

# THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No.156

December 1988

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The Newsletter is published monthly except in August. Items and advertisements for inclusion in the Newsletter should be sent to the Editor (Susan Oakes, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL) to arrive before the first day of the month prior to publication.

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## FORTHCOMING SOCIETY MEETINGS

- Friday 20 January 1989, Burlington House
- Friday 17 February 1989, Warwick
- Friday 17 March 1989, Scientific Societies Lecture Theatre
- Thursday, Friday 18-19 May 1989, Liverpool  
Representations of Algebras
- Friday 16 June 1989, Burlington House
- Friday 20 October 1989, Burlington House
- Friday 17 November 1989, Royal Society

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## CONFERENCE ON GRAPH COLOURINGS

A one-day conference on Graph Colourings will be held at The Open University on Friday, 9th December, 1988, from 10.00 till 5.00. The speakers will (provisionally) be: B. Toft, N. Biggs, C. McDiarmid, A. Hilton, F. Holroyd, F. Jaeger, D. Woodall, A. Chetwynd and B. Wilson.

There is no registration fee; but it would be helpful if intending participants could inform Dr R. J. Wilson at the Faculty of Mathematics, Open University, Walton Hall, Milton Keynes MK7 6AA (from whom further information, maps etc can be obtained).

## THE 1989 HARDY LECTURER

LMS Council is pleased to announce that Professor V.F.R. Jones has accepted its invitation to be the 1989 Hardy Lecturer. Vaughan Jones obtained the B.Sc. degree from the University of Auckland in 1972 and the degree of Docteur es Sciences in 1979 from the Ecole de Mathematiques, Geneve, Switzerland. Since 1985 he has been Professor of Mathematics at the University of California, Berkeley. In 1983 he was an Alfred P. Sloan Research Fellow and he held a Guggenheim Fellowship in 1986.

Professor Jones will be visiting the U.K. for four weeks from 24 May 1989 and will give about twelve lectures including the 1989 Hardy Lecture to the Society in London on Friday 16 June. He would be prepared to lecture on the following topics:

- Type II factors
- Index for subfactors

- Knot polynomials
- Statistical mechanics and knot theory
- Hecke algebras and generalizations related to link invariants
- Braid group representations in quantum physics

Institutions that wish to invite Professor Jones to give a lecture should write to the Meetings and Membership Secretary, A.R. Pears, Department of Mathematics, King's College, Strand, London WC2R 2LS by 31 December 1988. It is expected that many more invitations will be received than can be accepted and neighbouring institutions are strongly encouraged to submit joint invitations. The itinerary and lecture titles at each venue will be decided by Programme Committee in consultation with Professor Jones and the host institutions.

## MATHEMATICIANS VISITING THE UK 1988-89

The following supplements the list that appeared in the November issue of the Newsletter.

### Cambridge University - DPMMS

Dr W.D. Blizard (University of Victoria, Canada) Pure Mathematics, 88/89

Professor D. Grant (University of Michigan, U.S.A.) Pure Mathematics, 88/89

Dr R. Nair (Ex University of Edinburgh) Pure Mathematics, 88/89

E. Pauwels (Limburgs University, Belgium) Statistics, 88/89.

### Heriot-Watt University

Professor X. Mora (Universitat Autònoma de Barcelona, Spain) Nonlinear Partial Differential Equations, Oct 88 - Aug 89

Dr K. Zhang (Peking University) Calculus of Variations, Partial Differential Equations, Oct 88 - Jun 89

### Lancaster University

Professor T. Abudurezake (Xinjiang University) Algebra, 1 Oct 88 - 30 Sep 89

Professor Z. Fidan (Ataturk University) Numerical Analysis, 1 Oct 88 - 30 Sep 89

Professor R.E. Mercer (Wright State University, U.S.A.) Operator Theory, 1 April 89 - 30 Jun 89

### Oxford University

Professor C.J. Amick (Chicago University, U.S.A.) Differential Equation, Aug 88 - Dec 88

Professor M.D. Atkinson (Carleton University, Canada) Algebra and Computing Science, Sep 88 - Jul 89

Professor T.J. Bridges (Worcester Polytechnic, U.S.A.) Bifurcation Theory, Oct 88 - Jun 89

Professor R. Cohen (Stanford University, U.S.A.) Topology, 88/89

Professor A.A. Davidov (Vladimir, U.S.S.R.) Differential Geometry, 88/89

Professor J.D. Dixon (Carleton University, Canada) Algebra and Group Theory, Nov 88 - Jun 89

Professor R.S. Doran (Texas Christian University, U.S.A.) Functional Analysis, Oct 88 - Dec 88

Dr A. Folacci (Observatoire de Paris-Meudon, France) Quantum Gravity, Jan 89 - Jun 89

Professor D. Finkelstein (Georgia Institute of Technology, U.S.A.) Quantum Topology, Sept 88 - May 89

Professor M. Furuta (Tokyo University, Japan) Geometry of Orbifolds, Oct 88 - May 89

Professor W.M. Goldman (University of Maryland, U.S.A.) Geometric Structures on Manifolds, Feb 89 - Apr 89

Professor R.C. Gunning (Princeton, U.S.A.) Non-linear Systems, Oct 88 - Dec 88

Dr B. Klemp (Torun, Poland) Representations of Algebras, Dec 88

Professor W.B. Krantz (Colorado University, U.S.A.) Differential Equations, Aug 88 - Mar 89

Dr B. Kulshammer (Dortmund University, West Germany) Finite Groups, Aug 88 - Feb 89

Professor A. Mann (Jerusalem University, Israel) Group Theory, Feb 89 - Jul 89

Professor M. Morimoto (Okayama University, Japan) Algebraic Geometry, Apr 89 - Jan 90

Professor P. Pappas (Vassar College, U.S.A.) Logic, 88/89

Dr R.G. Rehm (National Bureau of Standards, U.S.A.) Solidification Theory, Mar 89 - Jul 89

Dr A. Skowronski (Torun, Poland) Tame Algebras, Jun 89

Professor D. Shimamoto (Swarthmore College, U.S.A.) Differential Algebraic Topology, 88/89

Mr. S. Vasilovsky (Novosibirsk, U.S.S.R.) Jordan Algebra, Oct 88 - Sep 89

Dr W. Wang (Shandong University, China) Analytic Number Theory, Oct 88 - Sep 89

Mr. W. Xie (Sizhou University, China) Differential Equations, Nov 88 - Dec 88

### University College London

Professor J. Segal (University of Washington, U.S.A.) Analysis, Sep 88 - Jan 89

### University College of North Wales

Professor G. Vogouklis (Democritus University of Thrace, Greece) Hypergroups, Feb 89 - Jun 89

### University College of Swansea

Professor S. Kawamura (Yamagata University, Japan) Operator Algebras, 1 Mar 88 - 10 Jan 89

Dr T. Matsui (Tokyo Metropolitan University, Japan) Operator Algebras, 1 Oct 88 - 30 Sep 89

Dr S. Majid (Harvard, U.S.A.) Operator Algebras, 1 Oct 88 - 30 Sep 89

Dr J.C. Zambrini (University of Bielefeld) Stochastic Analysis and Mathematical Physics, Jan 89.

## DUBLIN DIFFERENTIAL EQUATION MEETING

A conference on Differential Equations will be held from 22nd to 25th May, 1989 at the National Institute for Higher Education, Dublin. The speakers are: S.S. Antman (Maryland), J. Carr (Heriot-Watt), W.N. Everitt (Birmingham), J.K. Hale (Georgia Tech.), R.E. O'Malley (Rennselaer).

There will be sessions of contributed talks and workshops on both theory and applications. Probable subjects for workshops are bifurcation theory, singular perturbations and gelation.

All LMS members are welcome. Those wishing

to give a 25 minute talk at the meeting should send an abstract of less than 200 words, and their registration fee to Dr D.W. Reynolds, by 3rd April, 1989. The registration fee, which includes lunches and refreshments, is £40.00 if received by 8th of May, and £50.00 otherwise. There is a 50% discount for graduate students.

Further information on the conference and accommodation in Dublin can be obtained from Dr D.W. Reynolds, School of Mathematical Sciences, National Institute for Higher Education, Glasnevin, Dublin 9, Republic of Ireland.

## GEOMETRY OF LOOP SPACES

In May 1989 the Max-Planck-Institut in Bonn is arranging a month of concentrated activity concerned with all aspects of loop spaces. This will include global analysis and differential geometry on loop spaces; the representation theory of loop groups and of  $\text{Diff}(S^1)$ ; two-dimensional conformal quantum field theory; moduli spaces of Riemann surfaces and holomorphic bundles. The focus will be especially on the interrelation between these areas.

The mathematical programme will be organised by Graeme Segal, Mathematical Institute, 24-29 St Giles, Oxford, England.

Anyone interested in taking part should write to Professor F. Hirzebruch, Max-Planck-Institut für Mathematik, Gottfried-Claren-Strasse 26, 5300 Bonn 3, Federal Republic of Germany.

Limited funds are available for the support of participants. Preference will be given to those staying for the whole month.

## BRITISH COLLOQUIUM FOR THEORETICAL COMPUTER SCIENCE

The fifth British Colloquium for Theoretical Computer Science (BCTCS) will take place at Royal Holloway and Bedford New College of the University of London, beginning on the morning of Tuesday 11th April and ending at lunchtime on Thursday 13th. The colloquium aims to provide a forum for theoretical computer scientists and mathematicians to discuss new developments in a number of broad areas: semantics of programming languages, logics of programs, formal languages, computational complexity, term rewriting systems, symbolic computation, program specification, theories of concurrency, and cryptography. (This list is not exclusive.)

A number of distinguished researchers will deliver survey lectures intended to cover the spectrum of interests in theoretical computer

science. These invited speakers will include:

Alberto Apostolico (Purdue University, West Lafayette); Richard Cole (New York University); Joseph Goguen (Oxford University); Roger Hindley (University College, Swansea) and John Lloyd (Bristol University).

The survey lectures will be complemented by many shorter, specialist talks. Abstracts of all talks will be listed in the Bulletin of the EATCS. Further information can be obtained by writing to BCTCS5, Department of Computer Science, Royal Holloway and Bedford New College, University of London, Egham, Surrey TW20 0EX, England (e-mail address: bctcs5@uk.ac.rhbc.vaxb). The local organising committee for BCTCS5 is Alan Davies, Costas Iliopoulos, and John Shawe-Taylor.

## 1989 LMS PRIZES

In Summer 1989 the Council proposes to award a De Morgan Medal, a Senior Whitehead Prize, a Junior Berwick Prize, and one or more Junior Whitehead Prizes. Accordingly, it has appointed J.H. Coates, D.G. Crighton, S.K. Donaldson, J.A. Green and E.C. Lance to the 1989 Prizes Committee.

The Council invites members of the Society to submit their views on possible candidates for the award of these Prizes confidentially in writing to any member of the Committee by 1 March 1989. Nominations for the award of a Junior Whitehead Prize are particularly solicited. Council reserves the right not to make an award if no candidate of sufficient merit is recommended by the Prizes Committee for any particular Prize.

The De Morgan Medal is awarded to a mathematician who is normally resident in the United Kingdom on 1 January 1989. The sole grounds for the award of the Medal is the candidate's contribution to mathematics. The Senior Whitehead Prize is awarded to a mathematician who is normally resident in the United Kingdom on 1 January 1989 in respect of work in, influence on or service to mathematics, or in recognition of lecturing gifts in the field of mathematics. The Junior Berwick Prize is awarded to a mathematician who on 1 January

1989 is a member of the Society, is under the age of forty years, and is not already a Fellow of the Royal Society, in respect of a piece of work actually published by the Society in any of its publications, including *Nonlinearity* and the book series, during the period from 1 January 1985 to 31 December 1988. The Junior Whitehead Prizes are awarded to mathematicians who on 1 January 1989 are normally resident in the United Kingdom or members of the Society mainly educated in the United Kingdom, who are under the age of forty years, and who are not already Fellows of the Royal Society. Grounds for the award may include work in and influence on mathematics. In each case nominations should contain explicit reference to the grounds on which the nomination is based.

No person may be awarded a given Prize more than once, and the President of the Society and the members of the Prizes Committee are ineligible for any of the awards. The detailed regulations and procedure for the award of each Prize may be obtained from Dr C.J. Mulvey, Mathematics Division, University of Sussex, Falmer, Brighton, BN1 9QH.

C.J. Mulvey  
Council and General Secretary.

## THIRD ANNUAL MEETING OF EUROPEAN WOMEN IN MATHEMATICS

This meeting will take place in the Mathematics Institute at Warwick University from Saturday 10th December to Monday 12th December. Saturday's programme is open to women only; anyone interested is very welcome to attend any or all of the remaining sessions.

Sunday December 11th

- 11.30-12.30 G. Kalmbach (Ulm)  
Intensive workshops for young mathematicians
- 2.30-3.30 E. Branner (Copenhagen)  
Iteration and fractals

Monday December 12th

- 10.00-11.30 E. Bayer (Genève)  
Quadratic forms

- 11.30-12.30 V. Trukova (Praha)  
Mathematical structures and representations
- 2.00-3.00 P. Cassou-Nogues (Bordeaux)  
Number theory and singularities
- 3.30-4.30 M. Garroni (Roma)  
Problems in integral and differential equations

For more information contact Dr Sarah Rees, Mathematics Institute, Warwick University, Coventry CV4 7AL. Telephone 0203-523523 ext 2678. E-mail SER@MATHS.WARWICK.AC.UK.

## 1989 LIST OF MEMBERS

The Society is preparing a new List of Members which will appear in May 1989. You should have received a letter giving details of your entry. If any of the information is incorrect or incomplete, return the form enclosed with the letter to the LMS office

by Friday 24th February 1989. Ensure that you give your name and initials so that the form can be identified. Write to Susan Oakes, the LMS Administrator, if you have not received the letter.

## FIELDS OF INTEREST

In checking their field of interest entry for the 1989 Membership List, members will need to refer to the new listing of AMS codes enclosed with the request for information. There have been some minor changes, notably the omission of 69 General Applied Mathematics and the introduction of 19 K-theory. The listing of AMS codes is printed below.

- 00 General
- 01 History and biography
- 03 Mathematical logic and foundations
- 04 Set theory
- 05 Combinatorics
- 06 Order, lattices, ordered algebraic structures
- 08 General mathematical systems
- 11 Number theory
- 12 Field theory and polynomials
- 13 Commutative rings and algebras
- 14 Algebraic geometry
- 15 Linear and multilinear algebra; matrix theory
- 16 Associative rings and algebras
- 17 Nonassociative rings and algebras
- 18 Category theory, homological algebra
- 19 K-theory
- 20 Group theory and generalizations
- 22 Topological groups, Lie groups
- 26 Real functions
- 28 Measure and integration
- 30 Functions of a complex variable
- 31 Potential theory
- 32 Several complex variables and analytic spaces
- 33 Special functions
- 34 Ordinary differential equations
- 35 Partial differential equations
- 39 Finite differences and functional equations
- 40 Sequences, series, summability
- 41 Approximations and expansions
- 42 Fourier analysis
- 43 Abstract harmonic analysis
- 44 Integral transforms, operational calculus
- 45 Integral equations
- 46 Functional analysis
- 47 Operator theory
- 49 Calculus of variations and optimal control; optimization
- 51 Geometry
- 52 Convex sets and related geometric topics
- 53 Differential geometry
- 54 General topology
- 55 Algebraic topology
- 57 Manifolds and cell complexes
- 58 Global analysis, analysis on manifolds
- 60 Probability theory and stochastic processes
- 62 Statistics
- 65 Numerical analysis
- 68 Computer science
- 70 Mechanics of particles and systems
- 73 Mechanics of solids
- 76 Fluid mechanics
- 78 Optics, electromagnetic theory
- 80 Classical thermodynamics, heat transfer
- 81 Quantum mechanics
- 82 Statistical physics, structure of matter
- 83 Relativity
- 85 Astronomy and astrophysics
- 86 Geophysics
- 90 Economics, operations research, programming, games
- 92 Biology and behavioral sciences
- 93 Systems theory; control
- 94 Information and communication, circuits.

# MEMORIAL UNIVERSITY OF NEWFOUNDLAND

## Department of Mathematics and Statistics POST-DOCTORAL FELLOWSHIP

Applications are invited from suitably qualified persons for a post-doctoral fellowship at the rate of \$1900 per month for the academic year 1989-90 with a possible one-year extension. Any mutually convenient date of appointment between April 1 and September 1, 1989 is possible. The successful candidate will have research interests in Geometry and Algebra. Candidates should submit a complete *curriculum vitae* and the names of two referees no later than **April 1 1989** to:

Professor B.L.R. Shawyer, Head,  
Department of Mathematics & Statistics,  
Memorial University of Newfoundland  
St John's, Newfoundland  
Canada A1C 5S7

This position is subject to availability of funds

### WHAT MATHEMATICS FOR COMPUTER SCIENTISTS?

A one-day meeting, to discuss those areas of mathematics most appropriate for a modern undergraduate curriculum in computer science, will be held in the Department of Computer Science, University of Manchester, on Friday 16 December 1988.

Programme (it is intended that the speakers should encourage discussion)

- |       |  |
|-------|--|
| 10.00 | Coffee   |
| 10.30 | W.M. Holcombe (Sheffield) <i>Mathematics counts but design matters</i>                                 |
| 11.30 | A. Ralston (SUNY at Buffalo) <i>Are programmers computer scientists? Do they need any mathematics?</i> |
| 12.30 | Lunch  |
| 14.00 | C.A.R. Hoare FRS (Oxford) <i>From Boolean algebra to category theory</i>                               |
| 15.00 | Tea  |
| 15.30 | Panel Discussion: Chair D.J. Cooke (Loughborough)  |

Those wishing to attend should write, preferably before 16 November, to Dr B. Banieqbal, Department of Computer Science, University of Manchester, Oxford Road, Manchester M13 9PL, enclosing a registration fee of £15 (cheques made payable to University of Manchester). This fee will cover lunch and refreshments.

A limited amount of University accommodation is available for those wishing to stay overnight on Thursday, 15 December. The cost will be £12 for bed and breakfast, and this should be paid at the time of application. It is expected that there will be a dinner on Thursday evening.

Organising Committee: R. Brown (Chairman), B. Banieqbal, S.S. Wainer.

The meeting is receiving financial support from the London Mathematical Society.

## BRITISH MATHEMATICAL COLLOQUIUM

The 41st British Mathematical Colloquium will be held at the University of Nottingham on 4th, 5th and 6th April 1989

The principal speakers are R. Beiri (Frankfurt), J.A. Bondy (Waterloo), W. Bruce (Newcastle-upon-Tyne), I.M. Chiswell (Queen Mary College, London), N.J. Cutland (Hull), K. Erdmann (Oxford), J. Fountain (York), G. Harman (Cardiff), T.W. Korner (Cambridge), J.K. Langley (University College, London), M. Liebeck (Imperial College, London), O. Penrose (Heriot-Watt), J.C. Robson (Leeds), R.L.E. Schwarzenberger (Warwick), C.C. Sims (Rutgers), R. Tijdeman (Leiden), A. West (Leeds).

The registration fee is £12, increasing to £18 for applications received after 31st January 1989. For research students, for those who have retired and for those without jobs each of these fees is halved.

The cost of accommodation and meals from Monday dinner to Friday breakfast inclusive is £80. From Tuesday lunch to Thursday lunch it is £47.

A copy of the application form accompanies the Newsletter. More copies and further information are available from the Colloquium Secretary, Dr D.L. Johnson, Department of Mathematics, University of Nottingham, University Park, Nottingham NG7 2RD.

## LMS DURHAM SYMPOSIA 1989

There will be three Symposia in 1989:

30 June - 11 July

L-functions in arithmetic *Organisers*: Professor J.H. Coates, Professor M.J. Taylor\*. *Main Speakers*: J. Arthur, S. Bloch, L. Clozel, J.M. Fontaine, S. Gelbart, R. Greenberg, B. Gross, H. Hida, K. Ribet, K. Rubin, A. Wiles.

11 - 21 July

Geometry of low-dimensional manifolds *Organisers*: Professor S.K. Donaldson, Dr C.B. Thomas\*. *Main Speakers*: D. Bennequin, A.J. Casson, S.K. Donaldson, A. Floer, M. Gromov, C. Taubes.

21 - 31 July

Image analysis *Organisers*: Professor J.E. Besag, Professor B.D. Ripley\*. *Main Speakers*: A. Baddeley, B.R. Frieden, D. & S. Geman, A. Jain, D.

Mumford, L.A. Shepp, P. Switzer.

These research symposia are organised under the auspices of the LMS and are supported by Research Grants from SERC. There may be a few places available for mathematicians not yet invited. Those interested should write for more information to the organisers marked \* at the following addresses:

Professor M.J. Taylor, Department of Mathematics, UMIST, P.O. Box 88, Manchester M60 1QD;

Dr C.B. Thomas, Department of Pure Mathematics and Mathematical Statistics, 16 Mill Lane, Cambridge, CB2 1SB;

Professor B.D. Ripley, Department of Mathematics, University of Strathclyde, Livingstone Tower, 26 Richmond Street, Glasgow G1 1XH.

## 1988 COUNCIL ELECTIONS

At the Annual General Meeting on 18th November 1988 the following members were elected to Council: J.H. Coates (President); E.C. Lance and R.L.E. Schwarzenberger (Vice-Presidents); J.D.M. Wright (Treasurer); C.J. Mulvey (Council and General Secretary); A.R. Pears (Meetings and Membership Secretary); D.A. Brannan (Publications Secretary); P.A. Samet (Librarian); J.W. Bruce, D.G. Crighton, P. Holgate, E.G. Rees, C.M.

Series, R.Y. Sharp (Members-at-Large, 2-year terms); K.W. Gruenberg (Member-at-Large, 1-year term), S.K. Donaldson, W.N. Everitt, B. Hartley, D. Strauss, and P. Vamos are Members-at-Large whose terms expire in 1989.

C.J. Mulvey  
Council and General Secretary.

## THE ROYAL METEOROLOGICAL SOCIETY AND THE BRITISH SOCIETY FOR THE HISTORY OF MATHEMATICS

A joint meeting of the two societies will take place at the University of Bristol on Saturday 6th May 1989. The meeting will be devoted to the work of Lewis Fry Richardson (1881-1953).

The speakers will be Mr O.M. Ashford, "Richardson - the man and his life"; Professor B.B. Mandelbrot, "Richardson and prematurity in science"; Professor L. Fox, "Some early but lasting numerical analysis"; Dr A. Gadd, "Weather

prediction by numerical process - past, present and future"; Professor H. Charnock, "Early work on atmospheric diffusion".

Further information may be obtained from Professor P.G. Drazin (RMS), School of Mathematics, University of Bristol, University Walk, Bristol BS8 1TW or from Dr C.R. Fletcher (BSHM), Department of Mathematics, The University College of Wales, Aberystwyth, Dyfed SY23 3BZ.

## GROUPS - ST ANDREWS 1989

This conference is sponsored by the Edinburgh Mathematical Society and the London Mathematical Society and will be held in St Andrews, Scotland from Saturday 29 July to Saturday 12 August 1989. The majority of lecture courses will be in the first week of the conference while a programme of seminars and invited lectures by other conference participants will be arranged during the second week of the conference. Speakers giving courses of three or four lectures will include Professor J.A. Green (Warwick), Professor N.D. Gupta (Manitoba), Professor O.H. Kegel (Freiburg), Professor J.G. Thompson

(Cambridge). A further main speaker will be Dr J.J. Cannon (Sydney) who will give lectures on the group-theory language *Cayley* and lead a *Cayley* workshop as part of the second week programme. Professor A. Yu Ol'shanskii (Moscow) also hopes to attend and give a series of lectures.

Further information and application forms are available from Dr C.M. Campbell and Dr E.F. Robertson, Mathematical Institute, University of St Andrews, North Haugh, St Andrews, Fife KY16 9SS, Scotland.

## SÉMINAIRE DE MATHÉMATIQUES SUPÉRIEURES - NATO ADVANCED STUDY INSTITUTE

A Seminar on "Fractal Geometry and Analysis" will be held at the Université de Montréal from 3rd - 21st July 1989. The Seminar is held with the support of NATO, the Ministry of Education of Québec, the Natural Sciences and Engineering Research Council of Canada, and the Université de Montréal.

The principal speakers are M.F. Barnsley (Georgia Inst. of Tech.), T.J. Bedford (Delft Univ. of Tech.), M. Dekking (Delft Univ. of Tech.), A. Douady (Ecole Normale Supérieure, Paris), S. Dubuc (Montréal), K.J. Falconer (Bristol), M. Hata (Kyoto),

J.-P. Kahane (Paris-Sud), B.B. Mandelbrot (IBM & Yale), M. Mendès France (Bordeaux) and C. Tricot (Ecole Polytechnique, Montréal).

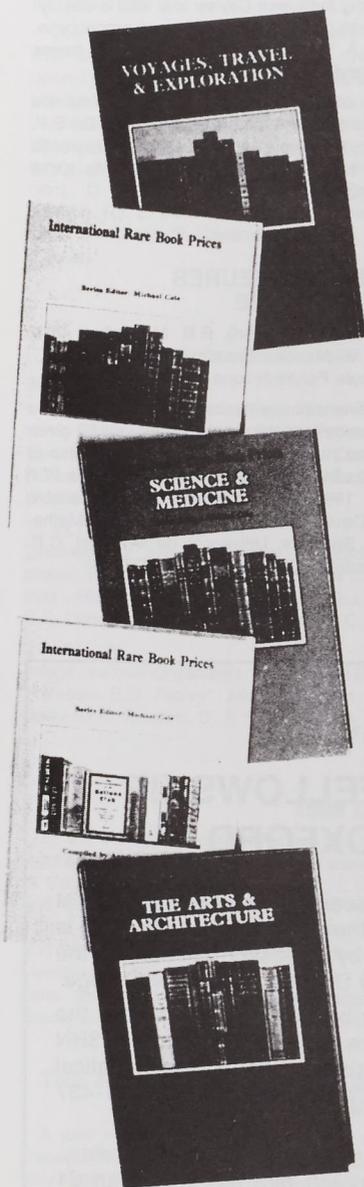
Partial financial assistance will be available for a certain number of participants. Priority will be given to graduate students. Requests for participation or financial assistance must be received before 17th February 1989. Further information is available from G. David, Secretary, Department of Mathematics & Statistics, Université de Montréal, C.P. 6128, Montréal, Québec, Canada H3C 3J7.

## G.H. HARDY JUNIOR RESEARCH FELLOWSHIP NEW COLLEGE, OXFORD

Applications are invited for a new Junior Research Fellowship tenable at New College Oxford from 1 October 1989 for three years. The fellowship is named after G.H. Hardy, and is jointly funded by Professor I.M. James, the London Mathematical Society (from the Hardy Bequest) and New College. Application forms and further particulars may be obtained from either the Senior Tutor, c/o The Fellows' Secretary, New College, Oxford OX1 3BN (telephone 0865-248451) or from the Administrator, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL (telephone 01-437 5377).

Applications should be sent to the Senior Tutor, c/o The Fellows' Secretary, New College, Oxford OX1 3BN, and must reach him not later than 31 December 1988, enclosing a curriculum vitae and stating the applicants' proposed research and the names of three referees. *Applicants should request their referees to write directly to the Senior Tutor, c/o The Fellows' Secretary, New College, Oxford OX1 3BN, letters which should arrive not later than 31 December 1988.*

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**THE CLIQUE**  
7 Pulleyn Drive, York YO2 2DY, England

## BERNARD E. LAWRENCE

Dr Bernard E. Lawrence who was elected a member of the London Mathematical Society on

11th December 1930 died on 2nd October 1988.

## ROGER C. LYNDON

Professor Roger C. Lyndon who was elected a reciprocity member of the London Mathematical

Society on 19th November 1964 died on 8th June 1988.

## PATRICK A.P. MORAN

Professor Patrick A.P. Moran, FRS, who was elected a reciprocity member of the London Ma-

thematical Society on 13th June 1940 died on 19th September 1988.

## FOURTH GREGYNOG SYMPOSIUM ON DIFFERENTIAL EQUATIONS

It is proposed to hold the fourth in the series of Gregynog Symposia on Differential Equations during the week 2 - 7 July 1989. The venue, as previously, will be Gregynog, a conference centre owned by the University of Wales, and situated in the mid Wales countryside near Newtown. The meeting will be funded by SERC.

The theme of the symposium will be *Spectral Theory of Laplace and Schrödinger Operators on Manifolds*. We plan to bring together a small group of interested mathematicians to discuss their current research and to work on problems of mutual interest in a pleasant and informal atmosphere.

There will be some expository talks and also an opportunity for participants to present recent findings. We hope that the meeting will stimulate research activity and encourage collaboration.

Since the available accommodation is limited, participation is by invitation. Research workers in the field of Dynamical Systems who wish to take part in the symposium are asked to contact Professor W D Evans, University of Wales College of Cardiff, School of Mathematics, Sengenhydd Road, Cardiff CF2 4AG. A brief summary of current research interest should be included. The cost of accommodation at Gregynog will be covered.

## SALEM PRIZE

The Salem Prize for 1988 was awarded to Dr A.L. Vol'berg (LOMI, Leningrad) for his work on rational approximation and almost analytic functions and to Dr Jean Christophe Yoccoz (*Ecole Polytechnique* and *Université de Paris-Sud, Orsay*) for his work on diffeomorphisms of the circle and Siegel's linearization theorem.

The prize established in 1968, is given every year to a young mathematician who is judged to have done an outstanding work in the field of interest of Raphaël Salem, primarily on Fourier series and related topics. The recipient was Dr Nicholas Varopoulos in 1968, Dr Richard Hunt in

1969, Dr Yves Meyer in 1970, Dr Charles Fefferman in 1971, Dr Thomas Körner in 1972, Dr E.M. Nikišin in 1973, Dr Hugh Montgomery in 1974, Dr William Beckner in 1975, Dr M.R. Herman in 1976, Dr S.B. Bočkarëv in 1977, Dr Björn E. Dahlberg in 1978, Dr Gilles Pisier in 1979, Dr Stylianos Pichorides in 1980, Dr Peter Jones in 1981, Dr Alexei B. Aleksandrov in 1982, Dr Jean Bourgain in 1983, Dr Carlos Kenig in 1984, Dr Th.H. Wolff in 1985, Dr N.G. Makarov in 1986 and Drs Guy David & Jean Lin Journé in 1987. The jury consisted of Professor V. Havin, Professor Y. Katznelson, Professor Y. Meyer and Professor E.M. Stein.

## SOCIÉTÉ MATHÉMATIQUE DE FRANCE

Membership dues for members of societies with a reciprocity agreement with the S.M.F. for 1989 are as follows : (50% reduction with respect to ordinary dues) : 200 F (including the Gazette).

Subscription prices to publications are those for individual members of the S.M.F., i.e.:

- Officiel des Mathématiques (surface mail) : 100 F
- Officiel de Mathématiques (air mail) : 150 F

- Bulletin (without Mémoires) : 150 F
- Bulletin + Mémoires : 250 F
- Astérisque (4 issues) : 220 F
- Astérisque (12 issues) : 630 F

Payments can be made by bank cheque, by visa or master card. Apply to : Société Mathématique de France, B.P. 106-05, 75226 Paris Cedex 05, France.

## FILLING UP ON FOUR-STAR MATHS

The demand for popular science should be properly met, says Nina Hall.

How many times have you found yourself at a social gathering, gazing distractedly around, wondering who you know, only to alight on a face that is frustratingly familiar but which you cannot place. The reason is, as you realise later, that the face is out of context. The owner of the face is not where you are used to seeing them. They shouldn't be there. Your neurons work overtime as synapses snap frantically, trying to make the right connections for identification, so you can go over and say hello.

This is exactly what happened to me the other day when I went along to an evening of popular lectures at Imperial College, London, organised by the London Mathematical Society. Two well-known figures on the mathematical landscape talked about recent developments to an audience whose combined non-scientific interests were probably greater than the sum of individual mathematical expertise.

A popular lecture on mathematics might seem a contradiction in terms. In fact, the lecture theatre was reassuringly full and infused with an odour of enthusiasm rarely encountered at academic symposia. One of the lecturers — Michael Berry, professor of physics at the University of Bristol — remarked enthusiastically to me beforehand that the audience looked "interesting, and different from the usual academic crowd". He became only slightly anxious when a troop of schoolkids settled themselves in the front row. He thought that he might have misjudged the level of his lecture.

Berry need not have worried. His talk on the fashionable topic of chaos, with demonstrations of pendulums that throbbed and bobbed to a random, but mathematically significant pattern, delighted everyone — professional mathematicians, budding Ruth Lawrences and interested lay people alike.

During the coffee break, I looked around for familiar faces. Apart from the occasional journalist there were few — except for a young man with fair hair and 'serious' spectacles. I knew I knew him, but how and why did I know him? In my job, covering physical sciences for *New Scientist*, I meet many academics. I confess that I do not always remember their faces. But I knew I had a good reason to remember this one.

Then, as another older man joined him, it suddenly dawned on me who the couple were.

Round the corner from my house is a small garage. I bought my used car from the garage's owner and I always fill up with petrol there. I am a regular customer. The fair-haired man checks the car's oil and tyres. His father advises me on when the car should be serviced.

I just had to ask my friendly neighbourhood garage mechanics why they came to the lectures. Father and son said they had always enjoyed mathematics at school and wanted to keep up with the latest developments. They always came to the London Mathematical Society's popular lectures. I shall never make cheap jokes about used-car salesmen again.

The unexpected encounter was a welcome antidote to a depressing experience the night before. I refer to an appalling advertisement on television in which an anthropomorphic spiral galaxy, which called itself a planet, tried to persuade an elliptical galaxy to gyrate around the Universe and help Bloggs win the pools. The ensuing dialogue, sickening in its heretical banality, was meant to encourage people to buy a certain tabloid newspaper so that they could learn about how the stars influence their lives.

The apparent level of public ignorance endorsed by this absurd piece of advertising copy makes those of us who try to communicate science truthfully want to weep. We are right to be concerned about how little the public understands about science and its implications for society.

But genuinely popular lectures by scientists who have the ability to assess the mood and capability of a lay audience are clearly a good way to counteract the disgraceful scientific deviations propounded in the mass media. We must have more of this kind of popular science.

The London Mathematical Society holds its popular lectures in Liverpool, as well as in the capital. The lectures are then released as an educational video. The Royal Society of Chemistry also holds popular lectures and is thinking about producing videos about chemists. Other learned societies are beginning to follow suit, but a lot more could be done. Scientists themselves must come forward and literally tell the world about their work. There's a host of people — from schoolchildren to garage mechanics — out there waiting to know.

*This first appeared in the New Scientist Magazine, London; the weekly review of science and technology.*

## 1989 NAYLOR PRIZE

The 1989 Naylor Prize is awarded to James Dickson Murray of Corpus Christi College, Oxford, for his major contributions to the field of mathematical biology, especially through the application of nonlinear differential equations to biological pro-

blems involving nonlinear oscillations, travelling waves or spacial patterns.

C.J. Mulvey  
Council and General Secretary



James Whitbread Lee Glaisher (1848-1928) was 2nd Wrangler at Cambridge in 1871 and was immediately elected a Fellow of Trinity, where he remained until his retirement. A tall, slim bachelor he amassed an enormous collection of books, and wrote about 400 papers on many traditional subjects (definite integrals, the theory of numbers, differential equations, and elliptic integrals). He is important for being the man who brought these subjects in a coherent way into the Cambridge syllabus and helped make the place the great source of English mathematicians it soon became. An FRS in 1875, he was the Society's eleventh President, from 1884-1886

## DIARY

The diary lists Society meetings and other events publicised in previous issues of the Newsletter.

### 1988

#### DECEMBER

- 8-9 Physics and Mathematics of Strings, The Royal Society, London (144)  
10-12 Third Annual Meeting of European Women in Mathematics, Warwick (154)  
13-15 Singularity Theory and Applications, Warwick (153)  
16 What Mathematics for Computer Scientists?, Manchester (153 & 154)

### 1989

#### JANUARY

- 9-27 Theoretical Fluid Mechanics and Applications, Italy (152)  
20 LMS Meeting, London

#### FEBRUARY

- 5-9 Applied Mathematics Conference, Australia (155)  
17 LMS Meeting, Warwick.

#### MARCH

- 17 LMS Meeting, London  
30-1 Apr Approximation Theory and Numerical Linear Algebra, U.S.A. (155)

#### APRIL

- 3-7 British Mathematical Colloquium, Nottingham  
17-21 Algebraic and Analytic Geometry Aspects of Singularity Theory, Warwick (153)  
17-28 Hyperbolic Geometry and Ergodic Theory, Italy (152)  
21-22 Atiyah's 60th Birthday Meeting, Oxford (155)

#### MAY

- 18-19 LMS Meeting, Liverpool  
23-27 Computing and Information, Canada (153)

#### JUNE

- 8-16 Probability Conference, Singapore (155)  
12-17 Geometry of Banach Spaces, Austria (154)  
14-16 Nonlinear Control Systems Design, Italy (150)  
16 LMS Meeting, London

#### JULY

- 3-7 British Combinatorial Conference, East Anglia (146)  
10-14 Dynamics, Bifurcations and Singularity Theory, Warwick (153)  
10-14 Combinatorial Mathematics and Computing, Australia (152)  
27-29 Cauchy and the French Mathematical World, France (152)

#### AUGUST

- 13-19 Differential Equations and Applications, Bulgaria (148)  
28-8 Sept Variational Problems in Analysis, Italy (152)

#### OCTOBER

- 20 LMS Meeting, London

#### NOVEMBER

- 17 LMS Meeting, London

#### DECEMBER

- 6-8 Category Theory and Computer Science, Manchester (154)

### 1990

#### AUGUST

- 21-29 International Congress of Mathematicians 1990, Japan (151)

For further information, refer to the figure in brackets, which is a cross reference to the LMS Newsletter Number.

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