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statistical society of australia incorporated

newsletter

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VALEDICTORY ADDRESS - Part I

A.T. James

I want to deal with my experiences at the University of Adelaide from 1941 to 1949 as a student and part-time tutor. This will be particularly with reference to its strengths and weaknesses as a preparation for a research career in science, mathematics and statistics in the light of experience overseas.

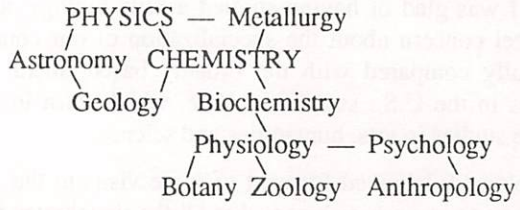
If you ask what Princeton, Yale and Cambridge Universities think of the University of Adelaide, the answer is simple; they don't. Princeton and Yale think of Harvard, and Harvard of the older European Universities including Cambridge. Cambridge thinks of Oxford and as for what Oxford thinks, you'd better ask a graduate such as Ren Potts, whose history of Mathematics at the University of Adelaide has been of help to me.

As secondary school reached the limits of what it could teach, it was exhilarating for me to come to the University and discover a new horizon. Then as the University of Adelaide of that date petered out in third and fourth year, except in mathematics, due to its meagre resources being primarily used up by first and second year teaching, it was even more exciting to enter Princeton and discover yet another horizon beyond. Finally, there were lectures by Hermann Weyl and Von Neumann at the Institute for Advanced Study!

A major difference between Australia and the U.S. is that most Australian parents, and grandparents, with financiial means are content to terminate their children's education at the end of secondary school, whereas a four year undergraduate liberal arts degree is considered the norm among educated people in the U.S. The Australians don't seem to realize what their children miss.

My interest in science, having been kindled by two outstanding physics and chemistry teachers at PAC, Mr Klose, and Mr Ray Smith, I enrolled in the University of Adelaide in 1941 aged 16, to study science and mathematics.

The success that I achieved under these teachers contrasts with my failure in Leaving Honours Mathematics. Mr Statton's lectures at the University rehabilitated my mathematics and restored my confidence.



The prevailing view of science was portrayed as in Don Stranks' *et al.*'s book of School Chemistry.

Science, according to this view, starts with the fundamental particles and atoms studied by physics, the atoms are put together as the molecules studied by chemistry which in turn form into the rocks of geology and the living beings of biology. From the latter come psychology and sociology. It expressed the ideology of deterministic materialism, pervasive at that time, together with reductionism; the whole can be easily inferred from a detailed knowledge of its parts.

Editors: D.E.Shaw, CSIRO, DMS, PO Box 218, Lindfield, NSW 2070
E. Brinkley, Australian Bureau of Statistics, PO Box 10, Belconnen, ACT 2616.
R.I.Forrester, CSIRO, Biometrics Unit, INRE, GPO Box 1666, Canberra, ACT 2601.

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The reductionist would analyse the computer in terms of the physics of its chips rather than in terms of its software.

Sir William Mitchell's books did not subscribe to this ideology. They were subsequently removed from the philosophy curriculum by Professor Smart.

The omission from Stranks' diagram of mathematics, which can describe the configurations, for example the orbitals of quantum chemistry, seems curious, but not surprising. Under the influence of pure mathematicians, notably G.H. Hardy, the role of mathematics as servant of the sciences had been played down in England, if not on the continent and U.S. In Princeton, a beautiful mathematics building was annexed to the physics building and Wigner and Bargmann had joint appointments, just as in Göttingen the Mathematische Institut and Institut für Physik were just down the road from each other.

The omission of mathematics from the view of most scientists at Adelaide has had two implications for the University. Firstly I believe it was a major factor in the separation of the Faculty of Mathematical Sciences from the Science Faculty in 1973.

Secondly it has made the Mathematics Departments substantially dependent on the Engineers for their bread and butter. Over one third of Applied Mathematics Department EFTSUs are engineering students and for Pure the figure is about one sixth.

In keeping with the philosophy implied by Stranks *et al.*, physics and chemistry were compulsory first years science subjects in 1941. Mathematics was an obvious choice for me, but students were forced to take either geology or a biological subject. I chose zoology, taught by Professor Harvey Johnston.

Later, I was glad of having studied a little biology, and I now feel concern about the specialization of our courses, especially compared with the broadly based liberal arts degrees in the U.S., such as at Yale, which must include diverse studies in arts, humanities and science.

In Zoology I, I looked forward to some visits to the Zoo. but learnt to my astonishment that all the vertebrates were a mere subphylum of the animal kingdom too insignificant to warrant more than a mere mention.

In second year the opposite problem arose. Chemistry split into two subjects both of which I wished to study but I also wanted to include physics and mathematics. A very enterprising and helpful young administrative assistant to the Registrar came to the rescue, called Mr Edgeloe. He sent me off to see the professors and then arranged for me to do all the subjects by taking 5 o'clock lectures in mathematics. I can imagine that later on, Vic was rubbing his hands in glee because he had sold me $126 worth of courses. My father didn't appreciate the bill, for it was exactly double the PAC fees at that time. Fees, however, were vital to the University producing one third of its income. The money spent on my University fees was the best part of my inheritance.

In the Science Club, Dr Rupert Best gave a very exciting talk on his tobacco mosaic viruses and tomato spotted wilt. It greatly surprised us that life could be crystallized and we wondered where the line could be drawn between the living and the inanimate.

A few years later I read Schrödinger's little green book, "What is life", in which he correctly speculated that the genetic code would turn out to be an aperiodic crystal and that it could be damaged by radiation. I enthusiastically asked Mr Hedley Marston, the Chief of the CSIRO Division of Biochemstry and General Nutrition what he thought of Schrödinger's book. He poured cold water on it with the scornful comment, "These physicists are incredibly naive". Later however, Crick acknowledged the help of the ideas in Schrödinger's book.

Mr Frank Winzor's lectures in Organic Chemistry II were delightful, and the training in reading organic chemical formulae in my youth enabled me to read biochemistry many years later.

The next year, I had to drop the subject and only take Physical and Inorganic Chemistry III. There was no impetus to research in Chemistry, for the Department had only a sparse publication record until Geoff Badger joined it in 1949.

For Honours Physics IV in 1944, Professor Kerr Grant simply set a big book for me to read supplemented by some lectures in thermodynamics by Dr Burden. This training in Physics has been useful for subsequent modelling. For practical work, he suggested working on an electronic clock.

Kerr Grant would have described himself as an experimental physicist but his heart was really in technology. The earlier year courses gave concrete illustrations of the basic physical principles in a very well planned set of practical courses and spectacular demonstrations, which must have been very valuable for the engineers who then shared the Physics Building.

He was a consummate showman and enjoyed his uproarious first year lectures as much as the students. What went on was described by a conscientious student. "I go to Professor Kerr Grant's lectures because they are so interesting, and then I attend the evening lectures to find out what it was all about."

Kerr Grant held the Massachusetts Institute of Technology in far higher esteem than any university, and worked very hard to see his beloved School of Mines develop into the SAIT in line with the MIT. I think he would have liked to see it now accorded University status, but without change of name or function.

The technological emphasis of the Physics Department gave it the conservative outlook of the classical physicists. Kerr Grant was prepared to bask in the limelight of Einstein's relativity theory, but since quantum mechanics had not yet had its uses in transistors and computer chips, and the arrival of Dirac's quantum chemistry in Adelaide had to await Professor Jordan, the quantum theory, although taught, was approached in somewhat of an attitude of disbelief.

Sir William Mitchell in his book, "The Place of Minds", which I bought as a student but have only read recently, was ahead of the Physics Department of his day in seeing why the classical concepts of physics had to give way to

quantum theory. His book has been considered rather impenetrable, but the latter half is more accessible because his esoteric ideas are illustrated by examples from physics. The second volume of Mitchell's Gifford lectures would have elucidated his ideas even further. It is a pity that the manuscript was destroyed in the bombing of London. I believe Mitchell's study of the methods by which the human mind pries into the secrets of Nature, could have importance for other sciences such as quantitative metabolism and physiology.

CENTRAL COUNCIL REPORT

Central Council AGM, March 1990

1. Incorporation.

The Society became an incorporated body on 26 February this year. This affords members the benefits of limited liability in relation to their membership of the central Society. However it is possible that situations could arise when, through their membership of a Branch of the Society, members do not have this legal protection. Central Council is looking further at the alternatives to guard against this. These alternatives are that:

(i) each Branch become incorporated, or

(ii) the Rules of the Society (and Branches) be changed so that members belong to the central Society, rather than to Branches as is the present situation.

The meeting formally adopted new Rules. Copies will be sent to all members in due course; Branch Secretaries have copies in the meantime should members wish to see them.

2. Australian Mathematical Sciences Council

Central Council formally endorsed the Society's membership of the AMSC as from 1 December 1989. The inaugural members of this body are the Statistical Society, the Australian Mathematics Society, the Australian Association of Mathematics Teachers, the Mathematical Education Research Group and the Mathematics Education Lecturers Association. The combined membership is about 7000. The AMSC gives the mathematical and statistical sciences a stronger voice on FASTS (it gets a seat on the Board), and will provide a focus for policy issues related to mathematics and statistics. Our membership will cost the Society $1.50 per head per year, in addition to the $3.50 per head FASTS membership fee.

3. Policy issues

The Council broke into small discussion groups to consider a range of policy issues. Outcomes from this were:

(i) **Continuity of Central Council membership.** This has been a problem in that Branch delegates to Central Council, and incoming members of the Executive, are often unfamiliar with issues being discussed. It was decided that the Executive should be expanded to include a Vice-President, who would be alternatively incoming President and then outgoing President. So a person who is to be President of the Society would spend four years on Council — one as Vice-President before becoming President, two as President, and a fourth as Vice-President again. Branches are encouraged to give greater recognition to the appointment of Central Council delegates, and encourage continuity of attendance.

(ii) **Centralisation of the Society.** The issues have been mentioned under "Incorporation" above. The Executive is preparing a paper for Branches to consider the issues.

(iii) **A more pro-active role for the Society.** What active steps can the Society take for publicity, or for promoting the cause of Statistics? Dr Doug Shaw is convening a small working group to consider this in more detail.

(iv) **ARC grants.** It is a matter of great concern that the number of projects in Statistics and Probability approved by the ARC is so low. Dr Richard Jarrett and Professor Tim Brown are taking up the matter of cross-disciplinary applications and priority areas of research with the ARC.

4. Elections

Dr Richard Jarrett was elected for a second year as President and Dr Jeff Wood was re-elected as Treasurer. Dr John Field agreed to continue as Secretary in the short term. The new Vice-President is Mr Dennis Trewin, who is Immediate Past President. A Search Committee is in the process of nominating the next President, who will take over as Vice-President in accordance with the decision about the role of the Vice-President, mentioned above.

Section Chairs were elected as follows:

Statistical Computing	Prof Tony Pettitt
Survey & Management	Mr Dennis Trewin
Medical Sciences	Dr John Hopper
Biological Sciences	Dr Brian Cullis
Statistical Education	Dr Ken Russell
Industrial Statistics	Dr Brenton Dansie

There is currently no Chairperson for the Earth Sciences Section, but one is being sought.

Society representatives on other bodies were appointed:

National Committee for Mathematics	Prof Chris Heyde
Australian Geoscience Council	Dr Nick Fisher
FASSO	Dr Sue Wilson

5. SSA Logo and Motto

The Victorian Branch has suggested that an SSA tie and scarf be produced. Members ideas on a suitable logo and motto will be sought.

Sun Microsystems Lecture Series

As a result of the generous suupport of Sun Microsystems Australia, Professor Brad Efron is to visit Australia in late June/early July under the auspices of the consortium for Research in Computer Intensive Statistical Methods. Professor Efron will deliver the following lectures, which are open to the public.

Better Approximate Confidence Intervals in Exponential Families
6.00 pm, June 27, Lecture Theatre 2, Student Centre, Bond University, Gold Coast.
For information, contact David Scott, phone (075) 95 3322, fax (075) 95 3320.

Shakespeare and the Case of the Suspicious Statisticians
6.00 pm, June 28, Copland Theatre, Australian National University.
For information, contact Peter Hall, phone (06) 249 3697, fax (06) 249 0759.

Six Questions Raised by the Bootstrap
July 3, in conjunction with the Tenth Australian Statistical Conference
and Second Pacific Statistical Congress.
For information, contact Doug Shaw, phone (02) 413 7062, fax (02) 416 9317.

BRANCH REPORTS

New South Wales

H.O. Lancaster Lecture

At the end of 1989, the NSW Branch Council reconsidered the issue of the title of the Presidential Address/President's Invited Address delivered in alternate years at the Annual General Meeting. Council over-whelmingly supported the idea of renaming both these lectures as the H.O. Lancaster Lecture.

Oliver Lancaster's many and varied statistical achievements have been extolled elsewhere. He has been honoured by the award of the Pitman Medal and Honorary Life Membership of the Statistical Society of Australia for his research and for his contributions to the Society. Oliver continues to contribute to the Society by way of his regular attendance and contributions at meetings and dinners.

Oliver has graciously accepted this honour. In his letter of acceptance to Branch President Ron Sandland, he stated: "Of all the societies to which I have belonged, I have felt most at home in the Statistical Society, whether of New South Wales in the early days or of Australia now."

Annual General Meeting

The 42nd Annual General Meeting of the NSW Branch was held on 20 March 1990 at the University of Sydney.

Office bearers and Council members for 1990 are:

President	A/Prof John Robinson, Sydney University
Past-President	Dr Ron Sandland, CSIRO DMS
Treasurer	Dr Dennis Reid, Dept. Ag. & Fisheries
Secretary	Dr Sam Huxham, UTS
Asst. Secretary	Prof Geoff Eagleson, AGSM UNSW
Council	A/Prof Ann Eyland, Macquarie University; Dr Nick Fisher, CSIRO DMS; Dr Simon Sheather, AGSM UNSW; Dr Debbie Street, UNSW; Dr Neville Weber, Sydney University.

Bootstrap Confidence Intervals & Transformations

At the AGM on 20 March the H.O. Lancaster Lecture was delivered by the incoming Branch President, John Robinson, on the topic Bootstrap Confidence Intervals and Transformations.

The idea of the bootstrap, introduced by Efron in 1979, is one of the most important recent developments in statistical inference. Difficulties inherent in its use in obtaining confidence intervals were noted in that initial paper but these have since been a source of controversy and confusion. There are essentially three approaches which John outlined: the first based on transformations gives rise to the percentile method and improvements on it, the second based on standardising to pivotal form leads to the Bootstrap-t and the third, tilting, is based on an exponential family approximation. Recent work has clarified the conditions under which these different approaches will give accurate intervals. John, in reviewing some of this work, described and discussed the relationships between the methods.

Making Statistical Packages Intelligent

The April meeting of the Branch heard Don McNeil (Macquarie University) speak on Making Statistical Packages Intelligent, in which Don explored the gap from statistical package to statistical expert system.

A statistical expert system may be regarded as having three components - informing the user (including choice of method), analysing the data, and making decisions. Don illustrated how statistical packages do or could approach these three components. The second component could be developed using database concepts.

Don indicated the relevance of database concepts, and contrasted the modelling data through statistical models and through database notions which linked that data in models incorporating structural information. Databases enforce discipline on the data which statistical packages do not.

New Members

The Branch welcomes the following new members to the Society.

E. Baafi, R. Cavanaugh, M. Corcoran, P.J. Davy, M. Donald, R. Hughes, G. Knight, G. Lazzarotto, L. Liyanage, L.M. Morris, M.S. Peiris, A. Porter, K. Price, T.R. Sloan, R.S. Sparkes, J. Stanley, L. Stephens, B. Stokes, K. Tam, F. Tuyl, C. Badcock, F. Chen, J.T. Flananagan, E. Green, B. Jing, M.T.H. Lay, S.H. Liaw, Y.Q. Lin, W. Roberts, S.F. Yiu.

Victoria

Annual General Meeting

The Annual General Meeting of the Victorian Branch was held on March 27. Office bearers were elected as follows:

President	Dr Geoff Robinson
Secretary	Dr G. Clayton
Asst. Secretary	Ms T. Dickinson
Treasurer	Dr B. Kellett
Council	Dr J. Carlin Mr N. Garnham Mr H. Gielewski Mr C. Nelson Ms L. Watson Ms L. Chambers (Student).

Following the AGM, Dr Robinson gave an address entitled 'Presenting Data'. Drawing on work by A.S.C. Ehrenberg, E.R. Tufte

SENIOR BIOMETRICIAN

DEPARTMENT OF AGRICULTURE AND RURAL AFFAIRS

Melbourne, Victoria, Australia

The Biometric Services unit of the Department of Agriculture and Rural Affairs, Victoria, Australia has a vacancy for a senior Biometrician. The official position title is Resource Biometrician, Scientist Class SCI-4, and the salary range is $42,826 - $45,339.

DUTIES

Provide leadership in the use of up-to-date biometrical methods; maintain knowledge of research developments in applied statistics and act as a resource person for the department's biometricians, scientists and managers; supervise the training of biometricians; undertake applied statistical research in relevant identified areas.

QUALIFICATIONS:
Mandatory
An appropriate degree or diploma in Agricultural Science, Science or an equivalent qualification.

Desirable
A higher degree in Statistics or Biometrics; proven research ability in applied statistics with application to the biological sciences; relevant experience in teaching and/or consulting; experience in the use of relevant statistical packages, especially Genstat5 and SAS; high level of communication and interpersonal skills including the ability to lead professional staff and liaise effectively with researchers.

For further information about the position, and to arrange to receive a copy of the duty statement and key selection criteria, telephone:

Dr John Reynolds,
Manager Biometric Services
(03) 651 7241

Written applications quoting the Position Number 05/05/0450/5 and addressing the key selection criteria should be received by 27 June 1990. Applications should give details of qualifications and experience, the names of three professional referees and a business hours contact telephone number. Applications should be addressed to:

The Manager, Personnel
Department of Agricultural and Rural Afffairs
Box 500
EAST MELBOURNE VIC 3002

and H. Wainer, and using plenty of visual examples of goodand bad practice, Dr Robinson developed his talk under the headings of Principles, Rules

for Constructing Tables and Rules for Graphics. The guiding principle(s) were Ehrenberg's Strong (and Weak) Criteria for good data presentation, viz 'The patterns and exceptions should be obvious at a glance (once one has been told what they are).' Several examples of graphs and tables, particularly of a 'commercial' origin showed that even the weak criterion can prove too difficult to attain.

As promised, Dr Robinson concluded with several examples from the previous week's newspapers, showing that there are regular examples of both good and bad data presentation. A valuable new term for one's vocabulary is 'chart junk', i.e. those pretty pictures which can clutter up a graphic, and serve to distract one from the lack of information.

Queensland

Time Series Nonlinearity Detection

Dr Neville Davies of Nottingham Polytechnic discussed this topic at our annual general meeting on 21 February, 1990. He emphasised the importance of using graphical methods as an aid in the detection of nonlinearity in time series. In general, Neville maintained that intelligent plotting of time series data is rare, particularly in textbooks. Neville demonstrated that simple methods of stretching and squashing axes can be helpful in detecting nonlinearity. The Bayesian analysis of time series (BATS) software of Harrison, West and Pole was shown to be useful in examining the dynamic nature of time series coefficients.

At that meeting, the following officer bearers were elected:

President	Kaye Basford
Treasurer	Janet Chaseling
Secretary	Gordon Smyth
Councillors	Peter Jones, Helen MacGillivray, Philip Pollett, Ian Saunders, Tony Swain, Richard Wilson.

An afternoon symposium of short talks entitled "Statisticians at Work" is to be held by our branch on 24th May for an audience of High School Teachers and Careers Advisors.

Brad Efron at Bond University

Open house is being held at Bond University on the afternoon of 27 June to meet Bradley Efron. This will be followed at 6pm by his talk on "Better Approximate Confidence Intervals in Exponential Families" and a Statistical Society meeting.

South Australia

Annual General Meeting

The Branch held its AGM on Tuesday, 27 March 1990 at which the following Council was elected:

President	John Field (CSIRO DMS)
Vice-president	Bob Hall (SAIT)
Secretary	Alan Branford (Flinders University)
Treasurer	Jill Smith (Flinders University)
Council	Brenton Dansie (SAIT) Trevor Hancock (WARI) Sandra Pattison (WARI)

Modelling Variance Heterogeneity

The AGM was addressed by Ari Verbyla (Chairman of the Department of Statistics, University of Adelaide).

The assumption of equal variance in the normal regression model is not always appropriate. How to diagnose variance heterogeneity was considered together with estimation in the case where a log-linear model for the variances is appropriate; the linear part depends on explanatory variables. Both full and residual maximum likelihood were discussed as was the use of regression diagnostic methods for the joint modelling of mean and variance.

Some Issues in Software Reliability Assessment

On April 24 the Branch was addressed by Alan Veevers (CSIRO Division of Mathematics and Statistics, Melbourne, and Liverpool University, UK).

Safety critical systems containing software components, such as aircraft, power stations, motor vehicles, railway signalling, have focussed attention on software reliability assessment and quality assurance.

Some current issues are:

- What is software reliabity and can it be quantified?
- What contributions do the many software reliability growth models make?
- What contributions do software testing tools make?
- What new approaches should be adopted?

These and other issues were addressed with the emphasis on the role of statistical methods in the general debate.

Canberra

Plagiarism and Time Series Analysis

Dr Richard Jones, University of Colorado, addressed the Branch at the February 27 meeting. Richard showed how time series methods were used to investigate an allegation of misconduct in medical literature. It was alleged that a graph, depicting the response of a patient suffering from Parkinson's disease to a particular medical test, had been used in separate journal articles a number of years apart. The author claimed the graphs were independent and referred to different patients. To resolve the matter, the US National Institute of Health called in a statistician to

test the theory that the graph in the second article was a manually smoothed version of the graph in the first article.

In order to test whether the two time series were independent, Richard had the two graphs digitized. A stepwise regression procedure was the used to fit a time series model to the first set of data. Using the spectral density, Richard simulated data for a range of random numbers and frequency bands, in order to test coherence with the first set of data. Richard found that simulated data had little coherence with the first set, but that the data from the two digitized series were highly coherent. This finding led to the conclusion that the graph in the second article was indeed a trace of the graph in the first article. Given this conclusion, Richard thought the only option available to the author was to repeat the experiment and prove the first set of results can be duplicated.

Annual General Meeting

The AGM of the ACT Branch was held on 27 March 1990, in the Plant Industry Lecture Theatre at the CSIRO. The office bearers elected at the meeting were:

President	Dr Alan Welsh
Secretary	Mr Eden Brinkley
Treasurer	Dr Emlyn Williams
Councillors	Ms Justine Gibbings Dr Susan Wilson Professor Peter Hall Mr Warren Muller Dr Graham Pollard Dr Ray Chambers, immediate past-President.

The Application of Geostatistics

Dr Daniel Guibal, ARMINES, spoke to the Branch following the AGM. Daniel examined some of the problems commonly found in the application of geostatistics. He discussed the different stages of a geostatistical study, namely the choice of the initial modelling framework, variography, global and local estimation, and recoverable reserves. For each of these stages, Daniel described some of the practical problems confronting the statistician, the limitations of the analysis methods used, and the consequences of the choices made. It was interesting to note Daniel's examples of how difficult it can be to draw samples from a mine and how economically important it is to detect the `outliers'.

Daniel concluded his talk with the following recommendations: the Statistician must have a sound knowledge of the phenomenon under study, the model to be used must be adapted to the problem and be as simple as possible, the limits of the model must be known and it is imperative not to `extrapolate' it, and there is a need for more in-depth training for practicioners of geostatistics in Australia.

VISITORS

Professor J. Cohen; Rockefeller University; 5 - 19 September 1990; Melbourne University, Statistics Department; Dr Fima C. Klebaner.

Dr Nicola Crichton; Exeter University, England; medical statistics; 1 July 1989 - 30 June 1990; Monash University; Professor P.D. Finch.

Professor J.M. Gani; Santa Barbara, California; wife; stochastic modelling, probability; September 1989 - August 1990; Australian National University, Department of Statistics; Professor C.R. Heathcote.

Professor R.H. Jones; University of Colorado Health Sciences Center; wife with 2 children; time series and epidemiology; September 1989 - 30 June 1990; Australian National University, Department of Statistics; Professor C.R. Heathcote.

Professor K. Kesten; Cornell University; 22 May - 17 June 1990; Melbourne University, Statistics Department; Dr Fima C. Klebaner.

Professor D. Schafer; University of Oregon; generalised linear models; 17 September 1989 - 17 September 1990; University of Western Australia; A/Professor I.R. James.

NATIONAL COMMITTEE FOR MATHEMATICS

The NCM is one of 33 National Committees of the Australian Academy of Science. These committees provide the Australian link to the International Council of Scientific Unions as well as being a forum for the discussion of policy matters within their disciplinary area.

The NCM currently has 10 members and it includes representatives of the Australian Mathematical Society, the Australian Association of Mathematics Teachers, the Australian Computer Society, the Australian Society for Operations Research and the Statistical Society of Australia. The NCM also has two sub-committees, the Australian Subcommission of the International Commission for Mathematical Instruction (which is linked to the International Mathematical Union) and the Australian Mathematical Olympiad Committee, which handles Australian participation in the annual Mathematical Olympiads.

The NCM meets approximately annually, its most recent meeting being held on 13 December 1989; the majority of its business is conducted by correspondence.

Recent activities have included consideration of policy issues in connection with the ASTEC Report *Profile of Australian Science* and the DEET Review of Mathematics and Science Teachers Education, the formation of the Mathematical Sciences Council, preparation of the Australian entry for the ninth edition of the *World Directory of Mathematicians*, initial work towards a *Report on the Status of the Mathematical Sciences in Australia*, preparation for the International Geosphere-Biosphere Workshop on Mathematical and Statistical Modelling of Global Change (held in Canberra from April 23-27, 1990) and various business matters involving relations with the International Mathematical Union.

C.C. Heyde
(SSA Representative)

SPECIAL INTEREST SECTION

Statistical Education

There will be a section of the Statistical Conference in July devoted to topics in Statistical Education; this includes the education of students, teachers, and users, of Statistics. Your attendance, and helpful discussion after each talk, is eagerly encouraged.

Many of us in the teaching area are beset with the problem of what to show of statistical activities when our institution has an Open Day. Most posters have little chance of capturing the attention of an audience which has already looked at umpteen posters and has perhaps seen a "Magic Chemistry Show" or something equally spectacular. I plan to write to the statistical group at each tertiary institution to seek any ideas it has for displays, or news of past successes, and then to make the combined list available to respondents and others who are interested. However, if you have had some good results, please don't wait for me to write. Put pen to paper (fingers to the word processor?) and let me know what you've done. (My address is on the back page.) The whole profession can benefit.

Ken Russell

Medical Statistical

10th ASC Workshop on Statistics and AIDS, 30 June - 1 July 1990

Reminder! Please register with:

John Hopper
Faculty of Medicine Epidemiology Unit
The University of Melbourne
151 Barry Street, CARLTON VIC 3053

The cost is $125, with a special rate of $50 for students, and this includes lunches, and morning and afternoon teas.

The workshop will be held at Basser College, University of NSW, and registration will be from 9 to 10 am, Saturday, June 30.

Overseas guest speakers are Valerie Isham (University College, London) and Ron Brookmeyer (John Hopkins University).

Latest analyses of the Australian epidemic can be obtained from Patty Solomon and Sue Wilson's updated NCEPH Report issued at the beginning of May.

MISCELLANEA

Incorporation of SSA

The Society became the Statistical Society of Australia Incorporated on 26 February. This means that the Society now has a distinct legal identity, and that the responsibility of members of Central Council for the debts and liabilities of the Society is limited. Dr Des Nicholls of the Australian National University has agreed to be the Society's Public Officer, the formal point of contact between the Society and the ACT Corporate Affairs Commission. The Society thanks Dr Daryl Daley for piloting it through the various stages of the incorporation process.

Legal advice obtained in the ACT and South Australia indicates that individual branches continue to be unincorporated bodies. Branch councils should consider protecting themselves by making sure that they have appropriate liability insurance, by incorporating, or both. If a branch decides to incorporate it should consider including in its rules a provision to the effect that it will be bound by the Rules of the Society. If you want any more information please contact me using the Society's address which is on the back page. However branches may like to seek legal advice in case there are subtle but important differences between the laws of their own states and those of the ACT and South Australia.

Jeff Wood

Storage of Society Property

The Society depends on the goodwill of various people and organizations to store its property, supplies of back issues of the Journal, careers leaflets, etc. We do not want to abuse this goodwill, and we do not want to leave things lying idle when they could be put to good use.

Rational decisions on storage and disposal of things can only be made when we have a good idea of what we possess, so if you have any Society property or know if its whereabouts, please let me know by writing to me at the address on the back page. If you can think of a good use for any SSAI property let me know that as well. Finally if you think that we need to replenish our stocks of anything tell me or a member of Central Council.

Jeff Wood

Illawarra Statistical Group

The Inaugural meeting of the Illawarra Statistical Group was held on Wednesday, 28 March. A Constitution was adopted and a Committee of seven was elected. The principal Office Bearers are Chairman - John Flanagan (BHP Steel); Secretary - Lynn Morris and Treasurer - Shahab Ghahreman (both of the University of Wollongong). Following this formal meeting, Bob Murison spoke on statistical problems arising from work within the NSW Department of Agriculture.

The Committee has decided on an ambitious programme of nine to ten meetings per year. It has also established as a prime aim the promotion of knowledge and applications of statistics in the Illawarra region.

Society Tie and Scarf Design Competition

Central Council of the Society is investigating the possibility of producing a Society Tie and Scarf. These will be appropriate for normal wear but will have a distinctive emblem or design that relects the nature of the Society.

You are invited to enter the Design Competition by submitting your ideas for either the tie or the scarf or both. These can be either for a design for a Society emblem, to be incorporated in a neutral or simply-patterned tie or scarf, or as more complete designs for each, with pattern and emblems.

Finished art work is not required, but ideas should be well presented and oversize. The production company will produce the finished art work from the successful designs.

Prizes (you guessed it) a tie and scarf for the person submitting the successful design for each item. I will try to persuade the Treasurer to throw in a book voucher as well.

Entries to Mr N. Garnham, Mathematics Department, Swinburne Institute of Technology, PO Box 218, Hawthorn VIC 3122. **Closing date - 15 July 1990.**

Competition for Young Statisticians from Developing Countries

The International Statistical Institute (ISI) announced the Fifth Competition among young statisticians from developing countries who are invited to submit a paper on any topic within the broad field of statistics, for possible presentation at the 48th Session of ISI to be held in Cairo, Egypt, in 1991.

Participation in the competition is open to nationals of developing countries who are living in a developing country, and who were born in 1959 or later. Papers submitted must be unpublished, original works which may include material from particpants' university theses. The papers submitted will be examined by an interantional Jury of distinguished statisticians who will select the three best papers presented in the competition. The authors of the winning papers will be invited to present their papers at the Cairo Session of ISI, with all expenses paid (ie round trip airline ticket from his/her place of residence to Cairo plus a lump sum to cover living expenses).

Manuscripts from the Competition should be submitted in time to reach the ISI not later than January 1, 1991. Rules governing the preparation of papers, application forms and full details are available on request from:

The Director
Permanent Office
International Statistical Institute
428 Prinses Beatrixlaan
2270 AZ Voorburg
THE NETHERLANDS

STATISTICAL EDUCATION UNIT, KEY CENTRE OF STATISTICAL SCIENCES

The Key Centre for Statistical Sciences, based in Melbourne, has established the Statistical Education Unit, with the goal of raising significantly the quantitative ability of school children. This is to be achieved by enhancing those components of the school curricula that involve the handling and interpretation of data.

At present there is a reasonable amount of probability and statistics being taught (or simply used) in schools. Some of the material is both interesting and appropriate, but a lot is not as relevant as that which is being ignored. Some of the teachers are presenting their material in an interesting and effective way, but many lack the background and/or the resources to enable them to do this.

Some of the objectives of the Statistical Education Unit are to:

. establish and maintain a collection of appropriate material;

. develop additional materials;

. provide training programs for teachers;

. publish a newsletter;

. provide guidelines on the teaching of statistics;

. support school based initiatives in statistics;

. establish liaison with industry and government;

. provide speakers to foster student interest in statistics;

. encourage interest in statistical education.

To accomplish some of these above objectives, we are asking members of the Statistical Society for assistance. In the first instance we would be extremely grateful if each of you were to send us one of your favourite items of material. This could be a data set, a problem, a situation which you or your students have found stimulating, or perhaps a project. Do not worry too much about the level at which it is pitched, although in general, the easier the better. It would be easier for us if it were on disc or sent by e-mail. The preferred medium is Microsoft Word on the Macintosh, but we are able to convert most Macintosh and PC material to a usable form. Alternatively, you can e-mail to koula@mugga.mu.oz.

We intend to compile these resources into a document which would be useful to teachers, and in return for your efforts we would be pleased to send you this compilation both in hard copy and on disc wherever possible.

We would also be interested to hear from any statisticians, both in city and country areas, who could make some time available to members of the teaching profession for consultation on matters of content, or maybe even to talk to student groups. There is a great need out there, and members of the Statistical Society can make a very significant contribution to the development of statistical education throughout the country.

Material may be sent to me at the Department of Statistics, University of Melbourne. For further information contact me on (03) 344 4254, or Dr Ken Sharpe on (03) 344 6410. We hope to hear from you soon.

Kay Lipson
Cordinator SEU
Department of Statistics
University of Melbourne
Parkville VIC 3052

CORRECTION

Professor A.J. Dobson has sent the following note with regard to her article on ARC funding published in the March 1990 issue of the Newsletter.

> "Some of the numbers given in the article which appeared in the March issue of the Newsletter were wrong. At a very late stage in the process due to lack of funds further cuts were made to the number of grants awarded, but not to the amounts of money granted to successful applicants."

FASTS NEWS

Priorities for FASTS following the Election

The election has shown that there is a relatively small anti-science vote that can be politically manipulated. Speculating that these people have little contact with science, we must try to reach them through their children. The Family Maths and Family Science Projects must be greatly increased. Participation in the Olympiads should be encouraged more widely.

Another major priority must be the education of the Coalition so that they appreciate more fully the role of R & D in the economy.

FASTS Forums

On 25 February, FASTS along with the Australian Academy of Science and the portfolio of Employment Education and Training staged a public forum on the Report of the Discipline Review into Teacher Education in Mathematics and Science. About 100 people attended, many from interstate, and importantly, several of "the heavies" from the public service were there.

The following day, Professor Tony Wicken, FASTS President, was the speaker at the National Science Forum.

NEWS ABOUT MEMBERS

Peter Hall of the Department of Statistics, The Australian National Univcrsity, has won the 1989 Presidents' Award from the Committee of Presidents of Statistical Societies (COPPS). This award, which is jointly sponsored by the American Statistical Association, the Institute of Mathematical Statistics, the Eastern and Western North American Regions of the Biometric Society, and the Statistical Society of Canada, is presented annnually to a member of the statistical community under the age of 40 in recognition of outstanding contributions to the profession. The award consists of a plaque and a cash prize of $1,000 and is presented at a joint meeting of the societies, this year at the Joint Statistical Meetings in Washington, D.C., in August.

The citation mentions that Peter Hall is the author of several books and approximately 200 research articles in an extraordinarily wide variety of areas. He is a Fellow of the Institute of Mathematical Statistics and of the Australian Academy of Science and an Honorary Fellow of the Royal Statistical Society. Hall is a recipient of the Rollo Davidson Prize, of the Lyle Medal of the Australian Academy of Science, of the Australian Mathematical Society Medal, and of the Edgeworth David Medal of the Royal Society of New South Wales. He has served on the editorial boards of several statistical journals.

Associate Professor Ann Eyland of Macquarie University has accepted an appointment as Principal of Womens' College of the University of Sydney. She will take up the appointment on July 1, 1990.

Kaye Basford spent a rewarding few weeks in the U.S. recently - working with John Tukey at Princeton University, mainly on analysis of variance. Seems that Kaye has not worked so hard for a long time. It proved an exciting, challenging time with two to three hours discussion plus three or four papers to read and digest for each day of her stay. On the return trip she was an invited speaker at a symposium on the analysis of genotype by environment interaction in plant breeding trials at the University of Louisiana in Baton Rouge. This is an area of agricultural research to which biometricians have made a considerable contribution.

Congratulations to **Therese and Richard Wilson** on the birth on 16 March 1990 of their beautiful daughter, Kathleen Elizabeth - mother and father also flourishing.

Congratulations are also in order for our branch secretary, **Gordon Smyth**, on his recent marriage to **Margaret Mackisack**, formerly of Canberra. Margaret has just taken up an appointment as Lecturer in the School of Mathematics at Queensland University of Technology.

THE HARKNESS FELLOWSHIPS

The Fellowship programme was established in 1925 by an American philanthropic foundation, The Commonwealth Fund of New York, for study and travel in the United States, and the advancement of Australian - United States Relations.

Four Fellowships, tenable for between 12 and 21 months are offered. The award includes return fares to the United States, living and family allowances, travel in America (with car rental allowance), tuition and research expenses, a book and equipment allowance and health insurance.

Candidacy is open to men and women in any profession or field of study who are over the age of 21 years. Strong preference will be given to applicants who will be under 36 years of age on 1st September 1991. Candidates must by that date have a degree, or an equivalent qualification conferred by a professional body, or an outstanding record of achievement in the creative arts, journalism or other career. In addition, candidates for an MBA must have had substantial full-time post-graduate administrative experience.

Candidates must be citizens of Australia or have taken positive steps to achieve citizenship. They must not, between their 19th birthday and 1st September 1991, have spent more than six months in the United States.

Selection of Fellows for nomination to the Commonwealth Fund, which is made by the Australian Selection Committee, is based on personal qualities as well as on a proven level of academic or professional excellence and only those with outstanding records and potential to make a significant contribution to Australia will have a chance of success. The Australian Selection Committee will interview selected candidates in Melbourne in early December 1990.

The closing date for applications is 31st August 1990 or, in the case of public service candidates, such earlier time as may be notified in the relevant Gazette by the candidate's Pulbic Service Board.

Application forms will not be made available after 15th August 1990

Application forms may be obtained by individual candidates on request to the Australian Representative of The Commonwealth Fund: Mr J.T. Larkin, c/o KPMG Peat Marwick, GPO Box 796, Canberra ACT 2601.

AUSTRALASIAN CONFERENCES

CONFERENCE SUMMARY

Workshop on **Statistical Modelling of AIDS and Other Epidemics**, 30 June - 1 July 1990, University of NSW, Sydney, NSW. (Full details Newsletter 48, 10th ASC.)
Dr John Hopper, University of Melbourne, Faculty of Medicine Epidemiology Unit, 151 Barry Street, Carlton, Vic. 3053. Telephone (03) 344 6991; E-mail u5531300@ucsvc.dn.mu.oz

10th Australian Statistical Conference, 2-6 July 1990, University of NSW, Sydney, NSW. (Full details Newsletters 48, 49, 50 and this issue.)
Dr Doug Shaw, Chairman of the Programme Committee, CSIRO DMS, PO Box 218 Lindfield NSW 2070.

Workshop on **Statistical Methods in Image Analysis and Processing**, 6-7 July 1990, University of NSW, Sydney, NSW. (Full details Newsletters 48 and 49.)
Mark Berman, CSIRO DMS, PO Box 218, Lindfield NSW 2070. Telephone (02) 413 7568.

5th World Conference on Computers in Education, 9-13 July 1990, Sydney, Australia.
Information : WCCE/90, PO Box 319, Darlinghurst, NSW 2010, Australia.

The Third International Conference on Teaching Statistics (ICOTS 3), 19-24 August 1990, University of Otago, Dunedin, New Zealand. (Full details Newsletters 46, 49 and 50.)

Conference on Regional Modelling and Regional Planning, Newcastle, 20-21 September 1990.Dr Moira Gordon (049) 685-559. (Full details Newsletter 50).

Combined Statcomp/Biological Statistics Meeting, 1 - 5 July 1991, Coolangatta, Queensland.
Prof. Tony Pettit, School of Mathematics, QUT, GPO Box 2434, BRISBANE QLD 4001, Telephone (07) 223 2309, Fax (07) 229 1510, email zsmapettitt @ qut.edu.au. (Full details this Newsletter.)

10th Australian Statistical Conference, 2nd Pacific Statistical Congress, 2 - 6 July 1990

The programme for the July 2 - 6 Conference is now being finalised.

Professor Ulf Grenander of Brown University will be presenting a paper in the Image Analysis and Processing session of the conference on Friday July 6, as well as participating in the Workshop on Image Analysis and Processing. (A registration form for this Workshop is being included with this issue of the Newsletter.)

Over 100 contributed paper abstracts have been received by the Programme Committee; a number of these are from New Zealand, and abstracts have been received from several other Pacific Rim countries as well. Features of the Conference programme will be

. a session on Election Night forecasting, being organised by Hugh Morton of Massey University. Several European speakers have contributed papers for this session, as well as speakers from Australia and New Zealand;

. a speaker from the People's Republic of China and from Vietnam to particpate in the session on population censuses (thanks to funding from AIDAB);

. strong contributed paper sessions in aspects of regression, in quality, in computer intensive statistical methods, in applied probability and in time series.

Queries about the programme for the Conference should be directed to Dr Doug Shaw, DMS, CSIRO, PO Box 218, Lindfield NSW 2070; phone: (02) 414-7721; fax: (02) 416-9317.

Combined Statcomp/Biological Statistics Meeting 1991, 1 - 5 July 1991, Greenmount Resort Hotel, Coolangatta, Queensland *(overlooking the beach and sea).*

Themes will be:
. Statistics in upper secondary schools.
. Statistical developments at university and polytechnic level.
. Diagnostics,
. image processing,
. REML,
. genotype environment interaction,
. dependent data,
. Statistical Software,
. education.

Costs will be: Accommodation ($80 per night single to $25 per night, four sharing); Food (nil to whatever); Registration $200.

Further information: Tony Pettitt, School of Mathematics, Queensland University of Technology, GPO Box 2434, BRISBANE QLD 4001, Telephone (07) 223 2309, Fax (07) 229 1510, email zsmapettitt @ qut.edu.au

If you have any views about what you want from this meeting, please let me know. We are obviously at the early planning stage.

OVERSEAS CONFERENCES

World Organization of Systems and Cybernetics 8th International Congress, 11--14 June 1990, New York, NY, USA.
Information: Constantin V. Negoita, Congress Chairman, Dept. of Computer Science, Hunter College, CUNY, 695 Park Ave., New York, NY 10021, USA.

7th Annual Quality and Productivity Research Conference, 13--15 June 1990, Madison, WI, USA.
Thomas J. Snodgrass, Dept. of Engineering Professional Development, 801 Extension Bldg., Univ. of Wisconsin, Madison, WI 53706, USA.

XVth International Biometric Society Conference, 2-6 July 1990, Budapest, Hungary.
Information: XVth Secretariat Ms Eva Sos, Computer and Automation Inst., Hungarian Acad. of SCI, P.O. Box 63, H-1502 Budapest, Hungary.

Survey Design, Methodology and Analysis International Conference, 4-7 July 1990, Colchester, England.
Information: The Institute of Statisticians, 50 Fitzroy Street, London W1P 5HS, England.

1990 Joint Statistical Meetings, 6--9 August 1990, Anaheim, CA, USA.
Information: ASA, 1429 Duke St., Alexandria, VA 22314-3402, USA.

7th International Conference on the New Quality Philosophy in Statistical Research and Statistical Education, 6-9 August 1990, Anaheim, CA, USA.
Information : V. Shvyrkov, IS-SSE, 536 Oasis Dr., Santa Rosa, CA 95407, USA.

Institute of Mathematical Statistics 53rd Annual Meeting & 2nd World Congress of the Bernoulli Society, 13--18 August 1990, Uppsala, Sweden.
Information: Uppsala Turist & Kongress AB, "Bernoulli Society", Box 216, S-751 04 Uppsala, Sweden.

International Congress of Mathematicians, 21--29 August 1990, Kyoto, Japan.
Information: ICM-90 Secretariat, Research Inst. for Math Sciences, Kyoto Univ., Kitashirakawa, Sakyoku, Kyoto 606, Japan.

2nd International Conference on Environmetrics, 27-30 September 1990, Como, Italy.
Information : A.H.El Shaarawi, National Water Research Inst., PO Box 5050, Burlington, ON, Canada L7R 4A6, Canada.

34th Annual Fall Technical Conference, 18-19 October 1990, Richmond, VA, USA.
Information : Rick Lewis (ASQC-SD), Union Carbide Corp., 3200 Kanawha Turnpike, S. Charleston, WV 25303, USA.

International Conference on Measurement Errors in Surveys, 11-14 November 1990, Tucson, AZ, USA.
Paper submission information from Paul Biemer, Department of Experimental Statistics, Box 30003, Dept. 3130, New Mexico State University, Las Cruces, NM 88003-0003, USA; Phone(505) 646-2937. Registration information from Lee L. Decker, ASA, 1429 Duke Street, Alexandria, VA 22314-3402, USA; Phone (703) 684-1221, Fax (703) 684-2037.

International Conference on Industrial and Applied Mathematics (SIAM), 8-12 July 1991, Washington, DC, USA.
Information: SIAM, 3600 University City Science Center, Philadelphia, PA 19104-2688, USA.

IMSIBAC-4, 4th International Meeting of Statistics in the Basque Country, 4-7 September 1991, Bilbao, SPAIN.
Information : J.P. Vilaplana, P.O Box 32, 48940 LEJONA/LEIOA, SPAIN.

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School of Math. Sciences, UTS
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Belconnen ACT 2616

Queensland

President: Dr K.E. Basford
Secretary: Dr G. Smyth
Department of Mathematics
University of Queensland
St.Lucia, QLD 4067

SECTION CHAIRS

Statistics in the Medical Sciences

Dr J. Hopper
University of Melbourne
Faculty of Medicine Epidemiology Unit
151 Barry Street, Carlton, Vic 3053.

Statistics in the Earth Sciences

Dr N.I. Fisher
CSIRO, DMS
PO Box 218, Lindfield, NSW 2070

Statistics in the Biological Sciences

Dr B.R. Cullis
NSW Dept. of Agriculture & Fisheries
c/o Agricultural Research Institute
PMB Wagga Wagga, NSW 2650

Survey and Management

Mr D.J. Trewin
c/- Australian Bureau of Statistics
PO Box 10
Belconnen, ACT 2616

Statistical Education

Dr K. Russell
Mathematics Department
University of Wollongong
PO Box 1144
Wollongong, NSW 2500

Statistical Computing

Prof. A.N. Pettitt
Queensland Univ. of Technology
GPO Box 2434
Brisbane, QLD 4001

Industrial Statistics

Mr B. Dansie
School of Mathematics & Computing Studies
SAIT
PO Box 1, INGLE FARM SA 5098

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Enquiries and subscriptions should be sent to:

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GPO Box 573,
CANBERRA, ACT 2601.

Advertising will be carried in the Newsletter on any matters which the Editors feel are of interest to the members of the Society. In particular, advertisements of statistical vacancies, statistical literature and calculators will be welcome. For details of advertising rates etc. contact either the Editors or Dr J.T. Wood at the same address.

Members are requested to notify their local branch secretaries (see this page of the Newsletter) of change of address, in order that Newsletters and Journals can continue to be despatched to them.