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by the Legislative Committee to which the matter was referred. Subsequent petitions met the same fate; until in 1841, the united parliaments, under the administration of Lord Sydenham, voted the sum of £1,500 sterling for survey purposes. In this year, Sir William E. Logan, (then Mr. Logan), who was born in the City of Montreal in the year 1798 and had already won for himself a considerable reputation in Great Britain, for his admirable geological work in South Wales, and his important discovery whereby the question of the origin of coal was established in favor of the theory of growth in silu, came to Canada on a visit to his brother residing in Montreal, and impressed doubtless with the great opportunities so new and vast a country offered for original research, signified in a letter written at this time his intention, "provided he could make the necessary business arrangements," of offering himself as a candidate to undertake the geological survey of Canada; "*and." he wrote, "if I once begin it will not be my fault if it does not go ahead." Lord Sydenham while riding near Kingston was thrown from his horse and died from the injuries which he sustained. He was succeeded by Sir Charles Bagot, who after referring the matter of the appointment of a geologist to Lord Stanley, then Secretary of State, for the Colonies, offered the position, on the strong recommendations of such distinguished British scientists as De la Beche, Murchison, Sedgewick and Buckland, to Logan in the spring of 1842, and in August of the same year he entered upon his duties, but for several months his services were gratuitously performed. The actual institution of the survey may then be said to date trom the 1st of May, 1843. Mr. Logan's first assistant was Mr. Alexander Murray, (afterwards C.M.G., who subsequently became Director of the Survey of Newfoundland). It may here be noted that from the beginning, great stress was laid on the advantage likely to accrue in the direction of mineral development in Canada as a result of systematised geological investigation. This was in fact, the chief argument advan-ced by the petitioners to Parliament urging the establishment of the Survey; it was the view taken by Lord Sydenham in his support of the measure; and Logan himself as is evident from the opinions expressed both in his published letters and in his official reports, and equally so by his years of useful work, never ceased to regard this as the paramount aim and object of his endeavors. Thus in a letter addressed to Sir Henry De la Beche, in 1843, he wrote, "The main object of the investigation is no doubt to determine the mineral riches of the colony," and again in his evidence before the Parliamentary Committee on the Geological Survey in 1855, he said "The object of the survey is to ascertain the mineral resources of the country, and this is kept steadily in view. Whatever new scientific facts have resulted from it, have come out in the course of what I conceive to be economic researches carrie. In in a scientific way. . . My whole connection with geology is of a practical character." In short, as is somewhere stated, Sir William Logan belonged to that school of geologists whose motto is "Facts, then theories." And the reports for which he was responsible attest the accuracy of this claim. For example, in the "Report of Progress of the Geo-logical Survey from its commencement to 1863," over one-fifth of the volume, or close on two hundred pages is devoted to economic geology, specific information being here given in respect to mineral occurrence, location and utilization; while in general the

*Life of Sir William E. Logan-by B. J. Harrington, p. III. (Montreal: Dawson Bros., 1883.) various reports contained in this volume are characterized by the amount of practical information afforded. In 1844 Mr. Logan established in the "Upper Chamber" of his brother's warehouse in Montreal a museum in which to display the large quantities of organic remains and minerals collected by himself and Mr. Murray, during their summer explorations; and still bearing in mind economic requirements, he employed at his own pecuniary risk, a chemist to make the necessary analyses of mineral specimens.

It was not until the following year, Logan having meanwhile drawn heavily on his own resources for the expenses of the work, that, thanks to Lord Metcalfe, the Survey was placed on a better footing, the employ-ment of a chemist was authorized and the grant increased, covering a period of four years, to £2,000 per annum. But even under these improved conditions the difficulties of carrying on the work efficiently were enormous, not only by reason of financial disabilities but on account of the physical obstacles to be overcome. The greater portion of the country was, of course, a terra incognita, so that the geologists were obliged to devote the major part of their time in the field to topographical observations. In another of his long and interesting letters to his friend, De la Beche, Logan wrote: "I wish I could let you see the map of our journey across from the St. Lawrence to Bay Chalcur. The length of our winding line is 111 Bay Chalcur. miles, in which we dialled the twists and turns of two rivers, one thirty-five miles and the other sixty-five miles, obtaining the bearings of the reaches by prismatic compass and the distances by Rochon's micrometer, and registering at the same time the quality, contents and attitude of every bed of rock we saw, with barometric heights, etc. The distance between the rivers we triangulated by means of well marked peaks. I think you would say we deserve some credit for it." In later years, he also refers to the time occupied in work of this character. "It will be easily understood," he remarks, "that this geographical work must unavoidably impede the rapidity of geological examination; and the necessity of so much measurement to fix the position of rock exposures, forces us, in order to make even a moderate progress, to examine fewer of them, or to give to each a shorter time than we would like, and thus, perhaps, to over-look some of its characteristics." This point was well emphasized by Prof. Agassiz in his evidence before the select committee above referred to, in which after speaking of the inadequate means placed at the disposal of the geologists, he says, "Topographical surveys, to be satisfactory ought to be founded upon astro-nomical observations, but who multiplied and astronomical observations, but who would therefore expect that astronomers should leave their telescopes, go into field, chart in hand, and draw maps. Mining operations bear to geology the same relations, that geodetic operations bear to astronomy. All that may be fairly expected of a geologist, is to prepare a geological map of the province he surveys, and thus obtain the information, without which the mineral resources of a country cannot be satisfactorily ascertained."

At the close of the year 1846 Dr. (then Mr.) Sterry Hunt, who subsequently did so much useful work in connection with the survey in Canada, was appointed to the staff, replacing Mr. De Rottermond, as chemist and mineralogist.

Meanwhile the Provincial Act, passed in 1845, had made provision for the continuation of the Geological Survey for five years only, and the time was drawing to a close. However, not without a delay that interfered considerably with the work of the Survey, the