

LMS NEWSLETTER

No. 11

July 1974

NOMINATIONS FOR COUNCIL

It will very shortly be necessary to review membership of the Council of the Society, in preparation for the next session. Members will know of the customary procedure by which they may, under the existing By-Laws (see By-Law 1.5) nominate Officers and Council members. However it will greatly add to the efficient planning of next year's activities if members will write to me (at the Statistical Laboratory, 16 Mill Lane, Cambridge CB2 1SB), with such nominations as soon as possible, in order that the present Council can propose a balanced list of names as its own proposal for Council 1974-75. It will be the responsibility of the

nominator to ensure that the person nominated would be willing to serve and that he understands the obligations he would undertake, if elected. Most members find service on the Council exciting, and onerous. As well as the obligation to attend its monthly meetings, there is normally also a good deal of Committee work and often specifically delegated responsibility for particular areas of Council's numerous activities. The Society's range of activities broadens yearly, and it cannot function without the generous and unselfish co-operation of Members of Council.

D. G. KENDALL, *President*

DE MORGAN MEDAL

The 1974 De Morgan Medal has been awarded to Professor Graham Higman, F.R.S. The citation is as follows.

Graham Higman is primarily but not exclusively a group theorist and he has made fundamental and influential contributions to both infinite group theory, including its algorithmic aspects, and the theory of finite groups.

The paper on embedding theorems of 1949, written with Bernhard and Hanna Neumann not only proved that every countable group can be embedded in a two-generator group, a very basic fact, but gave a construction which has proved to be of wide applicability. In 1951 Higman showed elegantly that there exist finitely generated but infinite simple groups. Recently he has given an explicit construction of an infinite family of finitely presented infinite simple groups, a beautiful piece of work. However his finest paper on infinite groups appeared in 1961. This showed that a finitely generated group can

be embedded in a finitely presented group if and only if it has a recursively enumerable set of defining relations. This result has many interesting consequences including, as an immediate corollary, Novikov's theorem that the word problem for finitely presented groups is unsolvable in general. More recently Higman and Boone have given a purely algebraic criterion for a finitely generated group to have a solvable word problem.

In finite group theory, the outstanding paper on the p -length of p -soluble groups of 1956, written with P. Hall, played an essential part in the great breakthrough of 1963 when Feit and Thompson proved that all groups of odd order are soluble. Since then, the study of finite simple groups has been the major centre of interest and in this development Higman has played an important part, most notably in his paper of 1963 on the Suzuki 2-groups, but also in many other interesting contributions.

BERWICK PRIZE

The 1974 Senior Berwick Prize has been awarded to Professor Paul M. Cohn. The citation is as follows.

Paul Moritz Cohn's monograph, *Free Rings and Their Relations*, gives a clear and coherent account of the theory of free ideal rings, as developed by the author and collaborators since he invented them in 1964. It is shown that these form natural non-commutative analogues of principal ideal domains by developing in turn the

standard concepts of linear algebra in this context. The euclidean algorithm, unique factorisation, duality, and embedding in a (skew) field are discussed in turn in great (but not spurious) generality, unifying and generalising much earlier work, to which due reference is given. These form a wide class of rings, as the author has shown, and surprisingly detailed results are obtained in this difficult area of research.

HONORARY MEMBERS

As announced in the June Newsletter, Professor Jerzy Neyman and Professor Igor Rostislavovič Šafarevič have been elected to Honorary Membership of the Society. Their citations are as follows.

Professor Jerzy Splawa-Neyman was born in Poland in 1894. He came to England in the nineteen-twenties with a Polish Government scholarship to work with Karl Pearson's group of statisticians at University College London. In his joint work there with Professor E.S. Pearson CBE FRS on the foundations of hypothesis testing, there began to emerge what was to be the pattern for Neyman's work throughout his career; emphasis on application, combined with a profound respect for mathematics. In the United States he later set up a unique centre for research in probability and statistics in which this dual emphasis has been most marked. A vast number of the outstanding workers in these fields would be quick to acknowledge Neyman as the teacher to whom, directly or indirectly, they owe most. From a very early date Neyman was prominent in his efforts to promote the growth of the subject

in countries most in need of practical statistical help, and least able to provide it for themselves. Representatives of these and other countries were delighted to gather in Warsaw this Spring to attend a Symposium held in his honour; a tribute to a remarkable man to whom this generation owes a great mathematical debt.

Igor' Rostislavovič Šafarevič (born 3 Jan 1923) made his name by important advances in algebraic number theory, culminating in his demonstration with Golod of the existence of infinite "class field towers". Subsequently and at the same time as Tate and Lang in the United States he laid the foundations of the arithmetical theory of principal homogeneous spaces over abelian varieties and investigated the central role of what is now known as the Tate-Šafarevič group. More recently he has done distinguished work in algebraic geometry and built up an important school. He is a Corresponding Member of the Soviet Academy of Sciences, and was awarded a Lenin Prize in 1959.

SUPPLEMENTARY MEMBERSHIP LIST

As previously announced, a supplementary membership list is being prepared for 1 November 1974. Please note that this will not be distributed automatically to members; however, members placing an

order before 30 September 1974 will receive a copy free of charge. Please write to Mrs Shalit, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL as soon as possible.

REFERENCES FOR RECENT LECTURES

(May 1974) Dr. D. McDuff: E. Fadell & L. Neuwirth: Configuration spaces, *Math. Scand.* 10(1962), 111-118. P. May: The geometry of iterated loop spaces, Springer L. Noyes 271, 1972. D. McDuff: Configuration

spaces of positive and negative particles: to appear.

G. Segal: Configuration spaces and iterated loop spaces, *Invent. Math.* 21, (1973) 213-221.

WORLD DIRECTORY OF MATHEMATICIANS

Fifth Edition, June 1974. Publication authorized by the International Mathematical Union with the co-operation of the National Committees of Mathematics. Net price, including packing and postage, US \$10.00, if orders are received before the end of 1974; from January 1, 1975 the

price will be U.S. \$12.50. Orders should be sent to and payment will be received by: Professor Otto Frostman, Box 41, S 182 51 Djursholm, Sweden. Payment by cheque, money draft, or directly to Svenska Handelsbanken, Djursholm, Account No. 80 604 692.

DUBLIN MEETING 17-19 SEPTEMBER 1974

As announced in the April Newsletter, the London Mathematical Society and the Royal Irish Academy are organising a conference on PROBABILITY AND THE PHYSICAL SCIENCES in Dublin on 17-19 September 1974, sponsored by the International Association for Statistics in the Physical Sciences. The following have agreed to speak: E.B. Davies (Oxford), H. Föllmer (Frankfurt), G. Galavotti (Naples and Louvain), R. Hudson (Nottingham), D. G. Kendall (Cambridge), J. F. C. Kingman (Oxford), J. T. Lewis (Dublin), C. J. Preston (Oxford) and W. G. Sullivan (Dublin).

The first lecture will be at 3 p.m. on 17 September. The morning and afternoon sessions will be held in the School of Theoretical Physics, Dublin Institute for Advanced Studies, 10 Burlington Road, Dublin 4. Accommodation in single rooms will be available in Trinity Hall, Dartry Road, Dublin 6. A limited number of double rooms will be available. Dinner will be provided in Trinity College on 17 and 18 September. No formal arrangements

will be made for lunch, but a list of restaurants and pubs near the Institute will be provided. The charge for accommodation will be £12.00; this includes bed and breakfast, dinner, transport to and from Trinity Hall during the conference. On the first evening of the conference a public lecture entitled "MATHEMATICS AND THE MEDIAEVAL HISTORIAN" will be given by Professor D. G. Kendall, F.R.S., in the Royal Irish Academy at 8.00 p.m., and will be followed by a reception.

A visit to the Abbey Theatre has been arranged for the evening of 18 September on the invitation of Bord Fáilte.

A registration fee of £3 is payable by all participants (resident and non-resident). This should be sent to Professor B. Murdoch, 39 Trinity College, Dublin 2, with the completed registration form without delay and in any case not later than 15 August 1974. The accommodation in Trinity Hall is limited.

J. T. LEWIS (*Dublin Institute for Advanced Studies*)

NOTICE TO RECIPROCITY MEMBERS

At the International Congress in Vancouver there will be opportunity for Reciprocity Members of the London Mathematical Society to be formally admitted to the Society. There will be a special meeting followed by a reception, Ordinary Members are of course welcome to attend

the meeting and reception. All members wishing to attend the reception should apply to the Secretary, London Mathematical Society, Burlington House, Piccadilly, London W1V 0NL. Please apply as soon as possible and in any case before August 10th.

I. M. JAMES