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978-1-108-05068-5 - A Synopsis of Elementary Results in Pure and Applied Mathematics: Containing Propositions, Formulae, and Methods of Analysis, with Abridged Demonstrations: Volume 2

George Shoobridge Carr

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A Synopsis of Elementary Results in Pure and Applied Mathematics

When George Shoobridge Carr (1837–1914) wrote his *Synopsis of Elementary Results* he intended it as an aid to students preparing for degree-level examinations such as the Cambridge Mathematical Tripos, for which he provided private tuition. He would have been startled to see the two volumes, first published in 1880 and 1886 respectively, reissued more than a century later. Notably, in 1903 the work fell into the hands of the Indian prodigy Srinivasa Ramanujan (1887–1920) and greatly influenced his mathematical education. It is the interaction between a methodical teaching aid and the soaring spirit of a self-taught genius which gives this reissue its interest. Volume 2 contains sections on differential calculus, integral calculus, calculus of variations, differential equations, calculus of finite differences, plane coordinate geometry and solid coordinate geometry. Also included is a historically valuable index insofar as it provides references to 890 volumes of 32 periodicals dating back to 1800.

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VOLUME 2

GEORGE SHOOBRIDGE CARR



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IN
PURE AND APPLIED MATHEMATICS :
CONTAINING
PROPOSITIONS, FORMULÆ, AND METHODS OF ANALYSIS,
WITH
ABRIDGED DEMONSTRATIONS.

BY
G. S. CARR, M.A.

VOL. II.

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PREFACE TO PART II.

APOLOGIES for the non-completion of this volume at an earlier period are due to friends and enquirers. The labour involved in its production, and the pressure of other duties, must form the author's excuse.

In the compilation of Sections VIII. to XIV., the following works have been made use of:—

Treatises on the Differential and Integral Calculus, by Bertrand, Hymer, Todhunter, Williamson, and Gregory's Examples on the same subjects; Salmon's Lessons on Higher Algebra. Treatises on the Calculus of Variations, by Jellett and Todhunter; Boole's Differential Equations and Supplement; Carmichael's Calculus of Operations; Boole's Calculus of Finite Differences, edited by Moulton. Salmon's Conic Sections; Ferrers's Trilinear Coordinates; Kempe on Linkages (*Proc. of Roy. Soc.*, Vol. 23); Frost and Wolstenholme's Solid Geometry; Salmon's Geometry of Three Dimensions. Wolstenholme's Problems.

The Index which concludes the work, and which, it is hoped, will supply a felt want, deals with 890 volumes of 32 serial publications: of these publications, thirteen belong to Great Britain, one to New South Wales, two to America, four to France, five to Germany, three to Italy, two to Russia, and two to Sweden.

As the volumes only date from the year 1800, the

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PREFACE.

important contributions of Euler to the “Transactions of the St. Petersburg Academy,” in the last century, are excluded. It was, however, unnecessary to include them, because a very complete classified index to Euler’s papers, as well as to those of David Bernoulli, Fuss, and others in the same Transactions, already exists.

The titles of this Index, and of the works of Euler therein referred to, are here appended, for the convenience of those who may wish to refer to the volumes.

Tableau général des publications de l’Académie Impériale de St. Pétersbourg depuis sa fondation. 1872. [B.M.C. : * *R.R.* 2050, *e.*]

I. Commentarii Academiae Scientiarum Imperialis Petropolitanae. 1726–1746; 14 vols. [B. M. C. : 431, *f.*]

II. Novi Commentarii A. S. I. P. 1747–75, 1750–77; 21 vols. [B. M. C. : 431, *f.* 15–17, *g.* 1–16, *h.* 1, 2.]

III. Acta A. S. I. P. 1778–86; 12 vols. [B. M. C. : 431, *h.* 3–8; or *T.C.* 8, *a.* 11.]

IV. Nova Acta A. S. I. P. 1787–1806; 15 vols. [B. M. C. : 431, *h.* 9–15, *i.* 1–8; or *T.C.* 8, *a.* 23.]

V. Leonhardi Euler Opera minora collecta, vel Commentationes Arithmeticae collectae; 2 vols. 1849. [B. M. C. : 8534, *ee.*]

VI. Opera posthuma mathematica et physica; 2 vols. 1862. [B.M.C. : 8534, *f.*]

VII. Opuscula analytica; 1783–5; 2 vols. [B. M. C. : 50, *i.* 15.]

Analysis infinitorum. [B. M. C. : 529, *b.* 11.]

G. S. C.

ENDSLEIGH GARDENS,
LONDON, N.W., 1886.

* British Museum Catalogue.