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and these circumstances lead to the supposition that in both instances it dips under the sandstone. Between Roe's Point and Campbell's Cove, on the western shore of the Island of Boularderie, the strata are very much broken and disturbed by faults. It would be difficult to describe these disturbances by words; but the Section will give the most distinct idea of them. Gypsum appears along this line in two places, which are shown in the Section.

First, to the N. W. of Roe's Point, we have solitary pinnacles of gypsum appearing on the beach. Next, three beds of limestone, with two of sandstone interposed, these beds all dipping in an opposite direction to those at Roe's Point. The middle bed of limestone contains *Productus spinosus*. The third and upper of these limestones is cut off by a vertical fault, which is succeeded by a flat arch of limestone, resting upon sandstone. This again is cut off by a vertical fault, which is succeeded by a horizontal bed of limestone.

This is followed by a level space; and beyond that we have a series of beds dipping in the same direction with those of Roe's Point.

- |                                     |                                                   |
|-------------------------------------|---------------------------------------------------|
| 1. A thin bed of limestone.         | 5. Rich marl, 6 feet.                             |
| 2. A bed of sandstone.              | 6. Green sandstone, with veins of gypsum, 2 feet. |
| 3. A thick bed of coarse limestone. | 7. Red marl, with grains of gypsum, 12 feet.      |
| 4. Gypsum, 18 feet thick.           |                                                   |

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This is followed by a level space, when no beds are seen, and beyond that we have limestone, dipping in the same direction with the gypsiferous marls.

## SECTION IV.

## CAMPBELL'S COVE, near LIME POINT.



Proceeding from Campbell's Cove along the shore of the Island of Boularderie in a south-westerly direction, we have similar limestones, lying in a horizontal position, for the space of two miles, until we arrive at Lime Point, where a small cove exhibits three beds of limestone with two interposed beds of sandstone dipping to the S. S. E., and apparently underlying the sandstone with coal-plants; but separated from it by a space which affords no section. The lowest of the three beds of limestone contains *Spirifer glaber* (Lyell); the middle bed contains shells.

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The writer mentions in his letter to Mr. Lyell that, "on the eastern side of the Sydney coal-field, he has found below the coal-seams, in every instance, beds of fire-clay, containing the long fibrous leaves of *Stigmaria*, matted together.

"In the black bituminous Shale, which lies about twenty yards