



FESPAlert

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FESP B Congress

The 14th **FESP B Congress** will be held in the historic and beautiful city of **Krakow, Poland**, and registration for the Congress is now OPEN.

This magical city, on the banks of the Wisla (Vistula) River, has one of the best-preserved medieval city centres in Europe, with dozens of churches covering almost every architectural period and surrounded by monasteries and abbeys



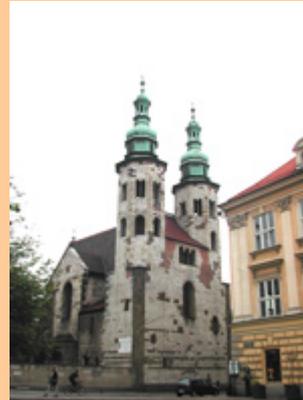
Laid out in 1257, the Main Market Square is one of the largest medieval market squares in Europe. It is dominated by the sixteenth-century Sukiennice

(Cloth Hall), which continues to operate as a trading centre with lively market stalls and pavement cafés in and around the building.

Krakow's cultural richness has long been recognized, and quite rightly it was chosen as the European City of Culture in 2000. Almost a quarter of Poland's museum holdings can be found here and the city's cultural scene is without equal.



13th century Basilica of the virgin Mary



11th century Romanesque church of St Andrew

A student population of almost 100,000 ensures a lively atmosphere throughout the city. Added to this are the increasing numbers of tourists who have discovered Krakow; as a result there are even more bars, cafés and restaurants, making the city centre a very attractive place to relax and socialise.



Attractions around the city's main square

As well as a rich cultural heritage, the city has an active intellectual heart, with nine different Universities located here, including the Jagiellonian University - the oldest in Poland, dating from the 14th century.

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

<http://www.zfr-pan.krakow.pl/konf/>

If you plan to attend, you can download the PRE-REGISTRATION FORM from the website, and after filling in, send by fax or by post to the Congress Secretariat. You can also pre-register ON LINE, although this should be confirmed by sending a form as above. When using the on line facility you will need to give a login name and password. By return email you will receive an authorization code which should be used (only necessary once) to access the Congress web site.

Research news

Relics: Plant fragments date land invasion (pp282-285; N&V)

Debate about the date of a momentous event in Earth's history — invasion of the land by plants — may have been resolved, thanks to the discovery of tiny fossilized plant fragments. The findings, reported in *Nature* by Wellman *et al.*, suggest that the earliest land plants arose at least 475 million years ago, adding 50 million years to previous estimates.

The evidence of these first land plants is in the form of microscopic spores trapped in 443–495-million-year-old rocks that are much older than the earliest remains of the plants themselves. Although these spores also resemble those of aquatic algae, undermining any claim about timing of land-plant origins based on this evidence alone. Sieving through rocks in Oman, Wellman and colleagues unearthed ancient fragments of what proved to be miniscule land plants containing large numbers of spores identical and of a similar age to those found previously. Analysis of the spore wall ultra structure led the team to conclude that these plants were similar to present-day liverworts.

EU forecasts crop losses caused by drought

The Commission's Joint Research Centre (JRC) has used its advanced crop yield forecasting system to predict the effects of the persisting drought on this year's harvest in the European Union. The expected drop in the main crop yields ranges from about 2% for potato to 25% for sunflower at EU level. The loss in wheat production will be approximately 10 million tonnes compared to the previous agricultural campaign.

From the analysis of the JRC crop indicators it emerges that this year's extreme weather conditions diminish the quantity and quality of the harvests particularly in central and southern Europe's agricultural areas. The winter crops suffered from the effects of a harsh winter and late spring frost. The heat wave starting as early as June caused the crops to develop in advance by 10 to 20 days anticipating ripening and maturity stages. Thus winter-spring cereals entered into grain filling stages under insufficient soil moisture conditions. The very high values of air temperature and solar radiation in the second part of July and beginning of August, resulted in a notable increase of the crops' water consumption. This, together with the summer dry spell, resulted in an acute depletion of the soil water reservoirs available to the crops. Since April 2003 the climatic water balance indicator (which represents the balance between water supply from rainfall and the crops' water requirements) shows a significant deficit in the majority of the Member States (excluding only the northern countries: Denmark, Finland, Ireland, Sweden and U.K.).

Yield forecasts, issued in August, were as follows:

Total Wheat (including soft wheat and durum wheat varieties): expected to be lower by 6.6% as compared to last year. The most affected countries contributing to the low European yields are France (about 9% below average results), Germany (7% below average), Italy (12.3% below average) and Portugal (15% below average).

Grain Maize: expected to be lower by 10.1% as compared to last year.

Rape Seed: The European yield will be lower than average by about 6.6% (2.9 t/ha instead of 3.1 t/ha), with Germany and France expected to have yields 11% and 10% lower than average. The crop suffered from the April late frost, during flowering, and from lack of rain during its ripening period.

Sunflower: expected to be 25.0% lower as compared to last year. The areas most affected will be Spain and Italy.

Sugar Beet: expected to be lower by 7.2% as compared to last year, although the sugar content should be higher. Areas of production around the English Channel and the North Sea appear to be the least affected.

Potato: expected to be lower by 2.0% as compared to last year.

The crop yield results at Pan-European level and a full description of the methodology are available at <http://mars.jrc.it/stats/bulletin> and at <http://www.marsop.info>

Engineering of increased vitamin E

Scientists have engineered plants with increased levels of vitamin E, which is deficient in 25% of the US population and is important for prenatal health and a decreased risk of heart disease. Identification of genes from barley, rice and wheat responsible for the synthesis of tocotrienols, members of the vitamin E family, opens the door to boosting the level of this vitamin in food crops.

Cahoon and colleagues have isolated the HGGT genes, which encode enzymes that play a key role in tocotrienol synthesis. Overexpression of the barley enzyme in *Arabidopsis* enhances total vitamin E content (tocotrienols plus the other major form, tocopherols) ten- to fifteen fold. In corn seed, levels were increased as much as six fold. The results demonstrate the feasibility of engineering increased vitamin E levels in plants using this enzyme.

Vitamin E is the generic term for any of eight naturally occurring forms of tocotrienols and tocopherols. The synthesis of tocopherols has been well characterized in plants, whereas the pathway that leads to tocotrienols has not been extensively studied. The results of Cahoon and co-workers provide the first evidence for the synthesis of tocotrienols in plants through the HGGT-catalyzed pathway. Although the work represents a breakthrough for boosting levels of certain tocotrienols, which are powerful antioxidants, further work is needed to produce plants containing dietary forms of the vitamin. Finally, manipulation of these genes could also lead to plants that are more resistant to oxidative stresses.

Glyphosate may encourage blight

Canadian scientists have evidence that glyphosate may increase the risk of fungal infections in wheat. This would be a major blow for backers of genetically modified wheat in Canada, because the first GM variety up for approval in Canada is modified to be glyphosate-resistant. The potential problem was spotted a few years ago by Myriam Fernandez of the Semiarid Prairie Agricultural Research Centre, Saskatchewan. She noticed that in some fields where glyphosate had been applied the previous year, wheat appeared to be worse affected by fusarium head blight. In a follow-up study, Fernandez measured levels of the blight in wheat fields. "We found higher levels of blight within each tillage category when glyphosate had been used in the previous year," says her colleague Keith Hanson. His lab study also showed that *Fusarium graminearum* and *F. avenaceum*, the fungi that cause head blight, grow faster when glyphosate-based weedkillers are added to the nutrient medium. The team is now planning field and greenhouse trials.

Hanson stresses that the real issue is whether the fungi leave more spores in the soil. It is also possible that the effect is simply due to herbicides leaving more dead plant matter in the soil for fungi to grow on and is not directly caused by glyphosate. Field studies should provide answers next spring.

Ironically, Syngenta, another biotech giant, based in Basle, Switzerland, has been developing and testing both genetically modified and conventional wheat strains that are resistant to the *fusarium* head fungi.

Other news

Swedes more favourable towards genetic engineering, but not GM foods

Results from a major European survey suggest that two out of three Swedes now accept genetic engineering. This makes Swedes the people with the most favourable views in the EU. "On the other hand, Swedes are the first among EU citizens to protest the right of social insurance offices and insurance companies to gain access to the genetic make-up of individuals," said Susanna Öhman, at Mid Sweden University. Interviews, carried out in 1996, 1999 and 2002 showed the most positive attitudes among Swedes regard genetic testing to discover hereditary diseases and cloning of stem cells to replace sick cells in patients with Parkinson's disease or diabetes, for example.

Genetically modified foods are the only application that Swedes reject outright, although if GM food contained less pesticide than other food, half of those interviewed would consider buying the product. Those who are most critical of genetic engineering are younger, well-educated women who live in cities, are knowledgeable about genetic engineering, and have left-of-centre political views. They see genetic engineering as an environmental problem. There is also a large critical group of poorly educated middle-aged and elderly men and women, not seldom religious, living in small towns. They have conservative values and see genetic engineering as a violation of the order of nature.

Austrian *Arabidopsis* research

Austrian research projects aimed at improving understanding of plants and their interaction with the environment are now being coordinated through the Austrian Platform of Arabidopsis Research (APAR). The initiative for the formation of APAR - a consortium of five Austrian research groups at three different institutes - came from the 2001 Wittgenstein Prize winner, Professor Heribert Hirt. The move has opened the way for Austrian scientists to play a major role in a multinational research programme, the Multinational Arabidopsis Steering Committee (MASC) of which Hirt is the only Austrian member.

Image and Text: <http://www.fwf.ac.at/en/press/plant.html>

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>)

Ozone Effects on Upland Vegetation: water relations and stomata

PhD position, Lancaster, UK

A three-year postgraduate studentship funded by DEFRA is available immediately or from the autumn to work with Prof. Bill Davies (<http://bssv01.lancs.ac.uk/bs/people/teach/wjd.html>) and Dr Gerhard Kerstiens (<http://bssv01.lancs.ac.uk/gk/gk.html>) on the investigation of subtle effects of moderately elevated ozone concentrations on British upland vegetation. The study will involve physiological experiments with selected species that will be grown in the new controlled-environment facilities of the Lancaster Environment Centre (<http://www.lec.lancs.ac.uk/>). This will include characterisation of ozone uptake and plant water relations and the elucidation of the role of ABA and ethylene in the interaction between O₃ and plant water status. The work will be carried out in close collaboration with four other groups, which form part of a consortium.

For an informal discussion please contact Prof. Bill Davies (w.davies@lancaster.ac.uk), Lancaster Environment Centre, Lancaster University, Lancaster LA1 4YQ, UK

Details of how to apply for this PhD can be found at:
<http://biol.lancs.ac.uk/bs/admit/PhDStud.htm>

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

Email: ui.fluegge@uni-koeln.de

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

Forthcoming meetings

Plant Molecular Biology Programs and Perspectives in an Enlarged Europe

Warsaw, 21 - 23 November

A 3-day Meeting on "Plant Molecular Biology Programs and Perspectives in an Enlarged Europe", aiming to promote collaboration between countries of western, eastern and southern Europe. The subjects to be covered are:

1. Plants and environment (plant-microorganism interactions and abiotic stress, phytoremediation)
2. Plant metabolism and multi-level controls
3. Plants as source of food, industrial material and renewable energy (e.g. food quality, biofuels, pharmaceuticals)
4. Acceptance of plant biotechnology

The Meeting will be held at the Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Pawlinskiego 5a, 02-106 Warsaw, Poland.

A registration fee of 110 Euros will be requested. This includes attendance to the lectures and meals (except breakfasts). Students from Central and Eastern European countries can apply for a reduced registration fee. For hotel accommodation and for further information, please contact the secretary Magda Berlinska, tel/fax +48 (22) 823 7189, e-mail cemb@ibb.waw.pl

REGISTRATION FORM

Three-day, On-hand Workshop
Plant Molecular Biology Programs and Perspectives in an Enlarged Europe
November 21 -23, 2003. Warsaw, POLAND

Last nameFirst name Position

Institution

Address

..... Country

Phone Fax e-Mail

Date of arrival in Warsaw

Date of departure

Additional information

To be sent preferably by e-mail (cemb@ibb.waw.pl)

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N.B. Please verify whether you need a passport (and visa) to enter Poland

Anti-inflammatory and anti-infective natural products

London (UK), 15- 16 December

Contact: Michael Heinrich; heinrich@cua.alsop.ac.uk

7th International Symposium on Inorganic Nitrogen Assimilation in Plants

Wageningen, The Netherlands June 23-27, 2004

The aim of the series of Symposia organised by the European Nitrate and Ammonium Group (ENAAG) is to present our current knowledge and ideas on further development of the molecular, biochemical, physiological, ecophysiological and agronomical aspects of inorganic nitrogen assimilation. The 7th Symposium is aimed at integrating the fundamental disciplines with the more applied aspects.

<http://www.enaag.org>

International Satellite Meeting in honor of Prof. Norio Murata

Trios-Rivieres, Quebec, Canada. August 25-28, 2004

The title of the meeting is: "Photosynthesis and Post-Genomic Era: From Biophysics to Molecular Biology, a Path in the Research of Photosystem II",

The web address is <http://www.nibb.ac.jp/~satellit/top>

10th Cell Wall Meeting

Sorrento, Italy. 29 August – 3 September 2004

This is the **first announcement** for the 10th Cell Wall Meeting that will be held in Sorrento, Italy, in August-September 2004. The aim of the Cell Wall Meeting is to bring together scientists whose research deals with any aspect of plant cell walls. As in the past, the meeting is completely open and there are no invited speakers. The organisers are committed to keeping the registration costs as low as possible to encourage especially students and young research scientists to attend the meeting. We also encourage industrial participation in order to establish links between cell wall research and potential downstream applications.

Registration will be on Sunday, August 29; talks will start on Monday.

Poster sessions will be held throughout the meeting.

Useful web sites

ARKive - Images of Life on Earth

<http://www.arkive.org/>

ARKive is a "Noah's Ark for the Internet era". It has the goal of archiving web-accessible information on 11,000 species threatened with extinction. This amounts to a centralized digital library of films, photographs and data about endangered species - plants as well as animals. The site a continually expanding and enduring audio-visual record of high quality and impressive depth of materials available. ARKive is a not-for-profit initiative of The Wildscreen Trust based in Bristol, UK. There are also sister sites: Planet ARKive (for children 9-10 years old) and ARKive Education (for parents and teachers).

Gramene: A Comparative Mapping Resource for Grains

<http://www.gramene.org/>

Gramene is a "Web-accessible data resource for comparative genome analysis in the grasses. Data formerly in RiceGenes is now integrated in Gramene." The rice genome is complete for 9 of 12 chromosomes and nearing completion for the others. This facilitates research on cross-species homologies including interpretation of biochemical pathways, gene and QTL localization and descriptions of phenotypic characters and mutations. Major parts of the site include databases (genome, EST, BLAST, marker, protein, literature), maps & data for downloads, and submissions.

Celebrating 50 Years of DNA

<http://www.pbs.org/wgbh/nova/photo51/>

Rosalind Franklin was a brilliant scientist who died of cancer before the Nobel Prize was awarded for DNA. Her neglected photo 51 contained all of the secrets of DNA's inner structure: the double helix, its periodicity, the position of base pairs. This site has an excellent summary of the early work on DNA, a scientific biography of Franklin, scientific images of DNA, ribosomes, and RNA, the interpretation of photo 51

<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.

FESPB News

KEY DATES FOR THE 14th CONGRESS (Krakow, Poland)

February 2003.....First Announcement and registration open

October 2003.....Second Announcement

March 31st, 2004.....Deadline for early Registration

March 31st, 2004.....Deadline for submission of Abstracts

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 *FESPAlert* or have any comments on content please e-mail me pjlumsden@uclan.ac.uk

The source of this *FESPAlert* is

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