# THE NEW ZEALAND MATHEMATICAL SOCIETY

# NEWSLETTER

NUMBER 4 DECEMBER, 1975


## NOTES FROM THE OCTOBER COUNCIL MEETING

The October Council meeting was held on the evening of October 3rd and the morning of October 4th at the University of Auckland. An apology was received from Professor Lorimer and a welcome extended to Lynn Gilmore, who has been co-opted onto Council to assist the Pres dent and Treasurer. Amongst the matters discussed were the following items:

### Leonid Plyushch

We still await a reply from the Soviet ambassador to Professor Vere-Jones's letter (see Newsletter Number 3).

### Relations with other bodies

The development of our relations with the Royal Society, the New Zealand Mathematical Associations, and the Mathematical Societies of Australia, America, London, South East Asia and Japan was reviewed (see detailed reports below). Approaches, seeking reciprocal agreements, are to be made to the Canadian Mathematical Congress, the Edinburgh Mathematical Society, the Society of Industrial and Applied Mathematics, and the Institute for Mathematics and its Applications. The Council would welcome suggestions from members as to other foreign mathematical societies who might be approached.

### Publications

Approaches are to be made to the publishers of the Journal of the N.Z. Operational Research Society, the N.Z. Mathematical Chronicle, the N.Z. Mathematics Magazine and the N.Z. Statistician, with a view to co-operation and interchange of information. It is hoped that the long-term publication policy of the Society will be discussed at the Annual General Meeting next May.

### Mathematics Education

Proposals concerning mathematics education at the secondary and tertiary levels were discussed briefly and it was decided that these should be published in the Newsletter and that members' opinions should be solicited (see below).

### Regional Meetings

The Council endorsed a proposal that one or two lecture meetings be held each year under the sponsorship of the Society in each university area (the first such meeting was held in Auckland on 3rd November and is reported under Local News below). Suggestions for such meetings should be made to a local Council member.

## Membership and Finance

At the time of the Council meeting, there were 79 ordinary members, 9 student members, 3 reciprocity members and 3 honorary members. 16 members had not paid their dues. There was a healthy balance in the bank account and it was decided to invest some of the Society's funds at a better rate of interest. It is intended that the question of travel expenses for Council meetings be discussed at the Annual General Meeting.

## Essay Competition

An ambiguity in the wording of the essay advertisement has been clarified and the date for enrolments extended to October 31. The entries will be sent to the Secretary in the first instance and the Judges will be selected by the President.

## Library Holdings

The attention of members is drawn to the existence of a list of mathematics journal holdings in N.Z. libraries which originated from Otago. This list will be updated periodically and circulated to Mathematics Departments.

## Employment

A report was received from the convenor of the Society's Committee on Employment (see below). Dr Davies has been added to the committee. Advertisements of selected vacancies for mathematicians will be published in the Newsletter.

# RELATIONS WITH OTHER BODIES

## Royal Society of New Zealand

Our application for affiliation was approved in October and Professor Vere-Jones has been appointed as our representative on the Member Bodies' Committee. Our members are now entitled to reduced subscriptions to the Royal Society's publications (Journal, Bulletin and Proceedings) and have access to the Library. Our Society may now nominate candidates for election as Fellows and have a say in the election of the Council of the Royal Society.

## Mathematical Associations of New Zealand

Professors Vere-Jones and Malcolm represented the Society at a meeting on July 26 with representatives of the Mathematical Associations of Auckland, Wellington, Nelson, Canterbury and Southland. The meeting agreed

(1) that the Associations and the Society continue to meet on a regular basis, at least annually, to discuss and organise matters of mutual interest and benefit and that the next meeting be convened by the Canterbury Mathematical Association,

(2) that the Southland Mathematical Association be invited to produce a News-sheet giving notice of coming events, visitors, etc. for circulation to the Mathematical Associations, the NZMS, mathematics advisors, curriculum officers, inspectors, and the mathematics departments of universities, technical institutes and teachers' colleges, and that each Association and the Society contribute at least $5 to assist in producing the News-sheet,

(3) that the Associations and the Society accept the principle of pooling the travel costs of one delegate from each Association and the Society and contributing in proportion to their membership,

(4) that the Colloquium organising committee be asked to consider including in the Colloquium programme a section devoted to mathematics teaching and education.

The Council endorsed these proposals at their October meeting and the organisers of the 1976 colloquium have made provision for special sessions on mathematics education (see below).

Australian Mathematical Society

Trans-Tasman relations continue to prosper. The Council has expressed our thanks for the gift of an issue of the AMS Gazette to each of our members. Several members of both Societies have taken advantage of the reciprocity agreement (see below). Canterbury University, as host for the 1978 Colloquium, has proposed a joint meeting of the two Societies and the Colloquium in 1978. The AMS has agreed in principle and negotiations are continuing. It is hoped to continue the exchange of observers at Council and annual meetings.

American Mathematical Society

We still await news of the American review of reciprocity agreements.

London Mathematical Society

We have entered into a reciprocity agreement with the LMS (see below) on the understanding that it may have to be reviewed when the results of the American review are announced.

South East Asian Mathematical Society

We have entered into a reciprocity agreement with the SEAMS (see below), which is based in Singapore.

Japanese Mathematical Society

We are still trying to make contact with this group.

## 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 (proposals for 1976 in parentheses):

(1) Membership subscription (including the Gazette) : $12 ($15, with a remission of $2 for early payment)

(2) Journal - Series A : $8 ($10)

(3) Journal - Series B : $2 ($2.50)

(4) Bulletin : $8 ($10)

Thus members of the NZMS may join the AMS for $6 a year. They should obtain a note of authentication and an application form from our Treasurer and send both to the AMS Secretary (Mr W. Pye, Melbourne State College, 757 Swanston St, Carlton, Vic 3053, AUSTRALIA).

London Mathematical Society

The same terms apply as for the AMS (see above). Current subscriptions and prices are as follows (for the year beginning November 1, 1975):

(1) Membership subscription : £3.00

(2) Journal : £6.00

(3) Proceedings : £6.00

(4) Bulletin : £3.00

Thus members of the NZMS may join the LMS for £1.50 a year. Application forms may be obtained from our Secretary.

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 conferences, meetings and occasional publications. Thus NZMS members may join the SEAMS for US$2.50. Application forms may be obtained from our Secretary.

## MATHEMATICAL EDUCATION

The following proposals relating to Mathematical Education were discussed at the October Council Meeting this year. It was decided that an edited version of the proposals should appear in the Newsletter and that comments on them be sought from members. The proposals were formulated originally be Kevin Broughan and Mark Schroder. Comments and suggestions relating to these proposals should be sent to the Society Secretary.

1. Mathematics Curriculum Project

It is proposed that two members of the Society be appointed by the Council to gather, on behalf of the Society, information on secondary school, undergraduate university, technical institute, community college, and teachers college mathematics curricula and to write a comparative study of these curricula. This study, when completed and approved by the Council, would be published in the Newsletter.

2. Secondary School Mathematics

The Society might concern itself actively with what might be loosely termed "entrance qualifications". By this we mean the syllabi, curricula and assessment of N.Z. secondary school students in their third, fourth, and fifth year in secondary school. Even though this is an important area for the associations it is also very vital for the tertiary institutions and therefore for the Society. We propose the following ways whereby the Society might take part in the process of curriculum development at these levels in the educational system.

Each year the Council would appoint a group of Society members to make comments on the national examination papers for S.C., U.E., Bursaries and Scholarships on behalf of the Society. The comments would be circulated to the Curriculum Development Units, Department of Education, University Entrance Board, Mathematical Associations and Heads of Mathematics Departments in the Schools. In case external examinations are phased out the group would make comments on examination papers and test papers which were used in a selected group of schools.

Every three years the Council would appoint a group of members of the Society to make comments on the Secondary School Syllabi, and the relationship between the syllabi, what is taught, and the examinations. It is proposed that this group meet each year and bring down a paper which might be discussed at the Colloquium. A seminar sponsored jointly by the NZMS and local Mathematical Association might be a good way to hold this discussion. The paper along with the comments of the seminar participants might then be given the same circulation as the comments on the examination papers.

3. Honours and Masters Degrees in Mathematics

Without regular exchange of information among departments, it is unlikely that the various N.Z. Honours degrees in Mathematics will remain comparable very long. Unfortunately, now that external assessment has been largely discarded, regular contact at this level has almost vanished. We feel that the Society could help to correct this, by acting as a clearing house for information.

Each year, departments would forward details on courses actually taught, student numbers, the instructor's summary (describing the course's aims and content, and special features of teaching or evaluation, and their success) and the examination. As a first step, this might be collated and

circulated to department libraries, and as a second, the Society might set up a committee to issue a summary report and commentary, which would be sent to all members. (Most members would also have access to the original collection, or could obtain a copy on request.) It would probably make sense to divide this report into overlapping groups, say, pure maths, mathematical physics, numerical analysis and computing, and statistics and probability. With this information at hand, course instructors would most likely find it much easier to set their courses at an appropriate level. In addition, useful statistics on enrolment patterns, and department specialities could emerge.

4. Research Degrees in Mathematics

To delve into the past - at the Second Mathematics Colloquium held at Canterbury in May 1967 the following notice of amendment was put before the Colloquium business meeting:

(i) That this Colloquium recommends that a list of topics which departments are prepared to supervise for a higher degree should be prepared and circulated.

(ii) That individual Mathematics Departments should encourage their post-graduate students to choose a topic which can be supervised within New Zealand and to transfer to another New Zealand university, if this is necessary, to study in their chosen field.

(iii) That this Colloquium recommends to the Grants' Committee that, at least until 1970, it should continue to allow Postgraduate Scholars in Mathematics to hold their scholarships overseas when this is considered desirable by their Heads of Department.

(iv) That successive Mathematics Colloquia should review progress towards the stage when Postgraduate Scholars in Mathematics can reasonably be required to remain in New Zealand during the initial tenure of their awards.

The Society records do not indicate who moved these amendments or which motions they related to. Professor Lawden chaired the meeting.

It is our opinion that this is a good time for matters relating to higher degrees in mathematics to be considered by the Society. Students have completed masters and honours degrees in New Zealand and then left to attempt doctorates at overseas universities for many years. No studies, as far as we can ascertain, have been done on the effectiveness of this procedure. It seems that we have now a body of mathematicians in New Zealand who are well qualified to supervise students for the doctorate and that the existence of such students might aid in the development of better mathematical research in this country.

There are many questions to be considered: We suggest, as a preliminary, that a statistical study be made of students who have done higher degrees in mathematics at N.Z. universities over the last 20 years, say. The study might involve the collection of the data described below for each year where the numbers are available:

(i) The number of masters students,
(ii) The number of masters students in each subject area,
(iii) The number of graduands with various classes of honours,
(iv) The number of graduands proceeding overseas to undertake doctoral studies.

Other figures might be of interest - for example the time taken to complete a masters degree, the presence of a thesis and so on. The study would present figures for the whole of New Zealand and avoid comparing institutions. Every three years the Council would appoint a member of the Society to collect the data outlined above, on behalf of the Society, each year and prepare the figures for publication in the Newsletter.

We suggest that the Council appoint a group of Society members to prepare a discussion paper on higher degrees in Mathematics in New Zealand. This paper would be published in the Newsletter after being approved by the Council and be the subject of a seminar to be held at the Colloquium following its publication. Comments made by the participants in the seminar might in turn be published in the Newsletter.

## CONFERENCES 1976

Jan 12 - 16 (Perth) : Australian Association of Mathematics Teachers
Details from Mr R. McCreddin, Hollywood Senior High School, Smyth Road, Shenhen Park, W.A. 6008, AUSTRALIA

Jan 12 - 16 (Evanston) : International Conference on Algebraic K-Theory
Details from Dr M.R. Stein, Mathematics Department, Northwestern University, Evanston, Ill 60201, U.S.A.

Jan 12 - Feb 14: (Adelaide) Summer Research Institute of Australian Mathematical Society
Details from Prof. C.A. Hurst, Department of Mathematical Physics, University of Adelaide, S.A. 5001, AUSTRALIA

Jan 26 - 30 (Clayton) : Numerical Solution of Fluid Dynamics Systems
Details from Dr R.A. Pearson, Mathematics Department, Monash University, Clayton, Vic. 3168, AUSTRALIA

Feb 1 - 4 (Jindbayne) : Applied Mathematics Conference of Australian Mathematical Society
Details from John Blake, CSIRO Division of Mathematics and Statistics, P.O. Box 1965, Canberra, A.C.T. 2601, AUSTRALIA

Mar 30 - Apr 2 (Dundee) : Conference on Theory of Ordinary and Partial Differential Equations
Details from Conference Secretaries, Mathematics Department, The University, Dundee DD1 4HN, SCOTLAND

May 10 - 14 (Perth) : Annual Meeting of Australian Mathematical Society
Details from Dr R.P. Sullivan, Mathematics Department, University of Western Australia, Nedlands, W.A. 6009, AUSTRALIA

May 21 - 24 (Palmerston North) : New Zealand Mathematics Colloquium (see notice below)
Details from Dr M.D. Hendy, Mathematics Department, Massey University, Palmerston North, NEW ZEALAND

Aug 16 - 21 (Karlsruhe) : International Congress on Mathematical Education
Details from Prof. Dr. H. Kunl, Institut fur Geometrie der Universitat, Englerstrasse, D75 Karlsruhe, GERMANY

Aug 17 - 20 (Melbourne) : Australian Statistical Conference
Details from Prof. P. Brookwell, Department of Statistics, La Trobe University, Bundoora, Vic. 3083, AUSTRALIA

Aug 24 - 27 (Melbourne) : Australian Conference on Combinatorial Mathematics
Details from Charles Little, Department of Mathematics and Computer Science, Royal Melbourne Institute of Technology, Melbourne, Vic. 3000, AUSTRALIA

## ELEVENTH NEW ZEALAND MATHEMATICS COLLOQUIUM

The Eleventh New Zealand Mathematics Colloquium will be held at Massey University from Friday, May 21, to Monday, May 24, 1976. The Colloquium is held in conjunction with the Annual Meeting of the New Zealand Mathematics Society.

Contributed papers in any area of mathematics and its applications may be submitted for inclusion in the programme, and suggestions for special interest sessions and invited speakers will be welcomed. It is also intended to organise sessions on various aspects of Mathematics Education (in Schools, Technical Institutes, Teachers' Colleges and Universities) including Curricula, Teaching approaches and Career opportunities.

The programme is expected to begin on Friday evening with an opening session followed by a social get-together. There will be sessions of contributed and invited papers on Saturday and Monday. It is intended that Sunday morning will be kept free and Sunday afternoon devoted mainly to discussion sessions. The Colloquium dinner will be held on Saturday evening. It is hoped that participants will be able to bring their families with them. A full programme for wives will be arranged and a creche will be available throughout the weekend.

Accommodation has been reserved in University Hostels (single and double rooms) at a daily rate of about $7 per adult for full board. Those requiring motel or hotel bookings should notify the organizers well in advance. Enquiries regarding the programme, accommodation or other arrangements should be addressed to

The Colloquium Secretary
Department of Mathematics
Massey University
Palmerston North
NEW ZEALAND

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## EMPLOYMENT OF MATHEMATICS GRADUATES

The Society's committee on employment has continued its work with a view to publishing a booklet on employment opportunities in mathematics in 1976. They arranged an evening meeting at Victoria University which was advertised as follows (with whimsical illustrations of impoverished mathematicians seeking work):

> "An informal function to discuss employment for mathematicians will be held on Wednesday, 24th September, 5.00 - 6.30 p.m. in the Smoking Room, Union Building. The following people have agreed to say a few words: Mr Peter Romanovsky, Careers Advisory Board, V.U.W., Dr Robert Williams, Chairman, State Services Commission, and Mr Ivan Hoshek, Actuary. There will be ample opportunity for informal discussion. Refreshments will be provided. All students in mathematics and related subject areas are warmly invited. We hope the occasion will be of value to those already committed to a particular career as well as those undecided about their future employment".

By all accounts this meeting was a great success and Council agreed that other areas be encouraged to organise activities along similar lines.

The March issue of the newsletter included some statistics abstracted from the Vice-Chancellors' Committee survey of graduate employment. Members may be interested in some more information from that survey (which covered graduates from all N.Z. universities from July 1st 1973 to June 30th 1974). Of the 190 graduates who obtained BSc, BSc(Hons), or MSc in mathematics 57 (30%) were women. The occupations reported were as follows (figures for women in parentheses):

| IN EMPLOYMENT | 48 | (12) |
|---|---|---|
| Not classifiable | 5 | (1) |
| Clerk of Works | 1 | (0) |
| Meteorologist | 2 | (1) |
| Biological Technician | 1 | (1) |
| Statistical Research Officer | 2 | (1) |
| Operational Research Analyst | 1 | (0) |
| Systems Analyst | 1 | (0) |
| EDP Systems Designer | 2 | (1) |
| Systems Engineer | 1 | (1) |
| Computer Programmer | 7 | (0) |
| Industrial Engineer | 1 | (0) |
| Methods Analyst | 1 | (0) |
| Research and Development Manager | 2 | (1) |
| Marketing Research Officer | 1 | (0) |
| Actuary | 2 | (0) |
| Accountant | 1 | (0) |
| Insurance Clerk | 1 | (0) |
| Bookkeeper | 1 | (0) |
| Statistical Clerk | 1 | (1) |
| Pre-Primary Teacher | 1 | (0) |
| Secondary Teacher | 11 | (4) |
| Tertiary Teacher | 2 | (0) |

| CONTINUING FULLTIME STUDY | 102 | (32) |
|---|---|---|
| Primary Teachers' College | 3 | (1) |
| Secondary Teachers' College | 43 | (21) |
| University | 49 | (10) |
| Other Tertiary | 1 | (0) |
| Overseas | 6 | (0) |

| NOT AVAILABLE FOR EMPLOYMENT IN N.Z. | 8 | (3) |
|---|---|---|
| Permanent Employment Overseas | 3 | (2) |
| Going Overseas for Other Reasons | 4 | (0) |
| Not Available for Permanent Employment | 1 | (1) |

| SEEKING SUITABLE EMPLOYMENT | 4 | (1) |
|---|---|---|

| OVERSEAS STUDENTS | 28 | (9) |
|---|---|---|
| Returning Home | 15 | (5) |
| Continuing Fulltime Study | 7 | (1) |
| Otherwise Staying in N.Z. | 6 | (3) |

## VACANCY

MASSEY UNIVERSITY

MATHEMATICS DEPARTMENT

Lecturer or Senior Lecturer in Statistics

A degree in mathematics together with research and advisory experience in applied statistics is required. Applicants would be expected to teach both undergraduate and graduate statistics courses, to supervise research and to advise university staff and students in at least one of the general areas of biology or social science or technology.

Salaries payable: Lecturer $7861-9912, Senior Lecturer $10081-11792

Further details may be obtained from the Registrar, Massey University, Palmerston North, New Zealand, with whom applications close on January 30, 1976.

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## LOCAL NEWS

### Auckland

Fourteen teachers attended a refresher course on "Computing and Numerical Analysis", given on 25th and 26th August, by Professor Butcher, Mrs Heard, Mr Tee and Mr Whale.

Dr Anthony Lavia, from the Computer Science Department at the University of Waterloo, is a temporary junior lecturer until the end of 1975. He is experienced in computer software.

Dr Jim Verner, from Queen's University at Kingston, Ontario, is a visiting lecturer until the end of 1976. His work is mainly concerned with numerical solution of Ordinary Differential Equations.

A Computational Mathematics Unit will be established within the Mathematics Department, on 1 February, 1976. Professor J C Butcher will be the Head of the Unit, and the other members will be Dr D M Ryan, Mr G J Tee and Mr J F Whale. The members of the Unit will give some courses under the auspices of the Board of Computer Studies, as well as courses within the Mathematics Department.

Dr D McNickle has left the Department, for post-doctoral study at the University of Michigan.

Chris Triggs has been awarded a Ph.D. for his dissertation on "The effects of serial correlation on linear models", and has gone to Nottingham University to take up a lectureship in statistics.

Dr A Creak and Dr J N Brownlee, of the Computer Centre at the University of Auckland, have recently produced a compiler for the simple interactive programming language BASIC on the small C.A.I. ALPHA L.S.I. computers, which reads cards pre-printed with BASIC symbols, on which the selected symbols have been marked by pencil.
This BASIC system has been used on the Mathematics Department's ALPHA computer, and has rapidly become popular with students. The Department has offered free use of the system to schools, with their students marking cards which are brought to the computer and processed. Several schools have already made use of this, and many others have indicated that they expect to use it in 1976.

Research lectures given recently in the Department include the following:
Professor N V Findler, SUNY, Buffalo, on "The role of exact and non-exact associative memories in human and machine information processing",
Dr P Hafner, University of Auckland, on "Sums of Squares",
Mr V Jones, Geneva University, on "Quantum Mechanics over fields of non-zero characteristic",
Mr J. Waller, University of Auckland, on "Non-transitive dice",
Dr Les Underhill, University of Capetown, on "Multivariate Beta Distributions - their properties and generalizations",
Mr V Jones, Geneva University, on "B-G Lattices",
Mr P Mullins, University of Auckland, on "Ramsey Numbers",
Dr J Verner, Queen's University of Kingston, Ontario, on "The Generation of Explicit Runge-Kutta Methods", and on "Explicit Runge-Kutta Methods with improved Fehlberg-type error estimates",
Professor Gustave Choquet, University of Paris, on "Some tools for the study of positive linear forms", and on "The role of Baire categories in analysis".

On 3rd November, 1975, Professor Gustave Choquet of the University of Paris addressed a local meeting of the Society at the University of Auckland on the topic "Is Geometry Still Necessary?"
Professor Choquet discussed the impact of reforms in Mathematics teaching on the development of a child's intuitive appreciation of geometrical ideas. There are twin dangers, of teaching mathematics in an overly formal way that is devoid of real content, and of reverting to a classical emphasis on Euclidean geometry as an end in itself. The way between these paths, the speaker suggested, is to avoid teaching geometry as a topic in its own

right, but to bring in geometric ideas and make use of diagrams and other geometric aids to comprehension throughout the teaching of courses on analysis and algebra.
Discussing the "Royal Road" proposed by Dieudonné, that is the teaching of geometry through the use of linear algebra, Professor Choquet felt that although this approach was basically sound, there was the danger of letting the algebra "fall from the sky" and giving the false impression that it was the essential foundation on which the geometry rested. Rather, he thought, the notions of geometry should come from the students' own experience and intuition: the use of algebra was to simplify and make rigorous the concepts that should already be understood on an intuitive basis.

++++++++++++++++++++ G.J.T.

Waikato

Mr J C Turner's book "Modern Applied Mathematics" is about to appear in a Spanish translation.

Dr K A Broughan has just returned from leave at Columbia University; his thesis will appear in the Springer Lecture Notes series.

Professor D Vere-Jones visited the department and gave a seminar on "Finite Bivariate Distributions and Semi-groups of Non-negative Matrices".

Professor G Choquet visited Hamilton, where he talked with Teachers' College staff and gave a seminar on "Positive Operators on C(K)". He was shown the sights of Rotorua and Tongariro National Park by Kevin Broughan and Ernie Kalnins.

++++++++++++++++++++ M.S.

Massey

Dr Les Foulds will join the Mathematics Department in January. He is currently with the Department of Economics at the University of Canterbury.

Dr Bruce Weir has resigned and will take up a visiting associate professorship in the Department of Statistics at North Carolina State University in February.

Various members of the department are engaged in research into various aspects of mathematical education, e.g. open book testing, reading skills, use of tutorials.

Mr Gordon Knight has been elected as staff representative on the University Council.

Seminars given recently in the department include the following:
Dr R J Brook, Massey University: "Is Unbiasedness worth the risk?"
Mr T Boyle, Horowhenua College and Victoria University: "Student Attitudes towards First-Year Mathematics",
Dr B Dawkins, Victoria University: "Foundations of Probability",
Dr R P Gupta, Dalhousie University: "Principal component analysis with applications",
Mr M R Carter, Massey University: "Permutation Groups and Pattern Enumeration",
Mr W D Halford, Massey University: "Lie Transformation Groups and Differential Equations",
Dr A H D Brown, CSIRO, Canberra: "A charge state mutation model",
Dr M D Hendy, Massey University: "Pure Mathematics: An Experimental Science",
Mr R J Spence, Massey University: "Statistics for the Mathematically Naive",
Dr E Scheinberg, University of Calgary: "Genetic Stability at the ADH locus of Tribolium"

++++++++++++++++++++ D.C.J.

Victoria

Professor Terence Nonweiler now occupies the Chair of Applied Mathematics (but has had to move it out of his study for the builders and painters, who have also displaced the secretaries from the departmental office).

Dr Jim Ansell is soon to go on sabbatical leave to Cambridge, England, via several seismically active areas, in order to continue working on the theory of earthquakes.

Dr Richard Epstein will be arriving early in December as a Postdoctoral Fellow in Mathematics, to work on recursive function theory with the logic group in the Mathematics and Philosophy Departments.

Dr Duncan Roper will be back next year, part-time.

Mr Euan Smith will soon be leaving for a permanent position with Geophysics Division, DSIR, and Ms Sharleen Forbes has resigned to return to Auckland.

This has been a record year for outside speakers to seminars, in all areas of the Department's mathematical activity: 3 in pure, 2 in applied, 1 in statistical and 2 on teaching methods. It has been most stimulating and helpful to us, as has our continued cooperation with geophysicists, philosophers and Applied Mathematics Division, DSIR.

++++++++++++++++++++ J.F.H.

Applied Mathematics Division, DSIR, Wellington

Dr R Wooding is working on geothermal problems at Colorado State University for one year on a National Science Foundation Fellowship.

Professor R P Gupta from Dalhousie University has been at AMD for two months. During that time he gave a series of lectures on multivariate analysis and conducted research on discrete distributions. He is shortly leaving for Australia where he will be giving further lectures to various universities. Then he will visit the Indian Statistical Institute in Delhi, before returning to Canada.

Dr N Zotov, formerly of the Mathematics Department of the University of Otago, is temporarily employed by AMD for a few months, cataloguing documentation of the Computing Services Centre at Victoria University.

Dr D R Brillinger of the University of California (Berkeley) will be visiting AMD in the near future for a few weeks. His main interests are in time series analysis and multivariate analysis.

++++++++++++++++++++ H.S.R.

WHAT IS MATHEMATICS?

"The subject in which we never know what we're talking about nor whether what we're saying is true"

Bertrand Russell

"The art of giving the same name to different things"

Poincaré

Physics and Engineering Laboratory, DSIR, Gracefield

Jim Beck and Graeme McVerry of the Engineering Seismology Section are working in the Department of Civil Engineering at Caltech on NRAC Fellowships.

Kevin Hall (Industrial Engineering Section) is presently editor of the Operations Research Newsletter.

Ian Donaldson (Applied Mechanics Section) is convenor of an international conference on the geothermal reservoir to be held at the Wairakei Hotel from August 29 to September 3 next year. He is currently running for parliament as Values candidate for Petone.

Next year is DSIR's 50th anniversary and most divisions have some activities (e.g. open days and conferences) planned to celebrate this.

++++++++++++++++++++ I.D.

Canterbury

The Mathematics Department is expanding downstairs into the area vacated by the Psychology Department. The large laboratory is being converted into 2 numerical laboratories, one equipped with a terminal and an XY-plotter connected to the Burroughs 6718 computer, and the other with 5 HP-25 calculators. John Deely plans to apply the techniques he studied on leave for teaching statistics with a computer terminal.

Brian Woods is on leave at Churchill College, Cambridge, where he is representing the College at squash and is working at the Engineering School. He is moving to Cranfield when his family joins him in the New Year.

Ting On To is adding Welsh to his languages while studying analysis at Swansea.

Peter Bryant travelled overseas for 2 months on a Erskine Fellowship, attending a fluid mechanics conference in Poland and visiting universities in the U.K. and U.S.A. He found that the teaching of applied and engineering mathematics ran more smoothly in those universities (for example M.I.T., Caltech) where the teaching remains in one department.

++++++++++++++++++++ P.J.B.

TO SEE OURSELVES AS OTHERS SEE US

"The good Christian should beware of mathematicians and all those who make empty prophecies. The danger already exists that the mathematicians have made a covenant with the devil to darken the spirit and to confine man in the bonds of Hell."

St. Augustine

"I can scarcely bear to write on mathematics or mathematicians. Oh for words to express my abomination of that science."

Lord Macaulay

Otago

John Harraway is on leave at Reading University for eleven months, having spent one month at Khon Kaen University in north-east Thailand on the way to England.
John Clark will be on leave at Stirling University until August 1976.
Michael Mather has resigned and leaves for Britain in December.
Dr Liddell has been appointed to an assistant lectureship.

++++++++++++++++++++ J.S.H.

## VACANCY

UNIVERSITY OF OTAGO
MATHEMATICS DEPARTMENT

Lecturer in Mathematics

Applications are invited for appointment as a lecturer in the Department of Mathematics. Applications will be considered from candidates with qualifications in analysis.

Salary scale: $7861 - 9912 per annum. Further particulars are available from the Registrar, University of Otago, P.O. Box 56, Dunedin, New Zealand, with whom applications close on December 15, 1975.

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## NEW MEMBERS

We welcome the following new members (additional to those listed in Newsletter Number 3):

Mr B.K. Campbell, Applied Mathematics Division, DSIR
Dr A.J. O'Connor, Faculty of Mathematics, Open University
Mr S.B. Watt, Department of Mathematics, University of Otago.

## SUBSCRIPTIONS FOR 1975 - 1976

Members and prospective members are reminded that their subscriptions for the year 1975 - 1976 were due on 1st April 1975. The annual subscription of $5 (reduced to $1 for students) should be sent direct to:

The Treasurer
New Zealand Mathematical Society
Department of Mathematics
University of Auckland
Private Bag
AUCKLAND

## OFFICERS FOR 1975-76

| | | |
|---|---|---|
| President: | Professor John C Butcher | (Auckland) |
| Immediate Past President: | Professor David Vere-Jones | (Victoria) |
| Incoming Vice-President: | Professor Gordon M Petersen | (Canterbury) |
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is published by the Auckland Mathematical Association, P.O. Box 6855, Auckland 1. The annual subscription for individuals is $3.00 and three issues are published each year.

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## THE NEWSLETTER

This Newsletter has been produced for the Council of the New Zealand Mathematical Society by Donald Joyce with the assistance of John Butcher, Kevin Broughan, and Lyn Stening. The Editor is particularly grateful to the Honorary Correspondents:

Garry Tee (Auckland), Mark Schroder (Waikato), John Harper (Victoria), Stan Roberts (AMD), Ian Donaldson (PEL), Peter Bryant (Canterbury) and Gloria Olive (Otago).

Contributions are invited from anyone who has anything to say of interest to the N.Z. mathematics community. Local News items may be sent to one of the Honorary Correspondents or direct to the Editor (c/- Mathematics Department, Massey University, Palmerston North, NEW ZEALAND).

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## FROM OUR ARCHIVES

Sir

In your otherwise beautiful poem (The Vision of Sin) there is a verse which reads:

"Every moment dies a man,
every moment one is born."

Obviously this cannot be true and I suggest that in the next edition you have it read:

"Every moment dies a man,
every moment $1\frac{1}{16}$ is born."

Even this value is slightly in error but should be sufficiently accurate for poetry.

Charles Babbage

(letter to Lord Tennyson)