Differential Analysis. Papers presented at the Bombay Colloquium, 1964 (Oxford University Press, 1965), viii+253 pp., 44s.

The International Colloquium on Differential Analysis held at the Tata Institute, Bombay, in January 1964, was a closed meeting of experts in the field. This volume gives the nineteen papers on subjects in Differential Equations, Differential Geometry, and Algebraic and Differential Topology presented at the Colloquium. Its value will be evident from a glance at the distinguished list of authors, which includes Atiyah, Bott, Gårding, Malgrange, Milnor, Morrey, Morse, Moser, de Rham and Spencer. The interaction between different branches is frequently brought out, for example in Hormander's paper on L^2 estimates and existence theorems for the $\bar{\partial}$ operator, in which direct proofs using Hilbert space methods are given of existence theorems previously obtained by methods of sheaf theory. A paper by Montgomery gives a valuable survey of some recent results on the topology of groups of transformations.

The book has stiff paper covers and was printed in India on rather off-white paper, but the layout is excellent, and workers in the field will be grateful that the Colloquium papers have been made available at such a reasonable price.   P. HEYWOOD

LEBLANC, H., *Techniques of Deductive Inference* (Prentice Hall, Inc., New Jersey, 1966), vii+216 pp.

This textbook covers elementary (classical) logic up to the Completeness and Compactness Theorems for the Predicate Calculus. There is a welcome emphasis on the approach of Gentzen and others, using natural deduction techniques and *sequenzen*. However this approach is developed alongside the more usual axiomatic approach, and there seems little point in its introduction here since Henkin's proof of the Completeness Theorem is retained and there is no discussion of consistency proofs, decision procedures or even of Gentzen's *Hauptsatz*. These disadvantages make the book unsuitable for an advanced course, or even a first course, in mathematical logic, while for most other courses in logic it is likely to be either too concise or too detailed.
          A. A. TREHERNE

Collected Papers of G. H. Hardy: Including Joint Papers with J. E. Littlewood and others, edited by a Committee appointed by the London Mathematical Society. Vol. 1 (Clarendon Press: Oxford University Press), 700 pp., 105s.

This is the first of seven volumes and contains Hardy's work on Diophantine approximation and additive number theory. The great majority of the papers included in this volume were written in collaboration with Professor Littlewood.

Professor Davenport has written an introduction to the papers on Diophantine approximation. The work on additive number theory is divided into three sections (*a*) partitions and sums of squares, (*b*) Waring's problem and (*c*) Goldbach's problem, and Professor Heilbronn has given an introductory account of each of these subjects. Individual papers are in many cases followed by further comments and lists of corrections. These editorial additions add greatly to the value of the collection. The volume concludes with Hardy's famous Oxford Inaugural Lecture of 1920, in which he gave a popular exposition of the Hardy-Littlewood circle method.

Hardy died nearly twenty years ago; it is fitting that at long last the London Mathematical Society should have begun to publish the collected papers of a man who was one of the greatest mathematicians this country has produced, and who gave the Society unstinted and devoted service during his life. It is to be hoped that subsequent volumes will be not too long delayed.   R. A. RANKIN