Canadian Society of Plant Physiologists Société Canadienne de Physiologie Végétale

BULLETIN



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CSPP-SCPV President, William Plaxton

Message from the President



It is an honour for me to represent our Society at a time when plant science research in Canada and internationally is playing an essential role in addressing a host of daunting challenges that currently face humanity. Effective integration of knowledge gained from the latest advances in all branches of plant science is needed to confront a wide array of unrelenting social and environmental problems. Plants recycle atmospheric carbon dioxide while generating the oxygen we breath, food we eat, feed for our livestock, building materials, and fibres needed to produce cloths and paper products. These amazing 'phytochemical factories' synthesize crucial medicines, essential nutrients and vitamins, flavors and fragrances, and feedstocks for a host of different industries. Plants also offer sustainable solutions for a bio-based economy in this era of declining and non-renewable fossil fuel resources coupled with rising greenhouse gas emissions and global warming. Central research questions deal with the study and inquiry into the form,

function, development, diversity, reproduction, evolved adaptations, and applications of lower and higher plants and their interactions within the biosphere. Our ultimate goal as plant scientists is to make fundamental discoveries that will lead to the efficient production of 'carbon neutral' biofuels, biodegradable plastics and other 'green' products, while generating higher yielding and more nutritious crop varieties. Presently more than one billion people are going hungry and the resulting malnutrition is contributing to disease and mortality. By 2050 we will need to double food production to meet the demands of the world's escalating population. At the same time large tracts of arable land are being lost to urbanization and soil degradation, while the effects of climate change threaten many existing crops. Landraces and wild relatives of all major crops are rapidly disappearing, removing important productivity and yield traits from the usable global gene pools. Therefore, plant biologists must apply their knowledge together with rapidly evolving technologies and databases, and genetic resources to enable sustainable increases in crop yields while using less fresh water, fertilizers, and energy. Engineered crops and trees are needed that are resistant to pathogens, insect pests and disease, and that can effectively acclimate to abiotic stresses imposed by low soil fertility, drought, salinity, temperature extremes, flooding, and other consequences of erratic weather due to climate change. Plant biology also offers novel solutions for bioenergy/biomaterials.

CSPP-SCPV President, William Plaxton

Message from the President ... (continued)

Such solutions include the design and manufacturing of more efficient solar energy harnessing devices based on photosynthetic processes in plants and algae, more efficient use of currently existing biomass, development of dedicated bioenergy/biomaterials crops that exhibit improved nutrient and water use efficiencies, optimized plant architecture, and altered composition to facilitate biomass conversion to biofuel and biomaterials. The establishment of 'bioenergy' plants and algae that are tolerant of stresses and that can be grown on areas that are marginal for food production has to be explored as we simultaneously pursue sustainable agricultural strategies.

A New Name for Our Society It is imperative that the Canadian plant biology community continues to grow and prosper in academic, government, and private sectors, and that younger scientists are attracted to and have the opportunity to engage in stateof-the-art plant science research and education within Canada. At the 2011 CSPP-SCPV Annual General Meeting the membership voted overwhelmingly to update the name of our Society to: "The Canadian Society of Plant Biologists/La Société Canadianne de Biologie Végétale". The necessary administrative procedures to officially effect this change are currently underway. The executive and membership of our Society believe that 'CSPB/ SCBV' better reflects the broad scope of modern functional and interdisciplinary plant science research. This name change will hopefully find more resonance and inclusiveness with the graduate students and younger Canadian plant scientists who are the future of our Society. Annual membership fees have been maintained as low as possible to encourage all graduate students

and scientists conducting basic plant science research in Canada to join and participate in our Society – irrespective of the specific research tools or experimental approaches that they are using.

CSPP Conferences

Annual and regional CSPP meetings are excellent venues for students, postdoctoral fellows and professional scientists to communicate and obtain feedback about their research results, make important career connections, and to establish collaborations. The quality of the research reported in poster and oral presentations has been consistently excellent. The CSPP takes pride in supporting student and postdoctoral fellow participation at annual and regional meetings, via Duff travel awards for travel to annual meetings, and awards for best student oral and poster presentations. The CSPP also meets every fourth year with the American Society of Plant Biologists (ASPB) and will be joining them in 2014 for the next joint annual meeting in Portland, Oregon.

A successful and well organized CSPP Eastern Regional Meeting was recently held in Ottawa on the campus of Carleton University. Apart from contributed student and post-doc oral and poster presentations, keynote lectures were given by Fedrica Brandizzi (Michigan State Univ.) and Sofia Stone (Dalhousie Univ). None of this would have been possible without the considerable efforts of the local organizing committee: Owen Rowland, Shelley Hepworth, and Gopal Subramaniam, and their student volunteers. The 2012 Annual CSPP Meeting will be held next June on the University of Alberta campus in Edmonton. A wideranging scientific program will

commence on June 25 and end on June 27. Major symposia featuring international speakers are planned on topics including: water and drought, genetic adaptation, development, and plant interactions with other organisms. There will also be sessions on other topics and ample opportunities for oral presentations by graduate students and post-doctoral fellows. A preliminary program and registration information is available at: <u>www.CSPP2012.org</u>. On behalf of the Society I would like to extend our thanks and gratitude to the local organizing committee, particularly the cochairs Janice Cooke and Michael Deyholos who have taken on the significant task of organizing this meeting and accompanying program.

Plant Canada

The CSPP has strong ties with several national and international plant science organizations. Through Plant Canada (www.plantcanada.ca) the CSPP networks with five other Canadian societies (Botanical Association, Phytopathological Society, Weed Science Society, Society of Agronomy, and Society for Horticultural Science) who share a common interest in the plant sciences, and that met with CSPP for the successful Plant Canada 2012 conference in beautiful Halifax NS this past July. The main objectives of Plant Canada are: (i) to organize and sponsor regular, effective scientific meetings and workshops under a national umbrella for plant science and related disciplines in Canada, (ii) to operate and maintain a strong communication network among Member Societies and their individual members, and (iii) to be an effective voice for public and political education and advocacy in plant and related sciences.

CSPP-SCPV President, William Plaxton

Message from the President ... (continued)

The Global Plant Council In 2009 the CSPP joined The Global Plant Council (GPC, http://globalplantcouncil.org/ INDEX.HTM), an international consortium of 20 plant biology societies from 6 different continents. The GPC brings plant scientists together to work synergistically toward solving common problems facing humankind and that speaks with a strong voice to inform the global debate on those problems. The shared vision and effort will enable more effective use of knowledge and resources, accelerating progress in solving the challenges of world hunger, bioenergy, climate change, health and well-being, sustainability and environmental protection. Bringing together the world's plant science societies allows the GPC not only to access the remarkable scientific talent that exists in plant sciences across the globe but also to incorporate region specific viewpoints on how global issues impact specific societies and cultures. The GPC is bringing the world's foremost plant science practitioners into discussions from which sciencebased policies and decision making is emerging. The GPC understands the critical need to effectively inform the global

community and especially our politicians as to the central importance of the plant sciences and of the significance of generating reason based strategies for developing innovative solutions to pressing global issues.

Thanks to Our Volunteers! My two year term as Vice-President allowed me to witness firsthand the dedicated and capable efforts of the many volunteers who work together to advance CSPP's mission and functions. I am grateful to the past and present members of our executive, and the various committees that have helped to make this a vital and vibrant Society. Their contributions of time and energy are essential in keeping the Society functioning smoothly, and in proposing and evaluating new initiatives in support of **CSPP's fundamental** objective: the promotion of internationally-recognized Canadian research and education in basic plant sciences. A particularly important aspect of CSPP volunteers has been to foster and encourage the development of younger plant scientists, and to honour members who have made outstanding contributions to our overall understanding of

how plants work. I would specifically like to acknowledge and thank Carl Douglas (Univ. of British Columbia) for outstanding leadership during his recent two year tenure as President of our Society. I am also pleased to acknowledge our long serving (14 year!) Treasurer, Harold Weger (Univ. of Regina), who has been an invaluable asset and has consistently and efficiently carried out many important duties on behalf of the Society (far beyond collecting annual fees from the membership).

As our society always strives to promote the interests and needs of its membership, the CSPP executive and myself will look forward to receiving your perspectives, suggestions, and/or concerns. In closing, I hope to see as many CSPP members as possible participating in our upcoming annual meeting next June 25-28 in Edmonton. Meanwhile, best wishes to all for continued plant science research and education success!

William Plaxton

President CSPP-SCPV

CSPP-SCPV past president, Carl Douglas

Past president report



I had the privilege of servings as CSPP-SCPV President 2009-2011. Our Society will be in good hands in the future, with William Plaxton as President, and Vincenzo DeLuca as Vice President for the next two years. Among the highlights of the last two years were successful CSPP meetings, participation founding of the Global Plant Council, and an effort to expand the appeal of

our Society to the Canadian plant biology community by changing our name to the Canadian Society of Plant Biologists, as discussed in William's report. and US venues.

Traditionally, the CSPP-SCPV and the American Society of Plant Biologists (ASPB) hold joint meetings every four years, alternating between Canadian

CSPP-SCPV past president, Carl Douglas

Past president report ... (continued)

Our 2010 annual meeting was held jointly with the ASPB in Montreal, July 31-August 4, as Plant Biology 2010. One of my most enjoyable tasks as CSPP president was to join the Program Committee of the ASPB to plan this meeting. Anja Geitmann, chair of the CSPP-**SCPV** Local Organizing Committee, joined me as the second CSPP-SCPV representative. Under the leadership of ASPB Program Committee Chairs Danny Schnell (U Massachusetts) and Judy Cullis (UC Davis), we held three meetings to plan the scientific structure of the meeting and select invited and contributed talks. The whole process was a true collaboration and partnership between our two societies, with the CSPP playing a strong role in defining the themes and content of the meeting. The meeting was exciting, with strong Canadian content that highlighted some of the best Canadian plant biology research on an international stage. In the summer of 2011, members of our society and those of other Canadian plant biology societies were welcomed to Halifax for the Plant Canada meeting held on the campus of St. Mary's University. The local organizers developed an exciting scientific program and we enjoyed outstanding Maritime hospitality. We all look forward to the 2012 annual meeting to be held in Edmonton.

In conjunction with the Plant Biology 2009 meeting in Honolulu, the ASPB and then ASPB President Sarah Assmann invited presidents or representatives of approximately 15 plant biology societies from around the globe (representing all continents) for a global summit of plant biology societies, with the aim stimulating international collaboration towards tackling problems of common interest. As a result of the meeting, these societies (including the CSPP-SCPV and Plant Canada) agreed to form the Global Plant Council (GPC), with the mission of defining a unified agenda for raising awareness of the key contributions that plant biology can make to global problems, and making recommendations for action in key areas such as world hunger, human health and well being, climate change, energy, and sustainability and environmental protection. The CSPP-SCPV and Plant Canada hosted the first annual meeting of the GPC in advance of the Plant Biology 2010 meeting in Montreal. We welcomed representatives from Chinese, Japanese, Australian, European, North and South American, and African plant biology societies to the Montreal for the GPC meeting, at which a framework for international collaboration and action in the areas listed above was discussed. Under the leadership of Mel Oliver, GPC Executive Director, the GPC has taken on the task of identifying specific issues that plant scientists in member societies could contribute effective leadership. At the second annual meeting in Qingdao, China June 28-29, 2011, the GPC further discussed these issues and decided to develop short proposals for workshops in nine specific areas:

- 1. Digital seed bank
- 2. Local level diversity and yield stability
- 3. Increasing /enriching agricultural diversity
- 4. Biofortification
- 5. The plant environment metagenome

- 6. Development of medicinal plant-based products
- Species information for sustainable adaptation capability to climate change
- 8. Development of perennial rice/wheat/maize
- 9. Sharing information and resources

Stay tuned for more information about how CSPP members can be involved in shaping short proposals for workshops in areas of their expertise and interest. The next GPC meeting will be held in Jeju, Korea October 21-26, 2012, prior to the 10th International Congress on Plant Molecular Biology.

Finally, as reported by President William Plaxton in the Bulletin, our Society took a major new step at the Annual General meeting in Halifax at the Plant Canada meeting by overwhelmingly voting in favour of an amendment to our constitution to change our name to the Canadian Society of Plant Biologists (CSPB). This new name reflects the research and teaching interests of our members, which have broadened over the years to include many areas such as cell biology, molecular biology, and genomics as well as physiology. I believe that plant biology has a strong and important future in Canada and internationally, and that the CSPB will continue to make important contributions to science and society as one of the strongest Canadian plant science societies.

Carl Douglas

Past CSPP-SCPV president

CSPP-SCPV Eastern Regional Director, Ewa Cholewa

Eastern Regional News for 2011



The 2011 Eastern Regional Meeting was combined with Plant development Workshop and organized at Carleton University in Ottawa. The Organizing Committee: Owen Rowland, Shelley Hepworth, and Gopal Subramaniam welcomed conference participants on Friday December 2nd in a beautiful Carleton University Art Gallery with hor d'oeuvres and drinks. A group of enthusiastic undergraduate students volunteered to helped organizers with registration and technicalities throughout the meeting. There were 135 registered participants who had an excellent opportunity to network, exchange science ideas and make new friends.

On Saturday morning conference organizers insisted that participants will have good

breakfast of muffins, fruit, juices and coffee to get ready for a busy and productive day of science. There was an exciting line up of talks: two plenary talks, over 30 presentations in six topic sessions (in pairs of concurrent sessions) and 48 poster displays. After opening ceremonies, Federica Brandizzi from Michigan State University-DOE Plant Research Laboratory, USA, started plenary presentations. Frederica talked about insides of functional and morphological analyses of the early plant secretory pathway. The second plenary presentation was by Sophia Stone from Dalhousie University. Sophia presented her research about the function and regulation of E3 ubiquitin ligases in hormone signaling in plants.

During following coffee and lunch breaks conference participants had a chance to view a display of 44 posters, with 37 students authors competing for the best poster award. The rest of the day was very busy, filled with excellent oral presentations in six concurrent sessions. Speakers were presenting well in the late afternoon, with 19 students presenters competing for the best oral presentation. The judges: Ken

Wilson, Frédérique Guinel, Anja Geitmann, Myron Smith, Isabel Molina, Gopal Subramaniam, Tamara Western, Susanne Kohalmi, Leonid Savitch and Shelley Hepworth worked very hard during entire conference and selected Marisa Melas for the best oral presentation and Mike Wilton for the best poster presentation. Marisa Melas is pursuing her graduate studies in Dr. Robin Cameron's lab at McMaster University and her talk was entitled: "Investigation of DR1 movement during systemic acquired resistance". The best poster entitled "Dissecting plant pathogen interface" displayed results from Mike Wilton's research in Dr. Darrell Desveaux's lab at University of Toronto. The judges prized students for the excellence of their research and high quality of presentations. The judges also named Nicolay Hristozov and Timothy Lo as runners up for the best poster and oral presentations, respectively. Conjoined with Plant Development Workshop, the 2011 Eastern Regional Meeting was an enjoyable event and a great success.

Ewa Cholewa

Eastern Regional Director

2011 CSPP-SCPV EASTERN REGIONAL MEETING & PLANT DEVELOPMENT WORKSHOP STUDENT AWARDS



Marisa Melas (McMaster University; pictured with Ewa Cholewa) received the Director's Award for best oral presentation.



Timothy Lo (University of Toronto) received an honourable mention in the oral presentation category.



Mike Wilton (University of Toronto) received the Director's Award for best poster presentation.



Nicolay Hristozov (McGill University; pictured with Suzanne Kohlami) received an honorable mention in the poster presentation category.

CSPP-SCPV Eastern Regional Director, Ewa Cholewa

Eastern Regional News for 2010

The 2010 Eastern Regional Meeting/Congrès Régional de l'Est was held at Brock University, St. Catharines, Ontario, Canada on December 3rd and 4th, 2010. The meeting was organized by Vincenzo De Luca with help from Charles Després and Douglas Bruce. The meeting was financially supported in part by Vineland Research and Innovation Center, Brock University Faculty of Mathematics and Science, and the Department of Biological Sciences. In addition, Brock University's Facilities Management, Conference and Event Services, Brock Dining Services. Parking Services and Custodial Services facilitated the organization of this meeting and helped with meeting expenses. The meeting was well attended with 24 oral presentations and 44 posters. On Friday, Dec 3rd the organizers greeted conference participants with wine and hors d'oeuvres in the beautiful Pond Inlet during registration and mixer. After opening ceremonies early Saturday morning, the participants were listening to plenary speakers' presentations. The first speaker, Peter Moffett from University of Sherbrooke described his work on constitutive and induced defenses against plant viruses. The second speaker, André Kessler from Cornell University explained ecological cost of

induced plant responses and the information war in the plant headspace. Their presentations were followed by two concurrent regular sessions.

The afternoon sessions began with special presentation from Daryl Somers who is regarded as a world leader in cereal genetic mapping and the application of genomics and genotyping to crop improvement. Dr. Somers is a Research Director at Vineland Research & Innovation Center. His talk entitled "Science and Innovation at Vineland" provided conference participants with insights into investigations for improving new apple varieties, the development of cold tolerant grapes and incorporation of desirable traits into existing ornamental plant varieties such as improved water use efficiency, stress tolerance and for increased economic value.

The students participating in best presentation competition proudly displayed their high quality results. There were total 41 competitors, with 14 talks and 27 posters. Poster presentations were viewed during coffee and lunch breaks. The judges work very hard and upon few arguments decided that the award for the best oral presentation will go to Terry S.C. Lung for his talk entitled: "Examining of the role of the TOC complex in selective protein import into dimorphic chloroplasts in the single-cell

C₄species Bienertia sinuspersici". Terry is a graduate student in Dr. Simon D.X. Chuong laboratory at University of Waterloo. The best poster presentation winner was Ian Pulsifer who presented his work entitled "Arabidopsis LONG-CHAIN ACYL-COA SYNTHETASE 1 (LACS1), LACS2, and LACS3 facilitate fatty acid uptake in yeast". Ian is a graduate student in Dr. Owen Rowland's lab in the Department of Biology and Institute of Biochemistry at Carleton University in Ottawa. At the closing ceremony, the conference participants thanked organizers with applauds. We were especially thankful to Vincenzo De Luca, who even recruited his family members as volunteers to help at the meeting, for his organizational skills and hospitality at Brock University. On behalf of all CSPP members from Eastern Region, I would like to thank all organizers of past Eastern Regional Meetings for their hard work to make our conferences enjoyable and to thank all participants for their significant scientific contributions.

Ewa Cholewa

Eastern Regional Director

Past CSPP-SCPV Western Regional Director, Peter Constabel

Western Regional meeting report

The University of Victoria's Centre for Forest Biology hosted a successful Western Regional Meeting on May 10th, jointly with the Centre's biennial Forest Biology Symposium. The BC Essential Oils Workshop, organized by Soheil Mahmoud, also joined in the fun with a satellite meeting held in the afternoon. We were very pleased with a strong overall turnout, as the one-day meeting was attended by over 140 enthusiastic participants representing all regions in British Columbia, including a strong contingent of provincial and federal government scientists. The most dedicated CSPP members even crossed the Rocky Mountains to join us from Alberta.

This year's FORB Symposium theme was "Forests, Genetic Diversity, and Climate Change". Dr Tom Whitham from Northern Arizona University was the morning's keynote speaker and got things off to a flying start with his talk entitled "A community genetics approach to ecosystem services, climate change, and restoration of forests". Tom elegantly described the work he is leading in a broad "genes- toecosystems" project that aims understand ecosystem structure based on ecological foundation species. Forest trees are typically foundation species, and Tom showed the importance of tree genotypes and genetics in determining many aspects of community structure and adaptability. The second Symposium talk, entitled "Forests and carbon: positive feedback to climate change or opportunities for mitigation?"

was given by Dr Werner Kurz of the Pacific Forestry Centre (Natural Resources Canada) in Victoria. Werner's talk outlined the complexities of carbon accounting in Canada's forests. As we all know, our forests contain huge quantities of carbon and normally act as carbon sinks, but release carbon following drastic disturbance. Making sure that forest are managed to maximize their function as sinks, and determining what knowledge is required to achieve this goal, were major themes of this presentation.

The contributed talks were both excellent in quality and wideranging in topic. They covered research from practical questions in forestry, such as the potential of assisted migration of forest trees in the face of climate change, to addressing basic questions of how plants (and also their pests and pathogens) function. A number of talks revolved around the latest genomics resources applied to forest systems, while others described new research on ecophysiology, developmental biology and biochemistry. We also had 27 poster presenters, which were visibly successful in stimulating discussion - albeit with mouths full, as we had scheduled this event over the lunch break. It was a long day, in particular for participants coming from Vancouver who had gotten up early to catch the first ferry from the Mainland. Those still standing at the end of the day headed over to have drinks at UVic's Faculty Club, appropriately situated in a small forest on campus.

The mix of regular CSPP members and graduate students with government scientists in the Forest Biology Symposium was a big plus. Many of us are fully immersed in academia and university research, so interactions with scientists working in other environments is healthy and especially important for our graduate students. As the urgency of climate change continues to ramp up, the idea behind having a Symposium on the forests and climate change theme was to stimulate discussion and hopefully new research in this area. The high calibre of presentations by graduate students and post-doctoral fellows is always encouraging, and this regional meeting was no exception. I believe it is important that we continue to encourage our students to pursue research and be trained as scientists. We will need clear thinkers to meet future challenges to our forests and society.

The WRM was the first major project in my new role as the CSPP Western Regional Director, and I'm happy the meeting went smoothly. Thanks to Diane Gray, Barbara Hawkins, and Jürgen Ehlting for help with the organizing, and the UVic Centre for Forest Biology for support.

See you all next time!

C Peter Constabel

Past CSPP-SCPV Western Regional Director, Peter Constabel

Western Regional News

Since the next national meeting will take place at University of Alberta in Edmonton, June 25-27 2012, the next Western regional conference will take place in 2013. We are planning to have the meeting at the end of August (25-27), at the beautifully located Loon Lake Research & Education Centre (http://www.loonlake.ubc.ca/index.htm), located in the UBC Malcolm Knapp Research Forest, some 40 minutes away from

downtown Vancouver. The centre offers not only conference and food services but also various social exercises such as canoeing, rock climbing and rappelling, and not to forget, guided tours in the research forest and relaxing walks in ancient Western red cedar forests. In addition to research presentations, we also plan to offer a mini workshop on the application of next generation DNA sequence technology for

purposes ranging from rapid cloning of mutants in Arabidopsis and other species with a sequenced genome, to genome-wide analysis of differential gene expression in any plant species, regardless of available genomic resources. We plan to make a more detailed announcement at the 2012 meeting in Edmonton. Comments and idea's for the meeting as well as any other activities in the Western region

CSPP-SCPV Treasurer, Harold Weger

Treasurer's News



Following last year's successful experiment in which membership renewal notices were sent via email (as PDFs), for this fall I've again be used e-mail for that purpose. It not only saves paper, but also saves on postage costs.

In terms of membership renewals, Michael Stasiak (the CSPP's webmaster) and I have been working on implementing an online membership renewal system. The newly launched system is available via the Society's website (http://www.cspp-scpv.ca/registration.shtml), and secure credit card payments are handled via PayPal. It is not necessary to have PayPal account in order to use the system.

While we have successfully processed several memberships using this new system, there are still some picky details to be worked out. The most important detail is that some credit cards don't work on the system; the problem is most pronounced with corporate cards, but is not restricted to corporate cards. We are working on it!

The Duff Student and Post-Doc Travel Bursaries program (to help students and post-docs attend the annual conference) has been very busy, awarding almost \$20,000 in bursaries over the past two years. The Travel Bursary program is funded from a combination of two sources: donations to the Fund made by CSPP members, and from general Society revenues. We've been averaging slightly over \$1000 per year in donations, and the remainder of the bursary is funded from general revenues. We hope to be able to maintain these levels of funding to the Travel Bursary program for coming years. This is a program that Society members have repeatedly said is very important.

Harold Weger

Treasurer

News and Events

Plant Canada and CSPP-SCPV 2011 Annual Meeting

The 2011 Plant Canada conference was held in Halifax, Nova Scotia, from July 17 to 21, 2011. The conference was cohosted by St. Mary's University and the Nova Scotia Agricultural College. Plant Canada (www.plantcanada.ca/) is a federation of six Canadian plant biology societies (including the CSPP), and these societies hold a joint conference approximately

every four years with the various societies alternating in taking the lead in organizing the conference. For this conference, the fifth organized by Plant Canada, the co-chairs of the organizing commitee were Yousef Papadopoulos (AAFC, Atlantic Horticulture and Food Research Centre) and David Percival (Nova Scotia Agricultural College). The

CSPP's representatives to the organizing committee were Society Vice-President and incoming President William Plaxton (Queen's University), and Kevin Vessey and Zhongmin Dong from St. Mary's University. CSPP member and Plant Canada Past-President Carol Peterson served as a Plant Canada representative to the organizing committee.

Plant Canada ... (continued)

The conference also featured participation by two other plant biology organizations not officially affiliated with Plant Canada: the Organic Agriculture Centre of Canada and the Canadian Institute of Food Science & Technology.

The conference was led off with two plenary talks about climate change and related issues. The first talk was entitled "What's with the weather?", and was delivered by David Phillips, Senior Climatologist with Environment Canada. This was followed by "Climate change impacts on crop production in Canada: are we heading up or

down?" by Paul Bullock from the Dept of Soil Science at the University of Manitoba.

The CSPP organized two symposia at the conference. The first CSPP symposium was entitled "Plant Responses to Climate Change". Speakers in that symposium were Jonathan Newman (University of Gueph), whose talk was entitled "Mission accomplished or mission impossible: predicting biological impacts of climate change", and Sally Aitken (University of British Columbia), who discussed "Adapting forest genetic resource management to climate change". The second

CSPP symposium was about "Plant adaptations to stress", and featured Wayne Snedden (Queen's University) discussing the "Role of calcium in signaling plant stress response", and then Armand Séguin (Canadian Forestry Service - Laurentian Forestry Centre) delivering a talk about "Forest pathology in the era of genomics".

There also symposia organized by the other five constituent societies of Plant Canada, and numerous concurrent sessions of oral presentation. The entire conference proceedings are available on the CSPP website (www.CSPP-SCPV.ca).

News and Events

Progress in the Society Name Change

A number of people have been asking about the status of the Society name change. At the Society's annual general meeting, held during the recent Plant Canada 2011 conference (hosted by St. Mary's University in Halifax, NS), the membership voted to change the name of the Society to the Canadian Society of Plant Biologists/La Société canadienne de biologie végétale". The Society's Secretary, Barry Micallef, and I informed the Charities Directorate of the Canada Revenue Agency of the name change. However, there are also documents that must be sent to, and then approved by, Industry Canada. The required documents have been sent to Industry

Canada, and we are currently awaiting approval from that federal agency. Once the documents have been approved they must be submitted to the Charities Directorate. The Society has been informed by the Charities Directorate that we cannot start using the new name until all official approvals have been given.

In summary, the name change procedure is ongoing. I hope to soon hear back from Industry Canada about the documentation that we sent. Once that hurdle is cleared, the final approval from the Charities Directorate will hopefully be rapidly forthcoming. In the meantime,

the current Society name will continue to serve us!

Harold Weger



The official "name change vote tally plate". In the absence of an on-hand piece of paper, a paper plate was conscripted to record the results of the name change vote in Halifax.

News and Events

New corporate members

The Society would like to welcome two new corporate members, Hoskin Scientific and ICT International.

Hoskin Scientific is a supplier of monitoring equipment for plants, soil and weather (http://

www.hoskin.ca/). Their Environmental Monitoring Department offers a wide selection of plant biology equipment, including chlorophyll meters, leaf porometers, plant water status consoles, portable leaf area meters and many more items. They also rent equipment. The company has offices in Saint-Laurent, QC, Burlington, ON, and Burnaby, BC.



New corporate ... (continued)

ICT International (http://www.ictinternational.com/) provides solutions for soil, plant and environmental monitoring. ICT International is a leading manufacturer of sap flow, psychrometers (plant water potential and leaf osmotic

potential) and soil moisture instrumentation. ICT International consists of scientists and engineers who provide customised solutions for scientific research. The company is based in Armidale, NSW, Australia.



Links to the websites of both companies are available on the CSPP-SCPV homepage.

CSPP-SCPV Awards/Committees

Nominations for CSPP Awards/Candidatures pour les prix de la SCPV

The Canadian Society of Plant Physiologists invites nominations for its major awards to be presented at the Society's annual meeting in 2012. The details concerning the nature of each award, eligibility and qualifications of the nominees as well as the procedure to be followed by the nominators are given in the appropriate By-Laws in the Society's Constitution, a pdf version of which can be downloaded from the web site of the society (www.cspp-scpv.ca). These details, as well as lists of past recipients, are also included in the CSPP Membership Directory. The nominations for each award must be received by the Chair of the respective award committee (see page 26 of this bulletin or http:// www.cspp-scpv.ca/committeee.shtml) by March 31, 2012.

The CSPP Medal (The Gold Medal)

The medal is awarded either for outstanding published contributions or for distinguished service to plant physiology, primarily in Canada (see By-Law 11). The nominations should be sent to: Dr. Robert Guy, Department of Forest Sciences Faculty of Forestry, The University of British Columbia, Vancouver, BC, email: rob.guy@ubc.ca

The C.D. Nelson Award in Plant Physiology

The Award is given for outstanding research contributions to plant physiology. Special consideration will be given to originality and independence of thought. Nominees shall have been in an independent, full-time research position for no more than 10 years (see By-Law 12). The nominations should be sent to: Dr. Dominique Michaud

Department of Physiology, University of Laval, Québec, QC, email:

dominique.michaud@fsaa.ulaval.ca

The David J. Gifford Tree Physiology Award

The Award is given for outstanding research contributions in tree physiology, primarily in Canada. Special consideration will be given to originality and independence of thought (see By-Law 13). The nominations should be sent to: Dr. Shawn D Mansfield, Biotechnology and Wood Quality, The University of British Columbia, Vancouver, BC, email:

shawnman@interchg.ubc.ca

The Gleb Krotkov Award of the CSPP

The Award is given for outstanding service to the Society, both in administration and in scientific contributions to annual meetings (see By-Law 14). The nominations should be sent to: Dr. Normand Brisson, Department of Biochemistry Faculty of Medicine University of Montreal, Montreal, QC, email: normand.brisson@umontreal.ca

The Ragai Ibrahim Award

Have you particular pride in one of your current students for the great paper she/he published this year? Do you know of a current student or a student who graduated in 2009/2010 or 2010/2011 who published an impressive paper in 2011? Give them further recognition for their great efforts by nominating them for **The Ragai Ibrahim Prize for best student paper.** The nomination is a simple process, you need only be a member of the Society. See the details below. Don't procrastinate, do

it now! You'll get a great deal of pleasure out of their winning the award.

Criteria: A peer reviewed paper either in print or on line will be nominated by the supervisor of the student, and will be evaluated on the impact or potential impact that work will have on plant science. The nominated student will be the first or primary author of the work, and the paper must be based on work that the nominee performed as a student (graduate student or undergraduate). The nominee must be a member of the CSPP.

The award is based on the calendar year (January 1 to December 31). Nominations are due by March 31 of the following year. The nominee must be a student, or alternatively, have completed their graduate/ undergraduate program no more than 12 months prior to the date of publication of the paper. Each year there will be one winner and an honorable mention. Nomination: Send a PDF copy of the paper to the Chair of the Ibrahim Award Committee at santokh.singh@botany.ubc.ca by March 31. Please include a brief summary of why the paper merits consideration for the award (one page maximum on official letterhead), and indicate whether the nominee is still a student or whether they have completed their program (please indicate date of completion).

The contribution of the candidate must be fully described on any multi-authored paper, i.e., the intellectual contribution to the design of the experiments, the contribution to each figure and table in the

CSPP-SCPV Awards/Committees

Nominations for CSPP Awards... (continued)

manuscript and the contribution to the writing of all parts of the manuscript. The winner of the prize will be decided by March 1, and the winner will be notified. The award will be presented at the CSPP Annual Meeting.

Value of Prize: The winner will receive a framed certificate and a cheque for 350 dollars.

Rob Hill, Chair of the Ragai Ibrahim Award Committee

La Société canadienne de physiologie végétale vous invite à soumettre des candidatures pour les Prix de la Société qui seront remis lors du prochain congrès annuel en 2012. Les conditions d'éligibilité aux différents Prix (qualifications des candidats, procédures à suivre et caractéristiques des prix) sont décrits dans les Arrêtés de la Constitution de la SCPV. Une version pdf de la Constitution est disponible sur le site internet (www.cspp-scpv.ca) de la Société. Ces détails ainsi que la liste des précédents récipiendaires est également disponible dans la 'Liste des Membres' de la SCPV. La date limite de réception des candidatures auprès des différents présidents des comités responsables de l'évaluation des candidatures (voir la page 26 de ce bulletin ou http://www.cspp- scpv.ca/committee-e.shtml)) est fixée au 31 mars 2012.

La Médaille de la SCPV (La Médaille d'or)

La Médaille est décernée à un membre s'étant distingué soit par des publications exceptionnelles ou par ses services à la physiologie végétale, principalement au Canada (voir Arrêté no. 11). Les candidatures doivent être envoyées à : Dr. Robert Guy, Department of Forest Sciences Faculty of Forestry, The University of British Columbia, Vancouver, BC, courriel: rob.guy@ubc.ca

Le Prix C.D. Nelson en physiologie végétale

Ce Prix est décerné pour des contributions exceptionnelles à la recherche en physiologie végétale. Une attention particulière sera accordée à l'originalité et à la créativité des travaux. Les candidats doivent détenir un poste de chercheur indépendant, à temps plein, depuis moins de 10 ans (voir Arrêté no. 12). Les candidatures doivent être envoyées à : Dr. Dominique Michaud, Département de phytologie, Université Laval, Québec, QC, courriel: dominique.michaud@fsaa.ulaval.ca

Le Prix David J. Gifford en physiologie des arbres

Ce Prix est décerné pour des contributions exceptionnelles à la recherche en physiologie des arbres, principalement au Canada. Une attention particulière sera accordée à l'originalité et à la créativité des travaux (voir Arrêté no. 13). Les candidatures doivent être envoyées à : Dr. Shawn D Mansfield, Biotechnology and Wood Quality, The University of British Columbia, Vancouver, BC, email: shawnman@interchg.ubc.ca

Le Prix Gleb Krotkov de la SCPV

Ce Prix est décerné pour service exceptionnel rendu à la Société, autant dans l'administration de la Société qu'en termes de contributions scientifiques lors des congrès annuels de la Société (voir Arrêté no. 14). Les candidatures doivent être envoyées à : Dr. Normand Brisson, Département de biochimie Faculté de Médecine Université de Montréal, Montréal, QC, courriel :

normand.brisson@umontreal.ca

Le Prix Ragai Ibrahim

Êtes-vous particulièrement fier d'un article publié cette année par un de vos étudiants? Connaissez-vous un étudiant qui est toujours aux études ou qui a terminé en 2009/2010 ou 2010/2011 et qui a publié un excellent article en 2011? Soumettez leur candidature pour le Prix Ragai Ibrahim afin que leurs efforts soient reconnus. La procédure est simple, il leur suffit d'être membre de la SCPV. Voir détails ci-après. N'attendez pas, faites-le dès maintenant! Vous en tirerez certainement un plaisir immense si l'un de vos étudiants obtient le prix.

Critères de Sélection. Un article publié soit en version papier ou en ligne dans une revue avec comité de

lecture peut être proposé par le superviseur de l'étudiant(e), et sera évalué quant à l'impact actuel ou potentiel que ce travail aura en biologie végétale. L'étudiant doit être premier auteur ou l'auteur principal du travail, et l'article doit être basé sur les travaux que le candidat a réalisé durant ses études (aux 1er, 2e ou 3e cycles). Le candidat doit être un membre de la SCPV.

Le prix est remis annuellement pour des articles publiés au cours de l'année précédente (1er janvier au 31 décembre). Les candidatures doivent être déposées au plus tard le 31 Mars de l'année suivante. Le candidat doit être étudiant ou avoir complété ses études de 1er, 2e ou 3e cycles moins de 12 mois avant la date de publication de l'article. Le comité identifiera un gagnant et une mention honorable à chaque année.

Candidatures: Une copie pdf de l'article doit être envoyé au président du Comité du Prix Ragai Ibrahim à l'adresse suivante : santokh.singh@botany.ubc.ca au plus tard le 31 Mars. Cet envoi doit être accompagné d'un court texte expliquant pourquoi cet article devrait être considéré pour le Prix Ragai Ibrahim (une page maximum sur papier en-tête). De plus, veuillez indiquer si le candidat est toujours étudiant ou s'il a complété ses études (indiquer alors la date de fin des études). La contribution du ou de la candidate doit être décrite en détail pour tous les articles multiauteurs i.e. la contribution intellectuelle au dispositif expérimental, la contribution à chacun des tableaux et à chacune des figures, et la contribution à la rédaction de chacune des parties du manuscrit. La décision sera prise le 1er mars et le gagnant en sera informé. Le prix sera remis lors du congrès annuel de la SCPV.

Prix. Le gagnant recevra un certificat ainsi qu'une bourse au montant de 350 dollars.

Rob Hill, Président du Comité du Prix Ragai Ibrahim

CSPP-SCPV Award Recipients

The Society Medal

The CSPP's most prestigious award is the Society Medal, commonly referred to as the Gold Medal. The medal winner is invited to give the Gold Medal address at the following year's annual conference. In Halifax we had the privilege of hearing the Gold Medal address of the 2010 Society Medal winner, Norman Hüner from the University of Western Ontario, and also the announcement of the 2011 Society Medal winner, Fathey Sarhan from the Université du Québec à Montréal.



The Society Medal (The Gold Medal)—La médaille de la Société (Médaille d'or) Norman Hüner

Dr. Norman Hüner is an exceptional scientist who enjoys an international reputation for his research in determining the relationships between photosynthesis and stress responses. He has helped to revolutionize this area of research, demonstrating that the photosynthetic apparatus, in addition to its role in energy generation, also acts as a sensor for the detection of environmental changes. Norman received his Ph.D. in 1978 from Carleton University, where his thesis examined the biochemical properties of Rubisco in cereals. This led to his interest in photosynthetic acclimation to low-temperature responses that he explored during his postdoctoral training at the University of Minnesota. His research there led to one of the many times where Norman's hypotheses challenged and contradicted the current dogma. In 1980, Norman accepted a faculty position in the Department of Plant Science at the University of Western Ontario, where he continued with this line of investigation. While on leave in Umeå, Sweden, in 1988, Norman began to develop the concept of how temperature

and light modulate photosynthetic responses through redox signaling chloroplasts. His research on photosynthetic acclimation to low temperature involved a unique multidisciplinary approach that produced some of the most comprehensive work to date on the subject. His integration of whole plant physiology, biochemistry, biophysics, and molecular biology allowed him to address critical questions in this field that have placed him among the top echelon of researchers internationally.

Norman was named a distinguished research professor at the University of Western Ontario in 1993 and became a fellow of the Royal Society of Canada in 1995. Other recognition includes the CSPP C. D. Nelson Award in 1987, an honorary doctorate of science from Umeå University in 1999, and the Distinguished Ontario Researcher Award in 2003. He currently holds a Tier 1 Canada Research Chair in Environmental Stress Biology.

Norman has an impressive 255 total career publications, with over 4,500 career total citations, and was designated a Thomson ISI Highly Cited Researcher in Plant & Animal Science in 2006. His papers appear in a range of

journals that reflect the breadth of his contributions. He has consistently held an impressive level of research grant funding from multiple sources and has demonstrated a substantial and lifelong commitment to the training of young scientists. Many of these individuals have since become eminent scientists in their own right. Since 2000 alone, Norman has trained 21 graduate students and eight research associates as members of his research group, hosted 15 visiting scientists from around the world, and engaged in an impressive number of research collaborations within Canada and internationally.

Norman's leadership in research has also been matched with his remarkable service to the scientific community, including his tenure as CSPP vice president (1999–2001), president (2001–2003), and past president (2003-2005). He led the initiative for the CFI /OIT/ Industry–University grant to establish the Biotron facility at the University of Western Ontario, where he served as the scientific director from 2004 to 2008. He also served with great effect in various capacities at several national and international scientific organizations, and his services are highly sought for editorial and review activities.

CSPP-SCPV Award Recipients



CSPP President Carl Douglas (left) congratulating 2011 Society Medal winner Fathey Sarhan.





Wayne Snedden (left) receiving the C.D. Nelson Award form CSPP President Carl Douglas.

Dr. Wayne Snedden (Queen's University) has made important contributions in the cellular signaling field, focusing principally on the role of calcium signaling and on the role of intracellular calcium sensor proteins such as calmodulin (CaM) and CaM-like proteins during abiotic and biotic stress responses. His work has received international attention, as judged by the high citation level it has attracted from the scientific

community. Wayne's record shows that during his young career he has already made a strong impact on the Canadian plant biology scene, first as a scientist, but also as a mentor for his students and as a teacher.

The 2010 Gleb Krotkov Award—Le Prix Gleb Krotkov Hargurdeep Saini

Prof. Hargurdeep "Deep" Saini (University of Toronto) has been a selfless contributor to, driving force within, and tireless proponent of the Canadian Society of Plant Physiologists. He has taken on numerous leadership roles within the Society, including serving as vice president, president, secretary, and bulletin editor, and has served on many CSPP committees. He was the chief

organizer of an Eastern regional meeting and a highly successful annual meeting. Related to the fact that the CSPP is one of the founding members of Plant Canada, Deep served as a board member of Plant Canada and then subsequently served two years as president of Plant Canada

Deep has attended all but one CSPP annual meeting since 1982,

and he and his coworkers have made in excess of 45 contributed and invited presentations at CSPP meetings. But perhaps most importantly, his dedication to the Society has meant that he has always been willing to step in to help when needed, often at the last minute. The CSPP owes much of its current success to Deep's efforts, and he is truly a worthy recipient of the Gleb Krotkov Award.

CSPP-SCPV Award Recipients

The David J. Gifford Award in Tree Physiology—Le Prix David J. Gifford en physiologie des arbres Janusz Zwiazek

Dr. Janusz Zwiazek has contributed to the advancement of tree physiology in Canada and internationally through his advancements in understanding how aquaporins in membranes of root tips influence water transport in trees and through his work on ectomycorrhizae and tree-water relations. He has also tackled applied problems in development of new protocols for preconditioning seedlings for stress after out-planting or finding better storage procedures for planting stock. Janusz has worked at finding better ways

for seedlings to withstand osmotic stress from salt. His work has been published in high-ranked journals including Plant Physiology, Plant Cell and Environment, New Phytologist, Journal of Experimental Botany, Environmental Pollution, and Planta. He has supervised 28 graduate students and 14 postdoctoral fellows. He has served on three editorial boards—*Acta Physiologiae* Plantarum, Dendrobiology, and Canadian Journal of Forest Research—and has frequently been invited to speak in Canada

and internationally (Poland, Finland, the United Kingdom, Bangladesh, China, Japan, Brazil). Janusz was awarded a Killam Annual Professorship (2002) and McCalla Professorship (2003, 2009) in recognition of research excellence. Recently, he was awarded the prestigious Scientific Achievement Award from the International Union of Forestry Research Organizations (2010).

Ragai Ibrahim Award for Best Student Paper- Le Prix Ragai Ibrahim pour le meilleur article rédigé par un étudiant

The Ragai Ibrahim Award Fund was established by CSPP-SCPV through a generous donation from Professor Ragai Ibrahim, eminent Canadian plant scientist and an emeritus member of the CSPP-SCPV. The purpose of the award is to recognize excellence in publication by graduate students. There is one award per year.

Professor Ibrahim is a long-time faculty member at Concordia University, where he is currently Distinguished Professor Emeritus. He has made numerous outstanding contributions to the understanding of plant flavonoid biochemistry. In recognition of his body of work he was awarded the CSPP-SCPV Society Medal (the "Gold Medal") in 2004. Highlights of his career were published in an invited review: Ibrahim RK (2005) A forty-year journey in plant research: original contributions to flavonoid biochemistry. Canadian Journal of Botany 83:433-450.



Ragai Ibrahim (left) at the 2005 Plant Canada conference in Edmonton, receiving his Society Medal from outgoing President Deep Saini (centre) and incoming President Robert Guy (right).

Ragai Ibrahim (à gauche) recevant la Médaille dela Société du président sortant Deep Saini (centre) et du nouveau président Robert Guy (à droite) lors du congrès Plant Canada 2005 qui s'est tenu à Edmonton.

Le Prix Ragai Ibrahim a été créé par la CSPP-SCPV en 2006 grâce à un généreux don du Professeur Ragai Ibrahim, éminent scientifique canadien dans le domaine végétal et membre émérite de la CSPP-SCPV. Le but de ce prix est de reconnaître l'excellence des publications des étudiants de 2ème et 3ème cycles. Un prix est attribué par année.

Professeur Ibrahim est un membre de longue date du corps professoral de l'Université Concordia, où il est actuellement professeur distingué émérite. Il contribua remarquablement à la compréhension de la biochimie des flavonoïdes chez les végétaux. En reconnaissance de son œuvre, la CSPP-SCPV lui décerna la Médaille de la Société («Médaille d'or») en 2004. Les faits saillants de sa carrière furent publiés dans une revue invitée: Ibrahim RK (2005) A forty-year journey in plant research: original contributions to flavonoid biochemistry. Canadian Journal of Botany 83:433-450.

CSPP-SCPV Award Recipients

The Ragai Ibrahim Award for the 2010 best student paper - Le Prix Ibrahim Ragai pour le papier meilleur étudiant 2010

Laurent Cappadocia

The winner of the 2010 Ibrahim prize is Laurent Cappadocia, from Normand Brisson's laboratory at the Université de Montréal. Laurent Cappadocia is first author of a paper entitled "Crystal Structures of DNA-Whirly Complexes and their Role in Arabidopsis Organelle Genome Repair" which was published in the June 2010 issue of The Plant Cell. This work represents the core of the PhD project of Laurent Cappadocia, who graduated in April 2011. Before the publication of this article, little was known regarding the molecular mechanisms by which plant organelles, plastids and mitochondria, maintained and repaired their genomes. The study of Laurent Cappadocia et al represents a very large body

of work. It stems from earlier observations from the laboratory of Normand Brisson that plant plastids lacking proteins of the Whirly (WHY) family accumulate DNA rearrangements that are mediated by microhomologies, suggesting the existence of a microhomology-mediated break-induced replication (MMBIR) mechanism in chloroplasts. Laurent Cappadocia used ciprofloxacin, a genotoxic agent specific to the organelles, to reveal the molecular mechanisms involved in the repair of double-strand breaks in organellar DNA. He used an original PCR strategy to detect DNA rearrangements in vivo and demonstrated that Whirly proteins are negative regulators of the MMBIR

pathway and that they promote the accurate repair of DNA double strand breaks in organelles. Furthermore, Laurent managed to obtain crystals of WHY2 and WHY2 complexed with DNA and conducted a detailed X-ray crystallography analysis of the crystals. This work led to the demonstration that Whirly proteins bind single strand DNA without sequence specificity and provide the first mechanistic insights on how Whirly proteins maintain genome stability. This study provides both conceptual and technical advances in the field of genome stability and will generate a broad interest among the plant biology community.

Honorable Mention for the 2010 Ibrahim prize - Mention honorable pour le prix Ibrahim 2010 Jonathan Roepke and Vonny Salim

The honorable mention for the 2010 Ibrahim prize went to Jonathan Roepke and Vonny Salim, from Vince De Luca's laboratory at Brock University. They share first authorship for their paper entitled 'Vinca drug components accumulate exclusively in leaf exudates of Madagascar periwinkle' published in the August 2010 issue of PNAS. This paper represents the MSc research projects of the two students who are now both pursuing PhD studies. The

findings of Jonathan Roepke and Vonny Salim represent one of the first steps in understanding the mechanisms that control when, where, and how the anticancer monoterpenoid indole alkaloids (MIAs) accumulate during Catharanthus roseus growth. MIAs result from the coupling of catharnthine and vindoline. The authors found that catharanthine accumulates in the wax exudates located at the surface of the leaf, whereas vindoline is sequestered in specialized leaf cells. The study,

which involves an array of highly sophisticated biochemical analysis methodologies, suggests that this compartmentalization might help prevent potentially harmful dimer formation within the leaf. In addition to these findings, the authors also demonstrate that catharanthine is involved in the protection of the plant against fungal pathogens and insects in a dose-dependent manner.

CSPP-SCPV Award Recipients

Ann Oaks Doctoral Fellowship

The Ann Oaks Doctoral Scholarship is named in honour of the late Dr. B. Ann Oaks, a long-time member of the CSPP-SCPV. The Scholarship was initiated by Dr. Oaks via financial gifts to the Society. Additional donations have been made by CSPP-SCPV members. The Oaks Scholarship is valued at \$21,000 per year (equivalent to NSERC's PGS-D), and like the PGS-D, is renewable for up to a total of three years of support.

Ann Oaks received a BA (Honours Biology) from the University of Toronto in 1951, and MA and PhD degrees from the University of Saskatchewan in 1954 and 1959, respectively. The majority of her research career was spent as a faculty member in the Department of Biology at McMaster University (1965 to 1989, emeritus), and as adjunct faculty in the Department of Botany at the University of Guelph (1989 to 1999). Ann's research focused on plant nitrogen metabolism, primarily in maize seedlings, and the quality of her research gained her international respect. Ann was made a fellow of the Royal Society of Canada in 1986, and received the Society (Gold) Medal from the CSPP-SCPV in 1988. Her prominence and leadership in plant physiology were recognized through an invitation to describe her career in a prefatory chapter for the Annual Review of Plant Physiology and Plant Molecular Biology (Oaks, A. 2000. Fifty years of plant science: was there really no place for a woman? 51:1-16). Ann was awarded a DSc from McMaster in 2004 and was recognized as a Woman of Distinction for lifetime achievement by the Guelph YWCA.



Ann Oaks (right) at the CSPP-SCPV annual conference (University of Guelph, June 2004), with CSPP member Ewa Cholewa.

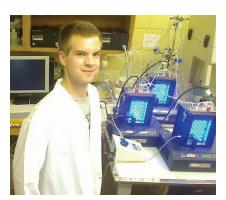
Ann Oaks (à droite) lors de la conférence annuelle du CSPP-SCPV (Université de Guelph, Juin 2004), avec Cholewa Ewa membre de la CSPB-SCBV

Bourses de doctorat Ann Oaks

La Bourse doctorale Ann Oaks a été nommée en l'honneur de la regrettée Dr B. Ann Oaks, membre de longue date de la CSPP-SCPV. La bourse a été établie par Dr Oaks grâce à des dons financiers personnels à la Société. D'autres dons ont aussi été faits par plusieurs membres de la CSPP-SCPV. La valeur de la bourse Oaks est de 21 000 \$ par année (équivalent d'une bourse CRSNG PGS-D), et comme le PGS-D, elle est renouvelable pour trois ans d'étude.

Ann Oaks a obtenu son BA (spécialisation en biologie) de l'Université de Toronto en 1951, et sa maîtrise et son doctorat de l'Université de la Saskatchewan en 1954 et 1959 respectivement. Elle a passé la majorité de sa carrière de recherche comme membre du corps professoral du Département de biologie à l'Université McMaster (1965 à

1989, émérite), et comme professeure adjointe au Département de botanique de l'Université de Guelph (1989 à 1999). La thématique de recherche de Ann était axée sur le métabolisme azoté des plantes. principalement dans les graines de maïs. La qualité de ses recherches lui a valu d'acquérir une renommée internationale; ainsi, Ann a été faite membre de la Société royale du Canada en 1986, et a reçu la Médaille (d'or) de la CSPP-SCPV en 1988. Sa notoriété et son leadership dans le domaine de la physiologie végétale ont été reconnus par une invitation à décrire sa carrière dans un chapitre liminaire de l'Annual Review of Plant Physiology and Plant Molecular Biology (Oaks, A. 2000. Fifty years of plant science: was there really no place for a woman? 51:1-16). Ann a reçu un DSc de l'Université McMaster en 2004 et a été reconnue comme femme de distinction pour l'ensemble de ses réalisations par le YWCA de Guelph.



Avery McCarthy is the new Oaks Scholarship holder. Avery started his PhD program in September in the laboratory of CSPP member Norm Hüner at the University of Western Ontario, and has recently completed an MSc degree at Mount Allison (in the laboratory of CSPP member Doug Campbell). The CSPP acknowledges the aid of NSERC in identifying the holder of the scholarship.

CSPP-SCPV Award Recipients

President's Awards at the Plant Canada 2011 (Halifax, NS)

The CSPP President's Award for the best student poster presentation was awarded to Kyle Bender (Queen's University; supervised by Wayne Snedden). The title of Kyle's poster was "Physiological analysis of an *Arabidopsis* calmodulin-like protein involved in seedling establishment".

Grace Hu from Memorial University of Newfoundland (supervised by Natalia Bykova) received an honourable mention for his poster presentation entitled "Impact of dormancy genotypes on differential protein expression profile of the redox-sensitive proteome of spring wheat".

The President's Award for the best student oral presentation went to Whitney Robinson (Queen's University; supervised by William Plaxton). The title of Whitney's presentation was "The secreted purple acid phosphatase isozymes AtPAP12 and AtPAP26 play a pivotal role in extracellular phosphate-scavenging by *Arabidopsis thaliana*".

The winner of the honourable mentions for the best oral presentation went to Guillaume Théroux Rancourt (University of Laval; supervised by Steeve Pépin) and Brendan O'Leary (Queen's University; supervised by William Plaxton). The presentation title of Guillaume Théroux Rancourt was "Changes in mesophyl conductance and plant hydraulic properties during a draught-rewatering cycle in hybrid poplars with contrasting water stress tolerance". Brendan O'Leary presented "Tissue-specific expression, phosphorylation, and monoubiquitination of phosphoenolpyruvate carboxylase isozymes of the castor oil plant".

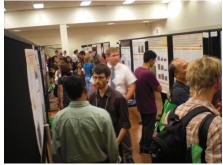


Former CSPP President Brian Colman (right) with President's Award poster winner Kyle Bender (centre) and honourable mention awardee Grace Hu (left).



Former CSPP President Brian Colman (right) with oral presentation President's Award winner Whitney Robinson.

Selected photos from the Plant Canada 2011 (Halifax, NS) workshop poster session





President's Award winner of the joint meeting of the ASPB and CSPP-SCPV (July 31-August 4, 2010)

The CSPP President's Awards for best student poster presentations were awarded to Heather McFarlane (The University of British Columbia; supervised by Lacey Samuels) and Michael Prouse (University of Toronto; supervised by Malcolm Campbell). The title of McFarlane's poster was: "Cuticular lipid export in *Arabidopsis thaliana* requires dimer combinations of ABCG11 and ABCG12". Michael Prouse presented a poster with a title "Characterisation of a transcriptional circuit involving the transcription factor, AtMYB61"



Heather McFarlane (right) receiving the President's Award for best poster presentation from former CSPP President Robert Guy.

News and Events

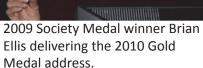
ASPB and CSPP-SCPV Award recipients (Plant Biology 2010)



CSPP President Carl Douglas (right) presenting the 2010 Society Medal to Norman Hüner



Derek Bewley (right) received the ASPB's Charles Reid Barnes Life Membership Award from ASPB President David Ho.



News and Events

Plant Canada 2011 Award recipients



Plant Canada President Shahrokh Khanizadeh (AAFC – Horticulture Research & Development Centre) presenting a certificate of appreciation to Karen Bailey (University of Saskatchewan).



Plant Canada 2011 co-chair of the organizing committee Yousef Papadopoulos (left) thanking Marilyn Roberts (Nova Scotia Agricultural College) for her efforts in helping to organize the conference.

Word from the Education Director

I would like to seize the opportunity to draw your attention to recent, present, and future activities organized by the Education Committee of the CSPP:

Past: Teaching Symposium at Plant Canada

During the Plant Canada 2011 meeting in Halifax, the CSPP Education Committee teamed up with their CBA counterparts to organize a half-day symposium dedicated to the topic "Evaluating student learning – How can we tell if our assignments are making a difference?". This symposium, chaired by Cindy Ross Friedman (Thompson Rivers University),

enjoyed phenomenal popularity with more than 50 people attending. Two invited speakers presented their own experiences related to this topic: Lyn Baldwin (Thompson Rivers University) talked about Scholarship of Teaching and Learning (SoTL) as applied to her plant anatomy class that incorporates drawing tutorials by an artist. She explained how she uses questionnaires to assess the success of this interdisciplinary concept in terms of academic performance and student satisfaction. The second invited talk was given by Frédérique Guinel (Wilfrid Laurier University) on using posters to assess critical thinking skills in a large class. Frédérique illustrated how she uses a single topic (in this case: water) over an entire term to motivate students to dig into scientific literature on the one hand, and to develop their communication skills on the other hand

The plenary talks were followed by a panel discussion led by John Markham (University of Manitoba). After John's initial presentation on scientific writing in undergraduate classes, the panelists, Lyn Baldwin, Christian Lacroix (University of Prince Edward Island), Norm Hüner (University of Western Ontario), and Janice Eddington (Dalhousie University) discussed a multitude of education related topics that yielded active participation from the audience. The animated discussion and the large number of participants have made this symposium a great



Present: Updating the Teaching Database

The Education Section on the CSPP web site contains a database that lists plant science related courses given by CSPP members. The purpose of this database is multiple as it hopefully guides students to the programs of their interest, but also allows faculty members to exchange with colleagues about teaching concepts, textbooks, and useful teaching material such as videos and online databases. We are currently updating this database and those of you already in the database have been contacted with the request

to provide an update on your teaching activities. We now would like to solicit information from previously non-listed and new faculty members. Tell us which (plant science related) courses you teach and which textbook or other material you use!

Future: Education Session at the Annual Meeting in Edmonton

Do you know of a colleague who has developed a new strategy to get undergraduate students excited about plant science? Are you involved in outreach activities? Have you

established an online learning platform? If you are involved in any of these or another initiative that helps to spread the word about plant science either at academic or public level, let us know! We are looking for exciting new topics to be included in the teaching session at the upcoming Annual Meeting in Edmonton. A limited travel fund is available to support an invited speaker.

CSPP-SCVP Education Director Anja Geitmann anja.geitmann@umontreal.ca



Member News



Larry Fowke

Larry Fowke, a plant cell biologist of the University of Saskatchewan, was inducted as a Fellow of the Royal Society of Canada in November 2009 for his pioneering and leading work in the areas of plant protoplasts, plant cell division, endocytosis in plant cells, and plant cell and tissue culture. His groundbreaking and exceptional research in these areas has been used around the world and his work on somatic embryogenesis in conifers has been successfully applied in industry.

Larry did his Ph.D. from Carleton University at Ottawa in 1968 and after a two year stint as an NRC (now NSERC) postdoctoral fellow at the Australian National University at Canberra; he joined the Biology Department at the University of Saskatchewan as an Assistant Professor in 1970. He moved quickly through the ranks to become Full Professor in 1979 and officially retired in 2006; he is now Professor Emeritus.

Throughout his career which spanned over four decades, Larry has distinguished himself in research, teaching and administration.

The central theme of Larry's research has been plant cell division. By using various microscopic, biochemical and molecular techniques, he and his students and postdoctoral fellows have investigated various aspects of cell division in algae, bryophytes, gymnosperms and angiosperms with emphasis on the role of microtubules and other organelles. In recent years his research has focused on the role of inhibitors, particularly ICK1, in the control of cell division and plant development. This innovative research, published in Nature, has opened new areas of investigation in various laboratories and has the potential for application in crop improvement. His pioneering work on plant protoplasts, in collaboration with colleagues from the NRC lab in Saskatoon, laid the foundation for research in genetic transformation and plant biotechnology. His research on coated vesicles in plant cells led to documenting for the first time the pathway of endocytosis in plant cells. Larry and his coworkers also developed tissue culture techniques for somatic embryogenesis in conifers (white and black spruce) and the storage of mature embryos. This fundamental research is now applied in industry and CellFor

Inc. in British Columbia is producing millions of elite embryos for reforestation.

Larry is the author and co-author of over 120 refereed publications in high profile journals including Nature, The Plant Journal, Planta, Plant Molecular Biology, and Journal of Experimental Botany. He has also authored over 30 book chapters, co-edited a book on Plant Protoplasts, and has five U.S. patents to his credit. He was one of the ISI Highly Cited Researcher in the plant and animal category worldwide from 1981-1999. Larry has presented numerous invited seminars and conference symposia nationally and internationally, and his work has been recognized by several awards including, the Distinguished Researcher Award by the U. of S., Jarislowsky Chair in Biotechnology, Rawson Professor, Biology Department, U. of S., Earned D.Sc., U of S., and the SABEX Award of Innovation. He was also the Associate Editor of four plant journals, and a member and Chair of an NSERC Grant Selection Committee in cell biology.

It is a fitting tribute to Larry's sustained and exemplary contributions that he has been honoured by induction into the Royal Society of Canada.

Congratulations Larry!

Vipen Sawhney

Obituary



David T. Canvin 1931 – 2010

Former CSPP Gold Medal winner David (Dave) Canvin died at the resort he owned on Desert Lake just north of Kingston on March 16, 2010 aged 78. He leaves behind his wife of 52 years Marie and his three sons, Steven, Paul and Robert. His daughter, Sarah, died in 2006 under tragic circumstances. Dave was an eminent plant scientist well known and respected not just in Canada but throughout the world.

Dave grew up on a small farm in Selkirk, Manitoba just north of Winnipeg. After high school, he attended the University of Manitoba in Winnipeg where he graduate with a B.S.A in Agriculture. He remained at the University of Manitoba obtaining an M.Sc. in Plant Science.

For his Ph.D., he joined Harry Beevers' research group in the department of biology at Purdue University. Beevers at that time was studying the means by which germinating seeds converted storage oil into carbohydrate for the growth of the developing embryo. To determine the pathway involved, Canvin fed a variety of ¹⁴C labelled substrates to slices of germinating castor seed endosperm. This pioneering work showed that acetate, produced from the breakdown of fatty acids, was converted to glucose through the operation of

the glyoxylate cycle and the reversal of glycolysis. This work, which was published in 1961 in the Journal of Biological Chemistry (Canvin, D.T. and Beever, H. JBC 236, 988-995) showed the power of radio isotopes in understanding metabolic pathways and established Canvin as an expert in this area. The significance of this early work was demonstrated by its selection as a Classic paper in a JBC publication in 2005 to commemorate 100 years of the iournal...

On completion of his Ph.D., Canvin returned, as a professor, to his alma mater, the University of Manitoba. However, his tenure there was short when he accepted a position in 1965 as professor of biology at Queen's University in Kingston, Ontario, where he was to spend the rest of his career.

At Queen's, he immediately established a research group. However, this time it was not on the breakdown, but on the synthesis of fatty acids in developing castor seeds. The descendents of the original castor plants established at Queen's by Canvin in 1965 are still grown in the greenhouse at Queen's University and are now used by plant biochemists such as William Plaxton.

Working with his graduate students, Hugh Drennan and Brian Zilkey, Canvin developed a sucrose density gradient procedure for separating the cellular components from castor endosperm, and showed that, unlike animals, fatty acid synthesis occurred in plastids not in the soluble phase of the cell (Zilkey, B.F. and Canvin, D.T. 1971 Can. J. Bot., 50, 323-336). This led to considerable controversy but was finally resolved by the demonstration by Ohrogge and Stumpf that acyl

carrier protein, the essential component in fatty acid synthesis was predominantly in the plastid fraction of plant cells. This again stressed the uniqueness of plant metabolism and the essential role of plastids. It has now been shown that most biosynthetic pathways occur in plastids, an organelle unique to plants.

A number of lively debates between Canvin and one of us (DTD) regarding the origin of the carbon in fatty acid biosynthesis, led to a very fruitful collaboration that established the presence of a glycolytic pathway in plant plastids. These pathways were catalyzed by isozymes that were shown to be distinct from their cytosolic counterparts, work that established the importance of the compartmentation of plant metabolism and demonstrated that plant metabolism was quite different from what is found in animals.

In 1968, on Gleb Krotkov's sudden death, Dave Canvin took over the supervision of Gleb's research group which led him into the area of photosynthesis and photorespiration. Krotkov had shown that when photosynthesis was terminated by extinguishing the light source. there was a burst of carbon dioxide release from the leaves. The amount released was dependent upon the level of oxygen. In an elaborate experiment involving multiple isotopes, Canvin showed that carbon was liberated not just on the termination of illumination but during the whole of photosynthesis and that it represented as much as 25% of the carbon the had been newly fixed by photosynthesis. From the measurement of oxygen isotope exchange in leaves, he concluded that photorespiration was an integral part of photosynthesis.

Obituary continued

It was not until much later that the oxygenase activity of rubisco was found and shown to be responsible for this release of newly fixed carbon. His pioneering work on gas exchange cemented his reputation as one of the premier experimentalists of his generation.

Canvin's work on photorespiration led inevitably to him working on green algae and cyanobacteria that appeared to lack the process. He showed that these organisms could concentrate carbon dioxide in their cells, effectively outcompeting oxygen at the active site of rubisco. Through collaboration with a number of student and post-docs Dave's team demonstrated that the "CO2 Concentrating" mechanism was the product of active CO2 and HCO3transport. Although the major focus of Canvin's work was carbon metabolism, over the years his lab also produced a range of important discoveries on the processes and location of nitrate and nitrite reduction in plant cells.

When one considers Canvin's research, it is clear that he was at the forefront in establishing new areas of plant metabolism that are now taken for granted. Looking back, it is clear that his work played a major role in changing the way we envisage plant growth and development. He was a technical expert who was unrelenting in his demand for accuracy. This was illustrated by an advanced undergraduate course on the use of isotopes. This course was viewed as the most technically demanding undergraduate laboratory course in the department and trained a generation of exceptionally talented biochemical researchers. The first experiment consisted of each student being given a black

bottle in which Canvin had placed a carefully measured amount of water. The students were supplied with a radioactive solution. All they had to do was pipette some of this solution into the bottle, measure the reduction in radioactivity and hence deduce the volume of water, but it had to be very accurate and students could not proceed with the next experiment until they got it right. As the course progressed students carried out experiments measuring ¹⁴CO₂ gas exchange and tracing 14C labelled substrates as they were metabolized through a variety of pathways.

Canvin's impact, however, goes beyond a simple discussion of his research accomplishments. He was a great mentor not just to his students and postdocs, but to his university colleagues and just about anyone who knew him. He would give endlessly of his time and expertise to help anyone willing to work hard and strive for excellence. He did not suffer fools gladly. He would challenge every scientific conclusion from a wide range of fields and expected the proponent to defend their position in discussions that could last for hours, days or years. His integrity and honesty were absolute.

Outside of research, he made many contributions at Queen's, within Canada and internationally. He served on the Queen's Senate, was President of the Faculty Association, the Head of Biology Department and Dean of Graduate Studies. In all these areas, he made a very significant contribution to the university.

Nationally, he served and was chair of the NSERC Plant Biology Grants Committee, a member of the Ontario Graduate Programme Appraisal Committee, a member of the Technical Advisory Committee on Nuclear Fuel Waste Management, Chair of the Committee of Heads of Biology in Ontario, Secretary- Treasurer of the Biological Council of Canada and Director of the Botanical Association.

As far as the CSPP is concerned, he served as Secretary-Treasurer, Vice-President and President, and in 1981 he was awarded the CSPP Gold Medal.

Internationally, he served on the editorial board of Plant Physiology, Planta, Cell and Environment, Photosynthesis Research and the Canadian Journal of Biochemistry. He was twice a consultant to the Food and Agriculture Organization (FAO) of the UN and twice a consultant to the FAO/ International Atomic Energy Agency. In 1977, he was elected a Fellow of the Royal Society of Canada.

Perhaps as a reversion to his early life on the farm, in 1995
Dave Canvin retired from
Queen's to fulfil a revelation that had occurred to him while in hospital for a bypass operation on his leg. Much to everyone's surprise he bought and operated Snug Harbour resort situated on beautiful Desert Lake about 35 miles north of Kingston. There he could be found mending cottage roofs, renting boats or simply drinking a beer with cottagers or visitors.

In all respects, he was a remarkable man who made a major contribution to our understanding of plants but who was also someone whom it was a privilege to know and have as a friend.

David T. Dennis

David H. Turpin

David B. Layzell

Obituary

Donald B. Hayden

(April 30, 1945 – November 20, 2011)

Donald B. Hayden was born in Toronto in 1945. His family subsequently moved to the London area where he attended high school and obtained both his undergraduate (B. Sc. Hon. Biol.) and graduate education in the Department of Botany (now the Department of Biology) at the University of Western Ontario. For his thesis, he studied isozymes of malate dehydrogenase in maize endosperm, under the direction of Dr. Frank Cook. After receiving his PhD in 1971, Don stayed on at Western, joining the Department as Assistant Professor.

Early on, Don developed an interest in the composition and organization of chloroplast thylakoid membranes. Following a chance meeting with Phillip Thornber in the early 70s, this interest became focused on chlorophyll-protein complexes. Up to this point in time, chlorophyll protein complexes associated with Photosystem I and the light harvesting complex (LHC) had been identified but the reaction centre for Photosystem II (PSII) had not yet been found. Believing the PSII complex might either be "buried" by the LHC or less stable, Don was convinced that we could find the

"missing" PSII by modifying the methods for isolating chlorophyll-protein complexes and "getting rid of" the LHC. At the time I was studying the effects of light and temperature on chloroplast development and had a maize mutant that was chlorophyll b-deficient (and consequently lacked the lightharvesting complex). Don's instincts proved correct and, with this system, we were the first to identify the chlorophyll-protein complex associated with Photosystem II. The paper describing this find (Hayden and Hopkins, Can. J. Bot. 1977) has been widely cited and recognized as a seminal paper in the study of chlorophyll-proteins.

Don was well known for his easy manner, his enthusiasm, and wide-ranging (and often innovative) interests. Throughout his career he served on numerous departmental, faculty, and university-wide committees. In 1977, Don was appointed Director of Part-time Studies in the Faculty of Part-time and Continuing Education, followed by a term as Associate Dean of Science (1979-1984). In 1984 he moved into the senior Administration as Assistant to the President. This path led to an appointment, in 1987, as Director of Commercial Development, where his most significant initiative was the founding of a research park at Western. Don then served as a Founding

Director and CEO of the UWO Research Park, which now stands as one of Canada's leading science and technology parks, with campuses in London and Sarnia. The UWO Park is the largest technology incubation centre in Ontario and the largest biotechnology incubation centre in Canada.

Don's talents were not limited to the academic world. He was also active on the Boards of the Institute for Chemical Science & Technology, the London Development Advisory Board, the London Community Small Business Assistance Centre, and the London High Technology Association.

Although very active in administrative posts, Don never lost his core interests. He continued his research on chloroplast membranes and other topics as well as the direction of graduate students, with his last publication appearing in 2011. Although he retired from the Department of Biology in 2009, Don continued with his interest in the University. Combining his two loves of teaching and intercollegiate athletics, took up a post-retirement position as Academic Counsellor to the Western Mustangs football team.

William G. Hopkins

Social events and field trips at Plant Canada 2011



The Nova Scotia
Agricultural College, in
nearby Truro, hosted a
barbecue one evening.
There was a
conspicuous amount of
lobster consumed.

The grounds at the Nova Scotia Agricultural College





There were also field trips that could be taken, including tours of the Coastal Barrens, a Horticultural Tour of the Annapolis Valley, and an Algal Biodiesel Tour at the National Research Council facility at Sandy Cove.

External Events

Upcoming Meetings

3rd Banff Conference on Plant Metabolism

SCIENTIFIC ORGANIZING COMMITTEE

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KEYNOTE SPEAKERS

Tadhg Begley (USA)
Peter Facchini (Canada)

PLENARY SPEAKERS

Yi Fong Tsay (Taiwan)
Lacy Samuels (Canada)
Anja Fuglsang (Denmark)
Valérie de Crécy-Lagard (USA)
Dean Della Penna (USA)
Cathie Martin (UK)
Yoshikatsu Matsubayashi
(Japan)
Martin Reaney (Canada)
Peter McCourt (Canada)
Alison Smith (UK)
Siobhan Brady (USA)
Luca Comai (USA)

June 28 to July 2, 2012

Dani Zamir (Israel)

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CENTRE
BANFF, ALBERTA,
CANADA



plantmet@ucalgary.ca www.ucalgary.ca/plantmetabolism **CSPP-SCPV Sponsored Events**

Upcoming Meetings

Edmonton une 25-27, 2012

CSPP/SCPV 2012 Annual Meeting

Genetic Adaptation

Michael Purugganan, NYU Loren Reiseberg, UBC

Carbon Flux

Andrew Hanson, Florida Robert Turgeon, cornell

Keeping Time

Rob McClung, Dartmouth Ove Nilsson, Umeå PSC

Water & Drought

Matthew Reynolds, CIMMYT Christophe Maurel, Montpellier Barb Lachenbruch, Oregon State

Gold Medal Address Fathey Sarhan, UQAM

C.D. Nelson Address Charles Deprés, Brock

Concurrent session topics include:

Biochemistry, Cell Biology, Development, Ecology, Evolution Genomics, Gene Regulation, Reproduction, Stress, Signaling & Hormones

Many opportunities for graduate student presentations

Attend the Banff Conference on Plant Metabolism immediately following CSPP/SCPV 2012

CSPP SCPV 2012 www.cspp2012.org

Early registration ends March 2nd Abstract submission ends April 16th

Canadian Society of Plant Physiologists La Société Canadianne de Physiologie Végétale **CSPP-SCPV** Membership

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Robert Guy (University of British Columbia) Chair Andrew Hanson (Florida) Line Lapointe (Laval)

CSPP-SCPV Bulletin Production

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Photos used in this bulletin are courtesy of Anja Geitmann, Harold Wener, William Plaxton and Ewa Cholewa.

We welcome comments and suggestions for future issues of the CSPP-SCPV Bulletin. Please send correspondence to communication@cspp-scpv.ca