

Illustrations: *Juncus inflexus* L.

Štěpánek, J., Monogr. *Tar. Palustr.*, 1998:

*Taraxacum paludosum* (Scopoli) Schlechter,

*Taraxacum apiculatifforme* Soest.,

*Taraxacum pulchellum* K. & Š.

Cover illustration: *Juncus conglomeratus* L.

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# IOPB NEWSLETTER NO. 31

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## Letter from the President

It is a pleasure to address you in this first newsletter prepared by Jan Kirschner, who continues a tradition started with her legendary vigor by Kristina Urbanska and continued by Liv Borgen and Bengt Jonsell whom I want to thank once more for their efforts.

Our main task during the last year has been concerned the preparation of the Proceedings of the Amsterdam Symposium. As usual, there have been all kinds of problems, but due to the unflagging efforts of the editors, Leo van Raamsdonk and Hans den Nijs, we can announce that the proceedings volume will be ready for distribution towards the end of this year. Here is the full citation:

*Plant Evolution in Man-made Habitats, Proceedings of the VIIth Symposium of the International Organization of Plant Biosystematics, L.W.D. van Raamsdonk & J.C.M. den Nijs (eds). Hugo de Vries Laboratory, Amsterdam, The Netherlands, 1999.*

The volume contains the reviewed and revised versions of 19 invited plenary lectures, and I believe that it will become a much-cited contribution to a research field that seems to be undergoing exponential growth. Human activity is strongly influencing both the rate and the direction of plant evolution, and this provides remarkable model system for aspects of evolutionary biology that have been traditionally claimed by biosystematists. Disturbed habitats stimulate fast genetic reactions in some plants, plant domestication creates new, artificial genotypes (or even species) and these can interact with their wild progenitors, and the

vast increase in long-distance dispersal of plants results in massive plant invasions. There is an urgent demand for an understanding of these processes that will make them predictable and manageable. These practical demands contribute heavily to research on plant evolution in reaction to human activity. At the same time, these processes touch on very basic questions of evolutionary biology and provide experimental systems in which all effects are quantitatively and qualitatively magnified relative to evolutionary events "in the wild". That makes them highly informative. There is a refreshing challenge in basic research on questions that are scientifically exciting combined with practical application in which the relevance and the correctness of the results is put to the test. Our symposium has illustrated this with some excellent examples. The genetics and evolution of apomixis is a basic topic with a vast practical relevance, and the study of the genetic basis and evolution of morphological and ecologically relevant characters is a traditional concern of biosystematics that has been rejuvenated by the availability of molecular marker maps. Both of these topics have been featured in our symposium.

In Amsterdam there also has been a meeting of the executive and the council of IOPB, and the results of the elections of officers and council members have been announced. Tim Lowry is the new president-elect, Tommy Lennartsson secretary/treasurer, Jan Kirschner editor of the newsletter, and Peter Hoch remains the regional treasurer for the USA.

Ten council members were elected: Randall Bayer, Liv Borgen, Pilar Catalan, Chengxin Fu, Jorge Crisci, Shoichi

Kawano, Elsbieta Kuta, John Murray, Hans den Nijs and Suzanne Warwick.

Hans den Nijs has agreed to act as IOPB webmaster, a new function. The web site at the time of this writing can be reached under

**[www.bio.uva.nl/conferences/iopb98.htm](http://www.bio.uva.nl/conferences/iopb98.htm)**

and is going to be transferred to

**[www.bio.uva.nl/iopb](http://www.bio.uva.nl/iopb)**

Tim Lowry, our new president-elect, is preparing the next triennial IOPB symposium. This will be held in Albuquerque, New Mexico, USA, from 12 to 16 August 2001. The symposium is planned to coincide with the annual meeting of the Botanical Society of America. There will be easy access for participants from IOPB to BSA symposia and we hope BSA members will be interested in the IOPB symposium. Altogether, we expect that this

combination will be a great boost to IOPB. We should all reserve the date in our calendars. Details of program and registration will be announced in the coming newsletters and on our website when they become available. The first circular should be mailed to all of you about this time next year.

Being an international organization with executive and council from all over the world can create problems with communication. Computers, when they work, can be a great help. Let me therefore close this letter with my e-mail address and invite you to make use of this. Executive and council are very much interested to make sure that biosystematists all over the world benefit from IOPB membership. I shall do my best to deal with questions and suggestions sent to me or to relay them to the proper address.

Konrad Bachmann

**[Bachmann@ipk-gatersleben.de](mailto:Bachmann@ipk-gatersleben.de)**

## 2

### News, Notes & Requests

#### Recently Published

*All members are encouraged to send in short notes, preferably by e-mail to the editor*

*kirschner@ibot.cas.cz*

#### **Professor James A. QUINN**

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Rutgers University

NEW BRUNSWICK, NJ 08901-1582

USA

quinn@AESOP.RUTGERS.EDU

(732) 932-4519

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#### **Publications during 1998**

QUINN J. A. (1998): Ecological aspects of sex expression in grasses. – In: G. P. CHEPLICK (ed.), *Population biology*

*of grasses*, pp. 136-154. Cambridge University Press, New York.

BYERS D. L. & J. A. QUINN (1998): Demographic variation in *Alliaria petiolata* (Brassicaceae) in four contrasting habitats. – *J. Torrey Bot. Soc.* 125: 138-149.

HUFF D. R., J. A. QUINN, B. HIGGINS & A. J. PALAZZO (1998): Random amplified polymorphic DNA (RAPD) variation among native little bluestem [*Schizachyrium scoparium* (MICHX.) NASH] populations from sites of high and low fertility in forest and grassland biomes. *Molecular Ecology* 7: 1591-1597.

and two further papers.

#### **Current Project**

Evolutionary and migratory history of the ploidy levels in buffalo grass (*Buchloe dactyloides*)

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#### **Professor Soom Nath RAINA**

Department of Botany

University of Delhi,

Delhi

110007 India

RAINA S. N., MUKAI Y. & YAMAMOTO M. (1998): In situ hybridization identifies the diploid progenitor species of *Coffea arabica* (Rubiaceae).- *Theoretical & Applied Genetics* 97: 1204-1209.

RAINA S. N. & MUKAI Y (1999): Genomic in situ hybridization in *Arachis* (Fabaceae) identifies the diploid wild progenitors of cultivated (*A. hypogaea*) and related wild (*V. monticola*) peanut species. – *Plant Systematics & Evolution* 214: 251-262.

BISHT M. S., KESAVACHARYULU K. & RAINA S.N. (1998): Nucleolar chromosome variation and evolution in the genus *Vicia*. – *Caryologia* 51: 133-147.

SINGH A. K., SMARTT J., SIMPSON C. E. & RAINA S. N. (1998): Genetic variation vis-a-vis molecular polymorphism in groundnut, *Arachis hypogaea* L. – *Genetic Resources & Crop Evolution* 45: 119-126.

RANI V. & RAINA S. N. (1998): Genetic analysis of enhanced-axillary-branching-derived *Eucalyptus tereticornis* Smith and *E. camaldulensis* Debn plants. – *Plant Cell Reports* 17: 236-242.

## Current Projects

**Professor Claude LEFČBVRE**  
Jardin Experimental J. Massart.  
Chaussee de Wavre, 1850  
1160 Brussels  
Belgium

Biosystematics of *Armeria*, *Silene nutans* and *S. italica*

## Request for material

*Armeria*, *Silene nutans*, *Silene italica*: viable seeds sampled from natural populations.

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## Order form

*to be sent to*

**In capital letters!**

Hans C. M. den Nijs  
Institute for Systematics & Ecology  
Kruislaan 318  
NL-1098 SM AMSTERDAM  
The Netherlands

*Please sent me copy/copies of Proceedings VIIth International IOPB Symposium „Plant Evolution in man-made Habitats,, by Leo W. D. van Raamsdonk & Hans C. M. den Nijs (editors)  
(NLG 100 = Euro 45.50 (For IOPB members in good standing NLG 90=Euro 41.)*

### Mode of payments:

1) Postal Giro Account : Netherlands 4950310  
Name of the Account: Representatiekas Bijzondere Plantkunde  
Kruislaan 318, NL-1098 SM AMSTERDAM  
Please mention: PROCEEDINGS 10PB 98

2) Please charge credit card: VISA (Only VISA possible!)

*Account number*

\_\_\_\_\_

*Expiry date*

\_\_\_\_\_

*Name (at it appears on card)*

\_\_\_\_\_

*Address*

\_\_\_\_\_

*Please, State*

\_\_\_\_\_

*Signature*

\_\_\_\_\_

*Date*

*(only when different from card holder Address)*

\_\_\_\_\_

*Shipping address*

\_\_\_\_\_

### 3

## Profiles

### Košice

**Pavol Mártonfi**

**DEPARTMENT OF EXPERIMENTAL  
BOTANY & GENETICS,  
FACULTY OF SCIENCE, P. J.  
ŠAFÁRIK UNIVERSITY, KOŠICE,  
SLOVAKIA**

#### Overview

The department of Experimental Botany and Genetics belongs to the Faculty of Science, which was established in 1963. In this decade research at the Department has been characterized by grant projects of basic research as well as several projects of applied research and development. It has been focused on physiological, genetic and taxonomic study of selected medicinal plant species (mainly *Chamomilla recutita*, *Calendula officinalis*, various species of *Thymus*, *Drosera*, *Achillea*, *Hypericum*, *Valeriana*) with the aim to increase the production of secondary metabolites with pharmaceutical activity. Recently started projects deal with problems of the reaction of the metabolism of lichenes and medicinal plants to heavy metals. At present the structure of the projects is as follows:

Two projects in biosystematics (see below);

Three projects in genetics and physiology: Genetic study of diploid genotypes of *Hypericum perforatum* L. at cell and molecular levels and effect of hypericin on radiosensitivity of cancer cells (head of project: Eva Čellárová); Heavy metal tolerance induction in the selected strains of lichen photobionts *Trebouxia* sp. - in vitro resynthesis of heavy metal tolerant lichen populations (Martin Bačkor); Some responses of *Chamomilla*

*recutita* (L.) Rausch. metabolism to heavy metals in soil (Anton Grejtovský);

Three projects in applied research: Breeding and conservation of medicinal plants (Miroslav Repčák); Genetic aspects of hypericin synthesis in diploid genotypes of *Hypericum perforatum* L. and its hemopoietic and antineoplastic effects (Eva Čellárová);

One project in didactics: The acquaintance of blind people with the living nature (Robert Hončariv).

#### Biosystematics

In this decade two projects (1992-1994 and 1995-1997) were devoted to **plant secondary metabolites** with results related to systematic botany (the head of both projects was Miroslav Repčák). Besides other results of these projects five chemotypes of Slovak populations of *Thymus pulegioides* were described and correlations among chemotype diversity of populations, chemotype frequency in populations and carbonate content in soil was found. The results showed that in the genus *Hypericum* the variability of *Hypericum perforatum* secondary metabolites has reticulate structure and analysis of metabolites corroborated the hybridization of *Hypericum maculatum* × *Hypericum perforatum*. Stress metabolite 9-(methylsulphinyl)nonanenitril was identified in *Rorippa sylvestris*. Flavonoid chemotypes (chrysosplenetin and jaceidin chemotype) of *Chamomilla recutita* were described for the first time.

In 1994-1996 the project **Biosystematic analysis of representatives of the genus *Thymus* sect. *Serpyllum* in the Carpathians and Pannonia** (Pavol Mártonfi) brought the following interesting results: determination of new chromosome numbers for two species in the genus *Thymus*; finding of new species for the flora of Slovakia, *Thymus alternans* Klokov; palynological evaluation of the genus *Thymus* sect. *Serpyllum* in the

Carpathians and Pannonia; definition of ecological relations between soil chemistry and the taxa studied.

The Department has participated in a long-term project of **Flora of Slovakia**. In 1999 Pavol Mártonfi became the head of the project for Universities (joint project of Slovak Academy of Science and three universities). At present the following genera have been prepared: *Aubrieta*, *Coronopus*, *Dicentra*, *Fumaria*, *Lunaria*, *Neslia*, *Thlaspi*. The workers of the Department took part also in preparation of the edition of Checklist of non-vascular and vascular plants of Slovakia.

The second recent project (1998-2000) is **Microevolutionary aspects of reproduction in *Hypericum maculatum* s. l. group** (Pavol Mártonfi). The aim of the project is to obtain knowledge on morphological, chemical and genetic variability in *Hypericum maculatum* s. l.

#### Selected publications since 1994

BAČKOR M., HUDÁK J., BAČKOROVÁ M. (1998): Comparison between growth responses of autotrophic and heterotrophic populations of lichen photobiont *Trebouxia irregularis* (Chlorophyta) on Cu, Hg and Cd chlorides treatment. – *Phyton* 38: 239-250.

BAČKOR M., HUDÁK J., REPČÁK M., ZIEGLER W., BAČKOROVÁ M. (1998): The influence of pH and lichen metabolites (vulpinic acid and (+) usnic acid) on the growth of lichen photobiont *Trebouxia irregularis*. – *The Lichenologist* 30: 577-582.

BRUTOVSKÁ R., KUŠNIRIKOVÁ P., BOGYIOVÁ E., ČELLÁROVÁ E. (1999): Karyotype analysis of *Hypericum perforatum* L. – *Biol. Plant.* 42: (in press), 1999.

group (including hybrids) and the study of the mechanisms of reproduction in this group and their influence on the origin of new forms in given evolutionary environment; to solve selected taxonomic and nomenclatural problems and obscurities in the group and evaluate processes present in reproduction (sexual reproduction, apomixis, hybridisation) and draw microevolutionary conclusions.

For the next period (2000-2002) the project **Biosystematic study of some groups of the genus *Hieracium* sect. *Alpina* in Central Europe** (Patrik Mráz) has been prepared. The aim of the proposed project is to solve the taxonomic problems and evolutionary relationships in selected species group of *Hieracium* sect. *Alpina* with morphological and karyological methods as well as by isozyme and secondary metabolite (flavonoids) analyses.

BRUTOVSKÁ R., ČELLÁROVÁ E., DOLEŽEL J. (1998): Cytogenetic variation in tissue culture-derived *Hypericum perforatum* L. plants and their seed progenies. – *Plant Sci.* 133: 221-229.

ČELLÁROVÁ E., BRUTOVSKÁ R., DAXNEROVÁ Z., BRUŇÁKOVÁ K., WEIGEL R. C. (1997): Dependence of hypericin content on ploidy of somaclones of *Hypericum perforatum* L. – *Acta Biotechnol.* 17: 83-90.

ČELLÁROVÁ E., DAXNEROVÁ Z., KIMÁKOVÁ K., HALUŠKOVÁ J. (1994): Variability of hypericin content in regenerants of *Hypericum perforatum* L. – *Acta Biotechnol.* 14: 265-271.

GREJTOVSKÝ A., REPČÁK M., GIANITS L. (1998): The influence of soil cadmium eliminating sorbents on *Chamomilla recutita*. – *J. Environ. Sci. Health B*, 33: 307-316.

HALUŠKOVÁ J., ČELLÁROVÁ E. (1997): RFLP analysis of *Hypericum perforatum* L. somaclones and their progenies. – *Euphytica* 95: 229-235.

- MARHOLD K., MÁRTONFI P. (1998): Typification of the name *Thymus serpyllum* L. (Lamiaceae). – *Bot. J. Linn. Soc.* 128: 271-276, 1998.
- MÁRTONFI P. (1995): *Teucrium montanum* (Lamiaceae) in the Czech and Slovak Republics. – *Preslia* 66(1994): 289-304.
- MÁRTONFI P. (1996): *Thymus alternans* Klokov - a new species of Slovak flora. – *Biologia*, Bratislava, 51: 27-29.
- MÁRTONFI P. (1997): Nomenclatural survey of the genus *Thymus* sect. *Serpyllum* from Carpathians and Pannonia. – *Thaiszia - J. Bot.* 7: 111-181.
- MÁRTONFI P. (1997): Pollen morphology of *Thymus* sect. *Serpyllum* (Labiatae: Mentheae) in Carpathians and Pannonia. – *Grana* 36: 261-270.
- MÁRTONFI P.: New species of the genus *Hypericum* sect. *Hypericum* (Guttiferae) from Slovakia. – *Folia Geobot.* 35: (in press), 2000.
- MÁRTONFI P., BRUTOVSKÁ R., ČELLÁROVÁ E., REPČÁK M. (1996): Apomixis and hybridity in *Hypericum perforatum*. – *Folia Geobot. Phytotax.* 31(3): 389-396, 1996 & In: Richards A. J., Kirschner J., Štěpánek J., Marhold K. [eds.]: Apomixis and Taxonomy (Special Features in Biosystematics and Biodiversity I), pp. 115-122. Opulus Press, Uppsala, 1996.
- MÁRTONFI P., GREJTOVSKÝ A., REPČÁK M. (1994): Chemotype pattern differentiation of *Thymus pulegioides* on different substrates – *Biochem. Syst. Ecol.* 22: 819-825.
- MÁRTONFI P., GREJTOVSKÝ A., REPČÁK M. (1997): Soil chemistry of *Thymus* species stands in Carpathians and Pannonia. – *Thaiszia - J. Bot.* 6(1996): 39-48.
- MÁRTONFI P., MÁRTONFIOVÁ L. (1997): *Thymus* chromosome numbers from Carpathians and Pannonia. – *Thaiszia - J. Bot.* 6(1996): 25-38
- MÁRTONFI P., MICHÁLEK J., HADINEC J., MÁRTONFIOVÁ L., REPČÁK M.: *Hypericum dubium* Leers - a new species of the Czech flora. – *Preslia* 71: (in press), 1999.
- MÁRTONFI P., REPČÁK M. (1994): Secondary metabolites during flower ontogenesis of *Hypericum perforatum* L. – *Zahradnictví* 21: 37-44.
- MÁRTONFI P., REPČÁK M., MIHOKOVÁ L. (1996): *Hypericum maculatum* Crantz subsp. *maculatum* × *H. perforatum* L. (Hypericaceae): Corroboration of natural hybridization by secondary metabolite analysis. – *Folia Geobot. Phytotax.* 31(2): 245-250.
- MRÁZ P. (1998): The structure and development of the glandular trichomes of *Teucrium montanum* (Lamiaceae). – *Biologia*, Bratislava 53: 65-72.
- MRÁZ P. (1999): *Coronopus didymus* (Brassicaceae) - a new neophyte in the flora of Slovakia. – *Biologia*, Bratislava, 54: 387-390.
- MRÁZ P., MARHOLD K. (1999): Lectotypification of the name *Hieracium rohacsense* Kit. (Compositae). – *Willdenowia* 29: (in press).
- REPČÁK M., IMRICH J., PIHLAJA K., KALÁTOVÁ M. (1998): 9-(methylsulphinyl)nonanenitrile, a stress metabolite of *Rorippa sylvestris*. – *Phytochem.* 47: 1219-1221.
- REPČÁK M., MÁRTONFI P. (1997): The localization of secondary substances in *Hypericum perforatum* flower. – *Biologia*, Bratislava 52: 91-94.
- REPČÁK M., MÁRTONFI P. (1995): The variability pattern of apigenin glucosides in *Chamomilla recutita* diploid and tetraploid cultivars. – *Pharmazie* 50: 696-699.
- REPČÁK M., ŠVEHLÍKOVÁ V., IMRICH J., PIHLAJA K. (1999): Chrysosplenetin and jaceidin chemotypes of *Chamomilla recutita* (L.) Rauschert. – *Biochem. Syst. Ecol.* 27: 727-732.

**Pavol Mártonfi <martonfi@kosice.upjs.sk>**

## IOPB Chromosome Data 15

edited by Clive A. Stace  
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Please send contributions to Professor Stace at the above address (preferably by email with the contribution in the main text, not as an attachment, 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:

- **Turki Ali Al-Turki & Syed Farough Mehmood**

Institute of Natural Resources and Environmental Research, King Abdul Aziz City for Science and Technology, P. O. Box 6086, Riyadh 11442, Saudi Arabia.

- **Shafiq A. Filfilan**

College of Science, King Saud University, Riyadh, Saudi Arabia.  
 Vouchers in KACST.

### CHENOPODIACEAE

*Anabasis setifera* Moq. 2n = 18. Saudi Arabia: distr. Darin, Saudi Arabian Gulf Coast, Al-Turki & Abdul Ghafoor 217.

*Bienertia cycloptera* Bunge. 2n = 18. Saudi Arabia: distr. Darin, Saudi Arabian Gulf Coast, Al-Turki & Abdul Ghafoor 156.

*Chenopodium album* L. 2n = 54. Saudi Arabia: distr. Al-Ha`ir, c. 30 km S of Riyadh, Al-Turki & Abdul Ghafoor 12.

*C. ambrosioides* L. 2n = 32. Saudi Arabia: distr. Al-Ha`ir, c. 30 km S of Riyadh, Al-Turki & Abdul Ghafoor 1875.

*C. ficifolium* Sm. 2n = 18. Saudi Arabia: distr. Dirab, c. 35 km SW of Riyadh, Al-Turki & Abdul Ghafoor 850.

*C. glaucum* L. 2n = 18. Saudi Arabia: distr. Al-Ha`ir, c. 30 km S of Riyadh, Al-Turki & Abdul Ghafoor 840.

*C. murale* L. 2n = 18. Saudi Arabia: distr. Al-uiyina, c. 50 km N of Riyadh, Al-Turki & Abdul Ghafoor 2784; distr. Dirab, c. 30 km S of Riyadh, Al-Turki & Abdul Ghafoor 868 .

*Halocnemum strobilaceum* (Pallas) M. Bieb. 2n = 18. Saudi Arabia: distr. Darin, Saudi Arabian Gulf Coast, Al-Turki & Abdul Ghafoor 155.

*Halopeplis perfoliata* (Forssk.) Bunge ex Schweinf. 2n = 18. Saudi Arabia: distr. Darin, Saudi Arabian Gulf Coast, Al-Turki & Abdul Ghafoor 165.

*Salicornia europaea* L. 2n = 18. Saudi Arabia: distr. Ras Tanura, Saudi Arabian Gulf Coast, Al-Turki, Abdul Ghafoor & S. J. Ali 2080; distr. Anak, Saudi Arabian Gulf Coast, Al-Turki, Abdul Ghafoor & S. J. Ali 2086.

Baltisberger & U. Schaeppi 12305  
(12516).

• **Matthias Baltisberger**

Geobotanical Institute, Swiss Federal  
Institute of Technology, Zollikerstrasse  
107, CH-8008 Zurich, Switzerland.  
Vouchers in Z/ZT (voucher number of  
cultivated plants in brackets).

**APIACEAE**

*Heracleum pyrenaicum* Lam. 2n=22.  
Greece: Karava, 30 km W of Karditsa,  
Nomos Karditsa, 1950-2000 m,  
20.6.1987, M. Baltisberger & U. Meili  
(12783).

*Malabaila aurea* (Sibth. & Sm.) Boiss.  
2n=22. Greece: between Aristi and  
Monodendrion, Pindos, 30 km NNW of  
Ioannina, 750 m, 27.6.1992, W. Huber  
13597b (13260).

**ASTERACEAE**

*Aposeris foetida* (L.) Less. 2n=16.  
Switzerland: Denti della Vecchia, NE of  
Lugano, canton Ticino, 1400 m,  
13.5.1994, M. Baltisberger 12861  
(12992).

*Leontodon montanus* Lam. 2n=12.  
Switzerland: between Liapay d'Enfer  
and Serra Neire, ENE of Les Haudčres,  
Val d'Hérens, S of Sion, canton Valais,  
2550-2650 m, 8.8.1996, M. Baltisberger  
& A. Widmer 13207 (13397).

**BRASSICACEAE**

*Fibigia clypeata* (L.) Med. 2n=16. Greece:  
near Kataphygion, E of Paleokastron,  
Vourinos, 20 km NE of Grevena,  
Nomos Grevena, 1350-1550 m,  
9.8.1990, M. Baltisberger & U.  
Schaeppi 12311 (12587).

**CARYOPHYLLACEAE**

*Silene marginata* Kit. 2n=24. Greece:  
Karava, 30 km W of Karditsa, Nomos  
Karditsa, 2000 m, 7.8.1990, M.

**DIPSACACEAE**

*Scabiosa crenata* Cyr. 2n=18. Greece:  
Loupata, S of Petroulion, 30 km WSW  
of Trikala, Nomos Trikala, 1950-2000  
m, 10.8.1990, M. Baltisberger & U.  
Schaeppi 12334 (12566).

**FABACEAE**

*Astragalus depressus* L. 2n=16.  
Switzerland: Ardez, Engadine, canton  
Grisons, 1520 m, 1.7.1996, M.  
Baltisberger (13259).

**LAMIACEAE**

*Betonica grandiflora* Willd. 2n=32.  
Russia: Teberda Reserve, north-western  
Caucasus, 1600 m, 29.8.1992, V.  
Onipchenko (13446).

*B. scardica* Griseb. 2n=16. Greece: near  
Kataphygion, E of Paleokastron,  
Vourinos, 20 km NE of Grevena,  
Nomos Grevena, 1350-1550 m,  
9.8.1990, M. Baltisberger & U.  
Schaeppi 12313.

*Marrubium velutinum* Sibth. & Sm. 2n=34.  
Greece: mountain top NNE of Karava,  
30 km W of Karditsa, Nomos Karditsa,  
1980-2007 m, 7.8.1990, M. Baltisberger  
& U. Schaeppi 12306 (13257).

*Salvia ringens* Sibth. & Sm. 2n=12.  
Greece: near Kataphygion, E of  
Paleokastron, Vourinos, 20 km NE of  
Grevena, Nomos Grevena, 1350-1550  
m, 9.8.1990, M. Baltisberger & U.  
Schaeppi 12310 (12929).

*Sideritis roeseri* Boiss. & Heldr. 2n=32.  
Greece: Loupata, S of Petroulion, 30 km  
WSW of Trikala, Nomos Trikala, 1950-  
2000m, 10.8.1990, M. Baltisberger &  
U. Schaeppi 12331 (13255).

*Teucrium chamaedrys* L. 2n=62.  
Switzerland: N of Meride, NW of  
Mendrisio, canton Ticino, 620 m,  
14.5.1994, M. Baltisberger (13194).

## LILIACEAE

*Ornithogalum umbellatum* L. 2n=18.  
Switzerland: Burin, near Li Curt, Val  
Poschiavo, canton Grisons, 1000 m,  
29.5.1994, A.-B. Utelli, ABU 1  
(13094).

## SAXIFRAGACEAE

*Saxifraga cotyledon* L. 2n=28.  
Switzerland: SE of lake Golzern, E of  
Amsteg, canton Uri, 1400 m, 16.6.1993,  
M. Baltisberger 12720 (13164).

- **Matthias Baltisberger & Peter Ryser**  
Geobotanical Institute, Swiss Federal  
Institute of Technology, Zollikerstrasse  
107, CH-8008 Zurich, Switzerland.  
Vouchers in Z/ZT.

## POACEAE

*Dactylis aschersoniana* Graebner. 2n=14.  
Switzerland: Rieterpark in Zurich, 1995,  
P. Ryser s.n.  
*D. glomerata* L. 2n=28. France: Les Baux,  
Provence, R. Langenauer, 1995, ZT:PR;  
Pointe du Grouin, Bretagne, K. Lee,  
1995, ZT:BR. Israel: Krayotu, Be'er  
sheva, A. Novoplasky, 1995, ZT:IS.  
Italy: Vulcano Piano, Isola di Vulcano,  
Isole Lipari, P. Ryser, 1995, ZT:AE;  
Monte Sant'Angelo, Promontorio del  
Gargano, Y. Edwards, 1996, ZT:GA.  
Spain: Castilblanco de los Arroyos,  
Andalusia, R. Fernandes Ales, 1986,  
ZT:AN. Switzerland: Allmend in  
Zürich, P. Ryser, 1995, ZT:ZH.

- **Hazel Chapman & Suzanne Lambie**  
Department of Plant and Microbial  
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Zealand. Vouchers in CANU.

## ASTERACEAE

*Hieracium pilosella* L. 2n=45 (9 plants);  
2n=43; 2n=41; 2n=39; 2n=36. Cave

Stream, North Canterbury, New  
Zealand.

- H. pilosella* L. 2n=45 (5 plants); 2n=42;  
2n=40 (2 plants); 2n=39; 2n=36 (3  
plants). Hinewai Reserve, Banks  
Peninsula, New Zealand.  
*H. pilosella* L. 2n=45 (7 plants); 2n=36.  
Twizel, behind estate, South  
Canterbury, New Zealand.  
*H. pilosella* L. 2n=45 (5 plants); 2n=69-72;  
2n=44; 2n=36. Halden Station, by  
lakeshore, South Canterbury, New  
Zealand.  
*H. pilosella* L. 2n=45 (4 plants); 2n=63;  
2n=42; 2n=41; 2n=36. Tekapo, by lay-  
by north of town, South Canterbury,  
New Zealand.

- **Elzbieta Kuta**

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**Leslaw Przywara**

Address as for Kuta.

Collector's abbreviations: ECH = Ewa  
Chudzinska, HB = Hanna Barczak, KB  
= Katarzyna Buczkowska, JS = Jerzy  
Szweykowski. All localities in Poland.  
Vouchers with JS.

## CEPHALOZIACEAE

*Cephalozia bicuspidata* (L.) Dumort. n=18.  
NW Poland, near Miastko, eroded soil  
on bank of small lake near the village of  
Studnica, 15.05.1995, JS, KB & HB,  
POZW 36939; N Poland, near  
Sierakowice, on bank of River  
Kamienica near the village of  
Kamienica Królewska Wybudowanie,  
alt. ca. 190 m, 09.05.1995, KB, HB &  
JS, POZW 36885; N Poland, on bare

peat in Staniszewskie Bloto Nature Reserve near the village of Mirachowo, W of Kartuzy, alt. 220 m, 10.05.1995, JS, KB & HB, POZW 36905.

*C. pleniceps* (Aust.) Lindb. n=18. N Poland, on bare peat in Staniszewskie Bloto Nature Reserve near the village of Mirachowo, W of Kartuzy, alt. 220 m, 10.05.1995, KB, HB & JS, POZW 36908.

*Nowellia curvifolia* (Dicks.) Mitt. n=18. Tatrzy Zachodnie, rotten wood in spruce forest at the E margin of the meadow called Hala Kondratowa, alt. 1320 m, 17.08.1998, KB, ECH & JS, POZW 38483.

#### LOPHOZIACEAE

*Anastrepta orcadensis* (Hook.) Schiffn. n=8. Tatrzy Zachodnie, spruce forest floor at the E margin of the meadow called Hala Kondratowa, alt. 1320 m, 17.08.1998, JS, ECH & KB, POZW 38477.

*Gymnocolea inflata* (Huds.) Dumort. n=9. N Poland, Pomorze, on bare soil between Calluna in the forest district Nadlesnictwo Czarnobór, div. 431g (N part of the heath called Czaracie Pola), 20.10.1997, KB & JS, POZW 38422.

*Lophozia binsteadii* (Kaal.) Evans. n=9. Tatrzy Zachodnie Range, between mosses in *Sphagnum/Polytrichum* hummock on the N slope of the mountain Kopa Kondracka, alt. 1870 m, 13.08.1997, KB & JS, POZW 38267.

#### PTILIDIACEAE

*Ptilidium pulcherrimum* (Web.) Vainio. n=9. Tatrzy Zachodnie, on spruce log in the spruce forest at the E margin of the meadow called Hala Kondratowa, alt. 1320 m, 17.08.1998, KB, ECH & JS, POZW 38474.

#### RICCIACEAE

*Riccia fluitans* L. emend. Lorbeer. n=7+m. W Poland, Ziemia Lubuska region, bank of Lake Chelmno by the village of

Chelm Zarski, 06.05.1997, KB & JS, POZW 38111.

*R. chamedryfolia* (With.) Grolle. n=10. Bieszczady Range, Eastern Carpathians, valley of River Górna Solinka, wet soil on an old road on the bank of the stream Beskidnik, alt. 750 m, 18.09.1996, KB, HB & JS, POZW 38035.

#### SCAPANACEAE

*Diplophyllum taxifolium* (Wahlenb.) Dum. n=9. Tatrzy Zachodnie, humus among rocks in the spruce forest at the E margin of the meadow called Hala Kondratowa, alt. 1320 m, 17.08.1998, KB, ECH & JS, POZW 38473.

*Scapania scandica* (H. Arnell & Buch) Macvicar. n=9. Bieszczady Range, Eastern Carpathians, Bukowe Berdo Mt., on boulder among *Alnus viridis* on W slope, alt. 1275 m, 21.09.1996, JS, KB & HB, POZW 38067.

• **Michael G.Pimenov, Tatyana V.Alexeeva, Eugene V.Kljuykov & Olga M. Bokova**

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Vouchers in MW. All localities in China. Collectors: M.G.Pimenov, E.V.Kljuykov and Liu QiXin. The investigations were supported by grants from the Russian Foundation of Fundamental Investigations and the National Geographic Society.

#### APIACEAE

*Acronema chienii* Shan Ren Hwa & Liou Shou Lu. 2n=18. Sichuan: Kangding Co., near Kangding, Paoma mountain park, woody slopes, 30°03'N, 101°58'E, alt. 2900 m, 20.09.1998. N 270.

*A. commutatum* H. Wolff. 2n = 20. Sichuan (near Yunnan border): between Ranwu and Shanranwu, near peak 5096

- m and pass to Bazusutzan basin, 28°39'N, 99°50'E, alt. 4250 m, 25.09.1998. N 411.
- Angelica apaensis* Shan Ren Hwa & Yuan Chang Chi. 2n=22. Sichuan: Kangding Co., pass across Daxue Shan between Xinduqiao and Kangding, E of Shuizheotzi, 30°04', 101°46', alt. 4100 m, 21.09.1998. N 289.
- A. kangdingensis* Shan Ren Hwa et Pu FaTing. n = 11. Sichuan: Kangding Co., near Kangding, Paoma mountain park, woody slopes, 30°03'N, 101°58'E, alt. 2800 m, 20.09.1998. N 267.
- A. likiangensis* H. Wulff. 2n = 22. Yunnan: Lijiang Co., Yulongxie Shan Mts., eastern slope near village of Jushi, alpine pasture Machuonba, 27°06'N, 100°11'E, alt. 3500 m, 02.10.1998. N 533.
- A. maowenensis* Yuan Chang Chi et Shan Ren Hwa. 2n = 22. Sichuan: between Hanyuan and Yinging, Daxiang Ling, near pass, 29°35'N, 102°37'E, alt. 2350 m, 09.09.1998. N 74
- A. nitida* H. Wolff. 2n=22. Sichuan: upper part of Minjiang basin, near Songpan, stony slope, 32°39'N, 103°36'E, alt. 3000 m, 13.09.1998. N 126.
- A. sinensis* (Oliv.) Diels. 2n = 22. Yunnan: Tali Co., Diancang Shan Mts., eastern slope, above Yangbi, rich mixed forests, 25°42'N, 100°06'E, alt. 2800 m, 04.10.1998. N 545.
- Bupleurum malconense* Shan Ren Hwa et Li Yin. n = 6. Sichuan: Wenchuan Co., Mingjiang river valley, between Wenchuan and Maowen, near village of Chiqu, 31°38'N, 103°48'E, alt. 1500 m, 12.09.1998. N 97.
- B. microcephalum* Diels. 2n=12. Sichuan: Kangding Co., near Kangding, Paoma mountain park, woody slopes, 30°03'N, 101°58'E, alt. 2700 m, 20.09.1998. N 284.
- B. wenchuanense* Shan Ren Hwa et Li Yin. n = 6. Sichuan: Wenchuan Co., Mingjiang river valley, between Wenchuan and Maowen, near village of Zhongba, 31°28'N, 103°31'E, alt. 1150 m, 12.09.1998. N 95.
- Chamaesium thalictrifolium* H. Wolff. 2n=12. Sichuan: Songpan Co., route to Hunglong, Limbo village, near Limbo Temple, spruce forests and their margins, shrubs (*Salix*, *Sibiraea*, *Berberis*), 32°46'N, 103°38'E, alt. 3300 m, 14.09.1998. N 135.
- Ferula kingdon-wardii* H. Wolff. 2n=22. Yunnan: NW part, Zhongdian Co., 12 km NW of Zhongdian, Niapahai lake, 27°58'N, 99°34'E, alt. 3360 m, 29.09.1998. N 492.
- F. olivacea* Diels. 2n = 22. Yunnan: Lijiang Co., Yulongxue Shan Mts., foot of eastern slope, mixed forest on abrupt slope of stream valley, 27°06'N, 100°12'E, alt. 3200 m, 01.10.1998. N 513.
- Heracleum oreocharis* H. Wolff. 2n = 22. Yunnan: Lijiang Co., Yulongxue Shan Mts., foot of eastern slope, mixed and pine forests, 27°06'N, 100°12'E, alt. 3200 m, 1.10.1998. N 509.
- H. rapula* Franch. 2n = 22. Yunnan: Tali Co., Diancang Shan Mts., eastern slope, above Yangbi, rich mixed forests, 25°42'N, 100°06'E, alt. 3100 m, 04.10.1998. N 551.
- Ligusticopsis capillacea* (H. Wolff) Leute. 2n=22. Yunnan: Lijiang Co., Yulongxue Shan Mts., eastern slope, alpine belt, 27°06'N, 100°12'E, alt. 4500 m, 01.10.1998. N 500.
- L. daucooides* (Franch.) Lavrova. 2n=22. Sichuan: Kangding Co., near Kangding, Paoma mountain park, woody slopes, 30°03'N, 101°58'E, alt. 3100 m, 20.09.1998. N 277. Sichuan: Kangding Co., between Renmei and Xinduqiao, 30°22'N, 101°31'E, alt. 3900 m, 18.09.1998. N 250.
- L. hispida* (Franch.) Lavrova & Kljuykov. 2n=22. Yunnan: Lijiang Co., Yulongxue Shan Mts., eastern slope near village of Jushi, alpine pasture Machuonba, 27°06'N, 100°11'E, alt. 3500 m, 02.10.1998. N 530.

- L. involucrata* (Franch.) Lavrova. 2n=22. Sichuan: road from Litang to Xiangchang, upper part of river Chuntian he valley near Liwa, Sangdui, 29°18'N, 100°05'E, alt. 4300 m, 24.09.1998. N 401.
- L. rechingerana* Leute. 2n=22. Sichuan: between Xinduqiao and Yajiang, pass near Gaul Temple, 30°03'N, 101°23'E, alt. 4350 m, 22.09.1998. N 312. Sichuan (near Yunnan border): between Ranwu and Shanranwu, near peak 5096 m and pass to Bazusutzan bassin, 28°39'N, 99°50'E, alt. 4250 m, 25.09.1998. N416. Sichuan: Kangding Co., near Tongolo (Dongelou), 30°03'N, 101°29'E, alt. 3700 m, 21.09.1998. N 298. Sichuan: Litang Co., 20 km S of Litang, rocks amongst high mountain plateau, 30°09'N, 100°20'E, alt. 4400 m, 23.09.1998. N 346.
- L. scapiformis* (H. Wolff) Leute. 2n = 22. Sichuan: Litang Co., south margin of Litang City, 30°10'N, 100°20'E, alt. 4300 m, 23.09.1998. N 345.
- Oreocomopsis aromatica* (W.W.Smith) Pimenov & Kljuykov (*Pleurospermum aromaticum* W.W.Smith). 2n=22. Sichuan: Litang Co., 20 km S of Litang, rocks amongst high mountain plateau, 30°09'N, 100°20'E, alt. 4400 m, 23.09.1998. N 348.
- Peucedanum praeruptorum* Dunn n = 11. Sichuan: Mingjiang river, near Shidaguan, valley of lateral stream, 31°54'N, 103°41'E, alt. 1800 m, 13.09.1998. N 114.
- Pimpinella diversifolia* DC. n = 9. Yunnan: near Kunming, Heilongtan, park of Kunming Institute of Botany, CAS, 25°08'N, 102°42'E, alt. 1950 m, 03.09.1998. N 16.
- P. scaberula* (Franch.) H. Boissieu var. *ambrosifolia* (Franch.) H. Wolff. 2n=18. Sichuan, Danba Co., basin of Dadu he river, valley of Jiangxiguo river, near Donggu, 30°35'N, 101°39'E, alt. 2800 m, 18.09.1998. N 223. Yunnan: Lijiang Co., Yulongxue Shan Mts., eastern slope near village of Jushi, alpine pasture Machuanba, 27°06'N, 100°11'E, alt. 3500 m, 02.10.1998. N 520.
- P. smithii* H. Wolff. 2n=22. Sichuan: Mingjiang river, between Shidaguan and Jiaochang, Maoziquo, near the stream, 32°02'N, 103°41'E, alt. 2400 m, 13.09.1998. N 117.
- Pternopetalum cardiocarpum* (Franch.) Hand.-Mazz. 2n=36. Yunnan: NW part, Zhongdian Co., 2 km from Luzo village, valley of river, 27°49'N, 99°54'E, alt. 3450 m, 27.09.1998. N 450.
- Pterocyclus forrestii* (Diels) Pimenov & Kljuykov (*Angelica forrestii* Diels, *Pleurospermum longicarpum* Shan Ren Hwa & Pan Ze Hui). 2n=18. Yunnan: NW part, Zhongdian Co., 2 km from Luzo village, valley of river, 27°49'N, 99°54'E, alt. 3450 m, 27.09.1998. N 453.
- Selinum candollii* Wall. ex DC. 2n=22. Yunnan: Lijiang Co., Yulongxue Shan Mts., eastern slope near village of Jushi, alpine pasture Machuonba, 27°06'N, 100°11'E, alt. 3500 m, 02.10.1998. N 538. Yunnan: Tali Co., Diancang Shan Mts., eastern slope, above Yangbi, rich mixed forests, 25°42'N, 100°06'E, alt. 3200 m. N 552.
- Seseli mairei* H. Wolff var. *simplicifolium* Wu Zheng Yi et Sheh Meng Lan. n = 9. Sichuan-Yunnan border, Panzhihua Co., near Duxi, Yinsha Yiang (Yangtze) valley, Pinus yunnanensis forest, 26°08'N, 101°48'E, alt. 2200 m, 07.09.1998. N 57.
- Sinocarum cruciatum* (Franch.) H. Wolff. 2n=18. Sichuan: Hongyuan Co., route Hongyuan-Barkam, valley of Somohe river, near Shuajingsi, woody slope, 32°01'N, 102°36'E, alt. 3100 m, 16.09.1998. N 188.
- S. variabile* (H. Wolff) Pimenov & Kljuykov (*Trachydium variabile* H. Wolff). 2n=18. Sichuan (near Yunnan border): between Ranwu and Shanranwu, near peak 5096 m and pass

to Bazusutzan bassin, 28°39'N, 99°50'E, alt. 4250 m, 25.09.1998. N 418.

Yunnan: NW part, Degen Co., road Zhongdian-Degen, Baimashan Mts., western slope, 28°28'N, 99°04'E, alt. 3800 m, 29.09.1998. N 482.

*Trachydium nanum* (Franch.) Pimenov & Kljuykov (*Pleurospermum nanum* Franch.). 2n=18. Yunnan: Tali Co., Diancang Shan Mts., eastern slope, above Yangbi, rocks, 25°42'N, 100°06'E, alt. 3600 m.

*Trachyspermum scaberulum* (Franch.) H. Wolff ex Hand.-Mazz. n = 9. Yunnan: river Yanglu He, 25°36'N, 102°16'E, alt. 2140 m, 06.09.1998. N 27.

- **Elsie M. A. Steyn**

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#### **GREYIACEAE**

*Greyia flanaganii* Bolus. n= 16. South Africa: Eastern Cape: Mooifontein Farm, near Komgha, on steep slopes of the Kabusi River, Steyn, Robberts & Reyneke 20, voucher in PRE.

This is the first report for the species; counts of n = ca. 17 and 2n = 32 - 34 for *Greyia sutherlandii* Hook. et Harv., published by P. Goldblatt in Ann. Missouri Bot Gard. 63: 889-895 (1976), are apparently the only other counts for this monogeneric family.

## 5

### **News from Plant Molecular Biosystematics 11**

#### **Invitation to papers: Research lab presentations**

Starting by this issue, I take responsibility as editor of the molecular column of this newsletter. You are sincerely invited to present your molecular biosystematics research group and your projects here. Please send manuscripts (attachments are fine) to:

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## News from

**Bengt Oxelman and Magnus Popp**  
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### **EVOLUTION OF THE *RPB2* GENE IN FLOWERING PLANTS**

We are a newly established research group in Systematic Botany at the recently founded Evolutionary Biology Centre. So far, we are only two people attached to the project, but we hope to increase in numbers soon, mainly by attracting PhD students to the project. Feel free to contact us, if you find our project interesting.

During the past decade, DNA sequencing has tremendously increased our understanding of the phylogenetic relationships of life. In plants, segments of the chloroplast genome (more generally, the plastome) have been particularly informative in resolving many phylogenetic problems at various taxonomic levels (e.g., Soltis et al. 1998: *Molecular Systematics of Plants II*, Kluwer; #1, 4, 8, 12, 18, 19, 21, 24). However, in several cases the information from plastome sequences is not adequate. Examples are groups where reticulate relationships between organismal groups occur (chloroplasts are usually maternally inherited), or where the time since divergence is too short for accumulation of a sufficient number of informative changes, or where the loss of functional constraints has reduced or even destroyed the usefulness (i.e. excessive mutations, loss of genes or even the entire genome in non-photosynthetic plants).

In some cases, nuclear ribosomal DNA (nrDNA) sequences are useful (e.g. #7, 10, 11). These occur in many tandem repeats in the nucleus, and are usually homogenous, due to a process called

concerted evolution (Zimmer et al. PNAS 77: 2158-2162, 1980). This is advantageous in some cases (i.e. organismal phylogenies), but not in others. For example, if we want to trace the history of a polyploid plant, bidirectional concerted evolution (Wendel et al. PNAS 92: 280-284, 1995) would effectively erase the traces of historical origin of at least one of the parental sequences. In the case of non-photosynthetic plants, it has been demonstrated that there is an elevation of the evolutionary rate of the nrDNA sequences (Nickrent et al. 1998 in Soltis et al. loc. cit.), possibly leading to wrong conclusions regarding the phylogenetic positions of these plants.

The focus on cpDNA and nrDNA by plants systematists is understandable in relation to the relative ease with which orthologous DNA fragments are sampled compared to the large and poorly known rest of the nuclear genome. However, the rapid biotechnological progress has made the time proper to propose a research project which focuses on the evolutionary dynamics and phylogenetic utility of a region from the low copy number part of the nuclear genome. We study the evolution of the *RPB2* gene, which encodes the second largest subunit of RNA polymerase II, responsible for the transcription of protein-encoding genes in eukaryotes. In collaboration with Benjamin D. Hall's research group at the University of Washington, Seattle, USA, we have discovered interesting macromutational events (#15), presumably with important implications for asterid phylogeny, as well as the usefulness of certain sequence regions for reconstructing phylogenies (#15, 23), and with possible consequences for the transcription of mRNA in these plants.

## Main research topics

**Gene phylogeny and comparison to other phylogenetic sources.** The aim is to get an understanding of the evolutionary history of the *RBP2* gene in flowering plants, especially gene phylogeny and macromutational events within the asterids. Within the asterid group of plants, the interrelationships among the major groupings are largely unclear. The distribution of duplicate copies and subsequent loss of introns in one of the copies are incongruent with earlier hypotheses based on cpDNA and nrDNA sequences. More sequence data and denser taxon sampling than is presently available are needed to get a robust gene phylogeny based on the *RBP2* sequences themselves. Congruence with other sequence regions is evaluated, and possible recombinational events are looked for. To get an overall picture of *RBP2* gene phylogeny, and to facilitate future studies of other plant groups, we plan to develop a database of non-asterid *RBP2* sequences.

**Histories of allopolyploids as inferred from molecular phylogenies.** The aim of this part is to use *RBP2* intron sequences as one source of data for inferring the origin of allopolyploid taxa. Most previous studies of allopolyploids are based on character additivity and/or intermediacy of the putative "parental" species. With such an approach, no alternative hypotheses are tested and it is ambiguous what kind of observation would falsify an hypothesis.

By identifying and characterizing homoeologous DNA regions from the hypothetical parental lineages, it is possible to use phylogenetic methods to infer histories of allopolyploid plants. This approach has been used to test hypothesis concerning the parental lineages of the allotetraploid *Silene aegaea* (#7, 23), and will, in conjunction with other molecular data sets, be extended to other plant groups as well. By studying polyploids of different ages, we hope to get an idea about the rate at which the sequences remain useful as markers for independent lineages, i.e. how fast processes such as gene silencing and recombination operate at the *RBP2* locus.

## Other current research projects

- Generic delimitations within *Sileneae* (Caryophyllaceae) (with Magnus Lidén)
- Phylogeny of *Frangula* and *Rhamnus* (with Kjell Bolmgren)
- Generic delimitations in the *Paronychioideae* (Caryophyllaceae) (with Britta Ahlgren and Mats Thulin)
- Phylogenetic relationships within Lamiales (with Richard G. Olmstead, Birgitta Bremer, and Per Kornhall)
- Empirical methods for testing the justification of character weighting schemes (with Torsten Eriksson)
- What are the differences between jackknife and bootstrap support, and what are we trying to estimate with these resampling methods?
- Alignment and coding of repetitive DNA sequences. (with Magnus Lidén)

## Recent publications and manuscripts:

BACKLUND, M., OXELMAN, B. & BREMER, B. (1999): Phylogenetic relationships within the *Gentianales* based on *ndhF* and *rbcL* sequences, with particular reference to the

*Loganiaceae*. - American Journal of Botany, in press.

BREMER, B., JANSEN, R. K., OXELMAN, B., BACKLUND, M., LANTZ, H. & KIM, K.-J. (1999): More characters or more taxa for a robust phylogeny — a case study from the coffee family

- (*Rubiaceae*). - Systematic Biology, in press.
- LIDÉN, M. & OXELMAN, B. (1996): Do we need a “phylogenetic taxonomy“? - *Zoologica Scripta* 25: 183-185.
- 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. - *Plant Systematics and Evolution* 206: 411-420.
- LIDÉN, M., OXELMAN, B., BACKLUND, A., ANDERSSON, L., BREMER, B., ERIKSSON, R., GILBERT, M., MOBERG, R., NORDAL, I., PERSSON, K., THULIN, M. & ZIMMER, B. (1997): Charlie is our darling. - *Taxon* 46: 735-738.
- OXELMAN, B. (1995): A revision of the *Silene sedoides*-group (*Caryophyllaceae*). - *Willdenowia* 25: 143-169.
- OXELMAN, B. (1996): RAPD patterns, nrDNA ITS sequences, and morphological patterns in the *Silene sedoides*-group (*Caryophyllaceae*) - *Plant Systematics and Evolution* 201: 93-116.
- OXELMAN, B., BACKLUND, M. & BREMER, B. (1999): Relationships of the *Buddlejaceae* s. l. investigated using parsimony jackknife and branch support analysis of chloroplast *ndhF* and *rbcL* sequence data. - *Systematic Botany* 24:164-182.
- OXELMAN, B. & W. GREUTER (1995): *Silene pinetorum* Boiss. & Heldr. In: GREUTER, W. *Studies in Greek Caryophylloideae: Agrostemma, Silene, and Vaccaria*. - *Willdenowia* 25: 134.
- OXELMAN, B. & M. LIDÉN (1995): Generic boundaries in the tribe *Sileneae* (*Caryophyllaceae*) as inferred from nuclear rDNA sequences. - *Taxon* 44: 525-542.
- OXELMAN, B. & M. LIDÉN (1995): The position of *Circaeaster* - evidence from nuclear ribosomal DNA. - *Plant Systematics and Evolution* [Supplement] 9: 189-193.
- OXELMAN, B., LIDÉN, M. & BERGLUND, D. (1997): Chloroplast rps16 intron phylogeny of the tribe *Sileneae* (*Caryophyllaceae*). - *Plant Systematics and Evolution* 206: 393-410.
- OXELMAN, B. & W. GREUTER (1997): . *Silene* sect. *Atocion* Otth, *Silene* sect. *Sedoideae* Oxelman & Greuter, *Silene* sect. *Rubellae* (Chowdhuri) Oxelman & Greuter ined., and sect. *Rigidulae* Schischkin. – In: STRID, A. & TAN, K. (eds.): *Flora hellenica*, vol 1. Koeltz, Königstein.
- OXELMAN, B. & NORMAN, E. (1999): *Buddlejaceae*. In KUBITZKI, K. (ed.) *The families and genera of flowering plants*. Springer-Verlag, Berlin. In preparation.
- Manuscripts in review or preparation:
- OXELMAN, B. & BREMER, B.: Discovery of paralogous RPB2 gene sequences and their phylogenetic utility in *Gentianales* of the asterids. In review with *Molecular Biology and Evolution*. 1999.
- FARRIS, S., GOLOBOFF, P., KÄLLERSJÖ, M. & B. OXELMAN: Improving jackknifing and bootstrapping. 1999.

LIDÉN, M. & B. OXELMAN: Generic boundaries and infrageneric classification in the tribe *Sileneae* (*Caryophyllaceae*) - a synthesis using morphological and molecular evidence. 1999.

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OXELMAN, B. 1996. LongRanger™ gels versus standard polyacrylamide gels on ALFExpress™ automated sequencers. - FMC Resolutions 12: 2-3.

#### **Contact us!**

If you are interested in getting in contact with us please contact:

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## Announcements

### **IMPORTANT NOTICE: MEMBERSHIP FEES**

Soon, dues notices will be sent to all members.

Members in USA and Canada should pay regional treasurer Peter Hoch, Missouri Botanical Garden, P.O. Box 299, St Louis, MO 63166-0299, USA or by charge of credit card VISA stating the account number, expiry date, names (as it appears on card), address, signature, date.

Due to changed banking policies it has become much more expensive to cash foreign cheques in Sweden. Therefore, we encourage you to transfer membership fees by using postal giro or by direct transfer to the IOPB bank account. Transfer SEK 300 to the new postal giro is 430 81 74 - 4, or to the bank account 1817 17 01 140. If you pay by cheque, SEK 120 (USD 18, EURO 16) must now be added for bank handling and currency conversion. Cheques should be payable to Tommy Lennartsson, Swedish University of Agricultural Sciences, Box 7002, 750 07 Uppsala, Sweden.

### **Vacant Post of a Head of DNA Lab**

Have you seen a DNA lab in a beautiful old chateau dominating a marvellous park and arboretum? Probably not – but there is a chance to observe this wonder at Průhonice, a little village at SE outskirts of Prague, another jewel among European cities. The DNA lab serves the Departments of Taxonomy, Biosystematics and Population Ecology in the Institute of Botany, Academy of Sciences, Czech Republic. The lab is equipped for PCR-based techniques, from RAPD, through specific PCR and RFLP to hybridization; sequencing not yet available. A flexible, dedicated scientist is needed to become a head of the lab with two technicians. Salary at or above the E European standard.

Applicants should contact J. Kirschner <kirschner@ibot.cas.cz>

## International Organization of Plant Biosystematists

The International Organization of Plant Biosystematics, founded in 1960, acts on several levels from coordinatin 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 give extensive insights in the feld IOPB deals with.

The IOPB Newsletter is published about twice a year and mailed to all members. It includes reports on current research, requestfor material and information, announcements of meetings, etc. Two permanent features in the Newsletter are IOPB Chromosome data News from Molecular Biosystematics. IOPB Members automatically have free publishing right of their data and news.

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Any inquires about joining IOPB, fees, Newsletter subscription etc. As well as the application form should be mailed to the Secretary/Treasurer Tommy Lennartsson, Dept of Conservation Biology, Swedish University of Agriculture Sciences, P.O. Box 7072, SE-75007 Uppsala, Sweden [tommy.lennartsson@nvb.slu.se](mailto:tommy.lennartsson@nvb.slu.se) (for other information read Announcements)

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