

P.1423

INTERNATIONAL ORGANIZATION OF PLANT BIOSYSTEMATISTS



io
pb

NEWSLETTER NO. 28

EDITED BY

L. Borgen & B. Jonsell

D.J. Crawford & C.A. Stace

Oslo 1997

ARTICLE IN PRESS

2018

10.1007/s11692-018-9500-0

© 2018 The Author(s)

https://doi.org/10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

10.1007/s11692-018-9500-0

ISSUED FROM

The Bergius Foundation, Royal Academy of Sciences, Stockholm
Botanical Garden & Museum, University of Oslo

Illustrations: Krok & Almquist, *Svensk Flora*, ed. B. & I. Jonsell, 27th ed. 1994
Bödtker, M., *Norsk Flora*, Illustrasjonsbind, 1970
Lindman, C.A.M., *Bilder ur Nordens Flora*, 1922
Curtis's Botanical Magazine, 1834

Graphic design & layout: Xtina Wootz

Printed by: GCS AS, Oslo, Norway, 1997

ISSN 0254-8844

© IOPB & The Authors

28 OCT. 1997

P.1423

IOPB NEWSLETTER NO. 28



REAL JARDIN BOTANICO
C. S. I. C.
BIBLIOTECA
ADQUIRIDO EN

Contents

Editors' Column

1	Editors' Column	3
2	News & Notes	4
3	Requests	5
4	The Profiles	6
	Biosystematics in Göteborg and Lund, Sweden today	
5	IOPB Chromosome Data 12	13
6	News from Molecular Biosystematists 8	20
7	Meetings – Past and Future	23
	VII IOPB Symposium, Amsterdam, Netherlands	
	Other meetings	
	Valdivia, Chile	
	Harare, Zimbabwe	
	Paris, France	
	Uppsala, Sweden	
8	Points of View	26
9	IOPB Executive and Council 1995–98	28
10	Changed Addresses & New Members	30



Contents

1	Editor's Column
2	News & Notes
3	Requests
4	The Profiles
5	Abstracts in Current and Past Issues
13	KOBB Chromosome Data 13
20	News from Molecular Biologists 20
23	Meetings - Past and Future
	VII KOBB Symposium Abstracts Other meetings Abstracts Human Genome Laboratory Genetic Services
26	Points of View
28	KOBB Executive and Council 1987-90
30	Changed Addresses & New Members



Editors' Column

Dear IOPB members,

1 Also this Newsletter has a pronounced Scandinavian flavour, not only through its editors which for the time being is inevitable, but more importantly through the contributions this time found under the standing heading "The Profile". In this issue biosystematic activities – in the broad sense we would like to take it – are presented from institutions at the universities of Göteborg (Gothenburg) and Lund. Although we are sure that much more of this kind can be told from Scandinavia we would very much like to see examples from other parts of the world as well. This holds true for the "News & Notes" too, where we have reported about some fresh Scandinavian theses. Similar information, particularly about books and theses, would be welcome from all over the world. You may well e-mail contributions to bengtj@bergianska.se – also as attached documents.

From all we have heard the new face and layout of the IOPB Newsletter was very well received – contrary views have at least not reached us. We editors would like to express our thanks to Xtina Wootz, Uppsala University Library, who put such inspired efforts into our Newsletter and continued to do it for the one you now have at hands.

When you read this the proceedings of the IOPB symposium in Tromsø should be out. We regret that it has taken a long time – in spite of all technical and electronic facilities of today publishing times seem rather to go the other way. You will find more about the Proceedings under "2. News and Notes".

The first circular for the IOPB symposium in Amsterdam August 1998 was sent out in the spring. You find some additional information under "7. Meetings". Before that meeting elections of IOPB executives and council will have to take place. With the next Newsletter, probably in January 1998, voting forms will be sent out. Now already we would like to request you to be active in that matter – do vote, and do before the 1st of January send in nominations to the President. In this Newsletter you will also find Executives and Council members – with updated addresses – and you may make your opinion about the composition. In Amsterdam important decisions about the future of IOPB have to be taken – see previous Newsletter under "8. Points of View" and a few comments in this one. We eagerly await more comments from members upon this important subject!

With all best wishes and a hope that very many of you are sending in the forms for taking part in the Amsterdam meeting.

Liv Borgen & Bengt Jonsell

News & Notes

2 Recently published

Three doctoral theses with biosystematical themes have in June 1997 been defended and published at Swedish universities, viz.

Black-Samuelsson, Sanna. 1997. Genetic variation and phenotypic plasticity in the rare plant species *Vicia pisiformis* L. and *V. dumetorum* L. (Fabaceae). Acta Univ. Agriculturae Sueciae. Silvestria 30. 37 pp. ISBN 91-576-5314-3. Summary published together with 5 papers printed or to be printed in international journals. Co-authors to one or more of those papers are S. Andersson, Lund and G. Eriksson, L. Gustafsson, P. Gustafsson, M. Lascoux & K. Lundkvist, Uppsala.

Lennartsson, Tommy. 1997. Demography, reproductive biology and adaptive traits in *Gentianella campestris* and *G. amarella*. Evaluating grassland management for conservation by using indicator plant species. Acta Univ. Agriculturae Sueciae, Agraria 46. 47 pp. ISBN 91-576-5253-8. Summary published together with 6 papers printed or to be printed in international journals. Co-authors to one or more of those papers are G. Oostermeijer, J. Van Dijk and H. van der Nijs, Amsterdam, P. Nilsson, Lund, J. Tuomi, Oulu & R. Svensson, Uppsala.

Runyeon, Helena. 1997. Variation in *Silene vulgaris* and *S. uniflora* (Caryophyllaceae): genetic diversity, gene flow and

habitat selection. 39 pp. Lund 1997. Published together with 5 papers printed or to be printed in international journals, three of them with H. C. Prentice as co-author.

IOPB Proceedings

The proceedings of the VI International IOPB Symposium held in Tromsø in 1995 have now appeared as Opera Botanica Vol. 132. The ordinary price is 750 Danish Crowns (approximately US\$ 108); Individual IOPB members at good standing may buy it at a reduced price DKK 550. You may mail your order to address "bengtj@bergianska.se". Its title corresponds to the symposium theme, "Variation and evolution in arctic and alpine plants". The contents are as follows.

DIVERSITY AND SPECIATION

Murray, D.F. Regional and local vascular plant diversity in the arctic.

Petrovsky, V.V. Areas of intensive plant speciation in the Beringian arctic shelf.

Yurtsev, B.A. Analysis of evolutionary differentiation in some key arctic-alpine taxa: *Dryas*, *Oxytropis* sect. *Arctobia* and *Taraxacum* sect. *Arctica*.

Stace, C.A., Gornall, R.J. & Ying, Shi. Cytological and molecular variation in apomictic *Hieracium* sect. *Alpina*.

Bayer, R.J. *Antennaria rosea* (Asteraceae) – a model group for the study of the evolution of polyploid agamic complexes

REPRODUCTIVE STRATEGIES

Tikhmenev, E.A. The reproductive features of the northern angiosperms as a factor of plant diversity and community stability.

Nordal, I., Hestmark, G. & Solstad, H. Reproductive biology and demography of

Papaver radicum – a key species in Nordic plant geography.

Philipp, M. Genetic diversity, breeding system and population structure in *Silene acaulis* (Caryophyllaceae) in West Greenland.

Pickering, C.M. Reproductive strategies and constraints of alpine plants as illustrated by five species of Australian alpine *Ranunculus*.

Bergstrom, D., Selkirk, P.M., Keenan, H.M. & Wilson, M. E. Reproductive behaviour of ten flowering plant species on subantarctic Macquarie Island.

Kudo, G. Sex expression and fruit set of an andromonoecious herb, *Peucedanum multivittatum* (Umbelliferae) along a snowmelt gradient.

Khodachek, E.A. Seed reproduction in arctic environments.

MOLECULAR APPROACHES

Bachmann, K. Nuclear DNA markers in plant biosystematic research.

Crawford, D.J. Molecular markers for the study of genetic variation within and between populations of rare plants.

Warwick, S.I. & Black, L.D. Molecular phylogenies from theory to application in *Brassica* and allies (tribe Brassiceae, Cruciferae)

ECOLOGY – NATURAL CONSTRAINTS AND HUMAN IMPACT

Razzhivin, V. Yu. Life form adaptations of vascular plants to the most extreme environments of the Asian arctic

Galen, C., Stanton, M., Shore, J.S. & Sherry, R.A. Source-sink dynamics and the effect of an environmental gradient on gene flow and genetic substructure of the alpine buttercup, *Ranunculus adoneus*.

Urbanska, K.M. Restoration ecology of alpine and arctic areas: are the classical concepts of niche and succession directly applicable?

Crawford, R.M.M. & Smith, L.C. Responses of some high arctic shore plants to variable lengths of growing season.

Wookey, P.A. & Robinson, C.H. Responsiveness and resilience of high arctic ecosystems to environmental change.

Requests

3 ... from Dr. Jan Kirschner

Institute of Botany, Academy of Sciences, CZ-25243 Průhonice 1, Czech Republic.

Fax: +420 2 6775 0031.

E-mail: kirschne@ibot.cas.cz

There are two projects based on a worldwide study of live plant material. They concern Juncaceae (a taxonomic monograph within the framework of IOPI – Species Plantarum project, A Flora of the World, 1997–1999) and the genus *Taraxacum* (a cpDNA study of the evolution within the genus). Any material, even a single specimen with viable seeds, or merely seeds from various parts of the world would mean a great help for the success of the projects. Please send the seeds or plants to the address given above.

The Profiles: Biosystematics in Göteborg and Lund, Sweden today

Göteborg

4

K. Persson & B. Erikson

In Göteborg studies related to traditional biosystematics started in the mid 1970s with two projects focusing on the families Liliaceae s. lat. and Papaveraceae. In 1974 Karin Persson moved to the University of Göteborg, Department of Systematic botany, from the Institute of Systematic botany at Lund, a centre of biosystematic research since the 1960s. At the University of Lund her main project concerned the *Artemisia maritima* complex in Europe and included a number of classical biosystematic methods such as chromosome studies, analyses of morphological variation within populations, crossing experiments, and reproductive studies (thesis for Ph.D. presented in 1974). In Göteborg she switched to monocots, starting a project on liliaceous plants in cooperation with Per Wendelbo, then Director of the Botanical Garden in Göteborg and an expert on the systematics of SW Asian plant genera with a special interest in bulbous plants. Their main scientific approach was generic problems in the family Hyacinthaceae. A number of genera were studied with an emphasis on karyological aspects, resulting in a series of publications, e. g. on *Bellevalia*, *Hyacinthus*, *Alrawia* (a genus described by the two coworkers), and *Hyacinthella*. After Per Wendelbo's untimely death in 1981, Karin Persson continued on her own or in cooperation with Jimmy Persson, with whom she has travelled on a number of extensive research expeditions above all in the East Mediterranean area (mainly Greece and Tur-

key). Her projects during later years have concerned evolution, systematics, karyology (including C-banding), and reproductive biology of bulbous and tuberous plants in the East Mediterranean and SW Asia, above all *Colchicum*, *Tulipa* and *Fritillaria*. Hybridization, important as part of the speciation processes in some of these genera, is investigated in spontaneous as well as artificial hybrids by means of e.g. chromosomal methods which will be complemented by genomic *in situ* hybridization techniques. Iranian species of the genus *Fritillaria* are also subject to studies of morphometry, cytology (C-banding) and reproduction by a doctoral student coming from Iran, Gholamreza Bakhshi Khaniki. More recently cooperation with two international projects has been initiated, "Bulbous and tuberous plants of Greece" (Botanical Institute and The Royal Veterinary and Agricultural University, Copenhagen, in cooperation with staff from Lund and Patras, Greece) connected to the ongoing Flora Hellenica project and intended to include morphological, karyological and molecular aspects; furthermore "Generic boundaries in Colchicaceae" with Joan Pedrola-Monfort and other researchers from Jardin Botanic Marimurtra, Blanes and Javier Fuertes-Aguilar, Real Jardin Botanico, Madrid, Spain, which will include analyses of genetic variation by means of isoenzymes, RAPDs, karyology and morphology. The latter project is moreover connected to a recently developing project "Phylogenetic analysis of the family Colchicaceae" at the Department of Botany, University of Austin, Texas.

Biosystematic research in the subfamily Fumarioideae of Papaveraceae was started by Magnus Lidén in the mid 1970s with work on a synopsis of the subfamily and a monograph

of the tribe *Fumarieae* (thesis presented in 1986), and continued by Åslög Dahl with a thesis (1990) on the genus *Hypecoum*. Both made use of morphologic and cytologic studies of very large living materials, and the latter included extensive artificial crossing experiments. Åslög Dahl has later turned to studies on the evolution of breeding systems and reproductive strategies of wind-pollinated trees, e.g. *Betula pendula*, *Corylus avellana* and *Ulmus glabra*. Magnus Lidén on the other hand has continued work in the Papaveraceae, concentrating on the large genus *Corydalis* (c. 430 species), at first the tuberous species which have only recently been published in the form of a book together with Henrik Zetterlund of the Botanical Garden, Göteborg. Most of the other groups are planned to be monographed during the years to come in cooperation with Su Zhi-Yun, Kunming. Magnus Lidén and coworkers have also devoted studies on diverse phylogenetic aspects of Fumarioideae in general and the genus *Corydalis* in particular by means of e.g. ITS and the plastid gene *rps 16* intron.

Molecular studies also comprised the main bulk of Bengt Oxelman's studies in the genus *Silene* (thesis 1995). Phylogenetic reconstructions in the *S. sedoides* group were based on RAPD patterns, sequences from the ITS sections of nuclear rDNA, as well as on morphological data. Together with Magnus Lidén, Oxelman also used rDNA sequences to construct a phylogeny for selected OTUs in the tribe *Sileneae*, comparing the results with structural data, with the aim to circumscribe natural genera and sections. These studies have recently been complemented by a phylogeny of the *rps 16* intron in the same tribe. Bengt Oxelman has now moved to the University of Stockholm.

A biosystematic project to gain knowledge about the reproductive biology of the genus *Campanula* was initiated by Yvonne Nyman in the mid 1980s. The investigation was based on studies of flower morphology and flower development, and a large number of crossing ability tests as well as pollen germinability tests. A detailed study on the function of the pollen collecting hairs was also made. From the results obtained conclusions were drawn about reproductive strategies within species. The project was completed with a Ph.D. thesis in 1994.

Fanny Astholm is about to complete her thesis on the South American, Andean genus *Alonsoa* (Scrophulariaceae). The genus comprises about 16 species of perennial herbs and subshrubs. The herbaceous species, in particular, are widespread and highly variable morphologically, and biosystematic studies have been used extensively to solve some of the taxonomical problems. Divergence in the position of the reproductive organs within the flower and thereby reproductive isolation is likely to be the reason for the ongoing speciation within the complex studied. By conducting extensive greenhouse experiments she also showed that naturally occurring pink-flowered plants are hybrids between red- and white-flowered species, and that the hybrid has lowered fertility.

In 1994, Bente Eriksen was granted a post-doctoral fellowship by the Swedish Natural Science Research Council (NFR) and initiated studies on the genus *Potentilla* (Rosaceae) in Fairbanks, Alaska, USA. Since the spring of 1996 she has been employed as a research associate at the department. A number of species of *Potentilla* have been shown to be facultative apomicts and, as such, are obvious cases for biosystematic inves-

tigation. Presence or absence of apomixis is established for the various species under study and, in case of apomixis, the relation between sexual and asexual reproduction is quantified within individuals by using advanced microscopic techniques and molecular markers for paternity analyses. Apomixis and ploidy level variation seem to interact and the mechanism is under investigation. Autopolyploidization in diploid sexuals may trigger both development of apomixis and ploidy level variation within populations. In situ hybridization techniques will reveal the presence of autopolyploids in natural populations. Allopolyploids resulting from hybridization are often postulated to be the main cause of taxonomical problems within *Potentilla*. The role of hybridization will be studied by means of artificial interspecific crossing programs and molecular techniques.

SCIENTIFIC PUBLICATIONS MAINLY FROM THE 1990'S

- Asthalm, F. & Nyman, Y. 1994. Morphometric variation in the *Alonsoa meridionalis*-complex. - *Pl. Syst. Evol.* 193: 53-68.
- Bakhshi Khaniki, G. 1995. Meiotic studies on some Iranian *Centaurea* (Compositae). - *Cytologia* 60: 341-346.
- Bakhshi Khaniki, G. 1996. Karyological studies in six taxa of the genus *Centaurea* (Compositae). - *Bot. Chron.* 12: 55-65.
- Bakhshi Khaniki, G. 1997. *Fritillaria atrolineata* (Liliaceae), a new species from Iran. - *Edinb. J. Bot.* (in press).
- Bakhshi Khaniki, K. 1997. *Fritillaria chlororhabdota* (Liliaceae), a new species from Iran. - *Herbertia* (in press).
- Bakhshi Khaniki & Persson, K. 1997. Nectary morphology in South West Asian *Fritillaria* (Liliaceae). - *Nord. J. Bot.* (submitted).
- Dahl, Å.E. 1989. Taxonomic and morphological studies in *Hypecoum* sect. *Hypecoum* (Papaveraceae). - *Pl. Syst. Evol.* 163: 226-280.
- Dahl, Å.E. 1990. Infrageneric division of *Hypecoum* L. (Papaveraceae). - *Nord. J. Bot.* 10: 129-140.
- Dahl, Å.E. 1992. Artificial crossing experiments in *Hypecoum* L. sect. *Hypecoum* (Papaveraceae). *Nord. J. Bot.* 12: 13-30.
- Dahl, Å.E. 1993. *Hypecoum* L. In: *Flora Europaea*, vol. 1 (2nd ed.), pp. 302-303.
- Dahl, Å.E. 1997. *Hypecoum* L. In: Jonsell, B. & al. (eds.), *Flora Nordica*, vol. 1 (in press).
- Dahl, Å.E. & Fredrikson, M. 1996. The timetable for development of maternal tissues sets the stage for male genomic selection in *Betula pendula*. - *Amer. J. Bot.* 83: 895-902.
- Dahl, Å.E. & Strandhede, S.O. 1996. Predicting the intensity of the birch pollen season. - *Aerobiologia* 12: 97-106.
- Dahl, Å.E., Wassgren, A.-B. & Bergström, G. 1990. Floral scents of *Hypecoum* L. sect. *Hypecoum* (Papaveraceae): Chemical composition and relevance to taxonomy and mating system. - *Biochem. Syst. Ecol.* 18: 157-168.
- Eriksen, B., Molau, U. & Svensson, M. 1993. Reproductive strategies in two arctic *Pedicularis* species (Scrophulariaceae). - *Eco-graphy* 16: 154-166.
- Eriksen, B. 1996. Mating systems in two species of *Potentilla* from Alaska. - *Folia Geobot. Phytotax.* 31: 333-344.
- Eriksen, B. 1997. Morphometric analysis of Alaskan members of the genus *Potentilla* L. sect. *Niveae* (Rosaceae). - *Nord. J. Bot.* 17 (in press).
- Fukuhara, T. & Lidén, M. 1995a. Pericarp anatomy in Fumariaceae. - *Bot. Jahrb. Syst.* 117: 499-530.

- Fukuhara, T. & Lidén, M. 1995b. Seed coat anatomy and phylogeny in Fumariaceae. - Bot. J. Linn. Soc. 119: 323-365.
- Lidén, M. 1991a. Notes on *Corydalis* sect. *Corydalis* in the Baltic area. - Nord. J. Bot 11: 129-133.
- Lidén, M. 1991b. De svenska nunneörterna. - Sv. Bot. Tidskr. 85: 65-69.
- Lidén, M. 1991c. New tuberous species of *Corydalis* (Papaveraceae). - Willdenowia 21: 175-79.
- Lidén, M. 1991d. Phenetics and *Fumaria* - a comment. - Pl. Syst. Evol. 176: 221-225.
- Lidén, M. 1991e. Revision of *Corydalis* sect. *Fumarioides*, part I. - Rheedeia 1: 29-35.
- Lidén, M. 1992a. Evolution and systematics of seed plants. In: Behnke, H.-D., Esser, K., Kubitzki, K., Runge, M. & Ziegler, H., (eds.), Progress in Botany 53: 282-317. - Springer Verlag, Berlin, Heidelberg.
- Lidén, M. 1992c. *Fumaria petteri* ssp. *calcarata* Lidén & Soler, first record from Almeria. - Anal. Jard. Bot. Madrid. 50: 257.
- Lidén, M. 1993a. Pteridophyllaceae. In: Kubitzki, K. (ed.), Families and genera of vascular plants, vol. 2. - Springer-Verlag.
- Lidén, M. 1993b. Fumariaceae. In: Kubitzki, K. (ed.), Families and genera of vascular plants, vol. 2. Springer-Verlag.
- Lidén, M. 1993c. *Corydalis cornuta*, a Himalayan/Afro-montane disjunct species. - Opera Bot. 121: 4546.
- Lidén, M. 1995a. A revision of *Corydalis* sect. *Fumarioides* Lidén. Part II. - Rheedeia 5: 1-36.
- Lidén, M. 1995b. Papaveraceae. In: Harling, G. & Andersson, L. (eds.), Flora of Ecuador 52. 13 pp.
- Lidén, M. 1996. New taxa of tuberous *Corydalis* species. - Willdenowia 26: 22-34.
- Lidén, M. 1997f. Fumarioideae. In: Jonsell, B. & al. (eds.), Flora Nordica, vol. 1 (in press).
- Lidén, M., Fukuhara, T., & Axberg, T. 1995. Phylogeny of *Corydalis*, ITS and morphology. - Pl. Syst. Evol. Suppl. 9: 183-188.
- Lidén, M., Fukuhara, T., Rylander, J., & Oxelman, B. 1997. Phylogeny and classification of Fumariaceae, with emphasis on *Dicentra* s.l. based on the plastid gene *rps16* intron. - Pl. Syst. Evol. (in press).
- Lidén, M. & Staaf, R. 1995. Embryo growth in tuberous *Corydalis* species. - Bull. Torrey Bot. Club 122: 312-313.
- Lidén, M. & Zetterlund, H. 1997. *Corydalis*, a gardener's guide and a monograph of the tuberous species. - AGS Publication Ltd. Friary Press, Dorset. 144 pp.
- Nyman, Y. 1991. *Campanula occidentalis* (Campanulaceae), a new species from the Canary Islands. Willdenowia 20: 113-116.
- Nyman, Y. 1991. Crossing experiments within the *Campanula dichotoma* group (Campanulaceae). - Pl. Syst. Evol. 177: 185-192.
- Nyman, Y. 1992. Pollination mechanisms in six *Campanula* species (Campanulaceae). - Pl. Syst. Evol. 181: 97-108.
- Nyman, Y. 1992. Reproduction in *Campanula afra* (Campanulaceae): mating system and the role of the pollen-collecting hairs. - Pl. Syst. Evol. 183: 33-41.
- Nyman, Y. 1993. The pollen-collecting hairs of *Campanula*. I. Morphological variation and the retractive mechanism. - Amer. J. Bot. 80: 1427-1436.
- Nyman, Y. 1993. The pollen-collecting hairs of *Campanula*. II. Function and adaptive significance in relation to pollination. - Amer. J. Bot. 80: 1437-1443.
- Oxelman, B. 1991. *Silene diversifolia* Otth and related species in Europe. In: Newton, M. E. (ed.), Flora Europaea: Notulae sys-

- tematicae ad Floram European spectantes, series 2. no. 4. - Bot. J. Linn. Soc. 106: 115-117.
- Oxelman, B. 1991. A revision of the *Silene sedoides*-group. - Willdenowia 25: 143-169.
- Oxelman, B. 1996. RAPD patterns, nrDNA ITS sequences and morphological patterns in *Silene* section *Sedoideae* (Caryophyllaceae). - Pl. Syst. Evol. 201: 93-116.
- Oxelman, B. & Lidén, M. 1995a. Generic boundaries in the tribe *Sileneae* (Caryophyllaceae) as inferred by nuclear rDNA sequences. - Taxon 44: 525-542.
- Oxelman, B. & Lidén, M. 1995b. The position of *Circaeaster* - evidence from nuclear ribosomal DNA. - Pl. Syst. Evol. Suppl. 9: 189-193.
- Oxelman, B., Lidén, M., & Berglund, D. 1997c. Chloroplast *rps16* intron phylogeny of the tribe *Sileneae* (Caryophyllaceae). - Pl. Syst. Evol. (in press).
- Persson, J. & Persson, K. A new species of *Fritillaria* from Turkey. The New Plantsman (submitted).
- Persson, K. 1988. New species of *Colchicum* (Colchicaceae) from the Greek mountains. - Willdenowia 18: 29-46.
- Persson, K. 1989. The genus *Tulipa* in Greece: taxonomy, karyology and hybridization. - Abstr. 6th OPTIMA Meeting Delphi, p. 32.
- Persson, K. 1991. *Colchicum* L., in A. Strid & Kit Tan (ed.), Mountain Flora of Greece 2: 650-662. Edinburgh Univ. Press.
- Persson, K. 1991. *Tulipa* L., in A. Strid & Kit Tan (ed.), Mountain Flora of Greece 2: 667-672. Edinburgh Univ. Press.
- Persson, K. 1992. Liliaceae subfam. Wurmbacoideae Buxbaum, in K. H. Rechinger (ed.), Flora Iranica 170: 1-40, tt. 1-14. - Graz.
- Persson, K. 1993. Reproductive strategies and evolution in *Colchicum*. - Proc. 5th OPTIMA Meeting, pp. 394-414. Istanbul.
- Persson, K. 1993. *Colchicum feinbruniae* sp. n. and allied species in the Middle East. - Israel J. Bot. 41: 75-86.
- Persson, K. 1997. The genus *Colchicum* in Turkey. 1. New species. - Edinb. J. Bot. (in press).
- Persson, K. 1997. The genus *Colchicum* in Turkey. 2. Revision of the large-leaved autumnal species. Edinb. J. Bot. (in press).
- Persson, K. & Persson, J. 1992. A new species and additional chromosome counts of *Hyacinthella* in Turkey. - Nord. J. Bot. 12: 615-620.
- Su Z.-Y. & Lidén, M. 1997. *Corydalis* in China I: Some new species. - Edinb. J. Bot. 54: 55-84.

Lund

Mikael Hedrén

At the University of Lund there is a long-standing tradition of experimental plant biology. Below, I will describe some on-going projects at the department of systematic botany. However, many significant projects have been carried out at other departments as well, notably the department of genetics where much of biosystematic studies is still done today. Yet, because the undersigned has moved to Lund recently and does not have the full view of projects being performed at other departments at the University I will give a short review of the projects that are performed at "my" department, that of systematic botany.

The full professor at the department is Dr. Honor Prentice, who came down to Lund from Uppsala University about four years ago. Most

of Honor's work is related to how genetic diversity is structured within species and how this structuring correlates to other parameters such as microhabitat, geography and immigration history to Scandinavia after the last ice age. Her field work has mainly been performed on the Baltic Island of Öland where there is a well-equipped field station run by the University of Uppsala. Most taxa studied by Honor are in the Caryophyllaceae, among others the disjunct *Cypsophila fastigiata*, and *Silene vulgaris* s.l., including the narrow-endemic *Silene maritima* ssp. *petraea* that is confined to Öland and Gotland. The *Silene* taxa on Öland and Gotland have also been studied by one of Honor's Ph.D. students, Helena Runyeon, who just defended her thesis on biodiversity, immigration history, differentiation, hybridization and other aspects of the biology of these plants. Honor is also the supervisor of other Ph.D. students at the department. Gabrielle Rosquist makes various studies, including allozyme analyses of the two taxa of *Anthericum* that occur in Sweden. One of the taxa, *A. liliago* is a tetraploid, and an exciting part of the the project is to trace the origin of this tetraploid from diploid populations. This will be an interesting story once all data are available.

Olle Jonsson studies the genetic structure of some clonal plants, mainly in the Cyperaceae. An interesting part of the project, which is in progress, is to compare tussock-forming clonal plants with long-rhizomatous ones.

Ursula Malm just started her studies on genetic variation in *Silene dioica* in Fennoscandia.

Åsa Olsson studies genetic variation in the genus *Rosa*. Åsa works with characters from RAPD analyses and her work is done in cooperation with Dr. Hilde Nybom at the Bals-

gård station of the Swedish Agricultural University.

Dr. Björn Widén, now professor at the department, has a number of long-term studies with which he is still working actively. The first of these is centered around the *Helianthemum oelandicum* complex which is endemic on Öland. After describing the population biology, flowering biology and geographic distribution of different flowering strategies on the Great Alvar of Öland, Björn supplements his earlier studies with studies of genetic structuring of variation as revealed by enzyme electrophoresis. These studies also include comparison with taxa related to *H. oelandicum* from Central and Southern Europe.

Another big project is describing the population biology and ecology of the composite *Senecio integrifolius* which is threatened in Sweden and dependent on proper management by grazing for its survival. The project involves long-term studies of the populations in the field as well as greenhouse experiments, artificial crossing experiments etc. Recently, a replantation experiment was also initiated to find out whether it is possible to reintroduce plants to former localities.

A third project is aimed at understanding differentiation processes among indigenous *Brassica* populations on Crete. These cabbages are polymorphic with highly differentiated local populations and are often treated as several different species. Compared to Northern Europe that was glaciated until about 10.000 years ago, the Mediterranean basin offers study populations with a much longer continuous history and the Crete populations of *Brassica* are believed to have survived the last glaciation *in situ*. The plants often grow on inaccessible rocky slopes and

populations may be very small. Questions asked are how differentiated the populations are genetically and if there is correspondence between morphological and genetic characters, furthermore how fast morphologically distinct populations may arise and the genetic back-ground to the morphological differences. The practical work involves a lot of experimental crosses in the greenhouse and Björn has now got a couple of thousands of F1:s, F2:s, backcrosses, etc. in cultivation, quite an impressive sight! The material is also analyzed for allozyme variation. Björn has also a number of Ph.D. students. Helena Persson studies clonal structure and genetic variation in hazel, *Corylus avellana*, on Öland. Her studies also include comparison with populations from mainland Sweden and Central Europe.

Katarina Schiemann studies demography and genetic variation in a couple of Scandinavian Fabaceae, including *Lathyrus vernus*. A considerable part of the study also includes cultivation experiments in the garden.

Dr. Stefan Andersson study ecotypic differentiation, quantitative genetics, and inheritance patterns of certain characters in various Scandinavian Asteraceae. Stefan recently got a long-time support for his research from the Swedish Natural Research Council. He also supervice one Ph.D. student, Patrik Waldman, who is studying the two Swedish species of *Scabiosa*, *S. columbaria* and *S. canescens*, for genetic variation and quantitative genetics in a natural conservacy context.

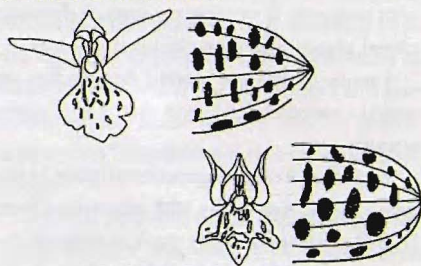
Dr. Nils Cronberg studied the genus *Sphagnum* for his thesis in which he used allozyme data to describe species delimitation, hybridization and genetic variation patterns. His present research deals with

genetic variation at all possible levels, from clonal structure to circumpolar geographic variation, in the widespread moss *Hylocomium splendens*.

Dr. Gertrud Dahlgren is still an active research associate at the department, although she retired from her professorship almost two years ago. Her present research has been in *Ranunculus*, subgenus *Batrachium*, but we will see what she comes up with next!

My own interests are at present in species delimitation and speciation processes in various groups of wild plants occurring in Fennoscandia. One of the groups I am studying is the *Carex flava* complex in which certain endemic or near-endemic taxa has been described. A more recent project, which will be continued, is the speciation patterns in the orchid genus *Dactylorhiza*, where allo-tetraploid taxa seem to evolve repeatedly from more-or-less the same set of diploid ancestors. So far I have used allozyme data for these projects, but I will now use DNA characters to get a more detailed picture of the evolution in *Dactylorhiza*.

Summing up some of the ongoing projects in the sphere of biosystematics at the department, I find quite a broad spectrum of research. This is also clear from a visit in our coffee room, which is certainly a very stimulating place for scientific discussions as well as other matters of life.



DACTYLORHIZA MACULATA: SSP. MACULATA; SSP. FUCHSI.



IOPB Chromosome Data 12

5

edited by Clive A. Stace
Department of Botany
University of Leicester
Leicester LE1 7RH
England.

E-mail: cas7@le.ac.uk. Please send contributions to Professor Stace at the above address (preferably by e-mail, but failing that on a 3.5 inch microdisc with text in ASCII-file and a printed copy) using the *exact layout* of the present list and stating whether or not you are a member of IOPB. Neither proofs nor reprints will be made available, but the editor will acknowledge receipt of contributions and raise queries with authors if necessary.

Reports by:

- **Jacques Cayouette**, Centre de recherches de l'Est sur les céréales et oléagineux, Agriculture et agroalimentaire Canada, édifice Wm Saunders, F.E.C., Ottawa, Ont., Canada K1A 0C6. Les spécimens témoins sont déposés à DAO ou à QFA. All localities in Canada.

CYPERACEAE

Carex adelostoma Krecz. $2n = ca\ 106$. Québec: région du lac Chavigny, lac au sud du lac Chavigny, extrémité sud, vallée de la charge ($57^{\circ}59'N\ 75^{\circ}05'W$), rives rocheuses du ruisseau, JC J82-230-1 (DAO 700009,

700013, 700014).

C. buxbaumii Wahlenb. $2n = 106$ (39 II + 7 IV; 33 II + 10 IV; 31 II + 11 IV; 29 II + 12 IV; 2 I + 28 II + 12 IV; 25 II + 14 IV).

Québec: comté de Gaspé, rivière Dartmouth, fosse "Snake", platière de gravier et de sable, JC J85-138-1 (DAO 700006, 700007, 700008).

C. lenticularis Michx. $n = 44$. Québec: région du lac Chavigny, lac au sud du lac Chavigny, rive nord, en bordure d'un esker ($58^{\circ}02'30''N\ 75^{\circ}04'00''W$), rives sablonneuses d'un lac asséché, JC J82-297-1 (DAO 700012).

C. limosa L. $2n = 64$. Québec: comté de Saguenay, Ilets-Jérémie, baie des Ilets, vers la pointe E et la sortie de la baie ($48^{\circ}53'50''N\ 68^{\circ}45'45''W$), zone de contact entre un marécage salé et la décharge d'un marécage d'eau douce, JC J79-178-1 (QFA 393181).

C. rostrata Stokes x *C. saxatilis* L. $2n = 80$ (30 II + 4 III + 2 IV; 2 I + 37 II + 1 IV; 38 II + 1 III). Nouveau-Québec: environs du lac Wasatimis, dans la partie nord-ouest du lac Bienville ($55^{\circ}15'N\ 72^{\circ}12'W$; UTM 18UXS768266), sur flanc de petite dune le long du rivage du lac, aux endroits saisonnièrement inondés, avec les deux parents présumés, P. Morisset, J. Deshayes, R. Pelletier & J. Murdock 84-74-1 (DAO 700004, 700010).

C. utriculata Boott. $n = 41$. Québec: comté de Saguenay, Pointe-au Boisvert ($48^{\circ}34'25''N\ 69^{\circ}10'05''W$), tourbière littorale à *Menyanthes*, *Carex paleacea*, JC J79-174-1 (QFA 393180); $2n = 81$ (39 II + 1 III, 1 I + 40 II). same locality, JC J79-175-2 (QFA).

C. viridula Michx. subsp. *viridula*. $n = 36$. Québec: comté de Saguenay, Pointe-des Monts ($49^{\circ}19'20''N\ 67^{\circ}22'20''W$), au fond

d'une petite anse, avec *Myrica gale* et *Scirpus rufus*, JC J79-154 (QFA 419360, DAO 700002).

- **Jacques Cayouette & Marcel Blondeau**, Centre de recherches de l'Est sur les céréales et oléagineux, Agriculture et agroalimentaire Canada, édifice Wm Saunders, F.E.C., Ottawa, Ont., Canada K1A 0C6, and 2400 Chemin Ste-Foy, Ste-Foy, Québec, Canada G1V 1T2. Les spécimens témoins sont déposés à DAO. All localities in Canada.

CYPERACEAE

Carex rufina Drejer. 2n = 88. Territoires du Nord-Ouest: district de Keewatin, Iles Belcher (île Flaherty), Sanikiluaq (56°32'N 79°14'W; UTM 17VPN 109 608), rivage d'un lac, entre les cailloux, MB SK89295a (DAO 700015).

POACEAE

Arctophila fulva (Trin.) Rupr. 2n = 42. Territoires du Nord-Ouest: district de Keewatin, Iles Belcher (île Flaherty), environs de Sanikiluaq (56°32'N 79°14'W; UTM 17VPN 065723), au bord d'un petit étang à 350 m du rivage, MB SK89363a (DAO 700011).

- **C. Gervais, J. Gagnon & R. Trahan**, Direction de la conservation et du patrimoine écologique, Ministère de l'Environnement et de la Faune du Québec, 2360, ch. Ste-Foy, Ste-Foy, Québec, Canada, G1V 4H2. Live material was collected by the first two authors and by: J. Labrecque and C. Lavoie (above address); S. Lamoureux, Fleurbec, St-Henri-de-Lévis, Québec, Canada; M. Garneau and C. Roy, Louis-Marie Herbarium (QFA), Ste-Foy, Québec, Canada; N. Dignard, Québec Herbarium

(QUE), Ste-Foy, Québec, Canada, and M.J. Oldham, Ontario Natural Heritage Centre, Peterborough, Ontario, Canada. Vouchers in QFA. Numbers in brackets correspond to greenhouse accession numbers and identify some of the voucher specimens. All localities in Canada.

JUNCAGINACEAE

Triglochin debile (Jones) Löve & Löve. 2n=c.96. Ontario: North Dorchester (Middlesex), saline highway interchange, M.J. Oldham, 17665, 28-07-1995, (95-13). 2n=96. Ontario: Sturgeon River, 0.9 km west of Seine River (Rainy River), roadside ditch, M.J. Oldham & W. Bakowsky, 17847, 06-08-1995, (95-46).

Triglochin elatum Nutt. 2n=c.142. Québec: filet Canuel, rive sud (Rimouski), C. Gervais, 17-08-1995, (95-190)(from seeds).

2n=c.144. Québec: Bridgeville (Gaspé-Est), lagune de Barchois, marais salé, M. Garneau & J. Labrecque, 92-102M, 06-08-1992, (92-163)(from seeds of a herbarium specimen); Havre-Aubert (îles-de-la-Madeleine), lagune du Bassin, marais salé, C. Roy & G. Lavoie, 92-2182-C, 18-08-1992 (*in situ* fixation); Havre-Aubert (îles-de-la-Madeleine), lagune du Bassin, marais salé, J. Gagnon & S. Pereira, 95-120, 29-08-1995, (95-95); Havre-Aubert (îles-de-la-Madeleine), tourbière minérotrophe du Bassin, J. Gagnon & S. Pereira, 95-126, 29-08-1995, (95-112); Saint-André-de-Kamouraska (Kamouraska), rive de l'estuaire maritime, C. Gervais, 05-09-1993, (93-31)(from seeds); Brador, (Saguenay), M. Garneau & P. Morisset, 94-818M, 19-08-1994, (94-20); Blanc-Sablon, (Saguenay), M. Garneau & P. Morisset, 94-786M, 15-08-1994, (94-26); Blanc-Sablon, (Saguenay), M. Garneau & P.

- Morisset, 94-783M, 15-08-1994, (94-30).
 2n=c.148. Québec: Rivière-Ouelle (Kamou-raska), rochers en bordure du fleuve, C. Gervais, 04-08-1995, (95-12).
 2n=c.150. Québec: Rivière-Ouelle (Kamou-raska), rochers en bordure du fleuve, C. Gervais, 04-08-1995, (95-17); Blanc-Sablon, (Saguenay), M. Garneau & P. Morisset, 94-784M, 15-08-1994, (94-33); Brador, (Saguenay), M. Garneau & P. Morisset, 94-819M, 19-08-1994, (94-21).
 2n=c.156. Québec: Blanc-Sablon, (Saguenay), M. Garneau & P. Morisset, 94-785M, 15-08-1994, (94-35).
- Triglochin elatum* Nutt. x *T. gaspense* Lieth & D. Löve (backcrosses with other hybrids?).
 2n=c.126. Québec: îlet Canuel, rive sud (Rimouski), C. Gervais & M. Garneau, 17-08-1995, (95-52).
- Triglochin elatum* Nutt. x *T. gaspense* Lieth & D. Löve (backcrosses with *T. elatum*).
 2n=c.138. Nouveau-Brunswick: Lamèque, C. Gervais, 08-08-1992, (92-158)(from seeds).
- Triglochin elatum* Nutt. x *T. palustre* L. (unreduced pollen?). 2n=c.96. Québec: baie de Rupert (Nouveau-Québec), batture maritime au nord-ouest de la pointe Lefavre, J. Gagnon, 2634, 06-08-1991, (95-8)(from seeds).
- Triglochin gaspense* Lieth & D. Löve. n=c.48. Québec: Parc national de Forillon (Gaspé-Est), marais salé de la baie de Penouille, S. Lamoureux & J. Labrecque, TG-14-1, 06-08-1994, (94-11).
 2n=96. Québec: Rivière-Pentecôte (Saguenay), embouchure de la rivière Riverin, N. Dignard, 95-644, 25-08-1995, (95-74); Étang-du-Nord (îles-de-la-Madeleine), lagune du Havre aux Basques, marais salé, J. Gagnon, 94-77, 08-09-1994, (94-42).
 2n=c.96. Québec: Havre-Aubert (îles-de-la-Madeleine), lagune du Havre aux Basques, marais salé, M. Garneau, J. Gagnon, G. Lavoie & C. Roy, 92-200M, 23-08-1992, (92-133A); Havre-Aubert (îles-de-la-Madeleine), lagune du Havre aux Basques, marais salé, M. Garneau, J. Gagnon, G. Lavoie & C. Roy, 92-200M, 23-08-1992, (92-147) (from seeds); Cacouna-Sud (Rivière-du-Loup), marais salé à l'est du Gros-Cacouna, S. Lamoureux & J. Labrecque, TG-5-1, 04-08-1994, (94-12); Saint-Siméon-Est (Bonaventure), battures maritimes, S. Lamoureux & J. Labrecque, TG-25-1, 20-08-1994, (94-15).
- Triglochin gaspense* Lieth & D. Löve x *T. elatum* Nutt. (backcrosses with *T. gaspense*).
 2n=c.99. Québec: Havre-Aubert (îles-de-la-Madeleine), lagune du Bassin, marais salé, C. Roy & G. Lavoie, 92-2181-C, 18-08-1992 (*in situ* fixation); Havre-Saint-Pierre, coulée à Paul (Saguenay), rivage maritime, S. Lamoureux & J. Labrecque, s.n., 10-08-1995, (95-22A); Baie-Saint-Paul, (Charlevoix-Ouest), rivage de l'estuaire maritime, au sud-ouest du quai, S. Lamoureux & J. Labrecque, s.n., 07-08-1995, (95-18); Petit-Pabos, (Gaspé-Est), marais salé de la baie, S. Lamoureux & J. Labrecque, TG-18-1, 18-08-1994, (94-09).
 2n=c.102. Québec: îlet Canuel, rive sud, (Rimouski), C. Gervais & C. Roy, 17-08-1995, (95-37A, 95-51); Douglstown, (Gaspé-Est), marais salé à l'embouchure de la rivière Saint-Jean, S. Lamoureux & J. Labrecque, TG-16-1, 07-08-1994 (94-13); Rimouski (Rimouski), marais salé à l'embouchure de la rivière Rimouski, S. Lamoureux & J. Labrecque, TG-10-1, 05-08-1994, (94-08); Saint-Majorique (Gaspé-Est), marais salé du bassin nord-ouest de la

baie de Gaspé, S. Lamoureux & J. La-brecque, TG-15-1, 06-08-1994, (94-14);

2n=c.105. Québec: Baie de Moisie (Saguenay), embouchure d'un ruisseau au nord de l'anse Le Cormoran, S. Lamoureux & J. Labrecque, s.n., 12-08-1995, (95-20).

Triglochin gaspense Lieth & D. Löve x (*T. gaspense* x *T. elatum*). 2n=c.108. Québec: Havre-Aubert (îles-de-la-Madeleine), baie du Havre aux Basques, marais salé, M. Garneau & G. Lavoie, 92-202M, 23-08-1992, (92-134).

Triglochin gaspense Lieth & D. Löve x *T. elatum* Nutt. 2n=120. Québec: Havre-Aubert (îles-de-la-Madeleine), lagune du Havre aux Basques, marais salé, M. Garneau & G. Lavoie, 92-218M, 25-08-1992, (92-135).

2n=c.120. Québec: Havre-Aubert (îles-de-la-Madeleine), lagune du Bassin, marais salé, M. Garneau, 92-202M, 23-08-1992, (92-146)(from seeds).

n=61, 2n=122. Québec: Grosse-île, anse au Sable, (îles-de-la-Madeleine), marais salé, J. Gagnon, H. Chevrier & A. Richard, 95-151, 02-09-1995, (95-111).

2n=c.123. Québec: archipel de Mingan, île Saint-Charles, (Saguenay), lac Salé, S. Lamoureux & J. Labrecque, s.n., 11-08-1995, (95-21).

2n=c.124. Québec: îlet Canuel, rive sud (Rimouski), M. Garneau, 95-141M, 11-08-1995, (95-43).

Triglochin palustre L. 2n=24. Québec: Lauzon, anse au Sauvage (Lévis), rive de l'estuaire fluvial, J. Gagnon, 95-113, 17-08-1995, (95-47); îlet Canuel, pointe ouest (Rimouski), C. Gervais & C. Roy, 16-08-1995, (95-50). 2n=37. Québec: Étang-du-Nord, (îles-de-la-Madeleine), lagune du Havre aux Basques, marais salé, J. Gagnon, 08-09-1994, (94-

38, 94-41); Havre-Aubert (îles-de-la-Madeleine), lagune du Bassin, marais salé, J. Gagnon & S. Pereira, 95-117, 29-08-1995, (95-113).

Triglochin maritimum L. s.s. 2n=48. Québec: Réserve faunique des Laurentides (Charlevoix-Ouest), tourbière minérotrophe de la rivière Pikauba, J. Gagnon, 95-204, 23-09-1995, (95-178); Languedoc (Abitibi), tourbière minérotrophe de la rivière Authier, J. Gagnon, 95-34, 27-07-1995, (95-23).

• **C. Gervais, M. Parent, R. Trahan & S. Plante.** Direction de la conservation et du patrimoine écologique, Ministère de l'Environnement et de la Faune du Québec, and Herbarier Louis-Marie, Université Laval, pavillon C.-E. Marchand, Sainte-Foy, Québec, Canada, G1K 7P4. Vouchers are deposited at QFA. Some specimens collected by F. Coursol (MT) may be considered as substitute vouchers of those collected by Plante and Coursol or Plante, Coursol, Bouchard and Labrecque. The numbers in brackets correspond to greenhouse accession numbers at QFA. All localities in Canada: Québec except *Festuca vivipara* (q.v.).

BRASSICACEAE

Cardamine bellidifolia L. 2n=16. Comté de Matane: Mont Logan, Bassin de Pease, 900m, 07.1992, Trahan (92-43).

Draba aurea M. Vahl. 2n=c.72. Comté de Rimouski: Îlet Canuel, rive sud, rochers maritimes, 15.08.1995, Gervais (95-183B); rive nord, 16.08.1995, Gervais & Roy (95-188A).

Draba clivicola Fern. 2n=c.48. Comté de Matane: Mont Griscom, ravin humide, 900m, 28.07.1992, Trahan (92-92A).

CALLITRICHACEAE

Callitriche stagnalis Scop. 2n=10. Comté de Montmorency: Beaupré, rivage du St-Laurent, 09.09.1995, Gervais (95-114); Ile d'Orléans, Village-des-Anglais, rivage du St-Laurent, 21.09.1995, Plante, Coursol & Bouchard (95-165B).

CARYOPHYLLACEAE

Spergularia marina (L.) Griseb. 2n=36. Comté de Rimouski: Ilet Canuel, rive sud, rivage du St-Laurent, 17.08.1995, Gervais (95-70).

CYPERACEAE

Eleocharis obtusa (Willd.) Schultes var. *peasei* Svenson. 2n=10. Comté de Montmorency: Ile d'Orléans, Battures des Ilets, 21.09.1995, Plante, Coursol & Bouchard (95-164, 95-166).

Scirpus smithii Gray. 2n=40. Comté de Québec: Sainte-Foy, plage Jacques Cartier, 07.09.1995, Plante & Coursol (95-101). Comté de Montmorency: Ile d'Orléans, Village-des-Anglais, rivage du St-Laurent, 21.09.1995, Plante, Coursol & Bouchard (95-161).

FABACEAE

Oxytropis borealis Nutt. var. *hudsonica* (Greene) Welsh. 2n=16. Territoire-du-Nouveau-Québec: Umiujaq, terrasse de gravier, 56°32'N 76°33'O, 22.08.1995, Blondeau UM 95450, UM 95451 (95-196, 95-197).

GENTIANACEAE

Gentianella amarella (L.) Boerner ssp. *acuta* (Michx) Gillett. n=9. Comté de Rimouski: Ilet Canuel, rochers maritimes, 15.08.1995, Gervais (95-68).

JUNCAGINACEAE

Triglochin gaspense Lieth & D. Löve. n=48. Comté du Saguenay: Grandes-Bergeronnes, rivage maritime, 08.1995, Labrecque & Lamoureux (95-19A).

LAMIACEAE

Lycopus laurentianus Rolland-Germain. 2n=22. Comté de Portneuf: 10 km à l'ouest de Neuville, rivage du St-Laurent, 20.09.1995, Plante, Coursol, Bouchard & Labrecque (95-122, 95-130). Comté de Montmorency: Ile d'Orléans, Village-des-Anglais, rivage du St-Laurent, 21.09.1995, Plante, Coursol, Bouchard & Labrecque (95-162).

Physostegia virginiana (L.) Benth. var. *granulosa* (Fassett) Fern. 2n=38. Comté de Portneuf: 10 km à l'ouest de Neuville, 20.09.1995, Plante, Coursol, Bouchard & Labrecque (95-121, 95-123).

LILIACEAE

Smilacina stellata (L.) Desf. 2n=36. Comté de Rimouski: Ilet Canuel, haut rivage maritime, 16.08.1995, Gervais & Roy (95-40A).

ONAGRACEAE

Epilobium ciliatum Raf. n=18, 2n=36. Comté de Rimouski: Ilet Canuel, rive nord, lisière de forêt, haut de grève rocailleuse, 16.08.1995, Gervais & Roy (95-66). Comté de Portneuf: 10 km à l'ouest de Neuville, 20.09.1995, Plante, Coursol, Bouchard & Labrecque (95-125).

Epilobium ecomosum (Fassett) Fern. n=18, 2n=36. Comté de Québec: Sainte-Foy, plage Jacques Cartier, 07.09.1995, Plante & Coursol (95-81, 95-83); Comté de Portneuf: 10 km à l'ouest de Neuville, 20.09.1995, Plante, Coursol, Bouchard & Labrecque (95-132, 95-140). Comté de Montmorency: Ile d'Orléans, Village-des-Anglais, rivage du St-Laurent, 21.09.1995, Plante, Coursol, Bouchard & Labrecque (95-159).

PLUMBAGINACEAE

Limonium nashii Small. 2n=36. Comté de Kamouraska: Rivière-Ouelle, rivage maritime, 4.08.1995, Gervais (95-14).

POACEAE

Festuca vivipara (L.) Sm. $2n=42$. Canada: Labrador: Anse-au-Clair, sommet exposé de falaise maritime, 3.08.1994, Morisset, Garneau & Fortin, PM 94-380 (95-86).

PORTULACACEAE

Claytonia caroliniana Michx. $2n=16+0-4B$ (51 individuals studied). Comté de Mégantic: St-Ferdinand, érablière, 03.05.1991, Trahan & Gervais. $2n=16+0-1B$ (27 individuals studied). Comté de Mégantic: Ste-Anne-du-Lac, érablière, 05.05.1993, Trahan.

ROSACEAE

Potentilla palustris (L.) Scop. $2n=42$. Comté de Montmorency: Beaupré, rivage du St-Laurent, 09.09.1995, Gervais (95-106A, 95-106B).

Rosa blanda Ait. $2n=14$. Comté de Charlevoix-Est: St-Irénée, haut de grève, 10.09.1995, Gervais (95-108B).

Rosa rugosa Thunb. $2n=14$. Comté de Rimouski: Bic, haut de grève à l'embouchure de la rivière Hâtée, 18.08.1995, Gervais & Roy (95-65); Comté de Charlevoix-Est: St-Irénée, haut de grève, 10.09.1995, Gervais (95-105).

Rosa williamsii Fern. $2n=14$. Comté de Rimouski: Bic, schistes à l'embouchure de la rivière Hâtée, 18.08.1995, Gervais & Roy (95-58).

Sanguisorba canadensis L. $2n=28$. Comté de Rimouski: Ilet Canuel, rochers maritimes, 16.08.1995, Gervais & Roy (95-44A).

SCROPHULARIACEAE

Agalinis purpurea (L.) Pennell var. *parviflora* (Benth.) Boivin. $2n=28$. Comté de Bellechasse: Beaumont, grève du St-Laurent, 10.08.1994, Gervais, s.n.

Lindernia dubia (L.) Pennell var. *inundata* Pennell. $n=9$, $2n=18$. Comté de Mont-

morency: Ile d'Orléans, Village-des-Anglais, rivage du St-Laurent, 21.09.1995, Plante, Coursol, Bouchard & Labrecque (95-171, 95-174, 95-175).

VERBENACEAE

Verbena urticifolia L. $n=7,8$. Comté de l'Île Jésus: St-Martin, boisé ouvert, 30.07.1995, Gervais, s.n.

• **B. Turk**, Department of Biology, Biotechnical Faculty, Univ. of Ljubljana, Vecna pot 111, SI-1000 Ljubljana, Slovenija. Vouchers in LJU. Author's name abbreviated to BT.

VALERIANACEAE

Valeriana officinalis L. $2n=14$. Slovenia: Vinice near Ribnica, 520 m, 14.4.1990, BT; Dolnje Jezero near Cerknica, 553 m, 14.4.1990, BT; on road between Crnuce and Trzin near Ljubljana, 2.5 km away from crossing in Crnuce, 300 m, 15.4.1990, BT; Cerklje na Gorenjskem near castle Strmol, 400 m, 15.4.1990, BT; between Medvode and Medno at Ljubljana, near rivulet Mavelscica, 315 m, 15.4.1990, BT; on road Lesce to Bled, where river Recica runs into river Sava Dolinka, 460 m, 17.4.1990, BT; Kozje, along river Bistrica, 280 m, 17.4.1990, BT; on road Ljubljana to Ig at crossing for Babna Gorica near bridge over river Izica, 290 m, 18.4.1990, BT; Novo Mesto on road Novo Mesto to Crmosnjice, 200 m, 19.4.1990, BT; Vahta Pass on road Novo Mesto to Metlika, 615 m, 19.4.1990, BT; right bank of river Lahinja in Primostek near Metlika, 138 m, 19.4.1990, BT; left bank of river Lahinja on road Gradac to Crnomelj at Okljuka, 145 m, 19.4.1990, BT; on road Slovenska Bistrica to Pragersko, under the highway crossing, 280 m, 23.4.1990, BT; Zavrc near Ormoz at crossing for Turski vrh, 200 m,

23.4.1990, BT; on road Verzej to Doklezovje on left bank of river Mura near bridge over Mura, 182 m, 23.4.1990, BT; Frankolovo, 315 m, 24.4.1990, BT; Hrusevje near Postojna, 567 m, 27.4.1990, BT; Gornji Dolic at Mislinja, 560 m, 8.5.1990, BT.

Valeriana collina Wallr. $2n=28$. Slovenia: Gornji Dolic at Mislinja, 580 m, 8.5.1990, BT.

Valeriana pratensis Dierbach ex Walther. $2n=28$. Slovenia: Notranje Gorice near Ljubljana on road Notranje Gorice to Podpec near rivulet Kusljanov graben, 292 m, 18.4.1990, BT; village Jezero near Podpec on S.E. side of lake Jezero, 290 m, 18.4.1990, BT; on road Ljubljana to Ig at

crossing for Babna Gorica near bridge over river Izica, 290 m, 18.4.1990, BT.

$2n=28 + 3B$. Slovenia: Ivanjkovci near Ormoz at rivulet Pavlovski potok, 220 m, 23.4.1990, BT.

Valeriana nemorensis Turk. $2n=28$. Slovenia: Dolnje Jezero near Cerknica, on right side of road Dolnje Jezero to Gorica, 553 m, 14.4.1990, BT; on road Ozeljtan to Nova Gorica at bridge over rivulet Lijak, 80 m, 28.4.1990, BT; Stari grad near Kobarid, 300 m, 29.4.1990, BT.

Valeriana sambucifolia Mikan f. $2n=56$. Slovenia: Pohorje, on road Lovrenc na Pohorju to Pesek near cottage on Pesek, 1300 m, 1.5.1990, BT.



VALERIANA OFFICINALIS L.



News from Molecular Biosystematists 8

Editor: Dan J. Crawford (address: see p. 28)

6

Robert S. Wallace
Department of Botany
Iowa State University, Ames,
Iowa 50011-1020 USA
e-mail: rwallace@iastate.edu

For the last several years, the research efforts in my laboratory have focused on the elucidation of the phylogenetic relationships within the morphologically complex family Cactaceae. The cacti have a long and complicated taxonomic history. Many examples of parallel character changes are found within this family, which exacerbate the problems of the interpretation of its evolution, and also add to the taxonomic confusion brought about by overdescription of its ca 1800 species. My involvement as part of a working group for the Cactaceae of the International Organization for Succulent Plant Study (IOS) has proven valuable in directing these research efforts, in particular to address the many previously unanswered questions for which morphological studies could not provide adequate information.

Field Research

Our studies of cactus phylogeny have included field research in various areas of the

USA, Mexico (Yucatan, Morelos, Puebla, Oaxaca, Chihuahua and Sonora) as well as in Chile and Peru. Collaboration with other cactus systematists and acquisition of plant samples from botanical gardens has made it possible to be fully representative of the phylogenetic and geographic diversity within the Cactaceae. Future field research efforts are planned for Brazil, Bolivia and Argentina, as well as more intensive studies of Mexican cactus diversification, particularly in Tribe Cactaeae.

Laboratory Research

Much of the recent research in my lab has utilized comparative DNA sequencing, although we continue to examine restriction site variation when appropriate. The cacti present a significant methodological challenge for the molecular systematist due to their production of extensive amounts of complex polysaccharides in the form of mucilage within their tissues. Specialized DNA isolation techniques have been developed in my laboratory which enable the isolation of clean, genomic DNA samples from normally recalcitrant tissues (now close to 850 taxa sampled from ca. 18 plant families; 92% cacti) which provide excellent quality templates for PCR amplification, or work extremely well for restriction site/hybridization studies. We have concentrated on the plastid genome for our primary source of information due to its relative conservatism, ease of use, and freedom from effects of polyploidy, concerted evolution, and other factors involved with the use of nuclear DNA. Initial comparative sequencing studies were done using *rbcL* and *ndhF* gene sequences, although low level phylogenetic resolution was lacking for many cactus lineages, due perhaps to effects of long

generation time. In an attempt to obtain better phylogenetic resolution, non-coding sequences from the *tmL-tmF* intergenic spacer and from the intron of *rpl16* have been used successfully to provide resolution at the intergeneric, and in several cases interspecific levels.

Previous Projects

We have been able to examine both structural (inversions, insertions, deletions) and sequence variation in the plastid genome of the Cactaceae and have identified synapomorphic structural changes which support the monophyly of the family (6 kb cpDNA inversion), monophyly of Subfamily Cactoideae (loss of *rpoC1* intron), and monophyly of Subfamily Opuntioideae (deletion in chloroplast gene *accD/ORF512*). Sequence analyses of chloroplast genes *rbcL*, *ndhF*, *rpl16* intron, and *tmL-tmF* intergenic spacer all corroborate monophyly for these groups, and disclose that the most basal divergences of the cacti resulted in four discrete lineages, not three, as had been previously hypothesized (these groups were recognized at the subfamilial level).

Studies of the general phylogenetic structure using comparative DNA sequencing for each of these subfamilial lineages within the Cactaceae have proven to be very useful. The Master's thesis research of Mr. Steven Dickie has shown that for the subfamily Opuntioideae as presently circumscribed (particularly with respect to the genus *Opuntia* and its extensive paraphyly), the entire subfamily is in need of a complete reevaluation of the generic concept for its members. Within the largest subfamily Cactoideae, the molecular systematic studies are continuing, however several tribes have been demonstrated as monophy-

letic; others are polyphyletic (e.g. Echinocereeae) and their recognition is not warranted.

These studies have also enabled the more confident placement of morphologically anomalous genera (e.g. *Uebelmannia*) into appropriate tribes, and forced a more detailed examination of morphology for many of these problematic groups.

A major effort to determine the evolutionary relationships among the columnar cacti in both North and South America was supported by the National Geographic Society. The resulting DNA and morphological data support the hypothesis that the columnar cacti found in North America are derived from South American ancestors, and that the central Andes is the likely center of origin for the Cactaceae. Further studies of the very closely-related South American tribes Brownieae, Cereae, and Trichocereae are required to better resolve the pattern of phylogenetic and biogeographic divergences in these lineages. Genus level studies have also been conducted (e.g. *Ferocactus* by recent Ph.D. graduate, Dr. J. Hugo Cota; *Copiapoa*, *Mila*, *Harrisia*, *Echinocereus* and others by various collaborators and students); such interspecific level studies will continue as further investigations of tribal/generic relationships identify other systematically-important questions.

Current Projects

BASAL DIVERGENCES IN THE OPUNTIOIDEAE

Mr. Steven Dickie is continuing his doctoral research on the subfamily Opuntioideae by examining the phylogenetic and biogeographic patterns of divergence in the South American lineages of this subfamily, which represent the extant plesiomorphic groups within the subfamily.

**PHYLOGENY AND SYSTEMATICS OF THE GENUS
MAMMILLARIA**

Ph.D. dissertation research by Mr. Charlie Butterworth is commencing on the largest genus of the Cactaceae, *Mammillaria*. He will evaluate overall morphological evolution of the genus in the context of a molecular phylogeny, and then will concentrate on one of the better defined lineages within the genus to determine its patterns of evolution.

PHYLOGENY OF EPIPHYTIC CACTUS LINEAGES

The epiphytic habit has evolved twice within the Cactaceae, and comparisons between the tribes Rhipsalideae ('Christmas Cactus' tribe) and the Hylocereeae ('Orchid Cactus' tribe) show that they are vastly different in their rates and patterns of divergence. The role of hybridization (including intergeneric hybridization) in the Hylocereeae as a significant evolutionary mechanism is particularly interesting.

PORTULACACEAE AND ALLIED FAMILIES

The dissertation research of Ms. Wendy Applequist will examine the diversification and specialization of members of families Portulacaceae, Basellaceae, and Didiereaceae (together with general studies of the Cactaceae) to provide evidence regarding their relatively close relationships as a group within the Caryophyllales, as well as their implied Gondwanan affinities.

FUTURE RESEARCH

In addition to examining the evolutionary relationships within the Cactaceae, our studies also include the investigation of inter- and intrafamilial relationships in other Caryophyllalean families such as the Aizoaceae, Portulacaceae, Didiereaceae and

Phytolaccaceae. Specifically, I have begun basic molecular systematic studies of the Aizoaceae to examine its phylogeny and assess its relative levels of diversification in comparison with the cacti; the families are comparable in size but have a considerably different biogeographic history. Future research is planned to assess the pattern of diversification of the order Caryophyllales, particularly with respect to the Phytolaccaceae, and its relationships to the other major clades of the order. To accomplish this, continued study of DNA variation in both nuclear and organellar genomes is planned. Collaboration with interested systematists is encouraged!



OFUNTIA BREVIFOLIA.

Meetings – Past & Future

7 Amsterdam '98

VII INTERNATIONAL IOPB SYMPOSIUM
AMSTERDAM, NETHERLANDS 10–15 AUGUST '98

The 1998 symposium is well on its way of organization now. You all will have received the first circular with the basic information, and many of you sent the form that guarantees you the receipt of the second circular. In this, the final registration forms will be included. The theme chosen obviously attracts interest not only from IOPB members but also from other disciplines, particularly from plant breeding and biotechnology. We may expect interesting discussions on the parallelism between domestication and natural evolution. There doubtless will also develop a debate about the past introgressions of crops into wild relatives, and of course also on the possible future consequences of such introgressions from transgenic races of crops if these will have been taken in full agricultural practice – an extremely important matter with respect to conservation of genetic resources and biodiversity in general.

Up to now (the beginning of July), some 90 people made their provisional registration. Given the time table this is very promising. However, we would like to welcome quite a few more colleagues, so don't hesitate to send in the form or to send me an E-mail message (IOPB98@bio.uva.nl). As indicated in the first circular you also could visit our website where regularly updated information is available: http://www/bio.uva.nl/conferences/iopb_98.htm

To give you the latest available information on the list of speakers and chairmen, the programme of the different symposia are listed underneath. By the time you will be reading this, I guess there will be many more be listed.

INTERNATIONAL ORGANIZATION OF PLANT BIO-SYSTEMATISTS – EVOLUTION IN MAN-MADE HABITATS SYMPOSIUM 1998, AMSTERDAM

Provisional Time Table (chairmen and speakers confirmed as per July 1, 1997)

Tuesday, 11 August 1998

General Plenary Lecture

Bengt Jonsell, President IOPB

Bergius Botanical Garden, Stockholm, Sweden

Symposium 1: EVOLUTION IN DISTURBED HABITATS

Chairman: **Herbert Hurka**

University of Osnabrück, Germany

Speakers:

Barbara Neuffer

University of Osnabrück, Germany

Krystyna Urbanska

ETH Zürich, Switzerland

Symposium 2: EVOLUTION OF CROPS. DOMESTICATION: SIMULATING EVOLUTION

Chairman & speaker: **Paul Gepts**

University of California, Davis, CA, USA

Symposium 3: EVOLUTION OF CROPS. MAPPING OF SPECIAL TRAITS

Chairman: **Andreas Boerner**

IPK Gatersleben, Germany

Speakers:

• **John Doebley**

University of Wisconsin, Madison WI, USA

"Evolution of Maize"

• **Andreas Boerner**

"Mapping in Triticeae"

• **Renate Schmidt**

Max-Delbrück-Laboratorium Köln, Germany
"Comparative Mapping in Brassicaceae"

Symposium 4: EVOLUTION OF INVASIVE PLANT SPECIES: ADAPTATION AND LIFE CYCLES

Chairman: **Joachim Kadereit**

University of Mainz, Germany

Speakers:

• **Suzanne I. Warwick**

Biosystematics Research Centre, Ottawa
"Invasive plant species: a perspective"

• **Shoichi Kawano**

University of Kyoto, Japan
"Life history traits in naturalized populations of *Arabidopsis thaliana* in Japan"

• **Joachim Kadereit**

"The evolution of invasive species in *Senecio*"

Symposium 5: EVOLUTION OF CROP-WILD RELATIVE COMPLEXES

Chairman & speaker: **Klaus Ammann**

Botanical Garden Berne, Switzerland
"Hybrid speciation in sunflowers"

Symposium 6: EVOLUTION OF INVASIVE PLANT SPECIES: APOMIXIS: CLONAL VS. SEXUAL SPECIATION

Chairman: **Christopher S. Campbell**

University of Maine, Orono ME, USA

Speakers:

• **Christopher S. Campbell**

"Hybridization and the evolution of agamic complexes"

• **Michael D. Hayward**

IGER, Aberystwyth
"The Genetics of Apomixis"

• **Randall J. Bayer**

CSIRO, Canberra, Australia
"Polyploidy and the evolution of agamic complexes"

• **Timothy Dickinson**

Royal Ontario Museum, Toronto, Canada

"Species concepts in agamic complexes"

• **Ron van der Hulst**

University of Amsterdam, The Netherlands

"Evolution of agamic complexes in European *Taraxacum* (Asteraceae)"

We all, the members of the organizing committee, hope to welcome large numbers of you next year in Amsterdam.

On behalf of these, Hans C.M. den Nijs, secretary organizing committee VIIIth symposium: Institute of Systematics & Population Biology, University of Amsterdam, Kruislaan 318, 1098 SM Amsterdam, The Netherlands, phone • 31 20 5257660, fax • 31 20 5257662

Other meetings

VALDIVIA, CHILE

II Southern Connection symposium Valdivia, Chile 6-11 January 1997.

"Southern Connection" is an informal association for all scientists interested in the natural history of the southern temperate areas and includes botanists as well as e.g. zoologists and quaternary geologists, both basic research and applications in natural conservancy in particular. Excursions to the magnificent but threatened temperate rain forests close by were extremely instructive. Meetings are held every three years, the second one took place in Valdivia, temperate Chile this January. The purpose is to promote contacts both between the disciplines and between the world's south temperate areas. The Valdivia meeting counted over 300 delegates among whom Argentine, Chile, Australia and New Zealand were particularly well represented, but also South Africa, USA,

and other S. American countries. In fact the Europeans were a small minority. The main theme this time, for which a number of speakers were invited, was the south temperate forests, focusing problems about management and conservancy. Numerous contributed papers and posters covered a great array of topics and gave a broad survey of activities in south temperate taxa and biota. The next "Southern connection" meeting will take place in New Zealand in 2000.

General Secretary and primary organizer of the symposium was Professor Mary Kalin Arroyo, member of IOPB and previously in our council. Anyone with interests in the south temperate areas is welcome to join the Southern Connection and will receive a newsletter and symposium circular. You should contact a board member, e.g. Mary Arroyo, Lab. De Sistemática y Biología Vegetal, Depto Biología, Univ. De Chile, Casilla 653. Santiago, Chile.

HARARE, ZIMBABWE

XV AETFAT Symposium in Harare, Zimbabwe, 2–9 February 1997.

"L'Association pour l'études de la flore de l'Afrique tropicale" holds since nearly 50 years regular meetings at three year intervals, nowadays every six years in Africa and in between in Europe or some other temperate part of the world. In Harare about 200 participants appeared and a great number of African countries were represented with the largest delegations from South Africa and the host country itself. Taxonomy and phylogeny, biodiversity, phytogeography, plant protection and vegetation conservancy were among the subjects treated. The next meeting, the 50th anniversary of the organization, will be held in Brussels in 2000.

PARIS, FRANCE

IX OPTIMA Meeting in Paris, May 11–17 1998.

The themes of the coming OPTIMA meeting will be (1) French activity in botany, (2) Plants and serpentine formations in the Mediterranean, (3) Molecular phylogeny of Mediterranean groups, (4) Demonstrations of Mediterranean databases, (5) Plant limits of the Mediterranean region, (6) The uses of Mediterranean plants. One excursion during the conference and two post meeting excursions are planned.

Professor J. Morat is General Secretary for the arrangements.

UPPSALA, SWEDEN

Planta Europa – second European conference on the conservation of wild plants in Uppsala, Sweden, 9–13 June 1998.

The first European conference on wild plant conservation in Hyères, France created the Planta Europa network, which now invites you to join them in sharing experience, developing the network and working out how together we can better conserve Europe's plants. For more information – and if you would like to contribute a paper, please contact the Conference Secretariat through Dr Johan Samuelsson e-mail: PlantaEuropa98@dha.slu.se

Bengt Jonsell

Points of view

8

We had only a few reactions upon the views about the future perspectives of IOPB expressed by the editors in the previous Newsletter. Should we take this as if members in general share our views – if so, we are of course happy, but we cannot help thinking that there are opinions we ought to know about that may be hidden among you. Please let us hear from you!

Krystyna Urbanska, Zürich, has sent us the following points of view on the actual issue:

1. *If and when IOPB merges with another organization, a balanced international character should be considered. This condition is indispensable to many decisions, elections of Executives, etc.*

2. *If and when IOPB merges with another organization, a structured membership fee should be considered. In the present time both individuals and libraries all over the world fight with increasingly restricted budgets, and the situation in post-communistic countries or those in the Third World is particularly difficult. For that reason, IOPB members should be given a free choice between (a) a fee including a Newsletter only, and (b) a considerably higher fee covering also a subscription to one journal. This system has been adopted in many societies of UK and USA, and I consider it fair to the people who may not be able to pay outrageous annual fees but wish to participate in society activities all the same. For many it is the only "lifeline" to foreign colleagues. I fear that a "forced" subscription to any – however good – journal, may cost IOPB many members.*

From Werner Greuter, Berlin, the following comment has arrived:

Concerning the term Biosystematics, my zoological colleagues tell me that they now widely use it in the general sense of biological systematics (i.e. to include alpha taxonomy, etc.), e.g. in Systematics Agenda 2000 – along with similar neologisms in fashion as biodiversity, bionomenclature, etc. In other words the term risks to become ambiguous (no fault of IOPB, of course, but there we are).

From David Hawksworth, London, the following observation was received.

The word "biosystematics" (as "biosystematists") was evidently first used in 1937 in the San Francisco area of the USA for an interdisciplinary group informally carrying on the work of the then declining Society for the Study of Speciation. This information comes from V.B. Smocovitus (J. History Biology 27: 241–309, 1994), who also wrote a book I have not seen that may include further information ("Botany and the Evolutionary Synthesis"). The often cited usage by Camp & Gilly (Brittonia 4: 323–385, 1943), as "biosystematy", is thus later.



SILENE UNIFLORA.

IOPB
Executive and Council 1995-98

9

Executive

President, **Bengt E. Jonsell**

Bergius Bot. Garden
P.O.B. 50017
S-10405 STOCKHOLM, Sweden
phone • +46 8 156 896
fax • +46 8612 9005
e-mail • bengtj@bergianska.se

Vice-President – President Elect,

Konrad Bachmann

Dept. of Taxonomy
IPK Gatersleben
Corrensstraße 3
D-06466 GATERSLEBEN, Germany
phone • +49 39482 5465
fax • +49 39482 5155
e-mail • bachmann@ipk-gatersleben.de

Past President, **Peter H. Raven**

Missouri Bot. Garden
P.O.B. 229
ST. LOUIS, MO 63166-0299, USA
phone • +1 314 577 5111
fax • +1 314 577 9595
e-mail • praven@nas.edu

Editor Newsletter, **Liv Borgen**

Bot. Garden & Museum
University of Oslo
Trondheimsveien 23 B
N-0562 OSLO, Norway
phone • +47 22 85 17 78
fax • +47 22 85 18 35
e-mail • liv.borgen@toyen.uio.no

Co-Editor Newsletter "Molecular News"

Daniel J. Crawford

Dept. of Botany
Ohio State University
1735 Neil Ave
COLUMBUS, OH 43210-1293, USA

phone • +1 614 292 8952
fax • +1 614 292 6345
e-mail • crawford.13@osu.edu

Co-Editor Newsletter "Chromosome Data",

Clive A. Stace

Dept. of Botany
University of Leicester
LEICESTER LE1 7RH, U.K.
phone • +44 116 252 3381
fax • +44 116 252 2791
e-mail • (secr.) jmdcwl@leicester.ac.uk/
(prof. Stace)cas7@leicester.ac.uk

Secretary/Treasurer, **Peter C. Hoch**

Missouri Bot. Garden
P. O. B. 299
ST. LOUIS, MO 63166-0299, USA
phone • +1 314 577 5175
fax • +1 314 577 9589
e-mail • hoch@mobot.mobot.org

Regional Treasurer (European currency)

Leo W.D. van Raamsdonk

Centre for Plant Breeding &
Reproduction Research, CPRO-DLO
P.O.B. 16
NL-6700 AA WAGENINGEN
The Netherlands
phone • +31 317 477279
fax • +31 317 416513
e-mail • l.w.d.vanraamsdonk@cpro.dlo.nl

Member ex officio for 1998 Symposium,

Hans C. M. den Nijs

Hugo de Vries Lab.
University of Amsterdam
Kruislaan 318
NL-1098 SM AMSTERDAM
The Netherlands
phone • +31 20 525 7660
fax • +31 20 525 7662
e-mail • njis@bio.uva.nl

Council

Randall J. Bayer

CSIRO – Plant Industry
Molecular Systematics Lab
Australian National Herbarium
GPO Box 1600
CANBERRA, ACT, 2601, Australia
phone • +61 6 246 5514
fax • +61 6 246 5249
e-mail • r.bayer@pi.csiro.au/
72113.2244@CompuServe.com

Jorge V. Crisci

(Museo de la Plata, 1900 La Plata, B.A., Argentina)
until Feb. 1998:
Dept. of Botany
Univ. of Wisconsin-Madison
132 Birge Hall
430 Lincoln Drive
MADISON, WIS 53706-1381, USA
phone • +1 608 262 8644
fax • +1 608 262 7509
e-mail • jvcrisci@facstaff.wisc.edu

Philip Garnock-Jones

School of Biological Sciences
Victoria Univ. of Wellington
P.O. Box 600
WELLINGTON, New Zealand
phone • +64 4 472 1000
fax • +64 4 4715331
e-mail • phil.garnock-jones@vuw.ac.nz

Herbert Hurka

Institut für Biologie
Univ. Osnabrück
Barbarastr. 11
D-49076 OSNABRÜCK, Germany
fax • +49 541 969 2870
e-mail • hurka@cipfb5.biologie.uni-
osnabrueck.de

Shoichi Kawano

Dept. of Biology
Faculty of Science
Kyoto University
KYOTO 606, Japan
phone • +81 75 753 4131
fax • +81 75 753 4145

e-mail • k53223@sakura.kudpc.kyoto-
u.ac.jp

Jan Kirschner

Institute of Botany
Academy of Sciences
CZ-25243 PRUHONICE 1
Czech Republic
fax • +420 2 6775 0031
e-mail • kirschne@ibot.cas.cz

Tatsuyoshi Morita

Biological Lab.
Faculty of Education
University of Niigata
8050 Ikarashi-ninocho
NIIGATA-SHI 950-21, Japan
fax • +81 25 263 1277
e-mail • morita@ed.niigata-u.ac.jp

David F. Murray

Univ. of Alaska Museum
907 Yukon Drive
FAIRBANKS, AK 99775-6960, USA
fax • +1 907 474 5469
e-mail • fdfm@aurora.alaska.edu

Jürg Stöcklin

Botanical Institute
University of Basel Schönbeinstrasse 6
CH4056 BASEL, Switzerland
phone • +41 61 267 3501
fax • +41 61 267 3504
e-mail • stoeklin2@ubaclu.unibas.ch

Suzanne I. Warwick

Centre for Land & Biological Resources
Research Agriculture and Agri-food
Canada, K.W. Neatby Bldg
C.E.F., OTTAWA, Ontario
Canada K1A 0C6
phone • +1 613 759 1829
fax • +1 613 759 1924
e-mail • warwick@em.agr.ca

Changed addresses & New members

10

Karl Peter Buttler
Orber Strasse 38
D-60386 FRANKFURT AM MAIN
Germany

Hann-Chung Lo, Dr
Department of Forestry
National Taiwan University
P.O. Box 13-387
TAIPEI 100, Taiwan, Republic of China
e-mail: hclo@ccms.ntu.edu.tw

Donna I. Ford-Wernitz
Department of Biology
P.O. Box 6057
MORGANTOWN, WV 26506-6057, USA

Henrik Aerenlund Pedersen
Botanical Museum
Gothersgade 130
DK-1123 COPENHAGEN, Denmark

Roland von Bothmer
Dept. of Plant Breeding Research
Swedish Univ. Agricultural Sciences
S-268 31 SVALÖV, Sweden

Anne Brysting
Trondheimsveien 23 B
Botanical Garden and Museum
N-0562 OSLO, Norway

Arve Elvebakk
IBC, Univ. of Tromsø
N-9000 TROMSØ, Norway

Bente Eriksen
Dept. of Systematic Botany
Carl Skottsbergs Gata 22
S-413 19 GÖTEBORG, Sweden

Aslaug Hagen
Botanical Garden and Museum
Trondheimsveien 23 B
N-0562 OSLO, Norway

Mikael Hedrén
Dept. of Systematic Botany
Ö. Vallgatan 18-20
S-223 61 LUND, Sweden

Hilde Nybom
Balsgård
Dept. for Horticultural Plant Breeding
Swedish Univ. of Agricultural Sciences
Fjälkestadsvägen 123-1
S-291 94 KRISTIANSTAD, Sweden

Karin Persson
Botanical Garden
Carl Skottsbergs Gata 22
S-413 19 GÖTEBORG, Sweden

Your address!

Please send changes and additions to the editor Bengt Jonsell – preferably by e-mail! Your changed address will be published in the next issue, which will also be correctly distributed.

For Germany in general should be observed that 4-digit zips are obsolete and misleading. German colleagues with such zips in the directory of the previous Newsletter are encouraged to inform us about the new number. The address of Werner Greuter, who informed us on this point, should now run:

Bot. Garten & Museum Berlin-Dahlem
Königin Luise Strasse 6-8
D-14191 BERLIN, Germany

International Organization of Plant Biosystematists

The International Organization of Plant Biosystematists, founded in 1960, acts on several levels from coordinating and publishing information on biosystematics to organizing international conferences in a triennial time schedule. The IOPB is open to all persons working or interested in biosystematics which is interpreted in a broad sense. The more recent volumes from the conferences held in Zürich (K.M. Urbanska, ed., 1987, *Differentiation Patterns in Higher Plants*), Kyoto (S. Kawano, ed., 1990, *Biological Approaches and Evolutionary Trends in Plants*), and St. Louis (P.C. Hoch & A.G. Stephenson, eds, 1995, *Experimental and Molecular Approaches to Plant Biosystematics*) give extensive insight in the field IOPB deals with.

The IOPB Newsletter is published twice a year and mailed to all Members. It includes reports on

current research, requests for material and information, announcements of meetings, etc. Two permanent features in the Newsletter are *IOPB Chromosome Data* and *News from Molecular Biosystematists*, respectively edited by Prof. Dr. Clive A. Stace, Dept. of Botany, University of Leicester, Leicester LE1 7RH, UK., and Prof. Dr. Dan J. Crawford, Dept. of Botany, Ohio State University, Columbus, Ohio 43210-1293, USA. The Newsletter Editors are Prof. Dr. Liv Borgen and Prof. Dr. Bengt Jonsell (addresses given on Research News Form). IOPB Members automatically have free publishing right of their data and news.

At present, IOPB Membership is for the three-year period between the Symposia. The next Symposium will be held in The Netherlands in 1998. Detailed information on the payment system will be provided by the Treasurer upon request.

Any inquiries about joining IOPB, membership fees, Newsletter subscription, etc., as well as the application form, should be mailed to the Secretary/Treasurer

Peter C. Hoch
Missouri Botanical Garden
P.O.B. 299
ST. LOUIS, Missouri 63166-0299
USA
phone • +1 314 577 5175
fax • +1 314 577 9589
e-mail • hochimobot.mobot.org

*Residents in the Nordic countries
may also apply to one of the News-
letter editors.*

IOPB MEMBERSHIP APPLICATION FORM (Please print!)

Mr./Ms. Last name

First name, middle initial

Address

Date Signature



Change addresses & subscriptions

For a change of address, please send the following information to the publisher: name, old and new addresses, telephone and fax numbers, e-mail address, and the date of the last issue received. Please allow 4-6 weeks for the change to take effect. If you are changing your address frequently, please inform us of the frequency and we will make every effort to accommodate you. Please allow 4-6 weeks for the change to take effect. If you are changing your address frequently, please inform us of the frequency and we will make every effort to accommodate you. Please allow 4-6 weeks for the change to take effect.

Subscription rates & advertising

Subscription rates for 2004 are as follows: Single copies: \$10.00; 1 year (6 issues): \$55.00; 2 years (12 issues): \$100.00. Advertising rates are available upon request. For more information, please contact the publisher at the address below.

For more information, please contact the publisher at the address below. The publisher's name and address are listed below.

The publisher's name and address are listed below. For more information, please contact the publisher at the address below.



Research News Form

for the International Organization of
Plant Biosystematists Newsletter
– IOPB Newsletter

**Typewritten
or in capital letters!**

Mr./Ms. Last name

First name, middle initial

Title

Address

PUBLICATIONS DURING THE YEAR

*Please select three titles and add the
remainder as e.g. "seven further papers"!*

CURRENT PROJECTS

PROJECTS COMPLETED

PROJECTS STARTED

**REQUESTS FOR RESEARCH
MATERIAL AND INFORMATION**

Articles and reports should be attached!

To be sent to
Liv Borgen
Botanical Garden and Museum
University of Oslo
Trondheimsveien 23B
N-0562 OSLO, Norway

and/or
Bengt E. Jonsell
Bergius Botanical Garden
P.O.B. 50017
S-10405 Stockholm, Sweden



1950-1951
1952-1953
1954-1955
1956-1957
1958-1959
1960-1961
1962-1963
1964-1965
1966-1967
1968-1969
1970-1971
1972-1973
1974-1975
1976-1977
1978-1979
1980-1981
1982-1983
1984-1985
1986-1987
1988-1989
1990-1991
1992-1993
1994-1995
1996-1997
1998-1999
2000-2001
2002-2003
2004-2005
2006-2007
2008-2009
2010-2011
2012-2013
2014-2015
2016-2017
2018-2019
2020-2021
2022-2023
2024-2025





