

PROCEEDINGS
OF
THE ROYAL SOCIETY.

1835—1836.

No. 23.

December 10, 1835.

FRANCIS BAILY, Esq., Vice-President and Treasurer, in
the Chair.

The following communication from the President to the Fellows
of the Royal Society was read :

“GENTLEMEN,

“At the opening of the Session I think it right to express my anxiety to come amongst you again ; and I therefore trust that I need not repeat that as soon as my present infirmity is removed you may be sure of my readiness to take the chair. In the mean time I hope that the Members will not relax in their endeavours to uphold the character of the Royal Society ; and I shall look with confidence to the attendance of the Vice-Presidents for the maintenance of that order and regularity so necessary to be observed at all literary and scientific meetings.

“Kensington Palace, Dec. 10, 1835.

“AUGUSTUS F., P.R.S.”

The following papers were read :

“Memoranda taken during the continuance of the *Aurora Borealis* of November 18, 1835,” By Charles C. Christie, Esq. Communicated by Samuel Hunter Christie, Esq., F.R.S.

The appearances described were seen from Deal, on the day mentioned in the title, from 9 to 20 minutes past 10 o'clock in the evening ; and consisted chiefly of a bright arch of light, of which the lower edge was sharply defined, surmounted on a dark cloud below, while the upper edge was shaded off into the cloudless and starlight sky, emitting large but faint luminous streaks, which issued upwards with great rapidity, exactly imitating flames agitated to and fro by a violent wind.

“Démonstration complète du Théorème dit de Fermat : par François Paulet, de Genève, ancien élève de l'Ecole Polytechnique.” Communicated by P. M. Roget, M.D., Sec. R.S.

The theorem of which the author professes to give, in this paper,

the complete demonstration, is the following: "No power, beyond the second degree, of any quantity, can exist, capable of being resolved into the sum, or the difference, of two other powers of the same degree:" or, as it may still more generally be expressed, "If the exponents of three powers be multiplied by the same number, provided that number be greater than 2, neither the sum, nor the difference, of any two of the resulting quantities can ever be equal to the third quantity."

It was resolved unanimously,—“That the thanks of this Society be given to their Secretary John George Children, Esq., for the zeal and ability which he has uniformly displayed, and the many valuable services he has rendered, in promoting its objects.”

December 17, 1835.

SIR JOHN RENNIE, Knt., Vice-President in the Chair.

“Researches towards establishing a theory of the Dispersion of Light, No. II.” By the Rev. Baden Powell, M.A., F.R.S., Savilian Professor of Geometry in the University of Oxford.

The author, in a preceding paper, published in the last part of the *Philosophical Transactions*, commenced a comparison between the results of M. Cauchy's system of undulations, expressing the theoretical refractive index for each of the standard rays of the spectrum, and the corresponding index found from observation in different media. Since that paper was communicated, he has received the account of a new series of results obtained by M. Rudberg, and comprising the indices for the standard rays in a prism of calcareous spar, and in a prism of quartz, both for the ordinary and the extraordinary rays; and also the ratios of the velocities in the direction of the three axes of elasticity, respectively, in Aragonite and Topaz. The author was accordingly led to examine this valuable series of data, and the comparison of them with the theory forms the subject of the present paper. He finds the coincidences of theory and observation to be at least as close as those already obtained from Fraunhofer's results, and to afford a satisfactory extension of the theory to ten new cases, in addition to those already discussed; and a further confirmation of the law assigned by the hypothesis of undulations.

A paper was in part read, entitled, “On the action of Light upon Plants, and of Plants upon the Atmosphere.” By Charles Daubeny, M.D., F.R.S., Professor of Chemistry and of Botany in the University of Oxford.

The Society then adjourned over the Christmas Vacation to meet again on the seventh of January next.