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International Organization of Plant Biosystematists

Newsletter

No. 23

Edited by

K. M. Urbanska

D. J. Crawford

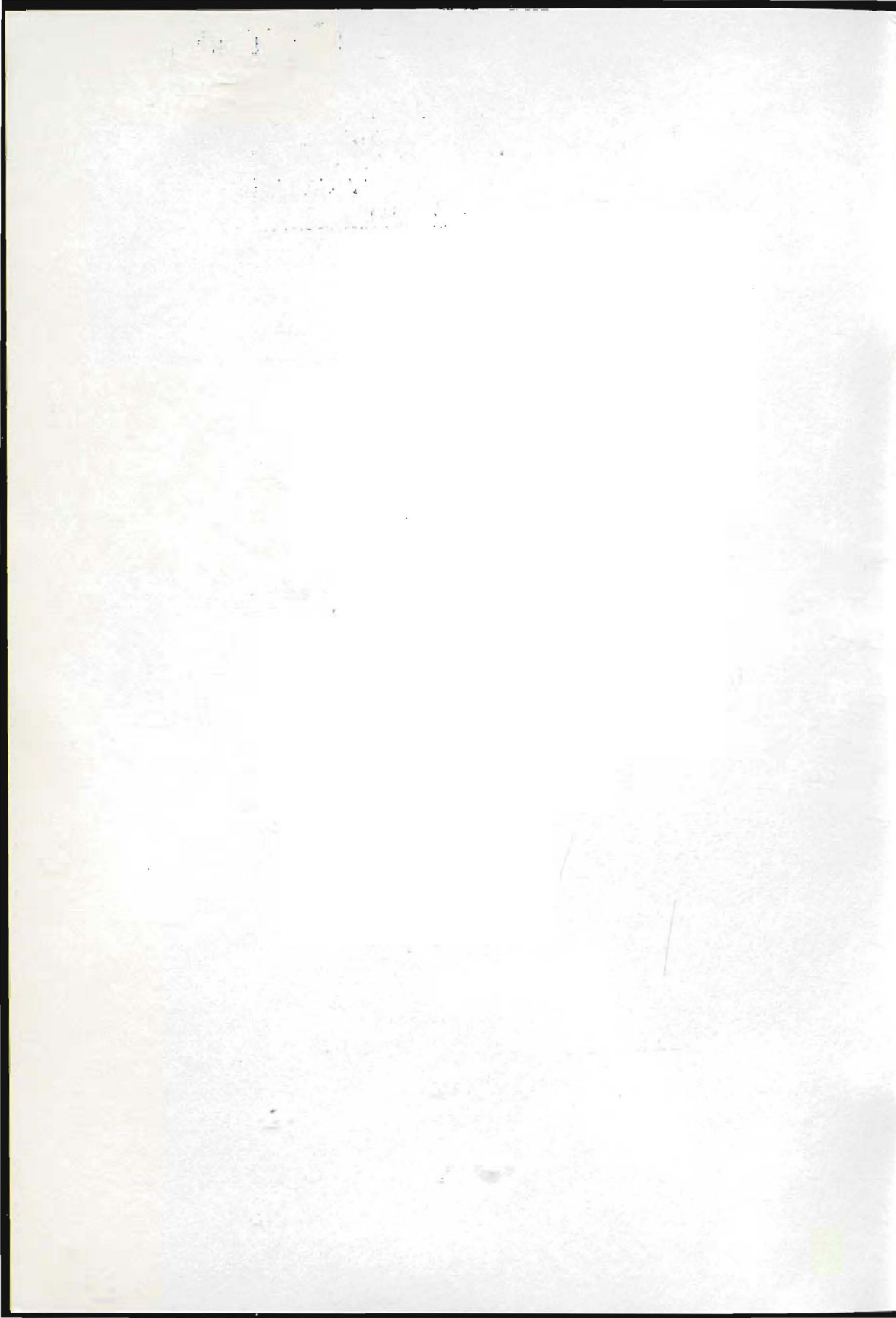
C. A. Stace



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Swiss Federal Institute of Technology

Zürich 1994



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IOPB Newsletter No. 23

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Current Executive and Council of IOPB

Membership Application Form

Research News Form

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1. Editorial Comment

Dear IOPB Members,

This particularly important Newsletter includes presentation of all persons running for office in the forthcoming IOPB elections (pp. 3-9). We provided photos so that you can see not only names on the list and/or some personal data but also faces. We hope that you approve the future Executive. The IOPB Council Members are expected to work for IOPB together with the members of Executive; please help to select efficient group of officers who will give some of their busy time to our Organization.

You have some months to return the ballot (p. 3), but why not to do it at once?? Shoichi Kawano, Chairman of the Nominating Committee, would certainly appreciate your efforts as he has to count votes and establish the definitive list of the Council. All this takes time, you know. Thank you for speedy reaction, just use your FAX if possible.

I started with IOPB Elections, but our new Newsletter includes other interesting features. Amongst them, "Profile of Lab" (p. 16) includes this time data provided by our new Member, Boris Alexandrovitch Yurtsev from the famous Komarov Bot. Institute, St. Petersburg. Spasibo Boris for this informative contribution.

Leo van Raamsdonk presents current research programme at his Institute (p. 18). This contribution comes at the time when Leo is about to become our Regional Treasurer; now European Members of IOPB will know more about the man their money is going to.

Speaking about Treasurer office: please do read carefully the contribution of Hans den Nijs on p. 22: There is an immediate change of Regional Treasurer US currency. Peter Hoch is now assuming duties of Hardy Eshbaugh who had to step down. Thanks, Hardy, for the time you have given to IOPB; good luck in further work! Welcome, Peter.

IOPB Symposium 1995 approaches; read the short note of our Vice-President Bengt Jonsell about progress in organizatory work (p. 21).

I'd like to ask all of you to send me more individual research reports, be it only one or two references to your recent publications. We need more information flow so please take a moment off and send me your data. If your contribution is short you may prefer to do it via e-mail as I am on Internet (at the long last). Thanks in advance.

I'll need your contributions for the next Newsletter issue by **April 30, 1995, the latest**. The idea is to provide the IOPB Elections results just about the time when Tromsø Symposium begins.

All the best regards,

The Editor

NOTE: Please write in capital letters or use typewriter while preparing your "Research News" sheet for the Newsletter. You don't want to have some words misspelled in print, do you?

It would be of a great help if the contributions are sent both on RPS Microdisc (MC2HD 3.5 inch hard disc) as well as a printout. We are also able to convert the contributions received in an ASCII text file on 3.5 or 5.25 inch disc formatted for MacIntosh.

2. IOPB Elections for 1995-1998 period: BALLOT

To allow for processing, please return before March 15, 1995 by mail or fax to:

Shoichi Kawano
Dept of Botany, Faculty of Sciences
Kyoto University
Sakyo-ku, Kyoto 606, Japan
FAX: +81 75 753 4122

Executive (please mark the appropriate box below)

President: Bengt E. JONSELL (current Vice-President)
Vice-president: Konrad BACHMANN (new candidate)
Secretary/Treasurer: Peter C. HOCH (new candidate)
Regional Treasurer for European Currency: Leo C. W. VAN RAAMSDONK (new candidate)
Newsletter Editor : Krystyna M. URBANSKA (current Editor)
Co-Editor for Chromosome Data: Clive A. STACE (current Co-Editor)
Co-Editor for Molecular News: Daniel J. CRAWFORD (current Co-Editor)
Member *ex officio* for 1998 Symposium: Hans C. M. DEN NIJS (current Secretary)

Approved

Rejected

Abstention from voting

Council (please cross out the names you don' t wish to vote for, leave out only those you want to have in the Council)

Randall J. BAYER	Canada	(current Council Member)
Jorge V. CRISCI	Argentina	(new candidate)
De-yuan HONG	China	(new candidate)
Philip GARNOCK-JONES	New Zealand	(new candidate)
Herbert HURKA	Germany	(current Council Member)
Shoichi KAWANO	Japan	(past President)
Jan KIRSCHNER	Czechia	(new candidate)
Tatsuoysshi MORITA	Japan	(new candidate)
David F. MURRAY	USA	(current Council Member)
Jürg STOECKLIN	Switzerland	(new candidate)
Suzanne I. WARWICK	Canada	(current Council Member)



To allow for processing, please return this page to the following address:

International Law Association
 1000 Avenue of the Americas
 New York, N.Y. 10020

For further information, please contact the International Law Association at the above address or by telephone (212) 875-1200.

For a complete list of member countries, please refer to the Yearbook of International Law, Volume 12, Part 1, page 1.

The International Law Association is a non-governmental organization of lawyers and jurists from all countries, established in 1928. Its purpose is to promote the development and codification of international law.

The Association is organized into six regional commissions: African, Asian, European, Inter-American, Latin American, and Middle Eastern. Each commission meets annually to discuss international law problems and to prepare reports for the plenary sessions.

The plenary sessions are held biennially in different parts of the world. The most recent session was held in Mexico City in 1974. The next session will be held in London in 1976.

The Association's work is carried out through its various commissions and through its publications, including the Yearbook of International Law, the International Law Journal, and the International Law Reports.

The Association is a member of the United Nations and of the International Council for Scientific and Cultural Cooperation.

Country Codes and the names for the Countries

Country Code	Country Name	Country Name
AD	Andorra	AD
AE	United Arab Emirates	AE
AF	Afghanistan	AF
AG	Antigua and Barbuda	AG
AI	Anguilla	AI
AL	Albania	AL
AM	Armenia	AM
AN	Netherlands Antilles	AN
AO	Angola	AO
AR	Argentina	AR
AT	Austria	AT
AU	Australia	AU
AW	Aruba	AW
AX	Aland Islands	AX
AY	Paraguay	AY
AZ	Azerbaijan	AZ
BA	Bosnia and Herzegovina	BA
BB	Barbados	BB
BD	Bangladesh	BD
BE	Belgium	BE
BF	Burkina Faso	BF
BG	Bulgaria	BG
BH	Bahrain	BH
BI	Burundi	BI
BJ	Benin	BJ
BK	Bhutan	BK
BL	Belize	BL
BM	Bermuda	BM
BN	Brunei Darussalam	BN
BO	Bolivia	BO
BR	Brazil	BR
BS	Bahamas	BS
BT	Bhutan	BT
BV	Bouvet Island	BV
BW	Botswana	BW
BY	Belarus	BY
BZ	Belize	BZ
CA	Canada	CA
CC	Cocos (Keeling) Islands	CC
CD	Congo	CD
CE	Cote d'Ivoire	CE
CF	Congo	CF
CG	Congo	CG
CH	Switzerland	CH
CI	Cote d'Ivoire	CI
CK	Cook Islands	CK
CL	Chile	CL
CM	Cameroun	CM
CN	China	CN
CO	Colombia	CO
CR	Costa Rica	CR
CU	Cuba	CU
CV	Cape Verde	CV
CX	Christmas Island	CX
CY	Cyprus	CY
CZ	Czech Republic	CZ
DA	Dominican Republic	DA
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DZ	Algeria	DZ
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EB	European Union	EB
EC	Ecuador	EC
ED	Ecuador	ED
EE	Estonia	EE
EF	Ecuador	EF
EG	Egypt	EG
EH	Western Sahara	EH
EI	Ireland	EI
EJ	Ecuador	EJ
EK	Ecuador	EK
EL	Greece	EL
EM	Ecuador	EM
EN	Ecuador	EN
EO	Ecuador	EO
EP	Ecuador	EP
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ER	Eritrea	ER
ES	Spain	ES
ET	Ethiopia	ET
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FF	Faroe Islands	FF
FG	Faroe Islands	FG
FH	Faroe Islands	FH
FI	Finland	FI
FJ	Fiji	FJ
FK	Falkland Islands	FK
FL	Faroe Islands	FL
FM	Federated States of Micronesia	FM
FN	Faroe Islands	FN
FO	Faroe Islands	FO
FP	Faroe Islands	FP
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FY	Faroe Islands	FY
FZ	Faroe Islands	FZ
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GD	Grenada	GD
GE	Georgia	GE
GF	French Guiana	GF
GG	Guernsey	GG
GH	Ghana	GH
GI	Guinea-Bissau	GI
GJ	Guinea-Bissau	GJ
GK	Guinea-Bissau	GK
GL	Greenland	GL
GM	Gambia	GM
GN	Guinea	GN
GO	Guinea	GO
GP	Guadeloupe	GP
GQ	Equatorial Guinea	GQ
GR	Greece	GR
GS	South Georgia and the South Sandwich Islands	GS
GT	Guatemala	GT
GU	Guam	GU
GV	Guinea-Bissau	GV
GW	Guinea-Bissau	GW
GX	Guinea-Bissau	GX
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HA	Haiti	HA
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HC	Haiti	HC
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HG	Haiti	HG
HH	Haiti	HH
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HJ	Haiti	HJ
HK	Hong Kong	HK
HL	Haiti	HL
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HO	Honduras	HO
HP	Honduras	HP
HQ	Honduras	HQ
HR	Croatia	HR
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HT	Haiti	HT
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IM	India	IM
IN	India	IN
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IR	Iran	IR
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JN	Japan	JN
JO	Jordan	JO
JP	Japan	JP
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KH	Kazakhstan	KH
KI	Kiribati	KI
KJ	Kazakhstan	KJ
KK	Kazakhstan	KK
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KP	Kazakhstan	KP
KQ	Kazakhstan	KQ
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MM	Myanmar	MM
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MO	Macao	MO
MP	Malawi	MP
MQ	Martinique	MQ
MR	Mali	MR
MS	Montserrat	MS
MT	Malta	MT
MU	Mauritius	MU
MV	Maldives	MV
MW	Malawi	MW
MX	Mexico	MX
MY	Malaysia	MY
MZ	Mozambique	MZ
NA	Namibia	NA
NB	Namibia	NB
NC	Namibia	NC
ND	Namibia	ND
NE	Niger	NE
NF	Norfolk Island	NF
NG	Nigeria	NG
NH	Namibia	NH
NI	Nicaragua	NI
NJ	Namibia	NJ
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NM	Namibia	NM
NO	Norway	NO
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NR	Nauru	NR
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NU	Nuove Terre	NU
NV	Namibia	NV
NW	Namibia	NW
NX	Namibia	NX
NY	Namibia	NY
NZ	New Zealand	NZ
OA	Namibia	OA
OB	Namibia	OB
OC	Namibia	OC
OD	Namibia	OD
OE	Namibia	OE
OF	Namibia	OF
OG	Namibia	OG
OH	Namibia	OH
OI	Namibia	OI
OJ	Namibia	OJ
OK	Namibia	OK
OL	Namibia	OL
OM	Oman	OM
ON	Namibia	ON
OO	Namibia	OO
OP	Namibia	OP
OQ	Namibia	OQ
OR	Namibia	OR
OS	Namibia	OS
OT	Namibia	OT
OU	Namibia	OU
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OX	Namibia	OX
OY	Namibia	OY
OZ	Namibia	OZ
PA	Pakistan	PA
PB	Pakistan	PB
PC	Pakistan	PC
PD	Pakistan	PD
PE	Peru	PE
PF	Pakistan	PF
PG	Papua New Guinea	PG
PH	Philippines	PH
PI	Pakistan	PI
PJ	Pakistan	PJ
PK	Pakistan	PK
PL	Poland	PL
PM	Puerto Rico	PM
PN	Pakistan	PN
PO	Pakistan	PO
PP	Pakistan	PP
PQ	Pakistan	PQ
PR	Puerto Rico	PR
PS	Pakistan	PS
PT	Portugal	PT
PV	Pakistan	PV
PW	Pakistan	PW
PX	Pakistan	PX
PY	Pakistan	PY
PZ	Pakistan	PZ
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QB	Qatar	QB
QC	Qatar	QC
QD	Qatar	QD
QE	Qatar	QE
QF	Qatar	QF
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QH	Qatar	QH
QI	Qatar	QI
QJ	Qatar	QJ
QK	Qatar	QK
QL	Qatar	QL
QM	Qatar	QM
QN	Qatar	QN
QO	Qatar	QO
QP	Qatar	QP

3. IOPB Elections: Presentation of Candidates

Changes in IOPB Executive are partly automatic, e. g. Vice-President (President Elect) who was voted for in the last elections assumes the office of the President stepping down after three years of service. IOPB Newsletter Editor and both Co-Editors agreed to serve for another three-year period. No alternative candidates were proposed for the offices of Vice-President, Secretary/Treasurer and the Regional Treasurer. The Nominating Committee suggests that the IOPB Executive be voted for *en bloc*.

Candidates for the Council are to be voted for individually. Each IOPB Member may vote for maximum ten candidates, but if somebody prefers to select e. g. four persons only, it is OK, too.

* * *

Presentation of IOPB Executive and Council candidates for 1995-1998

Executive

President:

Bengt E. JONSELL: 58, married, father of four.
Professor Bergianus and Director, Botanic Garden and the Bergius Foundation, Royal Swedish Academy of Sciences.

Main research interests: plant evolution in the Baltic landlift area; systematics of Cruciferae. Current project: Flora Nordica (project leader).

Hobbies: Nordic music and history.

Bergius Bot. Garden, P. O. B. 50017,
S-10405 Stockholm, Sweden.

Phone: +46 8 156 896; Fax: +46 8 612 9005



Vice-President/President-Elect:

Konrad BACHMANN: 55, married, father of two.
Professor of Evolutionary Botany at Institute of Systematics and Population Biology, University of Amsterdam.

Main research interests: origin and maintenance of species identity. Current project: genetic mapping of phenotypic characters relative to molecular markers in *Microseris*.

Hobbies: listening to classical music.

Hugo de Vries Lab, Univ. of Amsterdam, Kruislaan 318,
NL-1098 SM Amsterdam, The Netherlands.

Phone: +31 20 525 7817; Fax: +31 20 525 7662

e-mail: a433bach@hasara11.bitnet



Past President:

Peter H. RAVEN: 58, married, father of four.

Director, Missouri Bot. Garden and Engelmann Professor of Botany at Washington University.

Main research interests: systematics and evolution of Onagraceae; preservation of biodiversity. Current project: systematics and evolution of *Epilobium*.

Hobbies: reading, hiking with his children.

Missouri Bot. Garden, P.O.B. 229, St. Louis, MO 63166-0299,
USA.

Phone: +1 314 577 5110; FAX: +1 314 577 9595

e-mail: raven@mobot.org



Secretary/Treasurer:

Peter C. HOCH: 44, married, father of two.
Curator, Missouri Bot. Garden and Adjunct Professor at
Washington University.

Main research interests: phylogenetic analysis of Onagraceae
esp. *Epilobium*; use of combinations of morphological and
molecular data to develop more complete models of plant evolu-
tion. Current project: "Total evidence" phylogenetic analysis of
Onagraceae.

Hobbies: gardening, cooking, photography.
Missouri Bot. Garden, P. O. B. 299, St. Louis, Missouri
63166-0299, USA.

Phone: +1 314 577 5175; Fax: +1 314 577 9596
e-mail: hoch@mobot.mobot.org



Regional Treasurer (European currency):

Leo W. D. VAN RAAMSDONK: 39, married, father of four.
Senior Scientist, Biosystematics, Centre for Plant Breeding and
Reproduction Research Wageningen.

Main research interests: biosystematics of cultivated plants and
their wild relatives. Current projects: modelling of domestication
scenarios; biodiversity research, biosafety of transgenic plants.

Hobbies: children, computer programming.
Centre for Plant Breeding and Reproduction Research CPRO-
DLO, P.O.B. 16, NL-6700 AA Wageningen, The Netherlands.

Phone: +31 8370 77279; Fax: +31 8370 16513
e-mail: L.W.D.van.Raamsdonk@CPRO.AGRO.NL



Newsletter Editor:

Krystyna M. URBANSKA: 59, divorced, mother of one.
Professor of Biology at Swiss Federal Institute of Technology
Zurich.

Main research interests: biology of asexually reproducing plants;
ecological restoration above the timberline. Current project:
demographic assessment of ecological restoration in high-alti-
tude sites.

Hobbies: interior design, quilting.
Geobotanisches Institut ETH, Stiftung Rübel, Zürichbergstrasse
38, CH-8044 Zurich, Switzerland.

Phone: +41 1 632 3877 (Secretary); Fax: +41 1 632 12 15
e-mail: urbanska@umnw.ethz.ch



Co-Editor Newsletter (Chromosome Data):

Clive A. STACE: 56, married, father of two.
Professor of Plant Taxonomy at University of Leicester.

Main research interests: hybridization; molecular systematics.
Current project: Cytological and molecular characterization of
Hieracium agamospecies.

Hobbies: gardening, photography.
Dept of Botany, University of Leicester, Leicester LE1 7RH,
U.K.

Phone: +44 116 252 3381; Fax: +44 116 252 2791



Co-Editor Newsletter (Molecular News):

Daniel J. CRAWFORD: 52, married, father of two.
Professor at Dept of Plant Biology, Ohio State University.
Main research interests: molecular systematics; evolution on
Oceanic islands. Current projects: Origin and evolution of the
flora of the Juan Fernandez Islands, genetic variation in the
genus *Lemna* L.
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: d Crawford@magnum.acs.ohio-state.edu



Member *ex officio* for 1998 Symposium:

Hans C. M. DEN NIJS: 48, married, father of two.
Professor at Hugo de Vries Lab, University of Amsterdam.
Main research interests: polyploid speciation; conservation bio-
logy esp. fragmentation effects. Current projects: genetics and
population biology in small populations e.g., *Gentiana*;
biosystematics of *Taraxacum*.
Hobbies: organic vegetable growing, house refitting, photogr.
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



Council Candidates:

Randall J. BAYER: 38, single, no children.
Associate Professor of Systematic Botany and Curator of
Vascular Plants (ALTA) at University of Alberta, Edmonton.
Main research interests: evolution and systematics of the Astera-
ceae, polyploid agamic complexes of *Antennaria*. Current pro-
jects: Molecular phylogeny of the Gnaphalieae using the gene
matK, esp. subtr. Angianthinae and Cassiniinae.
Hobbies: hiking, fishing.
Dept of Botany, University of Alberta, Edmonton, Alberta
T6G 2E9, Canada.
Phone: +1 403 492 7567; Fax: +1 403 492 9457;
e-mail: randallbayer@mts.uacs.alberta.ca



Jorge V. CRISCI: 49, married, no children.
Professor of Botany and Director, Laboratory of Systematic and
Evolutionary Biology, Facultad de Ciencias Naturales y Museo,
Universidad Nacional de La Plata.
Main research interests: phylogenetics, multivariate analysis.
Current projects: systematics of Asteraceae, historical biogeo-
graphy of southern S America.
Museo de La Plata, 1900 La Plata, Buenos Aires, Argentina.
Phone: 54-21 21 9066; e-mail: crisci@lasbe.org.ar



De-Yuan HONG: 58, married, father of two.
Director and Professor at Lab of Systematic and Evolutionary
Botany and Herbarium, Institute of Botany, Chinese Academy of
Sciences, Beijing.
Main research interests: cytotaxonomy and biosystematics,
biogeography and floristics of China. Current project: systema-
tics of *Paeonia*; Flora of China.
Open Laboratory, Institute of Botany, Chinese Academy of
Sciences, Xiangshan, Beijing 100093, China.
Phone: 86 1 259 1431(ext. 2128); FAX: 86 18 319 534;
e-mail: dailk@bepc2.ihep.ac.cn



Philip J. GARNOCK-JONES: 44, divorced, father of two. Professor of Plant Science at Victoria University of Wellington. Main research interests: Phylogeny and evolution of flowering plants. Current project: Phylogeny of *Hebe* and *Ourisia* (Scrophulariaceae). School of Biological Sciences, Victoria University of Wellington, P. O. Box 600, Wellington, New Zealand. Phone: +64 4 4721000; Fax: +64 4 4715331. e-mail: Phil.Garnock-Jones@vuw.ac.nz



Herbert HURKA: 54, married, father of two. Professor of Systematic Botany at University of Osnabrück. Main research interests: evolutionary biology and plant phylogenies; biosystematics of Brassicaceae. Current project: species differentiation at molecular and organismic level in selected Brassicaceae. Hobbies: mountain climbing. Institut f. Biologie, Univ. of Osnabrück. Barbarastr. 11, D-49076 Osnabrück, Deutschland. Fax: +49 541 969 28 70; e-mail: hurka@cipfb5.biologie.uni-osnabrueck.de



Shoichi KAWANO: 58, married, father of two. Professor at Section of Systematic Botany, Kyoto University, and Institute of Genetic Ecology, Sendai University. Main research interests: plant population biology and life history evolution in plants, molecular population genetics. Current project: phenotypic plasticity and evolution of adaptive systems. Hobbies: singing. Dept of Biology, Faculty of Science, Kyoto University, Kyoto 606, Japan. Phone: +81 75 753 4133; Fax: +81 75 753 412.



Jan KIRSCHNER: 39, married, father of two. Head of the Dept of Taxonomy and Biosystematics, Institute of Botany, Pruhonice. Main research interests: taxonomy, karyology, and molecular systematics of *Taraxacum* and *Luzula*, population biology of agamosperous plants. Current projects: sectional differentiation in *Taraxacum* sect. *Dioszegia*, rapid peripheral speciation in *Luzula* sect. *Luzula*. Hobbies: playing recorder with his children. Institute of Botany, Academy of Sciences, CZ-25243 Pruhonice 1, Czech Republic. Phone: +42 2 643 65 73, Fax +42 2 643 65 29; e-mail: kirschn@csearn.bitnet



Tatsuyoshi MORITA: 49, married, father of two. Professor at Faculty of Education, University of Niigata. Main research interests: polyploid speciation in Asteraceae. Current project: molecular-phylogenetic analysis of agamic complex in Asian *Taraxacum*. Hobbies: playing with his dog, travelling, ancient history. 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: 57, married, no children.
Professor of Botany and Curator; Museum, University of Alaska.
Main research interests: Origin and evolution of arctic and alpine
floras. Current project: Panarctic Flora.
Hobbies: photography, art, music.
Museum, University of Alaska, 907 Yukon Drive, Fairbanks,
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e-mail: FFDFM@aurora.alaska.edu



Jürg STOECKLIN: 43, married, father of two.
Lecturer and Research Scientist at Botanical Institute, University
of Basel.
Main research interests: population biology and reproductive
biology of clonal plants. Current project: alpine pioneer species
e. g., *Epilobium* spp.
Hobbies: modern history, history of civilization.
Botanical Institute, University of Basel, Schönbeinstrasse 6,
CH-4056 Basel, Switzerland.
Phone: +41 61 267 3501; Fax: +41 61 267 35 04.



Suzanne I. WARWICK: 42, married, no children (but one cat
Leonardo).
Senior Research Scientist at Agri-Food Canada and Adjunct
Professor, Biology Dept, University of Ottawa.
Main research interests: molecular systematics, phylogeny and
taxonomy of Brassicaceae, population genetics of weeds.
Current project: genetic diversity and relationships in Brassica-
ceae: molecular, morphological and chromosome evolution.
Hobbies: restoration of oldest walled garden in Canada, wilder-
ness canoe/camping and biking.
Centre for Land and Biological Resources Research, Agriculture
and Agri-food Canada, K. W. Neatby Bldg, C.E.F., Ottawa,
Ontario, Canada K1A 0C6.
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4. Individual Research News

Czapik Romana, Dept of Plant Cytology and Embryology, Institute of Botany, Jagelloni-
an University, Grodzka 52, 31-044 Krakow, Poland.

Recent publications:

CZAPIK R., 1993. Chromosome numbers and lack of flowers in *Ornithogallum umbella-
tum* Agg. (Liliaceae). Polish Bot. Stud. 5: 71-77.

CZAPIK R. and KOSCINSKA-PAJAK M. 1994. ANL Current list of apomictic species and apo-
mictic processes in seed plants I. Apomixis Newsletter 1994, 7: 44-46.

NOVOTNÁ I. and CZAPIK R. 1994. Metaxenia, a mechanism increasing seed variability after
interspecific crosses within *Arabis hirsuta* complex (Cruciferae). Acta Biol. Craco-
viensia, Ser. Bot. Vol. XXXVI.

Fahsel Dianne, Dept of Plant Sciences, Univ. of Western Ontario, London, Ont. N6A 5B7 Canada.

Recent publications:

FAHSEL D., 1994. Secondary biochemistry of lichens (review). *Symbiosis*.

FAHSEL D., 1994. Rhizine and upper thallus isozymes in umbilicate lichens. *Symbiosis*.

FAHSEL D., 1994. UV absorbance by thallus extracts of umbilicate lichens. *The Lichenologist*.

Khandjian Nazik, Ministry of Nature and Environment Protection, 35 Moskovian Street, Yerevan, 375002, Armenia

Recent publications:

KHANDJIAN N. 1994. Morphology and anatomy of achenes and systematics of the tribe Anthemideae. (In press).

KHANDJIAN N. 1994. Phytogeographical analysis of the tribe Anthemideae. (In press).

Four further papers in press.

Hoch Peter C., Missouri Bot. Garden, P. O. Box 299, St. Louis MO 63166-0299 USA.

Recent publications:

HOCH P.C., CRISCI J.V., TOBE H. and BERRY P.E. 1993. A cladistic analysis of the plant family Onagraceae. *Syst. Bot.* 18: 31-47.

GRAHAM S.A., CRISCI J.V. and HOCH P.C. 1993. Cladistic analysis of the Lythraceae sensu lato based on morphological characters. *Bot. J. Linn. Soc.* 113: 1-33.

BAUM D.A., SYTSMA K.J. and HOCH P.C. 1994. A phylogenetic analysis of *Epilobium* (Onagraceae) based on nuclear ribosomal DNA sequences. *Syst. Bot.* 19: 363-388.

Warwick Suzanne I., Centre for Land and Biological Resources Research, K. W. Neatby Bldg, C. E. F. Ottawa. Ontario Canada K1A 0C6.

Recent publications:

WARWICK S.I. and BLACK L. 1993. Molecular relationship in subtribe Brassicinae (Cruciferae, tribe Brassiceae, subtribe Brassicinae). *Can. J. Bot.* 71: 906-918.

WARWICK S.I. et al. 1993, 1994. Guide to the wild germplasm of Brassica and allied crops. Parts I to V. *Agriculture Canada Techn. Bull.*: 1993-14E, 33 pp.; -15E, 22 pp.; -16E, 31 pp.; -17E, 19 pp.; and 1994-2E, 61 pp.

YOUNG A., MERRIAM H.G. and WARWICK S.I. 1993. The effects of forest fragmentation on genetic variation in *Acer saccharum* Marsh. (sugar maple) populations. *Heredity* 71: 277-289.

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5. IOPB Chromosome Data 8

edited by Clive A. Stace,
Department of Botany, University of Leicester
Leicester LE1 7 REH
England
Fax: + 44-533-522-791

Please send contributions to Professor Stace at the above address on RPS 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 or reprints will be made available, but the editor will acknowledge receipt of contributions and raise queries with authors if necessary. Thank you.

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Reports by T.V. ALEXEEVA, M.G. VASIL'eva, J.V. DAUSHKEVICH and M.G. PIMENOV, Botanical Garden, Moscow State University, Moscow 119899, Russia. Vouchers in MW. The collectors are M.G. Pimenov (P), M.G. Vasil'eva (V), J.V. Daushkevich (D), T.V. Alexeeva (A), and E.V. Kljuykov (K). The work has been supported by the Russian Foundation of Basic Investigations (RFFI).

Angelica palustris (Bess.) Hoffm. n=11. Russia, Kurgan distr., Valley of Tobol River, Ust-Uyskoe. 1993. P & V 11.

Angelica purpurascens (Ave-Lall.) Gilli. n=11. Russia, Northern Caucasus, Krasnodar Territory, Adygeja, 15km W. of Guseripl. 1989. D 39.

Anthriscus sylvestris (L.) Hoffm. 2n=16. Russia, Novosibirsk distr., Zolotaja Dolina. 1989. P & V s.n.; Russia, Altai, Seminsky Pass. 1989. P & V s.n.; n=8. Russia, Northern Caucasus, N. Osetia, Mt. Arganalu-khokh. 1990. D 11.

Astrantia colchica Albov. 2n=14. Georgia, Dzhwari distr., Mt. Kvira. 1990. D 43.

Astrantia major L. 2n=14. Ukraine, Transcarpathian distr., near Tatarov. 1989. D 29.

Bunium longipes Freyn. n=10. Turkmenistan, Western Kopet Dagh Mts., Ipai-kala. 1990. P & K 7.

Bupleurum bicaule Helm. n=14, 14+1B. Russia, Krasnoyarsk territory, Khakassia, near Shira. 1993. P & V 55.

Bupleurum falcatum L. n=18. Russia, Voronezh distr., Divnogorje state reserve. 1993. D s.n.; Russia, Voronezh distr., near Volokonovka. 1993. D s.n.

Bupleurum scorzonerifolium Willd. n=6. Russia, Krasnoyarsk territory, Khakassia, near Shira. 1993. P & V 72; Russia, Chita distr., near Chita, Titova Sopka Mt. 1993. P & V s.n.; Russia, Chita distr., Valley of Onon River, Ononsk village. 1993. P & V 93.

Carum buriaticum Turcz. n=11. Russia, Chita distr., Valley of Onon River, Ononsk village. 1993. P & V 97.

Chaerophyllum prescottii DC. 2n=22. Russia, Altai, Valley of Charysh River, Charyshskoje. 1989. P & V s.n.

Conioselinum longifolium Turcz. 2n=22. Russia, Burjatia, East Saján Mts., Khobuty River. 1992. P & K 38.

Conioselinum tataricum Hoffm. n=22. Russia, Altai, Seminsky Pass. 1989. P & V s.n.; n=11. Russia, Krasnoyarsk territory, Khakassia, near Efremkino. 1993. P & V 82.

Eremodaucus lehmanii Bunge. n=9. Turkmenistan, Central Kopet Dagh Mts., near Ashkhabad, Bekrova. 1990. P & K s.n.

Eryngium planum L. 2n=16. Russia, Altai, near Barnaul, Valley of Ob' River, Gon'ba village. 1989. P & V, s.n.

Ferula soongarica Pall. ex Spreng. 2n=22. Russia, Altai, Valley of Charysh River, Charyshskoje. 1989. P & V s.n.

Ferula tatarica Fisch ex Spreng. 2n=22. Kazakhstan, Kustanai distr., Valley of Tobol River, near Ljutinka. 1993. P & V 21.

Hansenia mongholica Turcz. 2n=22. Russia, Burjatia, East Saján Mts., Khobuty River. 1992. P & K 33.

Heracleum apiifolium Boiss. 2n=22. Russia, Northern Caucasus, Krasnodar Territory, Adygeja, Lagonaki. 1989. D 61.

- Lithiscadium multicaule* Turcz. 2n=22. Russia, Burjatia, East Sajon Mts., Khobuty River. 1992. P & K 59.
- Peucedanum morisonii* Bess. 2n=66. Russia, Altai, Shtabka. 1989. P & V s.n.
- Peucedanum ruthenicum* Bieb. n=33. Russia, Voronezh distr., near Volokonovka. 1993. D s.n.; Russia, Voronezh distr., near Pisarevka. 1993. D s.n.
- Phlojodicarpus villosus* Turcz. 2n=44. Russia, Burjatia, East Sajon Mts., Khobuty River. 1992. P & K 42.
- Pimpinella saxifraga* L. n=20. Russia, Altai, near Biysk, Valley of Bija River. 1990. P & V 146; Russia, Kurgan distr., Valley of Alabuga River, Verkh-Alabuga village. 1993. P & V 44.
- Saposhnikovia divaricata* (Turcz.) Schischk. n=8. Russia, Chita distr., near Chita, Mt. Titova Sopka. 1993. P & V s.n.
- Schulzia crinita* (Pall.) Spreng. 2n=22. Russia, Altai, Seminsky Pass. 1989. P & V s.n.
- Seseli buchtormense* (Fisch. ex Spreng.) W.D.J.Koch. 2n=22. Russia, Altai, Seminsky Pass. 1989. P & V s.n.
- Seseli dichotomum* Pall. ex Bieb. n=11. Ukraine, Crimea, Mt. Selbukhra. 1989. A s.n.
- Seseli gummiferum* Pall. ex Smith. n=11. Ukraine, Crimea, near Nikita botanical garden. 1989. A 579.
- Seseli libanotis* (L.) W.D.J.Koch. 2n=22. Russia, Altai, Valley of Charysh River, Charyshskoje. 1989. P & V s.n.
- Seseli strictum* Ledeb. n=9. Russia, Kurgan distr., Valley of Tobol River, Ust-Uyskoe. 1993. P & V 3.
- Silaum silaus* (L.) Schinz et Thell. n=11, 2n=22. Russia, Kurgan distr., Valley of Tobol River, Ust-Uyskoe. 1993. P & V 9.
- Sium latifolium* L. n=6. Russia, Kurgan distr., Valley of Tobol River, Ust-Uyskoe. 1993. P & V s.n.; Kazakhstan, Kustanai distr., Valley of Tobol River, near Ljutinka. 1993. P & V 28.
- Sium suave* Walt. n=6. Russia, Krasnoyarsk territory, Khakassia, near Shira. 1993. P & V 70; 2n=12. Russia, Chita distr., Valley of Ingoda River, between Makkaveevo and Darasum. 1993. P & V s.n.
- Sphallerocarpus gracilis* (Bess. ex Trev.) Koso-Pol. n=10. Russia, Krasnoyarsk territory, Khakassia, near Shira. 1993. P & V s.n.; 2n=20. Russia, Chita distr., Valley of Onon River, Ononsk village. 1993. P & V s.n.; n=10. Russia, Chita distr., Valley of Onon River, near Olovjannaja. 1993. P & V s.n.
- Stenocoelium athamantoides* (Bieb.) Ledeb. n=20. Russia, Altai, Valley of Chuya River, Sukor Mt. 1990. P & V s.n.
- Zosima orientalis* Hoffm. n=5. Turkmenistan, Western Kopet Dagh Mts., Ipai-kala. 1990. P & K s.n.

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6. News from Molecular Biosystematists 4

edited by Dan J. Crawford
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Please send your contributions to Professor Crawford at the above address, if possible on RPS Microdisc with text in ASCII-file on 3.5" or 5.25" disc formatted for MacIntosh, and stating whether or not you are IOPB Member. Thank you.

* * *

News from Daniel J. Crawford, Department of Plant Biology, The Ohio State University, Columbus, Ohio 43210-1293, USA

A number of different projects are being carried out with collaborators and graduate students.

One study involves looking at ITS sequences in endemic genera on the Juan Fernandez Islands. The results from ITS are then compared and contrasted with those obtained from restriction site studies of cpDNA and morphology. Studies have been completed on the two largest endemic genera in the islands, *Dendroseris* and *Robinsonia*, both in the Asteraceae. For *Dendroseris*, ITS and cpDNA results give the same phylogeny with neither providing resolution among the three subgenera. By contrast, ITS and cpDNA provide quite different phylogenies for *Robinsonia*, with the latter giving no phylogenetic resolution (all mutations restricted to single species) whereas the former provides a very well resolved phylogeny that is fully concordant with one generated from morphological data. We also compared rates of sequence divergence in ITS and cpDNA in the two genera. These studies are in collaboration with T. Sang, S.-C. Kim and T. F. Stuessy.

Another ongoing project, with Elias Landolt and Donald Less, involves a study of the evolution and phylogeny of Lemnaceae (duckweeds). The extensive collection of E. Landolt made this study feasible. We are using enzyme electrophoresis to examine divergence between species within each of the four genera. Results for *Spirodela* and *Wolffia* indicate very high divergence between congeners, with some species sharing no alleles. Thus, despite morphological similarity, many duckweed species are highly divergent at allozyme loci. Phylogenetic studies using ITS and matK sequences have been initiated, and preliminary results with the matK gene are concordant with a phylogeny derived from morphological features.

Another ongoing study examines phylogenetic relationships with the genus *Coreopsis* and its relationship to the genus *Bidens*. These studies involve cpDNA restriction site mutations and ITS sequences in addition to basic morphological, chromosomal and biosystematic investigations. The collaboration includes B. Esselman, I. Sanchez-Vega, A. Sagastegui, E. B. Smith and Mesfin Tadesse. Present focus is elucidating relationships in the poorly known Andean species and an evaluation of generic limits between *Bidens* and *Coreopsis*. At present, Dr. Mesfin Tadesse, Addis Ababa University, Ethiopia, is working in the laboratory. He is an expert on *Bidens* in Africa. The major thrust of his work is the delimitation of *Bidens* and *Coreopsis*, and the elucidation of inter-continental relationships between the taxa.

Together with B. Esselman, I am examining genetic variation within *Trifolium stoloniferum*, a native American clover once thought to be extinct, but now known from several populations of various sizes. We are using RAPDs to assess variation and the results will be compared to those obtained with allozymes.

The following doctoral research is being carried out in my laboratory, with each person describing his/her work as follows:

Elizabeth Esselman:

Solidago albopilosa is an endangered goldenrod endemic to eastern Kentucky. I am interested in examining the possible origin and levels of genetic diversity within this species. Molecular techniques such as enzyme electrophoresis, RAPD markers, and cpDNA as well as crossing experiments are being used to identify putative parents. Levels of gene flow and genetic diversity will be measured using data from enzyme electrophoresis and RAPD markers. This information will be used in the re-establishment of extirpated populations and identifying populations with the greatest levels of genetic diversity so they may be targeted for any conservation efforts.

Karla Gengler:

I am studying the monogenetic family Malesherbiaceae, one of only two endemic families found in the Atacama Desert and central Andes of Chile, Peru, and Argentina. I am using ITS sequence data in conjunction with morphological data to elucidate the phylogeny, speciation, and biogeography of the group. Since this group is characteristic of these dry regions, its patterns of speciation and distribution may be indicative of the speciation and distributions of other groups also found in these regions, therefore, perhaps revealing general phytogeographical patterns in the Atacama Desert and arid Andean regions.

Seung-Chul Kim:

I am currently working on the evolution of subgenus *Dendrosonchus* (Lactuceae: Asteraceae) and its close relatives in the Canary Islands, Spain. I am particularly interested in the origin and evolution of subgenus *Dendrosonchus* on the Canary Islands and its phylogenetic relationships with closely related segregate genera on these islands. I am also interested in the phylogeny of subtribe Sonchinae (Bremer, 1993). Furthermore, I am interested in determining the ancestor (or sister group) of *Dendrosoris*, an endemic genus in the Juan Fernandez Islands, Chile. Molecular approaches, including direct ITS sequencing of nrDNA and restriction site analysis of cpDNA, are currently underway to address several of the above questions.

Tao Sang:

My dissertation research is focused on reconstructing phylogenetic and biogeographic histories of *Paeonia* (Paeoniaceae). I chose ITS sequences and chloroplast DNA restriction site variation as molecular data to reconstruct phylogeny. I am presently finishing ITS sequencing. The results are quite interesting. Multiple speciation events through hybridization within the genus have been revealed based on additives in the sequences. When the species derived through hybridization are excluded from cladistic analysis, cladograms generated from ITS sequences are concordant with the traditional classification of *Paeonia*. This study, thus, should contribute to a better understanding of the phylogeny of *Paeonia* and an improved natural classification. *Paeonia* has a fascinating distribution, occurring in five disjunct areas in the Northern Hemisphere: eastern Asia, central Asia, western Himalaya, the Mediterranean region, and Pacific North America. Reconstructing the biogeographic history of the genus by combining the molecular phylogeny with geological and climatic histories of the Northern Hemisphere should provide some general insights on biogeographic relationships.

7. Panarctic Flora Project - Current Research News

Writes David F. Murray, IOPB Council Member:

This year (April 1, 1994 through March 31, 1995) Dr. Bente Eriksen from Dept of Syst. Botany, Univ. of Gothenburg, Sweden, is resident in Fairbanks on post-doctoral fellowship from Swedish Research Council. She is jointly sponsored at Univ. of Alaska, Fairbanks, by David F. Murray UA (= Univ. of Alaska Museum) and W. Scott Armbrusher, IAB (= Institute of Arctic Biology). The study involves boreal and arctic species of *Potentilla* as a contribution to the Panarctic Flora Project, Flora of N America, and Flora Nordica.

The genus *Potentilla* is generally regarded as taxonomically difficult because the distinctions among species are often based on minor, even cryptic characters. The underlying assumption has been that these minor differences are stable, under genetic control, and taxonomically significant. Many new taxa have been named and described over the past ten years.

Eriksen has chosen to work primarily on the Niveae which consists of ca. 20 taxa, many important and widespread on northern landscapes of circumpolar and amphi-Beringian distributions, with extensions into the Himalayas and Rocky Mts.

Presumably, the taxonomic problems derive at last in part from apomictic seed formation (agamospermy). It is not known, however, the extent to which this mode of reproduction occurs among boreal and arctic taxa. Nor is the relationship among closely related agamosperous and sexual populations understood. Yet it is the dynamic relationships within and among populations that most certainly contribute to the complex pattern of phenotypes we see.

The objectives of Eriksen's project are:

- to confirm or reject the occurrence of pseudogamy in the target species;
- to assess the importance of hybridization among those species;
- to determine the amplitude of phenotypic plasticity;
- to detect relationships between ploidy level and taxonomic characters and
- to revise the taxonomy of the Niveae based on an improved understanding of the group.

In the summer 1994 Eriksen conducted field crossing experiments with *Potentilla hookeriana*, *P. nivea*, and *P. uniflora* in order to determine the mating systems of these species. Seeds from these experiments were germinated and the survival and growth of seedlings has been followed. The plants, now in the IAB research greenhouse, or the basis for collaboration with Dr. Ben Greene (IAB) on analysis of genetic variation by means of DNA patterns.

Transplants brought from the field this summer are currently dormant. These plants will be used to study the relation between ploidy level and morphological variation, and also serve as material for controlled greenhouse crosses in the spring of 1995. They include *P. nivea* ssp. *nivea* (5 populations, 38 individuals), *P. furcata* (1 population, 120 individuals), *P. villosa* (1 population, 3 individuals), all from Alaska. Additional five species from various groups more or less related to the Niveae have also been collected. Baseline data include phenology, pollen/ovule ratio, seed/ovule ratio, pollen fertility and seed morphology.

* * *

8. Profile of a Lab

Current research at the Far North Vegetation Cover Dept., Komarov Botanical Inst., Russian Academy of Sciences, 2 Prof. Popov Street, St. Petersburg 197376, Russia.

by Boris A. Yurtsev, Head of the Department

The Far North Vegetation Cover Department of the Komarov Botanical Institute is the only institution in Russia that specializes in all-round study of the vegetation cover in the Arctic not only in Russia itself but also on international level.

The Department staff includes specialists in floristics, vegetation, ecosystem science, biology and ecology of plants, and phytogeography. The Department is not a one-problem team, but deals with the regional complex of problems associated with the plant cover of the Arctic.

The urgent duty of the Department is the study of flora and vegetation in largely unknown, virgin areas of the tundra zone increasingly endangered by human activities. The studies are carried out on various levels: (a) phytogeographic plots (key study areas: one to three-week exploration of flora and vegetation within a representative test area of 6-10 km radius), (b) sub-stationary studies deal with more detailed exploration and large-scale vegetation mapping of the area during 1-3 field seasons; (c) stationary investigations which were carried out until 1977 in some field stations. These various studies included ca. 350 localities. Intensive floristic data were gathered in areas previously almost unexplored e. g. Chukotka and Wrangel Island.

The principal research directions may be outlined as follows:

1. Critical revision of the vascular plant flora of the Russian Arctic. The monumental work "Arctic Flora of USSR" (10 volumes) won USSR State Award in 1989. Its English translation is currently being prepared for publication at the Alberta University Press, Canada. The members of the author team of the Flora initiated the international project of "Panarctic Floras" (Editor's comment: see IOPB Newsletter, Nos. 18-20). Two centers of this project are respectively our Department and the Herbarium of the Univ. of Alaska Museum at Fairbanks, USA. A database is currently worked on and an annotated checklist of the flora is being compiled. In addition to this project, staff members of the Department are working on various regional floras of the Russian North.

2. Floristic and phytogeographic division of the circumpolar Arctic on the whole, and other more regional floristic subdivision. The classification of each unit was based on differential and co-differential plant species. More recently, the original schemes were revised and presented by B. A. Yurtsev at three international meetings (1992-1994). A number of phytogeographic concepts such as "Hypoarctic zone", "Meta-Arctic", "Mega-Beringia" etc. were developed by the staff of the Department.

3. Plant cover zonation of the Arctic. Detailed examination of this aspect is one of our guiding approaches to the study of vegetation cover. This type of studies is the best exemplified by work on the Taimyr zonal transect carried out by a team of Yu. I. Chernov and N. V. Matveyeva.

4. The generalization of the stored data on biological diversity (BD) was based on projects listed under 1-3. Computer database which include data on local floras and habitat floras is an important information source for work on dealing with ecological and geographic aspects of BD in the Asian North. A detailed analysis of zonal trend of BD on Taimyr was recently provided by N. V. Matveyeva.

5. The reconstruction of the history of the plant cover in the North is based on analysis of spatial differentiation of the plant cover, comparative analysis of floras, the coordinated phylogenetic analysis of selected taxa (e.g. *Dryas* spp.) as well as paleobotanical and geological evidence. Several large meetings in this subject were organized and contributed to by the staff members of the Department. The basic contribution was made to the history of Beringia.

6. Geobotanical studies in a strict sense deal with subtle structure of plant communities in different subzones and the vegetation cover structure at the landscape level including among others large-scale vegetation mapping (A. E. Katenin, S. S. Kholod). Classification of the plant communities in the Arctic is represented as well in the research programme of various staff members. Some studies of that type form part of international projects dealing with classification and mapping of circumpolar arctic vegetation.

7. Natural and anthropogenic dynamics of the Arctic vegetation during the last decade attracted attention of several Department scientists. The resulting work "The Study of Status and Anthropogenic Dynamics of the Arctic Vegetation" (now in press) is regarded as part of a formal instruction required by Ministry of Natural Resources of Russian Federation.

8. Ecological-biological studies are now represented by work of E. A. Khodachek on plant reproductive biology in Taimyr and Severnaya Zemlya as well as by research of T. G. Polozova on life-forms of arctic plants, mostly in Chukotka. Those studies are obviously connected with analysis of local floras and floristic-coenotical complexes.

9. Theoretical and methodical problems in phytogeography, floristics and geobotany are well represented in the research programme of the Department. 4 workshops in this subject were respectively held in 1971, 1983, 1988, and 1993, and the proceedings have been published.

10. The conservation component in the Department research programme increased dramatically within the last decade. The staff members contributed to the rare plant lists of the USSR and RF (esp. "Red Data Books"), annotated lists of plants to be protected in Chukotka and West Siberian Arctic). The Department is actively involved in the international programme CAFF (Conservation of Arctic Flora and Fauna), in the creation of international park "Beringia", etc.

At the time being Department experiences serious difficulties due to the economical and socio-political crisis in the country. Because of an inadequate funding, field expeditions as well as publications are severely limited and/or slowed down. In spite of these difficulties, there is an increased international research cooperation, help with purchase and use of computer technology. May this positive development increase.

Staff Members of the Department and their principal scientific activities (as of September 1994):

Abbreviations: CAVM = Circumpolar Arctic Vegetation Mapping; CAFF = Circumpolar Arctic Flora and Fauna; ITEX = International Tundra Experiment. PANF = Panarctic Flora.

YURTSEV, B. A., D. Sc., Professor. Flora, vegetation, phytogeography, paleogeography of the North esp. Northeastern Asia, Beringia; origin of florocoenotical complexes; systematics of some Rosaceae, Leguminosae; theory and methods of floristics and phytogeography. CAFF, CAVM, PANF.

- REBRISTAYA, Olga V., Ph. D.: Flora, vegetation, phytogeography of the North esp. N Europe and NW Siberia; systematics of *Castilleja*, *Saxifraga*; floristic methods; CAFF, PANF.
- PETROVSKY, V.V., Ph. D.: Flora and phytogeography of the North esp. N Yakutia, W Chukotka, Wrangel Island; systematics of *Papaver*, *Draba*, *Antennaria*; floristic methods. CAFF, PANF.
- MATVEYEVA, Nadezhda V., Ph. D.: Flora, vegetation, ecosystems of the Arctic esp. Taimyr, floristic classification of vegetation; natural zonation of the Arctic; ITEX.
- KATENIN, A.E., Ph. D.: Flora and vegetation of the Arctic esp. Chukotka Peninsula; structure of vegetation cover; large-scale mapping and structural-dominant classification of the arctic vegetation; mycorrhiza. CAFF, CAVM.
- KHODACEK, Eugenia A., Ph. D.: Reproductive biology of arctic plants esp. in Taimyr; flora and vegetation. CAFF.
- RASZHIVIN, V.Yu., Ph. D.: Flora and vegetation of the North esp. Chukotka and Koryak Mts; computerization of geobotany and floristics; snowbed vegetation of the Arctic and its classification. CAFF, ITEX, PANF.
- KOROLEVA, Tatjana M., Ph. D.: Flora of the Anyui Mts and N Yakutia; floristic methods; rare plant protection; CAFF, PANF.
- SERGIENKO, Ludmila A., Ph. D.: Flora and vegetation of the arctic sea shores; classification of the coastal vegetation; taxonomy of some sea shore genera.
- SEKRETAREVA, Nadezhda A., Ph. D.: Shrub vegetation of the tundra zone esp. willow shrub communities; flora and vegetation of Chukotka. CAFF, PANF.
- ZANOKHA, Lidia L., Ph. D.: Mesic meadow vegetation on Taimyr incl. floristic classification; flora, vegetation, ecosystems of Taimyr. ITEX.
- PLIEVA, Tamara V.: Flora of Chukotka and N Yakutia, CAFF, PANF, mapping Florae Europaeae.
- SOKOLOVA, Maria V.: Flora of Taimyr. CAFF, PANF.
- TARASKINA, Natalia N.: Chorology of the Arctic flora esp. flora of Chukotka. CAFF, PANF.
- KHITUN, Olga V.: Flora and vegetation of the W Siberian Arctic, the ecotopological structure of various subzone floras in Gydan Peninsula, PANF.
- KUCHEROV, I. B. Flora and vegetation of Chukotka, successional dynamics of vegetation.
- REZVANOVA, Galina S.: Flora and vegetation of the Chukotka Peninsula. CAVM.
- SLINCHENKOVA, Elena Yu.: Relic cryophyte-steppe communities of Chukotka.

* * *

Research news from Leo W.D. van Raamsdonk, Centre for Plant Breeding and Reproduction Research, CPRO-DLO, P.O. Box 16, 6700 AA-Wageningen, The Netherlands.

The Centre for Plant Breeding and Reproduction Research carries out fundamental and strategic research in the fields of breeding, genetics, molecular biology, genetic resources conservation, seed health and testing, variety testing and variety registration. In order to support this range of plant sciences several related research fields are included in the scope of the institute, biosystematics among them. The binding link between systematics and breeding research are the diverse evolutionary processes referred to as domestication. My own projects are focused on the relationships between cultivated plants and their wild relatives, and this includes nomenclature, species delimitation, classification, crossability research and phylogenetic reconstruction. The spin off of this research is in the fields of

documentation and optimization of genebank collections, crossing and introgression in breeding programs, and risk management of transgenic plants.

Last years a modelling system has been developed for graphic display of the mechanisms of evolution and domestication. This system can be used for comparison and clarification of different evolutionary pathways and for planning of breeding strategies. A specific model can consist of processes (e.g. mutation, introgression, polyploidization), parameters (e.g. gene frequencies, effective population size, fitness), modifiers (e.g. selection, drift) and entities resulting from the processes (adapted gene pools, reproductive isolation barriers). The crossability coefficient which is used for numerical analysis of crossability, provides an informative link to the developed graphic modelling system. The coefficient allows a numerical interpretation of several levels of crossability as included in the Gene Pool concept. A paper on crop domestication models designed for plant breeding studies is submitted for publication in 'Genetic Resources and Crop Evolution'.

In 1994 a project has been finished on the systematics of the genus *Tulipa*, which included numerical (multivariate) and phylogenetic analyses of data concerning morphology, chromosome banding and crossability. The genus *Tulipa* consists of two subgenera: the subgenus *Eriostemon* with three sections and about 20 species, and subgenus *Tulipa* (*Leio-stemon* Boiss.) with five sections and about 35 species. Within two of these five sections nine series have been described. A strict species concept was used resulting in several species treated as subspecies, variety or forma. Phylogenetic analysis of section *Biflores* revealed a phylogeny which corresponded to the one inferred from the phenetic analysis, using polyploidy to detect presumed ancestry. The two subgenera are completely isolated reproductively. Species belonging to different sections are generally intersterile. Hybrids between the sections *Eichleres* and *Tulipa* can be obtained in a number of combinations. The possibility of combining *T. gesneriana* (cultivated tulip, section *Tulipa*) with a range of related species has been used in breeding research. A total of 80 *T. gesneriana* cultivars belonging to twelve cultivar groups have been used in a study of phenetic variation over two years. Flowering time appeared to be the main discriminative character in the numerical analysis as well as in every cultivar classification since the first one from the early seventeenth century. Since this predominant use of earliness is supported by the principal component analysis, the historical, hierarchical classification of tulip cultivars with earliness as main division is still usable, with a further subdivision of the main groups according to other (floral) characters like lily-flowered, single versus double, fringed and parrot. This project was carried out in cooperation with Ms. T. de Vries (Dept. of Population Biology, CPRO-DLO), Ir. J.P. van Eijk and Ing. W. Eikelboom (Dept. of Ornamental Crops, CPRO-DLO) and Drs. J. van Scheepen (Royal General Bulbgrowers' Association, Hillegom, Holland). Two papers are listed below; four further manuscripts are in preparation.

Current research is focused on the cultivated species and wild relatives of the genus *Allium*. This genus consists of about 600 species, arranged in several subgenera and sections. Onion (*A. cepa*) belongs to section *Cepa*. A phylogenetic analysis of the six species of section *Cepa*, together with *A. roylei* of section *Rhizirideum* has been carried out. *A. roylei* is of particular interest for breeding purposes for its crossability with onion and for its desirable characters. Several different data sets are available for phylogeny reconstruction, i.e. a set of morphological, seed epidermis, chromosome and biochemical data ("supranuclear"), a set with crossability relationships and a set of nuclear DNA data (RAPD's). From literature, a set of chloroplast DNA data is available (Havey, USDA-ARS, Madison, WI). *A. cepa* and *A. vavilovii*, and *A. fistulosum* and *A. altaicum* appeared to be linked pairwise very closely in all data sets. The supranuclear and nDNA trees are comparable. The position of *A. oschaninii* is somewhat different in the supranuclear and nDNA tree, but in both trees this species is closer to *A. cepa/A. vavilovii* than *A. roylei* is to *A. cepa/A. vavilovii*. The topology of the trees resulting from the crossability

data and from the cpDNA set is completely identical. In both trees *A. roylei* is closer to *A. cepa/A. vavilovii* than *A. oschaninii*.

The discrepancy between the supranuclear/nDNA trees and the crossability/cpDNA trees is predominantly due to the position of *A. roylei*. The incongruity may be explained by the different effect of introgression on the structure of the nuclear and cytoplasmic genomes. Due to recombination, the recipient population will contain only a small part of the donor nuclear genome after several backcross generations. However, providing the hybrid and backcross plants will act as female parent of the subsequent backcross populations, a considerable part of the recipient population may have the donor cpDNA type. The existing crossability relationship may clarify the short distance between *A. cepa/A. vavilovii* and *A. roylei* in the cpDNA tree, shorter than may be inferred from their phylogenetic position in the nDNA tree. As a consequence, a shorter distance between two species in a cpDNA tree compared to a nDNA tree may be indicative for the level of crossability, which is of importance for plant breeding studies. A paper on introgression in *Allium* section *Cepa* is in preparation for 'Evolution'.

Future research plans will be dedicated to crossability research, study of nDNA and cpDNA variation, numerical analysis of variation and phylogeny reconstruction of representatives of the genus *Allium*. This project will be part of an *Allium* research programme and in this framework will be collaborated with Dr. C. Kik (Dept. of Vegetable and Fruit Crops, CPRO-DLO) and ms. ir. I. Boukema (Centre for Genetic Resources, Wageningen, The Netherlands), and with colleagues from Germany, Great Britain, France and Greece.

Relevant publications:

Modelling:

L.W.D. van Raamsdonk, 1992. A crossability coefficient for the evaluation of crossing experiments. *Nord. J. Bot.* 12: 177-182.

L.W.D. van Raamsdonk, 1993. Wild and cultivated plants: the parallelism between evolution and domestication. *Evol. Trends Pl.* 7: 73-84.

Tulipa:

J.P. van Eijk, L.W.D. van Raamsdonk, W. Eikelboom and R.J. Bino, 1991. Interspecific crosses between *Tulipa gesneriana* cultivars and wild *Tulipa* species: a survey. *Sexual Pl. Reprod.* 4: 1-5.

L.W.D. van Raamsdonk and T. de Vries, 1992. Biosystematic studies in *Tulipa* L. section *Eriostemon* Boiss. *Pl. Syst. Evol.* 179: 27-41.

Allium:

L.W.D. van Raamsdonk and T. de Vries, 1992. Biosystematic studies in *Allium* L. section *Cepa*. *Bot. J. Linn. Soc.* 109: 131-143.

L.W.D. van Raamsdonk, W.A. Wietsma and J.N. de Vries, 1992. Crossing experiments in *Allium* L. section *Cepa*. *Bot. J. Linn. Soc.* 109: 293-303.

A complete list of publications is available upon request.

* * *

9. IOPB Symposium 1995 - News from the Organizing Committee

Writes Bengt E. Jonsell, IOPB Vice-President/President Elect:

Planning for the VIth IOPB Symposium in Tromsø, Norway (July 29 through August 2, 1995) is making progress according to schedule. The number of subscriptions is almost 300 covering a great number of countries all over the world. There are invited speakers, who have accepted participation within all the sessions listed in the first Circular, and some more will be approached shortly.

We intend to accept only a limited number of contributed papers and encourage participants to provide posters which will be discussed in a session of its own.

There is a great interest for both pre-symposium trip to Svalbard and the post-symposium trip to Abisko (Swedish Lapland). There will also be one full-day excursion during the symposium in the surroundings of Tromsø.

The second and final Circular will be distributed by second half of January 1995 to all pre-subscribed persons, to all IOPB Members, and to some institutions. Final registration, including payment, will be requested by May 1, 1995. You are of course still welcome with your presubscription by the form of the first Circular or by a direct application to the IOPB Symposium Secretariat. The address is as follows:

IOPB Symposium Secretariat
Bergius Foundation
Box 50017
S-104 05 Stockholm, Sweden
Fax: 46 8 612 9005

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10. About Publication of IOPB Symposium 1992 Book

Writes Peter C. Hoch, editor:

The work on the book is nearly completed. The publication is scheduled before the end of this year but for some technical reasons it may be slightly delayed so that the effective appearance will be January 1995.

The book contents:

I. DNA and Plant Biosystematics

Soltis P.S., Soltis D.E., Novak S.J., Schultz J.J. and Kuzoff R.K.: Fossil DNA: its potential for biosystematics.

Bachmann K.: Nuclear DNA markers for the evolution of *Microseris* (Asteraceae).

Duvall M.R., Chase M.W., Soltis D.E. and Clegg M.T.: A phylogeny of seed plants resulting from analysis of DNA sequence variation among the *rbcL* loci of 475 species, with particular emphasis on alliances among monocotyledons.

MacRae A.F.: Patterns of transposable element evolution in the grasses.

Doebley J.: Genetics, development, and the morphological evolution of maize.

II. Plant Growth Patterns and Biosystematics

- Rothwell G.W.: The fossil history of branching: implications for the phylogeny of land plants.
- Proctor M.C.F. and Smith A.J.E.: Ecological and systematics implications of branching patterns in bryophytes.
- Kaplan D.R. and Groff P.A.: Developmental themes in vascular plants: functional and evolutionary significance.
- Hallé F.: Distribution of architectures across a taxonomic spectrum.
- Bell A.D. and Dines T.D.: Branching patterns in the Solanaceae.
- Hutchings M.J. and Turkington R.: Plasticity of branching in the clonal herbs *Trifolium repens* L. and *Glechoma hederacea* L.

III. Plant Reproductive Strategies

- Dilcher D.L.: Plant reproductive strategies: using the fossil record to unravel current issues in plant reproduction.
- Schmitt J.: Genotype-environment interaction, parental effects, and the evolution of plant reproductive traits.
- Hamrick J.L., Godt M.J.W. and Sherman-Broyles S.L.: Gene flow among plant populations: evidence from genetic markers.
- Stephenson A.G., Quesada M.R., Schlichting C.D. and Winsor J.A.: Consequences of avian pollination in pollen load size.
- Rocha O.J. and Stephenson A.G.: Regulation in flower, fruit, and seed production: *Phaseolus coccineus*, a study case.
- Anderson G.J.: Systematics and reproductive biology.

IV. Phylogenetic Analysis and Population Biology

- Maddison W.: Phylogenetic histories within and among species.
- Baum D.A. and Shaw K.L.: Genealogical perspectives on the species problem.
- McDade L.A.: Hybridization and phylogenetics.
- Rieseberg L.H. and Morefield J.D.: Character expression, phylogenetic reconstruction, and the detection of reticulate evolution.
- Weller S.G., Donoghue M.J. and Charlesworth D.: The evolution of self-incompatibility in flowering plants: a phylogenetic approach.

* * *

11. Urgent News from the Treasurer: Change of Regional Treasurer!!

Writes Hans C.M. den Nijs, IOPB Secretary/Treasurer:

Change of Regional Treasurer!

After some years of serving as Regional Treasurer for US Dollars, Hardy Eshbaugh had to withdraw. His action saved IOPB many hundreds of dollars in the high international banking charges. Thanks, Hardy. It is a pleasure for me to announce that Peter C. Hoch (Missouri Botanical Garden, St. Louis) agreed to take over Hardy's job as from now on. So, if you for any reason like to pay in US Dollars, please send the check to him, according the instruction given on the next page.

Reminder: pay your fees now!

Approximately one year ago I contributed at this place some data from my files; they included, among others, the overview of the size, and rather important also, the back dues of our organization. I now can report that IOPB had a slight increase in the membership over the past year, the directory counts 280 personal and institutional members. However, my urgent request for paying the dues for the current period was not completely successful, there are still some tens of members not yet having paid their fees for the period that now is almost already expiring. I again have to ask all those that belong to this category, to fulfill their payment duties soon. In my role as Treasurer I don't like to feel like a writ-server, so please look through your files and do the necessary.

At this place I like to thank all Members who meanwhile have paid.

Membership fees for 1993-1995

As stated before, the personal membership fees for the current period that expires at the Tromsøe symposium in 1995 are set at US\$ 33.- (or the equivalent of DFL 66.-). Members may pay their fees for two periods in once: the fees for the next period (for the years 1996-1998) have also been set at US\$ 33.-. Later possible rise of the fees will not be charged to those members who pay now for this period too. The total amount for these almost century-transgressing membership period thus is US\$ 66.-, equalling DFL 132.-.

As IOPB is still trying to avoid banking charges as much as possible, it would be fine if many of you would pay for these two periods now, it saves IOPB future banking costs, and you the likely rise of the fees.

It is important to reduce the banking charges, so I have to ask the members to pay only by one of the here mentioned **charge free** (or at least relatively **cheap**) ways of transfer.

Dutch Florin payments:

- o Send an **Eurocheque** to J.C.M. den Nijs, amounting DFL 66.- (or DFL 132.- for two membership periods) made payable to J.C.M. den Nijs - IOPB
- or
- o Send an **International Postal Money Order**, amounting DFL 66.- (or DFL 132.- see above) made payable to J.C.M. den Nijs - IOPB

These Eurocheques and Postal Money Orders should be sent to:

**Hans C. M. den Nijs
Hugo de Vries Laboratory
University of Amsterdam
Kruislaan 318
NL-1098 SM Amsterdam, The Netherlands**

US Dollar payments:

- o Send a **cheque**, made out to IOPB, and amounting US\$ 33.- (or US\$ 66.- for two membership periods).

Cheques should be sent to:

**Dr. Peter C. Hoch
Missouri Botanical Garden
P.O. Box 299
St. Louis, Missouri 63166-0299
USA**

The membership fee for **INSTITUTIONAL members** amounts to US\$ 40.- (equalling DFL 80.-) for the three-year period, postage not included (to be added to the amount due: US\$ 10.-, or DFL 20.-).

Thank you very much for your cooperation.

* * *

12. Meetings - Past and Future

COMPOSITAE: Systematics Biology Utilization

The second International Compositae Conference, that was held under the above heading at the Royal Botanic Gardens, Kew, England, from July 25 through August 5, 1994. During two successive weeks approximately 200 specialists from all continents (9 of them being IOPB members) presented and discussed recent advances from a large spectrum of disciplines covering this largest family of the dicots. The first week was on systematics and evolution, while in the other a large array of biological and utilization aspects were scheduled. New systematic insights were presented from many different disciplines such as morphology, ontogeny, paleontology, secondary compounds, and from cpDNA studies as well as from cytogenetical and phylogeographical data. It became quite clear that much progress was made, but also that there still are many discrepancies among data obtained by different approaches. Particularly some of the macromolecular studies made clear that a careful choice of the characters is needed for a fruitful discussion on the phylogenies among and within the many tribes distinguished within the family.

During the second week, the focus was on genomic organization, developmental control and ecology of the life cycle. Of course there was also attention given to the involvement of family representatives in agriculture, not only for the very valuable contribution from the Sunflower genus and for the many ornamentals, but also for the many weedy species. A special section dealt with the importance of ethnobotany. Here, the family contributions to the human as well as the animal pharmacognosy formed an important component of the programme. Not only during the lectures, but also in the evening workshops (e.g., on fruit morphology and data bases), it was evident that much more work was needed regardless of the large body of research already done. There is an urgent need for these further investigations, especially in view of the biodiversity crisis, and the ensuing losses of genetic resources.

It proved to be a very successful conference, and the organization was praised manifold. However, it was a little bit disappointing that apparently many of the colleagues were not able to attend two full weeks. The long duration of the meeting hindered contacts because many of the early participants did not even meet those who came later. This minor point of criticism will certainly largely be overcome when the proceedings are published. These doubtless will form a very valuable and comprehensive "State of the Compositae Art" of the early nineties. A hope was expressed many times during the conference that the next meeting on this important and still intriguing family will take place within some 5 or 8 years, and not after such a large interval as was the case between the current conference and the 1975 symposium at Reading.

* * *

Workshop: APOMIXIS AND TAXONOMY

8-11 August 1995.

Institute of Botany, Academy of Sciences, Pruhonice near Prague, Czech Republic.

The Workshop should give the participants an opportunity to present and discuss latest results achieved in the fields of breeding system variation, mechanisms of apomixis, genetic diversity of populations with presence of agamospermy, and taxonomic treatment of apomictic groups.

For information please contact: Organizing Committee
Jan Kirschner & Jan Stepánek
Institute of Botany
Academy of Sciences
CZ-25243 Pruhonice 1
Czech Republic

* * *

13. Requests for Material and/or Information

ERIKSEN B. and **MURRAY D.F.**, Museum, University of Alaska, 907 Yukon Drive, Fairbanks, AK 99775-1200, USA; Fax: +1 907 47 45 469, would appreciate vouchered seeds from populations of any *Potentilla* (*Nivea*) species from outside Alaska.

FAHSELT D. Dr., Dept. of Plant Sciences, University of Western Ontario, London, Ont. N6A 5B7, Canada, would appreciate data on success rates of transplanting native vascular plants.

KHANDJIAN N., Deputy Chief Div., Ministry of Nature and Environment Protection, 35 Moskovian Street, Yerevan, 375002, Armenia, would appreciate achenes on various Compositae tribes, and information on international conferences.

* * *

14. Miscellaneous News and Notes

Temporary change of address:

From March 1995 through February 1996, Dr. Jan Kirschner can be reached at the following address: Royal Botanical Gardens, Kew, Richmond, Surrey TW9 3AB, England; FAX +44 81 332 5278.

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* * *

IOFB - MEMBERSHIP APPLICATION FORM (1998)

No. / MS

Last name

First name (initials - optional)

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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) and Kyoto (S. Kawano, ed.: 1990: Biological Approaches and Evolutionary Trends in Plants) give extensive insight in the field IOPB deals with.

The IOPB Newsletter in 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, England, and Prof. Dr. Dan J. Crawford, Dept. of Botany, Ohio State University, Columbus, Ohio 43210-1293, USA. The Newsletter Editor is Prof. Dr. Krystyna M. Urbanska, Geobotanisches Institut ETH, Zürichbergstrasse 38, CH-8044 Zürich, Switzerland. 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 Scandinavia in 1995.

IOPB Membership fee for individuals is US\$ 33.- for 1993-1995, Institutional Membership fees are set at US\$ 40.- for the same period. Detailed information on the payment system can be found in the Newsletter, and will be provided by the Treasurer upon the receipt of the application form.

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

Dr. 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

Please don't send such mail to the Newsletter Editor, it delays the procedure!!

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IOPB - MEMBERSHIP APPLICATION FORM (please print)

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Mr./ Ms.

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Last name

.....
First name, middle initial

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Address

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Date:

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Signature:



International Brotherhood of Teamsters

The International Brotherhood of Teamsters... level from... national conference... in 1981... history...

For further information... contact the... 1-800-555-1234

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Research News Form

for the International Organization of Plant Biosystematists Newsletter
(IOPB Newsletter)

Typewritten or in capital letters

.....
Last name

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First name (Mr., Ms.)

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Title

Address:

Publications during the year*:

Current projects:

Projects completed:

Projects started:

Requests for research material and information:

Articles and reports should be attached

To be sent to Krystyna M. Urbanska, Geobotanisches Institut ETH, Stiftung Rübel,
Zürichbergstrasse 38, CH-8044 Zürich, Switzerland

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



Project Information

Project Name: [Faint text]
Project Number: [Faint text]

Client Name: [Faint text]

Address: [Faint text]

Project Start Date: [Faint text]

Project End Date: [Faint text]

Current Progress: [Faint text]

Project Manager: [Faint text]

Project Status: [Faint text]

Project Budget: [Faint text]

Project Risk: [Faint text]

Project Description: [Faint text]

Project Objectives: [Faint text]

Project Deliverables: [Faint text]

Project Milestones: [Faint text]

Project Risks: [Faint text]

Project Issues: [Faint text]

Project Next Steps: [Faint text]

Project Contact Information: [Faint text]

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