

COMBINATORICS

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pp 1 - 8

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* During 1986 all enquiries should be directed to the *
* CMSA, c/- Prof. D. A. Holton, Dept. Maths & Stats, *
* University of Otago, Box 56, Dunedin, New Zealand. *
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I. Australian Mathematical Society Links.

Since last newsletter there have been two letters received on this subject. Both of them are against the move essentially because there seems to be no advantage to CMSA members (but an increase in fees to the Aus.M.S.). Below are some extracts from these letters.

"I've been reading the proposal for the CMSA to be embedded in the Australian Mathematical Society. Beyond seeing no need for such a step, I find the financial arrangements alarming. It is proposed to multiply my subscription by five, not because the CMSA needs the money, but to satisfy some quirk of the internal politics of a body of which I am not, and do not wish to become, a member. I notice, by the way, that only 30% of the CMSA members are also members of the Australian Mathematical Society. I am against paying a higher subscription than the CMSA needs, especially when there is no suggestion that any benefits will accrue to me or other members thereby.

Reading further, I see the 'power', such as it is, being given to the Dual Members out of proportion to their numbers. Is this democracy?"

"I am not prepared to pay \$20 per annum for the so-called "privilege" of belonging to an affiliate of the AMS. I think that you will find that a lot of ordinary members feel the same."

Could I suggest that anyone in favour of the move to cement links between the two bodies drop me a line for publication in a Newsletter early next year.

I suggest the matter be debated at the Canberra Conference in 1987 and a decision be made then. Postal votes should be accepted for such an important issue.

Derek Holton.

II. News.

It is with great pleasure that I announce the recent marriage of my research student Mr. R.E.L. (Tank) Aldred to my secretary Miss K.H.M. Smeets. I should point out that this is not a cheap way of getting your Ph.D. typed. Karen is not thinking of submitting her thesis.

III. Conferences.

As we have been mentioning heavily in all of the earlier newsletters this year, there is a conference being held in Dunedin from 1/12/86 to 5/12/86 registration for which should be sent right now if it has not already been sent. To facilitate your registration we have yet again included a registration form in this issue of the newsletter. Those who are coming and have already sent in your registration forms please note that we will be offering a shuttle service to and from the airport during the conference. If you would like to be met at the airport please send your flight details to the conference organisers so that arrangements may be made for your collection. If you are arriving in Dunedin by other than air transport and you require some directional assistance then you should feel free to call Derek Holton at home on 779 723.

Other conferences coming up in the not too distant future are as follows:

CMSA Canberra, 24 - 28 August 1987.

Contact Dr. B.D. McKay, Dept. Comp. Sci., A.N.U., Canberra 2601, A.C.T., Australia.

Australian Mathematical Society Annual Meeting, Deakin.

Contact Dr. K.L. McAvaney, Div. Computing and Mathematics, Deakin University, Vic. 3217, Australia.

Summer Research Institute of the Australian Mathematical Society, Newcastle University.

Contact Dr. R.B. Eggleton, Dept. Mathematics, University of Newcastle, Newcastle, N.S.W., Australia.

IV. The Dunedin Conference.

The second half of this year's ACCMC will be held in Dunedin from 1-5 December. If you intend attending this meeting and you have not yet sent in your registration form then you should do so immediately.

(i) Invited Speakers

One hour addresses will be given by the following invitees -

L. Caccetta (W.A.I.T., Perth)
(Applications of graph theory)

W. Jackson (Goldsmith College, London)
(Longest cycles in 3-connected cubic graphs)

A. Hartman (IBM, Haifa)
(Factorisation of the Complete Uniform Hypergraph)

L. Szekely (Auckland)
(Inclusion-exclusion with vanishing terms.)

(ii) Papers/Proceedings

In addition to the invited lectures, we welcome contributed papers in all areas of pure and applied combinatorics including aspects of computing. Contributed papers will be of twenty-five (25) minutes duration with five (5) minutes allowed for questions.

Potential speakers should send a TITLE and a SHORT ABSTRACT to:-

Professor D. A. Holton,
Dept. of Mathematics and Statistics,
University of Otago,
Box 56, Dunedin,
New Zealand.

Titles and abstracts should already be here.

The proceedings of the Dunedin Conference will be published as a special volume of *Ars Combinatoria*. All papers will be refereed. Contributors must submit their manuscripts in final form at the conference

It would be most appreciated if, where possible, papers were prepared as Macintosh Macwrite documents and brought to the conference on disc as well as in hard copy. It would also be useful if copies of any non standard fonts used could be included on the disc. (If it makes you feel more comfortable you may read "disk" for "disc" in the preceding sentences.)

(iii) Accommodation

Accommodation has been reserved at Knox College, University of Otago. This university hall of residence is some ten minutes walk from the department of mathematics and statistics.

This will be for bed and breakfast only. Lunches and evening meals can be purchased from a variety of reasonable venues within easy reach of the university and college. The Senior Common Room (Staff Club) will be available to conference participants for the duration of the conference. Reasonable lunches may be purchased there.

The cost of accommodation is \$N.Z.30 per day (single).

For those wishing hotel/motel accommodation there is a

variety of these residences in the neighbourhood for approximately N.Z.\$40/day, bed only, G.S.T. not withstanding.

(iv) Registration

Registration fees are payable at the conference (though we'll take them any time ahead of time) and will be:

N.Z.\$95 for non members (giving membership for the year),

N.Z.\$88 for members,

N.Z.\$50 for students (which includes annual membership).

(v) Social Programme

The usual wine and cheese, cocktail parties and general riotous behaviour are guaranteed.

The excursion for planned for the conference was intended to contain a certain cruise component, however an alarming increase in the incidence of acts of piracy on local waters have forced to alter our plans to a totally land based operation. The new excursion should take in most of the attractions of the scenic peninsula and come in at around \$23 a head (GST included).

There will be a conference dinner, which, including drinks, should cost no more than N.Z.\$30/person. It would help the committee if you would indicate if you plan to attend the dinner. Also indicate if you are likely to be accompanied by guests to the dinner.

(vi) Climate

It should be noted that, although it will be officially summer in New Zealand at the time of the conference, the temperatures and general weather conditions encountered may be more somewhat cooler and wetter than the grandios title of "summer" might suggest to many. Thus it is suggested that the inclusion of some warmer clothing and some wet weather apparel would be wise.

(vii) Program

As the program for the conference has not yet been prepared it will not be distributed until the conference.

De Olde Registration forme

Name: Prof./Dr./Mr./Mrs./Miss/Ms

(Please use BLOCK LETTERS and underline surname)

Mailing address: _____

Do you plan to submit a paper? ____

Title? _____

Knox College accommodation required for _____ persons from _____

until _____

Other accommodation required (Please specify) _____

I will/will not attend the conference dinner. I shall be accompanied by _____ guests

I will/will not attend the excursion. I shall be accompanied by _____ guests.

I am enclosing N.Z.\$20 as a deposit and _____ as prepayment of my registration.

I wish to be picked up from the airport. I shall be arriving on flight _____ at _____ (time?)

V. The Singapore Conference Revisited.

The combined meeting in Singapore in May was a great success. The proceedings have now been sent to the publishers and should appear as a special volume of *Ars Combinatoria* soon. Attached is a list of the papers to appear in these proceedings.

- Additive permutations of cardinality seven by J. Abraham.
- Covers of symmetric designs by R.E.L. Aldred and C.D. Godsil.
- Total concepts in graph theory by M. Behzad.
- Lattices associated to the rectangular association scheme by Thomas Bier.
- On cycles in graphs by L. Caccetta and K. Vijayan.
- On a characterisation of comparability graphs by O. Chan, C.C. Chen and P. Slater.
- An application of combinatorial group theory to coding by Gerard Cohen and Gilles Zemor.
- Realizing small leaves of partial triple systems by Charles J. Colburn.
- An algorithm for detecting symmetries in drawings by Peter Eades and Hoe Chin Ng.
- Three unsolved problems in graph theory by Roger B. Eggleton.
- Group signings of symmetric balanced incomplete block designs by Peter B. Gibbons and Rudolf A. Mathon.
- Generalizing Kuratowski's theorem from R^2 to R^k by David Gillman.
- On $(1, n)$ -regular graphs by M.A. Henning, Henda C. Swart and P.A. Winter.
- Minimal extensions of Sequences associated with BD-graphs by H.C. Huang and K.M. Koh.
- Vertex-gluing of graphs with their closed-set lattices by K.M. Koh and K.S. Poh.
- Independent sets in regular graphs of high girth by B.D. McKay.
- Coset diagrams for a homomorphic image of $\Delta(2, 3, 6)$ by Q. Mushtaq and F. Shaheen.
- k -minimal domination numbers of cycles by C.M. Mynhardt and E.J. Cockayne.
- On automorphism groups of imprimitive symmetric graphs by Cheryl E. Praeger.

On graceful graphs: cycles with a P_k -chord, $k \geq 4$ by
N. Punnim and N. Pabhapote.

Bounds for all-terminal reliability by arc-packing by
Aparna Ramanathan and Charles J. Colbourn.

On harmonious and related graphs by Shee Sze-chin.

A characterisation of information networks by C. Surma.

Extending partial generalized latin rectangles with
restraints by Tjong-Seng Tay.

Modelling knowledge information systems using inference
nets by Hoon Heng Teh, Loke Soo Hsu and Wai Wan Tsang.

A decision tree algorithm for squaring histograms in
random number generation by Wai Wan Tsang and George
Marsaglia.

On the a_i, b_i chromatic number of a graph by P.A. Winter.

New progress in Polya's Theory by Zhong Ji.

Problems