

## NOT-THE-MINUTES OF THE 37TH AGM

Over 100 people attended the 37th annual conference of the New Zealand Statistical Association which was held in Wellington from June 24 to June 26. The venue, the Victoria University Vice-Chancellor's Meeting Room, was at times a little over-crowded but the slight discomfort was more than compensated for by the lavish morning and afternoon teas. Some of the papers were good too!

In a paper entitled "Statistics in our Schools—For Good or Bad" Sharleen Forbes dispelled any doubts that members may have had about whether the association needs to assist secondary schools in teaching the new seventh form "Maths with Stats" course. The teachers and students seem to have been saddled with an overly ambitious syllabus and association members were asked to offer their help to secondary schools in the form of suggestions for topics for student projects (a project counts for 20% of the course assessment) and/or supervision of student projects. The association may also be able to help in other ways by, say, offering "enrichment" courses for teachers or by publishing a suitable book for the course. A network of coordinators of potential helpers may already be in place, viz. Secondary School Science Fair Judges.

The other papers ranged over a variety of topics: effective sizes of commercial omnibus surveys in NZ, random rounding, genotype x environment interaction, and one day was taken up with medical statistics papers. It is surely one of the virtues of the association's annual conference that at one venue in a very short space of time, attendees can be exposed to a variety of applications of statistical theory.

An informal conference dinner was held at a local quasi-Italian restaurant. The dinner was so informal that a worm turned up in one of the guest's salads. The guest, a well-known expander of Edgeworth Series, was able to extort a free meal from the restaurant and two carafes of the house wine which he shared with his fellow diners.

The annual general meeting was attended by about 60 to 70 members and was characterised by some enthusiastic contributions under the last two items of the agenda—Annual Conference and General Business. Richard Penny of the Department of Statistics offered to organize the 38th Annual Conference in Christchurch during August, 1987. This was enthusiastically received by almost all delegates (especially the Wellington and Auckland claquees) and the general mood of the meeting was that the conference should perhaps oscillate between Auckland and Christchurch or Dunedin with, say, two conferences every four years being held in Wellington.

Bryan Manly reported that it was very possible that ICOTS III, The International Conference on Teaching

Statistics, will be held in Dunedin, New Zealand in 1990. Our association pledged its support.

Don Esslemont, on behalf of an anonymous public servant, moved that the association notes with concern the recent government directive to the Department of Statistics to recover 25%, or more, of its budget by introducing charges for its services. Apparently, no other census bureau in the world does this and the potential loss of cooperation of respondents in the commercial sector is the major reason. One member of the audience suggested that respondents should now bill the Department of Statistics for the time spent researching answers to questionnaires.

Murray Jorgensen reported that the NZ Mathematical Society Guest Lecturer for 1986 is to be Dr Terry Speed. Dr Speed will be available for lectures of a technical and non-technical nature (see the separate news item below).

Other business included the election of the 1986/87 executive committee (see below), and, discussion and adoption of a first draft of the constitution for the new SAPQC (Survey Appraisals and Public Questions Committee). The SAPQC is sponsored solely by our association and replaces the SAC (Survey Appraisals Committee) which was cosponsored by the Market Research Society of NZ and us. The SAPQC has a slightly wider brief (which includes the issuing of press releases concerning "statements with technical statistical content made in the public domain") and a correspondingly larger committee. The committee, elected at the AGM includes: Don Esslemont, Len Cook, Garry Dickinson, Bryan Manly, David Vere-Jones and John Jowett.

A vote of thanks was passed to outgoing members of the executive committee, Garry Dickinson (President for the last 3 years), Dave Cox (Secretary for the last 3 years) and Mick Roberts (Corporate Members' Representative).

## THE 1986/87 EXECUTIVE COMMITTEE

The new executive committee elected at the 37th AGM is:

**President: Dr Peter J. Thomson**

Institute of Statistics and OR,  
Victoria University, Private Bag, Wellington  
Telephone: (04) 721-000 (ext 866)

Peter is a Senior Lecturer in Mathematical Statistics at Victoria University of Wellington. After completing his university training at Otago and the Australian National University, Peter taught at the University of Nottingham, England (1972-1976), and Massey University (1976-1980). His research interests lie in Time Series Analysis.

Peter has served on the executive committee of NZSA for four years (so far) and spent one of those years as Treasurer. He has recently communicated his views on future directions for the association in a Letter-



to-the-Editor published in *The New Zealand Statistician* (21:43-45).

**Secretary: Jean Thompson**

Applied Mathematics Division, DSIR  
P.O. Box 1335, Wellington  
Telephone: (04) 727-855 (ext 870)

Jean is a Statistical Consultant with the Applied Mathematics Division of DSIR. She began her career, "in the pre-computer days", as a clerical assistant with the NZ Meteorological Office where she "added up the monthly rainfall and hourly temperatures, pressures and relative humidities and got to doing the odd linear regression as a treat!" Jean completed a Mathematics degree at Victoria and ¼ of a bachelor's degree in Russian from Harvard! Her research interests lie in Numerical Taxonomy and the Teaching of Statistics.

Jean served as Secretary-Treasurer of the Association in 1962/63 and has been a member of AAVA syllabus revision committees since 1984. She believes the association "needs to appraise the community of our existence and what we are. Statisticians are too often seen as simply number-collectors. Our problem-solving role is only very rarely perceived yet this is where one of our great strengths lies".

**Treasurer: W. Alex Neill**

Applied Mathematics Division, DSIR  
P.O. Box 1335, Wellington  
Telephone: (04) 727-855 (ext 839)

Alex is a Statistical Consultant with the Applied Mathematics Division of DSIR and commenced work there after graduating from Victoria University of Wellington. His major interests lie in statistical quality assurance, survey analysis and categorical data analysis.

This will be Alex's third year as Treasurer of NZSA and he believes that, "financial constraints should not unduly limit worthwhile new avenues for the NZSA. You as members, should let us know to what extent you would actively and financially support expanded activities by the Association."

**Corporate Members' Representative:**

**David Harte**

Biometrics Section, Head Office  
Ministry of Agriculture and Fisheries  
Private Bag Wellington  
Telephone: (04) 720-367 (ext 8806)

David is a Biometrician with MAF. After graduating from Victoria University, David worked in the Sample Design Division of the Department of Statistics and the Traffic Research Branch of the Ministry of Transport. His interests lie in Generalised Linear Models, Quality Assurance, Statistical Computing, and, Stochastic Processes.

David has served on the executive committee of NZSA since 1985 and has organised the awarding of statistics prizes at regional Science Fairs.  
**Committee:**

**Dr P. Colin Cryer**

Department of Community Health  
Wellington Clinical School, Wellington  
Hospital  
Wellington 2  
Telephone: (04) 855-959

Colin is a Lecturer in Biostatistics at the Wellington Clinical School. After completing his university training at the University College of Wales, Aberystwyth, Colin worked as a Senior Statistician in the Research Department of The Boots Co. Ltd. His interests lie in

logistic regression analysis applied to observational study data, and, injury research.

Colin has been a member of the NZSA executive committee since 1982 and organised the Medical Statistics Seminars in 1983, 1984 and 1986. He was a member of the Programme Committee of the Pacific Statistical Congress, 1985. Colin feels that because of NZ's small size and limited resources, "It is important that professionals working in related areas talk to each other so that (a) our small resources are not wasted through duplication, (b) new methods can be brought to the attention of practitioners quickly, (c) we may advance more efficiently. The NZSA is one vehicle for communication." and adds that he would like to see other satellite seminar series attached to the NZSA annual conference.

**Sharleen D. Forbes**

Queen Margaret College  
Hobson Street, Thorndon, Wellington  
Telephone: (04) 737-727

Sharleen teaches Mathematics and Statistics at Queen Margaret College and was formerly a Lecturer in Mathematics at Victoria University. Sharleen has worked as a Systems Analyst for the Auckland City Council and completed a Master's degree at the University of Auckland in 1971. Her statistical interests lie in statistical methodology for the social sciences, in general, and in NZ fertility and child-spacing patterns, in particular.

Sharleen is a member of ORSNZ, NZ Mathematical Society, Women in Science Education, International Organisation of Women and Mathematics Education, and is a committee member of the Wellington Maths Association.

**Bryan F. J. Manly**

Department of Mathematics and Statistics  
University of Otago  
P.O. Box 56, Dunedin  
Telephone: (024) 771-640

Bryan is Associate Professor of Statistics at the University of Otago. He graduated from the City University, London in 1966 and has held lecturing positions at Salford University, Lancashire, the University of Papua New Guinea and the University of Otago. He is interested in Applications of Statistics particularly in biological areas and is the author of two books, "The Statistics of Natural Selection on Animal Populations" and "A Primer on Multivariate Statistical Methods".

Bryan has been a Council Member of the International Biometric Society, Secretary of the Australasian Region of the Biometric Society, and, Secretary of the Pacific Statistical Congress, 1985.

**John H. Maindonald**

Applied Mathematics Division, DSIR  
Mt Albert Research Centre  
Private Bag, Auckland  
Telephone: (09) 893-660

John is a Statistical Consultant with the Applied Mathematics Division of DSIR. After graduating from the University of New Zealand, John held positions at PNBHS (1960), Palmerston North University College, now Massey, (1960-1961), Northcote College (1962), Murray College, Sialkot, of the University of Panjab, Pakistan (1963-66), University of Auckland (1966-68), Manchester University (1969-1970), Sheffield Polytechnic (1970-1971), and was the Victoria University Biometrician (1971-1978) before joining AMD. His research interests lie mainly in statistical



computing and he is the author of "Statistical Computation" a volume in the Wiley Series in Probability and Mathematical Statistics.

John has served on the Council of the International Association for Statistical Computing (1981-1983), on the board of DSIR agricultural journals since 1982, and the NZSA executive committee from 1972-1978 and since 1984. He comments that, "We really ought to have a more obvious public presence—we ought to have more impact on the computing fraternity—e.g. write for 'Interface' on graphics and standards of statistical presentation."

**Clare E. Salmund**

Department of Community Health  
Wellington Clinical School, Wellington  
Hospital  
Wellington 2  
Telephone: (04) 855-653

Clare is a Senior Biostatistician with the Wellington Clinical School. Her previous positions include Lecturer, Dept of Preventive and Social Medicine, Otago University Medical School (1968-1971) and Senior Biostatistician, Epidemiology Unit, Wellington Hospital (1971-1985), and, her statistical interests lie in epidemiology and longitudinal studies.

Clare has been a member of the NZSA executive committee since 1983 and served on the Survey Appraisals Committee from 1983 to 1985.

*Co-opted Committee Member:*

**Garry E. Dickinson**

Department of Statistics  
Aorangi House, Molesworth Street,  
Wellington  
Telephone: (04) 729-119

Garry is an Assistant Government Statistician and was formerly a Statistical Consultant with the Applied Mathematics Division of DSIR. Garry has Mathematics and Statistics degrees from Victoria and London and his statistical interests lie in business and agricultural surveys, and the marketing of statistics.

Garry has been a Fellow of the Royal Statistical Society since 1967 and has served on the Executive Committee of our association for the last four years, three of those years as President.

from the top management down; surely a daunting and ambitious task. However these aims and objectives are clearly endorsed, not only by the member

organisations, but also well placed individuals such as the Minister of Trade and Industry, David Caygill, and Mr D. D. Rowlands, Managing Director, Fisher and Paykel Ltd.

The first morning of the seminar began with a session by Ivor Francis on quality improvement as a philosophy of doing business. This was followed by an introduction to Deming's fourteen principles of management together with a film featuring Deming himself. These principles are the key to the Deming philosophy and are reproduced below:

1. Create constancy of purpose for improvement of product and services with a plan to become more competitive and thus to stay in business.
2. Adopt the new philosophy. We are in a new economic age. We no longer need to live with commonly accepted delays, mistakes, defective materials and defective workmanship.
3. Cease dependence on mass inspection. Require instead statistical evidence that quality is built in, which eliminates the need for mass inspection.
4. End the practice of awarding business on the basis of price. Instead, ask for meaningful measures of quality along with price.
5. Work constantly to improve every activity in the system of production and service.
6. Institute modern methods of training on the job for everyone.
7. Introduce modern methods of supervision that allow for quality to be the responsibility of everyone.
8. Drive out fear so that everyone may work effectively for the organization.
9. Break down barriers between departments.
10. Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity.
11. Eliminate work standards that prescribe numerical quotas.
12. Remove barriers between workers and their pride of workmanship.
13. Maintain a vigorous programme of continuing education and retraining of the workforce.
14. Create a structure that puts everyone in the organization to work at Company-Wide Quality Improvement.

**by Peter J. Thomson**

**REFLECTIONS ON A DEMING SEMINAR**

Recently I was invited to attend a Deming Seminar on company-wide quality improvement held at the Academy in Wellington. This was an invitation I was only too pleased to accept as such seminars are normally held for Deming Institute members only. Day one of the three day seminar began with coffee and registration. Along with other registrants I received a handsome Deming Institute folder together with stationery and various items of information on the Institute and its activities. In addition we were each given a substantial 380 page text by W. Edwards Deming entitled "Quality Productivity and Competitive Position". The Deming Institute clearly meant business!

From the information provided I was able to learn more about the Institute and its objectives. Its member organisations are many and varied spanning both public and private sector and manufacturing and service industries. The Institute's aims are principally educational with the broad objective of improving both the quality and productivity in NZ organisations as a whole. It achieves this by educating entire companies

The top management of any organisation that subscribes to the Deming philosophy must, in order to do its job, accept responsibility for adopting these management principles. This responsibility **cannot** be delegated. This means, in particular, that the Chief Executive of the organisation concerned must be committed to this philosophy and to maintaining an active personal involvement in the programme.

The afternoon of the first day was spent in workshops followed by two sessions led by Tim Ball, one discussing what was meant by quality and how it might be measured with the other discussing causes of variability. The remaining two days covered topics such as ways of supervision, training services, the importance of teamwork, operations and purchasing, improving processes, improving management (poor management, we were told, is almost always to blame for the ills of any organisation) and economic sampling, all liberally spiced with workshops and illustrative management games. The final session on the third day covered the important topic of how to put all these principles into practice with constructive plans for action.



In the course of the seminar a number of simple statistical concepts and QA techniques were covered. These were used to analyse objective measures of quality and performance with particular care and attention being paid to assessing variability and its causes. The motivation for the use of these techniques as management tools was not just to screen for items of poor quality, but, more importantly, to diagnose the sources of poor quality. The ultimate objective was to remove the causes of poor quality even beyond the limits that current practice would regard as economically worthwhile. The causes were of two main types; special causes (essentially of a transient nature; e.g. machine breakdowns) or common causes (non-specific and quantified as statistical noise). Reducing the level of common causes is the harder task. However, if Deming's theories are correct, improved quality necessarily leads to increased productivity and ultimately to a healthy successful organisation well placed to compete in the modern world.

The people attending the course were drawn from a wide background including companies such as ICI, Toyota, IBM, Mainzeal, AWA, Department of Justice, NZPO and the Dairy Board to name but a few. Representatives from middle management through to the upper echelons of management were present. It was interesting to observe (as only a dispassionate statistician can) the interactions between this somewhat hard-nosed group and Ivor and Tim. There were times when the sceptics put both lecturers under pressure. Both Tim and Ivor acquitted themselves well to the extent that the sceptics were either won over by the end of the seminar or had otherwise gone gracefully to ground. Certainly, most of the individuals I spoke to at the seminar were generally sympathetic to the basic thrust of the Deming philosophy. In the films that featured Deming, the great man came over as being totally convinced of the correctness of his approach to management. This meant that he tended to preach rather than lecture to us, a style that did not particularly endear him to a group of individualistic New Zealanders. Fortunately Tim and Ivor were sensitive to the NZ psyche and adopted a much more pragmatic, commonsense line of attack which was, to my mind, more successful.

It should be said that the Deming philosophy is more than just the application of quantitative methods, although this is clearly an important aspect and one that I have concentrated on in this short article. Rather it is an integrated philosophy of management which, in its entirety involves all aspects to do with running a modern complex organisation. The creation of a stable work force and an organisation that is sympathetic to and values the talents and welfare of its employees is part of the Deming approach for example.

Many of us have discussed ways in which our statistical expertise can be used to the greater good of NZ industry. Such debate and initiatives have frequently centered around the provision of specialised statistical consulting services. However such initiatives can only prosper against a background of an informed and enlightened management who are aware of the value that modern statistical methods can provide. (On this matter see also Professor George Barnard's article on 'Rescuing our manufacturing industry—some of the statistical problems' in the UK *Statistician* (1986) 35, pp3-16.) Educating management in such matters is clearly crucially important and the more difficult task. This being the case, it is very much to the credit of the Deming Institute that it has directly addressed this major problem. In terms of the statistical profession in

NZ and the training of statisticians, the importance of such an education programme cannot be overstated. I personally wish the Institute every success.

## AN HISTORIC REUNION



Photo: John Casey, VUW

During Professor Peter Whittle's visit to Wellington in May of this year a somewhat historic reunion of current and ex-AMD staff took place at Victoria University of Wellington. Pictured in the above photograph are—

Backrow from left to right: Dr John H. Darwin, Dr Robert B. Davies, Dr R. M. (Bob) Williams, Professor G. A. (Tony) Vignaux, and, Frontrow from left to right: Mr Ian D. Dick, Professor Peter Whittle and Mr H. S. (Stan) Roberts.

John Darwin first joined DSIR in 1944 and worked in the Radar Development Laboratory. He transferred a bit later on to what was to become AMD and studied at Cambridge and the University of Manchester. He was a statistical consultant and Section Leader at AMD until 1978 and then left for the Department of Statistics where he was Government Statistician from 1980 to 1984.

Robert Davies joined AMD in 1964 and after studying at Berkeley, and heading the Statistics Section at AMD became Director of the division in 1982. He is currently the fourth Director of the division.

Bob Williams was AMD's second director from 1953 to 1962. He subsequently spent periods as Vice Chancellor at the University of Otago and the Australian National University and Chairman of the State Services Commission.

Tony Vignaux worked at AMD from 1964 to 1967. He is now Professor of Operations Research in the Department of Mathematics at Victoria University of Wellington.

Ian Dick was hired as DSIR's first biometrician in 1939 and was appointed Officer-in-Charge of the Biometrics Section upon its formation in 1946. He was the first director of AMD (or AML) from 1949 to 1953 and was subsequently Assistant Director-General and Under-Secretary for Mines.

Peter Whittle worked at AMD from 1953 to 1959 and has a distinguished research career in Time Series Analysis and Operational Research. He is currently Director of the Statistical Laboratory at Cambridge.

Stan Roberts joined AMD in 1951 and spent almost 30 years as an ebullient statistical consultant. In 1981, for his long and distinguished record of service to our association, Stan was elected first Honorary Life Member of the New Zealand Statistical Association.

All of those photographed have served on the executive committee of our association, five as presidents, and one (Stan) has attended 35 out of 37



Annual General meetings.

An unavoidable omission from the photographed group is Dr Hamish R. Thompson who was in the South Island on DSIR business. Hamish, who is currently Chief Director of the Resources Group of DSIR divisions, joined AMD in 1948, and was the third, and so far the longest-serving, Director of AMD from 1963 to 1982.

## DUNEDIN REGIONAL GROUP

It is planned to set up a local group of the NZ Statistical Association in Dunedin. This will consist of statisticians at the University of Otago and Invermay Research Station, High School teachers of statistics, and others who may wish to join. It is envisaged that meetings will be held infrequently to begin with, perhaps every six months. An evening meeting over dinner, followed by an informal discussion or talk is what is proposed at present.

If you live in or near Dunedin and are interested in taking part in this group, please contact, Bryan Manly, Department of Mathematics and Statistics, University of Otago, P.O. Box 56, Dunedin (Telephone: 771-640). Also, please tell colleagues who may be interested. In the first instance it will not be necessary to be a member of the Statistical Association in order to take part, although it is hoped that the existence of the group will encourage people to join the national body.

## NZ MATHEMATICAL SOCIETY VISITING LECTURER—Dr Terry Speed

Dr Terry P. Speed, Head of the Division of Mathematics and Statistics, CSIRO, Australia is to tour New Zealand in September/October, 1986 as the NZ Mathematical Society Visiting Lecturer. His itinerary will include all six university centres and he is willing to present two or three of the following talks in each centre: For mathematical audiences:

- (1) Generalized Wreath Product Groups and their Role in Statistics
- (2) Triangulated Graphs and their Application
- (3) What is an Analysis of Variance?

For teachers:

- (1) What Statistics should be taught in Schools?
- (2) The Teaching and Learning of Conditional Probability

For general audiences:

- (1) The Hidden Contribution of the Mathematical Sciences to Everyday Life
- (2) Quantifying Risks: When Can You Believe the Experts?

Dr Murray Jorgensen is coordinating Dr Speed's tour and further information can be obtained either from local members of The New Zealand Mathematical Society or directly from Murray at the Department of Mathematics, University of Waikato, Private Bag, Hamilton.

## SURVEY OF MEMBERS

This issue of the newsletter contains a questionnaire. Members are urged to complete it and mail it (postage has already been paid) to the executive committee as soon as possible. The questionnaire was hastily compiled and the executive committee, realising its shortcomings, fully expect some "wag" to refer it to the SAPQC (see SAC). Perhaps another survey in 3 or 4 years time will be several steps closer to perfection.

The most urgent piece of information we desire from the survey is a list by region of volunteers willing to assist secondary schools with the seventh form "Maths

with Stats" course. One volunteer in each region will be asked to coordinate, in a very loose way, the relief work. The coordinator may or may not wish to use the local Maths Association as a "base" for activities. The executive committee will do all it can to assist these volunteers.

The executive committee wish to publish a list of members and their applied interests and skills. The "Application or Interest Group" areas are fairly broad and are designed in part to nail down what members really do for a crust and aid communication between members with common statistical interests. A "de facto" interest group exists already, namely, the Medical Statistics Seminar participants. Special interest meetings in these application areas may be organised in the future.

The "Skills" categories are fairly specific and are designed so that members can use the membership list or directory to locate potential colleagues, collaborators and mentors with "unique" mixes of skills. The executive committee does reserve the right to permute the ordered letters which describe a member's skills if the sequence of letters spell-out a word of dubious linguistic pedigree. You may think of this as the editorial equivalent of "random rounding".

Once you have completed the questionnaire, fold it carefully, place it in the window envelope provided and drop it in a mailbox. If you have mislaid the window envelope, use any envelope and address it as follows: Freepost No. 676, New Zealand Statistical Association (Inc.), Box 1731, Wellington.

## ANYONE GOING TO ICOTS II IN CANADA?

Your new president, Peter Thomson, and, Bryan Manly of the University of Otago, are both anxious to contact any New Zealanders who are planning to attend the ICOTS II conference to be held in August in Victoria, British Columbia, Canada. New Zealand, and in particular, Dunedin is preparing a case to host ICOTS III in 1990, and Peter and Bryan wish to "brief" any New Zealanders participating in ICOTS II on NZ's case for hosting the four-yearly extravaganza (sounds like the Commonwealth Games). Could intending participants please contact Peter or Bryan as soon as possible—their addresses and telephone numbers are listed in the second news item in this issue.

## INDUSTRIAL STATISTICS IN OZ—A KIWI PERSPECTIVE

by Jocelyn Dale (AMD/DSIR, Mt Albert)

The aim of my visit was to discuss my research on sparse contingency tables and ordered categorical responses; present seminars to DMS meetings; meet those involved in industrial statistics in DMS and SIROMATH; and discuss statistical problems and approaches with CSIRO statisticians, and establish contacts.

Termite attacks on decaying wood, the varying quality of mineral ore, experimental designs for ELISA assay plates, the spatial distribution of eucalypts in NSW, biological control of aphids, removing noise statistically from Landsat pictures, trying the 'S' statistical language (I'll be the first to use it when it hits Auckland!), high quality typesetting using the L<sup>A</sup>T<sub>E</sub>X system (a descendant of Knuth's T<sub>E</sub>X) with a laser printer. I met these and more in those 4 weeks, in



discussions with CSIRO scientists...but it's more the state of industrial statistics in DMS and SIROMATH that I'll describe in more detail...

DMS is starting to promote statistical expertise to industry. Their new industrial statistics group, led by Geoff Robinson, is based in Melbourne. Bill Armstrong (ex NZ Dairy Board) joined the group a week before I arrived in Melbourne. They were interested in my recent work installing CUSUM charting systems. That was the only time I was able to discuss cricket in that country! (see *Newsletter No. 9*) Geoff and I came to grips with parameter design, a technique for reducing the variability of a process with respect to parameters that can't be controlled (Kacker, *Journal of Quality Technology*, 1985). Kacker's paper is a translation of Taguchi's ideas into English.

In Sydney, Ron Sandland and Nick Fisher are interested in Hoadley's paper (*Bell System Technical Journal*, 1985) applying Empirical Bayes methods to process control. They are keeping close links with SIROMATH, and hope to find interesting research problems from industry.

DMS aims to promote statistics, more on an industry-wide basis than for individual companies. They are able to do chargeable work only if it is charged out through SIROMATH—quite different from the NZ government's present "user pays" policy.

In contrast, SIROMATH is a private company, having to get all its income from consulting charged out at commercial rates. I detected that this was somewhat of a burden for them. Richard Tweedie, based in Sydney, is the Managing Director. I visited their offices in Melbourne and Sydney, both buzzing with activity. SIROMATH have access to a wide range of expertise, with a staff totalling over 30, and the option to subcontract work to DMS scientists. SIROMATH clients include government departments, mining companies, and manufacturing and service sector groups.

They feel that industrial statistics is very hard, and may not be profitable, in which case they would have to drop it. William Dunsmuir, the Southern Regional Manager, indicated that the industrial jobs tend to be smallish, and more in helping management with ancillary systems, rather than controlling the manufacturing process. Ross Hughes (ex Massey University) has a "travelling road show" in industrial experimental design. Unfortunately I didn't meet him or his show—he was in Western Australia at the time.

Doug Shaw is the SIROMATH industrial statistics contact for Sydney. He has put in a few process control charts and gives seminars on statistical techniques to in-house company groups. Some of his clients are in the service sector.

Our position in Applied Mathematics Division, DSIR is some way between DMS and SIROMATH. We are keen to promote statistics to industry, and are in a position to do consulting for a fee. We are fortunate that we don't have to jump in at the deep end the way SIROMATH had to. Neither do we have to take every job that comes our way, just to make ends meet. The main problem I foresee in NZ as industry wakes up to what statisticians can do for them is that we might not have enough expertise in the country. Then it may be a case of making available the talents of our friends in SIROMATH and DMS.

## CALIFORNIA KIWIS by Dave Saville (MAF Biometrics, Lincoln)

In northern California, where I spent seven months from September 1984 to April 1985, the word "kiwi" refers to the locally grown California kiwifruit. The climate in northern California appears well suited to kiwis. These are widely sold at roadside stalls and farmers' markets at 3 lb to the dollar. The local kiwi tends to be smaller and sweeter than NZ kiwifruit, which sells sparingly at around 80 cents each. Luckily for us, however, the supply of kiwis appears to be insufficient to saturate the whole of the US.

Another culinary feature of California is the supply of big, juicy, bright orange, oranges. Bright orange except when the colouring process misses a patch, as with one I bought. In season these sell at the farmers' markets for 4 lb to the dollar.

My time in California was spent lecturing in statistics at the agricultural campus, Davis, of the University of California, in the Central Valley inland from San Francisco. Davis is a pleasant university town of about 40,000, characterised by tree lined streets and bike-peddalling students and staff. However, the weather is not as I'd imagined California weather to be. When I first arrived in early autumn it was unbearably hot, so I spent September sheltering either in a noisy-air-conditioned office or in the nextdoor neighbour's swimming pool. This was followed by a period of 2-3 months of beautiful autumnal weather. Unfortunately then came the fog! Three months of dull overcast weather, temperature consistently in the range 2-10°C. Davis lies in a valley in which the fog lies continually, disturbed only by passing storms which meant about one day of sun per week. My response was to get a weekly fix of sunshine by driving out of the fog into the Sierra sunshine for a day's skiing at 7000-10000 feet.

My job was with the Department of Agronomy and Range Science while their statistics professor was on sabbatical leave. I taught two 10-week courses, an elementary course to a mix of 120 undergraduates and 100 graduate students, and an advanced course to 70 graduate students.

The first course was for me mostly an endurance test, since with a preprinted course textbook I had little choice but to follow a "cookbook" approach. This course was as usual poorly received by the students, for whom I had considerable sympathy. The course had enough inherent problems without adding a rookie lecturer! (I should add that I found the students on the whole to be friendly and hardworking, but under considerable pressure from the need to get all A's or you're on the dole).

Disillusioned by my first term at Davis, I took off to Canada to sit in the Christmas snow and ponder my soul navel for the 4 week break. This time freshened my soul and resolved me on a radical course of action. For the second course I would abandon the "cookbook" approach and teach using the geometric approach pioneered by Graham Wood and myself at Canterbury University. This would be a do or die affair—either my confidence as a teacher would be restored or destroyed forever! In the event, the success of the course exceeded all expectations, and my second term at Davis was an enjoyable and stimulating period. The students, who were mainly graduate students in agronomy, animal science, food science, viticulture, pomology and other applied sciences, were on the whole prepared to invest a lot of time in the course since they felt they were for the first time coming to grips with "real" statistics. They were initially puzzled by what vectors and n-



dimensional geometry had to do with it, but as time went on they could see the power and unifying nature of the approach. As one student put it: "we had a hard time opening the box, but once we got inside we found lots of goodies".

Encouraged by the success of the method, Graham Wood and I are currently preparing a textbook entitled "Statistical Methods: The Geometric Approach", a paper on the topic is being published in the August issue of *The American Statistician*. We'd of course be happy to supply further information to anyone who's interested.

### UNIVERSITY OF AUCKLAND DEPARTMENT OF ZOOLOGY STATISTICIAN/PROGRAMMER

A statistician/programmer is required to assist in meeting the statistical and computing needs of the Zoology Department, this person will also have responsibility for a laboratory of ten or more microcomputers. Applicants should have a statistics degree or its equivalent with experience in data analysis, and be able to program competently in BASIC and FORTRAN or PASCAL. Experience in statistical consulting and in the use of the SAS statistical package would be an advantage.

Salary: From \$27,296 to \$29,499, depending on experience.

Closing Date for Applications:  
15 August 1986

Contact in the first instance,  
Dr B. M. McArdle,  
Telephone: (09) 737-999 (ext.7206)

### APPLIED MATHEMATICS DIVISION

Department of Scientific and  
Industrial Research

### VACANCIES FOR STATISTICIANS

at  
Lincoln and Palmerston North  
DSIR Campuses

The Applied Mathematics Division of DSIR has vacancies for statisticians at both its Lincoln and Palmerston North substations. The work consists of advising DSIR scientists on the design of experiments and the analysis of the results. This involves both the use of standard statistical techniques and the development and application of new or modified techniques. There will also be some work for clients outside DSIR. In addition, there is time for statistical research not directly related to any consulting project.

**Qualifications:** Good honours degree in Mathematics or Statistics or PhD or equivalent; ability to work with people and a practical orientation; knowledge of computing would be an advantage. Where appropriate, training is available.

**Salary:** New first class honours degree:  
around \$22,700  
Honours degree + PhD:  
around \$26,400  
Adjustments are made for relevant experience.

Anyone interested should contact the Director as soon as possible. Write to or telephone—

The Director  
Dr R. B. Davies  
Applied Mathematics Division  
DSIR  
P.O. Box 1335  
Wellington  
(Tel: (04) 727-855)

### NEWS FROM MASSEY

Howard Edwards writes that the Department of Mathematics and Statistics at Massey will be offering a new 1st year statistics course from 1987 titled "Principles of Statistics". The course is aimed at students in the Mathematical Sciences and Technology whereas the existing "Introductory Statistics" course, taught by the Keller Plan method, will continue to concentrate on the steadily growing ranks of Business Studies students. The new course will be taught by a lecture and may well make use of the STATLAB package developed by Doug Stirling for the Apple MacIntosh (the package is currently being tested on first year Veterinary students in their "Introductory Biometrics" course).

Howard also enclosed the following item which appeared in the Massey Campus newsletter Muu...

### MASSEY WINS AGAIN, AGAIN

Since 1980 the NZ Mathematical Society has run a nationwide competition every second year for the 'best-written' predoctoral thesis (usually Masters level) in the mathematical sciences. Cash prizes have been provided by IBM or Burroughs Ltd. The 1986 competition was won by Massey's Shane Wood for a statistics thesis entitled 'The Bayesian Approach to Applications', supervised by Dr Howard Edwards of the Department of Mathematics and Statistics at Massey.

This is the fourth time the competition has been held, and it has been won three times by Massey, the previous winners being:

1980: Neville Jeans (Massey)  
1982: David Johnston (Massey)  
1984: J. W. Davys (Waikato)

In 1984 Massey did not submit an entry. 'It seems only right', says a Maths Department spokesman, 'that we should step aside from time-to-time to give the others a chance'.



## NEWS FROM ISOR/VUW

David Vere-Jones was no sooner back from overseas leave, mainly in China and the UK, when he disappeared off to Australia for 10 days. Certain ISOR staff are considering the possibility of fitting him out with a ball and chain, however they have to catch him first.

Tapas Sarkar has just left on leave for London and India and will return early next year. What with sabbaticals and vacant lectureships ISOR/Mathematical Statistics staff are currently feeling the pinch.

## NEWS FROM AMD/DSIR

Jocelyn Dale (AMD, Mt Albert) has spent April in Australia with DMS/CSIRO and a report on her travels appears elsewhere in this newsletter. The Mt Albert substation are taking delivery of their very own ATT 3B2 and are queuing up to try 'S'. Dr Carolyn Fisk is joining the Mt Albert OR group in August and Dr Emlyn Williams (DMS/CSIRO, Canberra) is scheduled to visit Mt Albert in late November.

Dick Sedcole (AMD, Palmerston North) has left the beleaguered Public Service for academe, viz, Lincoln College.

## PRESIDENT'S COLUMN

The Executive Committee met on Thursday, 3rd July. Our main objective was to discuss, in general terms, the various issues that had been raised at the annual conference and the AGM in particular.

Education was high on our list together with the setting up of an Education Committee whose brief (as per the AGM) will encompass the entire range of statistical education activities. However the current problems that the secondary school system is having with teaching the 7th form Mathematics with Statistics course means that this area must have top priority. It was felt that input to syllabus committees etc. was an important objective and some progress has already been made in this direction. I paid a brief visit to Mr Peter Brice, Acting Secretary, Schools and Development, with the Department of Education, to tell him of the Association's concerns about

statistical education in general and the 7th form Maths with Stats course in particular. I also advised him, along the lines discussed at the AGM, that we were willing to act as a resource and provide (limited) assistance for school teachers teaching this course (and others). He was very pleased to hear this and promised to involve us in such matters including the relevant syllabus committees etc.

One constructive way to proceed in the short term would be to establish links between the local mathematics associations (there are approximately 18 of these) and groups of local members interested in providing assistance. To facilitate this we will abstract lists of local statisticians who wish to be involved in this way from the Membership Survey which you should have received with this Newsletter. Once such groups are identified we would like them to meet and appoint a coordinator whose task would be to facilitate links between the local mathematics associations plus maths

teachers and the local group of Association members. The local coordinator would also coordinate with the Association's Education Committee.

In addition to coordinating these activities it was suggested that the Education Committee act and be widely publicised as a central and visible point of contact for the NZSA on all matters concerning statistical education. Thus, isolated teachers could, in the first instance, contact the Committee about their problems. Other suggestions were that the Committee might consider building a stock of teaching materials which could be hired out or sold to schools. These might include books (such as our case book), explanatory pamphlets, book lists, interesting data sets, ideas for projects, video cassette 'enrichment' material, computer programs/packages etc. plus other related material such as a careers booklet plus other vocational information. If you have any other ideas then please write and tell us. I and the Executive Committee welcome further comment on these and any other matters of concern to the Association.

Turning to other matters, Bryan Manly has been instrumental in organising major support for ICOTS III from Otago University which is willing to provide a large part of the 'up front' money needed together with organisational assistance. He has also obtained letters of support from the Mayor of Dunedin and the Vice Chancellor of Otago University. However further support will be necessary, particularly financial. If any of you have any brilliant ideas then please send them to Bryan Manly or me (a chocolate fish will be awarded for the best idea).

The Membership survey is timely and I urge you to complete and return this as soon as possible. It will, I am sure, be a valuable data base important to many of the activities of the Association.

Garry Dickinson was duly coopted onto the Executive Committee. He will not only be a valuable asset (to me especially) because of his experience as past president of the Association, but also as a link between the Executive Committee and the Survey Appraisals and Public Questions Committee. The latter will be meeting soon. Because of pressure of work and his many other commitments, Len Cook has decided that it would be best if he were on just one Association committee. Since Len is particularly keen to play a part in the SAPQC it was felt that his undoubted strengths and enthusiasms were best channelled there. Paul Maxwell was appointed as the Association's auditor; we are grateful for his contribution to the affairs of the Association. Thanks to Richard Penny and his colleagues the only discussion about next year's conference centred around where we could find more Richard Pennys to advance the Association's causes on other fronts.

A motion was unanimously passed at the Executive meeting thanking John Reynolds for his sterling work as Editor of both the *Statistician* and the *Newsletter*. John would like to retire as editor of the *Newsletter* at the end of this year and as editor of the *Statistician* at the end of next year. He feels that the editorial workload involved in producing both the *Statistician* and the *Newsletter* is now such that more than one individual should be involved. He suggests that there be two editors, one for the *Statistician* and one for the *Newsletter*, with supporting panels of Associate Editors. Such an arrangement would certainly help to keep the workload down. In the meantime it has been suggested that we set up a Publications Committee whose brief would span not only the *Statistician* and the *Newsletter*, but also the case book and other publications. Members



interested in joining such a committee and/or taking over one or other of the current editorial functions should contact John or me.

The Executive Committee would like to involve more of the members (especially those outside Wellington) in the affairs of the Association. If you feel particularly enthusiastic about any of the Association's activities or an activity you would like to see us promote then please put your ideas on paper and send them to me or to the editor for inclusion in the *Newsletter*. You can also help by providing such information on the Membership Survey Questionnaire Form.

*Peter Thomson*

#### DEADLINE FOR NEXT ISSUE

The deadline for submitted material for the September, 1986 issue of this newsletter is **August 29**.

Please send all notices of seminars, news items, letters-to-the-editor, etc. to...

John Reynolds,  
Newsletter Editor,  
AMD/DSIR  
P.O. Box 1335  
Wellington.

The deadline for "News and Announcements" for the November, 1986 issue of *The New Zealand Statistician* is **November 3**.

#### Second International Tampere Conference in Statistics

To be held in Tampere, Finland from June 1-4, 1987. For further information contact Conference Secretary, C123, Dept. of Math. Sci., Univ. of Tampere, P.O. Box 607, SF-33101 Tampere, Finland.

#### American Statistical Association/Biometric Society

The 1987 joint meeting is to be held August 17-20, in San Francisco, California. For further information write to ASA, 806 15th Street, N.W., Washington DC, 20005, USA.

#### Fifth International Symposium on Data Analysis and Informatics

To be held in Versailles, France from September 29 to October 2, 1987. Sponsors include ISI and RSS and the Organising Committee includes: J. M. Chambers (Bell Labs, USA), J. C. Gower (Rothamsted, UK) and R. R. Sokal (SUNY, USA). For a copy of the First Announcement write to:

INRIA  
Fifth Int. Symp. Data Analysis and Informatics  
Service des Relations Exterieurs  
Domaine de Voluceau - ROCQUENCOURT -  
B.P. 105  
78153 LE CHESNAY Cedex (FRANCE)

#### CORPORATE MEMBERS OF THE NEW ZEALAND STATISTICAL ASSOCIATION (Inc.)

The following organizations are Corporate Members of our Association. The Executive Committee wishes to thank these organizations for their support over the years and trusts that it will continue. Starred (★) organizations have been Corporate Members for ten years or more.

- ★ *A. C. Neilsen Pty Ltd*  
P.O. Box 2464, Wellington
- Accident Compensation Corporation*  
Private Bag, Wellington
- ★ *Applied Mathematics Division, DSIR,*  
P.O. Box 1335, Wellington
- ★ *Bank of New Zealand*  
P.O. Box 2392, Wellington
- ★ *Business and Economic Research Ltd*  
P.O. Box 10-277, Wellington
- ★ *Databank Systems Ltd*  
P.O. Box 3647, Wellington
- ★ *Department of Education*  
Private Bag, Wellington
- ★ *Department of Labour*  
Private Bag, Wellington
- Department of Social Welfare*  
Private Bag, Wellington
- ★ *Department of Statistics*  
Private Bag, Wellington
- ★ *Department of Trade and Industry*  
Private Bag, Wellington
- ★ *Geophysics Division, DSIR,*  
P.O. Box 1320, Wellington
- ★ *Hewlett Packard NZ Ltd*  
P.O. Box 9443, Wellington
- ★ *Housing Corporation of NZ*  
P.O. Box 5009, Wellington
- ★ *Market Research NZ Ltd*  
P.O. Box 11346, Wellington
- ★ *Ministry of Agriculture and Fisheries*  
P.O. Box 2298, Wellington
- New Zealand Wool Board*  
Private Bag, Wellington

#### OVERSEAS CONFERENCES

##### The First International Conference on Statistical Computing ICOSCO-I

To be held in Cesme, Izmir, Turkey from March 30 to April 2, 1987. Invited speakers to date include: E. Cinlar (USA), E. J. Dudewicz (USA), A. S. Hedayat (USA) and R. Sibson (UK). For a copy of the first announcement write to:

Prof. A. Ozturk, Conference Secretary,  
First Int. Conf. on Statistical Computing,  
Ege Universitesi,  
Bilgisayar Arastirma ve Uygulama Merkezi,  
35100 Bornova,  
Izmir, TURKEY

##### Charter Centenary Conference of the Royal Statistical Society

To be held in Cambridge, UK, from April 8-10, 1987. For further information contact J. H. Blenkinsop, Exec. Secretary, Royal Statistical Society, 25 Enford Street, London W1H 2BH, UK.

##### STATCOMP 87

The Statistical Computing Section of the Statistical Society of Australia will be holding a Statistical Computing conference in Melbourne during May of 1987. Possible themes for the conference include: Graphics, Algorithms for statistical computing, and, Using the IBM PC and the MacIntosh for statistical computing. It is anticipated that there will be invited speakers from overseas. For further information, contact Dr N. Weber, Dept. of Mathematical Statistics, University of Sydney, NSW 2006, Australia.



- ★ NZ Coal Research Association  
P.O. Box 3041, Wellington
- ★ NZ Electricity Department  
Private Bag, Wellington
- ★ NZ Meat and Wool Board Economic Service  
P.O. Box 5179, Wellington
- ★ NZ Steel Ltd  
Private Bag, Auckland
- ★ Post Office  
P.O.H.Q., Wellington
- ★ Reserve Bank of New Zealand  
P.O. Box 2099, Wellington
- ★ SAS Institute (NZ) Ltd  
P.O. Box 10-109, Wellington
- ★ Statistical Society of Australia  
C/o Stats Dept. ANU,  
Box 4, Canberra
- ★ State Insurance Office  
P.O. Box 5037, Wellington
- ★ Survey Research-Research International Ltd  
P.O. Box 30441, Lower Hutt
- ★ Westpac Banking Corporation  
P.O. Box 691, Wellington
- ★ Wool Research Organization of NZ  
Private Bag, Christchurch

## LET'S HEAR IT FOR CONTROLLED MAGICAL THINKING

*Metro* magazine, or is it *New Outlook*, have a column cruelly labelled 'Pseud's Corner' in which atrocious poems from *The Listener*, and so on, are reprinted for a snigger or two. The following, if it weren't so intriguing (who isn't intrigued by a quantitative definition of chaos and randomness multipliers), might just about qualify for it...

"It actually was Efron who started Diaconis thinking about what it really means to be random. Efron gave Diaconis an example. Suppose a wall is painted with 10-foot-wide black and white stripes. If you throw a dart at the wall, you can decide ahead of time whether it will land on a black or a white stripe. There is nothing random about it. Now suppose you start shrinking the stripes until they are only 1/10 inch wide. You would say that it is uncertain—random—whether the dart will land on a black stripe or a white one. 'Brad gave me that example and then asked "Can you make a theory of that?"' Diaconis recalls. 'It was a key image and a crucial question.'"

Kolata, G. (1986) What does it mean to be random? *Science*, 231, 1068-1070.

## SOME USER-PAYS ASPECTS OF THE FIDUCIAL ARGUMENT

"...and whenever I refer to Dr Deming I recall a conversation in which he and I were discussing the disputes on the foundations of statistical theory between Neyman and Pearson, who laid great stress on the behaviour of statistical methods in repeated sampling, and Fisher, who emphasised the importance of conditioning inferences on the specific features of the single sample to hand. Deming said, with a mischievous twinkle in his eye: 'My client's not interested in repeated sampling. He can scarcely afford to pay for the one he's got!'"

G. A. Barnard (1986) Rescuing our manufacturing industry—some of the statistical problems. *The Statistician* 35, 3-16.

## MOVING?

Members are requested to notify the Treasurer, NZSA, P.O. Box 1731, Wellington of any change of address in order that newsletters and journals (and subscription reminders) can continue to be despatched to them.



The New Zealand Statistical Association (Inc.)

Survey of Members

Preamble

The Registrar of Incorporated Societies requires us to keep up-to-date records on our members occupations. Your executive committee thought that an update exercise might also be an opportune time to collect some information from members on the sort of association they would like to belong to.

The committee also plans to publish a Directory of Members. The directory will contain members' occupations, contact addresses, application areas, and statistical skills. It is hoped that this information will prove to be useful to fellow members.

Name: -----  
Contact Address: -----  
-----  
-----  
-----  
Contact Telephone Number: -----  
Occupation: -----

A Application Areas and Skills

The executive committee is keen to foster interest groups or sections which reflect members' areas of application and/or employment. Satellite conferences, like the Medical Statistics Seminars, may be held in these application areas. The committee also wants to establish a directory of members and their statistical skills.

Areas of Application

Tick appropriate boxes...

Biometrics .. .. .	<input type="checkbox"/>
Business and Economic Statistics .. .. .	<input type="checkbox"/>
Industrial Statistics .. .. .	<input type="checkbox"/>
Social Statistics .. .. .	<input type="checkbox"/>
Statistical Education .. .. .	<input type="checkbox"/>
Survey and Census Methods .. .. .	<input type="checkbox"/>
Medical and Public Health Statistics .. .. .	<input type="checkbox"/>
Others (Specify) .. .. .	<input type="checkbox"/>







The association's newsletter is in content (Tick appropriate box)...  
 Too technical  About right  Not technical enough   
 and in appearance (Tick appropriate box)...  
 In need of upgrading  About right  In need of downgrading

Comments: \_\_\_\_\_  
 \_\_\_\_\_

The association should be initiating the publication of ...

	Strongly Support	Support	Do Not Support	No Opinion
Secondary School Textbooks .. ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tertiary level Textbooks .. ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Careers Booklets .. ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casebooks for Practising Statisticians..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Educational Material for lay people ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Statistical Software .. ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others (Specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D Statistics in the Secondary Schools

The executive committee wishes to encourage association members to provide limited assistance to secondary schools which teach the new seventh form "Maths with Stats" course. Assistance might take the form of "enrichment" talks to staff and/or students, suggestions for and guidance with practical projects, or, just acting as a mentor to staff at a secondary school.

(Strike out the appropriate word)

I am [ available / unavailable ] to provide limited assistance with seventh form "Maths with Stats" to a local secondary school

E Public Profile

Comment on whether the association should play a more active role in statistical matters affecting the community. If so how?

-----  
 -----  
 -----



**F Any Further Comments?** (about, say, the Survey Appraisals and Public Questions Committee, other possible standing committees, etc.)

.....  
.....  
.....  
.....

**G Comments about the Questionnaire**

This survey exercise may be repeated every two or three years. Do you have any comments about the content and design of the questionnaire?

.....  
.....

**H Instructions**

Thanks for your cooperation. Now fold the questionnaire in such a way that the return address is visible, place in the window envelope provided and drop in a letter box as soon as possible.

Freepost No. 676  
New Zealand Statistical Association (Inc.)  
P.O. Box 1731  
Wellington  
New Zealand