

THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 184

June 1991

FORTHCOMING SOCIETY MEETINGS

**Thursday 13 June 1991, Burlington House
F.C. Kirwan, H.B. Lawson**

**Friday 18 October 1991, Burlington House
Friday 15 November 1991, Burlington House**

VISIT OF PROFESSOR I. CHAVEL

Professor I. Chavel of CUNY will visit the UK between 9th and 27th June, being at Edinburgh 9th to 19th June and King's College London 23rd to 27th June. He will give the following seminars, the name of the contact person being given in brackets: University of Edinburgh 10th June (Professor T.J. Lyons); Heriot-Watt University 19th June (Dr M. van den Berg); University of Warwick 21st June

(Professor K. D. Elworthy); King's College London 25th June (Professor E.B. Davies).

The titles of his talks will be "Isoperimetric constants and large time decay of the heat kernel" and "Large time behaviour of solutions to the heat equation". Professor Chavel's visit is partially supported by a Scheme 2 grant from the London Mathematical Society.

VISIT OF PROFESSOR M. S. NARASIMHAN

Professor M. S. Narasimhan of the Tata Institute of Fundamental Research, Bombay and the International Centre for Theoretical Physics, Trieste, will be visiting the UK from 8th to 31st July. He will be in Warwick from 8th to 11th July, in Durham from 18th to 20th July and in Liverpool for the rest of the time.

Professor Narasimhan will give talks on generalised theta functions in Warwick 9th July (3.30pm), Liverpool 16th July (2.30pm) and

Durham 19th July (4.15pm). Further details may be obtained from Dr. P. E. Newstead, Department of Pure Mathematics, The University, PO Box 147, Liverpool, L69 3BX. (Tel: 051 794 4040, email: su23@uk.ac.liverpool), Dr. M. Reid (Warwick) or Dr. W. M. Oxbury (Durham). Professor Narasimhan's visit is partially supported by a Scheme 2 grant from the London Mathematical Society.

VISIT OF PROFESSOR M. PUTINAR

Professor M. Putinar of the University of Kansas, will be visiting the UK in May/June 1991 with financial support from the London Mathematical Society. His programme of lectures and the names of contacts are as follows: 28th May "Moment problems and nearly subnormal operators" North British Functional Analysis Seminar at Edinburgh (A. Gillespie); 4th June "Spectral analysis on

Bergman spaces" Yorkshire Functional Analysis Seminar at Leeds (J.R. Partington); 6th June "Moment problems and operator theory" King's College London (F. Jellet); 12th June "Spectral theory and analytic sheaves" Cambridge (T.W. Korner). For further details of the full programme contact H.G. Dales (0532-335143).

LONDON MATHEMATICAL SOCIETY MONOGRAPHS

The LMS Monographs are edited by Professor P.M. Cohn, FRS and Professor H.G. Dales and published by Oxford University Press on behalf of the Society. It may be that some translations of works originally written in Russian will be published in the Series. For this reason we should like

to extend our list of possible translators, who are paid for their services. If you are interested in the possibility of translating such a volume, please contact H.G. Dales, Department of Pure Mathematics, University of Leeds, Leeds LS2 9JT. Email: pmtghgd@uk.ac.leeds.cms1.

MATHEMATICS AND COMPUTING

For those of you who missed the announcement in the April Newsletter, this is an occasional column covering several topics linking mathematics and computing. We look for contributions from readers, and suggestions for software packages for review. Such contributions should be sent to rd@cs.st-and.ac.uk or dfh@maths.warwick.ac.uk. In the next issue, we intend to report on a conference on 'Symbolic Software for Mathematical Research' that was held in Rutgers, New Jersey, in March of this year. A number of controversial issues, such as whether software development should be regarded as a valid research activity for a mathematician, were raised at this conference.

This month, we summarise some of the material recently published by the CTICMS (Computers in Teaching Initiative Centre for Mathematics and Statistics) in its quarterly Newsletter Maths & Stats. Our intention in this column is to discuss teaching software only briefly, on the grounds that the CTICMS already covers this area rather well.

Those who dismiss "teaching software" as irrelevant to their research interests, however, will occasionally find it, and associated tools, useful for research purposes: it is often hard to draw a clear dividing line between the two, especially with those packages not designed with a drill-and-practice approach. We therefore find it quite appropriate to give a brief pointer to the work of the CTICMS, and intend to continue with such pointers at regular intervals. The CTI Centre (in two parts, at Birmingham [for Mathematics] and at Glasgow [for Statistics]) is funded by the Computer Board; it is responsible (inter alia) for the dissemination of information about software used in the teaching of Mathematics and Statistics. For further details, addition to the free circulation list, etc, send mail to ctimath@bham. Heads of department should

recently have received a copy of the second edition of the Maths & Stats Software Guide.

In Maths & Stats 2(1) February 1991, E. P. Hausler reviews version 2.5 of the ODE package for solving initial value problems in ordinary differential equations: he summarises it as "a user friendly package at a reasonable price ... bridging the roles of teaching package and general purpose problem solver". D. E. Roberts discusses the use of MathCAD in a course on discrete Fourier transforms for Mathematics with Engineering Technology students at Napier Polytechnic: he reports his enthusiasm for the package, despite some minor limitations and a substantial price (£375). Mike Beilby, director of the Birmingham branch of CTICMS, reviews DERIVE 2.01, a "user-friendly and inexpensive symbolic algebra package for the PC well-suited to basic classwork and a useful companion for checking exam questions". He also reviews MathType, a "not expensive" (only £179.10 plus VAT) tool for typesetting formulae on PCs running Windows. Adrian Bowman, director of the Glasgow branch, describes how to run BBC Basic programs on an Apple Macintosh.

Two workshops at Birmingham are described. The first, in November 1990, covered packages for teaching optimisation. The second covered symbolic algebra packages, such as Mathematica and DERIVE. News follows about various items of courseware and utilities, such as MAPLE, GINA, MicroCalc, SENAC, Authorware Academic, Access Mac, TrueBasic, and forthcoming workshops and conferences. The May 1991 issue of Maths & Stats is planned to contain reviews of Kaleidograph, MIM, Formulator and Milo, and reports of recent workshops on the uses of MINITAB and MATLAB in teaching.

Roy Dyckhoff and Derek Holt

ISAAC NEWTON INSTITUTE

The Isaac Newton Institute for Mathematical Sciences has been established in Cambridge as a national research institute with Sir Michael Atiyah as Director. Its activities will encompass pure mathematics, applied mathematics, statistics, engineering, computer science, theoretical physics, and all the other sciences in which mathematics is applied.

Work is beginning on the construction of a purpose-designed building for the Institute, to be completed by July 1992, when the scientific work of the Institute will begin. Typically, there will be two six-month visitor programmes in progress, with about twenty scientists associated with each in residence at any one time. Additionally, there will be periods of expanded activity, including instructional courses and workshops.

The programmes chosen for 1992-93 are: Low-Dimensional Topology and Quantum Field Theory (July - December 1992), Dynamo Theory (July - December 1992), L-functions and Arithmetic (January - June 1993), Epidemic Models (January - June 1993).

The Institute's Scientific Steering Committee will meet in October 1991 to select programmes for July 1993 onwards. Proposals for consideration at this meeting should be submitted by 15 July 1991, addressed to the Deputy Director, Dr Peter Goddard, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, Silver Street, Cambridge CB3 9EW. More information about the Institute, about the programmes for 1992-93 and about the submission of proposals may be obtained from Dr Goddard.

LONDON MATHEMATICAL SOCIETY

THURSDAY 13th JUNE 1991

F.C. Kirwan (Oxford)

will speak at 3.30 on

*Casson's Invariant in 3-dimensional
Topology and Moduli Spaces of
Bundles over Riemann Surfaces*

H.B. Lawson (Stony Brook)

will give the 1991 Hardy Lecture
at 5.00 on

Algebraic Cycles and Homology

The meeting is at the Geological Society
Burlington House, Piccadilly, London W1

All interested are very welcome

Tea will be served at 4.30

1991 HARDY LECTURE TOUR

In June, the 1991 Hardy Lecturer, Professor H.B. Lawson (Stony Brook), will give the following lectures.

- | | | |
|-----------|---------|--|
| Monday | 3 June | Oxford Symmetric products, algebraic cycles and some new invariants in algebraic geometry 3.00 pm, Mathematical Institute |
| Wednesday | 5 June | Cambridge Positive scalar curvature, spin cobordism and the \hat{A} -invariant 4.30 pm, Winstanley Lecture Hall, Trinity College |
| Friday | 7 June | Edinburgh Edinburgh Mathematical Society Manifolds of positive curvature 4.30 pm, Lecture Theatre B, David Hume Tower |
| Monday | 10 June | Durham Algebraic cycles, Bott periodicity and the Chern characteristic map 4.15pm, Room CM221, Mathematics Department |
| Tuesday | 11 June | York Manifolds of positive curvature 5.00 pm, Room V045, Vanbrugh College |
| Thursday | 13 June | 1991 HARDY LECTURE Algebraic cycles and homology 5.00 pm, Burlington House, London |

All interested are welcome to attend any of the meetings addressed by the Hardy Lecturer, but it is advisable to check the time and venue with the Department concerned. General enquiries about Professor Lawson's visit may be directed to the LMS Administrator, Miss Susan Oakes, telephone 071-437 5377.

LONDON MATHEMATICAL SOCIETY

1991 POPULAR LECTURES

Professor Ian Stewart

Four Encounters with Sierpiński's Gasket

Dr Alan Beardon

Wallpaper Patterns in Different Geometries

Monday 17th June

Lecture Theatre 2, Hicks Building,
University of Sheffield, Sheffield S3 7RH
at 7.00pm

Friday 28th June

The Great Hall, Sherfield Building
Imperial College, Exhibition Road, London SW7
at 7.30 pm

All interested are welcome

The Lectures are intended to be suitable for a general audience and no specific mathematical knowledge will be assumed. Although the talks are not primarily intended for professional mathematicians, everyone is welcome and some members may wish to apply for tickets for friends and relatives.

For the lectures at Imperial College admission is free by ticket obtainable in advance. Write to Miss S.M. Oakes, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL. A stamped-addressed envelope would be much appreciated.

Admission is free, without ticket, to the Lectures held at Sheffield.

7TH INTERNATIONAL CONGRESS ON MATHEMATICAL EDUCATION

ICME-7 will take place in the Université Laval, Quebec, Canada from 16th - 23rd August 1992. It is expected that between 3000 and 3500 delegates will attend the Congress, with a wide range of activities planned. These include national presentations, lectures, topic groups, workshops, poster sessions, films and exhibits of textbooks and software. The themes for the working groups at ICME-7 are listed below, with the names and addresses of the Chief Organizers (COs) where they are known.

The First Announcement from the Canadian National Committee for ICME-7 is available from the Royal Society. The Announcement includes a reply slip to be sent to the National Committee in Quebec to receive further details of ICME-7. This should be completed by everyone wishing to receive a copy of the Second Announcement from Quebec to be published later in 1991.

ICME-7 Working Groups

- Formation of elementary mathematical concepts at the primary level.
CO: Dr Helen Mansfield, Curtin Institute of Technology, 6001, Perth, W. Australia.
- Students' misconceptions and inconsistencies of thought.
CO: Dr Shlomo Vinner, Science Teaching Centre, Hebrew University, 91904 Jerusalem, Israel.
- Students' difficulties in calculus.
COs: Mille Michelle Artique, IREM Université Paris VII, Tour 56, 2 Place Jussieu, 75005 Paris, France, and
Professor Gontran Eryvynk, Department of Mathematics, University of Leuren, Campus Kortrijk, Kortrijk, Belgium.
- Theories of learning mathematics.
CO: Dr Pearla Neshet, School of Education, University of Haifa, 31999 Haifa, Israel.
- Improving students' attitudes and motivation.
CO: Dr Gilah Leder, Faculty of Education, Monash University, 3168 Clayton, Victoria, Australia.
- Pre- and in-service mathematics teacher education.
CO: Dr John Dossey, Dept of Mathematics, Illinois State University, Normal, IL 61761, USA.
- Language and communication in the classroom.
CO: Professor Heinz Steinberg, IDM, Universität Bielefeld, 4800 Bielefeld 1, Germany.
- Innovative assessment of students in the mathematics classroom.
COs: Dr Julia Szendrei, Rócczi utca 23.VI.20, 1191 Budapest, Hungary, and Dr Zoltan Bathory, Centre for Evaluation, Nat. Inst. of Education, Berzsényi 6, H-1087, Budapest, Hungary.
- Differentiation of mathematics programmes within and between classes.
CO: Dr Skip Kifer, College of Education, University of Kentucky, Lexington, KY, USA.
- Multicultural and multilingual classrooms.
CO: to be confirmed
- The role of geometry in general education.
CO: Dr Rina Hershkowitz, Dept of Science Teaching, Weizmann Institute for Science, 76100 Rehovot, Israel.
- Probability and statistics for the future citizen.
COs: Ms Mary Rouncefield, Chester College, Cheyney Road, Chester, CH1 4BJ, UK and
Dr James Schultz, Dept of Mathematics, The Ohio State University, Columbus, OH, USA.
- The place of algebra in secondary and tertiary education.
CO: Dr Carolyn Kieran, Dept de math et de l'informatique UQAM, C.P. 8888, succ. 'A' H3C 3PS, Montreal, QC, Canada.
- Modelling activities in the classroom.
CO: Mr Trygve Breiteig, Kristiansand Loereshogskole, 4604 Kristiansand S. Norway.
- Undergraduate mathematics for different groups of students.
CO: M. Daniel Alibert, UFR de Mathématiques, Institut Fourier, B.P. 74, 38402 St-Martin-d'Hères, France.
- The impact of calculators on the elementary school curriculum.
CO: Ms Hilary Shuard, CAN Continuation Project, Homerton College, Cambridge CB2 2PH, UK.
- Technology in the service of the mathematics curriculum.
CO: Prof. Klaus-Dieter Graf, Didaktik der Informatik, Freie Universität Berlin, 1000 Berlin 33, Germany.
- Methods for implementing curriculum change.
CO: Professor Hugh Burkhardt, Shell Centre for Maths Education, University Park, Nottingham, NG7 2RD, UK.
- Mathematics for early school leavers.
CO: Dr Carlos Vasco, Avenida 31, No. 15-31, Bogota, D.E. Colombia.
- Mathematics in distance education.
CO: Dr Gordon Knight, Dept of Maths and Statistics, Massey University, Palmerston North, New Zealand.
- The public image of mathematics and mathematicians.
CO: Dr Thomas Cooney, University of Georgia, 105 Aderhold Hall, Athens, G.A. 30602, USA.
- Mathematics education with reduced

resources.

CO: Dr Fidel Oteiza, Los Nibelungos 1847, Las Condes, Santiago, Chile.

23. Methodologies for mathematics education research.

CO: to be confirmed

MIS Workshops at ICME-7

The Mathematical Instruction Sub-committee of the Royal Society hopes to take several workshops to ICME-7 to develop themes from the UK which are relevant to the teaching of mathematics in an international context. Some of you will remember that this was done for ICME-6 in Budapest, and successfully involved numerous classroom teachers and others. These workshops would probably need to meet three or four times before ICME-7. If you are interested in any of these workshops, please contact the organizer directly.

Workshop: Chaos in mathematics education.

Organizer: Dr Daphne Kerslake, 4 Castle Close, Henbury, Bristol BS10 7QU.
Tel: (0272) 506218.

Workshop: Games in mathematics.

Organizer: Dr Christine Shiu, Centre for Mathematics Education, Open University, Walton Hall, Milton Keynes, MK5 7AA
Tel: (0908) 653551 or Mrs Gill Hatch,

Centre for Mathematics Education, Manchester Polytechnic, 799 Wilmslow Road, Didsbury, Manchester M20 8RR.
Tel: (061) 247 2257.

Workshop: Popularizing mathematics.

Organizer: Mr Geoff Wain, Centre for Studies in Science and Mathematics Education, University of Leeds, Leeds LS2 9JT.
Tel: (0532) 334603.

Workshop: Profession of teaching.

Organizer: To be confirmed, please contact Robert Rees at the Royal Society.

Sponsorship for ICME-7

The MIS will be raising sponsorship to assist with costs in attending ICME-7. The appeal for ICME-6 was very successful and over 400 UK delegates attended, many helped by the fund. Particular care was taken to support classroom mathematics teachers in addition to mathematics educators from other sectors. MIS hope to be successful again and to support as many delegates as possible. Further details will be given later.

For further MIS information or to join the UK mailing list, please contact Mr R.A. Rees, The Royal Society, 6 Carlton House Terrace, London, SW1Y 5AG. (Tel: 071 839 5561 Ext 311). The next newsletter will be available later in 1991.

BRITISH TOPOLOGY MEETING

The 6th British Topology Meeting will take place at the University of Aberdeen on 25th and 26th September 1991. The programme will consist of talks, of approximately 50 minute duration, mainly on the research of British topologists. Offers to speak will be welcomed; in addition there will be space for posters and displays of preprints. The cost of registration, two nights Bed and Breakfast and one dinner is £42.65.

This meeting is supported by the London Mathematical Society.

The first priority in the use of this money will be to support those participants unable to obtain funding from their own institutions.

If you are interested in attending, contact Alan W. Reid, 6th British Topology Meeting, Department of Mathematical Sciences, The University of Aberdeen, Dunbar Street, Aberdeen AB9 2TY. Telephone (0224) 272742 (or 272740), email: areid@uk.ac.aberdeen.kc.

ELISE STEIN

Dr Elise Stein who was elected a member of the London Mathematical Society on 17th November

1949 died on 19th March 1991.

PAUL WEISS

Professor Paul Weiss who was elected a member of the London Mathematical Society on 25th

January 1945 died on 19th January 1991.

DIFFERENTIAL GEOMETRIC METHODS IN LAGRANGIAN DYNAMICS

An informal workshop on Differential Geometric Methods in Lagrangian Dynamics, organised by M. Crampin and D.J. Saunders of the Open University, is to be held at the University of Stirling from 5th to 9th August 1991. Among those expected to take part are D. Krupka (Brno), G.

Marmo (Naples), W. Sarlet (Ghent), P. Urbanski (Warsaw). The meeting is supported by the London Mathematical Society. For further information contact M. Crampin, Faculty of Mathematics, The Open University, Walton Hall, Milton Keynes MK7 6AA, email: m.crampin@uk.ac.open.acs.vax.

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Volume 2: c.£30.00 net HB 0 521 36135 4 300 pp. Forthcoming August 1991

Cambridge University Press

The Edinburgh Building, Cambridge CB2 2RU, UK

SUPPORT FOR PERSECUTED MATHEMATICIANS

Recent approaches to me by two Kurdish mathematicians who have lost their jobs in Algerian universities as a result of the "Arabisation" programme there, (the effects of which have been intensified by the Gulf War), have prompted me to try to set up an informal organisation to provide support in similar cases. It aims would be:

1. To assist mathematicians seeking temporary or permanent sanctuary in the U.K. as a result of persecution on political, national, racial or religious grounds.

2. To support mathematicians who are suffering such persecution abroad.

The help I have in mind in (1) might take several forms: In seeking jobs, accommodation, etc., in obtaining suitable conditions for carry-

ing on research or resuming study (e.g. office space, library access, contact with other mathematicians). Action under (2) might include lobbying embassies; writing to MPs and the Foreign Office; sending suitable books, preprints and offprints; arranging study leaves in U.K. mathematics departments. An occasional newsletter or e-mail bulletin would provide publicity within the mathematical community. Mathematicians wishing to be involved can contact me at the Department of Mathematics, University Gardens, University of Glasgow, Glasgow G12 8QW, telephone 041 339 8855, ext. 6535, e-mail: k.a.brown@uk.ac.glasgow.vme. I would also be grateful to receive details of mathematicians seeking such support.

K.A.Brown

DIFFERENTIAL EQUATIONS

The Second Colloquium on Differential Equations with international participation will be held in Plovdiv, Bulgaria during the second half of August

1991. For further information write to Stoyan Zlatev, Mathematical Faculty, Plovdiv University, Tsar Assen Str.24, Plovdiv 4000, Bulgaria.

ROLLO DAVIDSON PRIZE

The Trustees of the Rollo Davidson Trust give notice that they have awarded a Rollo Davidson Prize for 1991 to Alain-Sol Szintman (ETH, Zurich,

Switzerland) for his work on the development of chaos in stochastic systems.

UNIVERSITY OF ESSEN Department of Mathematics & Institute for Experimental Mathematics

Starting 1st July 1991, a college for postgraduate and postdoctoral studies in theoretical and experimental methods of pure mathematics will be instituted at the University of Essen financed by the Deutsche Forschungsgemeinschaft.

It supports doctoral and postdoctoral fellowships. The main areas of research are:

- Algebra (Bessenrodt, Knörr)
- Local and Global Geometry (Esnault, Herzog, Viehweg)
- Number Theory (Frey, Rück)
- Algebraic and Technical Coding Theory (Stichtenoth, Tran, Vinck)
- Modell Theoretic Methods in Discrete Mathematics (Droste, Göbel)
- Computer Algebra (Michler, Schneider)

Qualified women candidates are especially encouraged to apply. Applicants should send a CV, a list of publications and certificates until **15th June 1991**. Furthermore, they should arrange to have two letters of reference submitted to: Prof. Dr. G. Michler, Institute for Experimental Mathematics, University of Essen, Ellernstrasse 29, D-4300 Essen 12, Germany.

Telephone: (201) 32064-40 Telefax: (201) 32064-25

Quadratic and Hermitian Forms over Rings

1991. XI, 524 pp. (Grundlehren der mathematischen Wissenschaften, Vol. 294)
Hardcover £70.50 ISBN 3-540-52117-8

This book presents the theory of quadratic and hermitian forms over rings in a very general setting. It avoids, as far as possible, any restriction on the characteristic and takes full advantage of the functional properties of the theory. It is not an encyclopedic survey. It stresses the algebraic aspects of the theory and avoids—within reason—overlapping with other books on quadratic forms (liked those of Lam, Milnor-Husemöller and Scharlau). One important tool is descent theory with the corresponding cohomological machinery. It is used to define the classical invariants of quadratic forms, but also for the study of Azmaya algebras, which are fundamental in the theory of Clifford algebras. Clifford algebras are applied, in particular, to treat in detail quadratic forms of low rank and their spinor groups. Another important tool is algebraic K-theory, which plays the role that linear algebra plays in the case of forms over fields. The book contains complete proofs of the stability, cancellation and splitting theorems in the linear and in the unitary case. These results are applied to polynomial rings to give quadratic analogues of the theorem of Quillen and Suslin on projective modules. Another, more geometric, application is to Witt groups of regular rings and Witt groups of real curves and surfaces.

A. J. Hahn, O. T. O'Meara, University of Notre Dame, Notre Dame, IN

The Classical Groups and K-Theory

Foreword by J. Dieudonné

1989. XV, 576 pp. (Grundlehren der mathematischen Wissenschaften, Vol. 291)
Hardcover £70.50 ISBN 3-540-17758-2

Contents: Introduction. – Notation and Conventions. – General Linear Groups, Steinberg Groups, and K-Groups. – Linear Groups over Division Rings. – Isomorphism Theory for the Linear Groups. – Linear Groups over General Classes of Rings. – Unitary Groups, Unitary Steinberg Groups, and Unitary K-Groups. – Unitary Groups over Division Rings. – Clifford Algebras and Orthogonal Groups over Commutative Rings. – Isomorphism Theory for the Unitary Groups. – Unitary Groups over General Classes of Form Rings. – Concluding Remarks. – Bibliography. – Index of Concepts. – Index of Symbols.

From the foreword by J. Dieudonné: "All mathematicians interested in classical groups should be grateful to these two outstanding investigators for having brought together old and new results (many of them their own) into a superbly organized whole. I am confident that their book will remain for a long time the standard reference in the theory."





Godfrey Harold Hardy's second Presidency of the Society, which was followed by his time as Secretary, from 1941-45, came after a decade of honours and influence. In 1928 he revived the Oxford Quarterly Journal of Mathematics on the death of Glaisher. In 1929 he received the Society's De Morgan medal, and in 1931 he returned to Cambridge as Sadlerian Professor. In 1934 the book on inequalities appeared, and in 1938 the first edition of Hardy and Wright's *Theory of Numbers*. He died on 1st December 1947, the day he was to be awarded the Royal Society's Copley medal. He was the Society's 38th President, from 1939-1941.

DIARY

The diary lists Society meetings and other events publicised in previous issues of the Newsletter. For further information, refer to the figure in brackets, which is a cross reference to the LMS Newsletter Number.

1991

JUNE

- 1 Edinburgh Mathematical Society Meeting, St Andrews (176)
- 9-14 Fixed Point Theory and Applications Conference, Canada (177)
- 13 LMS Meeting, London
- 15-15 July Proof Theory, Fragments of Arithmetic and Complexity Workshop, Prague, Czechoslovakia (182)
- 17 London Mathematical Society Popular Lectures, Sheffield
- 23-30 Category Theory Meeting, Canada (179)
- 24-2 July Topological Methods in the Theory of Ordinary Differential Equations in Finite and Infinite Dimensions, Italy (182)
- 25-6 July Hodge Theory Summer School, France (182)
- 28 London Mathematical Society Popular Lectures, Imperial College, London
- 29-8 Jul Probabilistic Methods in Combinatorics, Durham (178)

JULY

- 1-5 The Mathematics of Nonlinear Systems, Bath (168)(175)(177)
- 1-12 Cambridge Banach Algebras Symposium, Cambridge (182)
- 1-19 Geometric Group Theory Symposium, Sussex (179)
- 5-7 Babbage-Faraday Bicentenary Conference, Cambridge (183)
- 7-12 Gregynog Symposium on Differential Equations, Gregynog (176)
- 8-12 British Combinatorial Conference, Surrey (165)(180)
- 8-12 Australian Mathematical Society Annual Conference, Australia (177)
- 8-14 Radicals, Hungary (172)
- 9-19 Conformal Field Theory, Durham (178)
- 13-16 British Congress of Mathematics Education, Loughborough (170)
- 15-19 Radial Basis Function Workshop, Cambridge (182)
- 16-19 Euromech Colloquium on Mathematical Models for Liquid Crystals, Strathclyde (182)
- 20-30 Application of Categories in Computer Science, Durham (178)
- 22-26 Computational and Applied Mathematics Congress, Ireland (167)(180)
- 23-4 Aug Logic and Algebra of Specifications, Germany (181)
- 29-9 Aug Algebras and Orders, Canada (179)
- 30-9 Aug International Congress on Mathematical Physics, Leipzig, Germany (183)

AUGUST

- 18-24 Canadian Number Theory Association Conference, Ontario, Canada (177) (182)

SEPTEMBER

- 16-20 Minimal Models, Lie Groups and Differential Geometry, Spain (179)
- 23 Function Theory Meeting, Lancaster (182)
- 25-27 Numerical Methods in Fluid Mechanics, Switzerland (174)
- 27-28 Symposium on Arithmetic in Honour of Bryan Birch, Oxford (178)(183)

OCTOBER

- 18 LMS Meeting, London

NOVEMBER

- 15 LMS Meeting, London

DECEMBER

- 9-13 European Women in Mathematics, France (180)

1992

JUNE

- 29-1 July Joint AMS/LMS Meeting, Cambridge (155)

JULY

- 4-14 Evolutionary Problems, Durham (178)
- 6-10 European Congress of Mathematics, France (180)
- 14-24 Non-commutative Rings, Durham (178)

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. Telephone 071- 437 5377, Fax 071-439 4629, E-mail lms@uk.ac.kcl.cc.oak.
