understood, very few of the British public that care about the matter ever see the reports at all.

We have lately received a report from the Geological Survey of Canada for the year 1857, issued by the indefatigable director, Sir William Logan, and printed by order of the Legislative Assembly. It consists of six sub-reports on the topography and topographical geology of previously unexplored or partially unexplored disitrcts, by Mr. Murray, Mr. Richardson, Mr. Bell, and Mr. Billings—determinations of the longtitudes and latitudes of important places in the Province, by Lieutenant Ashe, of the Quebec Observatory—and descriptions of new species of fossils, by Mr. Billings, and the distinguished American palæontologist, Professor James Hall, of Albany. All these gentlemen evidently work with a will, and the result is a Report of 240 octavo pages, accompanied by valuable maps containing much new knowledge.

There is a vast tract of country, extending from the northern shores of Lake Superior, occupied by the Huronian rocks, which are the geological equivalents of the Chambrain strata of the Longmynd of Shropshire, and of the rough mountains that stretch from Barmouth towards Festining, in Merioutshire. These, in parts of Canada, are known as the copper-bearing rocks of Lake Huron, and the discovery of copper-lodes therein as an important object, while to search for these by mere empirical examination, would be an endless and a hopeless work. Most metalliferous lodes occur in cracks and dislocations, and these, in many cases, are apt to occur where the strata have been crumpled and contorted into what are termed anticlinal and synclinal folds. To ascertain in a preliminary manner the general nature of these curves, Mr. Murray selected a band of limestone from 150 to 250 feet thick, easily recognisable from the other strata; he fastens upon this on the banks of Echo Lake, north of Lake Huron, and follows it something like a greyhound, by the eye, sometimes like a sleuthhound, as it were by the scent, through all its convolutions, away to the west side of Little Lake George. He has noted that it is associated with two bands of conglomerate, one below and one above—coarse obtrusive masses, not so easily put out of sight—and following these he dodges the limestone on its track, and catching good sight of it on Thessalon and Otter-tail Lakes, he follows it more or less closely, altogether for upwards of forty miles, till it agains takes water on the north shore of Lake Huron among the copper "mining locations," the stratigraphical structure of which this work will, when completed, very materially illustrate.

The body of information collected by Sir William Logan's assistants is valuable in many ways, for, traversing as they do great tracts of imperfectly known country, they are instructed in addition to purely geological researches, to observe the nature of the soil, the heights of mountains, the rate of the falls of rivers, the state of the timber, and the species of quadrupeds, birds, land, and fresh-water shells, and other points of natural history, the state of agriculture, and any further questions of economics on which they are able to form a just opinion. For the prosecution of such investigations the scientific world is much indebted to the Canadian Government, even though, being subsidiary to geological work, they are necessarily somewhat desultory, and all Silurian palæontologists will estimate the value of the lists, descriptions, and figures of Canadian fossils by that able naturalist, Mr. Billings, in his report of 1858, helping as they do, to a comparison of the Old World forms of the other side of the Atlantic with those of Europe—a subject the interest of which will be best understood by those who know that, while many American forms are identical with ours, others differ just so much that palæontologists disagree as to whether they are different species or mere varieties. Those who are able to appreciate Mr. Darwin's remarkable book on the *Origin of Species* will see the importance of this subject.

Did space permit, we would fain follow Mr. Richardson and his party into Gaspé—that little-known region that lies at the mouth of the Gulf of St. Lawrence, opposite Labrador and Newfoundland. For the most part it is a wild, hilly country, forming the north-eastern extremity of the great Appalachian chain, and consisting chiefly of Lower and Upper Silurian and Devonian rocks. The basis of its mountains are covered with spruce, white pine, balsam fir, white birch, and cedar; while their tops are often utterly barren, and, even in July, covered with patches of snow. Its agricultural capabilities are poor, and its population so sparse, that running short of provisions, Mr. Richardson and his party were reduced for some days to living on porcupines, the merits of which in a cold roast state have erst been sung by the late lamented Edward Forbes.—*Saturday Review.*

2. THE MINERAL WEALTH OF LOWER CANADA.

The utmost activity will prevail this season in the mining districts of this part of the Province. Geologists have been theorising for years, and disputing as to whether there is or is not gold, lead or copper, in particular localities. Last summer was the explorer's year, and an army of practical men, with chisels and hammers, and microscopes and specimen bags, swarmed over the country. This year we shall have the mining era commenced. English capital will be invested here, as well as a great deal of American money, timorous, as capital ever is, of the troubles in the Republic. Hundreds of labourers will be set to work. An impetus will be given to colonization and immigration, which will be of the utmost advantage to us. It is difficult to say where the miners most will congregate. There is an *embarras de richesses* before them. The Gaspé lead mines invite them. The Chaudière and River du Loup gold diggings hold out no common inducements. The copper mines all over the Eastern Townships, cannot but attract them. All these are valuable. All will be made to yield their riches to industrious labour.—*Quebec Chronicle.*

3. NOTES OF LESSONS ON GIBRALTAR.

Position.—In the extreme south of Spain; a small promontory, about 2¾ miles in length, and ¾ in breadth. Its latitude is 30° 8′ north, and its longitude 5° 21′ west. The rock on the north side is perpendicular, and nearly so on the east and south; rather sloping on the west. Gibraltar has not an excellent harbour, but is important as a military station of Great Britain.

History.—Gibraltar was known to the ancients as Mount Calpe, and formed, with Mount Abyla on the African side, the pillars of Hercules. It was visited by the Phœnicians and Carthaginians, and was occupied as a station by the Romans; afterwards used as a military post by the Saracens, who erected a fortress in A.D. 712. They called it Gebel Torif, after their chief. Time has corrupted Gebel Torif into Gibraltar.

From 712 down to 1462, Gibraltar remained in the possession of the Moors of Barbary. In 1462 it was taken by the Spaniards; and, on its being surprised and pillaged in 1840 by an inconsiderable body of Moors, it was rebuilt and freshly fortified, on the most approved principles of the day.

After remaining in the hands of the Spaniards 242 years, it was captured by an English fleet under Admiral Rooke, July 21st, 1704. About three months after an army of French and Spaniards besieged it; and so determined were they in their plans, that 500 volunteers pledged themselves to capture Gibraltar or perish. The attempt was unsuccessful, and the siege was reduced to a blockade. Finally, the place was made over to the English at the peace of 1713. In 1727 another attempt was made to seize it, ending in a siege, which cost the assailants 3,000 lives, and the garrison 300.

In 1779 the last attempt was made by the Spaniards to get possession of Gibraltar. The siege lasted three years and seven months. The governor of the place was General Elliott; the commander of the Spanish forces, Duke de Crillon. Twice provisions failed, and the garrison were reduced to the utmost straits; even dandelions and nettles were sought after as luxuries. At last, Elliott determined to use red-hot shot; and so destructive were these projectiles, that in a few hours he had blown up most of the enemies' floating batteries, and fired many of their ships. Shortly after the siege was raised, and peace was concluded.

Since 1783, neither the Spaniards nor any other nation have molested the English in the possession of Gibraltar.

Importance.—(*a*) As a military and naval station to Great Britain, being the strongest fortress in the world. (*b*) In a commercial point of view, as a protection to English commerce in the Mediterranean Sea.—*Robert Waite, in English Pupil-teacher.*

4. BOTTOM OF THE OCEAN.

Soundings in the Atlantic, according to *All the Year Round*, have revealed the fact that at least two hundred and thirty miles from the coast of Ireland, the water is still shallow; or, in other words, that there is another Ireland only waiting to be raised—thus reversing the famous panacea for keeping the country quiet. It is just beyond this that the true Atlantic begins, the gulf suddenly sinking to 9,000 feet. Thus Ireland may one day have a coast line as high as the Alps. The whole floor of the Atlantic is paved with a soft, sticky substance, called oazo, nine-tenths consisting of very minute animals, many of them mere lumps of jelly, and thousands of which could float with ease in a drop of water; some resembling toothed wheels; others bundles of spines or threads shooting from a little globule. Some, however, are endowed with the property of separating flint from the sea water—which is more than every chemist could do; and there are hundreds of square miles covered with the skeletons of those little creatures. Part of this oazo is doubtless from the clouds of rain-dust which rise from the vast steppes of South America, in such masses as to darken the sun, and make the animals fly to shelter, and which, after sweeping like a simoon