THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 232 **November 1995**

FORTHCOMING SOCIETY MEETINGS

Friday 17 November 1995, Burlington House
I. Ekeland, J.M. Ball

Friday-Saturday 16-17 February 1996, Bath University
Differential Equations
H. Brézis, E.B. Davies, E.H. Lieb,
P.H. Rabinowitz, C.A. Stuart, T. Weidl

Friday-Saturday 10-11 May 1996, University of Glasgow
Joint Meeting with the Edinburgh Mathematical Society
Algebra
A. Lubotsky, K. Goodearl, G. Levitt, J. Rickard, C. Maclachlan

ANNUAL DINNER

The 1995 Annual Dinner will be held after the Annual General Meeting on Friday 17 November at 6.30 pm for 7.00 pm at the Chuen Cheng Ku Chinese Restaurant, 17 Wardour Street, London W1. The cost is £19.25 per person and members may book places for guests. The booking form, enclosed with the October Newsletter, should be returned together with payment to the London Mathematical Society office by **Wednesday 8 November.**

DEPARTMENTAL NEWS

Heriot-Watt University The following have been appointed to lectureships in the department: Dr Nick D. Gilbert (University of Durham), Dr Kewei Zhang (Macquarie University, Australia), Dr Michael Levitin (Research Associate, Heriot-Watt University). The following have been appointed to Research Associateships: Dr David G. Roxburgh (University of Dundee), Mr David Wild (Heriot-Watt University). Dr Jan Kristensen (Lyngby) is a visiting Research Associate under a Danish Fellowship, for 1 year from 1 September.

Open University The following have been appointed in the Pure Mathematics Department: Lectureships: Dr Gwyneth Stallard and Dr Bridget Webb; Temporary Lectureship: Dr June Barrow-Green; 1-year Research Fellowship: Dr Kathleen Quinn. Mr Roy Nelson and Dr David Asche both retired at the end of September.

Strathclyde University Dr A.C. McBride was awarded the degree of Doctor of Science by the University of Edinburgh in July 1995.

LMS CHARTER AND STATUTES AND BY-LAWS

Updated versions of the London Mathematical Society *Charter and Statutes* and *By-Laws* of the London Mathematical Society are available from the LMS Office.

LMS PUBLICATIONS NEWS

Dr Alan R. Pears has recently succeeded Dr J. Vernon Armitage (Durham) as LMS Obituaries Editor. Dr Armitage held this post for over 20 years, and the Society is greatly in his debt.

Dr Peter G. Dixon (Sheffield) has also recently succeeded Dr D.J.H. Garling (Cambridge) as LMS Book Reviews Editor of the Society's Bulletin.

Professor E. Chris Lance (Leeds) will shortly succeed Professor Norman Blackburn (Manchester) as Deputy Publications Secretary.

Society members may be interested to know that the first of the 1995 issues of the Society's new translation journals *Mathematics: Sbornik and Izvestiya: Mathematics* have appeared. The English translations from Russian originals were published by the American Mathematical Society up to the end of the Russian 1994 volumes; from January 1995 the translated journals are published by a 'troika' consisting of the Russian Academy of Sciences, the London Mathematical Society, and Turpion Ltd (a specialist London printer/publisher). It is particularly pleasing that the translations are of very high standard and now appear in around 5 months after the Russian original.

Members' libraries may obtain inspection copies or further information on these two journals from: Customer Services Department, Data Processing Department, Turpin Distribution Services Ltd, Blackhorse Road, Letchworth, Herts SG6 1HN.

David A Brannan

NORTH BRITISH FUNCTIONAL ANALYSIS SEMINAR

A meeting of the North British Functional Analysis Seminar will be held at the University of Manchester, Oxford Road, Manchester from 2.30 pm on Friday 10th November until midday on Saturday 11th November 1995. The speakers will be Professor P.F. Baum (Penn. State) on Friday and Professor M. Wodzicki (visiting Paris) on Saturday. All interested are most welcome to attend. For further information contact Dr Gordon Blower, NBFAS Secretary, tel 01524-593962, fax 01524-592681, e-mail maa008@uk.ac.lancs.cent1, Lancaster University.

AFFINE GEOMETRY OF CONVEX SETS CONFERENCE

A conference on Affine Geometry of Convex Sets will be held at Dalhousie University, Halifax, Nova Scotia, Canada from 21 to 25 July 1996. The conference is intended to cover all those areas of convexity lying between Euclidean metric properties and purely combinatorial properties of convex sets. It includes such topics as affine inequalities, bodies related to a convex body (e.g. projection, intersection, difference and centroid bodies), affine surface area and Minkowski geometry. If you wish to receive more information please write to: e-mail: geometry@cs.dal.ca or, regular mail: A.C. Thompson, Department of Mathematics, Statistics and Computing Science, Dalhousie University, Halifax, Nova Scotia B3H 3J5, Canada.

EDINBURGH MATHEMATICAL SOCIETY MEETINGS

Meetings to be held by the Edinburgh Mathematical Society are: 20 October (Edinburgh) AGM and Presidential Address of Professor A.D.D. Craik; 17 November (Glasgow) Dr A.W. Reid; 8 December (Edinburgh) Professor D.J.A. Welsh; 12 January (Edinburgh) Dr J.K. Langley; 9 February (Dundee) Professor J. Carr; 8 March (Stirling) Dr P.J. Rippon; 10-11 May (Glasgow) Joint Meeting with the London Mathematical Society; 31 May (Aberdeen) Professor N.J. Hitchin. Further information is available from the Honorary Secretaries, Dr P. Heywood (philip@maths.ed.ac.uk) and Dr C.J. Smyth (chris@maths. ed.ac.uk), Department of Mathematics and Statistics, University of Edinburgh, James Clerk Maxwell Building, Kings Buildings, Mayfield Road, Edinburgh EH9 3JZ.

LONDON MATHEMATICAL SOCIETY

Annual General Meeting

Friday 17 November 1995 at 3.15 pm

I. Ekeland (Paris)

will speak at 3.30 pm on

From Elie Cartan to Gerard Debreu:

Exterior differential systems and economic theory

J.M. Ball (Heriot-Watt)

(1995 Naylor Prize Lecture)

will speak at 5.00 pm on

Local minimizers of variational integrals

All interested are very welcome.

Tea will be served at 4.30 pm

The meeting will be held at the Linnean Society,

Burlington House, Piccadilly, London W1.

Please note early start at 3.15 pm

ROYAL SOCIETY FARADAY AWARD 1995

The Council of the Royal Society has made the Michael Faraday Award for 1995 to Professor Ian Stewart, Director of Warwick Interdisciplinary Research Programme, Mathematics Institute, University of Warwick and Gresham Professor of Geometry, Gresham College, London, in recognition of his work in communicating mathematical ideas to the widest possible range of audiences through his many thought-provoking books and magazine articles, his radio and television presentations, and his energetic public lectures in schools and industry on a variety of mathematical topics.

The Michael Faraday Award is made annually by the Royal Society on recommendation of COPUS (Committee on the Public Understanding of Science) to the scientist who has done most to further, in the UK, the public understanding of science. The Award consists of a silver gilt medal and a prize of £1000. Professor Stewart was nominated for the Award by the London Mathematical Society.

The Award will be presented to Professor Stewart by the President of the Royal Society on 30 November 1995. He will give his Award lecture at the Society on a date to be set in 1995/96.

SERVER OF THE EUROPEAN MATHEMATICAL SOCIETY

In June 1996 the 'European Mathematical Information Service' went on line under the URL http://www.emis.de or also under the anonymous ftp server ftp.emis.de. It contains information about the European Mathematical Congress 1996 in Budapest, about the European Mathematical Society, the Electronic Library of the European Mathematical Society, and information about conferences and other mathematical servers throughout the world. This service is offered by the EMS in collaboration with FIZ-Karlsruhe. Mirror servers in some European countries are under negotiation, so in the future access should be fast from many European countries. Point your www browser (Mosaic, Netscape, etc) at the given address and have a look.

Peter Michor
Secretary EMS

COMMEMORATION OF PAUL DIRAC Monday 13 November 1995

Paul Dirac will be commemorated by the placing of a plaque in Westminster Abbey, adjacent to the grave of Isaac Newton. The plaque will be dedicated on Monday 13 November 1995 at a short service following the regular Evensong in the Abbey (and separated from Evensong by a brief interval). The services in the Abbey will be preceded by a meeting at the Royal Society, 6 Carlton House Terrace, London SW1, celebrating some of Dirac's outstanding contributions to physics. All are welcome to attend both the Royal Society meeting and the service in the Abbey.

The programme for the Royal Society meeting will be: 10.30 Coffee; 11.00 Sir Michael Atiyah, President, Royal Society *The Dirac Equation and Geometry;* 12.00 Professor David Olive, University of Wales Swansea *Monopoles;* 1.00 Lunch (details below); 2.00 Professor Maurice Jacob, CERN, Geneva, Switzerland *Antimatter;* 3.00 Professor Abraham Pais, The Rockefeller University, New York *Paul Dirac: Aspects of His Life and Work;* 4.00 Tea. Evensong at Westminster Abbey is held at 5.00 and the Service of Dedication will commence at 6.00.

A buffet lunch will be available in the City of London Rooms of the Royal Society for those who book and pay £8 in advance. For details of how to book lunch and for other enquiries please contact: Dirac Commemoration, c/o The Faculty Office, DAMTP, University of Cambridge, Silver Street, Cambridge CB3 9EW, e-mail: faculty@ damtp.cam.ac.uk.

LONDON MATHEMATICAL SOCIETY

Spitalfields Day

Saturday 11 November 1995

Isaac Newton Institute for Mathematical Sciences
Seminar Room 1, 20 Clarkson Road, Cambridge

A DYNAMICAL SYSTEMS APPROACH TO PARTIAL DIFFERENTIAL EQUATIONS

Programme

10:30 Coffee

11:00 Jack K. Hale (Georgia Tech)
From finite to infinite dimensional dynamical systems

12:15 Lunch

13:30 John D. Gibbon (Imperial College)
Attractors for the Navier-Stokes equations

14:45 Edriss S. Titi (University of California at Irvine)
Inertial manifolds and degrees of freedom for dissipative systems

15:45 Tea

16:15 Peter Constantin (Chicago)
The Euler and Navier-Stokes equations

Anyone who is interested is welcome to attend. Lunch will be provided at a nominal charge; please let Tracey Hibbitt at the Institute know by Monday 6 November if you intend to come, in order to help us plan for lunch: tel: (01223) 335999; fax: (01223) 330508; e-mail: t.hibbitt@newton.cam.ac.uk.

Scientific enquiries can be addressed to Colin Sparrow at the Institute, e-mail: c.sparrow@newton.cam.ac.uk. All the speakers are currently based at the Newton Institute as part of the programme 'From Finite to Infinite Dimensional Dynamical Systems'.

IN MEMORY OF BRIAN HARTLEY

The London Mathematical Society has resolved to publish in the Journal a group of papers dedicated to the memory of the late Brian Hartley of the University of Manchester. The papers will be refereed in the usual way and must meet the Journal's normal criteria on standards and presentation. The Editors will make available about 90 or 100 pages of one issue of the Journal. Since space will be very restricted, shorter papers will be particularly welcome. Clearly it will be most appropriate to have papers written by Brian's collaborators, research students and close colleagues. If it turns out to be necessary the Editors may have to be selective in determining which papers should appear in the special part-issue, but it may be that further dedicated papers can be published in other issues of the Journal, Proceedings or Bulletin. The precise date of publication of the special part-issue of the Journal cannot be determined at this stage, but it is likely to be some time in late 1997 or early 1998.

Those who wish to submit a paper for possible inclusion in the special part-issue should submit the paper to the Society in the usual way (see the inside cover of a recent issue of the Journal, Proceedings or Bulletin) by 31 March 1996, making it clear that the paper is to be considered for inclusion in the special part issue of the Journal dedicated to Brian Hartley. An additional copy of the paper should be sent to me so that I can help the Editors co-ordinate the progress of the papers.

Roger Bryant
UMIST

BRITISH COMBINATORIAL COMMITTEE

At the Business Meeting held during the Fifteenth British Combinatorial Conference (3-7 July 1995, University of Stirling) a new Committee was elected to serve until the next Conference. At a subsequent meeting of the newly elected Committee, members to serve as Honorary Secretary and Honorary Treasurer were chosen. The members of the new Committee are as follows: Professor P.J. Cameron (Chairman), Dr I. Anderson (Treasurer), Dr M.H.G. Anthony, Dr B. Jackson, Dr C. McDiarmid, Dr J. Sheehan (Secretary), Ex Officio: Dr B.S. Webb (Bulletin Editor), Dr L.H. Soicher, Local Organizer for the 1997 Conference. The Committee is grateful for financial support received from the London Mathematical Society Conferences Fund towards the costs of the above mentioned Conference.

Sixteenth British Combinatorial Conference The Committee wishes to announce that the next British Combinatorial Conference will be held at Queen Mary and Westfield College from 7-11 July 1997.

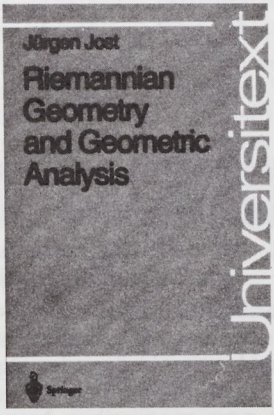
British Combinatorial Bulletin This Booklet, published annually, contains news of Conferences and Colloquia on Combinatorial topics, a list of British mathematicians known to be interested in Combinatorics and information about forthcoming research publications. It is available on request free of charge to mathematicians resident in Great Britain and at a cost of £3.00 (to cover postage for two issues) to interested persons resident overseas. Please send £3.00 sterling to the Editor, Dr B.S. Webb, Department of Pure Mathematics, The Open University, Walton Hall, Milton Keynes MK7 6AA.

One-Day Colloquia on Combinatorial Topics The British Combinatorial Committee has again decided to make a limited sum of money available for the support of One-Day Colloquia on Combinatorial topics. The Committee will, however, expect any Institution requesting money under this agreement to provide part of the total needed from its own funds. Proposals for consideration by the Committee should be sent in the first instance to the Secretary, Dr J. Sheehan, Department of Mathematical Sciences, University of Aberdeen, The Edward Wright Building, Dunbar Street, Aberdeen AB9 2TY.

Pathways to Geometry

J. Jost
Riemannian Geometry and Geometric Analysis
Universitext
1995. XI, 401 pages.
Softcover £ 34.00 ISBN 3-540-57113-2

Detailed proofs of basic results are introduced at an early stage. The reader introduced to Riemannian geometry from a local and global, mathematical and physical point of view. In particular a working knowledge of nonlinear analysis in geometry is gained.



J. Stillwell
Geometry of Surfaces
Universitext
1st edition 1992. Corr. 2nd printing 1995. XI, 216 pages. 165 figures.
Softcover £ 25.00 ISBN 3-540-97743-0

The geometry of surfaces is an ideal starting point for learners of geometry as the extensions offer the simplest possible introduction to fundamentals of modern geometry. The prerequisites are modest and standard, requiring only a little linear algebra, calculus, basic group theory and basic topology. Most importantly the theory of surfaces of constant curvature finds numerous applications in the rest of mathematics.

G. A. Jennings
Modern Geometry with Applications
Universitext
1994. VIII, 187 pages. 150 figures.
Softcover £ 21.00
ISBN 3-540-94222-X

Emphasis is given to applications and Special Relativity is discussed as a major example of a non-Euclidean geometry. The book reviews many topics from Euclidean geometry, emphasizing transformations, and includes a chapter on conics and planetary orbits.

Springer

Prices are subject to change without notice.
In EU countries the local VAT is effective.

Springer-Verlag, P. O. Box 31 13 40, D-10643 Berlin, Germany. Fax: (0)30/8207-301/448, e-mail: orders@springer.de

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MATHFIT: MATHEMATICS FOR INFORMATION TECHNOLOGY

Mathfit, Mathematics for IT, is an initiative which aims to develop the links between information technology and mathematics. The LMS Computer Science Committee is sponsoring a series of Mathfit workshops, with a particular emphasis on postgraduate participation. The first, on New Connections between Mathematics and Computer Science, takes place in Cambridge from 20 - 24 November. Anyone interested in applying for support for workshops should contact the Chair of the Computer Science Committee, Professor Ursula Martin, University of St Andrews, St Andrews, Fife KY16 9SS, e-mail um@dcs.st- and.ac.uk.

EPSRC is proposing MathFit as a new managed program, jointly managed by EPSRC's Mathematics Programme and Information Technology and Computer Science Programme. A consultation document is being prepared. If you wish to comment, talk to Peter Bates at EPSRC on 01793 444000, e-mail spxb0@ibm- b.rutherford.ac.uk.

WORKSHOP ON NEW CONNECTIONS BETWEEN MATHEMATICS AND COMPUTER SCIENCE, Isaac Newton Institute: 20-24 November 1995

The interplay between mathematics and computer science has traditionally centred around areas in logic, category theory and discrete mathematics. In recent years new connections between mathematics and computer science have emerged from such unexpected quarters as algebraic topology, differential geometry, dynamical systems and operator algebras. These new developments hold the promise of bringing new insights and powerful mathematical tools to bear on problems in computing. At the same time, such problems have opened new avenues of exploration for the mathematician.

This workshop is intended to bring together mathematicians and computer scientists for a series of tutorials and discussions on "New Connections". It is being timed to take advantage of parallel programmes in "Semantics of Computation" and "From Finite to Infinite Dimensional Dynamical Systems" at the Isaac Newton Institute in the second half of 1995. The workshop is being jointly hosted by the two programmes and by Hewlett-Packard's Basic Research Institute in the Mathematical Sciences (BRIMS) in Bristol, England. Financial support is expected from BRIMS, the London Mathematical Society and the MATHFIT initiative of the Engineering and Physical Sciences Research Council.

Invited participants include the following (in addition to those already participating in the programmes at the Newton Institute): John Baez, UC Riverside; Gerard Berry, Sophia-Antipolis; Anthony Bloch, Michigan; Roger Brockett, Harvard; Abbas Edalat, IC London; Peter Giblin, Liverpool; Jean-Yves Girard, CNRS Marseille; Eric Goubault, ENS Paris; Mikhail Gromov, IHES Paris; Henk Heijmans, CWI Amsterdam; Yves Lafont, CNRS Marseille; Ursula Martin, St Andrews; Gianfranco Mascari, Rome; Peter Olver, Minnesota; Prakash Panangaden, McGill; Vaughan Pratt, Stanford; Sergio Rajsbaum, MIT; Guillermo Sapiro, HP Palo Alto; Mike Shub, IBM Yorktown; Steve Smale, Berkeley.

It is expected that the morning sessions of the workshop will be devoted to tutorial lectures, intended to introduce new developments to a non-specialist audience. Among the topics expected to be covered are: "Differential geometry of algorithms", "Dynamics of proof and computation", "Algebraic topology and computation", "Geometry of images and computer vision" and "Developments in complexity theory". The afternoon sessions will allow time for informal discussions as well as shorter contributed talks. Discussions are underway with Cambridge University Press for publication of the proceedings. To register

for the workshop please e-mail: Mike Sekulla (m.sekulla@newton.cam.ac.uk) at the Isaac Newton Institute in Cambridge who will then supply further information about accommodation and travel.

If you are interested in giving a contributed talk at the workshop, please send a title, abstract and a list of 2-3 relevant references to the organiser, Jeremy Gunawardena at BRIMS (address below). A bibliography will be compiled from this data and made available to all participants. For further information, please contact: Jeremy Gunawardena, BRIMS, Hewlett-Packard Labs, Filton Road, Stoke Gifford, Bristol BS12 6QZ; tel: 0117 922 8216; fax: 0117 922 9190; e-mail: jhcg@hplb.hpl.hp.com.

For further information about BRIMS try URL:http://www-uk.hpl.hp.com/brims/ and for the Newton Institute try URL:http://www.newton.cam.ac.uk/

INTERNATIONAL CENTRE FOR MATHEMATICAL SCIENCES, EDINBURGH

The following workshops have been announced by the International Centre for Mathematical Sciences, Edinburgh.

Cell Kinetics, 27 November - 1 December 1995. Speakers: D. Appleton (Newcastle), A. Columbano (Cagliari), M. Loffler (Leipzig), L. Mallucci (Guy's Medical School), C. Potten (Paterson Institute for Cancer Research). Topics: Carcinogenesis and cell kinetics; Apoptosis; Growth promoting factors; Growth inhibiting factors; Structure and evolution of the epidermis; Haemopoiesis. The workshop is funded from a grant from Tenovus-Scotland. Two bursaries will be awarded by the Company of Biologists to enable two postgraduate PhD research students from the UK to attend the workshop. Registration fee £50 (£25 postgraduate students). For further information contact ICMS, 14 India Street, Edinburgh EH3 6EZ. Tel: 0131-220 1777; fax: 0131-220; 1053 e-mail: icms@maths.ed.ac.uk.

Workshop on Curves and Computation, 24-29 March 1996. A workshop on the computational number theoretic aspects of algebraic curves, particularly elliptic curves, but also curves of higher genus. Applications of curves, e.g. to coding, cryptography will also be considered. Main speakers will include (provisional): A. Bremner (Arizona), F. Beukers (Utrecht), N. Elkies (Harvard), J.-F. Mestre (Paris), E.F. Schaefer (Santa Clara), R. Schoof (Rome), J.H. Silverman (Brown). Scientific advisors: H. Cohen (Bordeaux), H.W. Lenstra. Organisers: J.E. Cremona (Exeter) (cremona@noether.ex.ac.uk), C.J. Smyth (Edinburgh) (chris@maths.ed.ac.uk). Arrival day 24th March. Approximate timing of academic activities: 9.00 25th to 16.00 29th March. Those interested in attending, or at least wishing to receive the second announcement (preferably by e-mail), should contact Chris Smyth: e-mail: chris@maths.ed.ac.uk; Department of Mathematics and Statistics, JCMB, King's Buildings, Mayfield Road, Edinburgh EH9 3JZ; tel: +44 (0)131 650 5054; fax: +44 (0)131 650 6553. The latest version of this and later announcements can be accessed on WWW from: http://www.ma.hw.ac.uk/icms/.

Other conferences and workshops in the ICMS 1995/6 programme will be: 17-29 March, Representation Theory and Automorphic Forms Instructional Conference; 20-22 March, Assessment of Environmental Impact Workshop; 25-29 March, Curves and Computation Workshop; 1-30 June, Interplays Between Geometry and Topology Workshop; 1-5 July, Adaptive Methods in Computational PDEs Workshop; 1 July-31 August, Nonstandard Analysis and its Applications. For further details contact: ICMS, 14 India Street, Edinburgh EH3 6EZ; tel: 0131 220 1777; fax: 0131 220 1053; e-mail: icms@ maths.ed.ac.uk.

1996 LMS DURHAM SYMPOSIA

There will be three symposia in 1996:

Partial Differential Equations and Spectral Theory Monday 24th June to Thursday 4th July 1996. Organisers: Professor D. Vassiliev*, Dr. Yu. Safarov. Main Speakers: S. Agmon (Jerusalem), H. Brezis (Paris VI), L. Caffarelli (Princeton), V. Guillemin (MIT), E. Lieb (Princeton), P-L. Lions (Paris IX), R. Melrose (MIT), P. Sarnak (Princeton), L. Simon (Stanford), J. Sjöstrand (Ecole Polytecnique).

Galois Representations in Arithmetic Algebraic Geometry Monday 8th July to Friday 19th July 1996. Organisers: Professor A.J. Scholl*, Professor R.L. Taylor. Main Speakers: Provisional: G. Faltings (Bonn), J-M. Fontaine (Orsay), B. Gross (Harvard), K. Kato (Tokyo), V. Kolyvagin (Moscow), B. Mazur (Harvard), K. Ribet (Berkeley), K. Rubin (Ohio), A. Wiles (Princeton).

Model Theory of Fields Monday 22nd July to Thursday 1st August 1996. Organisers: Professor A.J. Macintyre, Dr. A.J. Wilkie*. Main Speakers: Provisional: J. Denef (Leuven), E. Hrushovskii (MIT), D. Marker (Chicago), A. Pillay (Notre Dame), L. van den Dries (Urbana), B. Zilber (Kemerovo).

These research symposia are organised under the auspices of the London Mathematical Society and are supported by Research Grants from EPSRC. 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 D.G. Vassiliev, School of Mathematical Sciences, University of Sussex, Falmer, Brighton BN1 9QH; tel: 01273 678781; fax: 01273 678097; e-mail: d.vassiliev@sussex.ac.uk; Professor A.J.Scholl, Department of Mathematical Sciences, University of Durham, South Road, Durham DH1 3LE; Dr A.J. Wilkie, Mathematical Institute, University of Oxford, 24-29 St. Giles, Oxford OX1 3LB; fax: 01865 273583.

UNIVERSITY OF OXFORD

Junior Lecturership in Pure Mathematics

Applications are invited for a Junior Lecturership from persons qualified in any area of Pure Mathematics. The appointment is with effect from as early a date as may be arranged until 30 September 1998 and is not renewable.

Salary on the scale of £13,941 to £14,756 per annum.

Applications (including c.v., list of publications and an account of research interests) should be sent to the Chairman, Mathematical Institute, 24-29 St Giles', Oxford, OX1 3LB (Tel. (01865) 273576) not later than 17 November 1995, from whom further particulars may be obtained.

The University exists to promote excellence in education and research, and is an equal opportunities employer.

London Mathematical Society Monographs Series from Oxford University Press

NEW TITLES IN THE SERIES

Super-real Fields
Totally Ordered Fields with Additional Structure
H. Garth Dales and W. H. Woodin

This advanced text expounds the established theory of ordered fields, and continues to develop a quite ordinary theory of super-real fields. This theory has important applications in analysis and logic.

LMS Monograph Series No. 14
0-19-853991-6, February 1996
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Spectral Decompositions and Analytic Sheaves
J. Eschmeier and M. Putinar

This book uses the language of homological algebra and sheaf theory to describe both classical results and recent developments in the spectral theory of linear operators.

LMS Monograph No. 10
0-19-853667-4, February 1996
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Fundamentals of Semigroup Theory
John M. Howie

This is a clear and readable introduction to the subject, with emphasis on various classes of regular semigroups.

LMS Monograph Series No. 12
0-19-851194-9, October 1995
£45.00

Area, Lattice Points, and Exponential Sums
M. N. Huxley

This volume is concerned with the application of exponential sum techniques to a variety of problems in number theory, in particular the Riemann Zeta Function and the problem of estimating the number of lattice points in regions.

LMS Monograph Series No. 13
0-19-853466-3, February 1996
£85.00

An Atlas of Brauer Characters
C. Jansen, K. Lux, R. Parker, and R. Wilson

This book is a sequel to the *Atlas of Finite Groups* by J. Conway, R. Curtis, S. Norton, R. Parker, and R. Wilson (OUP 1985) and consists mainly of the modular character tables of many of the groups in the original Atlas.

LMS Monograph Series No. 11
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£49.50

The Geometry of Topological Stability
Andrew du Plessis and Terry Wall

Written by internationally renowned authors, the book describes original research, virtually none of which has appeared before in either articles or in book form. The methods developed will stimulate future progress from their application, especially with regard to singularity theory.

LMS Monograph Series No. 9
0-19-853588-0, December 1995
£75.00

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THE GRAVES COLLECTION
University College London

In an article published nearly twenty years ago, Alison Dorling drew attention to the mathematical library of John Thomas Graves (1806-70) and gave an informative account of its history since 1870, when Graves left "all his mathematical, astronomical, and physical books and papers to University College, London, in remembrance of his former connexion with that Institution". The present article, intended to serve primarily as an updated modification of its predecessor, will hopefully also provide some interesting and useful new information on this remarkable mathematical collection.

Graves was born in Dublin in 1806, the same year as his more famous contemporary Augustus De Morgan (1806-71), with whom he had much in common. Both men graduated in 1827 (Graves from Trinity College, Dublin; De Morgan from Trinity College, Cambridge), both were highly regarded mathematicians, both had William Rowan Hamilton as friend and correspondent, both were committee members of the Society for the Diffusion of Useful Knowledge, both contributed articles to William Smith's *Dictionary of Greek and Roman Biography,* and both taught - at one time or another - at University College, London (Graves as professor of jurisprudence from 1839-43, De Morgan as professor of mathematics from 1828-31 and 1836-67). A measure of the nature of their own friendship is that Graves is said to have compiled a list of 2,862 anagrams of Augustus De Morgan in English, Latin, French and German.

However, their greatest common attribute was their love of old mathematical and scientific books. Each amassed a truly vast collection. De Morgan's library which will be discussed in a future article, is estimated at some 3,000 items. Graves' collection is nearly five time as large, containing over 14,000 pieces altogether. Indeed, as was remarked shortly after its donation to University College, *"perhaps no private scholar has ever formed a Mathematical Library so nearly complete".* It was something of an understatement when De Morgan wrote to W.R. Hamilton in 1852, *"You know of course that J. Graves has become a great book collector".* An example of the way Graves' collection was used in the mathematical debates of the day is found in a letter from Hamilton to De Morgan (14 December 1857) where Hamilton is discussing the relation between Argand's work on complex numbers and his own quaternions: *"I regret to say that I have never seen a copy of Argand's publication of 1806, for which I would cheerfully pay more than for many a modern book; but John Graves, who is a great collector, has, in his fine library at Cheltenham, a set of Gergonne's* Annales de Mathématiques, *and he has assured me that he considers me not to have in the least overstated Argand's claims, in the Notes to the Preface to my Lectures . . . ".*

The collection comprises over 10,000 books, 51 manuscripts, and, according to the contemporaneous inventory, 4,577 pamphlets. Unlike the libraries of fellow UCL professors William Sharpey (1802-80) and Robert E. Grant (1793-1874) which have been integrated with the main collection, the Graves library has always remained a distinct body. Today, all items are housed in store in the D.M.S. Watson Library at University College. They are divided into three groupings: books printed before 1640, including 75 incunabula, are kept in the strong room, the main printed collection on shelves in the basement, and the manuscripts with the rest of the College archive material. Being lucky enough to have been recently allowed to visit the basement store, I was able to see for myself not only the great extent of the collection but also the superb condition of the great majority of the volumes - well over a half still exhibit the striking red and gold bindings they received while still in Graves' possession.

The majority of the collection is devoted to mathematical works, in all their many forms, but items relating to physics, astronomy and, to a lesser extent, chemical and biological sciences are also in evidence. Among the older tracts, works on alchemy and astrology are particularly noticeable. However, even taking for granted its vast size and the wide range of subject material embraced, the most outstanding feature of the Graves collection is the sheer age and rarity of many of its constituents. Alison Dorling identified 285 seventeenth-century works in the collection which are not held in the British Library. First editions of numerous famous works abound. The reader's appetite may be whetted by the mention of Galileo's *Sidereus Nuncius* (1610), Briggs' *Arithmetica Logarithmica* (two copies: 1624 & 1631), Recorde's *Pathewaie to Knowledge* (in the later 1574 edition), Harriot's *Artis Analyticae Praxis* (1631), Descartes' *Discours de la Methode* (1637) and Cocker's *Arithmetick* of 1678. However, it was the first edition of Copernicus's *De Revolutionibus* (1543) which particularly caught my eye!

Among the manuscripts are three by James Bradley from the eighteenth century, two seventeenth century versions of Aristotle's *De Caelo,* a 1667 treatise by Seth Ward entitled *Geometrical Astronomy,* and a number of fourteenth century tracts by Sacrobosco including *Tractatus de Sphaera.* This latter author is also well represented among the incunabula which contain ten editions of his *Sphaera Mundi,* six dating from 1478 to 1499. Also included among pre-1500 books are a 1497 Cologne edition of Aristotle's *Meteorologica* and Erhard Ratdolt's first printed Euclid from 1482.

This brings us to the remarkable collection of editions of Euclid, numbered at over 260. Not all were originally acquired by Graves himself; some have been added since 1926 thanks to a fund established by the will of W.W. Rouse Ball. Among the 83 items printed before 1640 are first editions of the *Elements* translated into Italian (1543), German (1562), French (1564) and, of course, Billingsley's English version of 1570, with John Dee's preface. Other language versions included in this sub-collection are Finnish, Turkish, Persian, Hebrew and Chinese.

Finally, among the pamphlets and journals are contained complete runs of several scientific periodicals including the *Philosophical Transactions of the Royal Society* from 1665, *Transactions of the Royal Irish Academy* from 1787, three journals of the French Academie des Sciences: *Histoire* (1699 onwards), *Memoires* (1816-), and *Comptes rendus* (1835-); Crelle's *Journal* (1826-) and the Leipzig *Acta* from 1682-1729. To name a pre-1870 mathematical author who is not contained in the Graves collection is quite a task; it is still baffling how one man had the resources to build up so comprehensive an accumulation of mathematical books, even at nineteenth century prices. The library is nearly priceless today; one can only wonder at Graves' insurance arrangements!

The main collection is catalogued on shelf cards which are housed in the D.M.S. Watson Library, with a separate directory for the rare books and a handlist for the manuscripts. Further information can be obtained from the archivist, Ms. Gillian M. Furlong, D.M.S. Watson Library, University College London, Gower Street, London WC1E 6BT.

Adrian Rice

The above is an article which appeared in the BSHM Newsletter, reprinted here by kind permission of the Editor.

CENTRE FOR DISCRETE AND APPLICABLE MATHS

The London School of Economics is pleased to announce the formation of the Centre for Discrete and Applicable Maths (CDAM). A prospectus, setting out the aims and activities of the Centre, is currently in preparation. The CDAM Foundation Lecture will take place on Tuesday 28 November. Bill Pulleyblank (Head of Mathematical Sciences, IBM) will speak on *Dealing with Uncertainty in Finance Models* at 5.30 pm in the Old Theatre, London School of Economics. Further details are available from the Centre, telephone: 0171 955 7732.

UNIVERSITY OF WALES SWANSEA

SENIOR RESEARCH ASSISTANT

Applications are invited for a vacancy for Senior Research Assistant supported by the Engineering and Physical Sciences Research Council, in the Department of Mathematics, to work with Professor D.E. Evans on Operator Algebras and their applications. Applicants should possess a PhD in Mathematics or expect to receive such a degree soon.

The appointment, which will commence on 1 October 1996, will be at an appropriate point on the Research Assistant scale together with USS benefits and will be for two years in the first instance.

Informal enquiries may be made to Professor D.E. Evans (David.E.Evans@swansea.ac.uk). Further particulars and application forms (2 copies) may be obtained from the Personnel Office, University of Wales Swansea, Singleton Park, Swansea SA2 8PP (Personnel.Mailbox@Swansea.ac.uk), to which office they should be returned by ***Friday 1 December 1995.***

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RESEARCH FELLOW IN THE APPLICATIONS OF SOLITONS IN DATA TRANSMISSION

Applications are invited for the post of Research Fellow on an EPSRC funded project, jointly through the Institute of Mathematics and Statistics and the Electronic Engineering Laboratory. The project covers both the Mathematical analysis and applications of non-linear transmission systems.

Applicants should have a good honours degree in Mathematics, Physics or Electronics with experience in Computer packages. Postgraduate experience and experience in the theory of non-linear wave equations would be an advantage.

The post is for two years from February 1996. Salary in the range £15,986 - £21,519 p.a.

Application forms and further particulars are available form the Personnel Office, The Registry, The University, Canterbury, Kent CT2 7NZ. Telephone (01227) 764000 extension 3674 or (01227) 475482 (24 hour answerphone) Minicom (01227) 823674. Please quote reference number A96/31.

Closing date: 25 November 1995.

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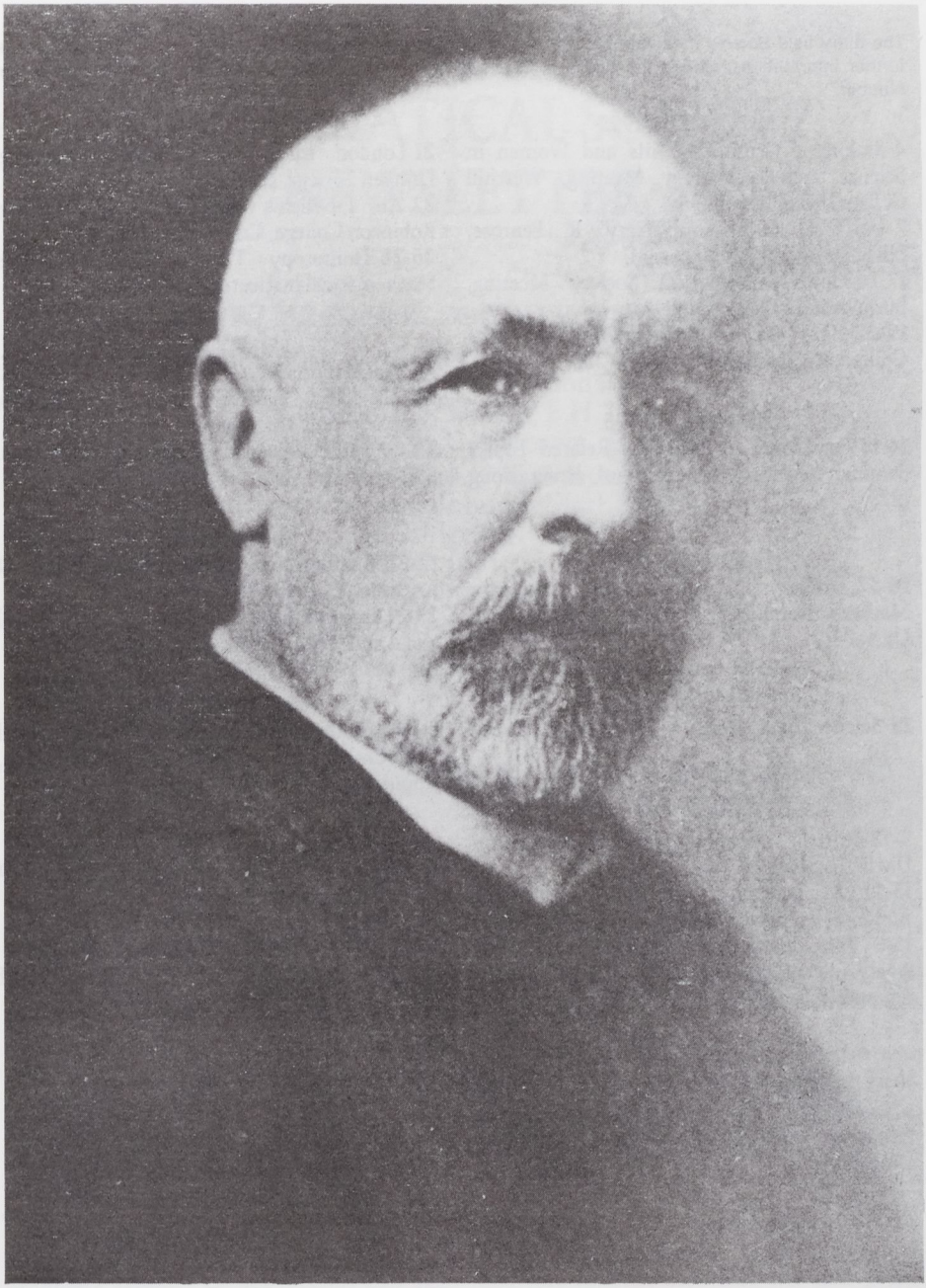

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DIARY

The diary lists Society meetings and other events publicized 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.

NOVEMBER 1995

4 Staking a Claim for Girls and Women in Science and Technology Meeting, Westhill College, Birmingham (230)
7 UNESCO 50th Anniversary, R. Penrose, Public Lecture, Edinburgh (231)
17 London Mathematical Society Meeting, Burlington House, London
19-22 Pure and Applied Mathematics Conference, Bahrain University (222)

DECEMBER 1995

14-18 Functional Analysis and Related Topics Seminar, Chinese University of Hong Kong (225)

FEBRUARY 1996

16-17 Differential Equations, London Mathematical Society Two-Day Meeting, Bath University

MARCH 1996

15 Science, Engineering and Technology Week (231)

APRIL 1996

9-12 British Mathematical Colloquium, UMIST (231)
15-19 LMS Invited Lectures - Professor F.J. Almgren, University College London (228)
15-3 May School on Nonlinear Functional Analysis and Applications to Differential Equations, ICTP Trieste (230)

MAY 1996

10-11 Algebra, Joint Two-Day London Mathematical Society Meeting with the Edinburgh Mathematical Society, Glasgow University

JUNE 1996

21 London Mathematical Society Meeting, Linnean Society, London
22 Ali Fröhlich's 80th Birthday Meeting, Robinson College, Cambridge (230)
26-28 Homotopy Theory Mini-Conference, Mathematical Institute, Oxford (230)

JULY 1996

14-19 Computational Techniques in Spectral Theory and Related Topics Workshop, Gregynog Hall, University of Wales(230)
22-26 2nd European Congress of Mathematics, Budapest, Hungary

AUGUST 1996

12-30 School on Algebraic Groups & Arithmetic Groups, ICTP Trieste (230)
25-31 International Congress of Theoretical and Applied Mechanics, Kyoto, Japan (226)

SEPTEMBER 1996

9-27 School on Numerical Simulation of Partial Differential Equations: Methods, Algorithms, Applications, ICTP Trieste (230)

JULY 1997

7-11 British Combinatorial Conference, Queen Mary & Westfield College, London (230)

AUGUST 1998

18-28 International Congress of Mathematicians, Berlin, Germany

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 WIV 0NL, to arrive before the first day of the month prior to publication. Telephone 0171-437 5377, fax 0171-439 4629, e-mail lms@kcl.ac.uk. The London Mathematical Society is registered with the Charity Commissioners.

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