

## 5.—MAGNETTIC.

There are also deposits of magnetite sands in Sable Island. Attention was devoted to these long ago. It is more than 10 years since I received specimens. The late Professor Howe included this sand in his collections at the International Exhibition of London, 1862. It corresponds with the sands of Cape Breton, Cape Rosier, and also No. 4, and is different from the auriferous-magnetic sand of Joggin Point. I never saw gold in any specimen. Prof. Howe, in his analysis, found titanium. Any specimens that I have seen are less magnetic than that of Cape Breton. Mr. Macdonald has anew directed my attention to it by presenting to the Museum a specimen of what he collected during a recent visit to the Island.

Sable Island is 95 miles south-east of Cape Canso, and may be underlaid by an extension of the rocks of either Nova Scotia or Cape Breton of any formation. There can be no doubt that its magnetic sands are of Archæan extraction, and in all probability they are *glacially* transparent, and that from the coast of Labrador, where the Archæan is like that of Cape Rosier, granite and garnetiferous and syenitic and magnetic. The Arctic current, with its ice freight, according to the Admiralty charts, passes along the south side of Sable Island bank, outside of the soundings. This may have been the agency employed in transporting the magnetic sand to Sable Island.

## ART. IV. — GEOLOGICAL NOTES. BY SIMON D. MACDONALD, F.G.S.

## SABLE ISLAND.

(Read January 9, 1882.)

HAVING carefully examined the different points in the vicinity of the main station, where gold was said to have been found, and as yet being disappointed in not finding an opening among the hummocks that I could call an average section, showing the stratification as visible on a small scale in the several indentations along the shore, I turned eastward, feeling assured from the gradual ascending character of the Island in this direction, and its curvature to the north-east, that I should yet find among the hills

sheltered from the prevalent south-west winds, a section that would reveal the internal arrangements of this remarkable formation. Nor was I disappointed, for while plodding along the landwash in company with the south side patrol, at a slight turn in the coast, we came suddenly upon a beautiful escarpment some 80 feet high and reaching inland about 500 feet.

The late southeast gales had undermined the embankment at this place causing a downfall, and thereby had produced a fresh exposure of the sand cliff.

The section of this exposure is as follows:—

1. A strata of dark ferruginous sand. . . . . 2 feet.
2. Dark mottled Ferruginous, Siliceous and  
Garnetiferous sand. . . . . 50 feet.
3. Garnetiferous and Siliceous only. . . . . 20 “
4. Siliceous sand, light buff colour, with few  
garnets. . . . . 10 “

On comparison with another exposure seen subsequently, I considered this as a typical section of the whole formation of this Island.

Here my friend, the patrol, kindly offered to take me to a place on the south side of the lake where he informed me there was an exposure of jet black sand. Thither we turned our steps when a recall from our steamer somewhat abruptly terminated our expedition in that direction. A sudden shift of wind and a fast rising sea necessitated our presence aboard, and in a few hours we were heading towards the coast in the teeth of a north-wester.

#### CAPE ROSIER.

From Grand Greve to the summit west of Cape Bon Ami the road tends north-eastward across the Gaspé limestones, which are here obscured by drift.

The summit is of grey calcareous shale. From this point the scenery is grand and imposing.

A few feet from the right of the road the precipice is perpendicular about 700 feet. On the left is an escarpment of upwards of 1200 feet, in many places overhanging the tide.

Along the side of the cliff the road descends at an angle of about  $45^{\circ}$ , in many places cut in the face of the rock.

This formation is grey limestone, in layers of from 6 to 8 inches in thickness, separated by bands of greenish shale, and much shattered. In many places it rises in sharp pinnacles, presenting a grand castellated appearance.

During the spring months the road is abandoned for a more circuitous route by boats around Cape Gaspe, travel being too hazardous from the continual falling of debris along the face of the mountain.

From the foot of Cape Bon Ami towards Cape Rosier the coast is low and shelving.

From the violence of south-east gales the entire distance between those Capes is covered with grey limestone shingle, except at Cape Rosier lighthouse. This magnificent structure, which is the finest in the Gulf, is built upon strata of grey limestone, with alternate bands of conglomerate resembling that of Perce Mountain.

The whole is interstratified with black and grey shales.

At the base of the light house I counted upwards of 20 veins of calcareous spar, from one to three inches in width. Some of these contain cubes of galena.

From this point north-west the character of the shingle changes to that of granitic gneiss and shales, which are probably of Archæan age.

At several places along the shore toward Griffin Cove, where it is possible to remove the shingle, there are seen deposits of black ferruginous sand.

At Mr. Whalen's, in the vicinity of Cape Rosier, I was shown a large pan of this material, taken from an embankment for inspection, on my return from Griffin Cove.

From the magnetic character of this sand, and its appearance under the glass, I believe it to be same as that of the Moisie river deposit, shown to me by Capt. LeMeasuer, at Cape Gaspe. It is probably derived from the granitic gneiss.