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## COMBINATORICS

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*Combinatorics* is the newsletter of the Combinatorial Mathematics Society of Australasia, and is published by the Society. Annual subscription rate for individual non-members and institutions is \$A4. All enquiries should be directed to the C.M.S.A., c/- Kevin L. McAvaney, Division of Computing and Mathematics, Deakin University, Victoria 3217, Australia.

## FIRST NOTICE

## EIGHTH AUSTRALIAN CONFERENCE ON COMBINATORIAL MATHEMATICS

The Eighth Australian Conference on Combinatorial Mathematics will be held at Deakin University, Geelong, Victoria, 25-29 August, 1980. All interested persons are cordially invited to attend. Contributed papers are welcome in all areas of combinatorics, pure and applied. Invited speakers are being arranged. One or two series of instructional lectures are being planned. Accommodation on campus will be available. The second annual general meeting of the Combinatorial Mathematics Society of Australasia will be held at the Conference.

Those who are not members of C.M.S.A. but are interested in attending the Conference and/or receiving the second notice please write to : Kevin L. McAvaney, Director C.M.S.A., Division of Computing & Mathematics, Deakin University, Victoria 3217, Australia.

## C.M.S.A. SUBSCRIPTION RENEWAL

Members are reminded that their annual subscriptions fall due on 1 January, 1980. The rates remain at \$A4 for those in full-time employment and \$A2 otherwise. Please make cheques payable to C.M.S.A. and post, with full name and address, to : Kevin L. McAvaney, Director C.M.S.A., Division Computing & Mathematics, Deakin University, Victoria 3217, Australia.

In the next membership list it is planned to publish office telephone numbers - in particular direct dial numbers would be useful - of any members who wish this information disseminated. If you fall into this category, please send the number to the Director with your subscription.

## NEW PUBLICATIONS

*Authors are requested to contribute lists of publications from 1978, and send future details of publications on appearance to Dr. D.A. Holton, Department of Mathematics, University of Melbourne, Parkville, Vic., 3052.*

- B. Alspach, Graphs and permutation groups whose transitive constituents have prime degree, *Topics in Graph Theory*, Annals N.Y. Acad. Sci., 238, 1979, 12-20.
- B. Alspach and K.B. Reid, Degree frequencies in digraphs and tournaments, *J. Graph Th.*, 2, 1978, 241-249.
- B. Alspach and T.D. Parsons, Isomorphism of circulant graphs and digraphs, *Discrete Math.*, 25, 1979, 97-108.
- B. Alspach and R.J. Sutcliffe, Vertex-transitive graphs of order  $2p$ , *Proc. Second International Conf. Comb.*, Annals N.Y. Acad. Sci., 319, 1979, 18-27.
- L. Cacetta, External graphs of diameter 3, *J. Austral. Math. Soc.*, 28A, 1979, 67-81.
- L. Cacetta, Characterization of external graphs of diameter 4-II, *Ars Comb.*, 7, 1979, 310-317.
- M. Herzog and C.E. Praeger, On characters in the principal 2-block, II, *J. Austral. Math. Soc.*, 28A, 1979, 100-106.
- D.A. Holton and J. Sheehan, On Sylow graphs, *J. Austral. Math. Soc.*, 28A, 1979, 27-38.
- C.A. Rodger, On the complete weight enumeration of certain linear codes over  $GF(3)$ , *Ars Comb.*, 7, 1979, 171-180.
- F. Salzborn and G. Szekeres, A problem in Combinatorial Group Theory, *Ars Comb.*, 7, 1979, 3-6.
- W.D. Wallis, Spouse-avoiding mixed doubles tournaments. *Proc. N.Y. Acad. Soc.*, 319, 1979, 549-554.
- N. Wormald, A 4-chromatic graph with a special plane drawing, *J. Austral. Math. Soc.*, 28A, 1979, 1-8.

## ANNOUNCEMENTS

*Under this heading we publish short new items for the information of members. All contributions should be sent to Professor R.W. Robinson, Department of Mathematics, University of Newcastle, N.S.W. 2308.*

### Summer Research Workshop in Algebraic Combinatorics

During July 1979, a workshop on algebraic combinatorics was held at Simon Fraser University, Canada. One of the main purposes of SRWAC was to expose participants to important unsolved problems in algebraic combinatorics. As a result of this, a list of more than 60 unsolved problems was compiled. Many of these arose directly out of the workshop. Included with the problems are responses, references, partial solutions and counter examples which arose both during and after the SRWAC. A copy of the problems is available for \$2 (Canadian) and can be obtained on sending this remittance (made payable to Simon Fraser University) to

SRWAC - Unsolved Problems  
Department of Mathematics  
Simon Fraser University  
Burnaby, B.C.  
Canada V5A 1S6

### Symposium on Combinatorics and Graph Theory

The following invitation was recently received by Dr. J. Seberry and Dr. J. Dawson, among others. It was requested that the invitation be brought "to the notice of other combinatorialists in Australia", so presumably the deadlines can be extended. The convenor is Dr. S.B. Rao, Indian Statistical Institute, 203 Barrackpore Trunk Road, Calcutta 700 035, India.

Dear Colleague,

The Indian Statistical Institute is going to hold a Symposium on Combinatorics and Graph Theory from 25 February 1980 to 29 February 1980. The Symposium will include sessions for special invited lectures, the presentation of research papers as well as expository lectures on recent work in selected areas of Combinatorics and Graph Theory.

You and you colleagues are invited to present papers and expository articles on Combinatorics and/or Graph Theory at the symposium. Abstracts of the papers may be sent by 15 November 1979 and the full papers by 15 December 1979. As it is proposed to publish the proceedings as early as possible, the papers should be neatly typed (double spaced) and sent in three copies. Diagrams should be drawn in Indian ink on tracing paper.

Board and lodging shall be arranged, free of charge, in the campus of the Institute for all participants whose papers are accepted for presentation at the symposium. It will help us to organize the symposium if you let us know of your intention to participate in the symposium by the middle of October 1979.

All correspondence regarding this symposium should be addressed to Dr. S.B. Rao, Convenor of the Symposium, at the address indicated at the head of this letter.

Yours sincerely,

B.P. Adhikari,  
Director

#### 4th International Conference on the Theory and Applications of Graphs

To be held at Western Michigan University and the Kalamazoo Sheraton Hotel, Kalamazoo, Michigan, from May 6-9, 1980.

There will be approximately 50 talks by graph theorists from all over the world and ample opportunity for discussion of research. Plans include a conference banquet and other social functions. Additional information can be obtained from : Directors, Graph Theory Conference, Department of Mathematics, Western Michigan University, Kalamazoo, MI 49008.

#### 8th British Combinatorial Conference

This is planned for 20th to 24th July, 1981, in Swansea, South Wales. (Information received from Dr. A.D. Keedwell, Honorary Secretary, British Combinatorial Committee).

For about three years, Chris Rodger's address will be : C/- Department of Mathematics, University of Reading, Reading, England.

20TH SUMMER RESEARCH INSTITUTE OF THE  
AUSTRALIAN MATHEMATICAL SOCIETY

Organisation of the Combinatorial Theory section has been taken over by Dr. J. Dawson, Division of Mathematics and Statistics, CSIRO, P.O. Box 1965, Canberra City, ACT 2601. Dr. Dawson is taking over from Dr. J. Oxley, who will be away for a year from November (address: Mathematics Department, University of North Carolina, Chapel Hill, N.C. 27514, U.S.A.).

Contributed papers are being solicited, and should be sent to Dr. Dawson as soon as possible. Combinatorial Theory is scheduled for Week 2 of the SRI, 21st to 25th January, 1980. On each of the five days, Professor R.G. Stanton will present a lecture on "Various Topics in Covering Theory" from 2 to 3 p.m., followed by a workshop from 4 to 5 p.m. From 11.00 a.m. to noon other invited papers are scheduled as follows:

- Monday Professor W.D. Wallis, "The spectrum of skew Room squares".
- Tuesday Professor R.W. Robinson, "History of graph theory with emphasis on enumeration".
- Wednesday Dr. R.B. Eggleton, "Graphs with infinite degree sequences".
- Thursday Dr. J. Seberry, "Orthogonal designs: pure and applied".
- Friday Dr. A.P. Street, "Graphs and designs".

HIGHER DEGREES

*It is planned to list higher degrees by thesis on combinatorial subjects which are taken in Australasian institutions. Details should be sent to Dr. Anne Penfold Street, Department of Mathematics, University of Queensland, St. Lucia, Qld. 4067 - and should include the name of supervisor, date of award, and a short abstract.*

*In order to compile a complete record, we request details of any past theses as well as future ones.*

## COMBINATORIAL MATHEMATICA SOCIETY OF AUSTRALASIA

Minutes of the 1979 Annual General Meeting held on 23rd August. The meeting opened at 4.40 p.m. with W.D. Wallis in the chair.

### 1. Secretary

R.W. Robinson was elected Secretary for the meeting.

### 2. Constitution

The meeting notified the constitution on the motion of K. McAvaney, seconded by A.P. Street.

### 3. Reports

The Secretary reported that society membership stood at 93.

As Treasurer, W.D. Wallis reported that the conference was expected to show a profit which would be passed on to the organizer of the next conference. An audited statement would be included in the newsletter after conference finances were finalised.

The report of the Treasury was accepted in the motion of R.B. Eggleton, seconded by K. McAvaney.

### 4. 1978 Conference

W.D. Wallis reported that the proceedings were expected to be published in about six weeks. There had been delays occasioned by the postal strike in New South Wales.

### 5. 1979 Conference

A note of thanks was accorded the organizers by acclamation, in the motion of K. McAvaney.

### 6. 1980 Conference

It was agreed that the conference would be held at Deakin University, on the motion of R.W. Robinson, seconded by A.P. Street.

### 7. Officers

It was agreed that K. McAvaney be elected President for the coming year, on the motion of R.W. Robinson, seconded by A.P. Street.

It was further agreed that K. McAvaney should be Treasurer and Secretary, with the power to co-opt, on the motion of R.B. Eggleton, seconded by W.D. Wallis.

### 8. Later Conferences

There was general support for holding the 1981 conference at Sydney University.

It was reported that an offer had been received to hold the 1982 conference in Adelaide.

### 9. Other Business

#### (a) Prizes.

An offer had been received of money for a prize for the best student paper at the conference. Institution of such a prize was opposed on the grounds that it would be impractical to conduct the competition fairly.

The alternative of a student fares fund was proposed by A.P. Street and supported by R.G. Stanton. It was suggested that the Society could collect funds for the purpose.

After some discussion it was resolved that no prizes be offered by the Society, on the motion of A.P. Street, seconded by K. Vijayan.

It was then resolved that if the Director of the 1980 conference considered the financial resources of the Society sufficient to warrant it, that student participants be encouraged to apply for a travel subsidy to attend the conference, moved by R.B. Eggleton, seconded by D.E. Taylor.

The amendment that applications for student travel subsidies should be considered on the basis of need only was proposed by A. Hartman. Discussion revolved around the impracticality of meaningful implementation, and the amendment was lost.

#### (b) Membership Years.

It was resolved that the calendar year be the basis of membership, on the motion of W.D. Wallis, seconded by G.W. Southern. Consequently the membership fee for next year will fall due on 1st January, 1980.

There being no further business, the meeting was declared closed at 5.25 p.m.

R.W. Robinson.



## RESEARCH ANNOUNCEMENTS

*This department will publish research announcements, announcements of forthcoming publications and so forth. An asterisk (\*) indicates that preprints are available. Please send contributions to Dr. D.A. Holton, Department of Mathematics, University of Melbourne, Parkville, Vic. 3052.*

\* I. Cacetta and W.D. Wallis, "Maximal sets of deficiency three".

L.R. Foulds, M. Shore and P.B. Gibbons, "The Steiner problem in Graphs".

L.R. Foulds, M.D. Hendy and David Penny, "A Graph Theoretic Approach to the Development of Phylogenetic Trees.

L.R. Foulds, "The Solution of Network Design Problems by Branch and Bound Enumeration".

L.R. Foulds and D.F. Robinson, "Comparison of Labelled Trees".

D.A. Holton, B.D. McKay and M.D. Plummer, "Cycles through specified vertices in 3-connected cubic graphs".

\* R.C. Mullin, P.J. Schellenberg, S.A. Vanstone and W.D. Wallis, "On the existence of frames".

D.G. Rogers, "A multiplication theorem for regular perfect systems of difference sets".

D.G. Rogers, K.M. Koh and T. Tan, "On graceful graphs I : Complete products".

\* D.R. Stinson and W.D. Wallis, "Some designs used in constructing skew Room squares".