

appeared in 1858-59 and 1865. The contributors were Mr. Billings of the Canadian Survey, Mr. Salter of the Survey of Great Britain, and Prof. James Hall, the State Geologist of New York. They were slender octavo volumes containing altogether only 370 pages of text, but with a liberal supply of excellently engraved plates. Three of the Decades are monographs on the subject dealt with, and the four volumes are classics in North American Geology and absolutely essential to students of North American invertebrate paleontology. In 1865 the first volume, 426 pp., of a series entitled "Palaeozoic Fossils" appeared, the species described being entirely by Billings. Many of the descriptions are unaccompanied by illustrations and those afforded are wood-cuts. In 1866 the pamphlet, 93 pp., entitled "Catalogues of the Silurian Fossils of the Island of Anticosti," was published. It also consists of descriptions of species, sometimes illustrated, sometimes not. This closes the work done by the survey of the old Province of Canada, the operations of which extended only to portions of what are now Quebec and Ontario. As Sir William Logan said, much of the period was occupied in obtaining topographical knowledge sufficient to enable the first geological map to be made, and indeed this is the main result of his labours.\* When we look at the very small quantity of matter in the reports produced during this period of twenty-four years we must deeply regret the indifference of a people who could leave unsupported, save by two or three enthusiasts, a man with such endowments as the Director of the Survey, Sir William Logan, our honoured president in the first year of this Institute. We shall see later what this ignorance and indifference have cost us.

But narrow as was the scope of the work in old Canada it was worse in the Maritime Provinces. As early as 1838, Dr. Abraham Gesner began a geological survey of New Brunswick, which was carried on in some fashion until 1844, when it came to an end, the result being the reports detailed in the footnote below.† There was also, apparently, a report in 1843. 88 pp., not, however, styled the fifth report. Dr. Gesner had already published a volume on Nova Scotia‡ as a private venture in which he was assisted by the province, and the work in New Brunswick resulted in another contribution which reached the public in a similar manner. He was employed in 1846 by the government of Prince Edward Island to report on the geology of that province, which apparently resulted in a short report in 1847, and in 1849 he published a volume on the "Industrial Resources of Nova Scotia," but whether aided by the provincial government or not, I am unable to say. He published other papers regarding gold, iron, coal, and especially petroleum, but evidently to a languid public. In the volume on New Brunswick, published in 1847, and noted below,|| Dr. Gesner says: "Of the British North American Colonies, New Brunswick was the first to undertake an examination of her mineral resources. Since the commencement of that survey, similar ones have been instituted in Newfoundland and Canada. Prince Edward's Island has also followed the example. Nova Scotia would have engaged in such a work long ago, were not her mines and minerals sealed up by a close monopoly, which withholds from the inhabitants any participation in the mineral wealth of the country."

There were a few apparently official but irregular reports published in New Brunswick which should not be overlooked. In 1850, J. F. W. Johnston made a report on the "Agricultural Capabilities of the Province," etc., which includes geological notes by Mr. Robb. In 1864, L. W. Bailey made a report on Mines and Minerals. In 1865, Messrs. Bailey, Matthew and Hartt, made a geological report on Southern New Brunswick.

We have already mentioned Professor Henry Youle Hind in connection with the Red River and Saskatchewan expeditions. When appointed to this important

\* "In 1854 . . . when before the . . . select committee of the Legislature . . . appointed to investigate the working of the survey, . . . Logan was asked what the principal difficulties he had met with were; he replied: 'Independently of those unavoidably incident to travelling in canoes up shallow rivers, or on foot through the forest, are those arising from the want of a good topographical map of the country. Accurate topography is the basis of accurate geology.'" Presidential Address, R. S. C., 1864. G. M. Dawson.

† "First, Second, Third and Fourth Reports on the Geological Survey of the Province of New Brunswick," Gesner. St. John. 1st, 1839, 82 pp.; and, 1840, 72 pp.; 3rd, 1841, 88 pp.; 4th, 1842, 101 pp.

‡ "Remarks on the Geology and Mineralogy of Nova Scotia; with a new map of Nova Scotia, Cape Breton, Prince Edward Island, and part of New Brunswick." Gesner. Halifax and London, 1836.

|| "New Brunswick with Notes for Emigrants," Gesner. London, 1847.