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Linkage

The official newsletter of the Genetics Society of Australia Inc.

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From the President

At last! 2003, the year of the most exciting International Congress of Genetics in history, has arrived. It is not surprising that this event will dominate the year for Australian geneticists. With eight Nobel Prize winners and countless exceptional geneticists in all branches of our discipline converging on Melbourne in July, we have reason to be very excited. I take this opportunity to commend and thank the organisers, particularly Phil Batterham and David Smyth, for their exceptional efforts in putting the conference together. I urge you all to attend this extraordinary occasion in the history of Australian genetics.

The International Congress is not the only good news for Australian geneticists. Genetics continues to be strongly supported by Australian research agencies. Last year the Australian Centre for Plant Functional Genomics was funded, while the Australian Research Council Special Research Centres for Environmental Stress and Adaptation Research (CESAR), Molecular Genetics of Development (CMGD) and Functional and Applied Genomics all passed their first review and have been funded for the next triennium.

However, not all the news is positive. It appears that membership of the Society has not been keeping pace with the growth in the discipline and, disconcertingly, Genetics Departments as formal entities have disappeared from most of the Universities that used to boast them. The possible loss of students with a broad training in Genetics and who identify primarily with the discipline of Genetics may have a detrimental impact on the future of the Society. This year the International Congress will highlight the extraordinary significance of genetics to biology and to society, but we need to consider ways to maintain the strength and profile of the Society and its meetings in subsequent years. I would welcome any ideas you have that would help achieve this.

Robert Saint
President



Research Profile Ben Oldroyd

I started keeping bees when I was nine years old, and my teenage career ambition was to be the honey industry specialist in NSW Agriculture. Advised by the incumbent to do an Agriculture degree, I enrolled at Sydney University with thoughts of a major in entomology. There my well-laid plans were diverted by a growing fascination with genetics and statistics and distaste for insecticides and cotton. I ended up in Agricultural Genetics learning the arcane science of animal breeding and trying to apply the principles to bees.

At the end of Honours, I was offered a position as 'Laboratory Attendant' at Hawkesbury Agricultural College to do 'bee breeding'. It was awful. There were very few facilities and no supervision except for a hoard of feuding beekeepers intent on controlling both me and the 'research'. I quickly realized that I needed help and ran back to Chris Moran and Frank Nicholas in the Genetics department at Sydney to get some guidance. Somehow I emerged from that meeting enrolled in a full time PhD.

Chris and Frank knew a lot about breeding but not a jot about bees, assuming that they were overgrown *Drosophila* that could be crossed and counted with similar ease. I was advised to do a diallel cross of 9 strains of bees resulting in 9 x 9 colonies replicated three times. It nearly killed me.

Following my PhD I was offered an ARC fellowship to work with Ross Crozier then at UNSW, but declined in favour of fulfilling my teenage ambition, not in NSW but in Victoria, by becoming the head bee person at the now defunct Plant Research Institute in Burnley. I did that for 5 great years, bashing round the backblocks of Victoria doing applied research on bee diseases and fighting the European wasps. One day, however, I noticed that I had worn a small track in the grass from my lab to the tea room and decided that a change was necessary least I retire there.

So I got a post doc at the USDA in Baton Rouge Louisiana saving America from the Killer Bees. Lots of 'arduous' field work in Mexico, the chance to 'go molecular', and to

work, for the first time, with real bee people. It was brilliant as was the food and music.

I returned to LaTrobe University in 1991 to take up an ARC fellowship with Ross Crozier (this time I accepted). We were some of the first people to work on insect microsatellites, and developed new ways of deducing pedigrees in social insect colonies. This allowed us to genetically prove that a colony of bees in Ipswich had gone 'anarchistic' and the workers were laying the male-producing eggs instead of the queen.

In 1995 I returned to Sydney University, this time in the School of Biological Sciences where I teach population and evolutionary genetics with a strong emphasis on animal behaviour. My main focus is the evolution of worker sterility in social insects but I'm also interested in bee bonking. Did you know that *Apis dorsata* queens mate over 100 times? Now why should they bother to do that?

For the future I want to move into honeybee genomics: finding the genes that control worker sterility, the dance language, disease resistance and thermoregulation. Bees are still endlessly fascinating to me, and my childhood obsession with them is undiminished



Ben Oldroyd

Regional News

New Zealand from Richard Newcomb

Centre for Molecular Ecology and Evolution

The Allan Wilson Centre for Molecular Ecology and Evolution is an NZ government funded Centre of Research Excellence (CoRE). The centre's directors are David Penny and Mike Hendy. Based at Massey University with funding of close to \$7 million for the next three years and another \$5 million for capital equipment the centre's research has four themes. The first, co-ordinated by David Lambert, is investigating 'the rates and modes of evolution', following on from his work analysing DNA from Adelie penguin bones in Antarctica. The second theme is examining how New Zealand's biodiversity adapts genetically to changing environments. The third theme is the human settlement of Aotearoa based on the genetic data contained in the human population and the plants and animals the Polynesian settlers brought with them. The fourth theme has a mathematical focus, developing new analytic models to handle the exponentially growing genomic databases and to model evolution events occurring over periods ranging from months to billions of years.

Sequencing the Cow Genome

The New Zealand Consortium of AgResearch, Agritech Investments Ltd (a Meat New Zealand subsidiary) and Dairy InSight Incorporated will each equally contribute towards the sequencing of the bovine genome, in a project that brings dairy, meat and research organisations together. AgResearch Animal Genomics Science Leader Dr Allan Crawford is equally positive about the joint venture, saying the partnership here and internationally, offers tremendous benefits to understanding and exploiting the cattle genome. Some initial work on the Bovine Genome Sequence has already been completed internationally, with AgResearch as an investment partner. The Alliance for Animal Genome Research is organising the next multi-million dollar stage of the gene mapping project on cattle, with the international cattle industry expected to commit \$US25 million. With this announcement \$US11 million has been formally pledged, leaving \$US14 million

to be raised. The US National Human Genome Research Institute (NHGRI) has committed the remaining \$25 million needed to proceed. The work will start in September at the Baylor Sequencing Centre in the United States, and is expected to take around two years to produce a draft Bovine Genomic Sequence.

Western Australia from Margaret Byrne

12th Australasian Plant Breeding Conference "Plant Breeding for the 11th Millenium"

The 12th Australasian Plant Breeding Conference, "Plant Breeding for the 11th Millenium", was held in Perth in September 2002. This theme reflects the challenges to plant breeding at a time when Australasian plant breeders must become more efficient, incorporate new technology and produce results in a competitive global market while also maintaining social and environmental responsibility. The conference covered a broad range of issues with Symposia on Using New Tools, Exploiting Novel Germplasm, Challenge of Pests and Diseases, Advances in Plant Breeding, Challenge of the Environment, and The Challenge of the Market. The challenges to plant breeding were highlighted by the distinguished group of invited speakers which included Tim Reeves, Stephen Smith, Richard Jefferson, Pat Heslop-Harrison, Sharron Quisenberry, Richard Richards and David Hughes. A large number of scientist and industry representatives presented talks on research and its application in industry, and the poster sessions were active with invited speakers leading discussion around posters in each of the symposia. Field trips were made to visit the major field crop testing facility at Wongan Hills, and to view the exploitation of breeding activities in environmental restoration, malting operations and grain handling facilities. Delegates were encouraged in their informal interactions with a relaxing cruise down the Swan River to the Fremantle Sailing Club where the conference dinner was held with spectacular views of the sunset over the ocean.

The conference has published all papers (invited, spoken and poster) on a CD which is available from Publications, Department of Agriculture, Locked Bag 4, Bentley Delivery

Centre, WA 6983 for \$30 (including GST and postage).

Fenner Medal Winner



The Fenner Medal recognises outstanding contributions to science by Professor F.J. Fenner, AC, CMG, MBE, MD, FAA, FRS. Its purpose is to recognise distinguished research in biology (excluding the biomedical sciences) by scientists under 40 years.

The 2003 Fenner Medal has been awarded to Dr Andrew Young (CSIRO Plant Industry) for his research in plant population genetics and his work on the impacts of small population size on self-incompatible plants.



Andrew Young

**International Congress of Genetics
July 6–11 2003**

Standing on the threshold

2003 is a landmark year in genetics. The 50th anniversary of the discovery of the structure of DNA neatly coincides with the real completion of many of the major genome sequencing projects, including humans and *Drosophila*. Ironically heated debates on gene numbers persist, when we still cannot assign function to half of the genes known to exist. RNA interference and gene chip technology offer contemporary routes to an understanding of genetic networks, while the sudden, widespread realization that eukaryotic genomes encode myriads of small RNAs, threatens to challenge accepted concepts of gene structure and function. This is the backdrop for the International Congress of Genetics to be held in Melbourne from July 6–11.

The Congress has adopted the theme *Genomes - The Linkage to Life*, recognizing that genetics stands on the threshold of new beginnings where almost any biological question, be it basic or applied can be addressed. The Congress Program Committees and the Convenors and the Co-Convenors of the 54 Symposia have brought together an extraordinary group of speakers to consider basic themes ranging from embryogenesis to evolution and applied topics pertinent to agriculture, the environment and medicine. The illogical barriers erected between the genetics of humans and other organisms have been discarded in a program relevant to the genetics of all species.

Much has been made of the fact that 8 Nobel Laureates (Watson, Khorana, Brenner, Tonegawa, Wieschaus, Doherty, Horvitz and Sulston) will be present at the Genetics Congress. To dwell on this fact is to understate the extraordinary talents of the other 270 speakers that will take the platform. The lineup is breathtaking. Congress delegates will face very tough choices in selecting sessions to attend. 1500 posters add to the extraordinary programming breadth and depth of this meeting. Special forums and a host of public participation events will allow a range of topical issues to be aired, discussed and debated.

Elite journals including *Science*, *Nature*, *Cell*, *Genes and Development* and *Bioessays* have called geneticists from around the world to assemble for the Congress. To date approximately 2000 have responded. It is extremely gratifying that large numbers of students have registered. Equally good is the news that at least 25 developing nations delegates will be brought to Melbourne as a result of the generosity of Congress sponsors and the International Genetics Federation.

While the DNA 50th anniversary will provide one celebratory focus, the Congress is also the 50th annual meeting of the Genetics Society of Australia. To mark this milestone Australia Post will launch two stamps during the DNA Discovery Dinner at the Crown Palladium Ballroom on Monday July 7. GSA President, Rob Saint, will present the M.J.D. White Address in an exceptional plenary session that will also feature 2002 Nobel Laureate, Robert Horvitz.

As the discipline of genetics is enters a new era, Australians have an unprecedented opportunity to engage to engage with the international research community, face to face on home turf. If you have not yet registered for the Congress, take a look at the web site (www.geneticscongress2003.com) and consider all that is on offer.

Minutes of the 49th Annual General Meeting University of New South Wales July 11, 2002

Apologies

Apologies were received from John McKenzie and Margaret Byrne,

Confirmation of Minutes

Moved: Ross Crozier. Seconded: Richard Newcomb. Carried.

Business Arising from the Minutes

AQIS – Requirement for imported *Drosophila melanogaster* to be quarantined. Phil Batterham reported that attempts to reverse AQIS policy had failed. Phil suggested that researchers working in institutions that did not have quarantine facilities would need to access facilities at

the University of Melbourne and the ANU that had been certified by AQIS.

Correspondence

Naming of student prizes – David Smyth reported that the working group had recommended that two prizes to be awarded for Ph.D. student presentations at annual GSA Conferences be named the Mayo Prize (Best Ph.D. student talk) and the Sidney James Prize (Best Ph.D. student poster).

Ross Crozier forwarded a request for inputs into the setting of Research Priorities by the Federal Government.

Treasurer's Report

Steve Donnellan presented the report. David Smyth thanked Steve for his curation of the finances of the Society over a period of several years. A motion to accept the report, moved by Jenny Graves and seconded by Richard Newcomb, was carried.

Secretary for Sustaining Members Report

Margaret Katz presented her report, noting that some Sustaining Members had requested the provision of the email addresses for GSA Members. A lengthy discussion of this matter followed. Alan Wilton offered to set up a separate list of individuals willing to receive email from Sustaining Members. Alan would then circulate materials provided to him by Sustaining Members. GSA Members could unsubscribe from this mailing list at any point in time. A motion of thanks to Margaret Katz was moved by Geoff Clarke and seconded by Jenny Graves. The motion was carried.

Secretary's Report

Phil Batterham presented his report commenting that his role as Secretary General for the 2003 International Congress of Genetics had limited his capacity to function as the Secretary of GSA. Hence, he indicated that he would not be standing for the Secretary's position on the 2002-2003 Committee. Phil suggested that, while GSA 2003 (i.e. the International Congress of Genetics) would be a great meeting representing the discipline of genetics in all of its depth and breadth, the Society needed to focus on the Annual Conferences of 2004 and beyond. David Smyth thanked Phil for

several years of excellent service. The report was accepted with applause.

Election of Office Bearers for 2002/2003

The following people were elected to the Committee unopposed:-

<i>President</i>	Rob Saint
<i>Vice President</i>	Ary Hoffmann
<i>Secretary</i>	Geoff Clarke
<i>Treasurer</i>	Stephen Donnellan
<i>Past President</i>	David Smyth
<i>Sustaining Members</i>	Philip Batterham

ACT	Andrew Young
NSW	Jenny Donald
VIC	Jenny Graves
WA	Margaret Byrne
QLD	Jane Hughes
NZ	Richard Newcomb
General	Yvonne Parsons

David Smyth thanked the retiring committee members, Margaret Katz and John McKenzie. A suggestion came from the floor that graduate students and postdoctoral research fellows have representation on the committee.

General Business

GSA 2004 – Phil Batterham indicated that the options for the Conference would be to meet back to back with the Lorne Genome Conference (February 2004), meet with HGSA in Perth or to have a GSA Conference that did not involve other groups. Phil stressed the need to build upon the momentum that would be generated by the Congress, with a diverse, high quality program being offered. Phil indicated that such a program could be attractive to many geneticists who did not usually attend GSA Conferences if it were held in one of the larger cities. A wide ranging discussion followed. Divergent views were aired without any consensus position being reached. David Smyth suggested that the issue be resolved by the committee.

GSA 2006 – Brisbane – Phil Batterham reminded members that GSA had committed to meeting with the Human Genetics Congress to be held in Brisbane.

Science Meets Parliament – Ross Crozier and Phil Batterham reported. Ross expressed his

concern about the Government's unwillingness to increase research funding. Phil Batterham noted the comment by Peter Wills (ARC Chief) that the Government had doubled ARC funding when such funding had been promised but had not yet been delivered.

Research Priorities – Members expressed the concern that the setting of research priorities would mean that grant funding would not be awarded purely on merit. However, it was noted that the opportunity to comment on principle of priority areas has passed but priority areas could still be suggested. Ross Crozier suggested that we put forward an area likely to advantage the maximum number of members. Rob Saint offered to canvass committee members for suggestions of priority areas.

'Genetics Society of Australia Summer Scholarship' – Andrew Young suggested that GSA initiate a summer studentship scheme. After some discussion the meeting unanimously agreed to support a scheme where GSA would provide up to \$2500 to match funding provided to a student by an Institution. The supervisor of the student would need to be a member of GSA. The scholarship winner would be selected on the basis of excellence of academic performance. Andrew Young was appointed to administer the scheme with a committee of 3. Chris Moran volunteered to assist.

Sexist job advertisements – Phil Batterham noted that a member complained that a sexist job advertisement had been circulated on the GSA email jobs network. The job being offered in an Arab nation was only open to males. Ross Crozier indicated that while the Society did not support sexist advertising, screening was difficult to impose because of the workload involved. It was agreed that it would be best if a disclaimer could be added to all job advertisement emails.

Conclusion

David Smyth thanked Alan Wilton and other members of the local organizing committee for producing an excellent conference in Sydney. The meeting closed at 6.50pm.