Review Papers for the

Advances in Applied Probability

The Editorial Board would like to encourage the submission to the *Advances* of Review Papers summarising and coordinating recent results in any of the fields of Applied Probability. The papers should be approximately 40–50 printed pages in length. On acceptance of a Review Paper for publication in the *Advances*, the author will receive £stg. 100 (U.S. $240).

In addition to these Review Papers, *Advances* is also designed to be a medium of publication for (1) long research papers in Applied Probability, which may include expository material, (2) expository papers on branches of mathematics of interest to probabilists, (3) papers outlining areas in the biological, physical, social and technological sciences in which probability models can be usefully developed, and finally, (4) papers in Applied Probability presented at conferences which do not publish their proceedings.

In short, the main function of *Advances* is to define areas of recent progress and potential development in Applied Probability. As with the *Journal of Applied Probability*, *Advances* undertakes to publish papers accepted by the Editors within 15 months of their submission.

The Editorial Board consists of E. Sparre Andersen, D. Blackwell, B. Gnedenko, J. Hájek, E. J. Hannan, D. G. Kendall, J. F. C. Kingman, K. Krickeberg, P. A. P. Moran, J. Neveu, K. R. Parthasarathy, R. Pyke, C. A. B. Smith and L. Takács. The Editor-in-Chief is J. Gani, and the Editorial Office of the *Advances* is in the Department of Probability and Statistics, The University, Sheffield, S3 7RH, England.

Volume 3 No. 1 of *Advances* contains the following papers:

R. E. Miles	Poisson flats in Euclidean spaces. Part II: Homogeneous Poisson flats and the complementary theorem
E. F. Harding	The probabilities of rooted tree-shapes generated by random bifurcation
Marcel F. Neuts	A queue subject to extraneous phase changes
Edward C. van der Meulen	Three-terminal communication channels
Manfred Schäl	The analysis of queues with state-dependent parameters by Markov renewal processes
A. G. Pakes	Some limit theorems for the total progeny of a branching process

Subscription rates (post free) per volume are:

For libraries and institutions:	U.S.$13.00	£stg.5.25	$A.11.00
For individuals belonging to a recognised scientific society:	U.S.$8.00	£stg.3.30	$A.7.20
The price of back numbers is per volume	U.S.$14.50,	£stg.6.00	$A.13.00

Cheques made out on U.S., U.K. and Australian banks will be acceptable; they should be made payable to *Applied Probability*, and sent to:

Editorial Assistant, *Advances in Applied Probability*,
Department of Probability and Statistics,
The University, Sheffield, S3 7RH, England.

Methuen's Supplementary Review Series in Applied Probability

General Editor: M. S. BARTLETT, M.A., D.SC., F.R.S.
Editor: J. GANI, D.I.C., PH.D.,D.SC.

This supplementary series consists of the Review Papers from the first four volumes of the *Journal of Applied Probability* in book form. The volumes are written in a simple expository style, and provide research workers and students of Applied Probability with concise accounts of work done in their fields. The eight volumes deal with the applications of Probability Theory to the biological, chemical and technological sciences.

Volume 1. TIME-DEPENDENT RESULTS IN STORAGE THEORY
　　　　　　by N. U. Prabhu
Volume 2. DIFFUSION MODELS IN POPULATION GENETICS
　　　　　　by M. Kimura
Volume 3. GROUP REPRESENTATIONS AND APPLIED PROBABILITY
　　　　　　by E. J. Hannan
Volume 4. STOCHASTIC MODELS FOR BACTERIOPHAGE by J. Gani
Volume 5. RECENT RESULTS IN INFORMATION THEORY by S. Kotz
Volume 6. ON THE ALGEBRA OF QUEUES by J. F. C. Kingman
Volume 7. COMPLETE EXPONENTIAL CONVERGENCE AND SOME RELATED TOPICS by C. R. Heathcote
Volume 8. STOCHASTIC APPROACH TO CHEMICAL KINETICS
　　　　　　by D. A. McQuarrie

Orders for these should be made through your bookseller or direct from:
Methuen & Co. Ltd.
11 NEW FETTER LANE, LONDON EC4

Mathematical Spectrum

A Magazine of Contemporary Mathematics

This magazine addresses itself primarily to young mathematicians in schools, colleges of education, and universities. Its object is to discuss the entire range of modern mathematical disciplines (pure mathematics, applied mathematics, statistics, operational research, computing science, biomathematics) in an informative but informal manner and to relate discoveries in mathematics to progress in the natural sciences, technology, social studies, and business management.

The Editors believe that the process of learning is a dialogue, and consequently they wish to promote active participation by readers. Correspondence on any subject relating to mathematics and mathematical education is welcomed. There is also a problem section, and readers are encouraged to submit their solutions, the best of which are published.

For a descriptive leaflet, rates of subscription, and order form, application should be made to

The Oxford University Press, Walton Street, Oxford.

Mathematical Spectrum is published by Oxford University Press on behalf of the Applied Probability Trust.

The CANADIAN MATHEMATICAL CONGRESS announces the publication of:

PROCEEDINGS OF THE TWELFTH BIENNIAL SEMINAR on *Time Series, Stochastic Processes, Convexity, Combinatorics,* held at the University of British Columbia, Vancouver, B.C., Canada, 11–27 August, 1969. The publication, edited by Professor Ronald Pyke, contains xiv + 304 pages. Price: Canadian $20 (20% discount to any member of a recognized mathematical society). Please add 75c postage and handling charges.

COUNTING LABELLED TREES, by J. W. Moon. x + 113 pages. Price: Canadian $5 (20% discount to any member of a recognized mathematical society). Please add 50c postage and handling charges.

INTRODUCTION TO MARKOV CHAINS, by D. A. Dawson. 103 pages. Price: Canadian $3 plus postage and handling charges of 50c.

Orders should be addressed to:

Canadian Mathematical Congress
3421 Drummond Street, Suite 98,
Montreal 109, Quebec, Canada.

Please send your remittance in sterling or Canadian dollars with your order.

Studies in Pure Mathematics

Papers in combinatorial theory, analysis, geometry, algebra, and the theory of numbers

presented to **Richard Rado**

on the occasion of his sixty-fifth birthday

edited by L. Mirsky
Department of Pure
Mathematics, The University
Sheffield, England

January 1971
viii + 276 pp., £5.00

This volume is offered as a tribute to the achievement of Richard Rado in many branches of pure mathematics, and the choice of authors and papers reflects the wide range of his own investigations. Slightly over half the contributions are devoted to aspects of combinatorial mathematics and deal with topics such as the theory of graphs, enumerative analysis, the partition calculus, transversal theory, and combinatorial designs. The remaining papers are divided between analysis, geometry, algebra, and the theory of numbers.

Contributors

R. Baer
Zürich
R. A. Brualdi
Madison
N. G. de Bruijn
Eindhoven
H. S. M. Coxeter
Toronto
H. G. Eggleston
London
P. D. T. A. Elliott
Nottingham
P. Erdös
Budapest
T. Estermann
London
D. R. Fulkerson
Santa Monica
A. Hajnal
Budapest
H. Halberstam
Nottingham

M. Hall Jr.
Pasadena
H. Heilbronn
Toronto
E. Hlawka
Vienna
A. J. Hoffman
New York
H. A. Jung
Berlin
A. Méir
Edmonton
N. S. Mendelsohn
Winnipeg
E. C. Milner
Calgary
L. Mirsky
Sheffield
C. St. J. A. Nash-Williams
Waterloo
B. H. Neumann
Canberra

A. Oppenheim
Legon
Hazel Perfect
Sheffield
J. S. Pym
Sheffield
G.-C. Rota
Cambridge, Mass.
Vera T. Sós
Budapest
Olga Taussky
Pasadena
P. Turán
Budapest
W. T. Tutte
Waterloo
H. Tverberg
Bergen
B. L. van der Waerden
Zürich
D. J. A. Welsh
Oxford

Academic Press

London and New York

Berkeley Square House
Berkeley Square
London W1X 6BA
England

111 Fifth Avenue
New York
N.Y. 10003
USA

Subscription rates

Notes for Contributors

It is a condition of publication in the *Journal of Applied Probability* that papers shall not previously have appeared elsewhere, and will not be reprinted without the written permission of the Trust. The copyright of all published papers shall be vested in the Trust. It is the general policy of the *Journal* not to accept for publication papers which cannot appear in print within 15 months of their date of submission. Authors will receive 100 reprints of their papers free, and joint authors a proportional share of this number. Additional reprints will be provided at cost.

Manuscripts should be written in English or French; manuscripts in other languages may be accepted by the Editors, but will appear (subject to the author's agreement) in English or French translation in the *Journal*.

It will be of help to the Editors if the following conventions are adopted:

a) The manuscript should be typewritten, using double spacing, on one side of the paper only. The original and a copy may be submitted to any Editor; a duplicate of the covering letter should, however, be sent to the Editor-in-Chief.

b) References should be indicated in the text by the name of the author(s) and the date, thus: Feller (1961), and the full references listed at the end of the article in alphabetical order. Journal references should include the title of the article cited, the title of the journal (abbreviated in the style of the *International Journal of Abstracts: Statistical Theory and Method*) the volume, and inclusive page numbers. Book references should give the full title, the publisher, and the place of publication. For example:

Feller, W. (1961) A simple proof of renewal theorems. *Comm. Pure Appl. Math.* **14**, 285–293.

Robinson, E. A. (1959) *An Introduction to Infinitely Many Variates.* Griffin, London.

c) Type faces should be carefully distinguished on the manuscript using the following standard methods of marking:

Italic capitals (*T, I, R*) and lower case letters (*t, i, r*) should be underlined once, e.g., T, I, R, t, i, r.

Bold-face capitals (**T, I, R**) and lower case letters (**t, i, r**) should have a curly underline, e.g., T, I, R, t, i, r.

Greek characters ($\alpha. \beta. \theta$) and script letters ($\mathscr{J}, \mathscr{I}, \mathscr{R}$) should be carefully drawn and identified when first used by a marginal note of the form 'α—lower case Greek alpha' or '$\mathscr{R}$—script R'.

d) Indices and subscripts should be clearly distinguished, using the marking $\vee^4, \wedge_4$ where necessary.

Authors will receive only first proofs for correction; charges will be made for excessive alteration to these.

CONTENTS

Volume 8   **Number 2**   **June 1971**