APPS NEWS

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APPS NEWS is the official newsletter of the Australasian Plant Pathology Society, published quarterly. Items for inclusion should be sent to Mrs B. Hall, Plant Research Centre, SARDI, GPO Box 397, Adelaide, SA. 5001. Ph. 08 8303 9562, Fax 08 8303 9393, Email: hall.barbara@saugov.sa.gov.au. **Next deadline: 8th Nov 2002.** Editor-in-Chief APP: Dr Eric Cother, NSW Agriculture, Orange Agricultural Institute, Forest Road, Orange, 2800. Ph. 02 6391 3886, Fax 02 6391 3899, E-mail: ric.cother@agric.nsw.gov.au

Web Site: (http://www.australasianplantpathologysociety.org.au/)

Quarterly Comments from the APPS President

It is a great pleasure to advise that Dr Graham Stirling has been elected a Fellow and Dr Helen Ogle has been elected an Honorary Member of the Society. On behalf of all members I convey our sincere congratulations to Dr Stirling and Dr Ogle. Graham has made quite an exceptional contribution to theoretical and applied research in plant nematology both nationally and internationally. In addition he has made significant contributions to the society and to the farming community. Helen's contribution to the Society through service in various capacities and to teaching has also been quite exceptional. Detailed citations will be published in the Journal.

Lester W Burgess

International Congress of Plant Pathology, Christchurch, New Zealand, 2 – 7 February 2003

Deadline to remember:

- 31 October 2002 - registration - NZ$1080, Accommodation booking cut-off

Information on the post congress tour now available on the web site.
www.lincoln.ac.nz/icpp2003/
see page 8 for more details

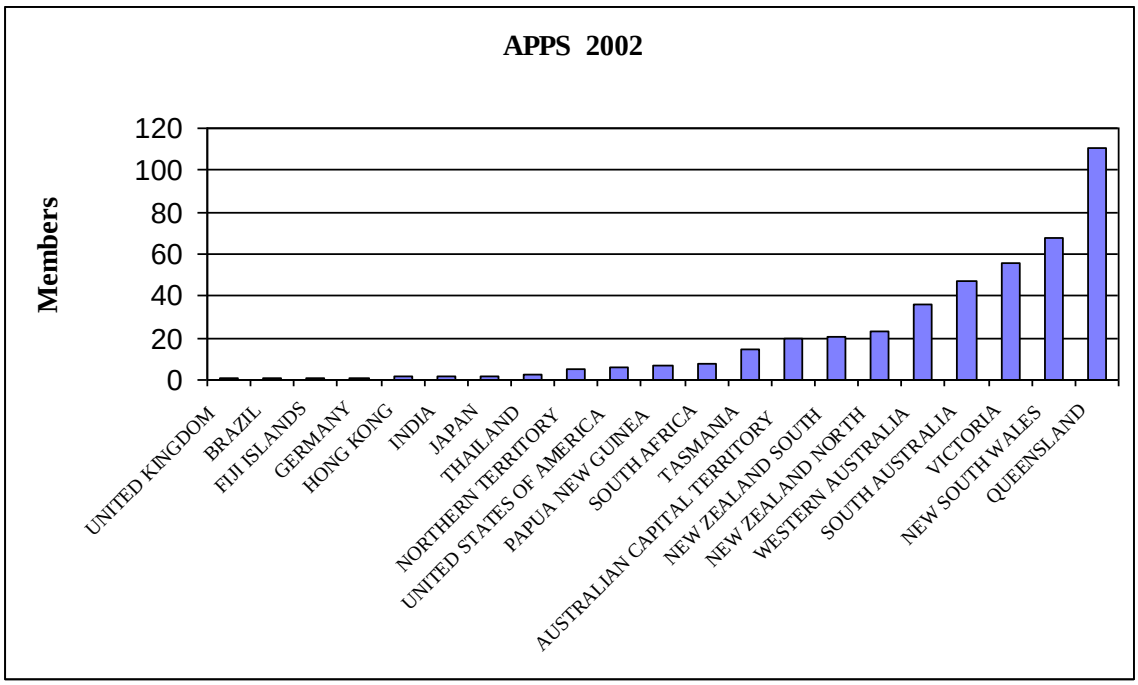
News from the Business Manager

Subscriptions for 2002 are now all in and although reasonably satisfactory we are down on last year. We now have 439 members whereas in 2001 we had 471. We need to remember that last year we held an excellent conference in a very popular location and this undoubtedly had some effect on the numbers. The chart below shows some of the demographics of members and it is great to see that memberships from countries outside Australia and New Zealand are increasing.

APPS needs more members so please encourage any non members from your work area to join. I have placed a new link on the web site which explains how to sign up new members.

The new electronic database change form on the web has greatly improved the accuracy of member details and in particular email addresses. No longer do I receive between 50 and 100 email bounces each time I send mail to all members. I would also like to take this opportunity to encourage members to fill in the web link on the information form. When we have enough links I will set up a page which will pull all of them together and perhaps will become the centre for all plant pathology research projects in our region. If anyone has any suggestions as to how we could make the web site more useful or user friendly please let me know.

Peter Williamson



Apologies to Peter - this article was held over from last issue - I forgot to include it! Ed.

More News from the Business Manager

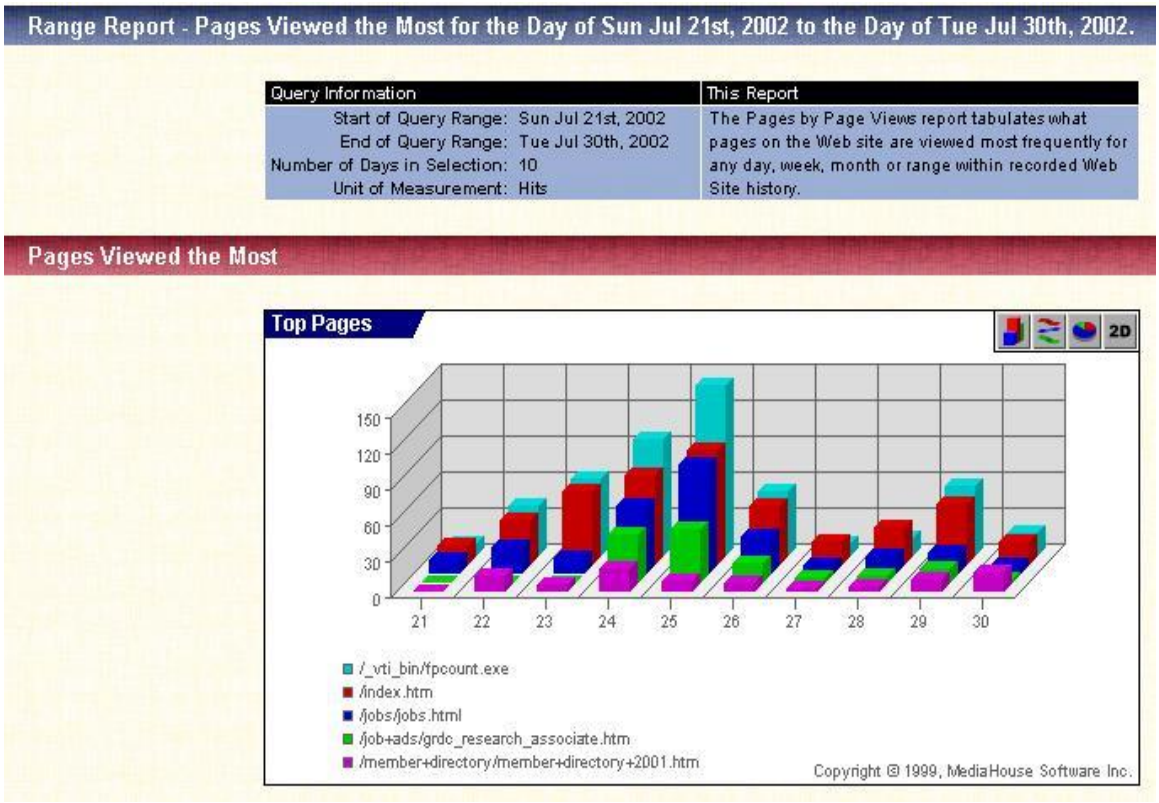
Over the period since I became business manager I have seen many changes in the way the daily business is run. We have changed from a traditional type of bookkeeping system to a full electronic office with an up to date web site (WorldCom though I'm afraid) where members can take responsibility for updating their records as often as they like. Encrypted credit card payment facilities will soon be added, hopefully before next years payments are due.

A couple of years ago we introduced the APPS job net which has rapidly become the members preferred system for advertising job vacancies. At a cost that is less than half that of the major national weekend newspaper and with an international audience, we can offer a service that is second to none. I regularly receive feedback from satisfied customers.

The web site has many features that I am still learning about but one that may interest you is the statistics that it generates. From my desk I can see who is on line, how many times they have logged on, the most used pages, which page they entered from and where they exited, which

browser they are using, which operating system is on their computer, the length of time they browsed the site and much more. Below is a chart of the usage over a one-week period near the end of July. Outside the top five, pages such as Plant Path Incursions, About the Society and the McAlpine Lectures are regularly visited. If members have any suggestions as to how the web site can be improved or made more useful, please let me know.

Peter Williamson



Key (from front to back) Number of hits in one week on:
front row: members directory, second row:GRDC research associate, third row: jobs , fourth row:index , back row: hit counter

REGIONAL NEWS

On Friday 28th June 2002, we had our Annual Midyear Postgraduate Student Seminar Afternoon at the University of Melbourne, Parkville. Five postgraduate students in their final year of study gave very interesting presentations on a variety of topics related to plant-microbe interactions.

Our first speaker was Ms Geetha Kularatne, from the Department of Biotechnology and Environmental Biology at RMIT University, who spoke on 'Mycosphaerella leaf disease: molecular differentiation of closely related fungi causing the disease and a preliminary investigation on disease resistance genes'. Geetha's work described efforts to differentiate the closely related *Mycosphaerella* fungi and other related species that cause this disease in a *Eucalyptus globulus* seed orchard at Kinglake West. Designing of species-specific primers was attempted by comparing the sequences of the ITS region, with the ultimate aim to use them to

detect the fungi in infected leaf material. Geetha also undertook a preliminary investigation on genes relevant to disease resistance using resistant gene analogue (RGA) primer analysis.

Next was Mr Joe Barrins, from the School of Botany at the University of Melbourne, who presented his work on 'Population genetics of *Leptosphaeria maculans* in Australia'. The aim of Joe's research was to investigate the population genetic structure of *L. maculans*, the causal agent of blackleg disease of oilseed Brassicas such as canola, using molecular techniques (primarily AFLP analysis) on an historical collection of isolates from Australia, Europe and North America. He used an hierarchical sampling method to assess the population structure in a paddock and a random sampling method to assess the structure in a sampling of WA, NSW and Victorian locations. Joe found a high degree of similarity between isolates in all of these studies, with the majority of variation found within sampling sites rather than between them.

Our third speaker was Mr Alex Idnurm, also from the School of Botany at the University of Melbourne, who described his project on 'The identification of pathogenicity genes in the blackleg fungus (*Leptosphaeria maculans*). Alex's research aimed to identify pathogenicity genes from this fungus, using random insertional mutagenesis and targeted disruption of candidate pathogenicity genes. Alex found one non-pathogenic mutant that has a deletion of the isocitrate lyase gene, which is an exciting discovery since this gene is also essential for disease by human pathogenic organisms.

After a short break, our fourth speaker for the afternoon was Mr Jim Rookes, from the School of Biological and Chemical Sciences at Deakin University, who discussed the 'Development of a *PAL1* gene promoter/GFP reporter system to study plant defence responses'. Jim transformed *Arabidopsis thaliana* plants with a construct containing the green fluorescent protein (GFP) gene under control of the phenylalanine ammonia-lyase (*PAL1)* gene promoter. *PAL1* encodes a key enzyme involved in the plant defence response and thus makes an ideal candidate to visualise the defence response via gene expression. He then observed GFP production in transgenic plants after several types of treatments and especially during incompatible plant-pathogen interactions. The information provided by this system further extends the knowledge of temporal and spatial induction of *PAL1* during the defence response.

Our final speaker was Mr Rod Jones, from the School of Botany at the University of Melbourne. Rod introduced us to 'The dynamic process of systematics e.g. *Dermocybe*'. Rod presented a brief history of fungal taxonomy in Australia, leading up to a contemporary example from his work in which morphology, chemistry and molecular data have been used to clarify a taxonomic complexity within the fungal genus *Dermocybe*.

Following the seminars, we enjoyed drinks and nibbles in the ILFR Foyer, which gave everybody a chance to ask more questions of the speakers and catch up on other news. A few partygoers continued on into the night, hopping over to Lygon Street, Carlton for dinner. Sincere thanks to our speakers for their time, effort and enthusiasm, and also to the audience members who ventured out on a typically changeable Melbourne day to support our postgrads.

Finally I would like to announce that I am on maternity leave until the end of July 2003 and that Dr Tonya Wiechel (email: Tonya.Wiechel@buseco.monash.edu.au) will be taking on the role of Victorian Councillor in my absence.

Sally Stewart-Wade

SOUTH AUSTRALIA

The SA branch has had one meeting since the last newsletter. Alexandra Schoeny (from INRA, France) spoke to us about the disease risk forecast model she has been developing whilst working with Jenny Davidson (SARDI). The model forecasts disease risk for blackspot in field peas and has been developed using data from many years of trials as well as meteorological data.

Alexandra showed us the new computer program they have developed that enables the grower to input the factors affecting his crop. After the seminar, the winners of the South Australian branch student travel grants for the International Congress in New Zealand were announced. Congratulations to Suzanne Colmagro ($900), Imelda Soriano ($900), Dale Godfrey ($600) and Luke Selth ($400).

During the year we have been running a quiz prize where people get points for attendance and bonus points for answering quiz questions right at the end of each seminar. At the end of the year, the first three placegetters will get a prize. Currently, Kylie Cook is leading the charge with 12.5 points followed by Eileen Scott on 9 points. Third position is currently a tussle between Klaus Oldach, Tirath Gill and Mark Sosnowski (on 4.5 points). We have also been quite busy preparing for our National Science Week event – 'To eat or not to eat' (21st August), working with Dr Rob Morrison (formerly of The Curiosity Show) to perfect the script.
Amanda Able

PAPUA NEW GUINEA

In July, the Regional Councilor met with Mr Roy Masamdu, Chief Entomologist of the National Agriculture Research Institute and President of the PNG Crop Protection Association. A brief meeting was held with the participation of Professor Terry Price of Vudal University to discuss plans for a PNG Crop Protection Conference to be preceded by a workshop on Crop Loss Assessment to be held in Rabaul in July 2003. We would like to invite to this Conference, APPS members and Crop Protectionists within the region. A lot of Plant Pathology issues will have been discussed at the ICPP 2003 in New Zealand and important issues raised at the ICPP will be disseminated to the PNG Crop Protectionists who do not attend.

The town of Rabaul was completely devastated by the 1994 twin volcano eruptions but it is now slowly recovering. There are three Agricultural Institutions: National Agriculture Research Institute; PNG Cocoa & Coconut Research Institute and Vudal University (formerly Vudal Agriculture College) within close proximity to each other and should interest anyone interested in tropical Plant Pathology. Any members thinking of attending (we would like your participation) should look out for more information in the next issues of the APPS newsletter or contact the PNG Regional Councilor at ccri@datec.net.pg for information.
John Konam

NEW SOUTH WALES

Fusarium Laboratory Workshop
University of Sydney, June 2002

A workshop on the identification of *Fusarium* species was held at the University of Sydney, June 24-28. The workshop attracted a total of 42 participants from 7 countries and from 4 states within Australia . The course was a mixture of lectures and laboratory sessions in which participants were introduced to a range of techniques for identifying *Fusarium* species including molecular based techniques, vegetative compatibility grouping and crossing. Of course, a large proportion of the time was spent looking down the microscope to understand the morphology of the genus. The principle instructors for the course were Professor Lester Burgess, University of Sydney, Professor John Leslie and Dr Kurt Zeller both from Kansas State University and Dr Brett Summerell, Royal Botanic Gardens, Sydney. Similar workshops on the identification of *Fusarium* are held every year in different parts of the world; the next workshop will be held in Kansas, USA

next June, 2003. Information can obtained from Professor John Leslie, Kansas State University (jfl@plantpath.ksu).
Brett Summerell

Fusarium workshop participants

QUEENSLAND

The third APPS/DPI seminar day held in Queensland this year was a veritable feast of vegetable pathology! Bob Davis gave his final seminar before his retirement, and reflected on his 34 year career in the Queensland Department of Primary Industries. Associate Professor Meg McGrath who has been visiting with the DPI Vegetable Pathology group in Gatton and Indooroopilly for the past six months spoke about her work with Halloween pumpkin diseases on Long Island, New York.

Bob Davis retired from QDPI on the 8 August 2002, after 34 years of meritorious service. A full report on Bob's farewell will be given in the next edition of APPS news.

Future seminar plans include a tour of Maroochy Research Station, timed to coincide with strawberry season of course! As well as the third annual Postgraduate Seminar Awards Day to be held in late November. This years Awards day will most likely be held at the Gatton Research Station, however, I would very much like to encourage students located in other areas to attend, as sponsorship to cover travel expenses and accommodation is available.

Regular Seminar Program
(Indooroopilly Research Centre)
"Vegetable Pathology Day" 9 July 2002

Bob Davis (Senior Plant Pathologist, QDPI Gatton)
"Some things I wish I knew before I started..."
Having joined the QDPI in 1968 as a part of the cadet scheme, Bob started his presentation with the definition of the term cadet. "A young person undertaking an apprenticeship, usually in sheep farming, who is aligned with an experienced sheep farmer." Followed by a series of interesting

and often humorous stories, with even more humorous photographs, Bob amused us all with a detailed description of his 34 year journey from cadet to sheep farmer.

Meg McGrath (Associate Professor, Department of Plant Pathology Cornell University, NY, USA)
"Addressing the challenges of effectively managing diseases of Halloween pumpkins."
Meg's work involves the integrated management of a number of important diseases of vegetable crops grown on Long Island. Of particular interest to Meg is the production of Halloween pumpkins, and the control of powdery mildew. Control of powdery mildew using fungicides is a complicated issue for growers, with resistance developing quickly to many of the available systemic fungicides. Meg has been responsible for developing a programs to successfully reduce fungicide resistance. Meg also spoke generally about the other horticultural crops grown on Long Island, of which there is a surprising amount, including wine grapes, tomatoes, peppers (capsicums), broccoli, cauliflower, spinach, potatoes, herbs and cucurbits.
Christine Horlock

Second Notice

APPS Postgraduate Seminar Awards Day

November, 2002 Gatton Research Station

Postgraduate plant pathology students from throughout Queensland, or their supervisors are encouraged to submit expressions of interest to participate in the Australasian Plant Pathology Society's Annual Postgraduate Seminar Awards' Day.

Entry forms and contest information can be found on the APPS website: www.australasianplantpathologysociety.org.au. For further information, or to register your interest in participating, please contact:

Christine Horlock
Plant Pathologist, QDPI, 80 Meiers Road, Indooroopilly QLD 4068.
Phone (07) 3896 9335 Fax (07) 3896 9533
Email christine.horlock@dpi.qld.gov.au

International Congress of Plant Pathology
Christchurch, New Zealand, 2 – 7 February 2003
Incorporating the 14th Biennial Australasian Plant Pathology Conference.
web address: www.lincoln.ac.nz/icpp2003/

Most members of APPS will have received a copy of the "Call for papers and registration brochure" for this congress. If not then E-mail icpp2003@lincoln.ac.nz and ask for a copy to be sent to you. Many members have registered for ICPP2003 and we are grateful for the early registration.

The next important date is the 31 October when ICPP hopes to have received the next group of registrations. As at the 6 August the total number of full registrations was 583 which is encouraging.

The pre- and post-congress workshops are not yet full but each are being well supported. Thus we expect that all will proceed. The PVEP and PVIN workshops are now being held at the University of Canterbury on the days already notified, but not at Lincoln University. There are approx. 400 delegates attending each of the two social events, so these should prove to be very enjoyable.

Post-congress Tours: there is now more information on the website. In addition there is further information about the evening workshops on the website, and an on-line registration form should you wish to take part in one of these. If you wish to be actively involved in one then please E-mail the appropriate organiser.

It is important to note that the 14th conference of APPS is incorporated in ICPP2003. Thus there will be a Presidential address, the McAlpine address and a biennial general meeting.

Ron Close

NOTES FROM THE WEB

A website worth checking - **Illustrated Encyclopaedia of Forage Crop Diseases**
http://ss.ngri.affrc.go.jp/disease/detitle.htm

Should you 'own' your review?

I believe that the scientific community needs to engage in a debate on whether the 'anonymous peer review should now be replaced by a 'signed peer review'.

? Why change a system that has successfully ensured that only (predominantly) valid results of valid experiments are published in scientific journals?

! Because the environment in which that research is conducted has changed significantly.

This discussion will be distasteful to all member of the APPS and we will not want to believe self interest could undermine such a venerated scientific institution as the peer review. However, just think about the plagiarism that has been aired in the popular press recently and you will realise that what I am suggesting is a less visible, or even invisible, 'crime' and therefore well within the realms of possibility.

The climatic changes in the scientific arena means that journals are now asking scientist to review papers written by others with whom they are in competition. The competition is both for increasingly scarce funding and increasingly important publications in some fields or institutions. This situation does not lend itself to a fair and impartial review of manuscripts. Try as one might it is difficult to give a 'leg up' to someone, or group, who you think may use this publication to support their applications for more dollars.

There is also increasing competition for scientists' time, so why should I give time to review a paper for which I will get no credit – for the good of science of course. But that does not get me funding or publications. How does the referee get credit for the review? I would propose that referees be acknowledged in the paper along with the date the paper was accepted, i.e. at the bottom of the paper the journal currently prints 'accepted for publication on (this date)', this could be followed by 'Refereed by John Howard and Fred Dagg'.

I believe such recognition would encourage referees to be thorough and fair in reviews of manuscripts so that at the next conference or gathering they can face the authors. Also, just as importantly, readers will know that the referees have accepted a manuscript as good work well written and as such, cursory reviews or acceptance of poor manuscripts will reflect on their standing as a scientist.

An alternative to the above proposal is a completely anonymous review in which the reviewer does not know who the authors are, however, it would still be pretty easy to work out that the author is not an associate of the reviewer or in their institution.

Bill MacLeod

XI INTERNATIONAL SYMPOSIUM ON BIOLOGICAL CONTROL OF WEEDS 27 APRIL - 2 MAY 2003

The XI International Symposium on Biological Control of Weeds is being held in Canberra, Australia, from Sunday 27 April - Friday 2 May 2003. The importance of ecology as the underpinning discipline for biological control is the emphasis for this symposium. Information on the symposium, including cost of registration and deadline for abstracts, can be found at

http://www.ento.csiro.au/weeds2003/index.html

BOOK REVIEW

PHYLLOSPHERE MICROBIOLOGY – Edited by S. E. Lindow, E.I Hecht-Poinar, and V.J. Elliot, Published by the American Phytopathological Society, St Paul, Minnisota, 2002, 395 pp.

This is the seventh volume of a series on the biology of phylloplane microorganisms. They are based on five yearly symposia, the first of which, was held in 1970, and contain a wealth of information on the ecology and general biology of phyllolplane bacteria and fungi in particular, but also on insects, arachnids and other microscopic biota.

The present volume is based on the symposium held at Berkley, California, in August 2000, attended by 117 biologists, is presented in six parts: I The Physical and Chemical Environment of Plant Surfaces (3 Chapters); II Interactions between Epiphytes and their Hosts (6 Chapters); III Interactions among Microbes on Plant Surfaces (5 Chapters); IV Plant Surface Microbes: Agricultural Practices and Food Quality (3 Chapters); V Modelling of Interactions and Movement of Microbes on Plant Surfaces (4 Chapters), and VI Contribution of Phyllosphere Microbiology to Science and Agriculture (1 Chapter). The authors of 13 of the 22 chapters are American, three are French, one each of five is Australian, Canadian, English, Finnish and Philippino and one chapter shares joint American French authors.

Its main fault is that the editors use “phylolosphere” instead of “phylloplane” although some authors use the correct term. A minor irritation is the failure to indent second and subsequent lines, or otherwise highlight the beginning, of each reference cited in the literature. This is not user-friendly.

Generally, however, the book is well produced. Although 14 of the nineteen chapters deal with bacterial biology, this redresses past emphasis on fungi. Editors and authors have produced a

readable volume generally free from errors. While each chapter is valuable, the following are singled out for their novelty or advanced ideas.

G.W. Beatie notes advances in understanding the nature of leaf surfaces and interactions of phylloplane bacteria and fungi with wax structure and chemistry (Chap. 1) since 1970. She summarises changes to waxes and interactions as a result of environmental change and stress. In Chapter 3, Wendy Mechaber raises the fascinating prospect of nanoscale studies of leaf surface topography revealing the collection of volatile chemicals in the nanovalleys of the phylloplane and their influence on pathogenesis.

Hirano and Upper's two Chapters on *Pseudomonas syringae* review factors important in migration to new foliage and suggest some students of pathogenesis should be mindful of disease as a side effect of, not necessarily a critical step in, the life cycle of pathogens. The Finnish team expand this idea, showing how alternation between wet and dry conditions on the phylloplane, alternate the genetic significance to bacteria of features of flagella or pili. In Chapter 10, the joint French-American team explore possible implications of the formation of bacterial biofilms over the phylloplane. They raise questions of the relative importance of individual cell behaviour in contrast to the multicellular organism type behaviour of biofilms and speculate on the impact of biofilms rather than individual, independent cells on the ecology of other organisms and pathogenesis. In Chapter 11, Kjelleberg and Steinberg examine defence mechanism in marine plants against bacterial attack, suggesting some eukaryotes produce molecules that block attractant receptors in pathogenic and fouling agents. In others such as *Ulva lactucae*, resident saprophytic bacteria produce inhibitors of marine fouling organisms. Ironically, this is the only paper where "phyllosphere" could be used legitimately, but it is not!

In Chapter 12, Bailey *et al* explore the idea of a "Genetic Commonwealth", a horizontal gene pool, shared by bacterial components of phylloplane populations, which are "administered" by plasmids and which may moderate behaviour in some hosts. Pruvost and Gagnevin (Chap. 14) examine the possible evolution of pathogenesis in Xanthomonads, with special attention to the significance of endophytic and epiphytic phases of the life cycle of a pathovar on mango.

In a scholarly presentation (Chap. 16), Trevor Suslow examines potential hazards of organic farming resulting from incomplete composing of animal wastes. Under moist conditions, *Escheria coli* and *Salmonella* sp can compete and survive on leaf surfaces in competition with better-known phylloplane bacteria. Leung *et al* (Chap 17) review work on the ecology of *Xanthomonas oryzae* in an attempt to develop effective biological control of this very destructive rice pathogen. Zak (Chap 19) also seeks effective biocontrol through developing understanding of the diverse functions and processes, underlying patterns of taxonomic diversity. Kinkel et al (Chap. 20) develop this idea in modelling the aggregation of resources, within leaf areas rather than the whole leaf. It complements Chapter 3.

Bélanger and Avis (Chap.) give a thoughtful overview of the need to understand the fluctuating interactions between phylloplane fungi caused by changes in the climate of the phyllosphere and the phylloplane, especially when formulating biocontrols. Whitham and Scheitzer's (Chap. 18) scholarly consideration of how long-lived plants affects the selective pressure of parasites over time complements this and should be read by all students of Forest Pathology or of diseases of long-lived perennial hosts.

Chapter 21 will benefit modellers of aerobiology of fungal spores regarding spore capture by foliage, while the final chapter reviews progress in the study of leaf surface ecology since 1955, listing each of the six preceding publications.

D.G. Parbery

Report on the VIIIth Int. Plant Virus Epidemiology Symposium – First steps into the new Millenium. Aschersleben, Germany 12-17 May, 2002

This successful and stimulating international symposium was held in the substantial and well set out conference venue, the Bestehornhaus, in the centre of Aschersleben. The symposium was well attended by 155 participants from 35 different countries from five continents. It was the eighth in the series of international symposia held every three years under the auspices of the Plant Virus Epidemiology Committee of the International Society for Plant Pathology.

The programme started on the evening of Sunday 12th May with registration and a welcoming reception in the town hall hosted by the Mayor of Aschersleben. On Monday 13th May the opening session included three brief presentations by Thomas Kuehne, the principal symposium organiser, the Mayor of Aschersleben, and Manfred Lueckemeyer representing the German Federal Ministry of Consumer Protection, Food and Agriculture. Historical accounts were provided of the town of Aschersleben and its Agricultural Research Station founded in 1920 and rebuilt after the second world war by Prof. Maximillian Klinkowski. Since 1992, the two institutes in Ascherleben (Institute for Resistance Research and Pathogen Diagnostics, and Institute for Epidemiology and Resistance) have belonged to the newly founded Federal Centre for Breeding Research on Cultivated Plants (www.bafz.de). Their current main research emphasis is on pathogen resistance and epidemiology of plant pathogens.

The opening presentations were followed by the Chairman's' address in which Roger Jones (Australia) spoke on the topic "Using epidemiological information to develop effective integrated virus disease management strategies". He stressed the dangers associated with deploying single control measures against virus diseases and the synergistic benefits that result from combining control measures with different modes of action. The types of epidemiological information needed before effective integrated management strategies can be developed for specific pathosystems were described. Integrated virus disease management strategies need to be 'tailor-made' by selecting the mix of host resistance, cultural, chemical or biological control measures most suited to each individual pathosystem. He gave examples illustrating integrated management strategies designed for viral pathogens transmitted in different ways.

The first major session was on "Virus resistance in plants". It started with invited contributions on "Durable virus resistance through conventional approaches" by Herve Lecoq (France) and "Molecular-biological aspects of virus resistance" by Jari Valconnen (Sweden). In a comprehensive review Lecoq described how different types of host resistance to viruses operate, how virus evolution can combat host resistance, and the tendency of resistance-breaking strains to be poorly competitive in mixed infection with other strains. The numbers of nucleotide changes in the virus genome required to overcome host resistance contribute to its durability. Combining cultural control measures with virus resistance approaches improves resistance durability. Valconnen described how single dominant and recessive resistance genes operate, and the way isolation and characterisation of resistance genes can provide novel insights into virus resistance mechanisms, viral synergism and the 'recovery' phenomenon. During the last two years genes controlling RNA silencing (encoding polymerases and helicase) and a universal RNA surveillance system (encoding calmodulin-related protein) have been found in plants. The helper protein of potyviruses (HC-pro) and several other viral proteins can act as silencing suppressors.

The papers in the rest of the virus resistance session were on:- control of mite- transmitted pigeon pea sterility mosaic disease in India through viral resistance (Jones, Scotland); ability of barley yellow mosaic virus 2 to overcome the rym4 resistance gene in barley and the pivotal role played by viral RNA1 in this (Kuehne, Germany); the outstanding performance of transgenic resistance to cucumber fruit mottle virus in cucumbers carrying viral coat protein or replicase genes (Gal-on, Israel); the behaviour of pathogen-derived resistance in transgenic plums challenged with aphid inoculated plum pox virus and exposed for 5 years in the field (Ravelandro, France); and the instability under field conditions of pathogen-derived resistance to

potato virus Y in potato (Schubert, Germany). In the evening, (Monday) participants were treated to an interesting sightseeing tour of Aschersleben complete with a church organ recital.

On Tuesday 14th May there was a full day session on 'Virus-vector interactions", which started with an invited presentation from Edgar Schliephake (Germany) on "Aphid behaviour and virus transmission". He reviewed the features of aphids (flight, dispersion, reproduction, host recognition, feeding habits, etc.) that make them well suited to transmitting viruses, surviving adverse environmental conditions and rapidly exploiting opportunities to colonise plants. The advantages and disadvantages of using different types of insect traps in epidemiological studies were discussed along with use of electrical penetration graph data to provide information about probing and virus transmission by aphids.

There followed a series of papers on:- detecting RNA-amplifiable citrus tristeza virus by squash capture-PCR in aphids visiting citrus trees (Cambra, Spain); using chimaeric viruses to determine molecular mechanisms of transmission of beet western yellows and cucurbit aphid-borne yellows viruses by aphids (Herrbach, France); and the specificity of the potyvirus helper component in aphid transmission using turnip mosaic and zucchini yellow mosaic viruses as a model (Huet, Israel). The 'virus-vector interaction' session continued with papers discussing:- using aphid vector resistance to control groundnut rosette virus disease in the sub Sahara (Willekens, UK); whitefly transmission of different sweet potato viruses (Valverde, USA); the relationship between cucumber vein yellowing virus and its whitefly vector *Bemisia tabaci* (Caciagli, France); genotypic variation in *Bemisia tabaci* in Africa (Abdullahi, (Germany), and transmission of wheat dwarf virus by the leafhopper *Psammotettix alienus* (Manurung, Germany). In a comprehensive presentation on the relationship between thrips development and tospovirus transmission, Moritz (Germany) reported that the separation of salivary gland from mid gut during larval development is the reason why only first and early second instar thrips larvae can acquire tospoviruses.

The final two papers on the "virus-vector" interaction topic were on:- festuca leaf streak virus reaching the salivary gland being responsible for its transmission by its plant hopper vector *Javesella pellucida* (Lundsgaard, Denmark), and an entertaining contribution on contact transmission of rice yellow mottle virus in rice crops by rats and cattle (Sarra, Mali). The day (Tuesday) finished with an introduction to the Scientific Excursion to be held on the following day, and a well attended open meeting that elected new representatives to the Plant Virus Epidemiology Committee of the ISPP, and discussed possible future symposia sponsored by the Committee.

On Wednesday 15 may the scientific excursion took place in which three experimental sites were visited. An explanatory excursion booklet provided useful historical background and helpful information about the work being done at the three sites which were:

1. The Institute of Horticultural Crops at Quedlinburg. Here we saw an impressive field experiment in which a large number of brassica species infected with turnip mosaic virus (TuMV) showed a diverse array of viral symptoms. TuMV-resistant brassica germplasm was demonstrated along with new TuMV resistance sources in Chinese cabbage, horse-radish, primitive forms of cabbage and *Raphanobrassica* hybrids, and breeding lines of cauliflower with resistance to TuMV. The programme of breeding different brassica species for TuMV resistance was described by the researcher involved (Reiner Kraemer) and a useful detailed explanatory handout provided.
2. At Morgenrot we saw extensive virus field trials plots belonging to the private plant breeding company "Saatzucht Joseph Breun GdbR". Here, large-scale breeding of barley for resistance to barley yellow mosaic and barley mild mosaic viruses is underway on land heavily infested with both. Susceptible and resistant responses to challenge with soil-borne virus inoculum were clearly evident in the plots.
3. At Gatersleben, we visited the genebank of the Institute of Plant Genetics and Crop Plant Research at Gatersleben. This modern genebank is one of the biggest in the world holding more

than 10,000 accessions. It plays an important role as a genetic resource for plant breeders and in preventing genetic erosion in crop plants and their wild relatives.

On Thursday 16 May, the morning session topic was "Molecular and general virus epidemiology". It started with an invited presentation from Rene van der Vlught (Netherlands) entitled "Plant virus epidemiology: facts and future". He emphasised how understanding the disease triangle and the interactions between its constituents [virus-host-environment] is essential to assess risk of epidemic development. Use of modern techniques for virus detection assist enormously in obtaining information needed to develop this understanding. He gave the recent European outbreaks of potato virus Y^{-NTN} strain in potato and pepino mosaic virus in tomato as examples of where the latest molecular and immunological methods had been successfully deployed for this purpose.

This epidemiology session included a series of more molecular papers on:- molecular variation of two distinct strains of wheat dwarf virus differing in host preference and nucleic acid sequence, one from wheat and the other barley (Kvarnheden, Sweden); variations in the coat proteins of field populations of maize dwarf mosaic virus from corn (Salomon, Israel); and characterisation of Zanzibar cassava mosaic virus, a new cassava virus (Maruthi, UK). A paper by Harper (UK) described how banana streak virus disease can arise in banana plants from release stimulated by 'stressful conditions' of integrated copies of the virus sequence incorporated within the host B genome. He reported that such incorporation into the viral genome also occurs widely with other badnaviruses in several different crop plants.

More traditional virus epidemiology papers in this session described:- western flower thrips vectored outbreaks of tomato spotted wilt virus in potato (Thompson, South Africa); the aphid vector species behaviour and epidemiology of viruses infecting lettuce and broccoli crops (Fereres, Spain); the biotic factors driving epidemics of tomato leaf curl virus in India (Colvin, UK); the epidemiology and control of carrot virus Y (Latham, Australia); the current continent-wide position with the African pandemic of cassava mosaic virus (Legg, Uganda); and spread of little cherry disease (Eppler, Germany).

On Thursday 16 May the afternoon session topic was "Dynamics of virus spread". Mike Thresh (UK) provided a comprehensive invited review of spatial patterns of virus spread. He described (with examples) the influence on spatial virus pattern of wind direction, wind breaks, hedgerows, headlands, contour banks, row spacing, plant density, irrigation channels, field size and shape, field aspect and undulation, plot size and shape, etc. He provided examples of random, clumped and systematic patterns in the distribution of diseased plants for scenarios with soil-borne and aerial vectors, and with internal or external virus infection sources. He also discussed different types of virus infection gradients. These spatial patterns and gradients influence the effectiveness of isolation and other approaches to virus control by an appropriate disposition of planting's to prevent or delay virus spread.

Then, papers followed on:- spread of iris yellow spot tospovirus by *Thrips tabaci* in onion crops (Gera, Israel); decreasing spread of tomato spotted wilt virus by thrips in thrips-resistant pepper (Maris, Netherlands); modelling tomato spotted wilt virus epidemics in potatoes (Jericho, Australia); and the epidemiology of several viruses in different crops in the Ukraine (Polischuk, Ukraine). Thackray (Australia) described a well-validated simulation model that uses pre-growing season rainfall to forecast aphid outbreaks and barley yellow dwarf virus epidemics in a typical Mediterranean-type climate. Predictions for date of aphid arrival, amount of virus spread, yield losses and the need for early insecticide sprays are provided.

At the conference dinner that followed (Thursday evening), participants were treated to a delicious multiple course meal with a choice of wines, followed by typical folksinging by singers from the Harz mountains complete with yodelling and audience participation. Presentations were made to Thomas Kuehne to thank him and the Aschersleben team for all the hard work in organising such a successful conference and to Gerhard Proeseler for his role in the conference organisation and to wish him well in his retirement. The evening was rounded off with dancing to

music played by a local popular music group. An excellent evenings' entertainment was had by all.

On Friday 17 May, the final session of the conference dealt with "Strategies for virus control". Francisco Morales (Colombia) set the scene with an invited presentation on "ecology and epidemiology of whitefly-transmitted viruses in Latin America". This was a "big-picture" paper that started by outlining which virus diseases are currently most important economically on major crops grown from Mexico and the Caribbean islands in the north right through to the southern cone of South America. He emphasised the widespread damage caused by whitefly-transmitted begomoviruses and discussed modelling studies using the FloraMap program with data from 304 geo-referenced points that help explain their distribution. The key to occurrence is climatic conditions that favour their vector *Bemisia tabci* – in particular a dry season of at least 4 months and a mean temperature above 21^{o}C for the hottest month of the year.

The presentations on control strategies that followed dealt with:- extension and uptake by farmers of single control measures versus integrated control approaches for managing cassava mosaic virus (Sseruwagi, Uganda); using cross protection with mild cassava mosaic strains to prevent infection by severe ones in a post epidemic situation (Owor, Uganda); using resistant cultivars and phytosanitary measures to control sweet potato virus disease caused by mixed infection with sweet potato chlorotic stunt and sweet potato feathery mottle viruses (Gibson, UK); successful breeding of tomato resistant to tomato leaf curl virus (Muniyappa, India); hypersensitive and susceptible responses of rootstock's to infection with prunus necrotic ringspot and prune dwarf viruses (Lankes, Germany), and successful use of physical barriers, neem oil and Bion to control spread of potato virus Y in seed potatoes (Legorburu, Spain). In a talk addressing the important issue of how to control viruses in organic crops without access to herbicides or pesticides, Doring (Germany) demonstrated good suppression of spread of potato virus Y using straw mulch groundcover to decrease aphid vector landing rates in organic seed potato production.

One of the very important features of the symposium not mentioned above was the large number of interesting posters, more than 100 posters in total on a very diverse array of topics. In particular, the posters linked to the session topic "Molecular and general virus epidemiology" was most impressive in both size and content. They consisted of 60 different posters addressing a very diverse set of epidemiological themes, confirming that plant virus epidemiology is alive and well in the new millennium!

The conference ended with an open discussion involving contributions from invited speakers and the audience on three topics:- likely virological consequences of further spread of the B type of *Bemisia tabaci* within Africa; future prospects for deployment of plants with pathogen-derived transgenic virus resistance in different parts of the world; how to use limited financial resources to best effect when funding epidemiology research; and how best to foster a partnership of mutual benefit between researchers involved in molecular laboratory research and those involved in practical field epidemiology studies.

This eighth in the series of triennial International Symposia on Plant Virus Epidemiology was not only scientifically stimulating but also very efficiently organised. It successfully maintained the high standards set by past meetings of the International Virus Epidemiology Group. The weekend 'Spring Festival' that greeted participants on arrival at Aschersleben, with street entertainment and a throng of happy people, the warm spring weather and sunshine every day, the spring flowers and trees out in blossom, and the many attractive traditional-style German buildings in the town all helped to provide an ideal 'backdrop' to the event.

The Mayor of Aschersleben who graciously provided the reception and facilities, the German organising committee, and especially Thomas Kuehne and the staff of the two Aschersleben Institutes (Institute for Resistance Research and Pathogen Diagnostics, and Institute for Epidemiology and Resistance) are to be congratulated warmly over a job well done.

Roger Jones, 31/5/02

New Members

On behalf of the Society, the Management Committee would like to welcome the following new members:

TAS: Miss Anna Smith

SA: Dr Ian Dry
Mr Paul Bogacki (student)
Ms Imelda Soriano (student)

QLD: Dr Chrys Akem
Mr John Harvey (student)

VIC: Ms Joanne Dawson
Ms Greetha Kularatne (Student)
Mr Sam (Student)
(c/o Dr Morley Murlithara Singh)

Don't forget to have your say!

This is your newsletter so be sure to let us know what is going on about:

* Open days and field days
* Scholarships and employment opportunities
* Regional news
* Special interest groups
* Requests for information etc.
* Upcoming events
* Awards to members
* Issues of concern
* Humorous events

and any other interesting information!
