

Sir William had brought to light not a mere congeries of crystalline masses erupted from a heated interior, but a great stratified formation formed out of the waste of pre-existing rocks. That the one portion lay unconformably upon the other showed that the older strata—undoubtedly formed under the sea—had been elevated by subterranean action, and partly worn away again by the atmosphere and the waves before the newer strata, derived from this denudation, were laid down. Hutton had long ago said that geology revealed no traces of a beginning, and though here Sir William Logan has carried us inconceivably further back into the history of our planet, we are as far as ever from detecting any evidence of a truly primitive rock. We see traces of the same kinds of action as are still in operation around us—rocks being ground down into sediment, and the sediment carried into the sea, there to form new rocks, which in time are raised up into land and worn away as before. But there was one feature of the Canadian discovery which inspired a hope that eventually we might be able not only to carry back in this way the history of existing geological causes, but to find that life appeared upon the globe long anterior to that dim, obscure Cambrian period, during some part of which it had been thought to have had its beginning. Among the old crystalline rocks of Canada—named Laurentian, from their development along the northern shores of the St. Lawrence—there lay some extensive beds of limestone. Now, though chemical or other forces had so mineralized and changed these rocks from their original character of marine sediment that their true stratified nature could hardly be recognised save on the large scale, and though able chemists maintained that the limestones were chemical and mineralogical segregations, having no connexion with organic action like the limestones of more recent formations, still the hope could not be thrown aside that some fortunate observer might chance to light upon traces of fossils in these, the oldest known calcareous beds in the world. Sir William Logan himself had looked long and anxiously, but without success. He had indeed detected a suspicious object in the limestone which seemed to him to be organic, and to resemble some of the so-called corals of the Silurian series. But the specimen was too obscure for identification. At last, he was able to submit to Dr. Dawson, of Montreal, another portion, in which that naturalist recognised the structure of a foraminifer. So important an announcement deserved all the confirmation which could be obtained for it. The specimens were accordingly placed in the hands of Dr. Carpenter, our highest authority on the microscopic structure of such organisms as the Canadian fossils were believed to be. By him the decision of Dr. Dawson was fully borne out, and the true organic nature of the substance confirmed. The fossil has been named the *Eozoon Canadense*, and up to the present time is the oldest relic of life which has been found upon the globe. It is believed to have grown in aggregated masses, forming reefs of rock, like the coral-reefs of our own day. Hence like the thick masses of limestone in which it is found may be due in large measure to the secretive powers of these humble animals.

The Laurentian rocks must have been separated by a vast lapse of time from the next formation which succeeds them. For during that interval they had been changed from the state of sand, mud, and gravel, into gnarled crystalline gneiss, schist, and quartzrock, and in that altered state had been anew exposed to denudation. It is beyond that immense gap that Sir William Logan's discovery enables us to throw back the beginning of life. But this is not all. The upper member of the Laurentian series is likewise separated from the lower by an unconformability, which represents the passing of another enormously protracted period. We must carry back the history of life even beyond that second interval: for it is in the lower of the Laurentian rocks that the *Eozoon* has been found. And having reached that far point, we await the onward march of discovery, knowing that even now, we have not reached the beginning, that the Laurentian rocks must have a bottom, which as yet has not been reached, and that beneath them there may per-

haps lie still earlier records of waves that beat upon the land, and of living things that grew and died beneath them.

While chronicling this Canadian discovery—which marks an epoch in the history of geology—Sir Roderick Murchison has been able in this new edition of his book to announce the completion of his own researches, whereby a representative of the Laurentian rocks has been shown to exist in this country, and the whole of the Scottish Highlands has been brought into relation with the rocks of the rest of the island.

## OFFICIAL NOTICES.

### Ministry of Public Instruction.

#### APPOINTMENTS.

The Lieutenant-Governor of the Province of Quebec, by an Order in Council, dated the 25th ult., was pleased to approve of the following nominations:

#### SCHOOL INSPECTORS

Mr. Edouard Carrier, formerly a Teacher, to be Inspector of Schools for the Counties of Dorchester and Lévis, in the room and stead of F. E. Juneau, Esq.

F. E. Juneau, Esq., to be Inspector of Schools for the Counties of Montmorency, Quebec, and Portneuf, and for the Catholic Schools of the City of Quebec.

#### SCHOOL COMMISSIONERS

The following Gentlemen to be School Commissioners for the following Municipalities:

St. André d'Argenteuil, County of Argenteuil: Mr. Washington Johnston, in place of Mr. Donald Levanahan whose term of office had expired,—the *election* not having taken place within the time required by law.

St. Albert, County of Arthabaska: Mr. Charles Dery, in the room and stead of himself,—no *election* having taken place.

Ste. Clotilde, County of Arthabaska: Mr. Gonzague Hebert, in the room and stead of himself,—the *election* being irregular.

St. Norbert, County of Arthabaska: Mr. Jean-Baptiste Beliveau, in place of Mr. David Talbot whose term of office had expired,—the *election* not having been held within the time prescribed by law.

St. Valère de Bulstrode, County of Arthabaska: Mr. Joseph Simoleau, in the room and stead of himself,—the *election* not having been held within the legal time.

Tingwick, County of Arthabaska: Messrs. Edward O'Keefe and Thos. Smith, in place of Messrs. Patrick Carlin and John Costello, who have finally quitted the Municipality,—the *election* not having been held within the time prescribed by law.

Acton Vale, County of Bagot: Mr. Narcisse Bouneau, in place of Mr. George Henry Mount who has finally quitted the Municipality,—the *election* not having been held within the legal time.

St. Come, County of Beauce: Mr. Narcisse Letourneau in place of Mr. George Rodrigue whose term of office had expired,—the *election* of July being irregular.

Paspébiac, County of Bonaventure: Mr. Adam Brotherton, in the room and stead of himself, and Mr. Louis Brunet, in place of Mr. John Horth, whose term of office had expired,—the *election* not having been held within the time prescribed by law.

St. Jean Chrysostôme No. 2, County of Châteauguay: Mr. James McNoughty, in place of Mr. James Lauriaty whose term of office had expired,—the *election* being irregular.

Howick, County of Châteauguay: Mr. Arthur Smith, in place of Mr. Thomas Reid whose term of office had expired,—the *election* not being held within the time prescribed by law.

Harvey, County of Chicoutimi: Messrs. Jacques Bolduc and Auguste Laforest, in place of Messrs. Othon Gagnon and Alexandre Bonchard whose terms of office had expired,—no *election* being held in July.

Clifton, County of Compton: Mr. Simon C. Haynes, in place of Mr. Eraste Taylor whose term of office had expired,—the *election* not being held within the legal time.

Cap Chatter, County of Gaspé: Mr. George Picard, in place of Mr. Laurent Labrie who has finally quitted the Municipality,—the *election* not being held within the legal time.

Cap de Rosiers, County of Gaspé: Mr. Nicholas O'Connor, in place of Mr. Henry Packwood whose term of office had expired,—there being no *election* in July.

Pabos, County of Gaspé: Messrs. James McIsaac, James Forest, Jean Aspireau, Robert Duguay, and James Miles, Junior,—the *elections* having been irregular.