

impossible in the short time at my disposal and I must content myself with such comparisons as will show how liberal and intelligent almost all other governments in North America have been relatively to our own.

Let us now turn to the establishment of our own regular survey.* In 1842, following the example of about twenty of the States of the American Union, the old Province of Canada instructed Sir William Logan to undertake a geological survey of the Province, work in connection with which began in 1843, Sir William having one assistant, Mr. Alexander Murray. For the ensuing ten years these two devoted men worked in the field, and after a few years Dr. T. Sterry Hunt became their able co-worker in the laboratory as chemist and mineralogist to the survey. for all practical purposes the first officer of that character, although not literally the first. No matter how devoted, two men could not do much judged by quantity, and the ten annual reports from 1843 to 1853 with two separate pamphlets on the mining regions of Lake Superior and the north shore of Lake Huron, make altogether less than 1,250 pages of small octavo, about as much matter as one annual report of the survey now. Two maps of a mine accompany one of the pamphlets, and here and there there is a badly executed illustration, but of fossils there are neither descriptions nor illustrations. It is true that in 1851 and 1852, Sir William Logan contributed important papers on the "Foot-prints in the Potsdam Sandstones of Canada" to the quarterly journal of the Geological Society in London, which were most adequately illustrated by the Society, but in these papers he thanks a member of the Geological Survey of Great Britain for naming the fossils he has occasion to refer to. If I could lay before you these twelve slender pamphlets and the still more slender reports of Dr. Gesner made in the Maritime Provinces, hereafter referred to, and put beside them the reports made by the various public surveys in the United States down to 1853, you would realize more forcibly than I can express in words how completely the Canadians failed to take that "liberal view of their own interests" which characterized the people of the United States. But somewhat better days were in store for the survey. Mr. James Richardson had been added to the workers in the field, and in 1856 Mr. E. Billings entered the survey as paleontologist. In 1857, Prof. Robert Bell, still a member of the staff, also joined the survey. The survey was now fairly equipped and its publications gave evidence of the larger scope of its operations. The report for 1853-56, published in one volume, was accompanied by the first series of maps, illustrating reports on the geology and topography of the Muskoka, Petewawa, Bonnechere, Madawaska, Maganetawan, French, Sturgeon, and Wahnapiatae Rivers and Lake Nipissing and its tributaries, also of the Island of Anticosti, altogether about 25 maps. In this volume appeared the first report of the paleontologist, the beginning of a series which established Mr. Billings' reputation throughout the scientific world. It is not accompanied by illustrations, which fate also befel some of his later reports. This is not so strange as the fact that to this day some of his species have been allowed to remain unillustrated. It is characteristic of our interest in science that his name is doubtless much better known to-day in Europe than it is in Canada. In 1863 the results of the work of the survey from the beginning appeared in the well-known volume of about 1,000 pages, published without a single plate but with about 500 good wood-engravings and an excellent atlas of maps and sections. This atlas contained the first geological map of "Canada and the Adjacent Regions," printed in colours, 125 miles to an inch, and it was followed in 1866 by the large map on the scale of twenty-five miles to an inch, coloured by hand. I wish that every Canadian might read the prefatory note accompanying this atlas, and learn what goes to the making of a reasonably accurate map of a new territory. The ordinary report of progress for the years 1863-66 containing papers by two new contributors, Mr. A. Michel and Mr. Thomas Macfarlane, was the last made to the old Province of Canada. In addition to these reports of progress, seven pamphlets appeared and six important contributions to paleontology. Four of these latter, called respectively Decades 1, 2, 3 and 4,

* "The first effort made toward the establishment of a geological survey in Canada, appears in a petition addressed to the House of Assembly, of Upper Canada in 1832, by Dr. Rae. Nothing, however, came of this or of several other attempts of the same kind, till the first united Parliament of Upper and Lower Canada in 1842, the Natural History Society of Montreal and the Historical Society of Quebec joined in urging the matter upon the government, with the result that the modest sum of £1,500 sterling was granted for the purpose of beginning such a survey." Presidential Address, R. S. C., 1894. G. M. Dawson.