based on the Provinces of the Dominion, with each province having its own Secretary: John Macoun for ON, John Bell for QC, Lawson for NS, and Prof. Jardine, likely a previous student of Lawson, for NB. (Library and Archives Canada, Rare Books Collection).

Annals, p 178). However, most of the interactions among members may have occurred in the last portion of the meeting, when specimens were exhibited on tables in a laboratory adjoining the Convocation Hall, where microscopes were set up to aid observation. There was an apparent effort for the specimens displayed at a given meeting to be related to the papers that were read. For example, on Jan. 10, 1862, in conjunction with the reading of a paper by Corresponding Member Alex Kemp, “On the shore limits of the marine algae of the North Eastern Coast of the United States”, several of Mr. Kemp’s algal specimens were displayed, along with a collection of American seaweeds from Mrs. John Macpherson of Kingston.

Beyond the meeting hall: seed exchange, herbarium, phenology study, field trip

Early on, BSC council members (most likely Lawson and the curators) laid rules (BSC Annals, p 42) to ensure a productive **seed exchange**. In return for seeds, the BSC expected to receive a report on the results of propagation (Connor, 1986), detailing the plants’ adaptation to the soil and climate, and their potential economic value.

Because of the interest shown by foreign botanists, clear regulations (published in the BAJ, 2 and CNG, 1) were also developed for **exchanging dried plant specimens**, with the goals of building a public herbarium and improving personal herbaria. Participating in the exchange carried responsibilities as stated in BSC Annals (p 112):

“To entitle a Fellow or Subscriber to a share of the Society’s duplicate specimens at any of the annual distributions, he shall have transmitted to the Society, before the 15th November, not less than 50 species of plants, with as many duplicate specimens of the rarer ones as possible.”

There was an additional note, urging

“The above rules will be strictly observed. Foreign botanists, in various parts of the world, have expressed a desire to contribute to the Society collections. There are spontaneous and liberal offers from Tuscany, Sicily, France, Australia, and other distant parts. It remains for the botanists of Canada to say, by their contributions this autumn, whether the Society will be able to enter upon such advantageous exchanges.”

Thus, universities and societies with herbaria appeared to have been favoured over individuals to receive specimens. For Connor (1986), Lawson was privileging his international colleagues over the Canadian members of the Society; however, we did not find any information to substantiate this claim.

Activities were also developed to help members get involved in botanical study. On April 12, 1861, at the sixth meeting (BSC Annals, p 110), **blank schedules** were distributed to the members “for recording the leafing, flowering, and other phenomena of plants.” Unfortunately, we were unsuccessful in unearthing one of these

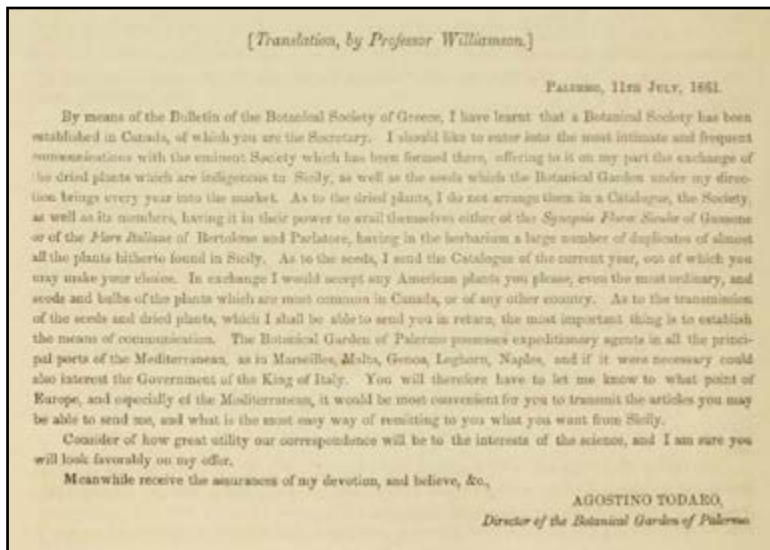


Fig. 6 –A letter, dated July 11, 1861, from Agostino Todaro, Director of the Botanical Garden of Palermo, to “Al Chiarissimo Signore” Lawson. The letter was published in the proceedings of the meeting held on Dec. 19, 1861. This letter, originally written in Italian, was translated by Professor Williamson, one of the Original Fellows of the Society. In it, one can read “*I should like to enter into the most intimate and frequent communications with the eminent Society which has been formed there, offering to it on my part the exchange of the dried plants which are indigenous to Sicily, as well as the seeds which the Botanical Garden under my directions brings every year into the market*” (BSC Annals, p 172).

schedules or any reports on results. Those proposed phenological observations could be useful today!

A fieldtrip, likely organised to close the First Session, was scheduled on June 15th, the day following the last meeting. However, because of bad weather, the excursion was postponed to the next day (Fig. 7).

The group, over a few miles, visited the woods and swamps found along Collins' Bay (CNG, 2); the day was fine and the members explored the area between Kingston and Bath (BAJ, 3). Some highlights were summarized (BAJ, 3):

“Ferns were numerous, among others *Osmunda cinnamomea*, *O. interrupta*, *Polypodium*, *Dryopteris*, *Onoclea sensibilis*, *Polystichum acrostichoides*, &c. The swamps were gay with flowers: *Calla palustris*, *Arisaema triphyllum* (the Indian Turnip), *Orchis spectabilis*, *Corallorhiza innata* (the Coral-root), and numerous other terrestrial orchids- *Cypripedium pubescens*, also, but the last not in flower. Carices were plentiful. Near the Fairfield Farm several acres of dried up swamp were covered with a carpet of *Marchantia polymorpha*, abundantly furnished with stalked, spore-bearing, rayed, disks, as well as with the little shields in which the flask-shaped antheridia are contained; they were in a good state for showing under the microscope the remarkable movements, &c., of the phytozoa. Many other Cryptogamic plants were obtained, especially, among mosses, interesting fertile specimens of numerous species of *Mnium*, *Bryum*, *Hypnum*, *Funaria*, *Sphagnum*, &c. Algae were in good condition, including species of *Spirulina*, *Confervae*, and *Nostoc*, *Mougeotia genuflexa*, *Vaucheria sessilis*, the elegant *Pandorina morum*, *Chaetophora elegans*, *Tetraspora gelatinosa*, and numerous Desmideae and Diatomaceae. Not the least beautiful plant collected on the occasion was the *Linnea borealis*, which was abundantly covered with blossoms on the edge of a wood, - That “little northern plant, long overlooked object, flowering early,” - which Linnaeus selected on the Swedish mountains to commemorate his own name in the annals of Science.”

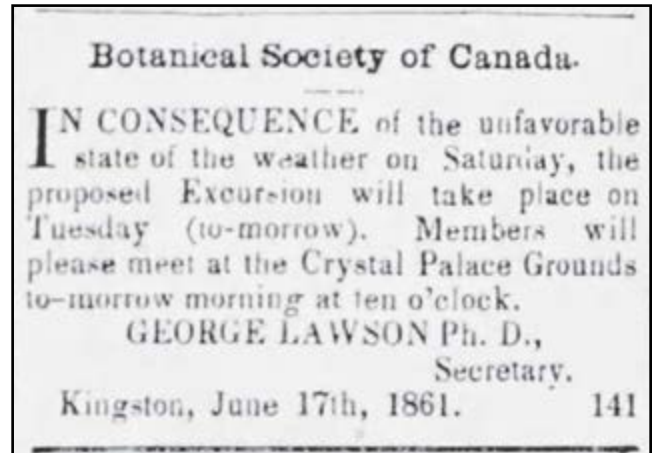


Fig. 7 – There is some disagreement about the date of the fieldtrip, with two different dates, the 17th and the 18th of June 1861, appearing in two different journals. We trust that the confusion arose because of the last-minute change described in this announcement. The event, scheduled on a Saturday, was postponed to the Tuesday following, the 18th, as mentioned in the DBW (8).

Both CNG and BAJ mentioned that the extensive list of the findings would be published in the BSC Annals. However, we could not find such a report.

To wrap up this instalment, we would like to highlight the energy that Lawson, at first mostly single-handedly, put into enacting his vision of the BSC. Most of his contemporaries, as well as today's historians (e.g., Connor, 1986), have recognized his unfaltering efforts. The Botanical Society of Canada tackled ambitious goals with impressive vigour and diverse activities from the outset. However, in mustering maximum participation, the organization's leaders may have spread themselves too thin. Although Lawson envisioned a truly scientific society, the need for broad political and financial support still necessitated amateur and social components. We can relate to Lawson's enthusiastic assumption that members of the public – once exposed to the wonder of plants, lichens and algae - could be motivated in large numbers to devote significant time to rigorous botanical pursuits in their spare time... but we also know from experience that this notion is naive. The 'something for everyone' structure counts among many possible factors that may have contributed to the abrupt demise of the fledgling BSC. Understanding the character and brief arc of the BSC's existence also requires attention to its political, scientific and societal context. In the next chapter of this series, we will time travel for the better purpose of elaborating the aspects of mid-Victorian Canada that set the Society's scene.

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