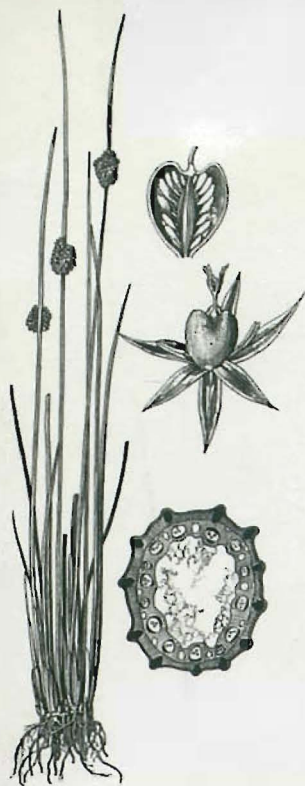


P.1433



IOPB

International Organization of Plant Biosystematists

Newsletter No. 31

Edited by

J. Kirschner & L. Drábková

C. A. Stace & B. Oxelman



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Institute of Botany,
Academy of Sciences
Průhonice, Czech Republic

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Illustrations: *Juncus inflexus* L.

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

Taraxacum paludosum (Scopoli) Schlechter,

Taraxacum apiculatiforme Soest.,

Taraxacum pulchellum K. & Š.

Cover illustration: *Juncus conglomeratus* L.

Printed by: Klasič s. r. o.

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Letter from the President

It is a pleasure to receive your letter and to
know that you are interested in the
work of the National Council on the
Handicapped. I am sure that you will
find the information in this letter
of interest to you.

Our main objective is to provide
information to the public about
the work of the National Council on
the Handicapped. We are also
interested in your views on the
work of the Council and in your
suggestions for improvement.

There are many ways in which you
can help. You can write to the
National Council on the Handicapped,
444 North Dearborn Street, Chicago,
Illinois 60610. You can also
write to your local representative
in Congress or to your state
legislature.

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the work of the Council and in your
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IOPB NEWSLETTER NO. 31

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31 AGO. 2005

P. 1423
REAL JARDÍN BOTÁNICO
BIBLIOTECA
DONADO EN

I

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 unflinching 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. In 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, Elsbjeta 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

and is going to be transferred to

www.bio.uva.nl/iopb

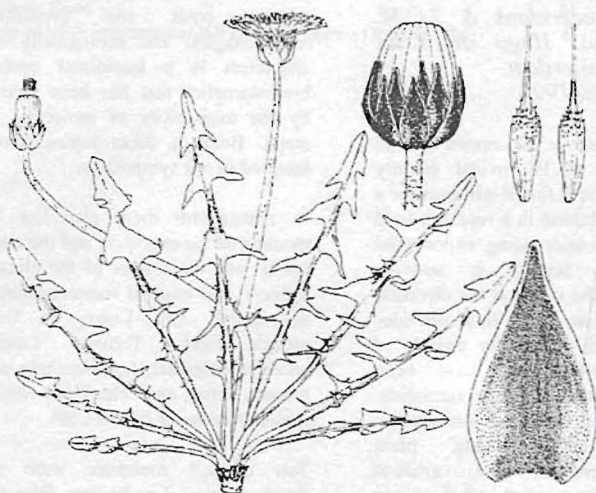
Tim Lowry, our new president-elect, is
preparing the next triennial IOPB
symposium. This will be held in
Albuquerque, New Mexico, USA, from 12
to 16 August 2001. The symposium is
planned to coincide with the annual
meeting of the Botanical Society of
America. There will be easy access for
participants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



Taraxacum apiculatiforme

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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quinn@AESOP.RUTGERS.EDU
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Fax: 932-4517

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*)

Professor Soom Nath RAINA

Department of Botany
University of Delhi,
Delhi
110007 India

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.

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.

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 LEFÈBVRE
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.

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 send 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 IOPB 98

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

Account number _____

Expiry date _____

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Date _____

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Shipping address _____

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 (chrysoplenetin 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.

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.

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.

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 *Cammilla 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., KALATOVÁ M. (1998): 9-(methylsulphonyl)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): Chryso-splenetin 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 Farouh
 Mehmood

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 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-uiyna, 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.

• **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 Monodendron, 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 Haudères, 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. Baltisberger & U. Schaeppi 12305 (12516).

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, Isola 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 Sciences, University of Canterbury, Private Bag 4800, Christchurch, New 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.

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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 bicuspadata (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.

Tatry 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. Taty 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. Taty 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. Taty 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 Chelmino 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 Górná 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.

SCAPANIACEAE

Diplophyllum taxifolium (Wahlenb.) Dum. n=9. Taty 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**
Botanical Garden of Moscow State University, Moscow 119899, Russia.
Liu Qi Xin
Nanjing Botanical Garden of CAS and Jiangsu Province, R. P. China.
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. Wolff. 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 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 Bazusutan basin, 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.
- Oreocromopsis 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. *ambrosiifolia* (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, Maoziqiu, 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 Machuanba, 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, Panzhuhua Co., near Duxi, Yinsha Yang (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:

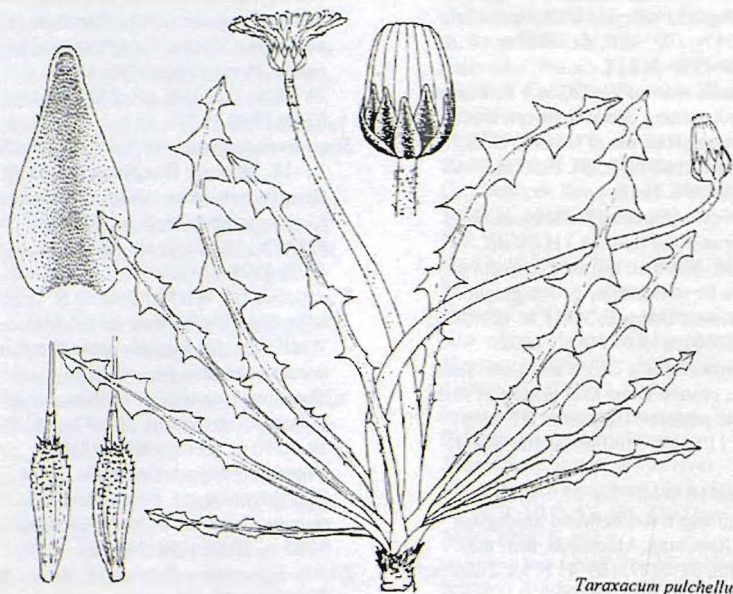
river Yanglu He, 25°36'N, 102°16'E,
alt. 2140 m, 06.09.1998. N 27.

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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 $n = \text{ca. } 17$ 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.



Taraxacum pulchellum

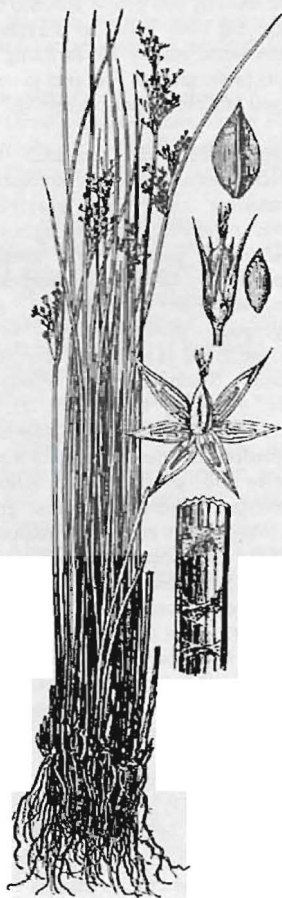
News from Plant Molecular Biosystematics II

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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Juncus inflexus

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.

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.

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 *Fragula* 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)

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.
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Announcements

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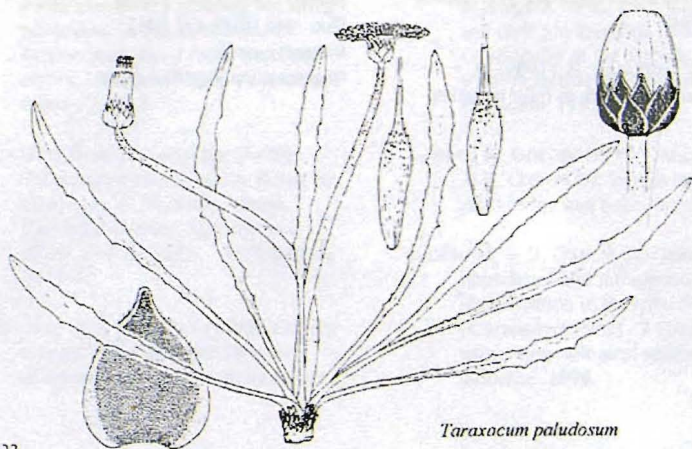
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