AN ELEMENTARY TREATISE ON THE THEORY OF DETERMINANTS: A TEXT-BOOK FOR COLLEGES

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An Elementary Treatise on the Theory of Determinants: A Text-Book for Colleges by Paul H. Hanus

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AN

ELEMENTARY TREATISE

ON THE

THEORY OF DETERMINANTS.

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A TEXT-BOOK FOR COLLEGES.

BY

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PREFACE.

THE importance of a knowledge of DETERMINANTS to all who extend their reading beyond the elements of mathematics, and the fact that most modern writers employ the determinant notation, have led to the belief that an American work on Determinants might satisfy a growing demand.

This is a text-book, and not an exhaustive treatise. Enough is given, however, to enable the student to use the determinant notation with ease, and to enable him to pursue his further reading in the modern higher mathematics with pleasure and profit.

The book is written with reference to the wants of the private student as well as to the needs of the class-room. The subject is at first presented with great simplicity. As the student advances, less attention is given to details. More than half the volume is devoted to applications and special forms, that the reader may get *some* notion of the power and utility of determinants as instruments of research.

Throughout the work care has been taken to show how each new concept has been evolved naturally; and, whenever it is thought advisable, a special case precedes the general discussion.

The work has been written in the far West, where contact with others in the same field was practically impossible. I

shall therefore be grateful for any notification of errors that may have escaped detection.

My thanks are due to Messrs. J. S. Cushing & Co., of Boston, for great care and patience manifested in the preparation of the plates.

Among the works consulted most assistance has been derived from the following. All the works named have been used freely.

Matzka. — Grundzüge der systematischen Einführung und Begründung der Lehre der Determinanten.

Baltzer. — Theorie und Anwendung der Determinanten (Fünfte Auflage).

Günther. — Lehrbuch der Determinanten-Theorie (Zweite Auflage).

Diekmann. — Einleitung in die Lehre von den Determinanten und ihrer Anwendung auf, etc.

Dostor. — Éléments de la Theorie des Déterminants avec Applications, etc. (Deuxième edition).

Hoüel. — Cours de Calcul Infinitésimal.

Scott. — A Treatise on the Theory of Determinants and their Applications, etc.

Burnside and Panton. — The Theory of Equations, with an Introduction, etc.

Muir. — A Treatise on the Theory of Determinants.

I am especially indebted to the last two works for many examples.

PAUL H. HANUS.

Boulder, Col., May, 1886.

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Preliminary Notions and Definitions.

CHAPTER II.

General Properties of Determinants.

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