

IV. "Contributions to Terrestrial Magnetism.—No. X." By Lieut.-General EDWARD SABINE, R.A., President of the Royal Society.
Received June 7, 1866.

(Abstract.)

In this number of the Contributions to Terrestrial Magnetism the author resumes the discussion of the results obtained in the Magnetic Survey of the Southern Ocean by the Expedition under Sir James Clark Ross, R.N., and Captain Francis Rawdon Crozier, R.N., between the years 1839 and 1843. The proceedings during the two first years of this Survey have been the subjects of two preceding numbers of the Contributions, viz. of Nos. V. and VI., in the Philosophical Transactions for 1843 and 1844. The present number contains a similarly detailed exposition of the operations of the third year of the Survey, comprehending the Southern Atlantic between Cape Horn and the Cape of Good Hope, and completing the circumnavigation of the southern hemisphere, from the departure of the expedition from the Cape of Good Hope in March 1840, to the return to the same station in April 1843. In a subsequent memoir, which will be presented to the Royal Society early in the ensuing Session, the author proposes to connect and thoroughly coordinate the three portions of the Survey, and to supply from them the numerical data at equidistant points on each of the three parallels of 50° , 60° , and 70° of south latitude, of the three magnetic elements, which will be required for a revision of the 'Allgemeine Theorie des Erdmagnetismus' of M. Gauss—the 40th parallel having been the most southern available at the epoch of the publication of the original work.

The instruments employed in this Survey, as well as the methods of employing them, and of eliminating the disturbing influence of the iron in the equipment of the vessels, having been in a great measure of a novel character, a discussion of considerable length bearing on all such points is prefixed to a full detail of the observations themselves, arranged in Tables, showing in every instance both the immediate results of the observations, and the corrections which have been applied in conformity with the principles contained in the preliminary discussion. Tabular abstracts are also furnished, exhibiting the results of the determinations of each day, with the appropriate geographical positions.

June 21, 1866.

Lieut.-General SABINE, President, in the Chair.

Dr. Hugo Müller, Mr. Perkin, the Rev. Canon Selwyn, and the Rev. R. Townsend, were admitted into the Society.