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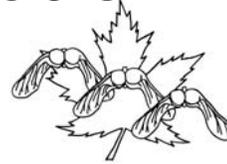
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The Canadian Botanical Association Bulletin



Bulletin de l'Association botanique du Canada

December / Décembre 2004 • Volume 37 No. / N° 4

President's Message

Hope you all had a great summer and an exciting fall term!

As we get closer towards the end of 2004, a few reminders for you.

First, you would have received your membership renewal form in the mail in the last few weeks. Please be sure to renew your membership, if you have not already done so. It is best to deal with this before the Holiday Season begins, and I thank you most sincerely for it. Second, be sure to check one of the boxes on the form regarding "Permission to Release" your name, address and e-mail address for CBA/ABC business only. Third, please encourage your new and old colleagues who are working in the area of plant biology, and are not members, to become members of CBA/ABC. And do not forget to enroll your graduate students and postdoctoral fellows as well. Our society provides a wide spectrum of botanical interests, including a section on teaching of plant biology. The diversity of talks and posters at the annual meetings provide an excellent opportunity to hear first hand of the latest developments in your own and related fields of botany.

It is also time to start thinking of nominating colleagues for the two major awards of the society: **The Lawson Medal** and **The Mary E. Elliott award**. The terms of reference for these awards are available on the CBA/ABC website: <http://www.uoguelph.ca/botany/cba>.

Please send your nominations to me by **January 31, 2005** at: sawhney@admin.usask.ca. The nominations should include a covering letter from the nominator listing the major contributions of the nominee, a copy of nominee's recent CV, any supporting letters from colleagues and copies of other documents as deemed appropriate. **I strongly urge you to take the time to nominate a colleague.** There are many members who have made excellent contributions to the discipline of botany and have provided superior service to the society who are deserving of recognition.

On another matter, Drs. Larry Peterson and Barry Shelp, co-editors of the *Canadian Journal of Botany*, recently wrote to me asking me for our views for a possible change of name of the journal. Several names have been suggested including, *Plant Journal Canada*, *Plant Biology Journal*, *Canadian Journal of Plant Biology*, *Chloros*, *Plant Form and Function*. I have recently also heard from Dr. Deep Saini, President of the Canadian Society of Plant Physiology, who has indicated that there is a strong desire among the CSPP members to give a new name to the journal. Please give some thought to this matter and send me your ideas in writing by e-mail or by letter.

I wish you all a joyous and restful upcoming Holiday Season, and the very best in 2005!

Vipen Sawhney, CBA/ABC President

Canadian Botanical Association



Bulletin

The CBA Bulletin is issued quarterly (in theory in March, June, September, and December) and sent to all CBA members. Comments or suggestions about the Bulletin should be directed to the Editor at the address below.

Information for submitting texts

Texts and illustrations for the Bulletin should preferably be sent to the Editor as electronic documents, nevertheless any medium is acceptable. Any format for texts or illustrations are welcome. Please make sure that scanned pictures are done with a very good resolution (say 300 dpi). The pictures should be made available separately from the text. If you have any question about text submission, please contact the Editor.

For general info on CBA, go to the web site:
<http://www.uoguelph.ca/botany/cba/>

Association botanique du Canada



Bulletin

Le Bulletin de l'ABC paraît quatre fois par année, normalement en mars, juin, septembre et décembre. Il est envoyé à tous les membres de l'ABC. Tout commentaire concernant le bulletin est apprécié par le rédacteur.

Directives aux contributeurs

Les textes et les images sont de préférence envoyés sous forme électronique, néanmoins, tous les supports de même que tous les formats imaginables sont acceptables. Les fichiers graphiques doivent être de très bonne définition (au moins 300 dpi) et disponibles indépendamment du texte. N'hésitez pas à contacter le rédacteur pour toute information.

Infos générales sur l'ABC à l'url suivant:
<http://www.uoguelph.ca/botany/cba/>

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Next issue / Prochain numéro

Texts for the next issue, **38(1)**, must be received before March 1st, 2005.

La date de tombée des textes du prochain numéro, le no **38(1)**, est le 1^{er} mars 2005.

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Message du rédacteur / Editor's Message

Dans ce numéro du Bulletin, vous trouverez une nouvelle rubrique intitulée 'Portrait de botaniste' dont l'objectif est de faire connaître les membres les uns aux autres. Notre association regroupe des gens de tout horizon qui partagent un intérêt commun, la botanique au Canada. Mieux connaître les autres membres, c'est aussi favoriser le développement de la botanique. Je remercie Vladimir Kricsfalusy qui a bien voulu, le premier, se prêter à cet exercice. C'est une invitation à soumettre leurs propres textes que je lance aux autres membres.

In this issue, you will find a new item, 'Portrait of a Botanist'. This column is aimed at improving the knowledge of membership. Members come from very diverse backgrounds but all with the same interest: Canadian botany. A mutual understanding helps also promoting botany. I want to thank Vladimir Kricsfalusy who kindly took a part, for the first time, in this sometimes difficult exercise. Everyone is invited to submit a text.

Martin Dubé, CBA Bulletin Editor / rédacteur du Bulletin de l'ABC

POSITION AVAILABLE

UNIVERSITY OF SASKATCHEWAN
Department of Biology
(www.usask.ca)

Assistant Professor Plant Community / Landscape Ecology

The Department invites applications for a tenure-track position at the Assistant Professor level in the area of Plant Community/Landscape Ecology, commencing July 1st, 2005. Preference will be given to candidates who will develop a vigorous research program focusing on plant communities and landscape processes within the northern prairie, boreal forest, or tundra systems. Applicants should have a Ph.D. and post-doctoral experience. The successful candidate will participate in the undergraduate and graduate teaching programs of the Department, with specific responsibility in plant diversity and communities. The successful applicant is expected to develop a vigorous, quantitative research program.

The Department has developed an internationally recognized area of strength in wildlife, ecosystems, and environment sciences. The candidate will join a group of 12 faculty members dedicated to research in environmental science, an area of strategic importance identified in the University's Integrated Plan. We benefit from strong collaborative links on campus with Canadian Wildlife Service and National Hydrology Research Centre, as well as several government agencies across Canada.

The University of Saskatchewan is committed to employment equity. Members of designated groups (women, aboriginal people, people with disabilities and visible minorities) are encouraged to self-identify in their applications. All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.

Send curriculum vitae, a description of proposed research and teaching interests, and the names, addresses, telephone/fax numbers, and email addresses of at least three references to:

Dr. F. Messier, Head
Department of Biology, University of Saskatchewan, 112 Science Place,
Saskatoon, SK, CANADA S7N 5E2

Tel.: (306) 966-4400; fax: (306) 966-4461; e-mail: francois.messier@usask.ca

Applications due: January 31, 2005

Change of address / Changement d'adresse

Past President / Présidente sortante: Dr. Liette Vasseur, Vice-rectrice associée à la recherche, Université Laurentienne
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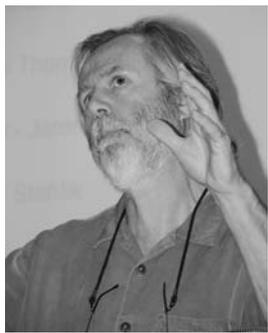
Winnipeg 2004

More photos of the Annual Meeting / Souvenirs du congrès annuel

(photos by Martin Dubé)



Robson Hall, University of Manitoba, where presentations were done. / Robson Hall, le pavillon de l'université du Manitoba où toutes les manifestations scientifiques se sont déroulées.



Spencer Barrett giving his talk on 'The Evolution of Combined versus Separate Sexes in Plants'.



Some of the participants in the Symposium on Invasive Plants chaired by Luise Hermanutz (on the left). Then, from left to right, B.L. Rex, Brian Hunt, K. Brown, Paul Catling, and Paul Cavers. / Certains des participants au Symposium on Invasive Plants présidé par Luise Hermanutz (à gauche). Puis, de gauche à droite, B.L. Rex, Brian Hunt, K. Brown, Paul Catling et Paul Cavers.



Field trip to Spirit Sands Trail, Spruce Woods Provincial Park. Above, on the top of the dunes; the trip leader was Bruce Ford (first on the left). Below, on left, down the dunes where the sand are stabilized by vegetation. Below, on right, a northern prairie skink, the only lizard of Manitoba, designated at risk and protected.

Excursion aux dunes de Spirit Sands Trail dans le parc provincial Spruce Woods. Ci-haut, arrivé au sommet des dunes; la personne à l'extrême gauche est Bruce Ford qui dirigeait l'excursion. Ci-dessous à gauche, en redescendant, les sables fixés par la végétation. Ci-dessous, à droite, une scinque des Prairies, le seul lézard du Manitoba, une espèce en voie de disparition et protégée.



Hugues Massicotte, in action as auctioneer. Christian Lacroix assists him by writing down transactions. / Hugues Massicotte, commissaire-priseur à la vente aux enchères. On voit également Christian Lacroix prenant note des ventes.



A nice time at the barbecue. / De bons moments durant le barbecue.

The way from Ukraine to Canada.

by Vladimir Kricsfalusy

For my Mother and Father with love

A lot of interesting and splendid things have happened in my life. Fate presented me with numerous acquaintances, outstanding scientists and wonderful people. There were on my way encounters with the opposite as well, and I had to come through those trials... I try to cherish all of those displays of destiny.

I was born (October 10, 1959) in the colourful autumn season in the village Ternovo (meaning Blackthorn) in Transcarpathia¹ which is located on the gentle hills of the Carpathian Mountains. I spent the first years of my life in this picturesque land and then went to school in Uzhgorod in 1966. Uzhgorod is the administrative centre of Transcarpathia where my parents had been transferred on pedagogical work.

My family was living in Uzhgorod with my mother's parents during these early years. This period left pleasant memories and made a deep impression on my life and essentially affected the choice of my future profession. Both of my parents come from the intellectual families which have contributed many teachers, priests, foresters, scientists and others. Historical fate scattered them through the whole world and today they live in Ukraine, Slovakia, Czech Republic, Hungary, Russia, the USA and Canada.

In my youngness, I eagerly absorbed a rich family history from the stories which were told to me by my grandfather Juriy, who was a very influential figure in my life. Together with him I carried out my first excursions into nature, and learned to distinguish and to love plants and animals. At that time I already had the boundless interest in knowledge and a constant longing for exploring something new and unknown.

I studied hard and graduated from Uzhgorod High School in 1976 with a golden medal. Nature sciences come easy to me. When the time came to make a choice where to continue my studies it was not so easy to make a decision especially because my father Vasyly', a teacher of mathematic and physics, wanted to see me in the same field. It was true that I had excellent abilities for this profession but I had a much bigger love to the nature.

During the studies at Uzhgorod University (1976-1981) I successfully combined the educational program (I received Lenin's award what was the highest student's award in the former USSR) with research which I began the first year of studies at the university. Prof. Vasyly' Komendar, the Chair of the Department of Botany, was my first adviser. He looked after me and gave me the opportunity to explore my interests. I friendly remember my other teachers, particularly Professors Istvan Fodor and Vira Mandryk who gave me a good training for future professional career.

Prof. Vasyly' Komendar quickly realized that the alma mater



*The Author in a field of *Narcissus angustifolius*. Photo: Richard Kricsfalusy, Narcissus Valley in the Carpathian Biosphere Reserve near Khust, Ukraine, 10 May 2003.*

walls hampered me and sent me to the best European salicologists (experts in the genus *Salix*) – Professors Alexey Skvortsov (Main Botanical Garden, USSR Academy of Sciences, Moscow) and Jindrich Chmelar (Mendel Agricultural and Forestry University, Brno, Czechoslovakia) for the practical studies.

During that time I carried out a thorough systematic study of the willows in the Ukrainian Carpathians which included the numerous field expeditions and the processing of a large volume of herbarium materials, and the chromosomes counting at the laboratory. The results of this work were a series of research papers and diploma project which led to a Master degree in 1981. For this work I was awarded with a golden medal of the USSR Academy of Sciences and was the only student in the history of Uzhgorod University who was nominated to such a high award and a medal of the Ministry of High Education of the USSR. This event has a special place in my life and is engraved in my memory. I obtained the award personally from the President of the USSR Academy of Sciences Anatoly Alexandrov who was an outstanding Russian scientist and designer of nuclear reactors.

After university, I decided to devote myself to science and entered the Department of Botany of Uzhgorod University as a PhD candidate (1981-1984). However, to my colleagues astonishment I did not want to continue as a successfully started student's work on willows and instead chose a new direction – the population biology of plants which so attracted the young scientist I was at that time.

It needs to be noted that Prof. Vasyly' Komendar who became an adviser for my PhD thesis did not argue with me and only

¹Transcarpathia is the administrative province/oblast of Ukraine which has belonged during a centuries as Ruthenia or Ugorska Rus' to the Hungarian Kingdom and later to the Austro-Hungarian Monarchy. After World War I as an autonomy land Podkarpatska Rus' region was included into the Czechoslovakian Republic, and after the World War II region was incorporated into the USSR.

stressed that I would have a difficult road on this new scientific study. Population biology study of *Narcissus angustifolius* – the rare and endangered plant species of the flora of Ukraine that I chose as a theme for the PhD thesis, demanded a development of new methodological approaches, using the modern methods of analysis etc. And again all was going well for me: a lot of enthusiastic work everywhere – in expeditions, at the laboratory, on workshops.

I was trained in the best population biology and biosystematics laboratories of the former USSR leading by Professors Tatiana Serebriakova (Moscow Pedagogical Institute), Vladimir Grif (Komarov Institute of Botany, USSR Academy of Sciences, St.-Petersburg) and Kostiantyn Malynovski (Institute of Ecology of the Carpathians, Academy of Sciences of Ukraine, L'viv). I defended my PhD thesis in 1985 at the Central Botanical Garden, Academy of Sciences of Ukraine. In my work for the first time on a case study of model species was substantiated a theoretical basis and developed a methodology of integrated population biology and biosystematics approach to the analysis of threatened plants. Taking into consideration the scientific and practical importance of these studies, my work was recommended for publishing as a separate book. The monograph appeared in the Svit Publish House at L'viv University in 1990. For that completed study I was awarded with the medal of the Exhibition of the National Economy Achievements of the USSR and with the medal of the State Committee of Science and Technology of the USSR.

I was inspired by achievements and began my working career at Uzhgorod University in 1985 with a great enthusiasm. Unexpectedly I ran into some difficult times. I was the youngest (25 years old) PhD fellow at the university, and I received the great support to head the Botanical Garden, but only if I became a member of the Communist Party. I refused this offer. Thereafter I was persecuted by the Communist Bureau and Administration of the Biological Faculty. The incident reached to the Rector of Uzhgorod University and the First Secretary of the Communist Party of Transcarpathia. Thanks to faithful friends of the family, I successfully “hid” in one of the laboratories at the Chemical Faculty and was kept at the university. Big changes in the USSR came swiftly because of the “perestroika”. Conflict little by little has died down, but still gave rise to the deep contradictions between myself and the partocracy-administrative ruling clique of the Biological Faculty (which has been lead by the same people in period of independence of Ukraine and has been transformed into the financial-administrative web). This continued through out the whole period of my research activity at the university.

During my work at the other faculty I never gave up the idea to return to my own department. I put a lot of efforts into proposing an additional position by way of a special grant from industry. Fortunately things turned out well and I was hired by the Department of Botany as Junior Research Scientist to study herbs in the forests of Transcarpathia. I worked in this area for more than 7 years and completed six research projects as the principal investigator or scientific adviser.

While carrying out the study of species composition, distribution, resources and technology of herbs planting I used all means possible to continue the study of flora and vegetation in the Ukrainian Carpathians. My herbarium which I had been collecting for 20 years was one of the biggest at the

Department of Botany. Part of my herbaria collection is located at the Upper Austrian Natural History Museum (Linz, Austria).

Despite the pressure of herbs research and the other activities, population biology remained my number one priority. In fact on a voluntary basis and without any financial resources I carried out three projects within the programs of the USSR Academy of Sciences and one – of the Ministry of Education of Ukraine. Taking part in these programs resulted in good opportunities for me to improve of my personal professional level and for the development of the scientific contacts with leading population botanists in the former USSR. Among them Professors Julian Zlobin (Ukraine), Liudmila Zaugol'nova and Ol'ga Smirnova (Russia) and others has taken place a great importance especially for the further cooperation.

Simultaneously on a voluntary basis I developed and started teaching graduated students a new course on “Population Biology of Plants” for the first time in Ukraine. Working with students I always drawn the talented people to the population studies. The research group became a core of a future laboratory has grew during these years. Together with my students I spread with biosystematics and population biology studies the rare and endangered geophytes which account 18 taxa in the flora of the Ukrainian Carpathians.

This period of my life was filled with the active participation in scientific conferences and interesting trips to Kamchatka, Tien Shan, Ural, Caucasus and other regions of the former USSR, and led to a new acquaintances with numerous outstanding scientists and people, particularly Professors T. Rabotnov and V. Khrzhanovskiy (Moscow), R. Kamelin and Z. Artjushenko (St.-Petersburg), B. Mirkin (Ufa), V. Kharkevich (Vladivostok), K. Sytnik, Ju. Sheliag-Sosonko and V. Chopyk (Kyiv), M. Holubets and S. Stoyko (L'viv), and others. At the same time I explored the possibilities of an international cooperation with scientists from Slovakia, Hungary, Austria, Czech Republic, Romania, Poland and Switzerland. We exchanged visits, became familiar with research trends, carried out joint excursions into nature and found the common interests for future collaboration. Cooperation with Professors Franz Speta (Austria), Philippe Kupfer (Switzerland), Zoltan Kereszti (Hungary), Sergej Mochnacky (Slovakia) and Ladislav Mucina (South Africa) were especially fruitful.

Despite the great results which I obtained in scientific and research activities, the administration of the Biological Faculty recommended me to the academic rank of Senior Research Scientists only after I overcome many obstacles. Finally this rank was conferred on me by the High Attestation Committee of the Council of Ministry of the USSR (Moscow) in 1992. However I wasn't allowed to enter a competition for the Professor's position because of the untrue family reason (my wife Gabriella, also a PhD, worked as an Assistant Professor at the Department of Botany).

Due to these circumstances, I concentrated my efforts on the improvement of conditions for the future development of the research activity. After big preparatory work which was done together with Prof. Vasyl' Komendar, a scientific department – Laboratory for Nature Conservation was created in 1993 for the first time in the history of the Biological Faculty. Prof. Vasyl' Komendar was appointed as a scientific supervisor and I as a chair of laboratory and an adviser of two scientific grants

(laboratory staff included 7 research fellows at full time positions, 3-5 PhD and MS candidates).

I devoted the next 10 years of my life to the improvement of scientific research activities at the laboratory. Under my leadership six scientific projects were implemented within the programs of the Ministry of Education and Science of Ukraine. They were concentrated on the complex study of the biodiversity of vascular plants in the Ukrainian Carpathians at levels of plant populations, species and communities. Three research projects on optimization of network of the Nature Protected Areas in Transcarpathia were realized within the regional programs as well.

I carried out active scientific research and pedagogical activity. I successfully prepared young research personnel (I was an adviser and a consultant for 6 PhD and more than 20 MS graduates), gave lectures at Uzhgorod University and before long I was invited by Presov University (Slovakia) for a position of Visiting Lecturer in 1998-1999. After a short time I obtained an official contract for the position of the Assistant Professor at Presov University. However I still believed that situation at Uzhgorod University and in the whole of Ukraine would finally stabilize and that the normal living and working conditions would improve. That is why I didn't accept this position.

I took an active part in the scientific and organizational life of Uzhgorod University during the entire period of time that I worked there. I lead the Scientific Council of Young Scientists for many years, and was a member of the Scientific Council and the Academic Ranks Admission Committee of the university for 10 years. Being a leader of Scientific Council of Young Scientists along with the Rector of the university Prof. Volodymyr Slyvka I visited some universities in the neighboring countries to establish official scientific and studying contacts. During those business trips a close bond developed between Prof. Volodymyr Slyvka and me which continued until my family moved to Canada. The Administration of the Biological Faculty did not approve of this relationship and several times pushed me to end the friendly contacts between our families. A few months ago I received the terrible news of the tragic death or more probably the assassination of Prof. Volodymyr Slyvka in Uzhgorod. Under public pressure and students protests the police has started investigation of this accident. This horrible situation affected my wife Gabriella and me. We were frustrated because we understood that such events could happen at any time to anyone in Ukraine. Nowadays the Orange Revolution in my home land gives us a hope that Ukraine becomes a democratic country.

I was a member of the editorial boards of some university proceedings and different academic editions. Furthermore, I was a founder and editor of the scientific series "Biodiversity conservation" and the scientific popular series "By trails of the native land" within which were published more than dozen of books, brochures, leaflets and maps. I was a member of the Organizing Committees some of scientific conferences and under my management and advising two International Conferences were carried out at Uzhgorod University in 2002.

New possibilities for international scientific cooperation appeared and I took an active part in the different grant competitions. I won 9 scientific grants in which I involved my graduates. The most important projects were following:

Biodiversity conservation in Transcarpathia: threatened plant species and communities (The Systematic Association), Biosystematics and population biology studies of threatened ephemeroidea in the Central-East Europe (Soros Foundation), a series of projects on wetlands conservation and development of trans-boundary Nature Conservation Areas in the Tysa/Tisza river basin (Regional Environmental Centre for Central and Eastern Europe, the United Nations, Ramsar Found), Biodiversity conservation and sustainable agriculture and forestry development (European Union, Carpathian Foundation).

My active participation in international scientific programs did not go unnoticed. I was nominated two times by the Soros awards (1984, 1998) for the successful participation in the biodiversity conservation programs. I was accepted as a member of the International Association for Vegetation Science (IAVS), Systematics Association (the United Kingdom), International Organization of Plant Biosystematists (IOPB), Society for Ecological Restoration International (SER) and others organizations. Also I was invited to become a member of the editorial boards of the "Thaszia" and "Carpathi" International Journals which are published abroad. I often participated in international conferences and has been published in foreign scientific editions.

Seeing that environmental problems can't be decided just through the scientific approach I spent a lot of time and effort to facilitate a nongovernmental movement in Transcarpathian region. Having a rich scientific experience and being a chairman and founding member of two environmental organizations I had the unique chance to build links between academic, public and administrative bodies in this field. Probably the most important results were obtained when I has worked as an expert ecologist for the Carpathian Foundation (1999-2000), scientific secretary of the National Committee of Ukraine on International Year of Mountains (2001-2003) and a regional coordinator of program "Kyiv-2003: raising the public participation in the process Environment for Europe in Ukraine" (2002-2003).

Such diverse and effective activity aroused envy, competition fear and the big desire to manage the money (obtained by me within the different grant programs). The charges of... espionage, blackmail and threats to me and my wife (who didn't want to participate in the Faculty Administration's black schemes) begun and resulted in open persecutions. It was a message of appreciation for 20 years of dedicated work for the benefits of science. Taking into consideration that fact that only Uzhgorod University was in Transcarpathia where our couple could work in conformity with professional background we have been put to a hard decision and departure from home land has got inevitable.

Let's take up the point of scientific creed. It should be noted that I has a distinguished and wide spectra of scientific interests which covers systematics, floristics, ecology, phytosociology, population biology and biodiversity conservation. I has been published on these issues personally or in cooperation 11 monographs and chapters in books, 4 manuals, 53 journal and 21 book papers, 34 papers in conference proceeding, 67 abstracts, almost 50 project reports and book reviews. I have been an editor for 9 books and proceeding of materials. Totally the list of my scientific works includes over 250 items and almost 50 scientific popular works.

My scientific and research activities provided along with my graduate students can be summarized to the following main trends.

Biosystematics of Monocotyledons plant species

Morphological, anatomical, biochemical, palynological and caryological variability of some taxa from Alliaceae, Amaryllidaceae, Hyacinthaceae, Iridaceae, Liliaceae and Melanthiaceae families had been studied. As the result of these studies 2 new taxa (*Narcissus angustifolius* subsp. *transcarpaticus* Kricsfalusy, *Erythronium dens-canis* subsp. *albiflorum* Kricsfalusy) were described for the first time; validity of 8 taxa (*Allium ursinum* subsp. *ucrainicum*, *Gagea transcarpatica*, *Galanthus nivalis* subsp. *carpaticum*, *G. nivalis* var. *vagneri*, *G. nivalis* var. *biflorum*, *G. nivalis* var. *triflorum*, *Muscari carpaticum*, *M. pocuticum*) was not confirmed; 2 new taxa for the flora of region (*Muscari botryoides* subsp. *transsilvanicum*, *Ornithogalum umbellatum* subsp. *divergens*) and 13 taxa indicated for the flora of region by mistake (*Allium carinatum*, *A. ericetorum*, *A. rotundum*, *Crocus albiflorus*, *C. csapodyae*, *Fritillaria meleagroides*, *Gagea fistulosa*, *Leopoldia tenuiflora*, *Muscari racemosum*, *Ornithogalum gussonei*, *Scilla amoena*, *S. bifolia* subsp. *bifolia*, *S. nivalis*) were determined.



Narcissus angustifolius
subsp. *transcarpaticus*
Kricsfalusy

Population biology of rare and endangered plant species

A case study of the group of bulbous plants which includes 18 ephemeroïd geophytes have been carried out to determine their biological and morphological peculiarities (morphogenesis, ontogenesis, seasonal development, changes of metric and allometric characteristics of individuals and populations), reproductive biology (vegetative and seed reproductions, seed dispersal and germination), structure (spatial, age and vitality) and population strategy in natural and man-affected ecosystems as well as to elaborate the management system for their conservation.

On the basis of mentioned biosystematics and population biology studies the integrated approach to the analysis of threatened plant species was suggested. The started point of that is the idea that population as a universal unit of living structures is situated on the intersection of genetic and spatial series of biological systems, and in this way population is an elementary unit of species and component of ecosystem at the same time. This approach reveals the taxonomic and population structures of species, their morphological, ecological and genetic differentiations, elucidates the most important features of population life, determines the trends in microphylogeny and gives an evaluation of survival strategy and advanced evolution of study plant species.

Classification and conservation of plant communities

On the basis of Braun-Blanquet approach the classification of vegetation cover of region has been elaborated. 70 syntaxa in their composition were distinguished, within which 7 associations (*Rumici scutati-Rhodioletum roseae* Malynovski et Kricsfalusy, *Polytricho-Poetum deyllii* Malynovski et Kricsfalusy, *Potentillo-Polytrechetum communis* Malynovski et Kricsfalusy, *Cetrario-Juncetum trifidi* Malynovski et Kricsfalusy,

Senecio carpaticus-Seslerietum bielzii Kricsfalusy et Malynovski, *Thymo-Festucetum amethystinae* Kricsfalusy et Malynovski, *Soldanello-Nardetum* Kricsfalusy et Malynovski) and 16 subassociations were described for the first time. The characteristics of syntaxonomy, distribution, floristic composition, dynamic trends, nature value and necessity of conservation of rare and endangered plant communities were compiled.

The assessment and plant conservation

This direction integrates the data obtained from the research carried out within the taxonomical, biological and ecological studies with the aim to identify the endangered plant species and communities for the legal protection at different levels. The Red Lists of rare and endangered plant species (485 taxa) and communities (35 syntaxa) of Transcarpathia were compiled. The complex taxonomic, chorological, biological and morphological, coenotical characteristics were determined. Phytogeographic analysis of rare and endangered species was carried out, centers of their distribution were outlined, the list of the Carpathians endemics was completed as well, and this phenomenon was analyzed.

Nature protection and biodiversity restoration

Series of projects connected with conservation of endangered plant populations and communities in the natural conditions by the way of creating of nature conservation objects at different levels or development an appropriate management (different nature protective regimes, mowing, grazing), recovering of the extirpated habitats or destroyed ecological balance (hydrologic, coenotic) have been implemented. The system of management of the Narcissus Valley (massif of the Carpathian Biosphere Reserve) has been established and the necessity of creating of the Prytiszansky Regional Landscape Park, two Nature Reserves as well seven Natural Monuments was substantiated.

In conclusion some small details should be added. Administration work is not my thing. I was never restricted to the office walls and was always out in nature. I started my scientific excursions long ago as a student and probably in my home land there does not remain any nook that does not show my footprint. Behind me are thousands of kilometers with a rucksack on my back by the trails of Europe, Middle Asia, the Far East... And during all of these trips a photo camera was always with me: I like to say that a good photo is the best memory about the nature of lands where you have ever been. Hundreds of photos are in my collection today. They were published in several photo albums, books, magazines and CDs. My dream is to publish one day a special album devoted to the main passion of my life – the plants.

Currently I live in Toronto. I see a future in continuing of the scientific and research activity. Something I have put my hand to turn out well. I started a collaboration with the University of Toronto, volunteer activity at the Toronto and Region Conservation Authority, and my first research papers in Canada were published too. Of course, to find a niche in a new country isn't an easy venture. It takes time, huge efforts and patience. In the hard moments I find encouragement in my family. Our seven-year-old son Richard is a "little ray of sunshine" who shows us the magnificent moments of life and inspires to go ahead.

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Poorly Known Economic Plants of Canada - 43.

Chive (*Allium schoenoprasum* L.)

E. Small and P.M. Catling

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A charming plant with a special but subtle taste, chive is increasing in popularity. Because it is inconspicuous and restricted to rather unusual habitats, many do not realize that it is a widespread native plant occurring across most of Canada.

Latin Names

The genus name *Allium* is the classical Latin name for garlic. The specific epithet *schoenoprasum* is formed from the Greek *skhoinos*, meaning rush, and *prason*, meaning leek, a reference to the rush-like leaves of the plant. The obsolete name “rush-garlic” also reflects a superficial resemblance to the rush genus, *Juncus*.

English Names

“Chive” is derived from the Old French *cive*, which in turn comes from the Latin *cepa*, onion. The singular “chive” is best used as the name of the plant. When referred to as a condiment, the plural “chives” is usually employed. Wild plants are often called “wild chive(s).”

French Names

Ciboulette, civette, brûlotte, poireau (old European French names: ail civitte, ail civette, fausse échalote, petit poireau, appétit)

Morphology

Chive is a herbaceous plant with slim, hollow leaves arising from thick tufts, to a height of 70 cm or more. Slender, white-sheathed bulbs develop in dense masses or clusters at the base of the plant. Rose-purple or mauve flowers are produced in a small, round umbel at the end of a leafless stalk. Ten to 50 flowers are present in an umbel, the inner flowers developing faster than the outer ones. The plants are biennials or perennials. Some populations tend to flower the first year, others not until the second year at the earliest. Often there are two flowering periods within a given season, typically a heavy flowering in the spring combined with lighter flowering in mid-summer. Propagation is both clonal (by the production of daughter bulbs along short rhizomes) and sexual (by the production of seeds).

Classification and Geography

Of the approximately 600 species of *Allium*, about a dozen are cultivated, most notably the common onion (*A. cepa* L.) and garlic (*A. sativum* L.). In #22 of this series (CBA/ABC Bulletin 32(3):39-42. 1999), we discussed the wild leek, *A. tricoccum* Solander. *Allium schoenoprasum* is less pungent than these other species, and indeed is widely considered to be the mildest of all of the alliums. The related garlic chive

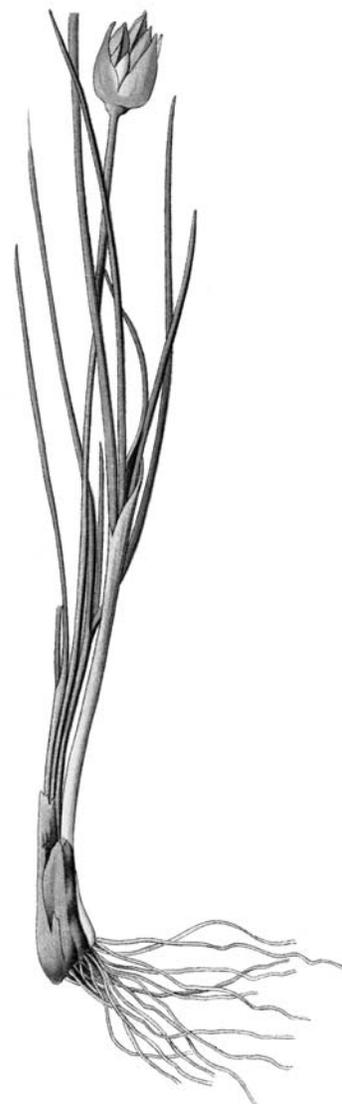


Fig. 1. Wild European chive (from Hallier, E.H. 1880. *Flora von Deutschland*, edition 5 of D.F.L. von Schlechtendal et al. F.E. Köhler, Gera-Untermhaus, Germany. Vol. 3).

(*Allium tuberosum*), also called Chinese chive, has larger, flatter leaves. It is widely used in Asia as a vegetable, garnish and flavouring and is becoming more popular in North America.

Wild plants of *A. schoenoprasum* (Figure 1) are distributed in northern regions of the North Temperate zone, extending as far south as southern Europe, Iran, India, and China. In North

America, chive grows naturally as far south as northern New York to northern Colorado and Oregon. The classification of the species is unsettled. Numerous infra-specific taxa have been recognized in the Old World. The majority of chive plants are diploid ($2n = 16$), but some tetraploids are known, mostly from Siberia. Supernumerary (B) chromosomes are often present, and have been extensively studied. DNA analysis by Friesen and Blattner (2000) indicated a discontinuity between European and Asian collections (which are naturally separated by a geographical gap of about 2,000 km), but North American collections were not adequately sampled and no conclusion could be drawn about their relationships with the Old World taxa. Wild plants of much of the northernmost regions of the world, including Canada, are usually assigned to var. *sibiricum* (L.) Hartm. (subsp. *sibiricum* (L.) Celak.) (Figure 2). Variety *laurentianum* Fern., described from western Newfoundland, has been interpreted as an eastern Canadian taxon. Plants of *A. schoenoprasum sensu lato* have been collected from all provinces and territories of Canada but, as noted, below, there is uncertainty regarding which of these are escapes from cultivated forms.

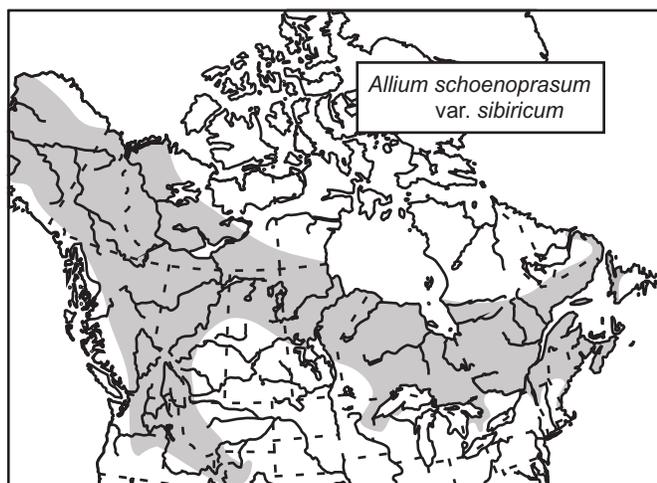


Fig. 2. Putative distribution of wild chive in Canada.

Domesticated chive (Figure 3) is usually assigned to var. *schoenoprasum*. It is commonly postulated to have arisen in the Mediterranean region, but it is likely that cultivated forms have been independently selected in various regions, at least in the Old World. The domesticated selections are relatively little changed from the wild forms.

A study by Tardif and Morisset (1990) suggested that there is a cline of variation from the St. Lawrence estuary region east to Newfoundland. These researchers also suggested that var. *laurentianum* of the Gulf of St. Lawrence may not be worthy of recognition. The cline is speculated to have originated through secondary contact and introgression of two races that survived Wisconsin glaciation in the Gulf of St. Lawrence region and in southern New England respectively.

According to Fernald (*Gray's Manual of Botany*), native plants referable to var. *sibiricum* have only one or two, rarely several bulbs together and the leaves are shorter than the inflorescence. The much cultivated plants introduced from



Fig. 3. Cultivated European chive (from Thomé, O.W. 1903. Prof. Dr. Thomé's *Flora von Deutschland, Österreich und der Schweiz*. H.V. Verlag, Berlin-Lichterfelde, Germany. Vol. 1).

Europe and referable to var. *schoenoprasum* have many bulbs crowded and persistent and the leaves are equal to or longer than the flowering stems.

Hybridization between cultivated and wild European forms is believed to have occurred, accounting for why it is difficult to ascertain whether or not populations encountered in nature

are truly wild. Another potential problem is that northern plants referable to var. *sibiricum* are sometimes introduced south of their main range. The extent to which such plants can escape and establish is unclear, but it does not seem to be frequent.

McNeal and Jacobsen (2002) in *Flora of North America* vol. 26 emphasized the great variability of characteristics used to distinguish the native populations and decided it was not possible to prepare a reliable map of the native distribution. We believe it is possible because neither introduced nor native chives escape and spread extensively. Of 158 specimens in the AAFC herbarium (DAO), the vast majority were from natural habitats, including mostly shorelines, but also prairies, tundra, and subalpine meadows. Only 6 of the 158 were from non-natural habitats such as old fields and borders of old houses, and were apparently escaped or persisting.

Ecology

The species grows in several habitats, but prefers moist soil conditions such as wet meadows and edges of streams, rivers, ponds, and lakes. In the southern parts of its range chive is frequently associated with other species that are disjunct from more continuous arctic, subarctic and boreal regions such as on the rocky shores of northern Lake Huron and Lake Superior. In many parts of the range it is confined to specialized open habitats along periodically flooded rivershores. On some of the fluctuating shorelines of the St. John River in New Brunswick (where dams have not interfered with natural flow) it occurs with a remarkable assemblage of restricted and endangered species.

The flowers attract numerous insects, including bees (Apidae), hover-flies (Syrphidae) and butterflies (Lepidoptera). Plants are self-compatible, but a high level of outcrossing has been observed.

Use as Food

Chive has been collected from the wild for food purposes in the Old World since antiquity. Wild chive was also a popular food among Indigenous Peoples of North America. The plant has been grown in Europe at least since the 16th century, cultivation thought to have originated in Italy, spread to Germany, and then to other European countries. During the 19th century chives became very popular in Europe, particularly in French *haute cuisine*.

Chives have a delicate onion flavor. The tender, mild leaves are eaten raw or cooked in many dishes, including salads, soups, vegetables, sauces, meats, eggs, fish, butter, and cream cheese. Chopped chives make an exceptional garnish for salads and potato dishes, going well with sour cream (some cooks recommend cutting chives with scissors, and never chopping them). Many cooks maintain potted chive plants on sunny windowsills, cutting off as much as is needed for a dish in preparation (dried chives are tasteless). The flavor of chives is destroyed by prolonged heat, and so it is best added to cooking foods during the last 5 to 10 minutes. The processing industry freezes, freeze-dries, and dehydrates chives for use in packaged foods such as soup mixes, salad dressings,

cocktail dips, sour cream, and cottage cheese products. The bulbs are often pickled.

The sulphur compounds that give species of *Allium* their characteristic onion taste are considered beneficial to the circulatory, respiratory, and digestive systems. Chive contains much lower concentrations of these compounds than, for example, garlic (*Allium sativum*), and as a result it is used as a medicinal to a much lesser extent. It does however contain substantial amounts of vitamins A and C.

Most *Allium* species can cause distress to many animals when consumed in excess. Although chive is not an especially potent member of the onion group it has been reported to produce poisoning symptoms in horses, dogs, and other animals, and deer are said to avoid it. However, it is generally not considered to be a significant threat to animals.

Non-Food Uses

Chive plants are often used for edging flower beds because of their abundant foliage and attractive lavender flowers (see also Figure 4). Dried chive umbels are widely used in flower arrangements. The juice of the plant has sometimes been used as an insect repellent. In past times, Indians of the Great Basin region prepared a golden-brown dye from the skin of the bulbs.

Agricultural and Commercial Aspects

Chive is among the most universally grown of herbs. Estimates of world commercial cultivation range from as little as 1,000 ha/year to 24,000 ha. Chive cultivation is much more established in Europe, especially northern Europe, Italy, and Greece, than in North America.

Cultivars and Germplasm

Since chive is more widely consumed in Europe than elsewhere in the world, the greatest efforts at breeding cultivars and preserving germplasm have been made there. However, serious breeding of chive did not begin in Europe until the early 1960s, and as a result, cultivars are relatively variable. There are only a few hundred germplasm collections of chive and most of these are in Europe. Only a few dozen commercial cultivars are available, and in North America very frequently the chives that are grown are not named cultivars. There is a need for the breeding of improved varieties.

Prospects

The market demand for chives as an ingredient in commercial food products is fairly stable. On the other hand, there is growing demand for fresh chives, especially out-of-season. There is therefore good potential for greenhouse and hydroponic producers to supply grocery stores, restaurants, and caterers with a high-quality fresh product. Chive grows very well in hydroponic culture, and produces considerable material in a relatively small space. Fundamental to the requirement for breeding chive cultivars is the basic need for germplasm acquisition and a better appreciation of the classification of *A. schoenoprasum*.

Myths, Legends, Tales, Folklore, and Interesting Facts

- Charlemagne (742–814) was a Frankish king (the Franks were a Germanic people) who came to be Emperor of the West. To better the economy of his realm, he composed an edict, “The Capitulare,” which directed all those he governed to grow about 90 different kinds of plant wherever possible. Chives was among the edible plants that were ordered to be grown. Charlemagne’s list is one of the best documented early examples of agricultural policies.
- Romanian Gypsies used chives as part of their fortune telling rituals.
- In past centuries in Europe, it was believed that hanging dried bunches of chives around the house, especially suspended from ceilings or hung on bed posts, drove away evil influences and disease.
- Chives became so popular in Holland during the 19th century that farmers fed them to their cattle to produce a flavoured milk. Today, milk that has been flavoured as a result of cattle feeding on weedy forms of chive is considered to have a bad taste.
- Chives are more popular than their everyday consumption would suggest, and in home cooking they are often reserved for special meals. The Texas Department of Criminal Justice until very recently provided detailed on-line information on the last meal requests of executed murderers. Of 285 final meals between 1982 and 2002, the most elaborate was “two 16 oz. ribeyes, one lb. turkey breast (sliced thin), twelve strips of bacon, two large hamburgers with mayo, onion, and lettuce, two large baked potatoes with butter, sour cream, cheese, and chives, four slices of cheese or one-half pound of grated cheddar cheese, chef salad with blue cheese dressing, two ears of corn on the cob, one pint of mint chocolate chip ice cream, and four vanilla Cokes or Mr. Pibb.”
- Of the approximately 600 species of *Allium*, chive is the only one that is native to both the Old and New Worlds.

Sources of Additional Information

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Acknowledgments

W.J. Cody (review), B. Brookes (artwork).

He who bears chives
on his breath
Is safe from being
kissed to death.

—Marcus Valerius Martialis (from “Martial’s Epigrams,” about 80 AD; Martial was a witty Roman who invented the “epigram,” a short satirical poem typically with a clever last line)



Fig. 4. Basket of garden-grown chives. Photograph by Sharon and Gerry Channer.

Book Review

Revue de livre

Roslinni ugrupovannja visokogor'ja ukrajinskich Karpat.
[Plant communities of the Ukrainian Carpathian Highlands.]
Malinovs'kij, K.A. & V.V. Krichfalushij, 2002.
[by Malinovski, K. and V. Kricsfalusy, 2002.]
"Karpatskaja Vezha" Publishers, Uzhgorod. 243 p., 54 tables, 28 colour photos.
ISBN 966-8269-05-5 [hardcover] [In Ukrainian]
Price: \$30.00 (hardcover), available from the second author¹.



Based on over 1300 releves (vegetation samples) and using the Braun-Blanquet vegetation classification approach, the authors developed a classification of high-elevation plant communities of the Carpathian Mountains of western Ukraine. This area, known as Ruthenia, is the westernmost extent of the East Carpathian Flora, an important node in the central Carpathian Ranges that extend from the Czech Republic, Slovakia, through Ruthenia to Romania.

The book describes 51 plant associations (and 16 subassociations) that are grouped into 25 alliances, 25 orders and 14 classes. Seven associations and 10 subassociations are described as new. All of those units are dealing with alpine and subalpine vegetation above the forest line, and include one association of the krummholz formation. The treatment also includes azonal vegetation of rock chasmophytes, springs, seepy areas, wet meadows and peat formations. The main bulk of plants communities treated in this book belong to plant communities of open short-grass meadows, both on acidic and calcareous bedrock, and wet subalpine meadows with tall forbs and tall grasses.

If you imagine the Carpathian mountain range as a crayfish with its tail bent under its abdomen, Ruthenia would be at the junction of the thorax and the abdomen. From a phytogeographic point of view, this area combines East-Carpathian and West-Carpathian floristic elements. Within the last century, this area belonged to Austria-Hungary,

Czechoslovakia, Hungary, Soviet Union and the Ukraine, and so the botanical literature of this area is multilingual. Considering the close phytogeographic ties with Romania, the only real challenge in the task of over viewing the botanical literature of the area is linguistic.

The book itself is a linguistic challenge. The Ukrainian language is hard to read even if you have some basic reading knowledge of Russian. The English summary is not even two pages long and gives the reader only a little bit more than a small amount of supplemental information on the 16 newly described associations endemic to this area.

However, the 54 vegetation tables break any linguistic barrier the reader would might face with this book. The tables contain a full species list for each association with the cover values listed for each species in each single releve, and with the constancy values that summarize in how many releves the species occurred. The tables are constructed using the Braun-Blanquet school's conventions with the differential species segregated from the rest at the top of the species lists. They give a very good picture of vegetation even to those readers who cannot handle the Ukrainian azbuka (the Ukrainian alphabet - similar to the Russian one).

Adolf Ceska
Victoria, B.C.



¹ See http://individual.utoronto.ca/v_kricsfalusy/

New Executive Assistant / Nouvelle adjointe à la direction

Please note that **Vanda Wutske** is a new executive assistant of our Association. She is responsible for day to day operation while Mel Fischer continues to be busy with financial things. Welcome Vanda!

Veillez noter que **Vanda Wutske** vient se joindre à Mel Fischer en tant qu'adjointe à la direction de notre Association. C'est elle qui s'occupe maintenant du roulement quotidien des affaires alors que Mel Fischer conserve la gestion financière. Bienvenue Vanda!

Vanda Wutske
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Book Review wanted / Revue de livre demandée

Dickinson T. A., Metsger, D. A., Bull, J., and Dickinson R. 2004. The ROM Field Guide to Wildflowers of Ontario. Royal Ontario Museum and McClelland & Stewart Ltd., Toronto, 416 pp.