



FESPBalert

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Research news

Ethylene and fungal resistance

Dutch phytopathologists have shown that ethylene is vital for the protection of plants against bacteria and fungi. Bart Geraats from Utrecht University demonstrated that plants which are insensitive for ethylene are hypersensitive to various microorganisms.

Modified tobacco plants which were insensitive to ethylene became spontaneously diseased and wilted when grown in ordinary compost. They were attacked by various fungi and fungi-like microorganisms which do not usually cause diseases in unmodified plants. Efforts to make the ethylene-insensitive plants more resistant were unsuccessful. Applying substances which normally activate disease resistance gave no increased resistance to the microorganisms in the compost.

Ethylene therefore appears to play a key role in activating the resistance mechanism against infectious microorganisms. The research implies that farmers and horticulturalists must be careful with substances that inhibit the effect of ethylene. Such substances could increase the susceptibility of plants to pathogens.

Peas and beans and nitrogen fixation

The relationship between leguminous plants such as peas and beans and nitrogen-fixing bacteria is even closer than previously thought, with bacteria acting like an intrinsic part of the plant, according to research recently published in *Nature*. Researchers from the University of Reading and the John Innes Centre, Norwich, have found that nitrogen-fixing bacteria provide more than just a supply of useable nitrogen to the plants. Amino acid cycling between the plant and the bacteria controls the fixation process, with the bacteria acting like an 'organelle' on which the plant is totally dependent.

“This evens things up in terms of the symbiotic relationship between plant and bacteria and also provides some reason for how the symbiotic relationship might have evolved,” explains Dr Philip Poole from the University of Reading. “We used to think that the bacteria fixed nitrogen in return for a supply of carbon and energy, but now we can see that the two are mutually dependent. Their complete dependency on each other helps explain how selective evolution might have driven the development of such an advantageous relationship.” The symbiotic relationship between legumes and rhizobia, which fix atmospheric nitrogen into ammonium, accounts for around 65% of the global nitrogen that can be used by other plants (when the legume dies) or animals (when the legume is eaten).

The research team found that the cycling of amino-acids between the legume and rhizobia was the key driver of the nitrogen fixation process. When the cycle was blocked, nitrogen fixation stopped. Similarly in the absence of amino acid cycling, rhizobia use carbon very poorly and legumes are poor at assimilating nitrogen released from the bacteria.

Wheat genetics

Scientists at the John Innes Centre (JIC), and the INRA (Institut National de Recherche Agronomique) at Evry, France have announced the creation of the largest library of genetic resources, for the study of wheat, in the world. The two teams have exchanged BAC libraries that when combined together, represent the entire genome of wheat. The research material in the libraries is freely available.

“The genome of wheat is very complex, which makes both studying its biology and using genetics to improve the quality of the crop very difficult”, says Dr Graham Moore (project leader at the JIC). The genome of wheat is 5x larger than that of humans, comprising some 150,000 genes. Each BAC fragment on average carries 1 or 2 genes and in total there are over 1.2 million fragments in the libraries. Pooling the British and French research efforts has dramatically shortened the time taken to produce a complete gene library.

“The USA, China, Japan, and Australia have expressed interest in using this library” says Dr Boulos Chalhoub (project leader at INRA). “This shows just how valuable a resource we have developed and in time we expect to see these libraries helping researchers and breeders in their continuing pursuit of both global food security and environmentally sustainable agriculture”.

Nematode control

Dutch plant ecologists have investigated how the potato cyst nematode can be controlled using *Solanum sisymbriifolium*, a member of the potato family. Potato cyst nematode has always proved difficult to control; farmers are only allowed to use nematicides (pesticides against nematodes) if there are no other options for control. In the past good results were obtained using potato plants that were resistant to the nematodes. However, the nematode always managed to overcome each line of resistance. New research has shown an alternative means of control using *Solanum sisymbriifolium*. The plant produces a hatching agent which causes the nematode's eggs to hatch. However, the nematodes which eat the plant can no longer reproduce.

Potato cyst nematodes attack the roots of potato plants. After harvest the nematodes remain in the soil in the form of cysts. These are the dead bodies of female nematodes that are filled with eggs. The eggs remain dormant until they come into contact with a substance exuded from the roots of potato plants. *Solanum sisymbriifolium*, a member of the potato family, has been found to exude the same hatching agent as the potato. The substance elicits the development of the eggs into nematodes. Although the nematodes feed on *Solanum sisymbriifolium*, the plant does not provide the nematodes the opportunity of completing their life cycle and thus reproducing. The reason for this is not yet clear.

Researchers from Wageningen University have extensively investigated *Solanum sisymbriifolium* so as to optimise the effectiveness of its use. For example, they are determining the minimum size of plant needed to thoroughly clean the soil of cysts. The intention is to cultivate *Solanum sisymbriifolium* somewhere in the period between potato harvest and the planting of the next potato crop. If the crop is ploughed in it also acts as a green manure crop.

Various companies in the potato sector are involved in the research. One of these, a potato seed company from Groningen, has meanwhile acquired the breeding rights to a number of *Solanum sisymbriifolium* varieties. At present the plant is only being cultivated on a few hundred hectares on a trial basis. Potato growers will only be able to use the crop on a large scale once the growing conditions under which this Latin-American plant is most effective have been determined. Research must also demonstrate that the plant will not affect potato production.

Other news

Nuffield council adds to GM debate

In 1999 the UK Nuffield Council on Bioethics provoked considerable discussion with the publication of its Report, Genetically modified crops: ethical and social issues. The Report recommended that, if the introduction of genetically modified (GM) crops in developing countries could be shown to be a cost-effective way to reduce malnutrition, there was a moral imperative to encourage the application of GM technology. Now, three years on, the Nuffield Council announces it is to re-assess the conclusions and recommendations of its Report in the light of recent developments, with particular reference to developing countries.

On the evidence available in 1999, the Nuffield Council concluded that GM crops could provide significant benefits to developing countries, provided that potential risks to health and the environment could be managed. Possible benefits included increased yields, enhanced pest resistance and tolerance to stress, improved nutrition, and new products, such as vaccines produced in crops. However, there were several unanswered questions when the Council's Report was published. Some of these remain, but a range of new scientific evidence is now available to help assess the potential of the technology. GM crops have been grown on a considerable number of small-holding farms in developing countries over the last three years. Recent trends in poverty and hunger in developing countries also need to be considered. Rural poverty has become an increasing concern, while at the same time improvements in crop yields have slowed. Water shortages are also more acute, as discussed at the World Water Forum last week. The potential application of GM technology will be considered in the context of developments in regulation, trade, intellectual property rights and consumer attitudes.

The Council will publish a draft Discussion Paper for consultation in June 2003.

UK GM field trials – statistics added to the debate

After four years, the largest experiment on genetically modified crops is all but over. The trials were set up to address fears that the broad-spectrum herbicides used with many GM varieties would harm farmland wildlife. However, the scientists may get little chance of a breather. Opponents of Britain's farm-scale trials have chosen the lull before the first findings are published to mount a detailed attack on the science. For now, the findings remain confidential, but based on the trials' methods and first-year pilot observations, which are already in print, campaigners claim the prospects for a clear verdict are bleak. "That the trials look set to produce uncertain results is not a reflection on the scientists involved," says Pete Riley, at Friends of the Earth. "Rather it highlights the inherent problems of embarking on politically motivated science."

Opposition to the trials is not new. From the start activists periodically ripped up trial crops while others claimed farmers were biasing the outcome by treating GM fields with less herbicide than would be used commercially- a charge the trial scientists rejected. Now, campaigners are keen to focus on what even some neutral experts see as the experiment's potential Achilles' heel: its statistical power.

The trials involved farmers growing both conventional and GM varieties of sugar beet, maize or oilseed rape (canola) in neighbouring fields. There were up to 25 sites per crop per season, which researchers would regularly visit to count weeds, beetles and other biodiversity "indicators". The goal was to discover if the GM fields held significantly less, or more, wildlife than those with conventional crops. For weeds and insects, the scientists designed the trials to be sensitive enough to have an 80 per cent chance of detecting 1.5-fold differences between conventional and GM fields. However, the Friends of the Earth report claims this sensitivity target is unlikely to be met for every species because of "noise" in the data. The levels of some key indicator organisms, including beetles and broad-leaved weeds, are likely to vary from field to field by far more than the 50 per cent margin that the trial allows for. If so, that could make detecting a 50 per cent difference between GM and non-GM fields impossible even if the difference is there. The report also takes issue with the 1.5-fold target difference itself, arguing that it is set too high. Previous research on the impact of herbicides on grey partridges found that much smaller differences in weed numbers - as slight as 13 per cent- were ecologically significant.

Les Firbank, from the Institute of Terrestrial Ecology, rejects the criticisms. "They're speculating on whether the experiment has been capable of delivering the stated power. That won't be answered until the data are published," he says. Firbank says that the sensitivity target was never intended to be met for every species. "The interpretation comes not from looking at each species in isolation but from combining results from different species and looking for patterns." Peter Green, president of Britain's Royal Statistical Society, says that while many of the report's points about statistical power are valid, such problems are not unique to these trials and there are well-established ways of handling them.

European commission considers GM

A roundtable meeting to examine the latest research results on the co-existence of GM and non-GM crops will be hosted by the European Commission at the end of April. A wide range of stakeholders, representing industry, NGOs, consumers and other players, will attend the meeting, the aim of which is to discuss the scientific basis for any agronomic and other measures that may be necessary to facilitate the sustainable co-existence of these different agricultural practices. Following this roundtable, the Commission will hold a public meeting to propose guidelines on how to address the issue of co-existence

“The introduction of genetically modified crops into European agriculture will require their co-existence with other production systems including conventional and organic farming”, said European Research Commissioner Philippe Busquin. “The ability to maintain different production systems is vital to ensure the capability of agriculture to deliver a high degree of consumer choice. Relevant decisions are to be based on scientific evidence and open democratic debate. That is why I invite all interested parties to participate in this roundtable and make their voice heard.”

Positions available

Full details of these positions are posted on the FESPP website on the Jobs and Studentships pages (<http://www.fespp.org/jobs.asp>)

Plant Biology MSc programme

Plant Biology at Utrecht University runs a two-year MSc programme that trains and educates plant biologists at a high academic level. Masters students will, individually or in a team, be challenged to solve fundamental and applied plant biological problems. To this end students are shown the most modern experimental and mathematical methods and techniques. Furthermore, students will also learn to apply molecular and genetical tools to a wide range of biological problems.

All courses and practical training are given in English by a team of internationally distinguished scientists.

More information on the programme and registration can be found on the flyer or on the website www.bio.uu.nl/plantbiology

Molecular Plant Physiology

Postdoctoral position, Cologne, Germany

The Botanical Institute of the University of Cologne invites applications for a PostDoc position in the field of Molecular Plant Physiology. The focus of research will lie on functional genomics of membrane transporter genes from *Arabidopsis thaliana*. Applicants should have fundamental experience in Molecular Biology, knowledge of plant metabolism and should enjoy working on biochemical and physiological topics. The positions will be confined at first to three years, the salary will be according to BAT IIa. Please post your applications (including CV and a short description of your working experience) to:

Prof. Dr. U.I. Flügge

Universität zu Köln

Botanisches Institut

Gyrhofstrasse 15

D-50931 Köln

Email: ui.fluegge@uni-koeln.de

<http://www.uni-koeln.de/math-nat-fak/botanik/bot2/agflue/HOME/index.htm>

Carbon and Oxygen Isotopes in Photosynthesis

Post-doctoral position, Italy

A post-doctoral position is available from June 2003 to work at CNR, Porano (TR), Italy in the photosynthesis and stable isotope laboratory on the study of "carbon and oxygen isotope analysis in photosynthetic products, metabolic partitioning and sources and sinks", within the framework of the European Community Program NETCARB. The 1 year position is intended to provide training in physiological ecology of photosynthesis, metabolism and stable isotope techniques. Candidates are expected to possess expertise in photosynthesis, gas exchange, knowledge of IRMS (stable isotope ratio mass spectrometry) techniques. Background in biogeochemical cycles and ecosystem discrimination is also appreciated. For further information and to discuss the program please contact:

Dr. Enrico Brugnoli
 CNR, Institute of Agro-Environmental Biology and Forestry
 Via Marconi 2
 05010 PORANO (TR), Italy
 Phone: (+39) 0763-374689
 Fax: (+39) 0763-374330
 E-mail: brugnoli@ibaf.cnr.it

The age limit for applicants is 35-years or lower. Applicants must be EU citizen or citizen of any EU Associated State or, in alternative have resided in an EU country or Associated State for at least 5 years. Applicants should not be Italian citizen or have resided and worked in Italy for more than 12 months in the last 2 years. Applications (to include a curriculum vitae, summary of research experience and the names, addresses and telephone numbers of three academic referees) should be sent at the earliest convenience to Dr.Enrico Brugnoli at the above address.

Role of Sphingolipids in the Secretory Pathway Of Plants

Postdoctoral position, Bordeaux, France

Available September 2003 for 12 months in the Laboratoire de Biogenèse Membranaire, CNRS-Université Bordeaux II. Extension to 18 months possible. Salary: 2150 euros per month.

Research in UMR 5544 deals with regulation of membrane lipid metabolism in plants and its role in the secretory pathway, membrane homeostasis and wax lipid production. The project will focus on the role of lipids and enzymes of lipid metabolism in the structural organization and function of the ER-Golgi-Plasma membrane pathway of plant cells. We will particularly study Glucosylceramide and the ceramide glucosyltransferase.

Glucosylceramide is a sphingolipid which accumulates in the plasma membrane and can be engaged in specific chemical links with sterols and other membrane components to form membrane domains called lipid rafts. Such domains lead to lipid and protein segregation which is a key step in lipid and protein delivery in the secretory pathway and assembly as functional domains at the cell surface.

The postdoctoral program will concern studies on the physiological role of Glucosylceramide in the secretory pathway through different steps:

- * Development of Glucosylceramide deficient mutants of *Arabidopsis thaliana* (salk mutants, RNAi approach, inducible mutants&).
- * Formation and composition of lipid rafts in these Glucosylceramide deficient mutants.
- * Analysis of the targeting of Golgi and Plasma membrane proteins in Glucosylceramide deficient plants (either by expressing protein markers in the mutants or by blocking glucosylceramide synthesis by specific inhibitors in wild plants).

The postdoctoral candidate is expected to have some experience in transgenic approaches in plants and protein expression, and the classical background in biochemistry and molecular biology.

Contacts:

Patrick Moreau (33 5 57 57 16 81 ; pmoreau@biomemb.u-bordeaux2.fr)

René Lessire (33 5 57 57 10 45 ; Rene.Lessire@biomemb.u-bordeaux2.fr)

Auxin Signalling Pathways

3 years Post-Doc position Gif sur Yvette, France

Position immediately available in the context of the EC-Research Training Network: ACCY

The purpose of ACCY is to unravel the auxin signalling pathways that mediate the control of cell growth. The programme will focus on identifying the molecular mechanisms underlying auxin action on the cell cycle in growing cells as well as quiescent cells which re-enter into division under developmental or environmental constraints. ACCY brings together seven participants which have accumulated a wide spectrum of complementary tools and expertise for analysing auxin signalling cascades and the plant cell cycle at the molecular, cellular and whole plant levels.

The overall aim of ACCY is to improve our understanding of the genetic and molecular control of cell division by the plant growth substance auxin in various cell and plant systems using a combination of modern biochemical, genetic and molecular cell biology approaches.

Three key objectives can be defined:

Objective 1: Studying the auxin signalling pathway involved in the control of cell growth

Objective 2: Identifying the molecular mechanisms of auxin action on the cell cycle

Objective 3: Investigating the mechanisms promoting the re-entry of quiescent cells into division

The candidate will search for novel auxin targets and will contribute to the functional characterisation of the auxin-binding protein ABP1, following work already in progress in the lab. Background in molecular and cellular biology, genetics and/or plant development is required. An expertise in genomics and bioinformatics would be an advantage but is not conditional. Collaborative work will be developed with most partners of the Research Training Network ACCY and specific training will be proposed in the context of the network.

Location: Gif sur Yvette, 25 km south of Paris, France

Condition: Due to EC-RTN rules, the position is offered to a PhD researcher from the EC or associated States but not France.

Contact:

Dr C. Perrot-Rechenmann

Institut des Sciences Végétales (ISV), CNRS, Avenue de la Terrasse Bat 23,
91198, GIF SUR YVETTE, Cedex

e-mail : catherine.rechenmann@isv.cnrs-gif.fr

phone: 33 1 69 82 35 88

Impacts of CO₂ and Climate on C4 Plant Fitness

PhD position, Sheffield, UK

A NERC-funded postgraduate studentship is available in the Department of Animal and Plant Sciences, University of Sheffield, England, U.K. (Supervisor: Colin Osborne)

Geological evidence has recently cast uncertainty on the long-held theory that C4 plants evolved in response to a decline in atmospheric CO₂. This PhD project will address the problem for the first time using an experimental approach, utilising state-of-the-art growth facilities at Sheffield. It will provide a timely evaluation of the extent to which a photosynthetic benefit of C4 plants over C3 contemporaries in low CO₂ translates into an increase in fitness. Coupled with field transplant experiments along an altitudinal gradient in South Africa, these experiments will give important insights into the selection pressures acting on C4 plants. The student will have opportunities for fieldwork in South Africa, and will be based in a department rated 5* in the latest RAE, with a breadth of research in molecular and ecological physiology.

Further information and details of how to apply for this PhD can be found at:

<http://www.shef.ac.uk/aps/graduate-information/graduate-opportunities.html>

Forthcoming meetings

Transposition, Recombination and Application to Plants

Iowa, June 5-8, 2003

(<http://www.bb.iastate.edu/~gfst/phomepg.html>)

The 5th Annual Plant Sciences Institute Symposium, SPONSORED BY the Department of Biochemistry, Biophysics and Molecular Biology, Iowa State University, Ames, IA and the Plant Sciences Institute, Iowa State University, Ames,

The meeting will combine the biology of plant transposons and the applications of transposons and other recombination mechanisms; including advanced transposon tagging systems, and potential uses of transposon-mediated recombination reactions for modifying plant genomes. Both DNA- and RNA-elements will be dealt with at the meeting, although more time will be devoted to DNA elements. The symposium will cover the following areas: Transposon biology: interactions between native elements and their hosts; How transposons have shaped plant genomes; Regulation of transposition; Transposition mechanisms; Transposon tagging; and Applications of transposon-mediated recombination for plant genome modifications.

ISU Symposia attract a world-wide audience, with a broad mix of principal investigators, postdocs, and graduate students. The atmosphere is informal and the format allows for extensive discussion both during and between sessions. An important purpose of these symposia is to promote interactions and new collaborations between individuals who might not normally come together at a single symposium.

ABSTRACT and TRAVEL GRANT DEADLINE: April 4, 2003

REGISTRATION DEADLINE: May 5, 2003

REGISTRATION COSTS:

Advance registration (until May 5): \$450 (regular), \$325 (students and postdocs).

Registration after May 5: \$500 (regular), \$375 (students and postdocs).

Studies of Flux-partitioning, Allocation and Translocation with Stable Isotope Labelling and Measurements in Mesocosms

Freising (Germany), 2nd - 6th June 2003

The draft programme of the next NETCARB summer-school is available. The summer school will be at Freising; the registration form is on NETCARB web page.

<http://www.wzw.tum.de/netcarb/>

Information and registration can be found on the website,

<http://www.spps.kvl.dk/congress2003>

7th International Congress of Plant Molecular Biology

Barcelona, Spain. 16 – 21 June, 2003

<http://www.ispmb2003.com>

Conference on Isotope Effects

Uppsala, Sweden, June 22-27, 2003

A multidisciplinary conference will emphasize the diversity of modern research on isotope effects in various areas of natural science with the emphasis on chemistry and biochemistry.

Details, including final call for abstracts, delegate's fee, deadline for registration, registration form and much more are available on the conference web site:
<http://www-conference.slu.se/iiec>

Contact Johanna Thyselius, Conference Secretariat, Akademikonferens, P.O Box 7059
 S-750 07 UPPSALA, Sweden

tel 018-67 20 84 int ph +46 18 67 20 84

fax 018-67 35 30 int fax+46 18 673530

e-mail: Johanna.Thyselius@akademikonferens.uu.se

<http://www.akademikonferens.uu.se/>

The 4th conference on Biochemistry, Ecophysiology and Population Biology of Alpine and Polar Plants

Trins near Innsbruck, Tyrol, Austria, 9 - 11 July, 2003

This conference will again offer an opportunity for scientific exchange and collaborations among scientists interested in Alpine and Polar Plant Biology. One aim of the conference is to connect high mountain plant research with studies on polar plants especially in the fields of bio-chemistry, ecophysiology and population biology. Keynote speakers will introduce the scientific themes (preliminary):

1. Stress Physiology (R. Bligny)
2. Ecophysiology (T.A. Day; R. Crawford)
3. Population Biology (U. Molau; I. Till-Bottraud)
4. Community Ecology (R. Callaway)

<http://www.ujf-grenoble.fr/JAL/trins2003/index.htm>

ASPB Annual Meeting

Honolulu, Hawaii. 26 – 30 July, 2003.

<http://www.aspb.org>

The XXI SPPS (Scandinavian Plant Physiology Society) Congress

Allinge-Sandvig, Bornholm, DENMARK 21-24 August 2003

Main topics of the congress:

The Plant Nutriome
Stress Biology
Bioimaging in Plant Biology

Invited Lecturers:

Eduardo Blumwald (USA)
Mary Lou Guerinot (USA)
Stefan Jansson (Sweden)
Jakko Kangasjärvi (Finland)
Satoshi Mori (Japan)
Nick Read (UK)
Mark Stitt (Germany)
Jens Stougaard (Denmark)
Michael F. Thomashow (USA)

Deadline for submission of abstracts and paying registration fee is May 1st 2003

Main Organizer:

Prof. Jan K. Schjørring
Department of Agricultural Sciences
Plant Nutrition Laboratory
Royal Veterinary and Agricultural University
DK-1871 Frederiksberg
Denmark

e-mail: jks@kvl.dk

SEB Symposium: membrane Trafficking in Plants

University of Glasgow, UK, 23 – 26 August, 2003

Contact: Mike Blatt. M.blatt@bio.gla.ac.uk

<http://www.sebiology.org/meetings/2003/Glasgow/index.htm>

Joint meeting of the Plant Growth Regulation Society of America and the Japanese Society for Chemical Regulation of Plants

Vancouver, British Columbia Canada. August 3-7, 2003

Sessions on: molecular aspects of plant growth regulation, fruit maturation, PGR uses in tree and woody plants, and applied PGR research.

3rd International Symposium on Dynamics of Physiological Processes in Woody Roots

Perth, Australia, 29 September-3 October 2003

Meeting web URL: <http://www.botany.uwa.edu.au/woodyroots/>

Sessions include:

1. Assimilate allocation and partitioning in roots
2. Root growth, development and turnover
3. Water flux
4. Nutrient uptake and utilization
5. Rhizosphere ecology/interactions
6. Root architecture

Keynote speakers:

Frederick (Rick) Meinzer (USDA-FS Corvallis, USA)

Mary Topa (Boyce Institute, USA)

Carol Peterson (Univ. Waterloo, Canada)

Christoph Leuschner (Univ of Gottingen, Germany)

Heinz Rennenberg (Uni of Freiberg, Germany)

Sally Smith (Univ of Adelaide, Australia)

Torgny Nasholm (SUA-Umea, Sweden)

Petra Marschner (Univ of Adelaide, Australia)

David Crowley (UC Riverside, USA)

Margaret McCully (CSIRO Canberra, Australia)

Günter Neumann (Univ. of Hohenheim, Germany)

Meine van Noordwijk (ICRAF, Indonesia)

Stephen Burgess (UC-Berkeley, USA)

Enquiries to: woodroot@cyllene.uwa.edu.au OR Pauline Grierson at

pfgblue@cyllene.uwa.edu.au

NEW!! Woody root meeting : <http://www.botany.uwa.edu.au/woodyroots/index.html>

Plant Genomics European Meeting (GEMs) 2

University of York, UK, 3 – 6 September, 2003

Contact: kvd1@york.ac.uk

<http://www.garnet.arabidopsis.org.uk>

II Symposium Island Ecosystems and Workshop on “ Island biodiversity and evolution”

5 - 9 October 2003, Funchal, Madeira Island, Portugal

10 October 2003, Funchal, Madeira Island, Portugal

SECOND ANNOUNCEMENT & CALL FOR PAPERS

The Centre for Macaronesian Studies (CEM) has the pleasure of inviting you to the “II Symposium of Island Ecosystems”, to take place in Funchal, Madeira Island, Portugal, October 5 - 9, 2003. Following-up on the success from the previous symposium, held in March 2001, the aim of the present meeting is to review the recent progress on the biodiversity, evolution and ecology of insular ecosystems, as well as on islands geology, paleoenvironments, and ecosystems management.

Deadline for submission of abstracts: **May 31, 2003**

Deadline for submission of full papers: **August 15, 2003**

Deadline for early registration fee: **May 31, 2003**

Registration and further information available at: www.uma.pt/ccbg or www.ccbg.net

Useful web sites

Celebrating 50 Years of DNA

<http://www.dna50.org/main.htm>

50 years ago, the belief that DNA was the genetic material was not yet universally accepted. With only 4 bases (ACGT) it was unclear how DNA possibly contain enough information or how could it reliably be replicated for each new cell? These were the questions James Watson and Francis Crick resolved on February 28, 1953. This web site includes the original paper in Nature, a genetics timeline, an archive, more readings in genetics and DNA-inspired artwork, and a summary of social events commemorating the occasion. For full utility, the Macromedia Flash Player is required, but there is a lot of information that even old browsers can access. This site has been created by Cold Spring Harbor, where Watson spent much of his career, as Director from 1968-94 and is still the lab's President.

Crop Description web site

http://www.hort.purdue.edu/newcrop/Indices/index_ab.html

This Crop Database from Purdue University in the United States includes both common and obscure plant crop species. Links are presented as an alphabetical list of mixed scientific and common names and can also be accessed with an integral search engine. Each crop plant has its own page.

PlantZAfrica.com

<http://www.plantzafrica.com/>

This site features information about plants native to southern Africa. The site includes: Plants of SA, Vegetation of SA, Using SA Plants, From the Archives, Miscellaneous Info as well as a site search. The plants site includes images, plant information and growing the plant.

Bioinformatics.Org

<http://bioinformatics.org/>

Bioinformatics.Org is an international organization promoting freedom and open exchange of data, databases, software and supporting resources relative to particular types of biological information. Bioinformatics includes all computer and supporting technologies involved in the analysis and use of the complex life sciences data available from molecular biology studies. This website is a central component in Bioinformatics.Org's goal is to provide "...access to cutting-edge resources can be prohibitively expensive for those working individually, in small groups, at poorly-funded institutions or in developing nations."

www.australiangraduate.com

This web site provides an invaluable introduction to students contemplating study at an Australian University.

Ricin Toxin from Castor Bean Plant, *Ricinus communis*

<http://www.ansci.cornell.edu/plants/toxicagents/ricin/ricin.html>

The recent arrest of terrorists in the United Kingdom for trying to isolate ricin from the castor bean (*Ricinus communis*), has raised interest in this species popular with physiologists interested in collecting phloem sap. It is the seeds that carry the toxin. This page explains the chemical basis of poisoning and why it takes days to kill (it inactivates ribosomes). There are medical uses too such as targetting it against cancer cells.

Bio-Web: Resources for Molecular and Cell Biologists

<http://cellbiol.com/>

The Bio-Web is a scientific news/resource site for molecular and cellular biology. With a newspaper-like appearance, the left column leads to major sections, cool sites (including powerhouse sites like Science, Nature, PubMed and others), followed by more news sources.

US National Arboretum

<http://www.usna.usda.gov/>

There is a remarkable depth in coverage and content in this site, which is a virtual arboretum, presenting many educational opportunities. Operated by the USDA, this operation provides some routine "county agent"-like services to farmers, hobbyists, and those trying to grow plants. The menu of options provides a plethora of pull-down menus, where services like the zone hardiness map is displayed, sheets on disease characterization and prevention, and planned plant introductions into the U.S.

FESPB News

14th FESPB Congress

The registration procedure for all interested in the participation in the 14th FESPB Congress which will be held in September 2004, in Cracow, in Poland is now open.

All information regarding the above can be found at the Congress website:

www.zfr-pan.krakow.pl/konf/

Please register at the web site. Then, the PRE-REGISTRATION FORM downloaded in the "rtf" format on the Congress website should be filled in and sent to the secretariat of the symposium by fax or by post. In this way all your personal details will be introduced into the FESPB CONGRESS database and you will be up to day informed about organizational issues.

The Second Announcement will be sent only to those who have registered on the Congress website and confirmed their participation in the Congress by completing and returning their PRE-REGISTRATION form to the Secretariat of the Symposium by fax or by post. (Completed forms with an institution stamp, that have been sent by post without registering on the Congress website will be also accepted).

I do hope that you will be able to join us to make this 14th FESPB Congress enjoyable and scientifically fulfilling that meets your highest expectations and reflects your interests in field of present day plant biology.

Prof. dr hab. Franciszek Dubert
THE 14th FESPB CONGRESS ORGANISER

FESPB Web Forum

The FESPB Web Forum is a much neglected feature of the FESPB web site. It has been set up in a way that allows letters to be posted for everyone to read and for any replies to be appended to letter so that again everyone can read it. You may be interested in two letters that have been posted on FESPB Web Forum recently by Mario de Tullio and Geert Potters. They concern the question of the increasing hostility to science by the general public and the need to educate teachers and students at schools to be more enthusiastic about science, especially plant science. To read these letters simply log on to the FESPB web site and click on 'FESPB Web Forum' button on the left side. Both letters make very interesting reading and may provoke you into writing to FESPB Web Forum yourself.

Items for FESPAlert

If you have items, job opportunities or information you think FESPP members would like to see in *FESPPAlert* or have any comments on content please e-mail me pjlumsden@uclan.ac.uk

The source of this FESPAlert is

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