THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No.159 **March 1989**

FORTHCOMING SOCIETY MEETINGS

Friday 17 March 1989, Scientific Societies Lecture Theatre

Thursday, Friday 18-19 May 1989, Liverpool
Representations of Algebras
Friday 16 June 1989, Burlington House
V.F.R. Jones, H.R. Morton
Friday 20 October 1989, Burlington House
Friday 17 November 1989, Royal Society

J. FRANK ADAMS

Frank Adams, FRS, Lowdean Professor of Astronomy and Geometry at Cambridge, died on 7th January 1989 at the age of 58. He was elected a member of the London Mathematical Society on 19th January 1956 and served on Council from 1963-65. He was awarded the Junior Berwick Prize in 1963 and the Senior Whitehead Prize in 1974.

SYDNEY GOLDSTEIN

Sydney Goldstein, FRS, former Professor of Applied Mathematics at Harvard University, died on 22nd January 1989 at the age of 85. He was elected a member of the London Mathematical Society on 10th November 1927.

VISIT OF DR S. NAG

Dr Subhashis Nag of the Indian Statistical Institute, currently at I.C.T.P. in Trieste, will visit Britain during the period 15th to 24th March with the support of an LMS grant under Scheme 2. He will lecture at several London colleges, including King's College on Thursday 17th March at 1.00 p.m., and at the University of Southampton during the next week. Dr Nag's interests lie in the deformation theory of Riemann surfaces.

For more details, please contact either Dr W. Harvey at King's College, London (tel. 01-836-5454) or Dr D.R.J. Chillingworth at Southampton (tel. 0703-595000).

VISIT OF PROFESSOR I. HAMBLETON

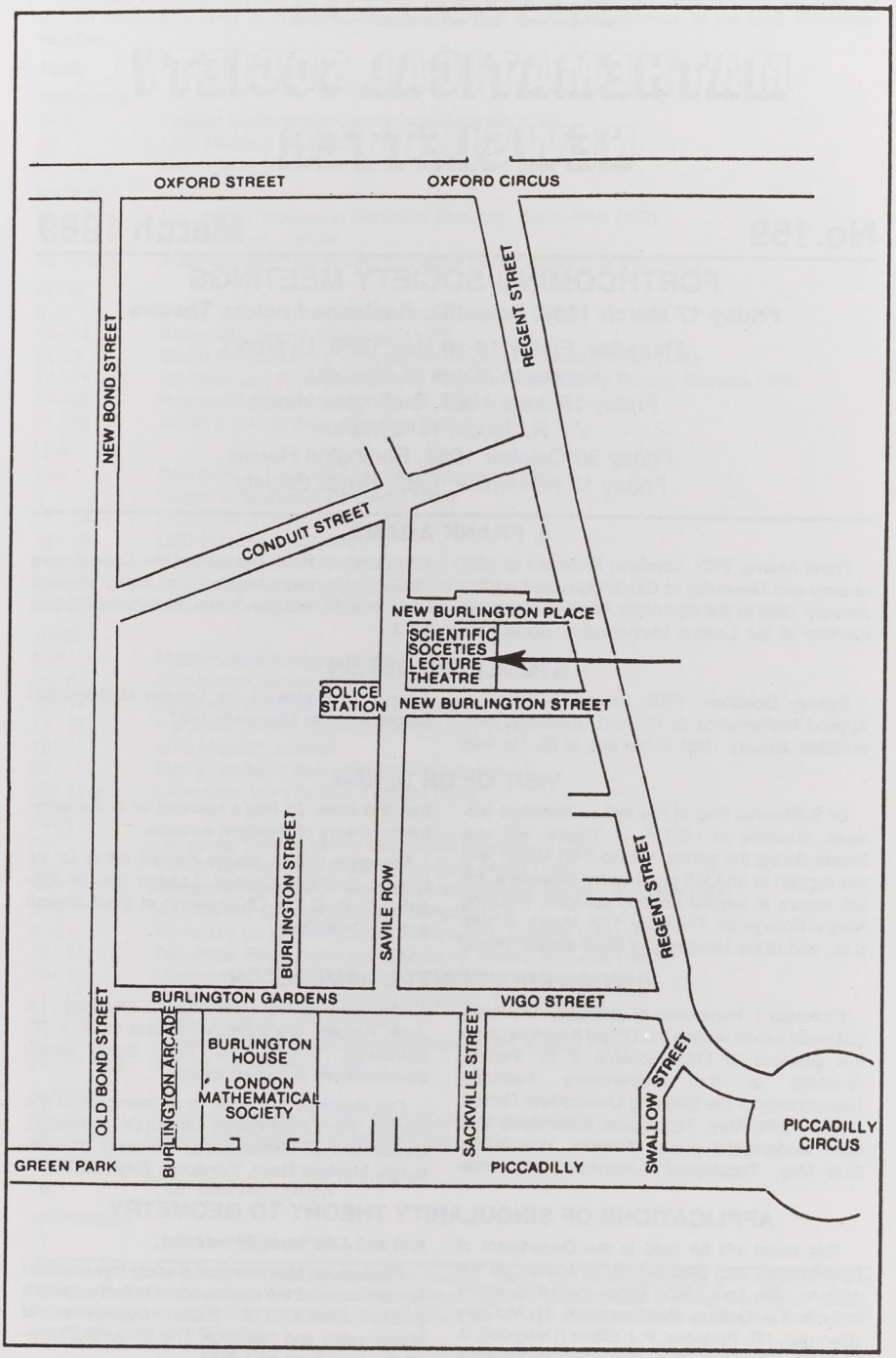
Professor I. Hambleton of McMaster University (Canada) will be visiting the United Kingdom under the auspices of LMS Scheme 2 for Visitors, speaking at the Mathematics Institutes/Departments of the following Universities: Oxford, Monday 29th May, Topological 4-manifolds with finite fundemental group; Warwick, Wednesday 31st May, Topological 4-manifolds with finite fundemental group; Cambridge, Thursday 1st June, Properly discontinuous actions on $S^n \times R^k$; Edinburgh, Monday 5th June, Some recent developments in surgery theory.

The meetings are open to all members of the Society. For further details contact Dr. A. Ranicki, Department of Mathematics, University of Edinburgh, Mayfield Road, Edinburgh EH9 3JZ.

APPLICATIONS OF SINGULARITY THEORY TO GEOMETRY

This event will be held in the Department of Mathematics and Statistics at Newcastle on the 10th to 13th April 1989. Those invited to speak include: T.J. Gaffney (Northeastern), C. McCrory (Georgia), I.R. Porteous, P.J. Giblin (Liverpool), J. Montaldi (Warwick), S.A. Robertson (Southampton) and J.W. Bruce (Newcastle).

The London Mathematical Society has awarded funds to support the conference. For further details please contact J.W. Bruce, Department of Mathematics and Statistics, The University, Newcastle upon Tyne NE1 7RU.


OXFORD STREET
OXFORD CIRCUS
NEW BOND STREET
REGENT STREET
CONDUIT STREET
NEW BURLINGTON PLACE
SCIENTIFIC SOCIETIES LECTURE THEATRE
POLICE STATION
NEW BURLINGTON STREET
BURLINGTON STREET
SAVILE ROW
REGENT STREET
BURLINGTON GARDENS
VIGO STREET
OLD BOND STREET
BURLINGTON ARCADE
BURLINGTON HOUSE
LONDON MATHEMATICAL SOCIETY
SACKVILLE STREET
SWALLOW STREET
PICCADILLY CIRCUS
GREEN PARK
PICCADILLY

LONDON MATHEMATICAL SOCIETY

J.D.S. Jones (Warwick)
APPLICATIONS OF CYCLIC HOMOLOGY IN GEOMETRY AND TOPOLOGY

R.L. Cohen (Stanford and Oxford)
THE TOPOLOGY OF RATIONAL FUNCTIONS

FRIDAY 17 MARCH 1989
at 3.30 p.m.

The meeting will be held at the
Scientific Societies Lecture Theatre,
New Burlington Place,
off Saville Row, London W1.

PLEASE NOTE CHANGE OF VENUE

All interested are very welcome.
Tea will be served at 4.30 p.m.

THE UNIVERSITY OF SHEFFIELD
DEPARTMENT OF PURE MATHEMATICS
2 Lectureships in Pure Mathematics

Applications are invited for two lectureships in Pure Mathematics. Applicants with research experience in any branch of pure mathematics are welcome, though the Department is particularly interested in those whose specialities lie in the areas of commutative algebra and algebraic geometry, or the theory of algorithms, or nonlinear analysis.

Each appointment will be made at a point on the Lecturer A or Lecturer B scale appropriate to the candidate's age, qualifications and experience. The salary ranges for the two scales are £9260 - £14500 and £15105 - £19310 per annum, respectively. The starting date for appointments is 1 September 1989, but alternative arrangements could, if necessary, be negotiated.

Further particulars may be obtained from the Director of Personnel Services, The University of Sheffield, Sheffield S10 2TN, to whom applications (6 copies), including curriculum vitae and the names and addresses of three referees, should be sent by 17 March 1989. Candidates at present overseas need only send one copy of their application.

Please quote the reference MAP 111/K/B.

LEEDS DIFFERENTIAL GEOMETRY DAY

A Differential Geometry Day will be held in the School of Mathematics, University of Leeds on Tuesday 14th March 1989. The programme will be as follows:

10.15am	Coffee outside the Mathematics Staff Common Room, level 9.
10.45am	J.C. Wood (Leeds), Harmonic morphisms and conformal foliations.
11.50am	J. Bolton (Durham), Minimal immersions and higher order invariants.
2.15pm	N. Ejiri (Tokyo, visiting Warwick), Index of minimal surfaces.
3.45pm	S. Donaldson (Oxford), Boundary problems for holomorphic bundles.

All talks will take place in Room E, level 10, School of Mathematics. All interested are welcome to attend. Further details from Dr J.C. Wood, School of Mathematics, University of Leeds, Leeds LS2 9JT. Telephone 0532-335106 (or 335130 or 335140). E-mail: pmt6jcw at uk.ac.leeds.cms 1.

FIFTH ANNUAL CONFERENCE OF THE EUROPEAN CONSORTIUM FOR MATHEMATICS IN INDUSTRY, ECMI90

The Fifth European Conference of the European Consortium for Mathematics in Industry, ECMI90 will be held in Lahti, Finland from the 6th to 9th June, 1990.

For further information contact, Ms Sinikka Vaskelainen, University of Helsinki, Lahti Research and Training Centre, Kirkkokatu 16, 15140 Lahti, Finland. Telephone 358-18-89211.

SIR JAMES LIGHTHILL

A symposium in honour of Sir James Lighthill is to be held at University College London on Friday 12th May 1989 to mark the occasion of his retirement as Provost of the College. The meeting commences at 2.30 p.m. in the Chemistry Auditorium and the contributors are D.G. Crighton (University of Cambridge), R. Hide (Meteorological Office, Bracknell), M.J. Lighthill (University College London) and J.H.B. Smith (Royal Aircraft Establishment, Farnborough). Tea will be served during the meeting to which admission is free without ticket. In addition, a buffet dinner will be available after the meeting at a cost of £15. Tickets for the dinner may be obtained on application to the Mathematics Department, University College, Gower Street, London WC1E 6BT.

SCOTTISH ALGEBRA DAY

A one-day conference on Algebra will be held in Glasgow on Saturday 11th March 1989, supported by the Centenary Fund of the Edinburgh Mathematical Society.

The invited speakers are: J.A. Green (Warwick), P.H. Kropholler (Q.M.C.), A. Mann (Jerusalem) and M. Reid (Warwick). For details contact K.A. Brown (Glasgow), J. Howie (Heriot-Watt) or T.H. Lenagan (Edinburgh).

THE 1989 COLLINGWOOD LECTURE

The Department of Mathematical Sciences of the University of Durham holds an annual lecture on the History and Philosophy of Mathematics, in memory of Sir Edward Collingwood, F.R.S. The 1989 lecture will be given by Professor N.H. Kuiper of l'Institut des Hautes Etudes Scientifiques, Paris, who will speak about 'Convexity, Knots and Surfaces'.

The lecture will take place at 3.15 p.m. on Tuesday 25th April 1989 in the Scarbrough Lecture Theatre, Science Laboratories, University of Durham.

THE MATHEMATICAL REVOLUTION INSPIRED BY COMPUTING

This conference sponsored by the Institute of Mathematics and its Applications will be held at Brighton Polytechnic, 5-7 April 1989. Speakers include Professor R. Burstall, Professor D. Epstein, Professor M. Hyland, Professor de Neumann, Dr T. Maibaum, Professor F. Piper, Professor S. Seidman and Professor D. Simpson. There will be a conference dinner and a debate on the subject of the conference. Speakers have been asked to address their presentations to non-specialist mathematicians, and the conference will be an excellent opportunity to find out what is happening in this exciting field. To attend the conference please contact Miss Yvonne May, Conference Officer, The Institute of Mathematics and its Applications, Maitland House, Warrior Square, Southend on Sea, Essex SS1 2JY. Telephone (0702) 612177.

IPCAM 1989

The International Centre for Pure and Applied Mathematics will be organizing Summer Schools on 'Artificial Intelligence and Expert Systems' and 'Complex Analysis', both from 12th June to 8th July 1989 at Nice, France. A Winter School on 'Applied Functional Analysis' from 4th to 23rd December 1989 will be held at Aswan, Egypt.

For further information write to the IPCAM office, 1 Avenue Edith Cavell, 06000 Nice, France.

G.H. HARDY JUNIOR RESEARCH FELLOWSHIP

The first G.H. Hardy Junior Research Fellowship, tenable at New College, Oxford, has been awarded to Mr Nigel Paul Byott of the Department of Mathematics at U.M.I.S.T., Manchester. 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, Oxford.

NEW FROM OXFORD

Oxford Applied Mathematics and Computing Science Series

Wave Theory and Applications

D. R. Bland

This textbook is a modern introduction to wave theory and its applications to physical phenomena such as deep water waves, transmission lines, elasticity, and traffic flow.

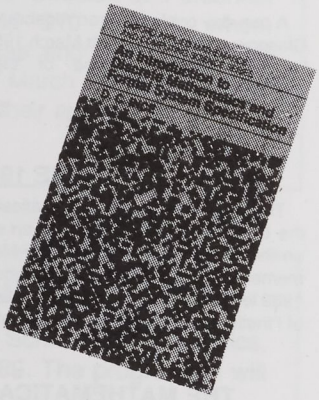
Oxford Applied Mathematics and Computing Science Series
0 19 859654 5, 326 pp., illus., Clarendon Press, October 1988 £40.00
0 19 859669 3, paperback, October 1988 £15.00

An Introduction to Discrete Mathematics and Formal System Specification

D. C. Ince

This textbook is an introduction to both the theory and practice of formal specification. Numerous worked examples and exercises including many from real software and computer systems are given.

Oxford Applied Mathematics and Computing Science Series
0 19 859667 7, 362 pp., illus., Clarendon Press, December 1988 £30.00
0 19 859664 2, paperback, December 1988 £15.00



FORTHCOMING . . .

NEW EDITION

A First Course in Combinatorial Mathematics

Second Edition

Ian Anderson

The aim of this book is to present a compact introduction to the basic combinatorial tools—such as recurrence relations, generating functions, incidence matrices, and the inclusion-exclusion principle—that will give the reader a flavour of the distinctive characteristics of this attractive and increasingly important branch of mathematics.

'. . . *excellent introductory text.*' **The Times Higher Education Supplement.**

Oxford Applied Mathematics and Computing Science Series

0 19 859674 X, 150 pp., illus., Clarendon Press, April 1989 £25.00
0 19 859673 1, paperback, April 1989 £10.95

OXFORD UNIVERSITY PRESS

NEW FROM OXFORD

Intermediate Mathematical Analysis

Hugh Thurston

A rigorous but readable introduction to the theory of differentiation and integration of functions of several variables. Contains numerous exercises and problems.

0 19 853291 1, 172 pp., illus., Clarendon Press, November 1988 £25.00
0 19 853292 X, paperback, November 1988 £12.50

Codes and Cryptography

Dominic Welsh

This textbook unifies the concepts of information, codes and cryptography. The fundamental ideas of communication theory including the Shannon model of cryptography, are introduced. The author then goes on to consider modern cryptography, password systems and authentication techniques.

'This authoritative book has a well structured approach. . . . essential reading for the engineer concerned with safe-guarding as well as communicating information.' **IEE Review**

0 19 853288 1, 270 pp., illus., Clarendon Press, June 1988 £35.00
0 19 853287 3, paperback, June 1988 £13.95

A Course in Number Theory

H. E. Rose

This wide-ranging introductory textbook deals with the central topics of number theory for undergraduate mathematicians. It includes extensive problem sections complete with sketch solutions.

0 19 853262 8, 364 pp., illus., Clarendon Press, May 1988 £40.00
0 19 853261 X, paperback, May 1988 £17.50

FORTHCOMING . . .

NEW IN PAPERBACK

Combinatorics of Finite Sets

Ian Anderson

This is a unique, coherent, and up-to-date account of the basic methods and results of the combinatorial study of finite set systems.

'it will satsify many needs . . . The style is relaxed and on the whole the pace is easy, arguments are often presented in a disarmingly simple way, and the topics are well motivated.' **Bulletin of the London Mathematical Society**

0 19 853379 9, 266 pp., paperback, Clarendon Press, April 1989 £9.95
0 19 853367 5, hardback, 1987 £25.00

Details of books not yet published are subject to change

OXFORD UNIVERSITY PRESS

UNIVERSITY OF READING

LECTURER IN PURE MATHEMATICS

Applications are invited for a Lecturership in the Department of Mathematics from 1 October 1989. The person appointed should have strong research potentiality in some area of Pure Mathematics and will be expected to play a full role in all aspects of the Department's teaching activities. Salary scale £9260 to £14500 p.a. (Grade A) or £15105 to £19310 p.a. (Grade B) - under review - plus USS benefits.

Further particulars and application forms (2 copies) are available from the Personnel Office, University of Reading, Whiteknights, P.O. Box 217, Reading RG6 2AH. Telephone 0734 318751.

Closing date 10 March 1989. Please quote Ref. AC. 8906.

UNIVERSITY OF BRISTOL DEPARTMENT OF MATHEMATICS

New Academic Appointments Scheme Chair in Pure Mathematics

Under the Scheme the University hopes to appoint a Professor of Pure Mathematics in the Department of Mathematics from 1st August 1989 or as soon as possible thereafter. Suitable candidates will be considered from any area of pure mathematics. The successful candidate will be expected to provide academic leadership in both teaching and research. It is intended that further expansion in the general research area of the new professor will take place after the appointment.

Applications including a curriculum vitae and the names and addresses of three referees, should be sent, to arrive not later than 17th March 1989, to the Registrar (for the attention of Nesta Babb, ref 0188/A), Senate House, University of Bristol, Bristol BS8 1TH, from whom further particulars can be obtained.

L.M.S. PUBLICATIONS

Lectures on the Asymptotic Theory of Ideals by D. Rees

In this book Professor Rees introduces and proves some of the main results of the asymptotic theory of ideals. The author's aim is to prove his Valuation Theorom, Strong Valuation Theorem, and Degree Formula, and to develop their consequences. The last part of the book is devoted to mixed multiplicities. Here he develops his theory of general elements of ideals and gives a proof of a generalized degree formula.

The book is based on lectures given at Nagoya University and is suitable for graduate students familiar with basic commutative algebra.

LMS Lecture Notes Series No. 113. LMS members' discount price £11.25

Algebraic, Extremal and Metric Combinatorics 1986 edited by M-M. Deza, P. Frankl and I.G. Rosenberg

This book represents a comprehensive overview of the present state of progress in three related areas of combinatorics. It comprises selected papers from the 'Algebraic, Extremal and Metric Combinatorics 1986' conference held at the University of Montreal.

Topics covered in the articles include association schemes, extremal problems, combinatorial geometries and matroids, and designs. All the papers contain new results and many are extensive surveys of particular areas of research.

LMS Lecture Notes Series No. 131. LMS members' discount price £15.00

The Geometry of Jet Bundles by D.J. Saunders

This book provides an introduction to the theory of jet bundles for mathematicians and physicists who wish to study, in a modern geometric way, differential equations, particularly those associated with the calculus of variations. One of the main themes of the book is that first-order jets may be considered as a natural generalization of vector fields for studying problems in field theory. To reinforce the connection between jets and vectors, different constructions associated with the jet bundles are associated according to the order of the jet.

A knowledge of differential geometry is assumed by the author, although introductory chapters include the necessary background on fibred manifolds, vector and affine bundles. Coordinate-free methods are used throughout, although coordinate representations are used when considering some applications.

This book will be useful for graduate students and research workers and could also be used as a textbook for advanced courses on differential-geometric methods in physics.

LMS Lecture Note Series No. 142. LMS members' discount price £15.00

Spacetime and Singularities – An Introduction by G.L.L. Naber

This book is an elementary introduction to the geometrical methods and notions used in special and general relativity. Particular emphasis is placed on the ideas concerned with the structure of space-time and those which play a role in the Penrose-Hawking singularity theorems. Indeed, the author's prime purpose is to give a rigorous proof of the simplest of these theorems, yet one which is representative of the whole.

No previous exposure either to relativity theory or differential geometry is required of the reader, as necessary concepts are developed when needed, though in order to keep the presentation reasonably accessible, some restrictions are imposed on the types of space considered. Each chapter is liberally supplied with exercises and examples.

LMS Student Texts Series No. 11. LMS members' discount price, hard cover £16.88, paperback £5.96.

These books have recently been published and are available from Cambridge University Press, Customer Services, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU. Payment should be sent with your order quoting Account Number 089 4900 001.

GEOMETRY AND ANALYSIS OF LOOP SPACES

A conference on Geometry and Analysis of Loop Spaces will be held at the Technical University of Budapest from 25th June to 1st July 1989. The aim of the conference is both to provide an introduction into and to present the newest developments of the mathematical theory with its bearings on theoretical physics. The programme of the conference is mainly devoted to lectures given by the invited speakers. Possibilities for short communications on the subject of the conference by other participants are also provided for. The invited speakers who have already accepted are M.F. Atiyah, R. Bott and G.B. Segal.

For further information and registration forms write to J. Szenthe, Department of Geometry, Technical University, Budapest 1521, Stoczek u.4, Hungary. Registration forms have to be returned no later than 31st March 1989.

THE UNIVERSITY
OF BIRMINGHAM

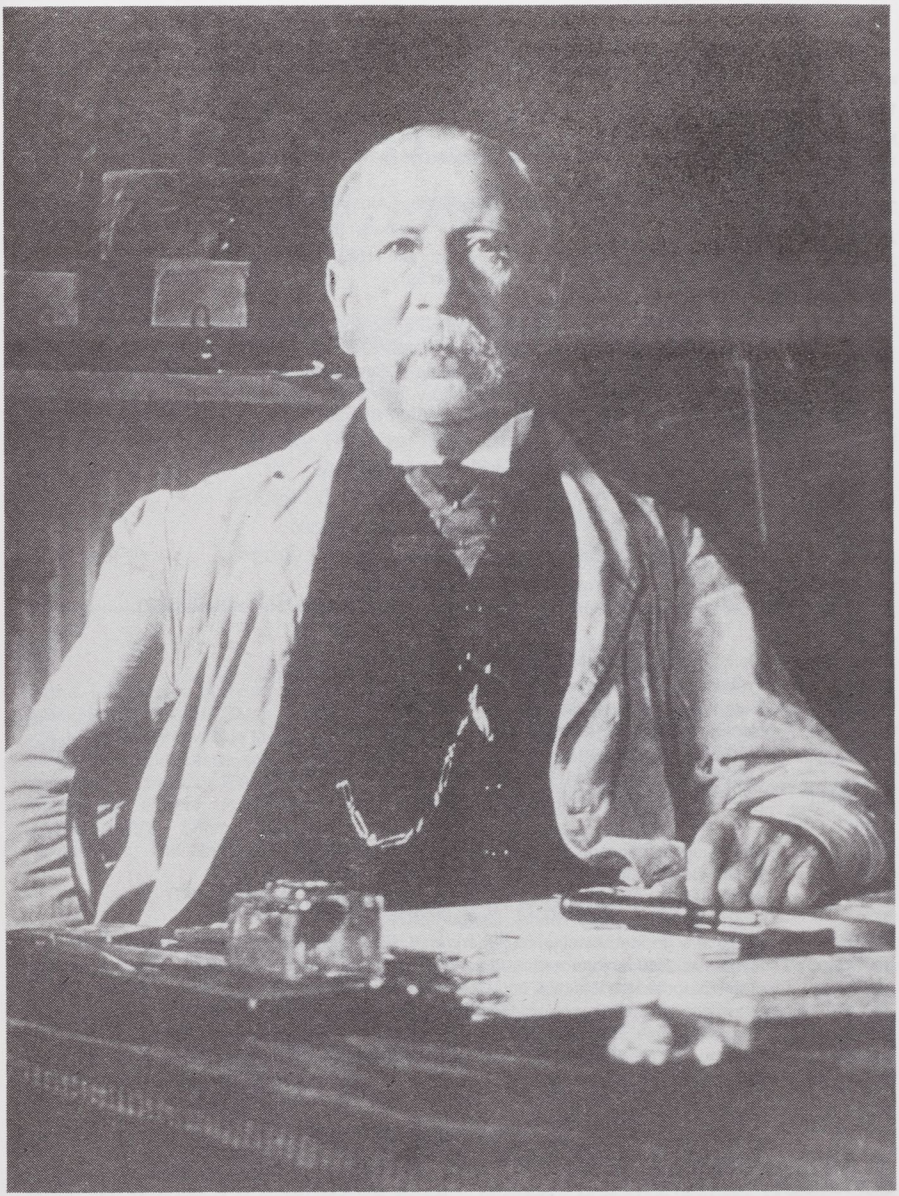
MASON CHAIR OF PURE MATHEMATICS

Applications are invited for appointment to this Chair in the School of Mathematics and Statistics that will become vacant on the retirement of Professor W.N. Everitt in September 1989.

Salary will be in the professorial range (minimum £23,380, permitted average £28,820) plus superannuation.

Further particulars are available from the Registrar and Secretary (EB), University of Birmingham, P.O. Box 363, Birmingham B15 2TT. (Fax 021-414 4534), to whom applications (three copies, one from overseas candidates) should be sent by 17th March.

The University is an
equal opportunities employer.



Sir George Greenhill (1847-1927) graduated second Wrangler and Smith's Prizeman from Cambridge in 1870, and was Professor of Mathematics at Woolwich from 1876 to 1908. He was devoted to the theory of elliptic functions, and introduced Weierstrass's theory of them to English readers. He also liked to work out applications of mathematics in great detail; his colleagues at Woolwich were very impressed by his study of motion in a fluid with application to rifling. Once described as a sociable recluse, he was elected an FRS in 1888, awarded the De Morgan medal in 1902, knighted in 1905, and was the Society's fourteenth President, from 1890 to 1892.

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.

1989

MARCH	
13–17	Regularity Problems in Nonlinear Elasticity, Heriot-Watt (157)
17	LMS Meeting, London
30–1 Apr	Approximation Theory and Numerical Linear Algebra, U.S.A. (155)
APRIL	
3–7	British Mathematical Colloquium, Nottingham (156) (158)
10	Mathematical Physics Group, London (158)
10–14	Probability Theory, Edinburgh (157)
11-13	British Colloquium for Theoretical Computer Science, Surrey (156)
12-13	Operator Algebra Workshop, Lancaster (158)
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	
1-31	Geometry of Loop Spaces, West Germany (156)
6	History of Mathematics, Bristol (156)
12–13	Groups in Galway, Ireland (157)
18–19	LMS Meeting, Liverpool
22–25	Dublin Differential Equation, Ireland (156)
23–27	Computing and Information, Canada (153)
31–2 Jun	Blow-up and Extinction for Parabolic and other Systems, Heriot-Watt (157)
JUNE	
5–9	Mathematical Analysis, Spain (157)
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
30	LMS Evening of Popular Lectures, London
30–11 Jul	L-functions in Arithmetic, Durham (156)
JULY	
2–7	Gregynog Symposium on Differential Equations (156)
3–7	British Combinatorial Conference, East Anglia (146)
3–7	Annual Meeting of the Australian Mathematical Society, Australia (157)
3–7	International Category Theory, Bangor (157)
3–21	Séminaire de Mathématiques Supérieures, Canada (156) (157)
10–14	Dynamics, Bifurcations and Singularity Theory, Warwick (153)
10–14	Combinatorial Mathematics and Computing, Australia (152)
11–21	Geometry of Low-dimensional Manifolds, Durham (156)
21–31	Image analysis, Durham (156)
27–29	Cauchy and the French Mathematical World, France (152)
29–12 Aug	Groups, St Andrews (156)
AUGUST	
13–19	Differential Equations and Applications, Bulgaria (148)
28–8 Sept	Variational Problems in Analysis, Italy (152)
SEPTEMBER	
6–8	Category Theory and Computer Science, Manchester (154)
OCTOBER	
20	LMS Meeting, London
NOVEMBER	
17	LMS Meeting, London

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 (telephone 01-437 5377, fax 01-439 4629), to arrive before the first day of the month prior to publication.

Printed by Boyatt Wood Press, Southampton (0703) 333132