

- The following papers have been accepted for publication and will appear shortly:
- MOYAL, J. E. The spectra of turbulence in a compressible fluid; eddy turbulence and random noise.
- PERFECT, H. On positive stochastic matrices with real characteristic roots.
- NABARRO, F. R. N. and VARLEY, J. H. O. The stability of hexagonal lattices with a simple law of force.
- OLVER, F. W. J. Some new asymptotic expansions for Bessel functions of large orders.
- BESICOVITCH, A. S. and TAYLOR, S. J. On the set of distances between points of a general metric space.
- CHISHOLM, J. S. R. Calculation of *S*-matrix elements.
- COX, D. R. Sequential tests for composite hypotheses.
- MILLER, J. C. P. On a method for the determination of converging factors, applied to the asymptotic expansions for the parabolic cylinder functions.
- BROOKER, R. A. The solution of algebraic equations on the Edsac.
- LINDLEY, D. V. The theory of queues with a single server.
- NORTHCOTT, D. G. A note on the intersection theorem for ideals.
- BAKER, H. F. Note on the foundations of projective geometry.
- ROTH, L. Some threefolds on which adjunction terminates.
- KANAGASABAPATHY, P. Note on Diophantine approximation.

## C O N T E N T S

|  | PAGE |
|--|------|
| GOLDIE, A. W. On direct decompositions. I . . . . .  | 1    |
| GOLDIE, A. W. On direct decompositions. II . . . . .   | 23   |
| GREEN, J. A. and REES, D. On semi-groups in which $x^r=x$ . . . . .  | 35   |
| INGLETON, A. W. The Hahn-Banach theorem for non-Archimedean-valued fields . . . . .                                  | 41   |
| REIFENBERG, E. R. Parametric surfaces. II. Tangential properties . . . . .   | 46   |
| GODDARD, L. S. Quadratic forms positive definite on a linear manifold . . . . .                                      | 70   |
| CASSELS, J. W. S. The inhomogeneous minimum of binary quadratic, ternary cubic and quaternary quartic forms. . . . . | 72   |
| CHANG, SHIH-HSUN. On a theorem of S. Bernstein. . . . .  | 87   |
| HAYMAN, W. K. An inequality for real positive functions . . . . .  | 93   |
| POTTS, R. B. Some generalized order-disorder transformations . . . . .   | 106  |
| LE COUTEUR, K. J. Factorization of the algebra of particles of half-odd spin . . . . .                               | 110  |
| JONES, D. S. Diffraction by a wave-guide of finite length . . . . .  | 118  |
| FREIBERGER, W. A problem in dynamic plasticity: the enlargement of a circular hole in a flat sheet . . . . .         | 135  |
| DEAN, W. R. Slow motion of viscous liquid near a half-pitot tube . . . . .   | 149  |
| STEWARTSON, K. On the slow motion of a sphere along the axis of a rotating fluid . . . . .                           | 168  |
| MACKIE, A. G. and PACK, D. C. Transonic flow past finite wedges . . . . .  | 178  |
| PIPPARD, A. B. and PULLAN, G. T. A superconducting galvanometer . . . . .  | 188  |
| <b>RESEARCH NOTES:</b>   |      |
| LORD, W. T. Free-streamline jets in shear flow . . . . .   | 197  |
| GRUENBERG, K. W. A note on a theorem of Burnside . . . . .   | 202  |
| TODD, J. A. On a conjecture of D. E. Littlewood . . . . .  | 203  |
| ATIYAH, M. F. A note on the tangents of a twisted cubic . . . . .  | 204  |
| MORAN, P. A. P. A characteristic property of the Poisson distribution . . . . .                                      | 206  |
| <b>CORRIGENDUM:</b>  |      |
| MALCOLM, I. and STRACHAN, C. Relativistic wave-functions and $K$ -capture for a modified Coulomb field . . . . .     | 208  |

*Printed in Great Britain at the University Press, Cambridge  
(Brooke Crutchley, University Printer)*