THE NEW ZEALAND MATHEMATICAL SOCIETY

# NEWSLETTER

NUMBER 2 MARCH, 1975

## PRESIDENT'S NOTES

Let me start by noting two items which should have immediate interest to members. The first is the coming into force of the reciprocity agreement with the Australian Society: members of our Society wishing to take advantage of this agreement should write to Professor Lorimer to obtain the necessary application forms for forwarding to the Australian Society. The same procedure should be followed by members who already belong to the Australian Society and wish to bring their membership of that society under the terms of the Reciprocity Agreement. Further details are given in the notice on p. 7. The concession we gain from the agreement is a very real one, for members can now belong to both societies for slightly less than it previously cost to belong to the Australian Society alone. I trust, however, that the agreement will not be of benefit to mathematicians in New Zealand solely or even primarily because of a one dollar reduction in annual fees. The way is now open for exploring such possibilities as joint meetings, closer collaboration in the publication of journals, joint discussions of academic and educational problems, to mention only those that come first to mind. I have been invited to attend the Annual Council Meeting of the Australian Society next May as an observer from the New Zealand Society, and some 10 days later Professor Neumann will be attending our own Council Meeting in a reciprocal capacity. It will be a failure of imagination and initiative, not a failure of opportunity, if these moves bear no practical fruit. I would be very glad to hear directly from any members who have particular points that they would like to see discussed at these joint meetings. In passing I mention that our negotiations with the London, American and Japanese Societies are still proceeding; I am hopeful we will be able to report a positive outcome to both issues by the time of our AGM.

The other immediate item to which I would like to refer is the scheme for an Essay Prize outlined on p. 6. The Council at its first meeting felt that there were several possibilities in the general area of prizes and other awards that the Society should consider very seriously, and it requested Dr Malcolm and Professor Lorimer to prepare a full report for the May Council Meeting, in order that specific recommendations could be passed on to the AGM. In the meantime, however, Council members have agreed that the scheme for an Essay Prize to mark the founding of the Society could be proceeded with independently. The scheme calls for the appointment of advisors in each University Centre to help discuss possible topics with possible candidates and we would be grateful to receive the names of persons who would be willing to act in this capacity so that the list can be agreed on at the May Council Meeting. The intention will then be to circulate copies of the notice, in the same style as, but possibly in larger format, than it appears in the Newsletter, and completed by the list of advisors, to all tertiary institutions for the beginning of the second term. I hope that all members will help to promote the competition by bringing it to the attention of likely entrants. After the essays have been judged, it is hoped that the winning essay or essays will be published by the Mathematics Magazine (the editors of the Mathematics Magazine have been approached for their approval).

On a long-term basis, the most important issue facing the Society– indeed, facing the development of mathematics in New Zealand in general– concerns the relationship

of the Society to the local Mathematical Associations. The very formation of the Society brings the Associations to some kind of watershed, where they have to look to their role on the national as well as the local scene, and hence inescapably, to the question of their relationships with the Society (which holds, as Dr Malcolm points out, very similar aims to those of many individual Associations). I am quite sure that the question of some kind of national coordination of the Associations was already ripe for discussion; in this respect the Society may have played the role of a midwife, helping to bring into the light of day proposals that were due on the scene in any case. But the more important feature is that we have the opportunity to examine whether the Society and the Associations can from the beginning fashion a joint harness within which both can operate to advance the general cause of mathematics in New Zealand, without creating a division of loyalties which, granted the small scale of our operations even at the national level, could easily endanger the successful operation of either party. How close we are to incurring this danger is shown, I think, by some of the reactions which accompanied the formation of the Society. I hope the suspicion which clouded some of our early maneouvres,— the suggestions that we were aiming to usurp the role of the Associations, or were behaving in such a way as to provide an "insult to schoolteachers", has now evaporated; but it shows how carefully the Society must tread if a successful outcome to these negotiations is to be forthcoming. To date, the activities the Society has tackled hardly overlap with those of the Associations. As time passes, however, it is inevitable that the Associations will have more business to conduct at the national level, and that the Society will wish to play a more active role at the local level. Both will benefit if their relationships can be so organised that the activities of the one grouping support and complement those of the other, and both can speak together on issues of national importance; conversely both would suffer if their activities came into competition.

I doubt if many would quarrel with the above sentiments, but the question is, how can the desired relationship best be achieved? How should the Society develop its local role and the Associations their national role?

The proposals which come from the ad hoc committee convened last October relate mainly to the latter aspect of the question. My personal feeling is that the decision here largely boils down to whether the Associations would do best to first federate among themselves and then maintain close informal relations with the Society (cross representation on Councils and so forth) or whether they should seek a formal status within an enlarged Society. The latter seemed to the participants at the October meeting to offer the best opportunities for further development. I favour it personally because it seems to me to enhance the possibility for greater activity at the local level. As groups formally affiliated to the Society, it would be natural for the Associations to develop and expand their activities to include more for tertiary level teachers (the polytechnics are notably badly catered for at present) and for mathematicians in government and industry. This would be in line with existing policy in most cases, but affiliation to the Society could provide a new stimulus. It would also relieve the Society of what would almost surely prove to be the impossible task of running local branches with a very restricted range of activities that did not conflict with the activities of the Associations.

Perhaps, from our point of view, such integration does run the risk of creating a larger and more cumbersome formal structure with no very immediate benefit to those primarily concerned with research activities and international links. But it is most unlikely that these activities would be prejudiced in any serious way by a move towards amalgamation, and in the wider interests of mathematics in New Zealand I think the price of a more cumbersome machinery would be well worth paying for the opportunity of working together and having discussions with representatives of a wide range of mathematical activities.

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As a closing theme, let me point the way towards the first AGM of the Society, to be held during the Colloquium at Dunedin. As indicated above, there are major issues to be discussed, even if the intention is to go no further than an expression of support in principle for the proposals Dr Malcolm describes or some modifications to them (I should stress that the Council has no intention of introducing major constitutional changes at this year's AGM; even if support in principle is obtained, it seems likely that at least a further year will be needed to work out an agreed form of such changes with the individual Associations.). A full support of members at the AGM is needed; and let us hope that the Colloquium provides the right occasion to prod some of the more recalcitrant of our colleagues into joining the Society.

Already in April, the Secretary will need nominations for an incoming Vice-President and two Council members; it would particularly appropriate to have further local support on Council for the new President, based in Auckland, and some representation from the venue of next year's Colloquium (Palmerston North). Since we are also bound to have two South Island representatives, these suggestions may tend to limit the choice of combinations, but I hope you will bear them in mind when the elections are held.

One final note, of particular concern to the President, if to no one else. Is there a case for instituting a presidential address at the AGM or at the Colloquium? I am confident I can wriggle out of this commitment myself; is it something to which we should commit my successors? — D. Vere-Jones

## REGIONAL MATHEMATICAL ASSOCIATIONS AND THE NZ MATHEMATICAL SOCIETY

For some years now Mathematical Associations have been well established in various regions throughout New Zealand; the Auckland Mathematical Association, for instance, has recently celebrated its 40th year of activity. Right from the first discussions on the possible formation of the NZ Mathematical Society the relationship of the Society to the Associations has been recognized as an important matter that would require careful consideration at an appropriate time.

As a result of informal discussions between various people involved both with the Associations and the Society it was agreed that the time was now appropriate to consider the possibilities of more formal relationships between the various Associations themselves and with the Society. A meeting was held in Christchurch on 19th October 1974 under the chairmanship of Mr N.J. Gale. Representatives attended from Mathematical Associations in Auckland, Waikato, Wellington, Canterbury and Southland. Apologies were received from, and interest expressed in the purpose of the meeting, by mathematical interests in Otago and Nelson. The Society was represented by Professors Petersen and Vere-Jones and Dr Malcolm.

As a result of wide ranging discussion the meeting agreed on several basic premises. These were:

1. That the development of the various autonomous mathematical associations has reached the stage where it is desirable to establish more formal relationships between them. Such relationships should provide for the regular exchange of information between the Associations and the promotion of some activities of common interest on a national or semi-national basis.

2. That the establishment of formal relationships between the regional Associations should, if at all possible, take place in the context of relationships between the Associations and the recently formed New Zealand Mathematical Society. The chief reasons supporting the inclusion of this as a basic premise are:

   a. Most of the regional Mathematical Associations, although in practice devoting almost all of their activities to aspects of mathematics in schools, yet share with the NZ Mathematical Society a common aim of promoting the development, application and dissemination of mathematical knowledge within New Zealand.

b. The small size of the NZ population and the relative smallness of the number of people interested in any aspect of mathematical activity make it undesirable to have parallel and possibly competing groupings of mathematical interest either at the national or the local level. Further, the effectiveness of a national and local 'voice' on behalf of mathematics and mathematicians in various areas of concern is enhanced if it is the expression of as wide a community as possible of those concerned with, and engaged in, the practice of mathematics.

c. The desire not to split membership in the various regions so that all persons with an interest in all fields of mathematics may have access to membership to Mathematical Associations and/or Society.

Further consideration was given to ways and means of relating the Associations with each other and with the Society. Various proposals were considered and finally it was agreed to recommend to each of the Associations and to the Society the following suggested scheme for their consideration.

The suggested scheme involves provision to be made in the constitution of the Society whereby each Mathematical Association could, if it so wished, become affiliated to the Society as an Association Member, and be liable for a modest annual affiliation fee— perhaps on a basis of 10¢ per Association Member. Each such affiliated Association would continue to be separately constituted, responsible for its own affairs and function locally in the same manner as at present, or in whatever other manner as determined by its own membership. The members of any affiliated Association would not automatically be reckoned as individual members of the Society. But individual members of an Association would be eligible to apply to become an ordinary member of the Society if he or she so wished, perhaps with a reduced annual subscription fee in lieu of his existing Association membership.

An affiliated Association would have the right to send voting delegates to each annual and special general meeting of the Society. The number of such delegates to be based on the numerical size of the membership of the Association and range from a minimum of one to a maximum of three.

The scheme further proposes that the Society should so organise itself that the group of affiliated Associations could be formed into a section or division within the Society. The section of Mathematical Associations within the Society would be free to promote and organise its own internal life with as much, or as little, detail as it wished. It would be the means by which the various Associations could relate directly to each other and sponsor and participate in national and semi-national activities of immediate concern to the Associations. This section of Mathematical Associations would have the right of appointment of three persons, say, from amongst the membership of the Associations, but also ordinary members of the Society, to the Council of the Society.

This sets out the essence of the proposal that has come from the Christchurch October meeting to each of the Associations and the Society. Each of these bodies is to consider it and to decide in principle whether it would support it, either in the form set out or with specified alternative arrangements.

The proposal as summarised above involves major issues for the Society. If agreed to in this, or some alternative form, major changes would be required in the constitution to allow for the affiliation of regional Associations, their collective organisation as a section within the Society and changes in the composition of the Council. It is important therefore, that Society members have full opportunity of considering the proposal and contributing to the making of the appropriate decisions.

The proposal will first be given detailed consideration at the May meeting of the Council. Members of the Society are encouraged, if they so wish, to communicate with the President, Professor Vere-Jones, or any Council member, views or suggestions on the issues involved. This would help the Council members in their May meeting.

From the Council meeting in May it is hoped that there will come a recommendation to the Annual General Meeting of the Society to be held a little later in May. This should enable the Society, meeting in its annual meeting, to reach a decision on whether or not it will want to support the proposal in principle. The nature of the Society's decision, taken at its annual meeting, will then be communicated to Mr Gale, as convener of the October Christchurch meeting, who will also receive replies form the Mathematical Associations. Depending on the nature of these replies, and if generally favourable, he will then convene a further meeting of Associations' and Society representatives. This meeting would prepare the way for detailed constitutional recommendations to be presented and decided upon at the 1976 annual meeting of the Society, and the inauguration thereby of formal relationships between the Associations and the Society, if such is to be established at all.

— W. Malcolm

## EMPLOYMENT OF MATHEMATICS GRADUATES

Figures from the Vice-Chancellor's Committee survey on employment of graduates were generously made available to the NZ Mathematical Society's group which is looking at this question. We list below the employment or other areas into which all graduates, with a "mathematics major", have gone. These figures apply to all NZ universities and cover the period 1st July 1973 to 30th June 1974. The number of respondents was 245 graduates.

| | | % of total | % of NZ students not continuing study |
|---|---|---|---|
| Teaching | | | |
| Secondary | 28% | | |
| Tertiary | 2% | | |
| Primary | 2% | 32% | 57% |
| Working Mathematicians (statisticians, scientists, etc.) | | 10% | 18% |
| Working in non-mathematical areas (e.g. clerical, self-employed) | | 10% | 18% |
| Further study | | 29% | -- |
| Overseas students returning home | | 8% | -- |
| Overseas students remaining (for further study or employment) | | 7% | -- |
| Looking for work | | 4% | 7% |
| | | 100% | 100% |

(Figures for all graduates will be published by the Vice-Chancellor's Committee later.)

Significant features include the high number of graduates going into teaching and the relatively small number being employed in mathematically relevant jobs outside of teaching. The latter is of concern to us and the group (convened by the Secretary) would welcome suggestions on ways in which this situation could be improved.

— G. Wake

## INAUGURAL ESSAY COMPETITION

The Council has decided to institute an essay competition to mark the founding of the New Zealand Mathematical Society. A draft announcement is included below and this notice will be circulated to all tertiary institutions at the beginning of the second term. The May Council Meeting will consider the appointment of judges and advisors and nominations would be gratefully received.

### New Zealand Mathematical Society Inaugural Essay Competition

To mark the founding in 1974 of the New Zealand Mathematical Society the Council of the Society invites entries from students enrolled in New Zealand universities or other tertiary institutions for the Inaugural Essay Competition. The competition is open to graduate but not doctoral students.

Two major prizes of $50 each will be awarded. One (the Open Prize) for the best entry from amongst all entrants, the other (the Undergraduate Prize) for the best entry from students who by the end of 1975 have not completed more than three years study at a tertiary institution or institutions. The winner of the Undergraduate Prize is eligible for the award of the Open Prize.

Further prizes of $5 each, not less than five in number, will be awarded for commended essays.

The winning essay or essays will be published in the New Zealand Mathematics Magazine.

Each entrant for the competition is free to select his or her own specific essay topic but this must come within the broad field of some mathematical subject or aspect of mathematical activity especially relevant to New Zealand. In particular, it may be a biographical account, or an exposition of some part of the mathematical work, of a person who was born and educated in New Zealand or whose mathematical working life was largely spent resident in New Zealand.

An adviser to students entering the competition has been appointed in each University centre. These advisers are:

Auckland:

Waikato:

Massey: to be appointed

Victoria:

Canterbury:

Otago:

Each student entering the competition is required to send to the adviser in his centre a written enrolment application by not later than August 31, 1975. This enrolment application must contain the full name of the entrant, term and vacation address, statement of year of initial enrolment at a tertiary institution and present course of study. The enrolment application must include the title of the essay to be submitted and (if necessary) a short paragraph in explanation of the title.

The adviser in accepting the enrolment has authority to suggest some variation in the title and topic submitted if he judges this appropriate and/or necessary. Students are encouraged to discuss personally with the adviser their plans for an essay topic, or seek advice on a possible topic, before the time of their actual written enrolment.

Each student entering the competition shall submit only one essay.

The completed essay msut not exceed more than 10,000 words in length. The final copy, preferably typed, but otherwise written in clear, legible handwriting, on one side only of A4 size paper, must reach the adviser not later than February 14, 1976.

Judges appointed by the Council of the New Zealand Mathematical Society shall determine the prize winning essays. Their decision will be final, and no correspondence will be entered into in regard to their decisions.

Each entrant in the competition will be notified by letter the outcome of the competition not later than April 30, 1976 but probably earlier.

Any further information about the competition, if not obtainable from one of the nominated advisers as set out above, should be sought from the Secretary of the Society, Dr G. Wake, Mathematics Department, Victoria University of Wellington, Private Bag, Wellington.

## RECIPROCITY AGREEMENT WITH AUSTRALIAN MATHEMATICAL SOCIETY

The agreement with the Australian Mathematical Society, the terms of which appeared in the last newsletter, is now in force. Members of the NZMS can join the Australian Society for $A6 per annum. They should enclose a note of authentication of membership of NZMS from our Treasurer (Professor P.J. Lorimer, University of Auckland) with their application to the Australian Society. The Treasurer will also have forms for membership application to the Australian Society. The financial year for which the first fees will be received under this agreement begins on 1st April 1975.

Applications for membership of the Australian Society should be sent to their Secretary. The current Secretary is: Mr W. Pye, Melbourne State College, 757 Swanston Street, Carlton, Victoria 3053, AUSTRALIA.

## INTERNATIONAL COMMISSION ON THE HISTORY OF MATHEMATICS

Mr D. Carian of Palmerston North Teachers College has been recommended by the Society to the International Commission on the History of Mathematics as a NZ member of the Commission. The Commission is an advisory and communications body. Its members help set policy, keep the International Commission informed about activities in their respective countries and help promote the journal (Historia Mathematica) in their areas.

## VISITOR

Professor Burton W. Jones, a number theorist and algebraist, previously chairman of the Mathematics Department of the University of Colorado will be visiting NZ from 15th March-6th April. His approximate itinerary is Auckland University, 17-19 March; Waikato University 19-21 March; Massey University 24-25 March; Victoria University 25-27 March; Otago University, 1-2 April; Canterbury University 2-4 April.

## RECIPROCITY AGREEMENTS

A reciprocity agreement is being negotiated with the London Mathematical Society on similar terms to those with the Australian Society. Details may be available for the May meeting. We have made approaches to both the American and Japanese Mathematical Societies.

## SUBSCRIPTIONS FOR 1975-76

Members were reminded that their subscriptions for the year 1975-76 are due on 1st April 1975. The annual subscription of $5 should be sent direct to the Treasurer, Professor P.J. Lorimer, University of Auckland as soon as possible after 1st April.

## ANNUAL GENERAL MEETING

Members are reminded that the Annual General Meeting of the New Zealand Mathematical Society will be held during the Colloquium in May in Dunedin (tentative date is Wednesday, 21st May). Any items which you wish to have placed on the agenda should be sent to the Secretary (Dr Graeme Wake, Victoria University of Wellington) by 9th April 1975. Also nominations for the following positions are called for

| | |
|---|---|
| Incoming Vice-President | (to replace Professor Davidson) |
| Two Council members | (to replace Drs Ansell and Wake) |
| Auditor | (at present Mr Christie of Auckland) |

The Secretary would like to have nominations for the positions by 9th May 1975.

## WHICH DEPARTMENT?

The Department of Theoretical and Applied Mechanics, University of Auckland, has occasional problems with its name. Not only was a recent letter from the US addressed "Department of Theology and Applied Magic", but an authentic malapropism was perpetrated by a secretary who phoned to ask for the "Department of Theatrical and Applied Mechanics".

## LOCAL NEWS

Local news and items of interest are included in each Newsletter. Please send any contributions to the Secretary of the Society.

### Otago

Prof. D.B. Sawyer has returned from sabbatical leave and resumed chairmanship of the Department.

Dr David Hill is on refresher leave at Warwick University until August 1975 and will be taking part in a seminar series on topology and functional analysis, including ergodic theory.

Professor S.P.H. Mandel spent the summer vacation as a consultant in Mathematical Statistics to the World Health Organisation based in Geneva.

Dr A.B. Evans will hold a UGC post-doctoral fellowship at Canterbury in 1975, working on general relativity.

### Waikato

Various members of staff will be overseas on leave this year. Prof. Roger Hosking will be involved with applied mathematics and Mr John Turner with statistics and operations research, both in the United Kingdom. Mr Kevin Broughan and Dr Durling will be in the United Kingdom furthering their interests in topology and statistics, respectively. Dr Mark Schroeder will be working on topology in Europe.

### Physics and Engineering Laboratory, DSIR, Gracefield

Don Campbell of the Applied Mechanics Section has completed his Ph.D. from the University of Auckland.

### Massey

Dr Tyree has resigned to study law at Victoria University. Mr Dean Halford is spending four months' leave at the University of Canterbury, working with Prof. Ray Kerr.

First year courses in mathematics and statistics have been considerably reorganised to match students' school backgrounds, provide appropriate service courses, and provide flexible entry to advanced courses.

Two successful summer sessions were conducted over the summer on p-adic numbers and on Lie Groups and Algebras.

Second-year extramural courses are proving very popular. This year the courses offered are: linear algebra, calculus, numerical analysis, statistical analysis, theoretical population biology and history of mathematics.

## Victoria

Prof. Terence Nonweiler, currently Mechan Professor of Aeronautics and Fluid Mechanics at Glasgow University, has been appointed to the Chair of Applied Mathematics and will arrive in late July. Mr Andrew Coppel, Senior Fellow in Mathematics, Institute of Advanced Studies, ANU, who works in number theory and the theory of ordinary differential equations, is currently Visiting Professor. It is hoped that Dr Alan Schumitsky, University of Southern California, will be a Visiting Professor for a period from early June.

Dr Gillian Thornley and Ms Sharleen Forbes have been appointed temporary lecturers, Dr Rob Goldblatt and Ms Megan Bondy have been appointed lecturers and Mr Mike Brockway and Mr Tim Schumacher have been appointed junior lecturers.

The Diploma in Operations Research and Statistics is successfully underway with nine students, six of whom are employed in various government departments.

The distinguished mathematical historian Prof. Struik, visiting New Zealand for family reasons, recently visited the Department and spoke on the "Sociology of Mathematics".

Mr Trevor Boyle of Horowhenua College is spending 1975 in the department as a Secondary School Teachers Fellow. Ms Thora Blithe has been elected Academic Dean of the Science Faculty and becomes the first woman, and youngest ever, Dean.

Dr Harper and Mr Smith recently attended the Southwest Pacific Workshop Symposium on the Indian-Pacific Plate Boundary at Sydney University.

Prof. Sandler has resigned but his successor has not yet been appointed.

## Applied Mathematics Division, DSIR, Wellington

Mr Clive Nicholson has joined the software section. Dr Mike Saunders has left for Stanford University where he will spend a year in the Operations Research Department working on the implementation of various methods of solving large staircase structured linear programming problems.

## Canterbury

Dr David Robinson recently spent six months at Cranfield Institute of Technology where he was involved in consulting work in Operations Research and developed a graph-theoretic model of the operations of local officers of a government department.

Bob Broughton recently returned from a year's leave at the University of Essex where he worked on numerical analysis.

Dr Graeme Wood has been awarded a University of Canterbury Centennial Fellowship and will leave in May for a year at Khon Kaen University in Thailand teaching linear algebra and numerical mathematics.

There are currently a number of visitors. Prof. S. Burton Jones, University of California, Riverside, whose field is point-set topology, is working with

Dr Barit on the topology of the plane. Dr F.A. Graydon, Eng. Mathematics Department, Bristol University, is working with the Engineering School on problems in solid mechanics. Dr C.I. Vinsonhaler, University of Connecticut, is working with Dr O'Meara on orders in regular self-injective finite rings. Dean Halford, of Massey, is working with Professor Kerr on problems in relativity.

The University has changed to a credit points system and the department has made changes. All mathematics papers can now be advanced toward a degree without the previous restriction to certain packaged combinations of them. The four advancing first-year papers consist of Algebra, Calculus, and Mathematical Methods, which are assessible from school mathematics, and statistics, for which school applied mathematics gives an advantage.

## Auckland

### Department of Theoretical and Applied Mechanics

Prof. Segedin is on leave until June 1975 at Cambridge University and Dr Ian Medland will be at the University of Manchester during 1975.

Dr Larry Lewin will be a visiting lecturer for the first half of 1975. Two new staff members, Dr Glenn Sinclair and Dr Jerry Griffin arrived in 1974. Both worked for their doctorates in Solid Mechanics at Caltech. However, Glenn graduated B.Sc., B.E. from Auckland, being one of the "foundation" Engineering Science class of 1968 while Jerry was a graduate of University of Southern Florida.

Dr Mike O'Sullivan was recently awarded two grants by the Energy Research and Development Committee. These will cover computer modelling of geothermal fields and cooling water discharges.

Dr Don Campbell (now with PEL, Gracefield) has become the first student to graduate Ph.D. in Engineering Science. His thesis is entitled "Numerical solutions of pollution problems in estuaries and rivers".

### Mathematics Department

Dr D.M. Ryan has been appointed to a lectureship.

Mr D.C. McNickle has completed his Ph.D. under the supervision of Dr J.J. Hunter and Dr A.J. Scott. The thesis was entitled "Processes in the decomposition of networks of queues".

The following have been appointed as Junior Lecturers or Part-time Lecturers for 1975: M. Barker, M.L. Dowling, R.E. Frimmel, G.M. Hall, A. Heard, H.A. Lucas, F.M. Luketina, D.C. McNickle, S.D. Scott, S. Tucker.

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This Newsletter has been produced for the Council of the New Zealand Mathematical Society by Ms Erlene Chun and Dr Jim Ansell of Victoria University of Wellington. Thanks go to the many contributors.