

DECEMBER 13. 1843.

The Rev. Thomas Image, M.A., was elected a Fellow of this Society.

The following communications were read : —

1. *On the GEOLOGY of CAPE BRETON.* By RICHARD BROWN, Esq.*

IN a letter to Mr. Lyell, dated Sydney Mines, Cape Breton, Oct. 20. 1843, the author stated —

"I have made a survey of some forty miles of coast on the eastern side of our coal-field; and have since devoted a few days to the examination of the shores of the Island of Boularderie, which is four miles wide, and twenty-six miles long, and exhibits natural sections on both sides from end to end. Nothing can be more definite than the position of the masses of gypsum in this island. I have examined them this summer in four different places, scores of miles apart, and find the following, with little variation, to be a section of the accompanying strata :

SECTION I. (Ideal).

General sequence of the COAL MEASURES and GYPSIFEROUS FORMATIONS near SYDNEY, CAPE BRETON.



† g. Coal measures.

f. Coarse sandstone with coal plants
—Shale.

e. Limestone in thin beds—Fossils.

d. Gypsum.

c. Soft red shale.

b. Coarse concretionary limestone
and shales.

a. Coarse conglomerate, highly
inclined.

"Wherever I have had an opportunity of making observations, they have confirmed your views as to the relative age of the gypsum."

Subjoined is the *Memoir* received from Mr. Brown.

THE following is a sketch of the north-western end of the Sydney coal-field. On the W. side of Sydney Harbour, the coal-measures can be traced transversely, without interruption, for 5200 yards, dipping to the N. E. at an angle of 7° , which gives a thickness of 1900 feet. The coal measures, generally speaking, are very free from faults.

* This paper and the next (Mr. Dawson's on Nova Scotia) are both illustrated by the map of Nova Scotia appended; but the map was originally prepared by Dr. A. Gesner to illustrate the paper of which a notice has already appeared in the "Proceedings," vol. iv. p. 186. One portion of the map is repeated, and coloured according to Mr. Brown's survey.

† These references are continued throughout the paper in the other Sections.