

THE THEORY OF DETERMINANTS AND THEIR APPLICATIONS

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The Theory of Determinants and Their Applications by Robert Forsyth Scott & G. B. Mathews

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ROBERT FORSYTH SCOTT & G. B. MATHEWS

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A.R. McLeod

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THEORY OF DETERMINANTS

AND THEIR APPLICATIONS

BY

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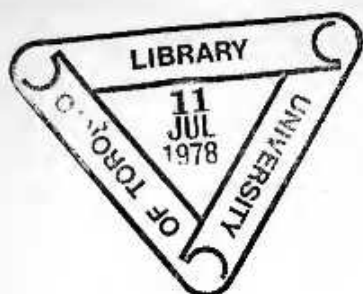
SECOND EDITION: REVISED BY

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UNIVERSITY LECTURER IN MATHEMATICS.

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PREFACE TO THE FIRST EDITION.

IN the present treatise I have attempted to give an exposition of the Theory of Determinants and their more important applications. In every case where it was possible I have consulted the original works and memoirs on the subject; a list of those I have been able to see is appended as it may be useful to others pursuing the same line of study. At one time I hoped to make this list exhaustive, supplementing my own researches from the literary notices in foreign mathematical journals, but even with this aid I found that it would be necessarily incomplete. In consequence of this the list has been restricted to those memoirs which I have seen, the leading results of which are incorporated either in the body of the text or in the examples.

The principal novelty of the treatise lies in the systematic use of Grassmann's alternate units, by means of which the study of determinants is, I believe, much simplified.

I have to thank my friend Mr JAS. BARNARD, M.A. of St John's College and Mathematical Master at the Proprietary School, Blackheath, for the care he has bestowed on correcting the proofs and for many valuable suggestions.

R. F. SCOTT.

February 1880.

REVISER'S PREFACE.

THE principal changes made in this edition are that some account has been given of infinite determinants, and of the elements of the theory of bilinear forms, together with the fundamental propositions about elementary divisors. I have intentionally refrained, as far as possible, from altering the character of the book, or increasing its size. The list of books and memoirs relating to determinants has been omitted, Dr Muir's bibliography being easily accessible; instead of this I have given a brief account of the earlier history of the subject. The new introductory chapter is intended for beginners, who are apt to feel discouraged if they first approach the theory in its most general form. For a similar reason the abbreviated notation employed in some chapters has not been used in those which are more elementary.

Besides original papers, I have consulted Pascal's excellent treatise in the Hoepli series, and Muth's *Elementartheiler*. The first volume of Kronecker's lectures on determinants appeared too late for me to consult it. I ought to say that for all the changes that have been made I am solely responsible, the revision having been left entirely in my hands by the author.

G. B. MATHEWS.

May 1904.

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