

TRANSACTIONS
OF THE
ROYAL SOCIETY
OF
EDINBURGH.

VOL. XVI.

PART I.

EDINBURGH:
PUBLISHED BY ROBERT GRANT & SON, 82 PRINCES STREET; AND
T. CADELL, STRAND, LONDON.

MDCCCXLV.

PRINTED BY NEILL AND CO., OLD FISHMARKET, EDINBURGH.

CONTENTS.

- I. *On a Possible Explanation of the Adaptation of the Eye to Distinct Vision at Different Distances.* By JAMES D. FORBES, Esq., F.R.SS. L. & E., Corresponding Member of the Institute of France, and Professor of Natural Philosophy in the University of Edinburgh, . . . Page 1
- II. *On the Modification of the Doubly Refracting and Physical Structure of Topaz, by Elastic Forces emanating from Minute Cavities.* By SIR DAVID BREWSTER, K.H., D.C.L., F.R.S., and V.P.R.S., Edin., 7
- III. *On the Existence of Crystals with different primitive forms and physical properties in the Cavities of Minerals; with additional Observations on the New Fluids in which they occur.* By SIR DAVID BREWSTER, K.H., LL.D., F.R.S., and V.P.R.S., Edin., 11
- IV. *Account of Experiments upon the Force of the Waves of the Atlantic and German Oceans.* By THOMAS STEVENSON, Civil-Engineer, Edinburgh. Communicated by DAVID STEVENSON, Esq., 23
- V. *On the Geology of Cockburnlaw, and the adjoining District, in Berwickshire; with a Map and Sections.* By WILLIAM STEVENSON, Dunse. Communicated by DAVID MILNE, Esq. 33
- VI. *On the Extraction of pure Phosphoric Acid from Bones, and on a new and anomalous Phosphate of Magnesia.* By WILLIAM GREGORY, M.D., F.R.S.E., Professor of Chemistry in the University of Edinburgh, 47
- VII. *Miscellaneous Observations on Blood and Milk.* By JOHN DAVY, M.D., F.R.S., Lond. and Edin., Inspector-General of Army Hospitals, L.R., 53
- VIII. *On the Advantages to be derived from the Use of Metallic Reflectors for Sextants and other Reflecting Instruments; and on Methods of directly determining the Errors in Mirrors and Sun-Shades used in Reflecting Instruments.* By JOHN ADIE, Esq., 61
- IX. *On the Balance Magnetometer, and its Temperature Correction.* By J. A. BROUN, Esq. Communicated by SIR T. M. BRISBANE, Bart., 67
- X. *On Wollaston's Argument from the Limitation of the Atmosphere, as to the Finite Divisibility of Matter.* By GEORGE WILSON, M.D., Lecturer on Chemistry, 79