THE NEW ZEALAND MATHEMATICAL SOCIETY

NEWSLETTER

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THE NEW ZEALAND MATHEMATICAL SOCIETY

The New Zealand Mathematical Society was established in 1974 to promote the development, application and dissemination of mathematical knowledge within New Zealand and to assist mathematicians in New Zealand to maintain effective co-operation with one another and with colleagues and mathematical societies in other countries.

Publications

The *Newsletter* which has rapidly grown to a publication of about twenty pages, comes out three times a year. It publicizes the business of the society and gives details of activities we sponsor. It reports conferences, news of mathematical organisations and visiting mathematicians and features studies of employment and other matters effecting mathematicians in New Zealand. The Society has produced a brochure *Employment Opportunities in Mathematics* which is intended to be repeated at intervals. It is a detailed survey of jobs in mathematics within New Zealand, with advice about seeking jobs, an outline of job prospects, present commentaries of people using mathematics in their job and other career suggestions. Our yearly compilation *Post-graduate Topics in Mathematics* is a list of research topics and supervisors available in New Zealand universities. It is for the information and guidance of students of mathematical subjects considered for post-graduate work. Other sporadic publications which are planned include a brochure on mathematical education and texts of lectures and conference abstracts.

Other Activities

The Society has an essay competition for advanced students. We sponsor a special lecture at each mathematical colloquium. We also have a visiting lecturer scheme and we promote regional meetings on specialized mathematical subjects.

Membership

Members are able to receive the New Zealand Mathematical Chronicle at a reduced rate and to become reciprocal members of a number of overseas societies including the Australian, South East Asian, London and Edinburgh Mathematical Societies and the Canadian Congress. Membership fees are due on the first of April each year. The full subscription is $7.00 and the student rate is $1.00. Applications for membership should be made to the Treasurer (Dr I.L. Reilly, Department of Mathematics, University of Auckland).

OPENING ADDRESS - 1st AUSTRALASIAN MATHEMATICS CONVENTION

Hon. L.W. Gandar
Minister of Education

Thank you for inviting me to speak to you at this, the first Australasian Mathematics Convention.

I would like to congratulate the mathematical societies and associations concerned for organising this gathering. At about this time last year I addressed the twelfth New Zealand mathematics colloquium in Wellington, I commented then on the effective way in which the New Zealand Mathematics Society was promoting the development, application and dissemination of mathematical knowledge within New Zealand. I was also impressed with the way the Society was assisting mathematicians in New Zealand to maintain effective cooperation with one another and with mathematicians and mathematical societies in other countries. This convention is clearly furthering this cooperation and I commend the mathematics community for their initiative.

Earlier this year, New Zealand was host for the first time to the conference of Australasian Ministers of Education. It was clear from this conference, and from previous ones held in Australia, that the problems in education, and the developments that are taking place, are similar in our two countries. In spite of this, or perhaps because of it, we have much to learn from each other. The interchange of ideas and experiences which take place at such conferences provides an effective method for us to get mutual benefit from the lessons that have been learned. Given the similarities of our cultural backgrounds it is not surprising that New Zealand and Australia should have much common ground in education generally.

Because of the universality of mathematics the issues cross cultural divisions. A small group of officers within my department is at present engaged in gathering information about mathematics education from around fifteen countries as part of the second International Association for the Evaluation of Educational Achievement Mathematics Study. It is apparent that the kinds of pressures and questionings that are a current feature of mathematics education in New Zealand are manifesting themselves in nearly all of the countries that have been surveyed. And it is interesting to note that current school mathematics syllabuses have much in common from country to country. In fact the only country of the fifteen so far surveyed that contemplates significant change in its syllabuses in the next ten years is Hungary, where the change is to dispense with their traditional syllabuses and introduce "New Mathematics". They are at present introducing the changes progressively through the school system. The existence of this tremendous area of common ground in mathematics education points to the desirability of increased communication at an international level. It also indicates the need for thorough research which can help to determine the directions mathematics education should take and the most effective means of achieving common goals.

Those of you who are visitors to New Zealand may have had time to observe the close and profitable relationships between teachers of mathematics in the different educational institutions in this country. The tradition for the present very good relationships was established when leading figures in mathematics in the universities were very actively involved in the formation and running of the early mathematical associations. University

mathematicians have continued to play an important role in the associations over the years. And since the emergence of polytechnics, community colleges and technical institutes, teachers from these institutions have begun to play an equally valuable part. There is no doubt that the contribution made to education in New Zealand by the mathematical associations has been a significant one for many years. The admixture of expertise in these groups is such that I know departmental officers working in mathematics education value their opinions very highly. Also directly contributing to the mathematical enrichment of our shcool students have been a long list of activities run by the association. These have included competitions and games evenings, lectures to senior students, mathematics olympiads, an annual mathematics camp for students in Wellington, the sponsorship of students to Australian mathematics camps, mathematics exhibitions and open days for prospective students at the universities and technical institutes.

As well as this impressive list the development of "Local Certificate" schemes in school mathematics has largely been due to the associations. I am very glad to say that increasingly teachers from all of the educational institutions are being cooperatively involved in Department of Education policy-making courses and working parties concerned with mathematics. The days when one level of education can or should function in isolation from other levels is long past.

I know that attending this convention there are mathematicians from industry, and from various government departments, the prime tasks of many of you is undoubtedly to teach mathematics. Successful accomplishment of this task demands not only a knowledge of mathematics but an understanding of students, as well as proficiency in teaching practice. The relative importance of these three factors may vary from level to level of the education system, but at no level can a teacher afford to neglect any one of them.

I mentioned earlier the need for research in education. Traditionally, our universities have performed a dual teaching/research role, and I suppose for most mathematicians research has meant research in mathematics. But I have been particularly pleased to note the increasing amount of research being carried out by mathematicians in the universities into the teaching and learning of mathematics at university level. There is much stimulating and challenging work to be done in this area.

As well as proficiency in teaching, an understanding of students and knowledge of mathematics, it is important in our complex society for teachers to know and appreciate the uses to which mathematics is being put. Students need to be educated in such a way that not only will they develop positive attitudes towards the subject, but also so that they have the necessary techniques to be able to apply what they have learned and to be able to extend their own knowledge.

It is essential that teachers from all levels of education communicate with each other. But it is just as important that teachers are in communication with, and sensitive to, the feelings and opinions about mathematics education in society at large. As we all know

communication should be a two-way process. Educators have a duty to explain what they aim to do, how they are going about doing it, and why particular methods have been chosen. At the same time they must find out from the "mathematics consumers" in society what is expected of the respective institutions. Certainly information from the prospective consumers may sometimes be conflicting and ill-defined, but on the other hand significant patterns may emerge and cognisance must be taken of these.

You will be aware that the direct utility of mathematics is not necessarily the over-riding reason for teaching the subject to all students. Those who try to defend the teaching of mathematics solely on this basis often find themselves on shaky ground. If teachers are to serve students well in their teaching of mathematics they must have a thorough humanistic, encompassing view of the discipline.

While mathematics is indeed taught because it is useful, we must interpret the word "useful" in its very broadest sense. It is true that the majority of those studying mathematics, even at university, are doing so because they wish to be able to apply the mathematics they are learning. And it has been a feature of recent subject developments that mathematics has a powerful application to an increasing number of fields. But the true nature of these kinds of application must be understood. The examples of "applications" that students are often given simply miss the point. They merely exercise the mechanical activity of substituting with formulae, or are conspicuously contrived.

The applied mathematics division of DSIR has recently assisted three NZ companies facing different distribution problems. The first company, a paint manufacturer, had to make a long - term decision on whether to extend its existing manufacturing facilities or to decentralise elsewhere (at greater capital expense) to reduce its freight costs. A mixed integer programming model was built to investigate various plant location alternatives and their associated capital, operating and freight costs. Different freight rates and sales forecasts were used to test the sensitivity of the results. The study has already led to a short-term reorganisation of production, and the company is currently analysing the better alternatives found in greater detail.

The second company, a dairy cooperative, has a perpetual short-term production-distribution problem. With the help of the Applied Mathematics Division, it has developed a sophisticated linear programming model which finds the most profitable daily production schedule of powder, casein, cheese and butter products. The computer results show company management how to allocate the available milk among the factories, and where to send the by-products for further processing. The model is also used to evaluate short production runs.

The third company, involved in recycling of used materials, made use of a simple mathematical distribution model to make savings of the order of ten percent in its railways freight bill.

The Applied Mathematics Division has worked with the Wellington Regional Planning Authority

on an analysis of trends in the region's public transport. Trends in location of population and employment and urban transport useage were investigated. Costs of car travel and public transport were analysed, as was parking availability and public transport route coverage. The results provide useful basic data for public transport policy making, and have been published by the planning authority. Future work will investigate alternative policies for the region's urban transport.

A mathematical model of the Wairakei geothermal field, developed several years ago, has been refined to give a more accurate match of the predicted pressure changes in the field with the observed responses to continued exploitation. The model follows the past pressure rundown and can be used to predict the effect of changes that could be tried to sustain power production levels. Experience gained from the work on Wairakei has been the basis for recently developed models of the Broadlands geothermal field and conceptual models of other fields (Tauhara, Kawerau, Ngawha).

A numerical method has been developed at Applied Mathematics Division to solve the equations of unsteady flow of natural gas in pipeline networks. For example, given the hourly pressures or input to the pipeline system at Kapuni gas field, and the hourly demand for gas at various consumer centres such as Wanganui, Palmerston North and Wellington, the model calculates the pressure variations with time at these various load centres. The programme has been used by one large distribution authority to model the network gas-flow history over a week, and to establish the maximum capacity of the pipeline under typical loads. As the programme can be used on a minicomputer it could readily be made accessible to local authorities.

The department of justice has recently completed, and will shortly publish, a study of the remanding process as it is practised in a Magistrate's Court. Observations were made in court in an effort to answer two questions:
What distinguishes people remanded on bail from those remanded in custody, and once a remand decision has been made, does it appear to have any subsequent prejudicial effect on plea, conviction or sentence? Factors able to be recorded and thought likely to influence the remand decision included the defendant's offence, his race, representation, and legal status at the time of the remand, and his previous remand history.
Applied Mathematics Division was called in to analyse the data collected and succeeded in identifying some of the factors apparently influencing the magistrate. The techniques used are applicable to data arising from a wide range of social science investigations and it is anticipated that the experience gained in using them will be of value in the future.

Those of you who are teachers will know that mathematics students who derive sufficient motivation from the discipline itself are rare indeed. Most need the enrichment of <u>experiencing</u> the ways in which the mathematical learning they have acquired can be used or is related to the world around them. For many this is a vehicle for enhancing their knowledge of, and interest in, mathematics.

The work being done in our schools and at tertiary education level is of a high standard but we must constantly strive to find and use teaching methods which will lead to more effective learning. As society changes, so the mathematical needs of society change and increase. So too do the characteristics of students and their relative maturity change. Teaching institutions, and the methods used in those institutions, must therefore be under regular review. We must be prepared to respond to change and provide for it.

It is then international conventions such as this that provide an ideal forum for teachers of mathematics, research mathematicians and users of mathematics. They can mix with each other, swap information, float ideas and have findings and methods scrutinised and questioned. My department therefore welcomed the opportunity to provide assistance for some teachers to attend this convention. We are all well aware that while the benefits that will accrue from their doing so are not easily measured, they will nevertheless be reflected in the work of our schools.

I know you will find the Convention enjoyable and rewarding. This will be to the credit of the organisers who have spent time and energy in arranging these meetings. I wish you a successful Convention and I have much pleasure in declaring the first Australasian Mathematical Convention officially open.

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VACANCIES

UNIVERSITY OF CANTERBURY

Applications are invited for the position of LECTURER IN MATHEMATICS. Applicants should have qualifications and experience in Numerical Analysis.

The salary for Lecturers is on a scale from $10,585 to $12,969 per annum.

Particulars, including information on travel and removal allowances, study leave, housing and superannuation, may be obtained from the undersigned or from registrars of all other universities in New Zealand.

Applications close on 15 September 1978 with the Registrar, University of Canterbury, Private Bag, Christchurch, New Zealand.

VICTORIA UNIVERSITY OF WELLINGTON

LECTURESHIP IN MATHEMATICS(STATISTICS)

A Lectureship in statistics within the Mathematics Department is currently being advertised. The appointee can take up the appointment any time from 1st February 1979. Applications close on 31st October 1978. Further details can be obtained from either Professor David Vere-Jones of the Chairman of the Mathematics Department, address:

Mathematics Department
Victoria University of Wellington
Private Bag
WELLINGTON

D S I R - APPLIED MATHEMATICS DIVISION

STATISTICIAN AND OPERATIONAL RESEARCH ANALYST

The Applied Mathematics Division of DSIR has vacancies in its Wellington headquarters for a mathematical statistician and an operational research analyst.

The statistics section has a staff of 11 and does servicing work and projects for DSIR divisions, research associations, Government departments, industry, local bodies, Universities etc. The suffessful applicant would be expected, in addition to doing his share of consulting, to engage in supporting research in mathematical statistics. Qualifications desired: honours degree and/or PhD with statistics. Some computing experience is desirable.

The Operational Research section has a staff of 6 and carries out consulting work for Government departments, local government, and private industry. Current projects are in the areas of transport, distribution, agricultural processing, and energy. Further projects are likely in these areas. Qualifications desired: honours degree and/or PhD in applied mathematics, computing, operational research or systems engineering; ability at oral and written communication, and a desire to work with people.

Starting salary would be up to $15,324 depending on qualifications and experience, but an exceptionally well qualified applicant could be appointed at a higher level. To help in assessing prospects: an applicant with a first class honours degree and PhD but no experience would be appointed at $9000-9500; one with 5 years experience at around $13,000. Promotion is by merit, and the maximum for scientists is $22,178.

For further details write to the Director of Applied Mathematics Division, Dr H R Thomson, at Box 1335, Wellington.

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"Recreation is the highest form of applied mathematics"
(Anon.)

* * * *

EXTRACTS FROM THE MINUTES OF THE SEVENTH COUNCIL MEETING

The seventh Council Meeting was held in the Mathematics Seminar Room 1 at the University of Canterbury on Sunday 14th May 1978 beginning at 11.30am, breaking for lunch at 12.30pm, resuming at 1.30pm and finishing at 6.15pm.

EDUCATION SUBCOMMITTEE

Dr Broughan reported that they had met many times. He wished to step down as convenor and indicated that Mr Turner was willing.

RESOLVED: That Mr J. Turner become Convenor of the Education Sub-Committee.

INTERNATIONAL UNION OF THEORETICAL AND APPLIED MECHANICS

RESOLVED: That Dr G Wake be responsible for preparing a case for New Zealand's application for membership of IUTAM, to be submitted to Council for transmission to the Royal Society. He was directed to consult with other interested parties.

EXCHANGE WITH THE AUSTRALIAN MATHEMATICAL SOCIETY

RESOLVED: That Council extend an invitation to the Australian Mathematical Society to have an observer at any future Council meeting.

AUSTRALASIAN MATHEMATICAL CONVENTION

(a) REPORT

Professor Petersen reported. Enrolments were 464 of which about 150 were Australian. The small (~20) contingent of Australian teachers was the only figure below expectations. Finance from outside sources had been disappointing.

(b) N.Z.M.S. LECTURER 1978

The N.Z.M.S. Lecturer at the Convention was to be Professor P.A.P. Moran of A.N.U.

(c) PUBLICATION OF EDUCATION NOTES

This is in hand. Mr Gale of the Associations, Prof. Vere-Jones and Mr G. Knight have been in communication. The intention is to sell a booklet prepared by the Auckland Mathematical Association.

(d) PUBLICATION OF MATHEMATICAL PAPERS

Dr Joyce will ask the Colloquium A.G.M. for permission to approach speakers for abstracts for publication in the Newsletter.

(e) ROLE OF ASSOCIATIONS

Professor Petersen reported on the rôle of the Mathematical Associations in the organizing of the Convention which he considered divergent from the Universities'. Dr Wake noted that cooperation has been good at Victoria last year and thought that the level of the teachers' involvement had been about right.

THE MATHEMATICAL ASSOCIATIONS

The Associations' Coordinating Committee had called a meeting for 7pm this day to prepare for the proposed inaugural meeting of a national body on Tuesday. Whilst it was recognized that the proposed body would compete with us for members, Council gave it its full support.

RESOLVED: That the N.Z.M.S. communicate to the preparatory meeting and to the inaugural meeting of the proposed N.Z. Association of Mathematics Teachers the message that we welcome the formation of a national body and look forward to full cooperation with the organization.

RESOLVED: That we communicate to the meeting of the N.Z.A.M.T. to the effect that we welcome future contact with them. We suggest three possible options for facilitating this contact:

exchange of agendas of Council meetings;
exchange of observers at Council meetings;
exchange of Council members.

RESOLVED: That Professor Petersen and Dr Broughan represent the Society at the comming meeting and communicate these resolutions.

RELATIONS WITH SUBSEQUENT COLLOQUIA

RESOLVED: That the N.Z.M.S. Council affirms its continuing support for the Mathematics Colloquia and offers its good offices to the organizers of Colloquia to assist in as many ways as possible. In particular, the N.Z.M.S. offers to store and service the Colloquium archives and to provide a continuing secretariat to promote continuity and greater forward planning.

PUBLICATIONS

(a) NEWSLETTER

Dr Joyce reported on moves to improve the style. The Society is willing to pay both printing and postal charges (which we fully accept, recognizing the load which the Massey Mathematics Department carries in providing secretarial assistance to the Editor). The question of service to overseas members was raised.

RESOLVED: That overseas members continue to get air-mail postings of the Newsletter.
Dr Joyce indicated his wish to resign the Editorship.

MOTION: That Council expresses its gratitude to Dr Joyce for his service to the Society as Editor.

CARRIED with Acclamation

(b) EMPLOYMENT BROCHURE

Dr Wake reported that the bill for printing was considerably more than was budgetted. The reason was that several hundred extra were done, the intention being to avoid a printing this year. Heads of departments should be invited to contribute to the costs of printing the next Brochure.

RESOLVED: That Dr Ray Littler take over the convenorship of the Employment Brochure committee, with Mr John Turner and others helping.

RESOLVED: That Council thanks Drs Wake and Davies for preparing the Employment Brochures.

(c) POSTGRADUATE TOPICS

This did not eventuate last year.

RESOLVED: That the Publications Subcommittee become responsible for coordinating the various publications of the Society; in particular the Post-graduate topics, mathematical theses and mathematics reports.

(d) REPORT OF EDITORIAL COMMITTEE

The report from Prof. Vere-Jones was received.

RESOLVED: That a publication fund be set up, with an initial balance of $200.

RESOLVED: That the Editorial Subcommitte be empowered to co-opt extra members.

RESOLVED: That Dr Broughan be made the Convenor of the Editorial Sub-Committee.

RESOLVED: That Professor Vere-Jones be thanked for his contribution to the Editorial Sub-Committee as convenor and be asked to stay on as a member.

(e) BULK RATE

RESOLVED: That the scheme lapse through lack of interest.

ROYAL SOCIETY OF NEW ZEALAND

(a) MEMBER BODIES REPRESENTATIVE

Dr R Davies reported. An up-to-date membership list should be sent to the Royal Society. A science programme is to begin on television in July and mathematical contributions are sought. The Science Centre is open and the Royal Society library has moved there. Copies of N.Z.M.S. publications should be lodged in it. Member Body affiliation fees have been raised.

(b) ANNUAL REPORT OF N.Z.M.S. to R.S.N.Z.

This was agreed to, though a small error in the membership figure quoted was noted.

(c) ANZAAS 1979

N.Z.M.S. offers publicity via the Newsletter for the mathematical programme but regrets that it cannot offer any financial assistance.

RESOLVED: That the President and Secretary be empowered to forward suggestions to Professor Seber, on behalf of the Society, for the position of Secretarial President of the Mathematics section.

(d) JAPAN

The difficulties of improving relations between the Royal Society of N.Z. and Japanese Societies were re-iterated.

(e) ROYAL SOCIETY NOMINATIONS

RESOLVED: That the Society seek suitable nominations for Fellowship and document cases. There were 2 vacancies on the National Committee for Mathematics.

RESOLVED: That Drs Joyce and Wilson seek the consent of Mr Gordon Knight and Professor Brian Woods to nomination.

[Secretarial note:These 2 afore-said are now incumbent! The 1978-9 National Committee for Mathematics is therefore

Professor J A Kalman (Convenor)
Dr R B Davies
Mr G H Knight
Mr S Kusmicich
Dr F T M Schroder
Professor B A Woods]

RESOLVED: That the Secretary and Member Bodies Representative take responsibility for informing members (via the Newsletter) of awards and prizes and vacancies on committees of the Royal Society and for coordinating nominations.

(f) RELATIONS WITH THE NATIONAL COMMITTEE FOR MATHEMATICS

Professor Lorimer had written, asking that N.Z.M.S. seek more control over the body. It was pointed out that the National Committee represented the whole of Mathematics in New Zealand and not just our Society.

RESOLVED: That the Society clarify our relationship with the National Committee and publish information on its proceedings.

INTERNATIONAL MATHEMATICAL UNION MEETING IN HELSINKI

(a) OFFICIAL N.Z. DELEGATE

The National Committee had nominated Dr Wake. He asked that the meeting agenda be publicized so that members could forward to him suggestions regarding the business.

(b) REPRESENTATIONS TO THE ROYAL SOCIETY FOR MORE GENERAL SUPPORT

The policy of the Royal Society is to try to give partial travel support to one official delegate to the business meeting of such international organizations, as the I.M.U. Whilst general satisfaction was expressed over the growing extent of this support, there was dissatisfaction that the other 5-6 mathematicians going from N.Z. (many being on leave in Europe at the time and needing only a $200-$300 extra assistance) could not be helped. Dr Reilly had obtained a statement from the British Royal Society on their support for the meeting, which comprised giving over $100 to about 100 British mathematicians and students. The view was that the Royal Society should seek more money from Government to enable it to fulfill its obligations.

RESOLVED: That Dr Reilly and the Incoming Vice President (Dr Wake) and the new Member Bodies Councillor take up with the Royal Society the matter of greater and more general support for N.Z. mathematicians to attend meetings of the I.M.U. (for which the Royal Society is the corresponding body).

RESOLVED: That the National Committee for Mathematics be asked that in future, when making nominations to official positions, they advertise well in advance and inform as wide a cross-section of the N.Z. mathematical community as possible.

CONSTITUTIONAL MATTERS

(a) TERM OF THE PRESIDENT

Professor Petersen reflected upon the advantages to continuity of a 2-year term. The idea fell upon stoney ground. The question of Council mid-term meetings was raised, it being generally recognized that the lack of one this last year had been a bad thing. One idea was for the Southern, Middle, and Northern members to hold Regional Council meetings with common agenda and circulated minutes.

RESOLVED: That regional meetings of Councillors be held before the end of year.

(b) CONSTITUTIONAL CHANGES

Situations which need treating are: (1) the vacancies that arise in Council at the A.G.M. if a Council member with time to serve gets elevated to Incoming Vice-President; (2) resignations from the Society should be in writing; (3) exchange of Council members with the N.Z.A.M.T.(4) having the financial year end at 31 December.

FOREIGN SOCIETIES

AMERICAN MATHEMATICAL SOCIETY

Now that their proposed changes in reciprocal membership have failed to eventuate, the way seems clear to proceed with our attempt to negotiate a reciprocal arrangement. Dr Joyce and Dr Broughan emphasised the need to be able to offer a journal to reciprocal members.

RESOLVED: That a sentence like "Members of the N.Z.M.S. receive the N.Z. Mathematical Chronicle at a reduced rate" be included in our publicity for reciprocal members.

I.M.U.

The Secretary drew attention to the advantages of having future international meetings under the auspices of the I.M.U.

MATHEMATICIANS IN DISTRESS

There have been requests from members that we attempt to assist mathematicians whose human rights are being infringed.

RESOLVED: That Council recommends that the A.G.M. appoint a committee on Human Rights of Mathematicians which will gather information and may make representations to the appropriate Governments through the President of the N.Z.M.S.

ACTIVITIES

(a) VISITING LECTURER

Dr Broughan was thanked for arranging Dr Grattan-Guiness' visit and for producing the accompanying abstracts of talks.

RESOLVED: That $224.90 be paid to meet the cost to the Society of the Visiting Lecturer 1978.

We should invite suggestions through the Newsletter for future visiting lecturers.

(b) ESSAY COMPETITION

RESOLVED: That Dr Wake take up the Essay Competition with Professor Malcolm, perhaps diverting its direction.

(c) REGIONAL MEETINGS

Reminder that money is offered to specialist regional meetings held in our name to subsidize tea.

(d) AUDIO-VISUAL

Dr Joyce is to consult with Mr Tee.

FINANCIAL

(a) TREASURER'S REPORT

The proposed budget was slightly amended to allow for $100 postage (mainly Newsletter) which hitherto has been borne by Massey. Dr Reilly advanced the idea of having the Society's financial year finish at 31 December to give the Treasurer more opportunity to get his books in order.

RESOLVED: That the proposed budget for 1978/79, as amended, be adopted.

RESOLVED: That $60 be paid to the Mathematics Coordinating Committee as our share in the travel expenses of their 1977 meeting.

Because the availability of Mr Emanuel or Mr Fairfield is undecided, the decision over the Auditor was left to the Treasurer.

(b) MEMBERSHIP

Membership at 28 April 1978 was 156 (3 honorary, 125 full, 20 student and 8 reciprocal).

(c) RECIPROCAL MEMBERSHIP

Dr Wake reported a generally poor response from business firms. 5 out of 28 circulars were returned, 4 declining but 1 (Burroughs) was promising.

RESOLVED: That we respond to Burroughs and invite them to assist in the production of the Employment Brochure.

ANNUAL GENERAL MEETING

(a) ANNUAL REPORT OF COUNCIL

Professor Petersen presented his intended report.

RESOLVED: That the President's report be accepted.

(b) ANNUAL STATEMENT OF ACCOUNTS

RESOLVED: That the Annual Statement of Accounts be received, for presentation at the Annual General Meeting.

(c) ELECTIONS

Nominations for the vacancies of Incoming Vice-President and 3 Council Members had to be in the Secretary's hands by Noon, 16th May.

GENERAL

(a) N.Z. ASSOCIATION OF SCIENTISTS

This organization has written asking for membership information and publicity. Dr Calvert has drawn our attention to the medals that they give.

RESOLVED: That the Newsletter publish information from the N.Z. Association of Scientists and that they be furnished with our membership list.

Dr Davies was asked to find out which members we have in common so that nominations for awards could be forwarded through them.

(b) WORLD DIRECTORY OF MATHEMATICIANS

RESOLVED: That this directory be brought to the attention of University departments and the Applied Mathematics Division.

(c) STEERING COMMITTEE IN MATHEMATICS

Professor Vere-Jones (Subject Convenor for Mathematics) has written suggesting that the Society could help their deliberations.

RESOLVED: That Professor Vere-Jones' letter be referred to the incoming Council.

It was suggested that the Society should advocate to the Vice-Chancellors' Committee, the holding of a Subject Conference (which is apparently possible every 3 years).

(d) SUMMER SCHOOLS

Dr Halford has written of the desirability of mounting Summer Schools in specialist topics and seeking our support.

RESOLVED: That Council supports the principle of Summer Schools (as outlined in Dr Halford's letter) and that we seek the opinion of the Society at its A.G.M.

The meeting closed by passing a motion of thanks to the outgoing officers, the precise wording of which was not recorded.

W Brent Wilson
Secretary

* * *

Some of us enjoy the numerical solution of differential equations. I do myself in moderation. (Sir Harold Jeffreys)

* * *

LOCAL NEWS

University of Auckland: Department of Mathematics

Visitors

Professor Ivor Francis, of the Department of Economic and Social Statistics, Cornell University, is spending the second term here.

Professor Graham Lord (analytical number theorist and actuary) and Mrs Lord (categorical functional analyst), New Zealanders now teaching at Laval University in Quebec, visited the Department in June.

Appointments

Keith Worsley has been appointed a Junior Lecturer. The post-doctoral fellowship for 1978/9 has been awarded to Mr J D Jarrat (ex-Otago), who is currently finishing his PhD (at Warwick) on mathematical crystallography.

Seminars

Dr Graham Lord (Laval) spoke on: "The Training of Actuaries at Laval University".

Professor A S B Holland (Calgary) gave a series of seminars on approximation theory: "Basic Fourier Series", Weierstrass' Theorems", "Jackson Theorems", "Order of Approximation" and "Saturation Problems".

Mr K Burrage (Auckland) spoke on "Zadunaisky Theory".

Mr K Worsley (Auckland) spoke on: "Automatic Interaction Detection".

Professor S R Searle (Cornell) spoke on: "A Survey of Methods of Estimating Variance Components" and "Analysis of Variance Components for Unequal-Subclass-Numbers Data".

Miss P Moss (Auckland) spoke on: "Butcher Series" and on "The Work of Wanner and Hairer" (jointly with Professor J C Butcher).

Dr A J Lee (Auckland) spoke on: "Closed Sequential Plans for Testing a Binomial Hypothesis".

Mr G J Tee (Auckland) gave a series of seminars on complexity of computation: "Powers and Polynomials", "Integer Arithmetic", "Functions of Two or More Parameters" and "The Fast Fourier Transform" (twice).

Dr J A John (Southampton) spoke on: "Outliers in Factorial Experiments".

Dr M R Osborne (ANU) spoke on: "Least Squares" and "Differential Equations".

Mr P Mullins (Auckland) spoke on: "Complex Arithmetic".

Professor J Hammersley (Oxford) spoke on: "Heavy Woollen Mathematics".

Professor E M de Jager (Amsterdam) spoke on: "Singular Perturbations of Hyperbolic Differential Equations".

Professor D G Watts (Kingston) spoke on: "Self-Modelling of CK Enzyme Release Due to Myocardial Infarction".

Professor A H Stone (Rochester) spoke on: "Borel and Analytic Sets".

Professor Dorothy Stone (Rochester) spoke on: "A Survey of Some Aspects of Measure Theory".

Dr D Gauld (Auckland) spoke on: "Topological Variations on the Theme 1= 0".

Dr I Reilly (Auckland) spoke on: "Some Aspects of Topological Groups-II".

Computer Studies

A lectureship in computer studies has been established and is being advertised. The lecturer will be attached (initially) to the Computational Mathematics Unit in the Department of Mathematics.

G J T

University of Auckland: Department of Theoretical and Applied Mechanics

Dr M C Forster has resigned in order to stay permanently in the United States. He joined the staff of this Department early in 1972 and with his previous twenty years' industrial experience made a valuable contribution to the Operations Research sector of the Department's work.

Mr J H Sims-Williams from the University of Bristol is to spend twelve months as a Visiting Lecturer in this Department. He comes from the Department of Engineering Mathematics which has recently introduced an engineering course which parallels closely the Engineering Science course in Auckland. The opportunity to exchange information on the two programmes should be valuable.

After spending some two years at Stanford University, Dr R N Horne returns to his alma mater to take up a Lectureship in this Department. With his experience in geothermal studies reinforced by his stay in California he will be a valuable member of the team headed by Dr M J O'Sullivan.

News has been received of the recent promotion of Dr E J List to a full professorship in Environmental Engineering at Caltech. Dr List was appointed to the staff of T A M in 1967 at the inception of the Engineering Science programme. With his drive and insight he made a lasting impression on this course in the three years he was with us.

C M S

* * *

The figure of 2.2 children per adult female was felt to be in some respects absurd, and a Royal Commission suggested that the middle classes be paid money to increase the average to a rounder and more convenient number. (Punch)

* * *

Massey University: Department of Mathematics & Statistics

Neville Jeans and Mark Hannagan have been appointed Demonstrators in the Department. Mark (ex Otago) is studying for his MSc.

Sam Choy received his PhD for a thesis entitled "One-and Two-Locus Inbreeding for Recurrent Selection and Overlapping Generations Selection Schemes". Neville Jeans gained his MSc and is currently working for his PhD in number theory.

Visitors

Professor S R Searle of the Biometrics Unit, Cornell University spent two days here in May.

Dr Hugh Morton of the School of Information Sciences, Canberra C A E stayed with us for a month in June. Dr Yoshi Ogata (Institute of Mathematical Statistics, Tokyo) and Dr Tetsuo Fujimagari (Kanazawa University) were two recent Japanese visitors specialising in asymptotic likelihood theory for stochastic processes, and in branching processes respectively.

Rationalization of the sequence of calculus courses at 200- and 300-levels has taken place. The 200-level Applied Differential Equations paper has been deleted, and there has been a redistribution of material between the 200-level Calculus course and the 300-level course, which has been retitled Calculus and Differential Equations.

Two new subject areas for the postgraduate Diploma in Social Sciences are available this year. The Dip Soc Sc(Mathematics) is essentially a six paper course to update and extend a candidate's knowledge and experience of modern mathematics. Prerequisities include two years of approved professional work (e.g. in a government department or in teaching) and three 200-level mathematics papers. The aim of the Dip Soc Sc(Operations Research) is to provide a candidate who has a background in linear algebra, calculus and statistical analysis with a one year course in OR. Four papers and a project are to be passed.

Recent seminars include

Dr D C Joyce - "Can Massey be New Zealand's Open University?"

Prof S R Searle - "Vec and Vech operators for matrices with some uses in Jacobians and multivariate statistics".

Dr Y Ogata - "Information theory and statistical model building".

Mr G H Knight - "Fruit salad algebra".

Dr T Fujimagari - "On the extinction time distribution of a branching process in varying environments".

Prof B I Hayman - "Vector differentiation".

Applied Mathematics Division, DSIR, Palmerston North

The number of staff in the Division is now 5.

Rob Fletcher has recenty resigned to take up an appointment as Statistician with the Dairy Research Institute in Palmerston North, replacing Ross Hughes who has departed overseas.

Manawatu Statistics Group

The Manawatu Statistics Group has continued to grow with a membership this year that includes many statisticians and users of statistics outside Massey and the DSIR. The following talks have been given:

Lester O'Brien - (Industrial Management and Engineering, Massey) - "There was this statistician and a manager, you see ...".

Hugh Morton - (Canberra C A E) - "Can you taste butter in your bickies?"

Stan Roberts - (AMD, Wellington) - "Illegitimate statistics".

All three talks were lively, entertaining and instructive, attracting sizeable and enthusiastic audiences. The last talk for the year will be given by Brian Murphy (National Research Bureau, Auckland) on political opinion polls.

Manawatu Mathematics Association

In its first year of operation, the Manawatu Mathematics Association opted for a programme which catered for, in the main, three sections of the Mathematics community.

Early in Term II, an evening was held for students of Mathematics at the Form Seven level, at which Dr Les Foulds of Massey University presented some ideas on puzzle/problem solving with the aid of matrices.

In July the Association ran its annual Mathematics Competitions, which for the first time this year included team competitions for Form 5, 6 and 7 students. This event was again well supported by schools in the immediate region.

In November this year the Association will hold its Annual General Meeting at the Massey University Staff Club. This meeting should operate under a heavy social bias with the added attraction of a guest speaker.

W D H

Victoria University of Wellington

Mr Bill Armstrong and Dr Sonja McKinlay, two of our statistics lecturers, are leaving later this year. Bill leaves in August in order to return to England, and Sonja is returning to Boston at the end of this year. Together with Mr John Maindonald's departure for DSIR (Auckland) last April, this has badly depleted the Statistics contingent at Victoria. Replacements are being sought (see elsewhere!)

Another staff member departed in June. Mr Roger Littlejohn who had been a temporary junior lecturer in statistics, left to pursue PhD studies, in probability and statistics, at ANU in Canberra.

Dr Rob Goldblatt and Ms Megan Clark both returned from leave in June. They were on leave in Oxford and Southampton respectively. The only overseas representative at the time of

writing is Dr John Harper (Cambridge, UK) who returns at the end of August (via a conference in Venezuela). Professor Terence Nonweiler and Dr Chris Grigson depart on leave in August for Britain/US and Adelaide respectively.

Professor David Vere-Jones and Dr Graeme Wake are attending overseas conferences in July and August respectively. David was in Canberra at a Stochastic Processes conference and Graeme is in Europe for the IMU meeting and congress.

Mr Yosihiko Ogata, our visiting statistics lecturer from Japan, was pleased to meet a New Zealand player of "GO" at Christchurch during May. He won, of course. He leaves for home in August, but hopes to have a 3 month stay at ANU on the way.

Dr Jock Hoe is reported to be having a very busy stay at the Foreign Languages Institute in Shanghai (1978-79). He hopes to make a brief visit to New Zealand during August. Jock has given us the names of some Chinese mathematicians to correspond with in connection with possible exchange of information between Chinese and New Zealand mathematicians.

The return of an ex-staff member, Mr Ross Renner to Wellington, after ten years in Suva (at USP) is welcome news. He is contributing to some of our statistics courses as a part-time lecturer in the third term, and is now employed by the Government Statistics Department.

Master and PhD degrees awarded so far this year are

Euan Smith	"The theory of multiearthquake locations by least squares and applications to groups of North Island New Zealand mantle earthquakes"	(PhD)
Yuri Fradkin	"Constructive Ordinals"	(MSc)
Oliver Druce	"The influence of reactant consumption on the critical conditions for thermal ignition"	(MSc)
Roger Littlejohn	"Brownian motion with repulsive polar drift: A model for insect dispersal"	(MSc)
Joseph Ha	"A parabolic propagation model for propagation of precursory signals through the subductal lithosphere"	(MSc)
Ian Westbrooke	"The ratio of P and S travel times as an indicator of velocity anomalies preceding large earthquakes"	(MSc)

Oliver is proceeding to Oxford for D Phil studies, Roger has gone to Canberra, (PhD), Ian has gone to Institute of Geophysics and Planetary Science, U C L A, (PhD) and Joseph is now a lecturer at the University of South Pacific. Dr Euan Smith is now at the Geophysics Division, DSIR.

Dr Jim Ansell has been re-elected as Chairman of the Wellington branch of the AUT.

G C W

Applied Mathematics Division, DSIR, Wellington

One of AMD's senior statisticians, John Darwin, is leaving the Division to become a deputy Government Statistician in the Department of Statistics. John was a founding member of the Biometrics section of DSIR, as AMD was then known, in 1946 and his departure will leave a large gap in the Statistics section. We will be very interested to see what effect he has on the Statistics Department.

Sita Bhaskaran, a National Research Advisory Council Scholar, joined the Division in July to work in operational research. Sita has recently completed her doctorate at the University of Adelaide on the optimal configuration of a pipeline collection system for a natural gas field.

Hugh Barr is working part time at the Planning Council secretariat for six months. He is assisting a subcommittee investigating information requirements for planning.

Kit Withers is currently visiting the Canberra branch of the CSIRO Division of Mathematics and Statistics in exchange with Warren Muller who will shortly be visiting various branches of AMD. Robert Davies is also travelling to Canberra to present an invited paper to the 8th Conference on Stochastic Processes and Their Applications.

Recent visitors to the Department include Denis Lindley, Donald Watts, and David Griffiths. Nick Fisher of CSIRO-DMS will be visiting the Auckland branch during October to December.

There are 2 vacancies at AMD. (Details appear elsewherein this issue.)

R B D

University of Canterbury

We have been given permission to advertise for a Lecturer in numerical mathematics. This is the first new position we have had for some years and follows a reallocation of positions between departments. It is hoped that an appointment will be made before Allan McInnes goes on leave next year. (See advertisement elsewhere in this issue.)

David Robinson has been elected unopposed to be Dean of Science for the three years beginning on 1 July. His book (with Les Foulds from Massey) entitled 'Digraphs - Theory and Techniques' has been accepted for publication. It covers applications of digraphs in diverse areas from logic to operations research. The theory presented includes elementary properties of digraphs, structure, acyclicity, tournaments, rooted trees, networks, digraph matrices, and undirected graphs.

Derrick Breach spent much of his time on leave in absorbing material which is resurfacing this year in a final year Honours course in Combinatorics. One memorable seminar he attended was given by W T Tutte, the distinguished graph theorist, in which a large part of the reconstruction conjecture was demolished by the most simple and elegant methods.

Bill Barit learnt Catastrophe theory at the Battelle Research Institute in Geneva, and then studied infinite dimension topology at the University of Kentucky and the University of California, Riverside. He arrived back just in time for the Mathematics Convention. Kevin O'Meara is now visiting the University of Connecticut, and will later be moving to the University of Waterloo. Roy Kerr is playing in the World Bridge Olympiad in New Orleans, and is expected back in late July.

Rick Beatson has been given an instructorship at the University of Texas in Austin, and Mark Anderson has been awarded a research scholarship at the same university. John Hannah has been awarded a research fellowship at Melbourne University. Adrian Abraham gained a distinction for his MSc, and is now continuing towards a PhD with Robert Bull.

P J B

University of Otago

Dr G F Liddell has been promoted to Lecturer.

Dr R K Beatson has been appointed a Post-Doctoral Fellow.

Professor D B Sawyer will be on Refresher Leave for one term, starting in August, 1978. He will be a Visiting Research Fellow at University College, London. Professor W Davidson will be Acting Chairman during his absence.

Dr G Olive returned from her leave in May after visiting Reed College, University of Wisconsin, Pennsylvania State University, Anderson College, University of California, San Diego, UCLA, the Claremont Colleges and California State College at San Bernardino. She also attended the Annual Meetingsof the American Mathematical Society in Atlanta, Georgia, and saw Professor John Kalman of the University of Auckland there.

Our weekly seminars continued to cover an interesting variety of topics:

Dr J H Harris	"Strong Scientific Theories"
Dr R K Beatson	"The Direct Theorems of Approximation Theory"
Dr P Fenton	"How small can an entire function be?"
Dr M J Curran	"Automorphism groups of graphs"
Dr J Clark	"From Vector Spaces to Free Modules"
Professor D B Sawyer	"A glance at p-adic numbers"
Dr D J McCaughan	"Hilbert's Problem #17 - Polynomials and Sums of Squares"
Dr J A Shanks	"Circular Arithmetic and Polynomial Zeros"

Dr J M Hammersley of the Institute of Economics and Statistics, Oxford, gave a seminar in May on "The Importance of Mistakes in Mathematical Research"

G O

CONFERENCES 1978-79

*** 1978 ***

August 15-23
(Helsinki)

1978 International Congress of Mathematicians
Details from International Congress of Mathematicians, ICM 78, Department of Mathematics, University of Helsinki, Hallituskatu 15, SF 00100 Helsinki 10, Finland.

August 21-25
(Leiden)

Third ISI COMPSTAT Symposium on Computational Statistics
Details from COMPSTAT '78, C/- Central Reken Instituut, University of Leiden, Wassenaaseweg 80, Leiden, The Netherlands.

August 22-25
(Bellaire, Michigan)

International Conference on Parallel Processing
Details from G J Lipovski, Department of Electrical Engineering, University of Texas, Austin, Texas 78712, U S A.

August 25-29
(Novosibirsk)

International Symposium on Group Theoretic Methods in Mechanics
Details from Symposium Committee, Institute of Hydrodynamics, Novosibirsk 630090, USSR.

August 27-Sept 2
(Berlin)

International Conference on Categorical Topology
Details from G Preuss, Institut fur Matematik, Freie Universitat Berlin, Huttenweg 9, D-1000, Berlin 33, Germany.

August 28-Sept 1
(Canberra)

Eighth Australian Computer Conference
Details from ACS-8 Programme Committee,
PO Box 446, Canberra, ACT 2601, Australia.

August 29-Sept 1
(Armidale)

Sixth Australian Conference on Combinatorial Mathematics
Details from Professor A F Horadam, Department of Mathematics, University of New England, Armidale, NSW 2351, Australia.

August 30-Sept 1
(Stuttgart)

International Conference on Finite Elements in Non-Linear Mechanics
Details from K William, FENOMECH 78, Institute of Statistics & Dynamics, University of Stuttgart, Pfaffenwaldring 27, D-7000 Stuttgart 80, Federal Republic of Germany.

Sept 3-7
(Varna)

Twelfth European Meeting of Statisticians
Details from B Penkov, National Committee for Mathematics,
PO Box 373, 1000 Sofia, Bulgaria.

Sept 4-9
(France)

First Colloquium on Applied Mathematics
Details from Secretariat du Comité d'Organisation du le Colloque AFCET-SMF, Centre de Mathématiques Appliquées, Ecole Polytechnique, 91128 Palaiseau Cédex, France.

Sept 6-8
(Oxford)

International Conference on the Analysis and Optimization of Stochastic Systems
Details from the Secretary, The Institute of Mathematics and its Applications, Maitland House, Warrior Square, Southend-on-Sea, Essex SS1 2JY, England.

Sept 6-8
(Mannheim)

Third Symposium on Operations Research
Details from W Oettli, III Symposium uber Operations Research, Universitat Mannheim, Schloss, D-6800 Mannheim, Federal Republic of Germany.

Sept 11-13
(Liverpool)

Mathematical Modelling of Turbulent Diffusion in the Environment
Details from Secretary and Registrar, Institute of Mathematics and its Applications, Maitland House, Warrior Square, Southend-on-Sea, Essex SS1 2JY, England.

Sept 11-16
(Austin)

Integrative Conference on Group Theory and Mathematical Physics (VII International Group Theory Colloquium)
Details from E Takasugi, Center for Particle Theory, Department of Physics, University of Texas, Austin, Texas 78712, USA.

September 30
(London)

The Teaching of Statistics in Schools
Details from Secretary and Registrar, Institute of Mathematics and its Applications, Maitland House, Warrior Square, Southend-on-Sea, Essex SS1 2JY, England.

December 5-8
(Wellington)

Asian-South Pacific Regional Meeting in Astronomy
Details from Dr B M Lewis, Secretary IAU Regional Meeting, PO Box 2909, Wellington, New Zealand.

*** 1979 ***

January 15-Feb 9
(Sydney)

Summer Research Institute of the Australian Mathematical Society
Details from Professor A McIntosh, Mathematics Department, Macquarie University, North Ryde, NSW 2113, Australia.

January 22-26
(Auckland)

49th ANZAAS Congress
Details from Dr N I Fisher,
C/- Department of Mathematics, University of Auckland, Private Bag, Auckland, New Zealand.

February 4-8
(Leura)

Australian Mathematical Society Applied Mathematics Conference
Details from J Blake, Division of Mathematics and Statistics, CSIRO, PO Box 1965, Canberra, ACT 2601, Australia.

February 13-16
(Sao Paulo)

Fifth Interamerican Conference on Mathematical Instruction
Details from Fifth CIAEM, Cidade Universitaria, UNICAMP, Caixa Postal 6063, 13.100 Campinas, Sao Paulo, Brazil.

May 14-25
(Singapore)

Workshops on Combinatorics, Graph Theory, Optimization and Mathematical Programming
Details from Department of Mathematics, Nanyang University, Jurong Road, Singapore 22.

May 28-31
(Singapore)

First Franco-Southeast Asia Mathematics Conference
Details from Department of Mathematics, Nanyang University, Jurong Road, Singapore 22.

August 22-29
(Hannover)

International Congress for Logic, Methodology and Philosophy of the Exact Sciences
Details from Sekretariat des Internationalen Kongresses fur Logik, Methodologie und Philosophie der Wissenschaften, Welfengarten 1, D-3000 Hannover, Federal Republic of Germany.

RECIPROCITY AGREEMENTS

Australian Mathematical Society

The terms of the agreement provide for individuals who are members of one Society to join the other for half the usual fee and thereby enjoy all the privileges of that Society, other than the right to vote. This applies, of course, provided you are not resident in the country of the second Society. Current subscriptions and prices are as follows:

(1) Membership subscription (including the Gazette): $25 (with a remission of $5 for early payment)

(2) Journal - Series A: $12

(3) Journal - Series B: $3

(4) Bulletin: $12

Thus members of the NZMS may join the AMS for $10 a year. They should obtain a note of authentication and an application form from our Treasurer and send both to the AMS secretary (D G Hurley, Department of Mathematics, University of Western Australia, Nedlands, Western Australia 6009, Australia).

Canadian Mathematical Congress

The same terms apply as for the AMS (see above). Current subscriptions and prices are as follows:

(1) Membership subscription (including newsletter): $15

(2) Canadian Journal of Mathematics: $14

(3) Canadian Mathematical Bulletin: $10

Thus members of the NZMS may join for $7.50.

Edinburgh Mathematical Society

Members of the New Zealand Mathematical Society may join the Edinburgh Mathematical Society on payment of the reciprocity member's subscription. This is £5.00 for the current session (against £7.50 for a full member). A reciprocity member receives the Proceedings of the Edinburgh Mathematical Society, but does not have voting rights. Anyone wishing to become a reciprocity member should write to the Secretary, Edinburgh Mathematical Society, James Clerk Maxwell Building, Mayfield Road, Edinburgh EH9 3JZ, Scotland.

Southeast Asian Mathematical Society

The same terms apply as for the AMS (see above). The current subscription is US$5.00, and privileges of membership include a quarterly newsletter and members' rates for conference, meetings and occasional publications. Thus NZMS members may join the SEAMS for US$2.50. Application forms may be obtained from our Secretary.

London Mathematical Society

The same terms apply as for the AMS (see above) except that reciprocal members do have the right to an LMS vote. Current subscriptions and prices are as follows:

(1)	Membership subscription:	£3.00
(2)	Journal:	£6.00
(3)	Proceedings:	£6.00
(4)	Bulletin:	£3.00

Reciprocal members are also entitled to a discount on the Journal of Applied Probability, LMS Monographs and LMS Lecture Notes. Members of the NZMS may join the LMS for £1.50 a year. Application forms may be obtained from our secretary.

OTHER NEW ZEALAND MATHEMATICAL PUBLICATIONS

Mathematical Chronicle

is published by the Mathematical Chronicle Committee, Department of Mathematics, University of Auckland, Private Bag, Auckland. The editors are Professor J A Kalman, Dr D B Gauld, Dr G D Dixit and Dr D M Ryan. The subscription is $10.00 per volume of three issues, with a reduced rate of $5.00 for individual subscribers and a further reduction to $4.00 for members of the New Zealand Mathematical Society. The Chronicle welcomes contributions of short research articles and mathematical notes by New Zealand mathematicians.

Mathematics Magazine

is published by the Auckland Mathematical Association, PO Box 6855, Auckland, 1. The annual subscription for individuals is $5.00 and three issues are published each year. A reduced rate is available for students.

Network

is published by the Mathematics Education Department of Christchurch Teachers' College (Secondary Division), Dovedale Avenue, Ilam, Christchurch 4. It exists to help provide an exchange of ideas among all those concerned with Mathematics Education in secondary schools.

New Zealand Operational Research

is published by the Operational Research Society of New Zealand, PO Box 904, Wellington. The editor is Dr H G Daellenbach. The annual subscription for individuals is $6.00 and two issues are published each year.

New Zealand Statistician

is published by the New Zealand Statistical Association, PO Box 1731, Wellington. The editor is Dr D Rhoades. The annual subscription for individuals is $2.00 and two or three issues are published each year. A reduced rate is available for students.

NOTES AND NOTICES

INSTITUTIONAL MEMBERSHIP OF N.Z.M.S.

At the end of last year an invitation to become institutional members of the N.Z. Mathematical Society to a few organizations resulted in warm support from National Mutual Life Association of Australasia Ltd. and Burroughs Ltd.

These organisations are therefore welcomed as the first two institutional members of the society (The annual fee for such members is currently set at $20 per year).

Burroughs, in particular, indicated strong interest in the Society and, in addition to joining as institutional members, expressed interest in supporting other activities of the Society. Specifically, they have undertaken to underwrite the cost of the next edition of the N.Z.M.S. Employment Brochure (published by the Society in 1976 and 1977), the next edition of which will appear in 1979. Further, they indicated interest in co-operating with us in bringing speakers from overseas to colloquia etc. The Society gratefully acknowledges the support and interest shown by Burroughs and looks forward to ongoing co-operation.

It is the intention of the Council to follow up further organizations in view of these responses. These initiatives are being organised by Council members Gillian Thornley and Graeme Wake in Wellington. If you have any suggestions in connection with this, please contact them directly.

G.C.W.

EMPLOYMENT FORUM

A forum on employment for mathematicians, aimed at near or new graduates, is to be held in Wellington on Wednesday, 13th September (5 - 7 p.m. in the Union Building). The panel of speakers is expected to include a computer firm manager, an applied statistician, a representative of the State Services Commission, a school teacher, an actuary, and the Secretary of the V.U.W. Careers Advisory Board. Past forums of this nature (in 1975 and 1977) were most successful. (One large employer of graduates (in the computing industry) recently stated that "ability in mathematics has proven to be his most helpful and reliable guide to good performance as employees").

G.C.W.

N.Z.M.S. VISITING LECTURER

Members are invited to suggest names of potential future N.Z. Mathematical Society Visiting lecturers.
Please forward your suggestions to the Society Secretary, Stan Roberts, DSIR (AMD), Private Bag, Wellington.

MID-WINTER TOPOLOGY WORKSHOP

The conditions were perfect. Snow on the Bombay hills, sunrise over Mt. Te Aroha, indeed a completely non typical sunny, windless, mid-winter Waikato day was Saturday 1 July 1978. The Science Tea Room at the University (where many a battle for Mathematical equality against the other sciences had been lost and won) was the venue for the workshop. Six papers were presented in all and there might well have been more had time and mental energy permitted.

The participants were Bill Rogers, John Turner, Raghavan (G.T.), Vamanamurthy (M.K.), Ivan Reilly, Heather Gardiner, Mark Schroder, David Gauld and Kevin Broughan.

The papers: Ivan answered the question "When is a quasi-uniform space uniformizable?" in several non-trivial ways indicating how he had extended his work on quasi-metrizable spaces. John defined certain "Distances on Knots" using his well established matrices, formulated four conjectures, and proved two of them. Raghavan summarized his joint work with Ivan on "Minimal Topological Spaces" showing a maximal output of mathematical research. David described the "Cannonical Schoenflies Problem" - a conjecture which has bothered him since his early days at Berkeley. The participants tried to give him new hope by suggesting that he might try E. Michael's Theory of continuous selection. Kevin described Mary Ellen Rudin's nice one page proof that metric spaces are paracompact and proved a recent result about spaces in which every geedelta is an effsigma.

The workshop was sponsored by the University of Waikato Department of Mathematics and the N.Z.M.S. The participants offer their thanks to these Institutions. It was agreed that a similar workshop would be held in 1979 at Auckland.

K.A.B.

TWO NEW MATHEMATICS EDUCATION COURSES

Massey University this year introduced a 400-level paper entitled Mathematics in Education. The course consists principally of reading and discussion. Students are expected to prepare seminars and to complete a project involving the study of some aspect of secondary or tertiary mathematics education in New Zealand. Topics covered include: The nature of mathematics and mathematical thinking, Why teach mathematics? Mathematics curricula, Applied and applicable mathematics in education, Evaluation, Proof and plausibility.

Victoria University of Wellington has introduced a new course in "Mathematics Education", to be taught largely by staff in the Mathematics Department but with substantial contributions by Education Department staff and by visiting lecturers. Aimed at primary and secondary teachers and intending mathematics teachers, the 300-level course will be available for candidates for the Diploma in Educational Studies as well as degree students, and will deal with theories of mathematics learning with applications to mathematics course design. [Extracted from Victoria University of Wellington's News VUW", Vol 3, No 8 (June 1978)].

W D H

49th ANZAAS CONGRESS

The Congress will be held at the University of Auckland, 22-26 January 1979 on the general theme "Directions for the Future". Section 8 of the programme is on Mathematical Sciences and places emphasis on applications to biological sciences. There will be symposia on mathematical modelling for physical, social and biological phenomena, and on mathematics education. It is also proposed to have sessions on industrial mathematics, optimization and operations research.

The Biometric Society (Australasian Region) is holding a meeting jointly with ANZAAS, on the theme "Statistics in the Life Sciences: A significant Interaction".

Further information is available from Dr N.I. Fisher, c - Department of Mathematics, University of Auckland, Private Bag, Auckland, New Zealand.

SCIENCE PROGRAMMES ON TELEVISION

The Royal Society of New Zealand, in conjunction with the television authorities, is preparing a series of TV programmes on scientific topics. Mathematical contributions are being sought for future programmes. If any member has a suggestion, would you please forward it to

The Secretary,
Royal Society of New Zealand,
P.O. Box 12249,
Wellington, N.Z.

SUMMER SCHOOLS AND TOPICAL MEETINGS

At the recent A.G.M. of the N.Z. Mathematical Society the question of mounting summer schools and specialist-topic seminars or conferences in mathematics in New Zealand was raised. It was seen that such meetings could be complementary to other events such as the Australian Mathematical Society's Summer Research Institute. The Council of the N.Z.M.S. supports these activities in principle and wishes to hear members' views on the matter of developing this area. In particular, this Newsletter wishes to offer a coordinating service and will publish notices of forthcoming local, regional or national meetings, seminars, conferences or summer schools in mathematics and its applications. Please direct your comments to the secretary (Stan Roberts) and information on meetings to the Newsletter editor (Dean Halford). The Newsletter is also keen to receive reports on such activities.

STOP PRESS

Mobil Oil (N.Z.) have just been admitted to Institutional Membership of the N.Z. Mathematical Society.

THE NEW ZEALAND MATHEMATICAL SOCIETY

OFFICERS 1977-78

President:	Dr G C Wake	Victoria University Mathematics Dept Private Bag WELLINGTON
Incoming Vice President:	Mr J C Turner	Department of Mathematics University of Waikato Private Bag HAMILTON
Outgoing Vice President:	Prof G M Petersen	Department of Mathematics University of Canterbury Private Bag CHRISTCHURCH
Secretary:	Mr H S Roberts (1978-1981)	Applied Mathematics Division D S I R Private Bag WELLINGTON
Treasurer:	Dr I L Reilly (1976-1979)	Mathematics Department University of Auckland P O Box 2175 AUCKLAND
Editor:	Dr W D Halford (1978-1981)	Mathematics & Statistics Department Massey University PALMERSTON NORTH
Council Members:	Dr K A Broughan (1976-1979)	Department of Mathematics University of Waikato Private Bag HAMILTON
	Dr W B Wilson (1976-1979)	Mathematics Department University of Canterbury Private Bag CHRISTCHURCH
	Dr G M Thornley (1978-1981)	Department of Mathematics Wellington Polytechnic WELLINGTON 4
	Mr D C Harvie (1978-1981)	Mathematics Department Victoria University of Wellington Private Bag WELLINGTON
Co-opted Member:	Dr D J McCaughan (1978-1979)	Mathematics Department University of Otago P O Box 56 DUNEDIN

Members are warmly invited to contact any of the above if they have any suggestions or comments about the activities of their Mathematical Society.

This Newsletter was compiled for the Council of the New Zealand Mathematical Society by Dean Halford and Donald Joyce, typed by Marie Tokori and Wendy Sigvertsen, and printed by the Massey University printery.

The Editor is grateful to the typists and to those who contributed copy, especially to the following Honorary Correspondents:

Auckland	:	Garry Tee (Mathematics)
		Cecil Segedin (Theor & Appl Mech)
Canterbury	:	Peter Bryant
DSIR	:	Robert Davies (AMD)
		Ian Donaldson (PEL)
Otago	:	Gloria Olive
Victoria	:	Graeme Wake
Waikato	:	Mark Schroder
Wellington Polytechnic	:	H Offenberger

Contributions are invited from anyone with items of interest to the New Zealand mathematics community, and may be sent to one of the Honorary Correspondents or direct to the Editor (C/o Department of Mathematics & Statistics, Massey University, Palmerston North, New Zealand).